

# FOIA MARKER

**This is not a textual record. This is used as an  
administrative marker by the William J. Clinton  
Presidential Library Staff.**

---

**Collection/Record Group:** Clinton Presidential Records  
**Subgroup/Office of Origin:** Council of Economic Advisers  
**Series/Staff Member:** Alicia Munnell  
**Subseries:**

---

**OA/ID Number:** 10102  
**FolderID:**

---

**Folder Title:**  
Claussen's Climate Change Mtg. Tues, 3/18/97, 9:30-11am, w/ JAF [Jeffrey Frankel] at State, Rm.  
3524

| Stack: | Row: | Section: | Shelf: | Position: |
|--------|------|----------|--------|-----------|
| S      | 20   | 3        | 2      | 2         |



## United States Department of State

*Bureau of Oceans and International  
Environmental and Scientific Affairs*

Washington, D.C. 20520

*cc: [signature]  
JTH  
JS*

TO: Distribution

March 17, 1997

FROM: OES - Eileen B. Claussen *[signature]*

SUBJECT: Climate Change Papers

Attached is a set of six papers setting forth ideas and proposals for possible inclusion as part of a U.S. submission to the Climate Convention Secretariat. We will consider these at the meeting of the Assistant Secretaries scheduled for 9:30 a.m. on Tuesday, March 18 in Main State Room 3524. Papers to be discussed include:

- Annex B countries and commitments
- Annex C gases and treatments
- Compliance
- Emissions Trading
- Joint Implementation
- Borrowing

These documents have been prepared to meet a very tight timetable; the Ad Hoc Group on the Berlin Mandate (AGBM) agreed that it would allow Parties to submit any new materials only until April 1, 1997 – and that all documents submitted following that date would not be included in the compilation being prepared for circulation to all Parties by June 1. However, in my view, while decisions on each of these issues will need to be taken over the next several months, not all need be decided – nor language submitted – by the April 1 deadline. I recommend that we focus our discussion tomorrow on Annex C gas/sector issues, compliance and joint implementation, and that time permitting, we then proceed with a discussion on Annex B, borrowing and emissions trading. We anticipate an additional round of review before submitting any materials to the Deputies, recognizing that any text must be completed and approved prior to the April 1, 1997, deadline. I would also like to use the session as an opportunity to discuss other aspects of the work program, with particular emphasis on briefings for the business and NGO communities, and the Hill. I look forward to seeing you tomorrow.

Attachments

As Stated

"Compliance" Elements

- o Attached is the proposed text for additional "compliance" elements to be sent to the Secretariat for inclusion in the compilation document.
- o These new elements (which are underlined below), combined with the existing U.S. proposal, would add up to a compliance regime along the following lines for Annex A and B Parties:
  - a requirement to have in place a national system for the accurate measurement of emissions;
  - a requirement to have national compliance and enforcement programs relevant to implementation;
  - detailed reporting requirements, including on the current status of a Party's emissions budget;
  - an automatic review process involving "review teams" (as currently used under the Convention) empowered to conduct on-site fact-finding and to prepare reports assessing implementation of commitments, including any potential problems in achieving such commitments;
  - automatic referral by the Secretariat of reports indicating questions of implementation to a "friendly" multilateral consultative process for further handling; such process would, as under the Montreal Protocol, take the form of an implementation committee composed of a subset of Parties;
  - in addition, at the request of a Party (about itself or other Parties) or the Secretariat, referral of implementation questions to the multilateral consultative process;
  - multilateral consultative process empowered to make recommendations to a meeting of the Parties, which would be authorized generally to take appropriate action; indicative list of possible actions would be included in the agreement;
  - explicit consequences in the agreement itself for certain violations:
    - o a Party that borrows (although not technically a violation) loses a certain percentage of its budget from the subsequent period;

-2-

- a Party that exceeds its emissions budget is required to borrow from its subsequent budget period, at a higher rate than that applicable to legal borrowing;

- a Party may not sell [issue: also not acquire?] tons under emissions trading if it is not in compliance with its measurement/reporting obligations; does not have a national mechanism for certification and verification of trades; exceeds its emissions budget; or [the Parties so decide with respect to a Party unlikely to meet its budget] [a quantitative formula automatically indicates that a Party is unlikely to meet its budget];

[Note that, with respect to all of these cases of non-compliance, there is an indicted vs. convicted issue, namely whether a Party is deemed to be in compliance for trading purposes until: a question is raised about its compliance (and, if so, by another Party? the Secretariat? the MCP? a meeting of the Parties?) or it has been found to be in non-compliance (by the MCP? a meeting of the Parties?) Text will need to be added on this point.]

- a Party not in compliance with measurement/reporting obligations may not acquire tons through joint implementation;

-- without prejudice to the multilateral process, the ability to invoke traditional bilateral dispute settlement leading to a recommendatory decision (as in the Convention);

-- various Secretariat functions related to the above.

- For non-Annex A and B Parties:

-- reporting requirements (e.g., on inventories, measures taken);

-- process for automatic review of individual communications;

-- multilateral consultative process (potentially leading to action by meeting of Parties), as referred to above;

-- traditional dispute settlement referred to above.

should you  
not be able to  
buy as well as  
sell tons?  
leave Party to be  
able to buy, sell  
not sell -

Text to Be Submitted

(note that Article #s will need to correspond to the new compilation text)

In Article 2 of the U.S. proposal (Emissions Budgets), add a new paragraph 6.bis. as follows:

- 6.bis. At the end of a budget period applicable to a Party, any amount of tonnes of carbon equivalent emissions over its emissions budget shall be subtracted at a rate of [rate substantially above that for limited legal borrowing] from the subsequent budget period.

---

In Article 4 of the U.S. proposal (Review and Compliance Process), substitute for paragraphs 4 to 6 the following text:

- 4.4 Review teams will review all aspects of a Party's implementation of this Protocol, including the likelihood that a Party will achieve its emissions budgets obligations. They will be authorized, inter alia, to conduct on-site fact-finding, review pertinent information, and consult with the Party in question and others as necessary. They will prepare a report assessing a Party's implementation of its obligations, identifying any areas of apparent non-compliance, as well as potential problems in achieving obligations.
- 4.5 Such reports will be circulated by the Secretariat to all Parties. In addition, the Secretariat will forward to the Multilateral Consultative Process referred to in Article 14 any report raising a question of implementation.

---

In Article 6 of the U.S. proposal (International Emissions Trading), substitute the following text:

- 6.1. Except as otherwise provided below, any Annex A or Annex B Party may transfer to, or receive from, any Annex A or Annex B Party, any of its tonnes of carbon equivalent emissions allowed for a budget period, for the purpose of meeting its obligations under Article 2.

-2-

- 6.2 An Annex A or Annex B Party may not transfer<sup>\*</sup> [issue: also not acquire?] any of its tonnes of carbon equivalent emissions allowed if:
- (a) it is not in compliance with its obligations under Article 3 (Measurement and Reporting);
  - (b) it does not have in place a national mechanism for certification and verification or trades;
  - (c) it has exceeded its emissions budget for a given budget period; or
  - (d) [Option 1: the Parties, at a meeting, have so decided with respect to a Party that, based on its reporting and any reports of review processes under this Protocol, is unlikely to achieve its emissions budget.] [Option 2: a quantitative formula that automatically deems a Party unlikely to achieve its emissions budget].
- 6.3 A Party may authorize any domestic entity (e.g., government agencies, private firms, non-governmental organizations, individuals) to participate in actions leading to transfer and receipt under paragraph 1 of tonnes of carbon equivalent emissions allowed.
- 6.4 The Parties, at a meeting, may further elaborate guidelines to facilitate the reporting of emissions trading information.

---

In Article 10 of the U.S. proposal (Meetings of the Parties), for paragraph 4, substitute the following text:

- 10.4 The functions of the meetings of the Parties shall be to:
- (a) periodically review the adequacy of this Protocol;
  - (b) review the implementation of this Protocol, including the information submitted in accordance with Articles 3 and 5, reports received from the review teams referred to in Article 4, and reports and recommendations received from the Multilateral Consultative Process referred to in Article 14;

-3-

- (c) apply or decide on appropriate consequences in cases of non-compliance with obligations in this Protocol;
- (d) in connection with subparagraph (c) above, develop an indicative list of appropriate consequences, taking into account the type, degree, and frequency of non-compliance; examples of consequences could include, e.g.,
  - issuance of recommendations from the meeting of the Parties to the Party in question;
  - requests for further information from the Party in question;
  - increased reporting requirements;
  - increased monitoring of a Party's compliance;
  - loss of voting rights and/or other opportunities to participate in processes under this Protocol;
  - devaluation or voiding of current and/or future transfers for purposes of International Emissions Trading;
  - ineligibility to engage in International Emissions Trading and/or Joint Implementation;
  - determination of ineligibility to receive technical or financial assistance;
  - imposition of monetary penalties;
  - mandatory purchasing of tons to clear an emissions budget debit;
  - trade measures.

---

In Article 11 of the U.S. proposal (Secretariat), for paragraph 2, substitute the following:

11.2 The functions of the secretariat shall be:

-4-

- (a) to maintain and administer records relating to the accounting of the emissions budgets of Annex A and Annex B Parties, including initial budget allocations, adjustments to budgets consistent with Articles 2, 6, and 7, annual emissions, and remaining budgets in a given budget period;
- (b) to facilitate the review of implementation of this Protocol through, inter alia, coordinating the review of Annex A and Annex B implementation; coordinating the reviews under Article 4; submitting to the Multilateral Consultative Process questions of implementation; and preparing an annual compilation and synthesis report that contains inventory and budget information, notes any discrepancies in accounting, and assesses whether individual reports are consistent with reporting criteria;
- (c) [other].

---

In Article 14 of the U.S. proposal (Multilateral Consultative Process), for the bracketed text, substitute the following text:

- 14.1 At their first meeting after entry into force of this Protocol, the Parties shall establish a Multilateral Consultative Process, implemented through an Implementation Committee composed of a subset of the Parties, to review, at the request of a Party or Parties, the Secretariat, or a Party in respect of itself, implementation questions under this Protocol.
- 14.2 The Multilateral Consultative Process should, inter alia:
  - (a) provide for the Party whose implementation is in question to attend meetings of the Implementation Committee and take part in consultations with it;
  - (b) provide the Party whose implementation is in question a full opportunity to inform the Implementation Committee of its capacity to implement its obligations and of its needs relevant to that issue;

-5-

- (c) provide for the Implementation Committee to consult, as it deems necessary, any subsidiary body under this Protocol or other expert bodies;
- (d) promote, as appropriate, the enhancement of the capacity of the Party whose implementation of this Protocol is in question to implement fully its obligations;
- (e) provide for the results of the work of the Implementation Committee, together with any recommendations, to be reported to the next meeting of the Parties;
- (f) provide for the Implementation Committee to meet as frequently as necessary to carry out its mandate.

### Annex B: An Options Paper

**Issue:** What countries, and what obligations should be included in Annex B?

**Background:** The language in the U.S. draft protocol to the Climate Convention suggests a variety of options for Annex B Parties, with the implicit assumption that Annex B commitments will differ from those of Annex A (developed countries and countries with economies in transition). The U.S. text includes the options of allowing budgets of Parties in Annex B to differ from those in Annex A with respect to the length of the budget periods, the baseyears, and/or the percentage reductions. This paper explores some of these options, proposes a criterion for denominating national emissions, and suggests a possible list of countries that might be persuaded to join Annex B.

**Budget denomination.** A commitment to a budget would allow free and full participation in international trading. One of the most fundamental elements of the US proposal is that Parties in either Annex A or Annex B would have binding budgets, backed up by full reporting, monitoring and verification obligations. Only with full compliance with such provisions would Parties be eligible to participate in international emissions trading regimes. However, in order to allow trading, it is critical that each Party have comparable budgets; in the U.S. proposal, such budgets would be denominated in terms of tonnes of carbon equivalents. Indicators such as energy consumption per unit of GDP, percentage of energy derived from renewables, or even greenhouse gas emissions per capita, while useful in their ability to point to areas for improvement in national emissions, do not independently provide adequate transparency for a full and open trading regime. Thus, to participate in Annex B Party commitments must be calibrated in terms of emissions; flexibility for them will lie in baseyears and/or percent emissions, not in the form of the commitment based on performance indicators.

**NOTE:** Discussion with Korea (and to a lesser extent, Mexico) have suggested that these countries may not be prepared to adopt binding emissions budgets. In this case, a different formulation may need to be found – one in which the Annex B obligation does not entitle participation in a trading regime. Such a structure, presumably of a voluntary nature, would still help differentiate between Annex B parties, and other developing country Parties.

**Differentiation.** It would be most desirable if a single set of parameters – or even a single percentage reduction – could be chosen to define the budgets for all Annex B Parties. However, recognizing the extremely wide variation in potential Annex B Party circumstances, and the substantial differences in their projected economic (and emissions) growth paths, it may be necessary to establish individual parameters for each Annex B Party. [NOTE: Establishing flexibility of this sort for Annex B Parties automatically raises the issue of why it is denied to Annex A Parties. Any approach which allows for such differentiation will need to address this issue.]

**Budget Allocations.** Given that setting a single, uniform target percentage may be inappropriate for all Annex B members, a different approach is needed to determine the initial allocation. It is suggested that Annex B countries be provided an initial budget allocation that would restrict emissions increases over the budget period to [10][20][30] percent less growth than that from the average of the equivalent previous period. It is also proposed that the allocation be reduced in subsequent budget periods, with the intent that Annex B Parties move from a growth path to stabilization within [15] years and ultimately a reduction path within [20] years. Provisions should be included in the instrument for a review of Annex B Party commitments at the conclusion of each budget period, and individual Party commitments should be modified to reflect changing circumstances.

**Budget periods and base years.** A number of options exist for selecting the base year (against which the future budget of a Party would be determined) for a Party. These could include:

- the year in which it signs the agreement (potentially leading to gaming of the numbers, or delay in signing);
- the base included in the Parties most recently included inventory following the entry into force of the instrument (faces some of the same problems, but may be less open to gaming); or
- a three year consecutive average surrounding the agreed Annex A base year (may not provide needed flexibility for the Annex B Parties).

The budget periods should be identical in length to those of Annex A Parties. If a Party accedes to the agreement during the middle of a budget period, its first period of obligation would be shortened, and its emissions budget pro-rated over the remainder of the period. In this way, budget periods will end at the same time for all Parties.

**Annex B Candidates.** Several alternative approaches may be taken in developing a list of possible Annex B members. It should be noted that the existing draft text already includes a clause allowing any Party to opt in—whether on the list or not. Two options are described below:

1. Select those countries that exceed levels of per capita income or emissions of existing Annex I countries (over a particular year, or average of several preceding years). A list of those countries with emissions per capita greater than 3.5 tons (Mexico is 3.7), and GDP per capita greater than \$5,500/year (Poland's is \$4900) not already in Annex I of the FCCC is contained in table 1. Political considerations may remove – or add – some additional Parties to this list. While not determining the level of the target, factors could be used to mark threshold levels beyond which a country would automatically become an Annex B member.
2. A second option for listing countries in Annex B is to include those countries that are currently not in Annex I but that have applied or are considering applying for OECD membership. Countries which have applied for observership in the OECD or its various individual work groups are listed in table 2.

## POSSIBLE CANDIDATES FOR ANNEX B

**TABLE 1**

Countries with GDP/capita greater than \$5,000 and CO2/capita greater than 3.5 tons

| Country/Region         | CO2 Emissions<br>000 metric tons | Per Capita<br>CO2 Emissions<br>(metric tons) | CO2 Emissions<br>from Land Use<br>(000 metric tons) | Total CO2<br>(000 metric tons) | GDP<br>PPP<br>(million Int\$) | Per Capita<br>GDP<br>(PPP; Int\$) | Avg '83-'93<br>PPP Growth<br>(%) | 1990<br>Population<br>(millions) | 1990-1995<br>Pop Change<br>(%) |
|------------------------|----------------------------------|----------------------------------------------|-----------------------------------------------------|--------------------------------|-------------------------------|-----------------------------------|----------------------------------|----------------------------------|--------------------------------|
| 1 Singapore            | 49,790                           | 17.99                                        | X                                                   | 49,790                         | 46,213                        | 16,736                            | 6.1                              | 2,705                            | 1.0                            |
| 2 United Arab Emirates | 70,616                           | 42.28                                        | X                                                   | 70,616                         | 25,381                        | 15,784                            | 0.5                              | 1,671                            | 2.6                            |
| 3 Israel               | 41,605                           | 8.1                                          | X                                                   | 41,605                         | 64,245                        | 12,783                            | 4.2                              | 4,660                            | 3.8                            |
| 4 Trinidad & Tobago    | 20,643                           | 16.3                                         | 1,200                                               | 21,843                         | 12,679                        | 10,145                            | -1.6                             | 1,236                            | 1.1                            |
| 5 Libya                | 39,520                           | 8.1                                          | 76                                                  | 39,596                         | 36,531                        | 9,649                             | X                                | 4,545                            | 3.5                            |
| 6 Korea, Rep           | 289,833                          | 6.56                                         | 1,500                                               | 291,333                        | 415,320                       | 9,565                             | 9.6                              | 42,869                           | 1.0                            |
| 7 Saudi Arabia         | 220,620                          | 13.85                                        | 60                                                  | 220,680                        | 143,679                       | 9,390                             | -1.6                             | 16,048                           | 2.2                            |
| 8 Oman                 | 10,036                           | 6.12                                         | X                                                   | 10,036                         | 13,975                        | 8,650                             | 2.6                              | 1,751                            | 4.2                            |
| 9 Kuwait               | 15,971                           | 8.1                                          | X                                                   | 15,971                         | 17,557                        | 8,561                             | -0.4                             | 2,143                            | -6.5                           |
| 10 Venezuela           | 116,424                          | 5.75                                         | 170,000                                             | 286,424                        | 172,419                       | 8,449                             | 2.9                              | 19,502                           | 2.3                            |
| 11 Mexico              | 332,852                          | 3.77                                         | 63,000                                              | 395,852                        | 692,795                       | 7,867                             | 3.6                              | 84,511                           | 2.1                            |
| 12 Malaysia            | 70,492                           | 3.74                                         | 210,000                                             | 280,492                        | 133,586                       | 7,191                             | 6.2                              | 17,891                           | 2.4                            |
| 13 Argentina           | 117,003                          | 3.52                                         | 85,000                                              | 202,003                        | 191,699                       | 5,921                             | -0.9                             | 32,547                           | 1.2                            |

**TABLE 2**

Countries that have applied to the OECD for Observer Status in Some Areas

| Country/Region  | CO2 Emissions<br>000 metric tons | Per Capita<br>CO2 Emissions<br>(metric tons) | CO2 Emissions<br>from Land Use<br>(000 metric tons) | Total CO2<br>(000 metric tons) | GDP<br>PPP<br>(million Int\$) | Per Capita<br>GDP<br>(PPP; Int\$) | Avg '83-'93<br>PPP Growth<br>(%) | 1990<br>Population<br>(millions) | 1990-1995<br>Pop Change<br>(%) |
|-----------------|----------------------------------|----------------------------------------------|-----------------------------------------------------|--------------------------------|-------------------------------|-----------------------------------|----------------------------------|----------------------------------|--------------------------------|
| 1 Korea, Rep    | 289,833                          | 6.56                                         | 1,500                                               | 291,333                        | 415,320                       | 9,565                             | 9.6                              | 42,869                           | 1.0                            |
| 2 Mexico        | 332,852                          | 3.77                                         | 63,000                                              | 395,852                        | 692,795                       | 7,867                             | 3.6                              | 84,511                           | 2.1                            |
| 3 Argentina     | 117,003                          | 3.52                                         | 85,000                                              | 202,003                        | 191,699                       | 5,921                             | -0.9                             | 32,547                           | 1.2                            |
| 4 Slovenia, Rep | 5,503                            | 2.75                                         | X                                                   | 5,503                          | X                             | X                                 | X                                | 1,918                            | 0.3                            |
| 5 Chile         | 34,738                           | 2.56                                         | 33,000                                              | 67,738                         | 85,948                        | 6,326                             | 6.3                              | 13,154                           | 1.6                            |
| 6 Israel        | 41,605                           | 8.1                                          | X                                                   | 41,605                         | 64,245                        | 12,783                            | 4.2                              | 4,660                            | 3.8                            |

Data Taken from 1996-1997 WRI Data Tables. Some data computed from data provided

CO2 emissions data primarily from 1993

CO2 primarily from 1991 land use data

Total CO2 column derived by adding CO2 emissions and land use data

GDP data primarily from 1992

**Article 7**  
**Joint Implementation**  
**March 14, 1997**

**General Issue:** How should calculation, measurement, monitoring, verification, review and reporting for joint implementation projects be implemented?

**Background:** The current U.S. Protocol proposal contains much of the language that will be needed to negotiate, adopt, and implement a working JI regime. However, Article 7.3 calls for additional provisions to be added on calculation, measurement, monitoring, verification, review, and reporting. There is agreement within the U.S. government on two areas where new language is required. For each of these topics the paper briefly provides background and then presents proposed text. These areas include language on the:

- need for guidelines for the measurement and reporting of JI by Parties
- need for the FCCC Secretariat to synthesize and report information on JI submitted by Parties

There are three other areas where there is disagreement on the need for explicit language. For each of these topics the paper briefly provides background and presents options for proposed text. These areas include language on:

- the review and verification of "tonnes of carbon equivalent" created through JI
- the potential certification by the UNFCCC of independent auditors for JI projects
- additionality

**Area 1:      Need for guidelines for the measurement and reporting of JI by Parties**

**Background:** The existing protocol language acknowledges the need to provide standards for the reporting and measurement by Parties of "tonnes of carbon equivalent allowed" created through JI. We suggest the following addition to the existing language of the US proposal.

**Draft Text (new text is in italics):**

**Article 7**

1. Any Party that is neither in Annex A nor B may generate tonnes of carbon equivalent emissions allowed through projects that meet the criteria set forth in paragraphs 2 and 3.
2. In addition to any criteria adopted by the Parties to this Protocol, the following criteria shall apply to projects:

**DRAFT -- FOR INTERNAL USE ONLY**

- (a) Projects must be compatible with and supportive of national environment and development priorities and strategies, as well as contribute to cost-effectiveness in achieving global benefits;
- (b) Projects must provide a reduction in emissions that is additional to any that would otherwise occur.

3. ~~[Additional provisions to be added on calculation, measurement, monitoring, verification, review, reporting.]~~ Parties shall adopt, no later than one year after entry into force:

- (a) *guidelines for the measuring and reporting on emissions reductions and sequestration resulting from joint implementation projects*
  - (i) *The measurement guidelines shall be consistent with Article 3.2.*
  - (ii) *The reporting guidelines shall ensure consistency of the separate reporting paths for joint implementation: Article 3.5 for Annex A or B Parties and paragraph 7 of this Article for Parties which are neither Annex A nor B.*

**Area 2:**        **Need for the FCCC Secretariat to synthesize and report information on JI submitted by Parties**

**Background:** The existing protocol language recognizes the need for the synthesis and reporting of information submitted by Parties to the UNFCCC on JI. We suggest the following addition to the existing language of the US proposal.

**Draft Text (new text is in italics):**

**Article 7**

8. *Submissions by Parties on joint implementation will be compiled into a synthesis report by the Secretariat at appropriate time intervals. The Synthesis report will be based on reports made under Article 3.5 and paragraph 7 of this Article.*

**Area 3:**        **Review and verification of "tonnes of carbon equivalent" created through JI**

**Background:** The U.S. draft protocol framework of January 17, 1997 says that Parties may generate "tonnes of carbon equivalent" allowed through JI. It recognizes the need for provisions for monitoring, verification, and review of proposed new "tonnes of carbon equivalent allowed." It does not address the process, however, for reviewing them according to the criteria or future guidelines, or to annul or otherwise deal with "tonnes of carbon equivalent" that do not meet the criteria or do not accrue GHG reductions as expected.

There are two options proposed below to deal with review. The first option is to elaborate on

a process for the review of "tonnes of carbon equivalent allowed" created through Jh. The second is to provide a process by which reporting guidelines will be elaborated no later than one year after entry into force.

**Option 1: Elaborate on a process for review**

**Draft Text (new text is in italics):**

**Article 7**

5. An Annex A or Annex B Party *that is in compliance with its obligations under Article 3 (Measurement and Reporting)* may acquire tonnes of carbon equivalent emissions allowed under this Article for the purpose of meeting its obligations under Article 2. ~~provided it is in compliance with its obligations under Article 3 (Measurement and Reporting)~~ *Such tonnes of carbon equivalent emissions allowed may not be added to the emissions budget of any Party until the project from which such tonnes were derived and the quantity of emission reductions or sequestrations accrued have been reviewed and determined to meet the criteria of this Article and the guidelines adopted by the Parties. Reviews pursuant to this paragraph shall be reported to the Parties per paragraph 8 [see consensus text proposed under Area 2] and conducted by experts coordinated by the Secretariat and based on reports made under Article 3.5 and paragraph 7 of this Article as well as on other relevant information, including site visits, where appropriate.*

**Option 2: Provide a process for establishing the review process**

**Draft Text (new text is in italics):**

**Article 7**

3. *Parties shall adopt, no later than one year after entry into force:*
- [insert at the end of consensus change to Article 3.(a) proposed under Area 1 above]  
© *reporting guidelines for the baseline calculations and a review process for projects for which standard methodologies do not apply.*
4. no change
5. An Annex A or Annex B Party may acquired tonne of carbon equivalent emissions allowed under this Article for the purpose of meeting its obligations under Article 2, provided it is in compliance with its obligation under Article 3 (Measurement and Reporting). *No credits for emissions reduced or sequestered can accrue until generated.*

**Area 4: Potential certification by the UNFCCC of independent auditors for JI projects**

**Background:** It has been proposed by some in the United States that independent auditors might be employed by the UNFCCC Secretariat or project developers themselves to measure and certify the GHG emission reductions associated with JI projects. If the FCCC Secretariat is placed in the position of reviewing JI projects (see Area 3), it has been suggested by some that the benefit of such potential certification would be to privatize much of the necessary review and to lessen the workload of the FCCC Secretariat. At the same time, it provides project developers and Parties with an additional option for determining the validity of their JI projects and associated credits.

**Option 1: Allow the potential certification by the UNFCCC of independent auditors for JI projects**

**Draft Text (new text is in italics):**

**Article 7**

3.(a) [insert at the end of consensus change to Article 3.(a) proposed under Area 1 above]

*The Parties may adopt additional guidelines as necessary, inter alia, for training and certification of independent auditors of JI projects.*

**Option 2: Do not broach the potential certification of independent auditors for JI projects**

**Article 7**

3.(a) [insert at the end of consensus change to Article 3.(a) proposed under Area 1 above]

*The Parties may adopt additional guidelines as necessary.*

**Area 5: Additionality**

**Background:** "Additionality" has been a controversial issue both internationally and within the USJI program because it is difficult to apply in practice. It is an important concept to ensure that "tonnes of carbon equivalent allowed" are not created for emission reductions (or avoidance of emission increases) that would occur anyway. This would expand the emissions budgets allowed under the agreement without an offset of that expansion through real GHG reductions elsewhere.

### Option 1: Propose a two-tier process for decisions regarding additionality

This option would establish in the agreement a set of project types that would be considered additional *a priori*. This list would be reviewed by the Parties every 5 years. A set of 5 to 10 project categories could open a restricted window for projects that will push the diffusion of clean or efficient technologies. It would create certainty for project developers about what can qualify and reduce transaction costs almost to zero for the demonstration of additionality. For projects that do not fall into this set of project types, guidelines would be adopted governing how to determine additionality against baselines of 'what would otherwise occur,' over and above the "no regrets" actions required of developing countries in the U.S. proposal in Article 5. This second tier for review, similar to USII review if guidelines were available, would allow other types of projects to be considered, opening a wider window of opportunities. However, the process would be more data-intensive, more judgmental, less certain for project developers, and would entail much higher transaction costs.

#### Draft Text (new text is in italics):

#### Article 7

- 2.(b) Projects must provide a reduction in emissions that is additional to any that would otherwise occur. *Projects may demonstrate additionality in one of two ways:*
- (I) *Projects which fall into one of the following categories will a priori be considered additional. These project categories will be reviewed for potential modification every five years following the initiation of the first budget period of Article 2.3*
    - (a) *projects which replace existing or future energy production from fossil fuels with the production of energy by renewable energy technologies including PV or thermal solar, geothermal, sustainably-produced biomass, or wind energy;*
    - (b) *projects which demonstrably increase forest stock and which prevent shift of forest losses outside of the project area by reducing local and other pressure for extraction of forest products or conversion of forestry land to non-forestry uses such as agriculture, grazing, or human settlements*
    - © *projects which demonstrably reduce the loss of forest stock [by at least 20 %] through improved forest management practices and increase efficiency of the production of forest products where the majority of products produced are durable forest products with lifetimes of greater than [20] years*
    - (d) *projects at least [30%] more "carbon-equivalent" efficient than the average carbon-equivalent efficiency of projects in that category in that country in the previous [3] years.*
  - (ii) *Projects which fall outside of these categories may demonstrate the creation of proposed tonnes of carbon equivalent allowed from joint implementation through*

*the creation of a quantitative baseline of what would occur without JI, developed in accordance with guidelines under paragraph 3 of this Article. These guidelines shall take into account "no regrets" measures deemed to be required under Article 5, and give explicit consideration to how policies and measures would evolve over time to meet domestic environmental, economic, and social goals.*

**Option 2: Propose the future adoption of a process for the determination of additionality**

This option would postpone the further elaboration of a method for the determination of additionality to the Parties post-Kyoto. It would instead propose a process for allowing Parties to adopt standardized methodologies for the determination of emissions additionality for narrow project types -- projects for which baseline calculations are certain. This would include many energy efficiency, forestry efficiency, renewable energy and fossil fuel projects. A likely example is a retrofit project where the baseline and changes to the baseline are clear. For projects which do not fall within the standardized methodologies, reporting guidelines for baseline calculations and a review process would be adopted (see Area 3, Option 2).

**Draft Text (new text is in italics):**

**Article 7**

*3. Parties shall adopt, no later than one year after entry into force:*

[insert at the end of consensus change to Article 3.(a) proposed under Area 1 above]

- (b) *standardized methodologies for the determination of emission additionality and criteria for its automatic application.*

**International Emissions Trading: Issue Papers**IssuePage Number

- |    |                                                          |   |
|----|----------------------------------------------------------|---|
| 1. | Is there a need for a new international oversight group? | 1 |
| 2. | In what units should trades occur?                       | 3 |
| 3. | How should "problem" countries be addressed?             | 4 |

*[note that the text provided is for clarity on the substantive suggestions for additions to the protocol; the text may need editing from State Department to ensure proper "legal" wording and placement for the Protocol]*

## Emissions Trading Issue #1: Enhancing the Role of the FCCC Secretariat in the Protocol

**Issue:** Is there a need for a new international oversight group to implement trading?

**Background:** No, the U.S. Protocol can be implemented through a clear division of responsibility assigned to the Parties, the FCCC Secretariat, and the in-depth expert review teams (and the multilateral consultative process discussed at length in another paper). The Protocol can be enhanced by clarifying the role of the FCCC Secretariat as the official tracker of the budget information for all Parties, using the mechanism of the compilation and synthesis report which is already required. The Protocol is already clear on each Party's required responsibilities for the individual tracking and reporting required for emissions and budget calculations. However, it is important to ensure that the Secretariat can verify it has received an official authorization from a Party before it records an emissions trade, similar to the requirement for the authorization from a "designated representative" from the utility company under the Acid Rain Program. Finally, although the Protocol implicitly requires (in Article 3.5) that the Party report its remaining budget after emissions are deducted, it may be appropriate to modify the Protocol explicitly in Article 2.2 to clarify the Party's requirement to adjust its budget annually by deducting the number of "tonnes allowed" which would be needed to pay for its annual emissions.

**Options:** See recommendations.

### **Recommendations:**

- Add text that specifies the role of the Secretariat as the official tracking mechanism for budget accounting information.
- Add the concept that a Party must give official approval before the FCCC Secretariat is authorized to record an emissions trade (similar to required "designated representative under the Acid Rain Program. This is envisioned as a multi-part form by which both buyer and seller must identify the quantity of tonnes traded and provide authentication to the Secretariat as recorder of trades)
- Add text for the annual deduction for emissions as a responsibility for each Party to determine its own remaining multi-year budget balance.

### **Draft Text:**

1. *insert new language in measurement and reporting section, at end of paragraph 3.5:*

3.5 With respect to any tonnes of carbon equivalent emissions allowed that are acquired or transferred under Articles 6 or 7, the Party shall specify the quantity, Party of origin or destination, and the relevant budget period, and include evidence of official approval for the transaction, on the prescribed form from both Parties to the transaction.

2. *insert new paragraph(s) in measurement and reporting section, or in Secretariat section*

11.7 The Secretariat shall track tonnes of carbon equivalent emissions allowed for each Party which are allocated, saved, borrowed, transferred among Parties, and retired. The Secretariat shall impose annually any automatic consequences recommended based on each Party's status and compliance progress. The Secretariat shall record and publish each Party's annual

**emissions and emissions budget levels, including any adjustments in the annual synthesis and compilation report.**

3. *insert new language in emissions trading section, paragraphs 6.1 and 6.2:*

- 6.1 An Annex A or Annex B Party that is in compliance with its obligations under Article 3 (Measurement and reporting) and that has in place a national mechanism for certification and verification, **may direct/authorize the Secretariat to record transfers to or receipts from any Annex A or Annex B Party any of its tonnes of carbon equivalent emissions allowed for a budget period, for the purpose of meeting its obligations under Article 2.**
- 6.2 A Party may authorize any domestic entity (e.g. government agencies, private firms, non-governmental organizations, individuals) to participate in actions leading to transfer and receipt under paragraph 1 of tonnes of carbon equivalent emissions allowed, **provided that before the tonnes of carbon equivalent emissions allowed may be used for the purpose adjusting its budget under Article 2, a Party must authorize/direct the Secretariat to implement any such transfers or receipts.**

4. insert new paragraph in emissions budget section, directly following budget adjustment paragraph which is currently numbered 2.2:

**the number of tonnes of carbon equivalent emissions equal to the Party's prior year actual emissions.**

5. We recommend reordering Article 2 so that the paragraphs of the budget section are in correct time sequence:

- I. Initial Budget Allocation (current Articles 2.3 and 2.4 become 2.1 and 2.2)
- II. Budget Adjustments (current Article 2.2 becomes 2.3)
- III. Annual Budget Balance (new language listed above in item#4 becomes Article 2.4)
- IV. Emissions shall not exceed budget. (Current Article 2.1 becomes Article 2.5; however, because this is the most important directive in the budget section, another logical reordering of the budget section would be I. Emissions shall not Exceed Budget, II. Initial Budget Allocation, III. Budget Adjustments, IV. Budget Balance, V. End-of Budget Reconciliation. VI. Other paragraphs on non-annex C and ratification)
- V/End of Budget Reconciliation (current Articles 2.5 & 2.6 become Article 2.6 & 2.7)
- VI. Other paragraphs on non-annex C and ratification follow.

## Emissions Trading Issue #2: Clarifying the Budget Unit of Measure

**Issue:** What units of measure should be used to implement emissions trading?

**Background:** The protocol envisions that the "tonne of carbon equivalent emissions allowed" or "TCEEA" would be the unit used to track emissions budget obligations. The TCEEA (or allowance) should also be the unit of measure used by the FCCC Secretariat for recording transfers from one Party to another. Individual Party's are also responsible for tracking and reporting their emissions budgets, including any purchases or sales, using the TCEEA as the unit of measure. However, the Party may wish to verify the appropriateness of the quantity of TCEEA's it is willing to transfer by identifying the particular emission reduction which will provide the basis of the transfer, calculating the quantity of the particular greenhouse gas, and multiplying that quantity by the approved GWP contained in the Protocol (recommended in another paper as the 100 year GWPs identified by the IPCC). Thus, no change is needed to the protocol text to address this issue because the tonne of carbon equivalent emissions allowed is the appropriate unit of measure to implement emissions trading.

Nevertheless, there is one practical consideration for the unit of measure which may be important to flag as a definition in the Protocol language (but which perhaps could wait instead to be defined in more detailed guidelines later). Specifically, the practical implications of the sheer number of tonnes of carbon equivalent emissions allowed which must be tracked by the FCCC Secretariat.

**Options:** See recommendations.

### **Recommendations for future guidelines to be developed:**

- Add the concept for a Tradeable Budget Unit (TBU) which is defined as some multiple [e.g., 1,000] number of tonnes of carbon equivalent emissions allowed

*NOTE: although this concept is important enough to include in the protocol for practical considerations, there may be some concern about introducing a new concept to the protocol negotiations now when others may already perceive the U.S. proposal as "too complicated". Therefore, it may be appropriate not to add this to the protocol text, but to include in the implementation guidelines to be developed later.*

### **Draft Text:**

**"Tradeable Budget Unit (TBU)" means the authorization under the GHG Protocol to emit up to [e.g., 1000] tonnes of carbon equivalent during or after a specified budget period.**

### Emissions Trading Issue #3: Trading Mechanism to Encourage Party Compliance

**Issue:** How should problem countries be addressed?

**Background:** Any international trading system should have a mechanism which provides an automatic incentive to comply with both reporting requirements and the budget commitments. The mechanism could be a definitive determination on the status, defined below using a "green/yellow/red" signal, of each Party's progress in meeting both its reporting and budget commitments. The concept is that the FCCC Secretariat (or the in-depth review team) will follow predetermined criteria to be developed (on an annual or other periodic basis) to assign a status showing a "satisfactory/caution/unsatisfactory" (corresponding to the green/yellow/red signal developed for this paper) rating of each Party's progress in meeting both its reporting and budget commitments. A Party would have to initially earn its green status before it could engage in trading, based on an initial review of its monitoring and reporting system to ensure the system meets required minimum standards established in guidelines, and then would need to maintain that status on the basis of its annual reports to continue to trade. Then, for a Party assigned a yellow or red status, automatic trading consequences would be implemented in addition to a referral to the Multilateral Consultative Process (described in another paper). For a more detailed description of the green/yellow/red signal system, see the attachment. The automatic trading consequence for the status for a yellow signal would be that although "allowances" could be sold, they would be marked by the Secretariat such that they could not be used for compliance with any Party's budget commitments until "green" status was restored to the issuer. The automatic trading consequences for a red signal would include 1) suspension of the right to sell allowances, 2) the automatic deduction excess tonnes emitted plus at least the interest rate required for borrowing, and 3) the automatic devaluation of any allowances sold after the yellow signal was assigned.

[[The yellow signal could be raised for determinations made during the budget period, including a determination based on interim emissions benchmarks, that a Party may fail to meet its budget obligations at the end of the budget period. If interim compliance benchmarks are unacceptable, then shorter budget periods (e.g. 3 years) might be considered.]]

#### **Options:**

1. Ensure the FCCC Secretariat has the administrative authority to implement automatic consequences which provide incentives for Parties to meet their reporting requirements [[, to meet interim emissions benchmarks,]] and to comply by the end of each budget period.
2. If the FCCC Secretariat does not have such administrative authority, then the U.S. should reserve the right to unilaterally deny "bad" tonnes of carbon equivalent emissions allowed, and this right should be shielded from the World Trade Organization.
3. Consider that the appropriate monitoring, reporting, and enforcement mechanisms may not be sufficient at this time to justify a full emissions trading system at this time, and construct the "trading" allowed by the Protocol to require case-by-case review and approval of specific emission reduction projects which could generate budget transfers (i.e., a "joint implementation" structure even for Annex I country trading).

#### **Recommendation: Option 1**

- Define the administrative and non-discretionary authority for the FCCC Secretariat (or the in-depth review teams) to appropriately oversee the emissions trading program. Specifically, require annual review and rating of each Party's emission and budget reports and each Party's

performance in meeting its budget commitments. [note that this does increase the FCCC's workload, and consequent need for funding.]

- One critical feature of this authority is that the signal and thus the automatic consequences would be implemented upon the finding of the deficiency, so that it would not be necessary to wait to implement any consequences until the MCP process came out with a recommended resolution

Note that the consequence for the yellow signal is defined so that the Party which received the yellow signal would be allowed to sell "tonnes allowed", but the tonnes would be tracked as "yellow" and could not be used by the buyer for compliance (those tonnes allowed could not be deducted to cover the buyer's emissions) until the Secretariat made a new determination that the seller had rectified its deficiencies and returned to green status. If the seller did not rectify its deficiencies after a specific time period, then the Secretariat would automatically downgrade the seller to red status, meaning that no further tonnes allowed could be sold, and any "yellow" tonnes sitting in any buyer's accounts would be downgraded to red, where the red tonnes are valueless for compliance and would be retired.

This scenario for green/yellow/red determinations envisions that any deficiency in an annual communication (mathematical error, failure to follow approved IPCC guidelines for some of the emission calculations, or complete failure to follow approved guidelines such that the entire emissions report is in question) would trigger a "yellow" status, which would provide the Party with some defined period of time to rectify the deficiencies before the "red" status (and consequently the prohibition against sale of tonnes allowed) is imposed. However, as the guidelines are developed, there may be some deficiencies which are so severe that it would be appropriate to trigger the "red" status immediately.

**Draft Text:**

*insert into international emissions trading section:*

**Each Annex A or Annex B Party must adopt a monitoring and reporting system which satisfactorily meets the promulgated minimum standards before it may engage in international emissions trading. In addition, each Annex A or Annex B Party's annual report shall be reviewed to determine if the Party's emissions and budget calculations are satisfactory, cautionary, or unsatisfactory, and the FCCC Secretariat will ensure any automatic trading limitations are followed.**

## ATTACHMENT for Trading Mechanism to Encourage Party Compliance

### **Meaning of Color Designations: (green, yellow, red)**

**Green Status:** Upon compliance with procedural requirements, a Party will be assigned Green status. With green status, a party may trade TBUs whose tender value will not be questioned by the FCCC. Green status must be affirmatively reestablished after any period of yellow or red status.

**Yellow Status:** Upon failure to comply with the procedural requirements or cumulative emissions budgets, a Party will be assigned Yellow status. With Yellow status, a party may continue to sell TBUs, but buyers are on notice that there are deficiencies in the performance of the issuing Party, and that the current tender value of the TBUs units sold by a Party under Yellow Status is suspended. Prices would presumably reflect the severity of market-perceived impairment.

Parties under Yellow status would have a specified period during which it would be expected to cure the identified deficiencies to the satisfaction of the FCCC Secretariat, and such Parties would concurrently be referred into the Multilateral Consultative Process. If the deficiency is timely cured, TBUs issued during the Yellow period will have their tender value restored, and the Party may be assigned Green status for future periods. If left uncured at the end of the period provided, a red status results.

[[Maintaining a plausible path toward budget period compliance should be a requirement of overall compliance, especially if the emission budget period is lengthy (e.g., more than 5 years). The plausibility of compliance would be tested during a multiyear budget period by comparing cumulative emissions during the budget period to date to a formula allowance. The formula allowance could be: (1) the budget period allowance pro-rated over the elapsed time since the start of the most recent budget period, (2) net adjustments from completed trades (including JI or other credits) and banked TBUs, plus (3) 10% of the current multiyear budget. Parties which exceeded the formula allowance at any time during the budget period would receive Yellow status. Green status could be restored by TBUs unit purchases or by reducing emissions, but failure to reach formula compliance could result in Red status after a specified interval.]]

**Red Status:** Upon failure to cure any Yellow deficiencies during the period provided, non-discretionary Red status must be assigned. With Red status, Yellow period TBUs issuances are invalidated and retired, clearing them from the books. Holders of such TBUs receive no value (or possibly reduced value under pro-ration of a deficiency).

## Recommended Annex C Criteria

### Issues

Which gases/sources/sectors belong in Annex C (i.e., subject to the binding overall budget set forth in the Protocol) and which should be excluded from Annex C (i.e., outside of the overall budget)? How should the distinction between Annex C and non-Annex C be made to ensure that the protocol optimizes comprehensiveness, cost-effectiveness, and compliance requirements?

The determination of whether or not a gas/source/sink belongs in Annex C should be made based on objective criteria. These criteria should be applied to the FCCC guidelines for national greenhouse gas inventories, perhaps with consideration of the potential for the methods to be improved in the near term. The gases/sources/sinks that meet the criteria should be included in Annex C and those that fail should be excluded from Annex C. As methods and data improve, those sectors excluded from Annex C should be reviewed, and additional gases/sources/sinks could be moved into Annex C. Graduation of a gas/source/sink into Annex C should occur systematically, with the agreement of all Parties. No Party can unilaterally move a gas/source/sink into Annex C.

### Recommended Criteria

There are at least five key criteria that gases, sources and sinks should satisfy in order to be included in Annex C. The effect of applying these criteria is to limit membership to only those gases and sources that meet general criteria and can be measured accurately or precisely.

The following list proposes criteria for inclusion in Annex C:

1. Internationally approved or accepted methods (i.e., guidelines adopted by the FCCC) for estimating emissions of this gas from this sector/source category must be available;
2. The national emission estimation methods must be sufficiently accurate and/or precise to ensure that compliance (or non-compliance) could be established. [Note that objective thresholds of accuracy and/or precision should be determined once the scope of Annex C is established. (e.g. +/-10%)]
3. The ability to measure emissions reductions must be systematically captured in the methodologies.
4. Methods must be sufficient to prevent game-playing or manipulation of estimates to falsely demonstrate compliance.

5. The methods must allow progress to be tracked and performance to be evaluated. This will require that data be reported on an annual basis.
6. The methods must be able to be consistently applied by all Annex A and B Parties.

#### Proposal

Apply the criteria to the current (or expected?) IPCC guidelines and develop a list of gases and sources that satisfy them. Given the timeframe, the technical analyst could not compile a list of gases, sources, and sinks that meet these criteria. We will develop this list for submission to the Secretariat by April 1.

Separate language should be developed to ensure that gases, sources, and sinks not included in Annex C are treated (see Issue Paper on Control of Non-Annex C Gases/Sources/Sinks).

## Control of Non-Annex C Gases/Sources/Sinks

### Issue

The binding target outlined in the protocol will apply to only the gases/sources/sinks listed in Annex C. Other provisions (unspecified in the draft protocol) will be developed for those gases/sources/sinks which are not listed in Annex C. This paper identifies the options for addressing these gases/sources/sinks.

### Options

Essentially, there are four ways to control non-Annex C gases/sources/sectors, as described below:

#### 1. Binding Target:

Description: Either together or individually, specific emission/removal targets could be set for Non-Annex C gases/sources/sectors.

Pros: Maximum environmental gains could be assured by setting a binding target for non-Annex C.

Cons: Difficult to implement and manage separate budgets for Annex C and non-Annex C. Likely to be unworkable since many of the non-Annex C gases are highly uncertain.

#### 2. Binding Policies & Measures:

Description: Each Party could be required to impose select policies and measures on Non-Annex C.

Pros: Greater assurance that environmental objectives would be met, while recognizing that weaknesses in estimation methods would make a binding target unworkable.

Cons: Imposition of harmonized, binding policies and measures does not reflect differing national circumstances among Parties.

#### 3. Voluntary Policies & Measures:

Description: Each Party could voluntarily adopt policies and measures to reduce emissions from non Annex C.

Pros: Some environmental gains will be made, in a manner consistent with national priorities and circumstances.

Cons: Maximum environmental gains will likely not be made.

03/17/97 15:29 ☎202 736 7336  
03/17/97 15:05 ☎202 260 6405

OES/STH

029/032

EPA CLIMATE CHG

005/003

4. No Provisions:

Description: Parties could assume no obligations (binding or voluntary) with respect to Non Annex C.

Pros: Eases burden on Parties; no additional compliance requirements.

Cons: No environmental progress made for non-Annex C gases.

### Borrowing Against Future Targets

Issue: Should Parties be allowed to borrow against future targets, and should language to this effect be removed from or maintained in the U.S. proposal?

Background: The concept of borrowing is currently included in the U.S. draft protocol proposal. It is mentioned in two places: Article 2.2(c) on emissions budgets which states that the budget includes: "up to [ ] percent] of the tonnes of carbon equivalent emissions allowed ....such as may be borrowed from the subsequent budget period....", and Article 2.6 which states "At the end of a budget period applicable to a Party, any amount of tonnes of carbon equivalent emissions allowed that is borrowed from the subsequent budget period shall be subtracted at a rate of [1.2:1] from the subsequent budget period." Thus, the language incorporates both a restriction on the amount allowed and a penalty for borrowing.

At the most recent session of the AGBM, the concept of borrowing came under significant attack, with delegates arguing that it allowed Parties to indefinitely exceed their commitments, and made any assessment of compliance impossible. This paper discusses the concept of borrowing, and suggests some approaches and clarifications that might address some of these concerns.

While borrowing has raised concerns, there are also several issues to be considered with respect to excluding the option. For example, without borrowing, a Party that exceeds its first budget by a modest margin would either start the next period with a clean slate, or be subject to a non-compliance provision that requires them to make up the shortfall, possibly with a penalty. The first alternative perversely rewards non-compliance, while the second is virtually identical to borrowing, except that only "non-compliers" may use it. By providing all Parties with access to borrowing, Parties in compliance are not penalized relative to Parties not in compliance. The extra degree of timing flexibility allows more Parties to remain in compliance. Moreover, borrowing does not endanger the environmental objective of the Protocol – in fact successful borrowing transactions would reduce atmospheric concentrations below the level that would have prevailed in their absence due to the requirement to pay back 20 percent more tons than are borrowed.

The concept of borrowing is familiar to all who are involved in financial transactions -- it involves taking a loan against future resources in order to pay current obligations. In the case of the climate, current obligations would equate to current levels of allowable emissions (or emissions in a given budget period); future resources would equate to allowable emissions in a future period.

A financial world without borrowing would be difficult to imagine. It is rare that a firm has internal capital resources adequate to fully finance its future growth. Similarly, responding to any significant climate change mitigation strategy without a parallel option for borrowing can also be expected to impose costly economic constraints on the system: it clearly reduces flexibility in terms of planning; and it may require the premature retirement of capital stock in order to meet strict deadlines. Borrowing also allow for a appropriate planning and introduction of new technologies – on a timeframe that may lead to greater emissions reductions than without such a system. In planning a borrowing regime, we must remain aware that the climate and mitigation responses are not fully analogous to financial markets.

Also in a manner similar to financial transactions, costs could be associated with emissions borrowing. These include risks of the borrower defaulting on the loan; opportunity costs to the lender of not making a more profitable investment elsewhere; and the adequacy of institutional mechanisms. Unlike most financial transactions, some additional risk may be associated with an emissions borrowing regime, including impacts to the environment from delayed reductions. However, the environmental risk posed by greenhouse gas emissions is a function of atmospheric concentrations rather than annual emissions. While borrowing tends to increase near term emissions, the environmental risks could be reduced if borrowing and repayment schedules were managed in such a way as to preclude concentrations rising above long-term target levels.

Notwithstanding the differences between financial borrowing and emissions borrowing, some of the solutions applied in the financial arena are applicable in both cases. For example:

- Loans are usually offered at some cost in the form of interest paid by the borrower; the analogous situation could call for the borrower to pay more in the way of future reductions for any emissions used in the current period. The U.S. proposal contains such provisions, with the penalty assessed at 20 percent of the amount borrowed. Several options might be considered if the exemplary number were changed:
  - A fixed rate for the budget period could be assigned on a political basis;
  - An annual rate could be developed; or
  - A rate based on market lending rates could be assigned (to insure that emissions borrowing was not less expensive than financial transactions)
- Financial transactions are also often accompanied by requirements that the borrower put up collateral; in the case of emissions borrowing, a bond might be posted to ensure that funds would be available to "buy" emissions should the borrower default on the loan, or another entity might guarantee the shortfall. We may also consider the potential "riskiness" of a borrower, and require more stringent safeguards for borrowers with questionable reduction strategies. The U.S. proposal does not currently contain such provisions. These might be added, and could take several forms including requiring the borrower to provide an indication of how repayment would be made, and only allowing borrowing for the amount that could be reasonably expected to be repaid.
- Financial transactions are also often limited in terms of the amount that can be borrowed -- either as a fixed total, or as a percentage of future earnings; emissions borrowing might have a similar limit (for example, a country or firm might be prohibited from borrowing more than [2][5][10] percent of its total emission reduction obligation). The U.S. proposal contains such provisions, although the number is unspecified. These provisions insure that Parties cannot use borrowing to indefinitely exceed their commitments. For example, a Party that "borrowed" the maximum amount in the first period would be unable to borrow more in the second period. A Party that borrowed would overcomply substantially relative to its second budget period if it paid back its borrowings fully. In fact, it would overcomply even in the extreme case in which it "rolled over" its initial borrowing, since to stay within the total borrowing limit it would have to overcomply at least to the extent of the borrowing penalty.
- Finally, defaulting borrowers are usually assessed a penalty; a similar penalty might be applied toward a defaulting emissions borrower -- either in the form of a monetized fine, or in the form of an additional reduction obligation. This concept is embedded in the non-

compliance provisions that are already included in the U.S. proposal – although additional penalties might be assessed on amounts borrowed in one budget period that are not repaid by the end of the subsequent budget period

### Recommendation

Noting both the concerns which many countries have expressed regarding borrowing – but also the significant advantages that accrue in terms of cost-effectiveness from allowing borrowing – the option to borrow should be left to the discretion of the Parties. However, in discussing the concept, the restriction placed on borrowing should be noted. In particular, the U.S. proposal restricts the extent to which borrowed emissions are to be used in a country's emissions budget (for the April 1 deadline, we could suggest that no more than [2][5][10][20] percent of a Party's total budget may be borrowed from a subsequent period), and also includes a penalty for borrowing – in the form of a 20 percent penalty on borrowed emissions. Our system also defines multiple budget periods (two are included in the U.S. proposal), and only allows borrowing from defined budget periods. In conjunction with the U.S. proposals for a stringent compliance and monitoring system, we believe that we have safeguarded borrowing from potential abuse.

To further address concerns about the concept, it is proposed that language be added to restrict borrowing to emissions for which a Party has provided detailed plans regarding repayment (and possibly require that guidelines for such proposals to be developed and adopted by the Parties at their first meeting). This addition would obligate a Party to develop, make public, have reviewed and have agreed specific proposals on how it would make up the additional obligations in the subsequent budget period. It would prohibit borrowing by Parties not having such plans. Language to this effect could be inserted into Article 2.6 of the U.S. proposal.

H:/FCCC/borrowing.doc

## CLIMATE CHANGE DISTRIBUTION LIST

|             |                    |          |                     |
|-------------|--------------------|----------|---------------------|
| OSTP        | Rosina Bierbaum    | 456-6202 | FAX: 456-6025       |
| CEA         | Alicia Munnell     | 395-5036 | FAX: 395-6958       |
| NEC         | Elgie Holstein     | 456-5370 | FAX: 456-2223       |
| OMB         | T.J. Glauthier     | 395-4561 | FAX: 395-4639       |
| Justice     | Lois Schiffer      | 514-2701 | FAX: 514-0557       |
| Commerce    | Jeffrey Hunker     | 482-6055 | FAX: 482-4636       |
| NOAA        | Terry Garcia       | 482-3567 | FAX: 482-6318       |
| Treasury    | Joshua Gotbaum     | 622-2220 | FAX: 622-2633       |
| Interior    | Brooks Yeager      | 208-6182 | FAX: 208-4561       |
| USTR        | Jennifer Haverkamp | 395-7320 | FAX: 395-4579       |
| Agriculture | - Charlie Rawls    | 720-6158 | FAX: 720-5437       |
| CEQ         | Dirk Forrister     | 343-1060 | FAX: 343-1162       |
| EPA         | Mary Nichols       | 260-7400 | FAX: 260-5155       |
|             | David Gardiner     | 260-4332 | FAX: 260-0275       |
| DOE:        | Mark Chupka        | 586-5523 | FAX: 586-0861       |
| DOT:        | Frank Kruesi       | 366-2222 | FAX: 366-3997       |
| OVP         | Pete Jordan        | 456-9501 | FAX: 456-9500       |
| CEQ         | David Sandalow     | 456-6543 | FAX: 456-2710       |
| CEQ         | Steve Seidel       | 395-3706 | FAX: 456-6546       |
| AID         | David Hales        | 875-4205 | FAX: (703) 875-4639 |

**Assistant Secretaries' Meeting at State**  
18 March 97 9:30pm

## **REVIEW OF CLIMATE CHANGE PAPERS FROM THE STATE DEPARTMENT**

### **1. Compliance**

**Issue:** What to do about the trading, borrowing, and JI of non-compliant nations?

Why should non-complaint nations be denied the means to get back into compliance--banned from trading or JI?

Why should borrowing incur a penalty in the next period?

By restricting flexibility, some nations might find it in their self-interest to drop out of the market.

### **2. Joint Implementation**

**Issue:** How to structure the Joint implementation agreements?

The paper submits a JI plan complicated enough to drive away all but the most determined nations. Nations are asked to clear many hurdles to get approval that many potentially beneficial projects could get dropped.

In addition, it is all rather vague as to whether if one country gets a "credit" for JI does the second country get a "debit"? The G-77 countries have not appreciated the vagueness behind the current version of JI.

### **3. Annex C Gases**

**Issue:** What to do about other non-carbon gases? 7

The proposal seems to suggest two separate markets for carbon and non-carbon gases. But do we need two parallel trading systems? Can we just say that a plan for Annex C gases is forthcoming?

More flexibility and thus more cost-effectiveness could be achieved if we allowed trading across gases. Additional administrative complexities could arise, but so would brokers to handle the conversion problems.

#### **4. Borrowing**

**Issue:** Should we remove borrowing from the US protocol?

The paper says that “the option to borrow should be left to the discretion of the Parties.”  
What exactly does this mean?

Also why make borrowing so onerous? Are penalties really necessary?

Why restrict borrowing to just 10 years into the future?

Again the LEAST-COST PATH, based on the IPCC, allows emissions to rise then fall.

#### **5. Annex B**

**Issue:** What nations, and what obligations should be included in Annex B?

Criteria have been proposed such as including those nations that have at least the level of per capita income or emissions as existing Annex I countries. It is unclear as to why a country would want to be on the Annex B list--what do they gain?

#### **6. Four International Emission Trading Papers**

**Issue #1:** Is there a need for a new international oversight group?

It depends---The more each trade is “handled”, the greater the transaction costs of participation and the less likely a potential trader will want to participate in this market. **Keep transaction costs down to a minimum.**

**Issue #2:** In what units should the trades occur?

The proposal is to trade units of carbon equivalent emissions. However, trading on the **carbon-content** of energy inputs might be a viable alternative given the difficulties in measuring emissions in many countries. Why? Much easier to monitor inputs than the emission levels.

**Issue #3:** How should “problem” countries be addressed?

STATE recommends that the Secretariat has authority to require annual review and rating of each Party's emission and budget reports and each Parties performance in meeting its budget commitments.

The plan is to have a three tier classification of permits--"GREEN/YELLOW/RED"

|        |                                                                                                                                                         |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| GREEN  | nations in compliance                                                                                                                                   |
| YELLOW | nations in non-compliance with procedural requirements or cumulative emission budgets--all YELLOW permits still are valid but buyers are put on notice. |
| RED    | nations that fail to cure their non-compliance within a given time frame--all RED permits are voided                                                    |

Does this scheme trigger too much uncertainty into the trading scheme? If so, potential traders might just drop out of the market, and thus increase the costs of compliance.

**Non-Issue #1:** Steps to operationalize trading?

No comments

## **RECALL The Conditions for a Successful Permit Market ARE:**

*1. A Sufficient Degree of Compliance should be achieved*

The protocol envisions that the “tonne of carbon equivalent emissions allowed” (TCEEA) would be the unit to track emission budget obligations. But monitoring will be less costly if the permit scheme was based on **carbon-content trading** rather than **carbon-emissions trading**. Why? Much easier to monitor the inputs than the outputs.

*2. Transaction costs must be low enough not to prevent efficient permit exchanges from taking place*

The permit system must keep transaction costs low: including the costs of finding prospective buyers and sellers, costs of obtaining any necessary approval for trading. Brokers would likely emerge in the presence of high transaction costs.

Regulatory constraints could lead to high transaction costs if each and every trade has to be approved by an international body.

*3. The Market for permits must be competitive*

If a nation or firm that buys and sells a significant fraction of the total number of permits traded might be able to influence price, e.g., Russia. This would imply that greenhouse gas reductions would not be achieved at minimum cost.

*4. The policy must be seen as one that will remain in place for a significant period of time.*

Firms and nations cannot be expected to trade if they think that policy is likely to change. If policy is stable for a reasonable time period, and there is little uncertainty about regarding the legitimacy of transactions. Who is liable if a seller sells and then ignores its obligations--the buyer or seller?

**Contents of Annex C (3-17-97 Draft)**  
**Pre-decisional, do not quote or cite**

**Issues:**

1. The current draft US protocol states that Annex C will list "greenhouse gases not covered by the Montreal protocol, with the exception of gases, or particular sources and sinks, for which there is insufficient knowledge of GWP or inability to accurately measure emissions or removals."
  - This definition implies that Annex C will not include all greenhouse gases emissions and removals; some gases and/or sources and sinks will be labeled as non-Annex C (Annex D). The sum of Annex C and Annex D will equal all known GHG sources and sinks.
2. Two technical issues must be addressed in determining which gases and removal mechanisms (sinks) should be included in Annex C:
  - Our knowledge of GWPs of greenhouse gases.
  - Our ability to accurately measure (and/or estimate) emissions or removals of gases.

**Background for Issue 1: Global Warming Potentials**

- Global Warming Potentials (GWPs) are a set of multipliers that convert physical units of greenhouse gases into a common unit of carbon-equivalents.
- Despite the technical shortcomings of the GWP approach (no two greenhouse gases are exactly equivalent), GWPs are useful policy tools for weighing the importance of individual greenhouse gases. Their use does not alter the quality of the underlying emissions data, nor does it change the ability to accurately measure emissions or removals.
- Use of IPCC 100-year GWPs has been part of past FCCC decisions and has been included in several protocol proposals put forth by other parties in the current negotiation process.
- The US should continue to support National Communication and IPCC guidelines that require separate reporting by weight for each greenhouse gas in addition to reporting carbon equivalents.

**Recommendations for Issue 1: Global Warming Potentials**

- Parties should use the 1995 IPCC 100-year GWP values for GHG comparisons in submissions.
- Parties should continue to support research efforts by the IPCC aimed at improving GWPs and devising improved methodologies for GHG comparison.
- Decisions to update or change GWPs should be made by consensus of the Parties at the end or beginning of budget periods.

## **Background for Issue 2: Accuracy and the Contents of Annex C**

- As the next step in the long-term process of emissions reduction, the US is committed to reaching agreement on legally-binding emissions reduction targets (level and timing TBD) in the negotiations culminating in Kyoto in December of 1997.
- This will result in a "budget" for each nation that will serve as the basis for assessment of compliance, and could be traded or banked. The criteria adopted for inclusion of GHG emissions and removals in Annex C will thus affect the contents of the budget.
- The US has advocated a comprehensive approach in the FCCC, i.e., inclusion of all GHG sources and sinks in the assessment of human influences on the atmosphere and in the planning and implementation of mitigation and adaptation actions. Regardless of the final decisions on the contents of Annex C, the US should continue to advocate comprehensive reporting and assessment of all GHG emissions and removals.
- The US remains committed to a comprehensive approach, but recognizes that addressing the full suite of human influences on the global atmosphere is a long-term process. Important and valuable near-term steps can be taken that focus on verifiable GHG emission reductions. We assume that the development of improved methodologies will permit the inclusion of additional sources of GHG in subsequent steps.
- CO<sub>2</sub> is the most important GHG, with the sum total of all other known GHGs (principally methane and nitrous oxide) resulting in an "effective" atmospheric concentration of CO<sub>2</sub> about 20% higher than CO<sub>2</sub> alone.
- However, reduction in methane emissions hold considerable promise for near-term mitigation due to methane's relatively short atmospheric lifetime. The ability to quantify methane emissions and reductions varies significantly by sector. Improved quantification of methane sources and sinks is a high priority.

### **Criteria Proposed for Inclusion of GHG Emissions and Removals in Annex C:**

1. Internationally approved or accepted methods (i.e., guidelines developed by the IPCC and adopted by the FCCC) for estimating emissions of this gas from this sector/source category must be available.
2. The national emission estimation methods must be sufficiently accurate and/or precise to ensure that compliance (or non-compliance) could be established.
3. The methods must allow progress to be tracked and performance to be evaluated. This will require that data be reported on an annual basis.
4. The methods must be able to be consistently applied by all Annex A and B Parties.

## Recommendations for Accuracy and Contents of Annex C:

Annex C should be as comprehensive as possible, but must recognize that there are significant differences in the accuracy of estimates and measurement of GHG emissions and reductions.

1. If the contents of Annex C are to be based on accurate estimation and/or measurement, and are to be the beginning of a comprehensive approach to targets, the following GHG emissions and removals should be included (error estimated at +/- 20% by EPA and DOE):

- CO<sub>2</sub> from energy use, flare gas, and cement.
- Methane from coal mines underground.
- SF<sub>6</sub> from industrial processes.
- N<sub>2</sub>O from adipic acid

As a point of reference, the above list represents approximately 85% of US total emissions.

2. An additional set of GHG emissions and removals could be considered for inclusion if considerable uncertainties in estimation and measurement can be reduced (error estimated at +/- 50 to 100% by EPA and DOE):

- CO<sub>2</sub> from forestry.
- Methane from landfills, abandoned coal mines, surface coal mines, gas venting, gas pipelines, oil and gas production, industrial use, and waste disposal.
- HFCs from mobile and stationary use.
- PFCs from industrial processes.

3. There is a further set of GHG emissions and removals that cannot now be accurately measured and/or estimated, and should thus be included as Non-Annex C GHGs (Annex D) and considered for inclusion in Annex C as understanding and estimation and measurement accuracy improve:

- CO<sub>2</sub> from land use other than forestry and land cover change.
- Methane from biomass burning, rice cultivation, animals.
- N<sub>2</sub>O from industrial processes (with the exception of adipic acid), agriculture, and biomass burning
- All GHGs without GWP values determined by the IPCC (e.g., CO, NO<sub>x</sub>, VOC)

4. The agreement should contain a provision for re-examination of Annex C at the mid-point of each target period, allowing for inclusion of additional GHG emissions and removals during the next period as understanding and measurement capabilities increase to the point where accurate estimates and verifiable measurements are possible.

**Draft Text**

**TBD, based on decision about items in category 2 above.**

**Current and Potential Reliability of Emissions and Reductions Estimates by Source**  
 E=(±5 percent), G=(±20 percent), OK=(±50), P=(±100), WAG=(order of magnitude)

| Rating<br>Annex     | Source                   | Reliability of Emissions |             | Reliability of<br>Reductions | US<br>Emissions<br>Share<br>(percent) | Cheap<br>Reductions<br>Available? | US<br>Emissions<br>Trend |
|---------------------|--------------------------|--------------------------|-------------|------------------------------|---------------------------------------|-----------------------------------|--------------------------|
|                     |                          | Now                      | With Effort |                              |                                       |                                   |                          |
| Carbon Dioxide      |                          |                          |             |                              |                                       |                                   |                          |
| 1                   | Energy Consumption       | E                        | E           | E                            | 85.5                                  | N                                 | up                       |
| 1                   | Flare Gas                | G                        | E           | E                            | 0.2                                   | ?                                 | --                       |
| 2                   | Natural Gas CO2          | WAG                      | P-G         | G-E                          | 0.4                                   | ?                                 | --                       |
| 1                   | Non-Fuel Use/Seq**       | OK                       | G           | G                            | 5.1                                   | N                                 | up                       |
| 1                   | US Military Abroad       | G                        | E           | E                            | 0.2                                   | N                                 | down                     |
| 1                   | Cement                   | E                        | E           | E                            | 0.5                                   | N                                 | up                       |
| 1                   | Other process            | G                        | E           | E                            | 0.5                                   | N                                 | --                       |
| 2/3                 | Forestry**               | P                        | OK          | OK                           | 7.1                                   | Y                                 | --                       |
| 2/3                 | Other Land Use           | WAG                      | P           | P                            | 0.1?                                  | ?                                 | ?                        |
| Methane             |                          |                          |             |                              |                                       |                                   |                          |
| 2                   | Coal Mines-abandoned     | WAG                      | P           | G-E                          | 0.1                                   | Y                                 | ?                        |
| 2                   | Coal Mine-Surface        | P                        | OK          | P-OK                         | 0.2                                   | N*                                | --                       |
| 1                   | Coal Mine-Underground    | OK                       | G           | G                            | 1.1                                   | Y*                                | down                     |
| 2                   | Gas Venting              | P                        | E           | E                            | 0.3                                   | Y*                                | --                       |
| 2                   | Gas Pipelines            | P                        | OK          | OK                           | 1.2                                   | Y*                                | --                       |
| 2                   | Oil & Gas Production     | P                        | OK          | OK                           | 0.8                                   | Y*                                | --                       |
| 2                   | Landfills                | P                        | OK          | E                            | 3.5                                   | Y                                 | down                     |
| 2                   | Waste Disposal           | WAG                      | P-OK        | E                            | 1.1                                   | Y                                 | up                       |
| 2/3                 | Livestock                | P                        | P           | P                            | 1.9                                   | ?                                 | up                       |
| 2/3                 | Rice Cultivation         | WAG                      | P           | P                            | 0.2                                   | N                                 | --                       |
| 2/3                 | Crop Burning             | WAG                      | P           | P                            | 0.1                                   | ?                                 | ?                        |
| 2                   | Industrial Methane       | WAG                      | OK          | OK                           | 0.04                                  | ?                                 | up                       |
| 3                   | Mobile Combustion        | P                        | OK          | P                            | 0.1                                   | N*                                | down                     |
| 3                   | Stationary Combustion    | WAG                      | P           | P-E                          | 0.1                                   | N*                                | down                     |
| Nitrous Oxide       |                          |                          |             |                              |                                       |                                   |                          |
| 1                   | Industrial nitrous oxide | WAG                      | G           | E                            | 0.5                                   | ?                                 | --                       |
| 3                   | Fertilizer N2O           | WAG                      | P           | WAG                          | 0.9                                   | N                                 | up                       |
| 3                   | Mobile Combustion        | P                        | OK          | P                            | 0.7                                   | N*                                | --                       |
| 3                   | Stationary Combustion    | P                        | OK          | P                            | 0.2                                   | N*                                | --                       |
| Halocarbons/HI GWPs |                          |                          |             |                              |                                       |                                   |                          |
| 2                   | SF6-all sources          | WAG                      | G-E         | E                            | 0.3                                   | Y                                 | ?                        |
| 2                   | PFC/exotic solvents      | WAG                      | E           | E                            | 0.05?                                 | Y                                 | ?                        |
| 2                   | HFC mobile use           | OK                       | G           | E                            | 0.2                                   | Y*                                | up                       |
| 2                   | HFC stationary           | P                        | G           | E                            | 0.05?                                 | Y*                                | up                       |
| 2                   | PFC aluminum             | P                        | OK-G        | OK-G                         | 0.2                                   | Y*                                | --                       |
| 2                   | HFC-23 Industrial        | P                        | OK-G        | OK-G                         | 0.8                                   | Y                                 | down                     |

Source: calculated from: Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1995* (Washington, October 1996).

\*Emissions correlated with energy consumption, hence possible multiplier effect if energy consumption declines.

\*\*Produces negative net emissions

Category 1 = 85% of US greenhouse gas emissions -  
 Russia = < 50%

Current and Potential Reliability of Emissions and Reductions Estimates by Source  
 E=(±5 percent), G=(±20 percent), OK=(±50), P=(±100), WAG=(order of magnitude)

| Rating<br>Annex     | Source                   | Reliability of Emissions |             | Reliability of<br>Reductions | US<br>Emissions<br>Share<br>(percent) | Cheap<br>Reductions<br>Available? | US<br>Emissions<br>Trend |
|---------------------|--------------------------|--------------------------|-------------|------------------------------|---------------------------------------|-----------------------------------|--------------------------|
|                     |                          | Now                      | With Effort |                              |                                       |                                   |                          |
| Carbon Dioxide      |                          |                          |             |                              |                                       |                                   |                          |
| 1                   | Energy Consumption       | E                        | E           | E                            | 85.5                                  | N                                 | up                       |
| 1                   | Flare Gas                | G                        | E           | E                            | 0.2                                   | ?                                 | --                       |
| 2                   | Natural Gas CO2          | WAG                      | P-G         | G-E                          | 0.4                                   | ?                                 | --                       |
| 1                   | Non-Fuel Use/Seq**       | OK                       | G           | G                            | 5.1                                   | N                                 | up                       |
| 1                   | US Military Abroad       | G                        | E           | E                            | 0.2                                   | N                                 | down                     |
| 1                   | Cement                   | E                        | E           | E                            | 0.5                                   | N                                 | up                       |
| 1                   | Other process            | G                        | E           | E                            | 0.5                                   | N                                 | --                       |
| 2/3                 | Forestry**               | P                        | OK          | OK                           | 7.1                                   | Y                                 | --                       |
| 2/3                 | Other Land Use           | WAG                      | P           | P                            | 0.1?                                  | ?                                 | ?                        |
| Methane             |                          |                          |             |                              |                                       |                                   |                          |
| 2                   | Coal Mines-abandoned     | WAG                      | P           | G-E                          | 0.1                                   | Y                                 | ?                        |
| 2                   | Coal Mine-Surface        | P                        | OK          | P-OK                         | 0.2                                   | N*                                | --                       |
| 1                   | Coal Mine-Underground    | OK                       | G           | G                            | 1.1                                   | Y*                                | down                     |
| 2                   | Gas Venting              | P                        | E           | E                            | 0.3                                   | Y*                                | --                       |
| 2                   | Gas Pipelines            | P                        | OK          | OK                           | 1.2                                   | Y*                                | --                       |
| 2                   | Oil & Gas Production     | P                        | OK          | OK                           | 0.8                                   | Y*                                | --                       |
| 2                   | Landfills                | P                        | OK          | E                            | 3.5                                   | Y                                 | down                     |
| 2                   | Waste Disposal           | WAG                      | P-OK        | E                            | 1.1                                   | Y                                 | up                       |
| 2/3                 | Livestock                | P                        | P           | P                            | 1.9                                   | ?                                 | up                       |
| 2/3                 | Rice Cultivation         | WAG                      | P           | P                            | 0.2                                   | N                                 | --                       |
| 2/3                 | Crop Burning             | WAG                      | P           | P                            | 0.1                                   | ?                                 | ?                        |
| 2                   | Industrial Methane       | WAG                      | OK          | OK                           | 0.04                                  | ?                                 | up                       |
| 3                   | Mobile Combustion        | P                        | OK          | P                            | 0.1                                   | N*                                | down                     |
| 3                   | Stationary Combustion    | WAG                      | P           | P-E                          | 0.1                                   | N*                                | down                     |
| Nitrous Oxide       |                          |                          |             |                              |                                       |                                   |                          |
| 1                   | Industrial nitrous oxide | WAG                      | G           | E                            | 0.5                                   | ?                                 | --                       |
| 3                   | Fertilizer N2O           | WAG                      | P           | WAG                          | 0.9                                   | N                                 | up                       |
| 3                   | Mobile Combustion        | P                        | OK          | P                            | 0.7                                   | N*                                | --                       |
| 3                   | Stationary Combustion    | P                        | OK          | P                            | 0.2                                   | N*                                | --                       |
| Halocarbons/HI GWPs |                          |                          |             |                              |                                       |                                   |                          |
| 2                   | SF6-all sources          | WAG                      | G-E         | E                            | 0.3                                   | Y                                 | ?                        |
| 2                   | PFC/exotic solvents      | WAG                      | E           | E                            | 0.05?                                 | Y                                 | ?                        |
| 2                   | HFC mobile use           | OK                       | G           | E                            | 0.2                                   | ?*                                | up                       |
| 2                   | HFC stationary           | P                        | G           | E                            | 0.05?                                 | ?*                                | up                       |
| 2                   | PFC aluminum             | P                        | OK-G        | OK-G                         | 0.2                                   | ?*                                | --                       |
| 2                   | HFC-23 Industrial        | P                        | OK-G        | OK-G                         | 0.8                                   | Y                                 | down                     |

Source: calculated from: Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1995* (Washington, October 1996).

\*Emissions correlated with energy consumption, hence possible multiplier effect if energy consumption declines.

\*\*Produces negative net emissions.

| TABLE A1-1<br>UNCERTAINTIES DUE TO EMISSION FACTORS AND ACTIVITY DATA |                                     |                          |                        |                              |
|-----------------------------------------------------------------------|-------------------------------------|--------------------------|------------------------|------------------------------|
| 1                                                                     | 2                                   | 3                        | 4                      | 5                            |
| Gas                                                                   | Source category                     | Emission factor<br>$U_E$ | Activity data<br>$U_A$ | Overall uncertainty<br>$U_T$ |
| CO <sub>2</sub>                                                       | Energy                              | 7%                       | 7%                     | 10%                          |
| CO <sub>2</sub>                                                       | Industrial Processes                | 7%                       | 7%                     | 10%                          |
| CO <sub>2</sub>                                                       | Land Use Change and Forestry        | 33%                      | 50%                    | 60%                          |
| CH <sub>4</sub>                                                       | Biomass Burning                     | 50%                      | 50%                    | 100%                         |
| CH <sub>4</sub>                                                       | Oil and Nat. Gas Activities         | 55%                      | 20%                    | 60%                          |
| CH <sub>4</sub>                                                       | Coal Mining and Handling Activities | 55%                      | 20%                    | 60%                          |
| CH <sub>4</sub>                                                       | Rice Cultivation                    | $\frac{3}{4}$            | $\frac{1}{4}$          | 1                            |
| CH <sub>4</sub>                                                       | Waste                               | $\frac{2}{3}$            | $\frac{1}{3}$          | 1                            |
| CH <sub>4</sub>                                                       | Animals                             | 25%                      | 10%                    | 25%                          |
| CH <sub>4</sub>                                                       | Animal waste                        | 20%                      | 10%                    | 20%                          |
| N <sub>2</sub> O                                                      | Industrial Processes                | 35%                      | 35%                    | 50%                          |
| N <sub>2</sub> O                                                      | Agricultural Soils                  |                          |                        | 2 orders of magnitude        |
| N <sub>2</sub> O                                                      | Biomass Burning                     |                          |                        | 100%                         |

Note: Individual uncertainties that appear to be greater than  $\pm 60\%$  are not shown. Instead judgement as to the relative importance of emission factor and activity data uncertainties are shown as fractions which sum to one.

## A1.2 Procedures for Quantifying Uncertainty

### Estimating Uncertainty of Components

To estimate uncertainty by source category and gas for a national inventory, it is necessary to develop information like that shown in Table A1-1, but specific to the individual country, methodology and data sources used. In scientific and process control literature the 95 per cent ( $\pm 2$ ) confidence limit is often regarded as appropriate for range definition. Where there is sufficient information to define the underlying probability distribution for conventional statistical analysis, a 95 per cent confidence interval should be calculated as a definition of the range. Uncertainty ranges can be estimated using classical analysis (see Robinson) or the Monte Carlo technique (in Eggleston, 1993). Otherwise the range will have to be assessed by national experts.

3/18/97 Zilren Claussen Climate Change

Opposition to trading  
borrowing  
II -

extension to non-Annex I countries - non consistent  
w/ Burun  
mandate.  
US coming in w/ flexibility, but no  
commitment on our own.

would to be more forthcoming on  
the numbers.

- Most countries pushing differentiation  
now go ahead and we have  
numbers

- OPEC countries want compensation

Numbers could be useful for G-7 summit in Denver  
General Assembly meeting one month later.

1:30 meeting tomorrow.

Zilren would like to submit our work April 1<sup>st</sup>.

① What goes to market?

EU - broad; includes species & stocks.

Tues 3/18/97 7:50 AM

cc: Am  
JAH  
JS

## CLIMATE CHANGE DISTRIBUTION LIST

|             |                    |          |                     |
|-------------|--------------------|----------|---------------------|
| OSTP        | Rosina Bierbaum    | 456-6202 | FAX: 456-6025       |
| CEA         | Alicia Munnell     | 395-5036 | FAX: 395-6958       |
| NEC         | Elgie Holstein     | 456-5370 | FAX: 456-2223       |
| OMB         | T.J. Glauthier     | 395-4561 | FAX: 395-4639       |
| Justice     | Lois Schiffer      | 514-2701 | FAX: 514-0557       |
| Commerce    | Jeffrey Hunker     | 482-6055 | FAX: 482-4636       |
| NOAA        | Terry Garcia       | 482-3567 | FAX: 482-6318       |
| Treasury    | Joshua Gotbaum     | 622-2220 | FAX: 622-2633       |
| Interior    | Brooks Yeager      | 208-6182 | FAX: 208-4561       |
| USTR        | Jennifer Haverkamp | 395-7320 | FAX: 395-4579       |
| Agriculture | - Charlie Rawls    | 720-6158 | FAX: 720-5437       |
| CEQ         | Dirk Forrister     | 343-1060 | FAX: 343-1162       |
| EPA         | Mary Nichols       | 260-7400 | FAX: 260-5155       |
|             | David Gardiner     | 260-4332 | FAX: 260-0275       |
| DOE:        | Mark Chupka        | 586-5523 | FAX: 586-0861       |
| DOT:        | Frank Kruesi       | 366-2222 | FAX: 366-3997       |
| OVP         | Pete Jordan        | 456-9501 | FAX: 456-9500       |
| CEQ         | David Sandalow     | 456-6543 | FAX: 456-2710       |
| CEQ         | Steve Seidel       | 395-3706 | FAX: 456-6546       |
| AID         | David Hales        | 875-4205 | FAX: (703) 875-4639 |

**International Emissions Trading: Issue Papers**IssuePage Number

1. Is there a need for a new international oversight group?
2. In what units should trades occur?
3. How should "problem" countries be addressed?

1

3

4

*[note that the text provided is for clarity on the substantive suggestions for additions to the protocol; the text may need editing from State Department to ensure proper "legal" wording and placement for the Protocol]*

## Emissions Trading Issue #1: Enhancing the Role of the FCCC Secretariat in the Protocol

**Issue:** Is there a need for a new international oversight group to implement trading?

**Background:** No, the U.S. Protocol can be implemented through a clear division of responsibility assigned to the Parties, the FCCC Secretariat, and the in-depth expert review teams (and the multilateral consultative process discussed at length in another paper). The Protocol can be enhanced by clarifying the role of the FCCC Secretariat as the official tracker of the budget information for all Parties, using the mechanism of the compilation and synthesis report which is already required. The Protocol is already clear on each Party's required responsibilities for the individual tracking and reporting required for emissions and budget calculations. However, it is important to ensure that the Secretariat can verify it has received an official authorization from a Party before it records an emissions trade, similar to the requirement for the authorization from a "designated representative" from the utility company under the Acid Rain Program. Finally, although the Protocol implicitly requires (in Article 3.5) that the Party report its remaining budget after emissions are deducted, it may be appropriate to modify the Protocol explicitly in Article 2.2 to clarify the Party's requirement to adjust its budget annually by deducting the number of "tonnes allowed" which would be needed to pay for its annual emissions.

**Options:** See recommendations.

### **Recommendations:**

- Add text that specifies the role of the Secretariat as the official tracking mechanism for budget accounting information.
- Add the concept that a Party must give official approval before the FCCC Secretariat is authorized to record an emissions trade (similar to required "designated representative under the Acid Rain Program. This is envisioned as a multi-part form by which both buyer and seller must identify the quantity of tonnes traded and provide authentication to the Secretariat as recorder of trades)
- Add text for the annual deduction for emissions as a responsibility for each Party to determine its own remaining multi-year budget balance.

### **Draft Text:**

1. *insert new language in measurement and reporting section, at end of paragraph 3.5:*

3.5 With respect to any tonnes of carbon equivalent emissions allowed that are acquired or transferred under Articles 6 or 7, the Party shall specify the quantity, Party of origin or destination, and the relevant budget period, and include evidence of official approval for the transaction, on the prescribed form from both Parties to the transaction.

2. *insert new paragraph(s) in measurement and reporting section, or in Secretariat section*

11.? The Secretariat shall track tonnes of carbon equivalent emissions allowed for each Party which are allocated, saved, borrowed, transferred among Parties, and retired. The Secretariat shall impose annually any automatic consequences recommended based on each Party's status and compliance progress. The Secretariat shall record and publish each Party's annual

**emissions and emissions budget levels, including any adjustments in the annual synthesis and compilation report.**

3. *insert new language in emissions trading section, paragraphs 6.1 and 6.2:*

6.1 An Annex A or Annex B Party that is in compliance with its obligations under Article 3 (Measurement and reporting) and that has in place a national mechanism for certification and verification, **may direct/authorize the Secretariat to record transfers to or receipts from any Annex A or Annex B Party any of its tonnes of carbon equivalent emissions allowed for a budget period, for the purpose of meeting its obligations under Article 2.**

6.2 A Party may authorize any domestic entity (e.g. government agencies, private firms, non-governmental organizations, individuals) to participate in actions leading to transfer and receipt under paragraph 1 of tonnes of carbon equivalent emissions allowed, **provided that before the tonnes of carbon equivalent emissions allowed may be used for the purpose adjusting its budget under Article 2, a Party must authorize/direct the Secretariat to implement any such transfers or receipts.**

4. *insert new paragraph in emissions budget section, directly following budget adjustment paragraph which is currently numbered 2.2:*

**the number of tonnes of carbon equivalent emissions equal to the Party's prior year actual emissions.**

5. We recommend reordering Article 2 so that the paragraphs of the budget section are in correct time sequence:

- I. Initial Budget Allocation (current Articles 2.3 and 2.4 become 2.1 and 2.2)
- II. Budget Adjustments (current Article 2.2 becomes 2.3)
- III. Annual Budget Balance (new language listed above in item#4 becomes Article 2.4)
- IV. Emissions shall not exceed budget. (Current Article 2.1 becomes Article 2.5; however, because this is the most important directive in the budget section, another logical reordering of the budget section would be I. Emissions shall not Exceed Budget, II. Initial Budget Allocation, III. Budget Adjustments, IV. Budget Balance, V. End-of Budget Reconciliation. VI. Other paragraphs on non-annex C and ratification)
- V/End of Budget Reconciliation (current Articles 2.5 & 2.6 become Article 2.6 & 2.7)
- VI. Other paragraphs on non-annex C and ratification follow.

## Emissions Trading Issue #2: Clarifying the Budget Unit of Measure

**Issue:** What units of measure should be used to implement emissions trading?

**Background:** The protocol envisions that the "tonne of carbon equivalent emissions allowed" or "TCEEA" would be the unit used to track emissions budget obligations. The TCEEA (or allowance) should also be the unit of measure used by the FCCC Secretariat for recording transfers from one Party to another. Individual Party's are also responsible for tracking and reporting their emissions budgets, including any purchases or sales, using the TCEEA as the unit of measure. However, the Party may wish to verify the appropriateness of the quantity of TCEEA's it is willing to transfer by identifying the particular emission reduction which will provide the basis of the transfer, calculating the quantity of the particular greenhouse gas, and multiplying that quantity by the approved GWP contained in the Protocol (recommended in another paper as the 100 year GWPs identified by the IPCC). Thus, no change is needed to the protocol text to address this issue because the tonne of carbon equivalent emissions allowed is the appropriate unit of measure to implement emissions trading.

Nevertheless, there is one practical consideration for the unit of measure which may be important to flag as a definition in the Protocol language (but which perhaps could wait instead to be defined in more detailed guidelines later). Specifically, the practical implications of the sheer number of tonnes of carbon equivalent emissions allowed which must be tracked by the FCCC Secretariat.

**Options:** See recommendations.

### **Recommendations for future guidelines to be developed:**

- Add the concept for a Tradeable Budget Unit (TBU) which is defined as some multiple [e.g., 1,000] number of tonnes of carbon equivalent emissions allowed

*NOTE: although this concept is important enough to include in the protocol for practical considerations, there may be some concern about introducing a new concept to the protocol negotiations now when others may already perceive the U.S. proposal as "too complicated". Therefore, it may be appropriate not to add this to the protocol text, but to include in the implementation guidelines to be developed later.*

### **Draft Text:**

**"Tradeable Budget Unit (TBU)" means the authorization under the GHG Protocol to emit up to [e.g., 1000] tonnes of carbon equivalent during or after a specified budget period.**

### Emissions Trading Issue #3: Trading Mechanism to Encourage Party Compliance

**Issue:** How should problem countries be addressed?

**Background:** Any international trading system should have a mechanism which provides an automatic incentive to comply with both reporting requirements and the budget commitments. The mechanism could be a definitive determination on the status, defined below using a "green/yellow/red" signal, of each Party's progress in meeting both its reporting and budget commitments. The concept is that the FCCC Secretariat (or the in-depth review team) will follow predetermined criteria to be developed (on an annual or other periodic basis) to assign a status showing a "satisfactory/caution/unsatisfactory" (corresponding to the green/yellow/red signal developed for this paper) rating of each Party's progress in meeting both its reporting and budget commitments. A Party would have to initially earn its green status before it could engage in trading, based on an initial review of its monitoring and reporting system to ensure the system meets required minimum standards established in guidelines, and then would need to maintain that status on the basis of its annual reports to continue to trade. Then, for a Party assigned a yellow or red status, automatic trading consequences would be implemented in addition to a referral to the Multilateral Consultative Process (described in another paper). For a more detailed description of the green/yellow/red signal system, see the attachment. The automatic trading consequence for the status for a yellow signal would be that although "allowances" could be sold, they would be marked by the Secretariat such that they could not be used for compliance with any Party's budget commitments until "green" status was restored to the issuer. The automatic trading consequences for a red signal would include 1) suspension of the right to sell allowances, 2) the automatic deduction excess tonnes emitted plus at least the interest rate required for borrowing, and 3) the automatic devaluation of any allowances sold after the yellow signal was assigned.

[[The yellow signal could be raised for determinations made during the budget period, including a determination based on interim emissions benchmarks, that a Party may fail to meet its budget obligations at the end of the budget period. If interim compliance benchmarks are unacceptable, then shorter budget periods (e.g. 3 years) might be considered.]]

#### **Options:**

1. Ensure the FCCC Secretariat has the administrative authority to implement automatic consequences which provide incentives for Parties to meet their reporting requirements [[, to meet interim emissions benchmarks,]] and to comply by the end of each budget period.
2. If the FCCC Secretariat does not have such administrative authority, then the U.S. should reserve the right to unilaterally deny "bad" tonnes of carbon equivalent emissions allowed, and this right should be shielded from the World Trade Organization.
3. Consider that the appropriate monitoring, reporting, and enforcement mechanisms may not be sufficient at this time to justify a full emissions trading system at this time, and construct the "trading" allowed by the Protocol to require case-by-case review and approval of specific emission reduction projects which could generate budget transfers (i.e., a "joint implementation" structure even for Annex I country trading).

#### **Recommendation: Option 1**

- Define the administrative and non-discretionary authority for the FCCC Secretariat (or the in-depth review teams) to appropriately oversee the emissions trading program. Specifically, require annual review and rating of each Party's emission and budget reports and each Party's

performance in meeting its budget commitments. [note that this does increase the FCCC's workload, and consequent need for funding.]

- One critical feature of this authority is that the signal and thus the automatic consequences would be implemented upon the finding of the deficiency, so that it would not be necessary to wait to implement any consequences until the MCP process came out with a recommended resolution

Note that the consequence for the yellow signal is defined so that the Party which received the yellow signal would be allowed to sell "tonnes allowed", but the tonnes would be tracked as "yellow" and could not be used by the buyer for compliance (those tonnes allowed could not be deducted to cover the buyer's emissions) until the Secretariat made a new determination that the seller had rectified its deficiencies and returned to green status. If the seller did not rectify its deficiencies after a specific time period, then the Secretariat would automatically downgrade the seller to red status, meaning that no further tonnes allowed could be sold, and any "yellow" tonnes sitting in any buyer's accounts would be downgraded to red, where the red tonnes are valueless for compliance and would be retired.

This scenario for green/yellow/red determinations envisions that any deficiency in an annual communication (mathematical error, failure to follow approved IPCC guidelines for some of the emission calculations, or complete failure to follow approved guidelines such that the entire emissions report is in question) would trigger a "yellow" status, which would provide the Party with some defined period of time to rectify the deficiencies before the "red" status (and consequently the prohibition against sale of tonnes allowed) is imposed. However, as the guidelines are developed, there may be some deficiencies which are so severe that it would be appropriate to trigger the "red" status immediately.

#### **Draft Text:**

*insert into international emissions trading section:*

**Each Annex A or Annex B Party must adopt a monitoring and reporting system which satisfactorily meets the promulgated minimum standards before it may engage in international emissions trading. In addition, each Annex A or Annex B Party's annual report shall be reviewed to determine if the Party's emissions and budget calculations are satisfactory, cautionary, or unsatisfactory, and the FCCC Secretariat will ensure any automatic trading limitations are followed.**

## ATTACHMENT for Trading Mechanism to Encourage Party Compliance

### **Meaning of Color Designations: (green, yellow, red)**

**Green Status:** Upon compliance with procedural requirements, a Party will be assigned Green status. With green status, a party may trade TBUs whose tender value will not be questioned by the FCCC. Green status must be affirmatively reestablished after any period of yellow or red status.

**Yellow Status:** Upon failure to comply with the procedural requirements or cumulative emissions budgets, a Party will be assigned Yellow status. With Yellow status, a party may continue to sell TBUs, but buyers are on notice that there are deficiencies in the performance of the issuing Party, and that the current tender value of the TBUs units sold by a Party under Yellow Status is suspended. Prices would presumably reflect the severity of market-perceived impairment.

Parties under Yellow status would have a specified period during which it would be expected to cure the identified deficiencies to the satisfaction of the FCCC Secretariat, and such Parties would concurrently be referred into the Multilateral Consultative Process. If the deficiency is timely cured, TBUs issued during the Yellow period will have their tender value restored, and the Party may be assigned Green status for future periods. If left uncured at the end of the period provided, a red status results.

[[Maintaining a plausible path toward budget period compliance should be a requirement of overall compliance, especially if the emission budget period is lengthy (e.g., more than 5 years). The plausibility of compliance would be tested during a multiyear budget period by comparing cumulative emissions during the budget period to date to a formula allowance. The formula allowance could be: (1) the budget period allowance pro-rated over the elapsed time since the start of the most recent budget period, (2) net adjustments from completed trades (including JI or other credits) and banked TBUs, plus (3) 10% of the current multiyear budget. Parties which exceeded the formula allowance at any time during the budget period would receive Yellow status. Green status could be restored by TBUs unit purchases or by reducing emissions, but failure to reach formula compliance could result in Red status after a specified interval.]]

**Red Status:** Upon failure to cure any Yellow deficiencies during the period provided, non-discretionary Red status must be assigned. With Red status, Yellow period TBUs issuances are invalidated and retired, clearing them from the books. Holders of such TBUs receive no value (or possibly reduced value under pro-ration of a deficiency).

## Recommended Annex C Criteria

### Issues

Which gases/sources/sectors belong in Annex C (i.e., subject to the binding overall budget set forth in the Protocol) and which should be excluded from Annex C (i.e., outside of the overall budget)? How should the distinction between Annex C and non-Annex C be made to ensure that the protocol optimizes comprehensiveness, cost-effectiveness, and compliance requirements?

The determination of whether or not a gas/source/sink belongs in Annex C should be made based on objective criteria. These criteria should be applied to the FCCC guidelines for national greenhouse gas inventories, perhaps with consideration of the potential for the methods to be improved in the near term. The gases/sources/sinks that meet the criteria should be included in Annex C and those that fail should be excluded from Annex C. As methods and data improve, those sectors excluded from Annex C should be reviewed, and additional gases/sources/sinks could be moved into Annex C. Graduation of a gas/source/sink into Annex C should occur systematically, with the agreement of all Parties. No Party can unilaterally move a gas/source/sink into Annex C.

### Recommended Criteria

There are at least five key criteria that gases, sources and sinks should satisfy in order to be included in Annex C. The effect of applying these criteria is to limit membership to only those gases and sources that meet general criteria and can be measured accurately or precisely.

The following list proposes criteria for inclusion in Annex C:

1. Internationally approved or accepted methods (i.e., guidelines adopted by the FCCC) for estimating emissions of this gas from this sector/source category must be available;
2. The national emission estimation methods must be sufficiently accurate and/or precise to ensure that compliance (or non-compliance) could be established. [Note that objective thresholds of accuracy and/or precision should be determined once the scope of Annex C is established. (e.g. +/-10%)]
3. The ability to measure emissions reductions must be systematically captured in the methodologies.
4. Methods must be sufficient to prevent game-playing or manipulation of estimates to falsely demonstrate compliance.

5. The methods must allow progress to be tracked and performance to be evaluated. This will require that data be reported on an annual basis.
6. The methods must be able to be consistently applied by all Annex A and B Parties.

#### Proposal

Apply the criteria to the current (or expected?) IPCC guidelines and develop a list of gases and sources that satisfy them. Given the timeframe, the technical analyst could not compile a list of gases, sources, and sinks that meet these criteria. We will develop this list for submission to the Secretariat by April 1.

Separate language should be developed to ensure that gases, sources, and sinks not included in Annex C are treated (see Issue Paper on Control of Non-Annex C Gases/Sources/Sinks).

## Control of Non-Annex C Gases/Sources/Sinks

### Issue

The binding target outlined in the protocol will apply to only the gases/sources/sinks listed in Annex C. Other provisions (unspecified in the draft protocol) will be developed for those gases/sources/sinks which are not listed in Annex C. This paper identifies the options for addressing these gases/sources/sinks.

### Options

Essentially, there are four ways to control non-Annex C gases/sources/sectors, as described below:

#### 1. Binding Target:

Description: Either together or individually, specific emission/removal targets could be set for Non-Annex C gases/sources/sectors.

Pros: Maximum environmental gains could be assured by setting a binding target for non-Annex C.

Cons: Difficult to implement and manage separate budgets for Annex C and non-Annex C. Likely to be unworkable since many of the non-Annex C gases are highly uncertain.

#### 2. Binding Policies & Measures:

Description: Each Party could be required to impose select policies and measures on Non-Annex C.

Pros: Greater assurance that environmental objectives would be met, while recognizing that weaknesses in estimation methods would make a binding target unworkable.

Cons: Imposition of harmonized, binding policies and measures does not reflect differing national circumstances among Parties.

#### 3. Voluntary Policies & Measures:

Description: Each Party could voluntarily adopt policies and measures to reduce emissions from non Annex C.

Pros: Some environmental gains will be made, in a manner consistent with national priorities and circumstances.

Cons: Maximum environmental gains will likely not be made.

4. No Provisions:

Description: Parties could assume no obligations (binding or voluntary) with respect to Non Annex C.

Pros: Eases burden on Parties; no additional compliance requirements.

Cons: No environmental progress made for non-Annex C gases.

### Borrowing Against Future Targets

**Issue:** Should Parties be allowed to borrow against future targets, and should language to this effect be removed from or maintained in the U.S. proposal?

**Background:** The concept of borrowing is currently included in the U.S. draft protocol proposal. It is mentioned in two places: Article 2.2(c) on emissions budgets which states that the budget includes: "up to [ ] percent] of the tonnes of carbon equivalent emissions allowed ....such as may be borrowed from the subsequent budget period....", and Article 2.6 which states "At the end of a budget period applicable to a Party, any amount of tonnes of carbon equivalent emissions allowed that is borrowed from the subsequent budget period shall be subtracted at a rate of [1.2:1] from the subsequent budget period." Thus, the language incorporates both a restriction on the amount allowed and a penalty for borrowing.

At the most recent session of the AGBM, the concept of borrowing came under significant attack, with delegates arguing that it allowed Parties to indefinitely exceed their commitments, and made any assessment of compliance impossible. This paper discusses the concept of borrowing, and suggests some approaches and clarifications that might address some of these concerns.

While borrowing has raised concerns, there are also several issues to be considered with respect to excluding the option. For example, without borrowing, a Party that exceeds its first budget by a modest margin would either start the next period with a clean slate, or be subject to a non-compliance provision that requires them to make up the shortfall, possibly with a penalty. The first alternative perversely rewards non-compliance, while the second is virtually identical to borrowing, except that only "non-compliers" may use it. By providing all Parties with access to borrowing, Parties in compliance are not penalized relative to Parties not in compliance. The extra degree of timing flexibility allows more Parties to remain in compliance. Moreover, borrowing does not endanger the environmental objective of the Protocol – in fact successful borrowing transactions would reduce atmospheric concentrations below the level that would have prevailed in their absence due to the requirement to pay back 20 percent more tons than are borrowed.

The concept of borrowing is familiar to all who are involved in financial transactions -- it involves taking a loan against future resources in order to pay current obligations. In the case of the climate, current obligations would equate to current levels of allowable emissions (or emissions in a given budget period); future resources would equate to allowable emissions in a future period.

A financial world without borrowing would be difficult to imagine. It is rare that a firm has internal capital resources adequate to fully finance its future growth. Similarly, responding to any significant climate change mitigation strategy without a parallel option for borrowing can also be expected to impose costly economic constraints on the system: it clearly reduces flexibility in terms of planning; and it may require the premature retirement of capital stock in order to meet strict deadlines. Borrowing also allow for a appropriate planning and introduction of new technologies – on a timeframe that may lead to greater emissions reductions than without such a system. In planning a borrowing regime, we must remain aware that the climate and mitigation responses are not fully analogous to financial markets.

Also in a manner similar to financial transactions, costs could be associated with emissions borrowing. These include risks of the borrower defaulting on the loan; opportunity costs to the lender of not making a more profitable investment elsewhere; and the adequacy of institutional mechanisms. Unlike most financial transactions, some additional risk may be associated with an emissions borrowing regime, including impacts to the environment from delayed reductions. However, the environmental risk posed by greenhouse gas emissions is a function of atmospheric concentrations rather than annual emissions. While borrowing tends to increase near term emissions, the environmental risks could be reduced if borrowing and repayment schedules were managed in such a way as to preclude concentrations rising above long-term target levels.

Notwithstanding the differences between financial borrowing and emissions borrowing, some of the solutions applied in the financial arena are applicable in both cases. For example:

- Loans are usually offered at some cost in the form of interest paid by the borrower; the analogous situation could call for the borrower to pay more in the way of future reductions for any emissions used in the current period. The U.S. proposal contains such provisions, with the penalty assessed at 20 percent of the amount borrowed. Several options might be considered if the exemplary number were changed:
  - A fixed rate for the budget period could be assigned on a political basis;
  - An annual rate could be developed; or
  - A rate based on market lending rates could be assigned (to insure that emissions borrowing was not less expensive than financial transactions)
- Financial transactions are also often accompanied by requirements that the borrower put up collateral; in the case of emissions borrowing, a bond might be posted to ensure that funds would be available to "buy" emissions should the borrower default on the loan, or another entity might guarantee the shortfall. We may also consider the potential "riskiness" of a borrower, and require more stringent safeguards for borrowers with questionable reduction strategies. The U.S. proposal does not currently contain such provisions. These might be added, and could take several forms including requiring the borrower to provide an indication of how repayment would be made, and only allowing borrowing for the amount that could be reasonably expected to be repaid.
- Financial transactions are also often limited in terms of the amount that can be borrowed -- either as a fixed total, or as a percentage of future earnings; emissions borrowing might have a similar limit (for example, a country or firm might be prohibited from borrowing more than [2][5][10] percent of its total emission reduction obligation). The U.S. proposal contains such provisions, although the number is unspecified. These provisions insure that Parties cannot use borrowing to indefinitely exceed their commitments. For example, a Party that "borrowed" the maximum amount in the first period would be unable to borrow more in the second period. A Party that borrowed would overcomply substantially relative to its second budget period if it paid back its borrowings fully. In fact, it would overcomply even in the extreme case in which it "rolled over" its initial borrowing, since to stay within the total borrowing limit it would have to overcomply at least to the extent of the borrowing penalty.
- Finally, defaulting borrowers are usually assessed a penalty; a similar penalty might be applied toward a defaulting emissions borrower -- either in the form of a monetized fine, or in the form of an additional reduction obligation. This concept is embedded in the non-

compliance provisions that are already included in the U.S. proposal – although additional penalties might be assessed on amounts borrowed in one budget period that are not repaid by the end of the subsequent budget period

### Recommendation

Noting both the concerns which many countries have expressed regarding borrowing – but also the significant advantages that accrue in terms of cost-effectiveness from allowing borrowing – the option to borrow should be left to the discretion of the Parties. However, in discussing the concept, the restriction placed on borrowing should be noted. In particular, the U.S. proposal restricts the extent to which borrowed emissions are to be used in a country's emissions budget (for the April 1 deadline, we could suggest that no more than [2][5][10][20] percent of a Party's total budget may be borrowed from a subsequent period), and also includes a penalty for borrowing – in the form of a 20 percent penalty on borrowed emissions. Our system also defines multiple budget periods (two are included in the U.S. proposal), and only allows borrowing from defined budget periods. In conjunction with the U.S. proposals for a stringent compliance and monitoring system, we believe that we have safeguarded borrowing from potential abuse.

To further address concerns about the concept, it is proposed that language be added to restrict borrowing to emissions for which a Party has provided detailed plans regarding repayment (and possibly require that guidelines for such proposals to be developed and adopted by the Parties at their first meeting). This addition would obligate a Party to develop, make public, have reviewed and have agreed specific proposals on how it would make up the additional obligations in the subsequent budget period. It would prohibit borrowing by Parties not having such plans. Language to this effect could be inserted into Article 2.6 of the U.S. proposal.

H:/FCCC/borrowing.doc