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UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

Ad Hoc Group on the Berlin Mandate
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IMPLEMENTATION OF THE BERLIN MANDATE

Comments from Parties

Note by the interim secretariat

Addendum

In addition to the submission from France (on behalf of the European Community), contained in document FCCC/AGBM/1995/MISC.1, the interim secretariat has now received submissions from the following countries: China, France, Germany, Iceland, Japan, Netherlands, Norway, Poland and the Russian Federation, Switzerland, Trinidad and Tobago (on behalf of the Alliance of Small Island States (AOSIS)), and the United States of America. The interim secretariat has also received a French version of the above-mentioned submission from France (on behalf of the European Community).

These submissions are attached, and, in accordance with the procedure for miscellaneous documents, are reproduced in the language(s) in which they were received and without formal editing.

The interim secretariat has been advised by a Party that submissions made by Parties in accordance with Article 17 of the Convention should also be read in conjunction with this compilation. Two such submissions exist and were issued as documents of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change (A/AC.237/L.23 and Add.1). As these documents continue to be documents of the Ad Hoc Group on the Berlin Mandate pursuant to the terms of the Berlin Mandate and are readily available, they have not been reproduced here.

FCCC/AGBM/1995/MISC.1/Add.1
GE.95-63920

CONTENTS

PAPER NO. 1: CHINA

中国代表团关于“柏林授权进程”的初步意见
（一九九五年九月四日）

1、公约和柏林授权的原则和规定是柏林授权进程的法律基础，该进程应严格按照柏林授权所确定的范围开展活动。柏林授权进程是由执行公约第4条第2款（d）项的规定而引发并启动的。根据第4条第2款（d）项所规定的评审，公约附件一国家依公约第4条第2款（a）和（b）项的义务是不充足的，因而需要予以加强。在这方面，柏林授权明确规定了特设工作组的任务：确定附件一国家的政策和措施并设定可在一定时间段内予以完成的限制或减少其温室气体排放的目标。柏林授权明确规定磋商进程不得对发展中国家规定任何新义务。发展中国家依公约第4条第1款所承担义务可以加以重申，但其履行应在考虑公约第4条第7款的基础上加以推进。

2、根据柏林授权的规定，柏林授权的进程早期，应包括一“分析和评价”阶段，以确定附件一国家所应采取的限制和减少温室气体排放的可能政策和措施。我们认为，用一段时间来评价附件一国家所采取和将采取的政策和措施是非常必要的，它将有助于柏林进程就附件一国家所应承担的新义务进行有意义的谈判。在政府间谈判委员会会议上，我们曾多次强调附件一国家充分履行公约现有义务将是公约进程的根本步骤。从附件一国家所提交的已有国家通报中，我们没有看到所采取的政策和措施对减少温室气体排放所产生的具体效果的任何说明。在对附件一国家２０００年后的政策、措施和目标进行分析和评价的同时，对这些国家２０００

年前已采取和将采取的政策和措施的有效性进行适当分析和评价也是非常有益的。这既会促进现有公约义务的履行，同时也将为确定附件一国家的下步行动奠定基础。柏林授权关于“分析和评价”的规定是非常明确的，“分析和评价”是针对附件一国家的政策和措施而进行的。任何“分析和评价”超出柏林决定所授权的范围的企图和主张，对发展中国家是完全不能接受的，也是违反柏林授权第一部分第1段（g）款所规定的“各方诚信合作”的原则的。

关于“分析和评价”阶段的时间长短，我们认为应采取灵活态度。我们认为重要的是使这个阶段能够对确定附件一国家的新义务有所帮助，为柏林授权进程提供一个有意义的谈判起点，能够促进正式谈判尽快达成协议。各方的充分和有效参与将会保证这个阶段取得成功，从而为下步谈判提供良好的基础。但是，我们遗憾地注意到，支助发展中国家缔约方参加会议的特别志愿基金的资源已变得如此之少，以至于不能资助大多数发展中国家参加柏林授权进程。这在某种意义上严重妨碍发展中国家的充分和有效参与。为此，我们强烈呼吁公约附件一国家及有此能力的国际组织向该志愿基金提供更多的捐款。

3、柏林授权进程将涉及各缔约方在公约下的权利和义务。只有公约缔约方才有权成为该进程的成员。从法律上说，只有公约缔约方所表示的意见或提交的文件或建议才构成工作组谈判的基础材料。在这些材料的基础上并依照公约和柏林授权的原则和规定，可以经各方充分磋商后形成供工作组进一步谈判的综合案文。至于来自其他方面，包括非缔约方的、有关国际机构的和非政府组织的意见和信息，其对谈判进程无疑会发挥作用

，但这些意见和信息不能成为谈判基础材料的组成部分，只能用以参考的目的。

4、根据柏林授权的规定，柏林授权进程的结果应是一项有法律拘束力的文件：或是一项议定书，或是另外形式的法律文件。不管其形式或名称为何，最后所达成的法律文件的性质和内容在柏林授权中已得到确定。柏林授权起因于对公约第4条第2款（a）（b）项是否充足的评审和此评审所得出的“不充足”的结论，柏林授权的核心是纠正公约第4条第2款（a）和（b）项的“不充足”，加强公约附件一国家在此二项下的义务。柏林授权进程的实质是对公约第4条第2款（d）项规定的执行，这决定了其结果不应是一项全面性的法律文件，而是关于公约某一特定义务的修改和补充。这些新义务的履行在公约现有的机构安排下即可实现，没有必要在所达成的法律文件中予以重复或另立。

(UNOFFICIAL TRANSLATION)

1995.9.4

PRELIMINARY COMMENTS BY THE CHINESE DELEGATION ON THE PROCESS OF THE BERLIN MANDATE

I. The principles and the provisions of the Convention and the "Berlin Mandate" are the legal basis for the process of the Berlin Mandate; such a process should, therefore, unfold its activities within the scope as defined by the Mandate. The process of the Berlin Mandate was attributable to, and initiated by, the implementation of the provisions of Article 4.2 (d) of the Convention (FCCC) . According to the conclusions of the review referred to in Article 4.2 (d) , the existing commitments of Annex I Parties in Article 4.2 (a) and (b) of the Convention are inadequate and therefore need to be strengthened. In this connection, the Berlin Mandate has provided a precise and specific task for the AGBM, namely, to elaborate for Annex I Parties policies and measures and to set quantified limitation and reduction objectives within specified time-frames for their anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol. At the same time, the Berlin Mandate also clearly states that the AGBM will not introduce any new commitments for the developing country Parties though the existing commitments in Article 4.1 are to be reaffirmed and the implementation of which are to be advanced in the context of Article 4.3, 4.5, and 4.7 of the Convention.

II. According to the Berlin Mandate, the process will include in its early stages an analysis and assessment to identify possible polices and measures for Annex I Parties which could contribute to limiting and reducing greenhouse gases emissions. In our view, it is essential to devote a period of time to analyzing and assessing the policies and measures which have been and will be adopted by Annex I Parties in this regard. This will be helpful to AGBM's meaningful negotiations on new commitments for Annex I Parties. We stated repeatedly at INC meetings that the full implementation of the existing commitments by Annex I Parties is the first and essential step for the Convention process. In the national communications submitted by the Annex I Parties so far, we have not seen any detailed description of the

effects of their polices and measures on reducing and limiting their greenhouse gases emissions. Hence it is very useful to conduct appropriate analysis and assessment of the effectiveness of the polices and measures adopted by Annex I Parties before the year 2000, while identifying those possible polices, measures and objectives beyond the year 2000. This will not only promote the implementation of their existing commitments under the Convention, but also lay a good foundation for the identification of their further actions.

The Berlin Mandate has very clear provisions on "Analysis and Assessment". The Analysis and Assessment will apply only to the polices and measures for Annex I Parties. Any attempt at going beyond the Berlin Mandate in this process is not only unacceptable to the developing countries, but is also inconsistent with the principle that there is "the need for all Parties to cooperate in good faith" as set out in Part I paragraph 1 (g) of the Berlin Mandate. As to the duration of the Analysis and Assessment, we are for a rather flexible approach. In our view, what is most important is that the Analysis and Assessment are helpful to elaborating new commitments for Annex I Parties and providing a good starting point for the formal negotiations so as to promote reaching an agreement as soon as possible.

Full and effective participation by all Parties to the Convention will guarantee the success of the Analysis and Assessment process, thus laying a good foundation for further negotiations. Regrettably, we have noted that the Special Voluntary Fund for financing the participation by the developing country Parties is becoming so scarce that it is unable to provide financial support to majority of the developing country Parties for their participation in the AGBM process. To some extent this has severely hampered the full and effective participation by the developing country Parties. Therefore, we strongly appeal to Annex I Parties to the Convention and those international organizations in a position to do so, to make more contributions to the Special Voluntary Fund.

III. The process of the Berlin Mandate will inevitably deal with rights and obligations of the Parties to the Convention. In this connection, only Parties to the Convention can be parties to this process. Legally speaking, only inputs or submissions from the Parties to the Convention can constitute basic documents for AGBM's further negotiations. On the basis of these inputs

and submissions from Parties, and in accordance with the relevant provisions of the Convention and the Berlin Mandate, full consultations by all Parties can lead to formulation of a draft composite document for the AGBM's further work. As to the submissions or information provided by other sources, such as non-Parties to the Convention, relevant international organizations or NGOs, although undoubtedly useful to the process of the negotiations, these cannot be a component of the basic documents for negotiations, and can only serve as reference materials.

IV. According to the provisions of the Berlin Mandate, the process of the Berlin Mandate will end up with a legally binding document, either a protocol or another legal instrument. Whatever its form and nomenclature, the nature and content of the legal instrument to be formulated are clearly stipulated in the Berlin Mandate. The Berlin Mandate emanated from the conclusion of the review of the adequacy of Article 4.2 (a) and (b) to the effect that the commitments in Article 4.2 (a) and (b) are inadequate. Thus, the core of the Berlin Mandate is to correct the "inadequacy" of Article 4.2 (a) and (b) by strengthening the commitments of Annex I Parties in Article 4.2 (a) and (b). The essence of the Berlin Mandate process is to strengthen the commitments in Article 4.2 (a) and (b), and this determines that the final outcome of the process should not be a comprehensive legal document , but a legal instrument to supplement or strengthen a specific area of the commitments contained in the Convention. Therefore, the implementation of the strengthened commitments can be carried out through the existing institutional arrangements of the Convention. And there is no need to duplicate or to establish any new mechanism for implementation in the envisaged legal instrument.

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PAPER NO. 2: FRANCE

Contribution française aux travaux

du groupe ad hoc sur le mandat de Berlin (AGBM)

I. Introduction

1. Le mandat de Berlin a donné un cadre aux travaux de l'AGBM en vue de conduire à une nouvelle étape pour progresser vers l'objectif ultime de la Convention-cadre des Nations Unies sur les changements climatiques.

2. Pour cela, le mandat de Berlin estime nécessaire que :

- les pays développés Parties et/ou les autres Parties visées à l'annexe 1 *"élaborent des politiques et des mesures et fixent des objectifs quantifiés de limitation et de réduction selon des échéances précises - 2005, 2010, 2020 par exemple - pour leurs émissions anthropiques par leurs sources et l'absorption par leurs puits des gaz à effet de serre non réglementés par le protocole de Montréal, en tenant compte des différences de ces Parties quant à leur point de départ ..."*; et *"que soit examinée la manière dont les Parties visées à l'annexe 1 coordonnent les unes avec les autres ... les instruments économiques et administratifs appropriés ..."*;
- les Parties non visées à l'annexe 1 *"réaffirment les engagements déjà énoncés à l'article 4.1. et continuent à progresser dans l'exécution de ces engagements afin d'arriver à un développement durable"*.

3. Le mandat de Berlin précise que, au début des travaux de l'AGBM, *"on procédera à une analyse et à une évaluation pour définir les politiques et les mesures que les Parties visées à l'annexe I pourraient prendre pour contribuer à limiter et réduire les émissions par les sources et protéger et renforcer les puits et réservoirs de gaz à effet de serre"*.

II. Analyse et évaluation des politiques et des mesures.

4. Afin de contribuer à l'analyse et à l'évaluation des politiques et des mesures, la France souhaite, en premier lieu, rappeler les éléments principaux de la politique énergétique qu'elle a menée depuis le premier choc pétrolier. Cette politique lui a en effet permis de réduire très sensiblement ses émissions de CO_2 et donc sa contribution à l'effet de serre dès avant 1990[1]. Ces résultats ont pu être obtenus grâce à la mise en place combinée d'une politique rigoureuse de maîtrise de

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[1] L'ampleur de cette politique a permis à la France, entre 1980 et 1990, de réduire ses émissions de CO_2 par habitant plus qu'aucun autre Etat membre de l'Union européenne (-26% contre une moyenne communautaire de -19,3%) ; au sein de l'OCDE, seule la Suède (aujourd'hui membre de l'Union européenne) a connu une réduction plus forte de ce ratio.

l'énergie et d'un vaste programme électronucléaire. Le développement du parc nucléaire a permis de diviser par dix le contenu en CO2 d'un kWh.

Parmi les politiques et mesures de maîtrise de l'énergie adoptées, on peut citer à titre d'exemple :

- la définition de réglementations strictes visant à favoriser les économies d'énergie. La réglementation thermique de l'habitat constitue à cet égard un exemple significatif ;
- l'utilisation de la fiscalité. Le niveau élevé des taxes sur les carburants, supérieur à celui pratiqué par la plupart des pays développés, a fortement contribué par le passé à limiter les émissions de gaz carbonique. Par ailleurs, de nombreuses incitations fiscales visant à améliorer l'efficacité énergétique ont été mises en place dès 1974, notamment dans l'industrie et l'habitat ;
- un important programme d'économies d'énergie et d'efficacité énergétique. La France dispose depuis 1974, pour mettre en oeuvre ces actions, d'une Agence pour les économies d'énergie qui a agi sur la demande finale et auprès des industriels, constituant au fil des ans un pôle de compétence et d'expertise.

Ces politiques et mesures de maîtrise de l'énergie font actuellement l'objet d'une évaluation en profondeur au niveau national.

5. Conformément à l'alinéa 4.2.a), la France a adopté des politiques et des mesures afin de limiter encore ses émissions nettes de gaz à effet de serre. Elle souhaite également attirer l'attention des Parties sur les enseignements qu'elle a tirés de l'élaboration de sa communication nationale :

- afin d'introduire une cohérence indispensable dans les mesures à prendre dans les divers secteurs de l'activité économique et à propos des divers gaz à effet de serre, la France s'est efforcée d'examiner, au niveau national, toutes les actions dont le coût est inférieur ou égal à un niveau de référence exprimé en écus par tonne de carbone équivalent dont l'émission peut être évité (ou qui a été retiré de l'atmosphère).
- cet examen a conduit à retenir aussi des mesures qui auront pour effet de modifier les tendances à long terme des émissions anthropiques nettes de gaz à effet de serre, même si celles-ci n'avaient qu'un impact assez faible à l'horizon 2000. Tel est le cas en particulier des mesures visant à renforcer la réglementation thermique des bâtiments ou à favoriser le stockage de carbone dans la forêt et le bois d'oeuvre.
- l'expérience du marché intérieur de l'Union européenne montre que nombre de mesures ne peuvent être mise en oeuvre de manière efficace que si elles sont coordonnées dans un espace suffisamment large. Ainsi, les initiatives qui relèvent aujourd'hui du niveau communautaire sont particulièrement importantes et efficaces dans de nombreux domaines tels que les transports, la fiscalité sur les carburants, diverses réglementations (notamment en matière d'environnement) et la politique agricole commune.
- compte-tenu des politiques et mesures retenues et de celles qui devront être prises au niveau de l'Union européenne, les prévisions d'émissions permettent d'estimer que la France devrait ramener ses émissions agrégées nettes de gaz à effet de serre (CO_2, CH_4, N_2O) en 2000 à leur niveau de 1990. Il convient cependant de souligner qu'il existe une marge d'incertitude importante sur les prévisions d'émissions de CO_2 à l'horizon 2000, de l'ordre de plus ou moins 7%. *Indépendante du programme adopté*, cette incertitude est liée, entre autres, aux aléas concernant la croissance économique, le prix du pétrole, le taux de disponibilité du nucléaire et le climat. Concernant les autres gaz à effet de serre (CH_4, N_2O), les incertitudes sur les inventaires rendent encore plus imprécises les prévisions d'émissions.

III. Autres réflexions tirées de l'expérience acquise dans l'exécution des engagements actuels et de divers travaux d'analyse disponibles (notamment les éléments produits au cours du processus d'élaboration du second rapport d'évaluation du GIEC)

6. La forme actuelle des engagements pris par les Parties visées à l'annexe 1, qui se fonde sur un objectif de limitation contraignant des émissions de gaz à effet de serre, fixé a priori, sans examen préalable de ce que chaque Partie pouvait raisonnablement espérer accomplir, et ne tenant pas compte des "circonstances nationales" (notamment les points de départ différents des Parties) conduit à des résultats en demi-teinte (cf. les premiers examens des communications nationales réalisés par le Secrétariat de la Convention, ou la déclaration des Etats Unis d'Amérique à la première session de l'AGBM) ; or il s'agissait d'une première étape a priori "facile" à franchir;

Son principal avantage est la simplicité de sa formulation ; en revanche, elle ne respecte pas certains critères dont de nombreuses analyses soulignent l'importance:

- *critère d'efficacité* : rechercher la minimisation du coût global de la stratégie de prévention de l'effet de serre mise en oeuvre ;.
- *critère d'équité* : conduire à une répartition acceptable de l'effort entre Parties concernées ;
- *critère de compatibilité avec les règles du commerce international* : ne pas conduire à des distorsions de concurrence entre entreprises des différentes Parties, notamment sur les marchés internationaux.

7. Par ailleurs, il convient de reconnaître que les connaissances scientifiques actuelles ne permettent pas d'élaborer de manière objective des scénarios d'émissions que les pays pourraient s'engager à respecter (l'accent est actuellement mis sur un indicateur plus fruste qui est le niveau cumulé des émissions des gaz à effet de serre sur les cent prochaines années, sur lequel les Experts ne sont d'ailleurs pas en mesure de se prononcer de manière précise) ; dans ce contexte, les grandes tendances d'évolution des émissions sont réellement importantes (il s'agit d'obtenir une inflexion progressive des trajectoires d'émission de gaz à effet de serre des différents pays, d'où l'importance plus grande à accorder à l'évolution des "dérivées" qu'aux "points d'arrivée" dans un futur proche[2]).

IV. Propositions de la France pour le Protocole ou l'autre instrument légal auquel devraient aboutir les travaux de l'AGBM

IV.1. Renforcement des engagements des Parties visées à l'annexe 1.

8. Le coût des mesures nouvelles qui sont susceptibles d'être mises en oeuvre par les Parties visées à l'annexe 1 après l'an 2000, est très différent d'un pays à l'autre, compte tenu, notamment, de l'intensité des efforts déjà accomplis et des résultats obtenus en matière de politique énergétique. La France estime que ces différences entre les Parties visées à l'annexe 1 quant à leur point de départ devront être pleinement prises en compte dans la détermination de nouveaux engagements, conformément à ce qui est indiqué dans le Mandat de Berlin.

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[2] Il convient de souligner que le "retour d'ici la fin de la décennie des émissions de gaz à effet de serre à leur niveau de 1990", qui est au coeur des engagements présents, ne garantit pas que les Parties progressent véritablement vers l'objectif ultime de la Convention; cet engagement peut en effet être tenu à l'aide de mesures n'ayant qu'un effet transitoire et ne modifiant en rien les déterminants des évolutions à long terme des émissions.

9. Par ailleurs, à la lumière des éléments d'analyse présentés plus haut, la France considère que le futur protocole devrait comporter des engagements des Parties visées à l'annexe 1 sur un ensemble de politiques et mesures qu'elles décideront de mettre en oeuvre. L'élaboration d'objectifs quantifiés à diverses échéances est utile pour dimensionner les politiques et mesures. Toutefois les incertitudes qui existent sur les prévisions d'émissions rendront probablement très difficile, voire impossible, tout engagement précis sur les niveaux d'émissions à moyen ou à long terme.

10. Dans sa déclaration faite au nom de l'Union Européenne lors de COP1, la France avait donné une liste indicative de politiques et de mesures visant à limiter les émissions nettes de gaz à effet de serre. La négociation menée dans le cadre de l'AGBM devrait s'intéresser en priorité aux politiques et mesures qui demandent à être coordonnées au niveau international pour des motifs de compétitivité ou pour accroître leur efficacité, et dont la mise en oeuvre permettrait de progresser de manière significative en direction de l'objectif ultime de la Convention. La France estime prioritaire dans ce cadre :

- le recours à des instruments économiques, y compris la fiscalité pesant sur les produits émettant du CO_2 et la suppression des subventions directes ou indirectes qui encouragent la consommation d'énergie fossile
- la mise en place de dispositifs visant à améliorer l'efficacité énergétique de certains produits dont les marchés sont ouverts à la concurrence internationale (véhicules, équipement de combustion, appareils domestiques, etc.). Ces mesures permettraient aux Pouvoirs Publics d'accroître l'efficacité des instruments fiscaux dans des secteurs dont les marchés sont soumis à diverses imperfections (manque d'information, contrainte sur les capacités de financement, ...)[3].

Par ailleurs, il conviendra de prendre en compte le secteur non énergétique, et de considérer des mesures concernant les autres gaz à effet de serre (émissions de CH4 du secteur agricole et des décharges, émissions de N2O du secteur agricole et du secteur industriel, émissions de HFC, ...).

11. La France a toujours considéré que la façon à la fois la plus efficace et également la plus équitable de répartir l'effort de réduction des émissions de CO_2 entre les nations développées est de faire réaliser dans tous ces pays toutes les réductions d'émission dont le coût est inférieur à un niveau de référence commun. La façon la plus simple, la plus lisible pour tous ces acteurs et la moins onéreuse, en terme de coûts de gestion administratifs, de parvenir à ce résultat consiste à instaurer, au sein des fiscalités existantes de tous ces pays, une taxation progressivement croissante sur le CO_2 à des taux coordonnés dans ces divers pays. Cette approche est aussi celle qui permet, au sein de chaque pays, de minimiser le coût de la réduction des émissions de CO_2. Une telle approche fiscale est à instaurer dans un espace suffisamment large pour tenir compte du cadre concurrentiel des activités auxquelles elle s'applique.

Parallèlement, il faut souligner l'importance que l'on doit attacher à faire disparaître dans tous les pays les subventions qui encouragent la consommation d'énergie fossile; ces subventions peuvent notamment prendre la forme de prix intérieurs pour les combustibles ou carburants, inférieurs aux cours mondiaux, elles peuvent consister à vendre l'électricité en dessous de son prix de revient ou à subventionner certaines activités grosses consommatrices d'énergie fossile, par exemple dans le

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[3] On peut faire remarquer que si les prix de l'énergie fossile incluent une composante relative à l'internalisation des effets négatifs d'effet de serre, il est de l'intérêt d'un pays (au titre de l'efficacité au sens strict, hors préoccupations d'effet de serre) de mettre en oeuvre de telles mesures "d'accompagnement" et de veiller à leur succès

secteur des transports en n'imputant pas aux usagers de la route l'ensemble des coûts (infrastructure, congestion, insécurité ...) qu'ils occasionnent.

Ces positions sont conformes aux enseignements des travaux des experts du Groupe 3 du GIEC qui, dans le chapitre consacré à l'évaluation des politiques et mesures pour combattre le changement climatique, soulignent l'intérêt qu'il y aurait à éliminer, en priorité, toutes les distorsions économiques conduisant à encourager les émissions de gaz à effet de serre ainsi que le rôle fondamental que devraient jouer les instruments économiques dans la stratégie mondiale de prévention du changement climatique[4].

12. Les modalités retenues pour organiser l'effort planétaire doivent être définies avec le souci de préserver une concurrence loyale entre les entreprises dans le cadre du commerce international. Il serait opportun que des dispositions semblables à celles de l'article 4 du protocole de Montréal sur les C.F.C soient prises afin d'éviter que les pays non Parties ne tirent un profit injustifié, dans le commerce international, du fait qu'ils ne participeraient pas à l'effort collectif de protection de l'atmosphère. Les délocalisations, qui pourraient résulter de telles pratiques, seraient en effet à la fois inéquitables et inefficaces, sinon même nuisibles, au plan de la prévention du changement de climat.

13. En ce qui concerne les politiques et les mesures qui ne demandent pas à être coordonnées au niveau international pour des motifs de compétitivité, la France considère que le protocole devrait en fournir une liste indicative ainsi que des recommandations quant aux critères permettant de déterminer l'ampleur des mesures sélectionnées. Parmi ces critères, la France réaffirme le rôle important qu'elle voudrait voir jouer aux aspects économiques (notamment par rapport aux considérations purement politiques) : on pourrait ainsi fixer un niveau de référence maximal commun pour le coût, à la tonne de gaz à effet de serre évitée exprimée en carbone équivalent, de ces mesures ; les communications nationales, en détaillant les raisons pour lesquelles certaines des politiques et des mesures n'ont pas été retenues et en fournissant une évaluation aussi transparente que possible du coût de celles qui l'ont été, permettraient de juger de l'efficacité ainsi que de l'équité dans la répartition de l'effort entrepris par les Parties visées à l'annexe 1.

IV. 2. Progrès dans l'exécution des engagements des Parties non visées à l'annexe 1.

14. Le mandat de Berlin réaffirme clairement que les pays développés Parties doivent être à l'avant garde de la lutte contre les changements climatiques; parallèlement, il reconnaît la nécessité pour les Parties non visées à l'annexe 1 de continuer à progresser dans l'exécution de leurs engagements présents, c'est à dire, en particulier, de mettre en oeuvre également des mesures de prévention de l'effet de serre.

La France considère que la participation, le plus vite possible, du plus grand nombre de pays à l'effort planétaire de prévention de l'effet de serre est souhaitable à plusieurs titres:

- le coût global de la prévention sera d'autant plus faible que la base d'intervention sera large et qu'il n'y aura que peu de restrictions quant aux actions pouvant être entreprises;

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[4] Les instruments économiques considérés par les experts du GIEC comprennent les instruments fiscaux (système harmonisé de taxes) et les permis (ou quotas) négociables, qui supposent des engagements contraignants portant sur des niveaux d'émissions. Outre les arguments développés plus hauts, l'absence de garantie quant à un fonctionnement satisfaisant d'un marché de permis négociable dans la pratique renforce également la conviction de la France qu'il est préférable de privilégier les instruments fiscaux à ce stade.

- l'efficacité des actions de réduction des émissions de gaz à effet de serre entreprises par les pays développés risque d'être considérablement réduite si elles induisent des augmentations d'émissions dans des pays se tenant à l'écart de l'effort de prévention, que ce soit par délocalisation d'activités productives ou comme conséquence d'une baisse du prix mondial de l'énergie fossile;
- la plupart des analyses prospectives montrent que l'objectif ultime de la Convention ne pourra être atteint en l'absence d'inflexion du rythme d'augmentation des émissions de gaz à effet de serre des pays en développement[5]. Dans les pays en phase d'industrialisation, compte tenu des inerties voire irréversibilités qu'imposent certains sentiers technologiques (notamment dans le secteur énergétique ou dans le secteur des transports), il est certainement plus efficace de considérer dès à présent des trajectoires de développement économes en carbone fossile.

15. La manière dont les Parties non visées à l'annexe 1 peuvent progresser dans l'exécution de leurs engagements doit faire l'objet d'une analyse sérieuse qui devrait être effectuée parallèlement à l'analyse concernant la contribution des Parties visées à l'annexe 1 ; des propositions concrètes émanant de ces Parties, directement concernés, seraient un apport essentiel dans le processus.

La France, pour sa part, souhaite livrer les propositions suivantes à la considération des participants au processus initié par le mandat de Berlin. Afin de progresser dans la mise en oeuvre de leurs engagements, les Parties non visées à l'annexe 1 pourraient :

- développer, le plus vite possible, en tirant le meilleur parti du concours du FEM, des "études pays" pour définir ce que pourrait être une stratégie nationale efficace de prévention de l'effet de serre;
- mettre progressivement en place, celles parmi les politiques et mesures identifiées, qui sont également favorables au développement économique de ces pays.
- participer à d'éventuelles actions coordonnées initiées par les pays de l'annexe 1, selon des modalités à préciser au cas par cas, afin d'éviter que les entreprises localisées dans les pays non visés à l'annexe 1 n'en tirent un profit injustifié dans le commerce international.

16. Conformément à l'article 4.7 de la convention, la France reconnaît que les Parties non visées à l'annexe 1 progresseront d'autant plus dans l'exécution de leurs engagements que les Parties visées à l'annexe 1 s'acquitteront de manière efficace de leurs engagements en ce qui concerne les ressources financières et le transfert de technologie. Cet engagement d'assistance doit pouvoir s'effectuer soit par la voie multilatérale (contribution au mécanisme financier) soit par la voie bilatérale (on peut citer l'initiative française ayant conduit à la création du Fonds français pour l'environnement mondial).

La France estime que, s'agissant de la contribution des pays développés à la prévention, dans les pays en développement, d'une pollution globale, la clé de répartition de l'effort des pays développés devrait évoluer à l'avenir de façon à tenir compte simultanément du PIB et du niveau d'atteinte à l'environnement global (notamment le niveau des émissions de CO2) des pays donateurs.

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[5]Les projections d'émissions de CO_2 de l'AIE pour la période 1990-2010 tablent sur une augmentation de 1,2 à 2,5 milliards de tonnes de CO_2 dans les pays de l'OCDE et de 6 à 7 milliards de tonnes dans les pays en développement. A l'horizon 2010, les émissions de CO_2 des pays en développement pourraient être supérieures à celles de l'OCDE.

PAPER NO. 3: FRANCE (ON BEHALF OF THE EUROPEAN COMMUNITY)

(The English version of this submission is contained in document AGBM/FCCC/1995/Misc.1)

Déclaration no. 1

PREMIERE CONFERENCE DES PARTIES

A LA CONVENTION-CADRE SUR LES CHANGEMENTS CLIMATIQUES

Déclaration de la France

au nom de l'Union européenne

Point: Adéquation des engagements contenus à l'article 4 paragraphe 2 (a) et (b)

Berlin, le 28 mars 1995

1. L'Union européenne remercie le Secrétariat Intérimaire pour son document FCCC/CP/1995/Misc.1 qui fait une synthèse des positions des différents pays sur la question de l'adéquation des engagements contenus à l'article 4 paragraphe 2 (a) et (b). Elle souhaite toutefois attirer son attention sur le fait que la position de l'Union européenne au CIN 11 doit être reprise dans ce document et qu'elle avait indiqué son souhait que sa déclaration faite à la fin de la 11ème session soit incluse dans le compte-rendu du CIN 11 et non pas dans le document FCCC/CP/1995/Misc.1.

Sur le thème de l'adéquation, la position de l'Union européenne définie au niveau ministériel le 9 mars 1995 est la suivante:

2. L'Union européenne confirme les conclusions qu'elle a adoptées les 15 et 16 décembre 1994 et présentées lors du 11ème CIN. Elle rappelle qu'à son avis les engagements des Parties figurant à l'Annexe I, qui visent à ramener les émissions de gaz à effet de serre à leur niveau de 1990 d'ici à l'an 2000, sont insuffisants pour atteindre l'objectif ultime énoncé à l'article 2 de la convention. Elle considère par conséquent que les points a) et b) de l'article 4 paragraphe 2 de la convention sont inadéquats.

3. L'Union européenne réaffirme sa détermination de respecter ses engagements actuels et de prendre toute mesure supplémentaire qui serait nécessaire pour atteindre ce but et elle invite instamment toutes les autres parties visées à l'annexe I à faire de même.

L'Union européenne, confirmant ses conclusions du 29 octobre 1990 concernant, entre autres, la stabilisation d'ici à l'an 2000 des émissions de CO_2 dans l'ensemble de la Communauté à leur niveau de 1990, demande aux autres parties visées à l'annexe I de s'engager également à stabiliser, individuellement ou conjointement, d'ici à l'an 2000 leurs émissions de CO_2 au niveau de 1990, c'est-à-dire au moins à ne pas dépasser ce niveau après l'an 2000.

4. Le CIN 11 a reconnu que les engagements prévus aux points a) et b) de l'article 4 paragraphe 2 ne sont qu'une première étape en direction de l'objectif ultime de la convention et qu'ils doivent être réexaminés lors de la première conférence des parties. L'Union européenne souligne à ce propos que la deuxième étape commence dès l'an 2000, puisque les engagements actuels sont muets pour la période au-delà de cette date.

5. L'Union européenne constate qu'en ce qui concerne les engagements pour la période après l'an 2000, compte tenu des délais probables de ratification, un protocole relatif à des politiques et à des mesures ainsi qu'à des objectifs et à des calendriers destinés à limiter et à réduire les émissions de gaz à effet de serre devrait avoir été adopté en 1997 pour pouvoir entrer en vigueur avant l'an 2000. Pour pouvoir être adopté en 1997, un tel protocole devrait être élaboré dans le cadre d'un processus de négociation susceptible de durer jusqu'à deux ans.

6. L'Union européenne réaffirme donc que la première conférence des parties devra au moins définir le mandat de négociation d'un protocole, en précisant un délai pour sa conclusion. L'Union européenne a déjà commencé à examiner les mesures qui pourraient contribuer à limiter et à réduire les émissions de gaz à effet de serre pour la période après l'an 2000.

7. L'Union européenne estime souhaitable, à la lumière des discussions menées au sein du CIN 11, que le mandat à définir par la première conférence des parties contienne en particulier les éléments-clés ci-après.

   a) Mise en place d'une deuxième étape en vue de la réalisation de l'objectif ultime de la convention.

b) Création, sous l'égide de la conférence des parties, d'un groupe ad hoc spécial, qui sera chargé d'élaborer un protocole auquel puissent adhérer autant de parties que possible, en se fondant sur les principes de l'article 3 de la Convention-cadre sur les changements climatiques et sur les conclusions de l'IPCC, y compris son deuxième rapport d'évaluation. La proposition de protocole présentée par l'AOSIS et les suggestions de la délégation allemande feront également partie des négociations.

c) Rapport du groupe ad hoc à la deuxième conférence des parties sur l'état des négociations relatives au protocole ; conclusion des négociations six mois avant la troisième conférence des parties afin de permettre l'adoption de ce protocole lors de cette conférence.

d) Inclusion dans le programme de travail du groupe ad hoc, en coopération avec les autres organes subsidiaires, d'une analyse ou d'une évaluation visant à définir les possibilités ainsi que les politiques et mesures qui permettraient de limiter et de réduire les émissions de gaz à effet de serre.

8. L'Union européenne a préparé un certain nombre d'éléments-clés dont nous pensons qu'ils pourraient constituer la base d'un mandat pour la négociation d'un protocole. Ces éléments-clés sont joints à la présente déclaration, qui est disponible dans la salle de réunion.

Eléments-clés à examiner en vue de leur inclusion dans le protocole

i) caractère global du protocole, qui couvrira tous les gaz à effet de serre, leurs sources et puits et tous les secteurs concernés ;

ii) responsabilités communes mais différenciées des parties en fonction de leurs capacités et possibilités respectives :

- responsabilité première des parties visées à l'annexe I qui prendront, individuellement ou conjointement, des engagements spécifiques renforçant et élargissant les engagements pris au titre de l'article 4 paragraphe 2 points a) et b) de la convention ;

- participation à terme des parties non visées à l'annexe I conformément à l'article 4 paragraphe 2 points f) et g) ; mise en place d'un cadre aboutissant à l'élaboration de formules durables de développement économique qui garantissent une croissance économique soutenue tout en limitant l'augmentation des émissions de gaz à effet de serre;

iii) approche combinée incluant à la fois des politiques et des mesures ainsi que des objectifs et des échéances, telles que 2005 et 2010, compte tenu des différences quant au point de départ et à l'approche, à la structure économique et à la base de ressources, comme indiqué à l'article 4 paragraphe 2 point a) ;

iv) politiques et mesures coordonnées concernant le CO_2 et d'autres gaz à effet de serre, en particulier dans les domaines où une coordination au niveau international est requise pour des motifs de compétitivité, la priorité étant accordée aux mesures suivantes :

- mesures liées à la compétitivité,

- mesures concernant les secteurs industriels à vocation mondiale,

- mesures dans des secteurs où les décisions prises peuvent avoir des effets négatifs à long terme sur les changements climatiques,

- mesures relatives aux produits commercialisables,

en particulier lorsque ces mesures visent :

* des émissions ou puits, potentiels ou existants, mondialement importants de gaz à effet de serre,

* des avantages potentiels importants lors du traitement d'autres problèmes,

* des mesures supplémentaires potentielles destinées à améliorer le rendement énergétique,

étant entendu qu'il sera tenu compte entre autres, d'une manière appropriée, de la liste indicative des politiques et mesures possibles figurant à l'annexe des présentes conclusions ;

v) examen régulier des engagements relatifs à la limitation et à la réduction des émissions de gaz à effet de serre ;

vi) dispositions visant à coordonner et à échanger l'expérience en matière de politiques et de mesures nationales dans des domaines d'intérêt, notamment ceux identifiés dans les rapports d'examen et de synthèse comme contribuant de manière significative aux émissions de gaz à effet de serre ;

vii) dispositions relatives à l'accès du public aux informations sur la consommation d'énergie et sur les politiques nationales, aux instituts régionaux chargés de la promotion d'une utilisation rationnelle de l'énergie et à l'étiquetage en matière d'énergie.

ANNEXE

Liste indicative des politiques et mesures possibles

Mesures relatives à l'utilisation de l'énergie et au CO_2

- recours à des instruments économiques, y compris des mesures fiscales telles que la taxation énergie/CO_2, et suppression des facteurs allant à l'encontre d'une utilisation efficace de l'énergie ;
- émissions de CO_2 provenant des grandes installations de combustion ;
- consommation énergétique des appareils ménagers ;
- isolation thermique des bâtiments ;
- émissions de CO_2 provenant des secteurs industriels grands consommateurs d'énergie ;
- émissions de CO_2 et d'autres gaz à effet de serre provenant des véhicules et, plus généralement, du secteur des transports terrestres ;
- émissions de CO_2 et d'autres gaz à effet de serre provenant du secteur des transports internationaux et, plus particulièrement, des avions et des bateaux ;
- promotion de l'utilisation de sources d'énergie nouvelles et renouvelables ;
- stockage du carbone dans les forêts.

Mesures relatives au CH_4

- limitation des émissions de CH_4 provenant de l'extraction et du transport du charbon et du gaz ;
- limitation des émissions de CH_4 provenant de l'élimination des déchets.

Mesures relatives au N_2O

- émissions de N_2O provenant de certains procédés industriels (acide adipique, acide nitrique,...) ;
- émissions de N_2O liées à l'utilisation d'engrais.

Mesures relatives aux HFC et aux PFC

- limitation des émissions de HFC et de PFC grâce à une optimisation de leur utilisation dans toutes les activités, entre autres dans les systèmes de réfrigération et de conditionnement d'air.

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Ad Hoc Group on the Berlin Mandate

First Session

STATEMENT

by

Cornelia Quennet-Thielen

German Delegation

Geneva, 21 - 25 August 1995

22 August 1995

Check against delivery

Mr Chairman,

I.

First of all, please allow me to pass on the best wishes of the German Environment Minister Dr Angela Merkel for the successful work of this newly set-up ad hoc group of the Conference of the Parties and for cooperation based on good faith between all the delegations from governments, international organisations and institutions as well as the non-governmental organisations. Minister Merkel is well aware of the responsibility assumed by Germany in hosting the First Conference of the Parties in Berlin and of the responsibility she herself bears as President of the Conference. She will continue unstintingly in her efforts to ensure that this negotiating process leads to an ambitious protocol or other legal instrument on the further limitation and reduction of greenhouse gas emissions that the Contracting Parties will negotiate and adopt at the Third Conference of the Parties in 1997.

II.

Mr. Chairman, the German delegation is very happy to see you in the chair again. We have profited from your leadership qualities in the past and we are sure we will need them in the two years of negotiations ahead of us. The German delegation is looking forward to good and successful cooperation with you and your future bureau. We are also pleased to see in this ad hoc group so many familiar faces. The experience, esteem and trust that we have developed with and for each other will be essential in our future work. At the same time, I am sure that all our new colleagues will quickly become members of the international "climate family" and their fresh ideas and new concepts will ensure that the process stays innovative and creative.

III.

Germany fully supports the statement of the European Union as presented earlier by the Spanish delegation. Let me just stress some points:

At the First Conference of the Parties in Berlin the Contracting Parties to the Framework Convention on Climate Change set up this subsidiary body and gave it a commission that is highly demanding from the point of view of substance and time, namely the Berlin Mandate. We all know how difficult the negotiations for this Mandate

were. They were successful only because the necessary willingness for agreement on a balanced compromise was present on all sides. That is precisely the reason why we feel it is essential that we start the work in this group with the clear and unambiguous understanding: the Berlin Mandate with all its elements is the basis and commitment of our joint work. We must conduct our negotiations in the next two years according to the wording and in the spirit of this Mandate.

IV.

At this 1st meeting we are concerned with creating the organisational and structural conditions for targeted and success-oriented work. We thank the secretariat for document no 1 which contains useful proposals, ideas and questions which we will return to individually in the course of this meeting. First of all let me develop a few basic considerations:

1. The climate protocol or other legal instrument should further implement and develop the Framework Convention on Climate Change, particularly by means of strengthening commitments for the Annex I Parties above and beyond Article 4, paragraph 2 (a) and (b) of the Convention as well as continue to advance the implementation of the existing commitments of all Contracting Parties from Article 4, paragraph 1. The drawing up of such a new instrument should keep us focused on the short and long term perspectives: in the short term we have to determine the next step towards the limitation and reduction of greenhouse gas emissions for the period after 2000. In the long term we should create a suitable mechanism for many further steps towards continuous implementation and further development of the Framework Convention on Climate Change with the aim of achieving the ambitious ultimate objective of Article 2 of the Convention. The work programme of the AGBM must take appropriate account of both of these aspects.

2. Our work programme must implement the elements of the Berlin Mandate. Our top priority is the strengthening of the commitments of the Annex I Parties by means of the combined setting of policies and measures as well as quantified limitation and reduction objectives within specified time-frames such as 2005, 2010 and 2020. Federal Chancellor Kohl stated this quite categorically in Berlin: In view of the high energy consumption and considerable emission of climate-damaging greenhouse gases in the industrialised nations, it is these countries which are called upon to take the first step. We must meet our special responsibility for protecting the global climate.

3. Policies and Measures:

Together with our partners in the European Union we have always been committed to agreeing on coordinated policies and measures - that is to say policies and measures to be taken by all Annex I Parties. We feel that a purely optional menu would not justify the tremendous effort associated with the identification and negotiation of policies and measures for a legal instrument. The considerable time involved also requires that we start with a limited number of particularly promising priority areas. We feel that these are areas in which measures would only be taken, can only realistically be expected or only promise success if they are implemented jointly on an international level. A few examples of this are the taxing of aircraft fuel, efficiency standards and labelling for products such as cars as well as economic instruments.

Under no circumstances does this mean that the Contracting Parties should be discouraged from implementing the entire spectrum of possible measures in their national programmes. It will be much rather the case that, above and beyond measures, which are coordinated at an international level, many other policies and measures will be indispensable in order to achieve ambitious quantified limitation and reduction objectives within the meaning of Article 2 of the Convention. However, we feel it is wise here to give countries the flexibility to choose the most suitable and effective measures in accordance with their specific national situation. The common strategy of the European Union is a good example of this two-track procedure.

4. Quantified limitation and reduction objectives

- According to the Berlin Mandate, objectives of this nature must be agreed as a second element alongside these policies and measures. Establishing desirable medium- and long-term objectives in emission reductions sets a clear framework for the development and implementation of national and regional programmes on precautionary action for climate protection and allow policy makers and other actors to optimize the range of available measures.

- The national target of the German government is well-known. Federal Chancellor Kohl reaffirmed this in Berlin when he said that Germany remains committed to reducing the 1990 level of its CO_2 emissions by 25% by the year 2005. Moreover, as early as its first National Communications under the Framework Convention on Climate Change

of September 1994, the Federal Government made it clear that it is aiming to reduce all climate-related emissions (including the gases not covered by the Framework Convention on Climate Change but controlled by the Montreal Protocol) - converted into CO_2 equivalents - by a factor of 50% by the year 2005 - in comparison to 1987. In comparison to the base year of 1990 this corresponds to a target reduction of some 40%.

The Federal Government is currently further developing its national reduction targets for the period beyond 2005. In view of our ambitious national targets, it is natural that the German concepts for quantified limitation and reduction objectives for the Annex I Parties in a protocol or other legal instrument will also be quite ambitious.

- When setting our work programme with regard to quantified limitation and reduction objectives we must take many questions into account. Let me just mention a few:

  * How do we implement the comprehensive approach of the Framework Convention on Climate Change? An overall objective for greenhouse gases not controlled by the Montreal Protocol or by setting objectives for each individual gas? The German delegation's preference for quantified objectives to be set for individual gases is well known. Obviously this is not possible for all gases at the same time. However, for a number of gases the existing data should be sufficient for objectives to be set by the time of the Third Conference of the Parties. In addition to CO_2, these could intitially be CH_4, N_2O, PFCs and HFCs.

    We feel that even an overall objective will only be able to relate to a specifically defined list of gases owing to the varying degrees of scientific knowledge and data availability with regard to the different greenhouse gases.

  * How can quantified limitation and reduction objectives for Annex I Parties take appropriate account of the different national conditions and starting points?

5. Analysis and assessment:

The Berlin Mandate states that the process will include in its early stages an analysis and assessment to identify possible policies and measures for Annex I Parties, to identify environmental and economic impacts and the results that could be achieved with regard to time horizons such as 2005, 2010 and 2020. There is not very much time until the Third Conference of the Parties in 1997. We therefore do not think it is acceptable to limit ourselves initially to analysis and assessment. Furthermore, the Berlin Mandate states clearly that this analysis and assessment is not a phase preceeding the negotiations. Germany is absolutely convinced that it is high time to start negotiations on concrete policies and measures as well as quantified limitation and reduction objectives for the Annex I Parties. In 1997 we must take decisions on an ambitious policy to protect the climate system beyond the year 2000.

In this connection we have recourse to a plethora of existing scientific, technical, social and economic information on the analysis and assessment: many national and international institutions and organisations have conducted outstanding work in this field. IPCC, UNEP, the International Standards Organisation (ISO), OECD, IEA and the United Nations Economic Commission for Europe (ECE) are just a few international examples. In Germany over eight years the Study Commission on Preventive Measures to Protect the Earth's Atmosphere of the German parliament in particular has contributed comprehensive analyses and assessments that are applicable far beyond the national area. This also applies to the IKARUS system (instruments for climate gas reduction strategies) developed within the context of our national programme, which can be used for detailed estimates of the effects of various policies, measures and techniques on greenhouse gas emissions.

Above and beyond this we should draw on the information and work in the whole machinery of the Convention. We have a comprehensive process of reporting and of reviewing reports. Both subsidiary bodies, SBSTA and SBI, will have numerous tasks in their work programme which are of great value to the negotiations in the AGBM. The intergovernmental technical advisory panels on methodologies and technologies currently under discussion can also contribute to the work of the AGBM. We must make best use of them and avoid duplicating our work.

We support the proposal that the Secretariat be commissioned to prepare an annotated compilation of the available information of this nature in due time before the next meeting of the AGBM in October (as with INC Document A/AC 237/83 on the adequacy of commitments). We request all Parties involved - the national delegations, the relevant international organisations and institutions as well as the non-governmental organisations - to identify suitable material, to make it available and to continue and strengthen their current work on these matters.

We should also consider asking SBSTA and SBI relevant questions e.g. concerning further analysis and assessment as well as relevant conclusions from Annex I communications already available and reviewed.

At the same time we should all see it as our priority to intensify our national analyses and assessments already associated with the development of the national programmes under the Convention and to incorporate policies and measures as well as limitation and reduction objectives for the stated time frames after the year 2000. We need to do that homework urgently to be well prepared.

If all these options are used, analysis and assessment can go hand in hand with negotiations without any problems whatsoever in the early stages of our work and be completed rather expeditiously.

Mr Chairman,

These were the first considerations of Germany with regard to the implementation of the Berlin Mandate in this new working group.

We might well come back to individual questions, as raised in the Secretariat's document or brought forward by other delegations in the course of our meeting.

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Ad Hoc Group on the Berlin Mandate

First Session

STATEMENT No 2

by

Cornelia Quennet-Thielen

German Delegation

Geneva, 21 - 25 August 1995

23 August 1995

Mr. Chairman,

I did not intend to take the floor on this item as I already explained our considerations on inputs into future work in my statement yesterday. However, having listened carefully to our Chinese colleague this morning, I recognized that there still remain considerable doubts or misunderstandings about the German position regarding a very crucial issue. Therefore I would like to ask your indulgence, Mr. Chairman, for taking the floor and clarifying this issue.

In our statement yesterday I expressed the firm position of my country strictly to respect the Berlin Mandate and its different elements and appealed to others to do the same. We have decided in Berlin upon a clear task for the Ad Hoc Group: to strengthen the commitments in Art. 4.2 a) and b) of Annex I Parties by elaborating policies and measures as well as quantified limitation and reduction objectives for these Annex I Parties without introducing any new commitments for Non Annex I Parties, while reaffirming existing commitments in Art. 4.1 and continuing to advance the implementation of these commitments. That for us is the basis and commitment for our future work.

Already in Berlin we have fully subscribed to this balanced compromise and my colleagues have repeatedly expressed this in the negotiating group under Ambassador Kjellen's chairmanship. But obviously not all doubts could be removed. So let me clarify again:

The German element paper submitted in September last year is outdated insofar as it was addressing possible commitments to be undertaken by a certain category of developing countries. I fully understand the confusion that prevails, as the elements paper is still referred to by many delegations. We understand this reference being directed to a different part of that paper, namely its section II which lists a comprehensive basket of policies and measures for Annex I Parties. These policies and measures mentioned in section II are still seen by many delegations, as well as by ourselves as a useful input for negotiating the new commitments of Annex I Parties. I hope that this clarification and explicit dissociation is now fully understood by all our friends and colleagues, especially in the developing world. May I express my thanks through you, Mr. Chairman, to my Chinese colleague for the affirmation he already gave me bilaterally that he is now fully aware of our position and that his concerns are removed.

PAPER NO. 5: ICELAND

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4.9.1995

Letter from the Secretary General, Ministry for the Environment of Iceland, to the secretariat of the UNFCCC

Ref.: Contribution of views by Parties on the implementation of the Berliner Mandate - request from the Bureau of the COP.

The Government of Iceland has considered the request made by the Bureau of the first Convention of the Parties (COP1) for the Framework Convention on Climate Change (FCCC) concerning views on the implementation of the Berliner Mandate.

The Icelandic Government acknowledges that the commitments by Annex I parties to reduce greenhouse gases to their 1990 level by the year 2000 are not sufficient for achieving the objectives expressed in Article 2 of the Convention. A successful implementation of the Berliner Mandate is therefore of great importance and Iceland will actively participate in the negotiation process, with the aim of reaching an agreement within the time-frame laid down in the decision taken at COP1.

The negotiation process should be organised in a flexible manner in order to ensure that is possible to take into consideration the development of the coming year's international discussion about Climate Change. The conclusions of the first meeting of the Ac-hoc Group on the Berliner Mandate appears to yield such flexibility.

Iceland would like to underline the importance of thorough analysis and assessment of the alternative actions that the Parties might want to discuss during the negotiations, including proposals presented at COP1 in Berlin. An emphasis on analysis and assessment is imperative in order to establish a credible process and it is clearly in line with the Berliner Mandate. In particular, an effort should be made to identify the policies and measures which are most effective when implemented collectively. However, due to the time constraint, one should draw on existing work and avoid unnecessary detailed analysis. It is clear that many national and international institutions and organisations have conducted outstanding work in

this field, which should be used for this purpose. Further, analysis and assessment should not be completely separated from the negotiations but must be viewed as an integral part of the negotiations, especially after the results of the Intergovernmental Panel on Climate Change (IPCC) second assessment report have been made available. Iceland, in accordance with the conclusions of the first meeting of the Ad-hoc Group on the Berliner Mandate (AGBM-1), will be presenting a list of issues that it finds necessary to clarify through analysis and assessment.

In view of the difficulties the Parties had in reaching an agreement on the FCCC and the many delicate compromises that had to be made in the process, it is Iceland's opinion that the current negotiation process should be aimed at establishing a protocol to the existing Convention.

It is clear that the negotiations will at some stage focus on a number of questions related to quantified limitations of greenhouse gases. One of the main issues in this context is whether limitations should be based on quantified objectives for individual gases or an overall objective for greenhouse gases. We would like to make it clear that Iceland has a preference for an overall objective for greenhouse gases, including CO2, CH4, N2O and CF4. We find that an overall objective is more in line with the aim of the FCCC than quantified objectives for individual gases. This approach, however, implies that more work has to be done with the aim of improving the scientific basis for aggregating the data for the different greenhouse gases.

Finally, with reference to article 4.2 (a) in the FCCC, we would like to express our concerns about the need to take into consideration special national conditions and different starting points. Iceland relies almost solely on renewable energy sources for stationary energy production. The possibilities for utilising renewable energy sources for this purpose have almost been fully exploited, and were so long before year 1990. However, to due the geographical size of the country as well as the relative importance of fishing sector, emissions from transportation and fishing operations are relatively high per capita. Here, the possibilities for quantitative reduction are limited by the present technology. These particular conditions are among the issues Iceland would like to address during the negotiations.

PAPER NO. 6: JAPAN

JAPAN'S VIEW
THE IMPLEMENTATION OF THE BERLIN MANDATE

1. The Government of Japan is willing to make every effort to successfully conclude the Berlin Mandate, and to adopt, at the COP3, a protocol or another legal instrument. The Government of Japan has already started exploring possible elements to be included in such instruments and will provide the next session of the AGBM (October 1995) with the explored elements, in addition to the preliminary comments below.

2. Preliminary comments

International negotiation on legal instruments should be undertaken in a constructive manner, attaching great importance to the following points:

(1)(a) To reflect appropriately the principles stipulated by Article 3 of FCCC, and

(b) "Taking into account the differences in these Parties' starting points and approaches, economic structures and resource bases, the need to maintain strong and sustainable economic growth, available technologies and other individual circumstances, as well as the need for equitable and appropriate contributions by each of these Parties to the global effort regarding that objective," as is provided for in Article 4.2(a) of FCCC.

(2) "Not introduce any new commitments for non-Annex I Parties," as stipulated in the Berlin Mandate 2(b).

(3) Such *modus operandi* that AG/BM and COP elaborate the existing commitments in Article 4.1 of FCCC and that, within the framework of Article 4.1, measures are taken by each party, which contribute to achievement of the ultimate objective of FCCC.

(4) The pursuit of a common understanding among all Parties, including non-Annex I Parties, regarding legal instruments should be developed on the basis of (a) a common, proper evaluation of past efforts and achievements of Annex I Parties, (b) on-going efforts by these countries to implement their commitments within the Convention, and (c) Annex

I Parties' exposition of their will to take the lead in making further efforts.

(5) Internationally comparative analysis of the state and effectiveness of policies and measures concerning each of the sectors such as industrial, residential and commercial, transport etc., taken by individual Annex I Parties, should be conducted at the subsidiary bodies, based upon national communication from each party, in-depth review, OECD/IEA joint project etc. Quantified limitation and reduction objective needs to be set based upon this analysis as well as the study by IPCC obtained through the subsidiary bodies, which provides the GHG emissions scientifically necessary to arrest the global warming.

(6) Further consideration and elaboration is required for Activities Implementation Jointly (AIJ) and for technology innovation, dissemination, and transfer, including how these should be referred to within the legal instruments.

3.With a view to facilitating international agreement on legal instruments, it is also important for each party to take a domestic action such as the formulation of appropriate administrative systems and the elaboration of policies and measures to arrest global warming.

In this regard, the Government of Japan is endeavoring to strengthen its policies and measures, as mentioned in the Annex attached.

4. Following the conclusions at SBSTA 1, Japan's comments on (a)report framework of Activities Implementation Jointly and (b) national communications of non-Annex I parties, will be provided by November 15.

ANNEX

Currently, Climate Change is one of the most important issues to the Government of Japan in developing national policy.

1. In October 1990 the Government of Japan established an Action Program To Arrest Global Warming by a decision of the Council of Ministers for Global Environment Conservation.
The targets of the Action Program are as follows:

(1) The emissions of CO2 should be stabilized on a per capita basis in the year 2000 and beyond at about the same level as in 1990, by steadily implementing a wide range of measures under this Action Program, as they become feasible, through the utmost efforts by both the government and private sectors.

(2) Efforts should also be made, along with the measures above, to stabilize the total amount of CO2 emission in the year 2000 and beyond at about the same level as in 1990, through progress in the development of innovate technologies, etc., including those related to solar, hydrogen and other new energies as well as fixation of CO2 at the pace and in the scale greater than currently predicted.

2. Japan has been promoting various measures, and strengthening policies including those which materialized according to the Action Program to Arrest Global Warming.

The following are recent development of the policies and measures on Climate Change issue in Japan.

(1) The Basic Environment Plan was decided by the Cabinet of the Government of Japan based on the Basic Environment Law in December 1994. The plan articulates policy direction on the Climate Change issue:

Ultimate objective is the same with that of the United Nations Framework Convention on Climate Change, i.e. "stabilization of greenhouse gas concentrations in the atmosphere to a level that would prevent dangerous anthropogenic interference with the climate system."

In the medium term, Japan will make further efforts to promote various measures in cooperation with other countries as well as to the formulation of the new international framework to arrest global warming.

For the time being, we will aim at attaining the goal of Action Program.

We will continue to promote various measures in the Program,

monitoring the status of implementation and fully taking into account new scientific knowledge.

(2) Formulation of the Action Plan For Greening Government Operation.
The Action Plan for Greening Government Operation was decided by the Cabinet in June 1995.
In the Plan it is decide that the Government should play a leading role in environment-friendly actions in the State and to limit CO2 emission from administrative works, to promote using recycled paper, and to introduce energy efficient equipment and low-pollution-emission vehicles etc.

(3) Major measures newly introduced in 1994-1995.
・Inclusion of some equipments such as computer etc. into specified equipment controlled under the Law Concerning Rational Use of Energy.
・Inclusion of electric power generation burning refuse-derived fuel as an object for issuing local bonds by local public authorities.
・Subsidies for installation of solar energy systems in private houses.
・Enactment of the Law for the Promotion of Sorted Collection and Valorization of Packaging Waste.

3. In addition to above mentioned measures, in order to contribute to the international discussion, particular, that of AG/BM, the Government of Japan has started examining countermeasures to arrest global warming beyond 2000 , by investigating possible countermeasures which will be taken by itself.

4. With regard to Japan's assistance to developing countries in this area, developing the measures of these countries to arrest global warming by holding the Asian-Pacific Seminars on Climate Change in order to disseminate the guideline of the inventory of greenhouse gas emissions and absorption(Up to now, four seminars were organized, in which 25 countries participated.), and also holding International conference on Climate Change in Asian-Pacific region concern sealevel rising from global warming.

Japan also has been assisting developing countries to create individual national strategies for counteracting global warming. Research to develop the strategy has been completed in two countries and is underway in two countries.

PAPER NO. 7: NETHERLANDS

STATEMENT OF THE NETHERLANDS ON AGENDA ITEM 3 (D) "INPUTS TO SUBSEQUENT SESSIONS OF THE AGBM"

In addition to the statement made by Spain on behalf of the European Union and the EU paper on this subject that was circulated - that we of course fully support - I would like to make a few comments on the issue of inputs to the negotiating process, highlighting some elements of the table of inputs as proposed by the EU. As most of these inputs will be the result of analytical or assessment activities I will touch upon the organisation of the analysis and assessment as well.

Focus

Inputs into the AGBM process should be focused on the key issues to be dealt with. And those key issues are clearly spelled out in the Berlin Mandate, namely:

- elaboration of policies and measures for Annex-1 Parties,
- setting of quantified limitation and reduction objectives within specified time-frames for Annex-1 parties,
- continued advancement of the implementation of existing commitments of art. 4.1.

If we want to make the best use of our limited resources and available time, the information to be collected as the basis for the negotiations should be focused on the main questions regarding those three key items. Questions on how to identify policies and measures to be dealt with in the protocol and how to set objectives and time frames. Analysis and assessment should not deal with the question whether objectives and time frames are necessary and/or effective. The Berlin Mandate has already answered that question clearly.

Consideration of the third element of the Berlin Mandate, namely the advancement of the implementation of the existing general commitments, would benefit greatly from inputs that focus on the diffusion and application of technology. In setting their development priorities, the technology choices made by countries have a major impact on the future emissions of greenhouse gases.

Inputs to be provided by SBSTA and SBI

Using the work of SBSTA and SBI to provide inputs into AGBM is receiving broad support. I would particularly like to highlight the importance of also using the intergovernmental technical panels that SBSTA is going to set up. These panels, if set up carefully, would enable us to generate sector specific information regarding policies and measures in those sectors where the priority of coordinated or harmonised action in the context of a protocol should lie.

In our opinion those priority sectors would be:

- internationally traded products such as automobiles and appliances
- internationally oriented energy intensive industrial processes such as steel, aluminum and chemicals manufacturing
- HFC and PFC use (see also our proposals for guidelines on fluorocarbons in FCCC/CP/1995/Misc.1 @ 45)
- airline and marine shipping industries

If the AGBM needs that kind of sector specific information - and I am convinced it will if it wants to address the issue of coordinated policies and measures adequately - then SBSTA should take the AGBM requirements into account. In other words, the work of the panels should be narrowly focused on those sectors that AGBM identifies as priority areas and they should bring together the real experts in those sectors. AGBM will have to ask SBSTA to act accordingly.

We can fully support the remarks made by the representative of Brazil on the contribution IPCC could make via SBSTA to the work of AGBM based on requests from Convention bodies to the IPCC. Also the suggestion on requesting a methodology to determine contribution of countries to the problem of climate change is a very interesting one.

With respect to the US suggestion, to set up a special panel on inputs regarding the global emission trends, I would like to point to the decision 6 of CoP-1 that clearly specifies that as a task for SBSTA.

Inputs based on available information

A lot of relevant information on possible policies and measures for Annex-1 countries and their technical and economic aspects is available from analyses that were already done or are currently in progress outside of the Convention machinery. The ongoing OECD/IEA Common Actions study is particularly relevant, because it provides a useful classification of policies and measures in 3 categories:

1. policies and measures that are decided at the national level,
2. policies and measures that will benefit from a certain coordination between (groups of) countries,
3. policies and measures that will only be undertaken if agreed internationally.

As a protocol will have to focus predominantly on categories 2 and 3 it does not make sense to provide the AGBM with a lot of information on policies and measures that are primarily decided at the national level apart from the information available from the review of the national communications, especially potentially replicable measures. The AGBM should focus on provisions, to be included in the protocol, to enable the exchange of experience with national policies and measures between Parties.

Priority issues to be dealt with in our opinion are the use of economic instruments as well as the issues mentioned above in connection with the technical panels.

Inputs based on additional work to be performed

Some additional analytical work will have to be undertaken to supplement the input from SBSTA/SBI and the input based on available information. In the EU paper there is a separate section devoted to this. For instance, to allow AGBM to deal with the formulation of objectives and time frames an assessment of possible alternatives for objectives and the consequences for achieving the ultimate objective of the Convention will be required. The use of collective targets, such as for the group of Annex-I countries, should in our opinion be a prominent feature of such an assessment, because it would allow a least cost strategy to be followed, that could drastically reduce the costs for all Parties involved. That is, if the accompanying issue of a fair distribution of the costs can be resolved (also to be addressed in the analysis). Collective objectives could take the form of:

- a % reduction per year (say 1-2% per year after 2000),
- a % reduction by a certain year,
- a cap of global emissions through Annex-1 action or - something different.

Other approaches to be looked at could include:

- the idea of emission budgets for a certain period of time as opposed to an annual emission milestone or
- a combination of a collective absolute target with individual reductions applying to an emissions trend rather than a base year.

Also the use of objectives such as energy efficiency improvement objectives or objectives regarding the % renewable energy should be investigated as a supplement to the use of objectives regarding emission levels.

On the policies and measures side it is likely that some additional work will be necessary on the potential in terms of emission reduction, because available studies are somewhat limited in this respect.

For the synthesis of policies and measures and the accompanying objectives and time frames we would like to emphasize the need to perform analyses using so called integrated assessment models. There is a family of those comprehensive models available now (see also the IPCC Working Group III report) that have the potential to support the negotiations via comparisons of various different combinations of policies and objectives. Aspects like costs, effectiveness in controlling greenhouse gas concentrations and effectiveness in mitigating adverse impacts of climate change can be evaluated through such exercises.

The AGBM would have to ensure that an appropriate organisational framework for these additional analytical and assessment activities is found. Given the full agenda of SBSTA it is unlikely that it will be able to deliver such information in time. A specific arrangement in the context of the AGBM would therefore be required. The Secretariat could make a compilation of ideas submitted by Parties on such an arrangement for the second AGBM meeting.

PAPER NO. 8: NORWAY

SUBMISSION BY THE GOVERNMENT OF NORWAY ON THE IMPLEMENTATION OF THE BERLIN MANDATE, INCLUDING THE NORWEGIAN VIEW ON ISSUES THAT WOULD BENEFIT FROM ANALYSIS AND ASSESSMENT

With reference to the Berlin Mandate, section III, paragraph 4, The Government of Norway is of the opinion that a thorough analysis and assessment phase is clearly needed. In this respect, we would like to focus on particularly two important aspects that would benefit from further analysis and assessment: (i) The need for equitable and appropriate contributions by each of the Parties and (ii) The need for cost-effective, coordinated economic instruments. In addition we address the need for more information regarding voluntary agreements.

(i) The need for equitable and appropriate contributions by each of the Parties

Norway has earlier referred to the need for an "equitable burdensharing" in developing further the commitments under the Convention. Similarly, other delegations have addressed the need for "a fair distribution of the costs for all Parties involved" in order to establish a level playing field. This point of departure, moreover, represents an important part of the foundation on which the main objectives of the AGBM process is based. According to paragraph 2 (a) of the Berlin Mandate, the process shall take into account "the differences in starting points and approaches, economic structures and resource base, ..., as well as the need for equitable and appropriate contributions by each of these Parties to the global effort...."

Henceforth, a paramount challenge ahead of us will be to operationalize this clause of the Berlin Mandate.

The Government of Norway has advocated a common emission target for a group of Parties, such as the OECD, which is to be achieved through "equitable and appropriate contributions by each of these Parties". In practical terms this would mean that the emission targets for each of the Parties would be differentiated on the basis of their "differences in starting points and approaches, economic structures and resource bases".

An analogy to such an approach is found in the Sulphur Protocol adopted in 1994 under the UNECE Convention on Long Range Transboundary Air Pollution, where the commitments for the respective Parties are differentiated on the basis of, i.a., the natural environment's critical loads. With respect to climate change, where the effects of emissions largely are unrelated to where they occur, the idea of a fair distribution of costs suggests that the "critical economic loads" would be an appropriate point of departure. In other words, commitments under a Protocol or other legal instrument should be differentiated among the Parties in emission terms. In terms of total economic loads, however, there should be no differentiation among the Parties which are part of the common emission target.

Thus, an important task of the analysis and assessment phase will be to elaborate further the concept of *equitable and appropriate contributions* (or *fair distribution of costs* or *burdensharing* or whatever label one chooses to address this pivotal issue).

In our opinion, it would in this respect be useful to draw on the competence of the OECD. OECD should be requested by the AGBM to extend its work in this field (GREEEN- model work, Common Action project) and initiate a project particularly related to the costs of action in different countries.

Norway would certainly like to contribute to the further process on this issue. We are on a national level preparing some projects with the aim to identify potential challenges related to the idea of "burdensharing"/"a fair distribution of the costs," and suggestions as to how these challenges could be met. Two pre-studies have been carried out by two Norwegian institutions, ECON Energy and CICERO (Center for International Climate and Environmental Research). (Report no. 305/95 "Burden sharing in climate policy: Survey of abatement cost studies" and Working Paper 1995:2 "Aspects of burden-sharing of common action to mitigate climate change"). A third pre-study, "The political feasibility of introducing the concept of "critical economic loads" in burden sharing discussions between OECD countries," carried out by The Fridtjof Nansen Institute, Norway, will soon be finalized.

We are enclosing the outline of a more extensive project on "Exploring distribution of commitments- a follow-up to the Berlin mandate" being prepared by CICERO. We will do our best to ensure that relevant working papers as well as the main report will be finalized in due time to be a useful input in the AGBM- process.

(ii) The need for cost-effective, coordinated economic instruments

The Berlin Mandate specificly asks that consideration be given to the possibilities for coordinating policy instruments (section II, paragraph 2d). In the Norwegian view, the need for cost-effective measures is the main reason why coordinated economic instruments as well as the concept activities implemented jointly (AIJ) will be of importance in a new agreement. In this respect, **we would like to refer to the work being carried out for Annex I countries by the Joint OECD/IEA project on national communications relating to Policies and measures for "common action." The AGBM should carefully go through the outline of this work in parallell with considering the need for additional projects in this field, carried out in cooperation wth the OECD or other institutions.**

Norway introduced a specific CO_2 tax in 1991. Certain changes in rates and bases have been made since the introduction, due partly to environmental concerns, but mainly due to the competitiveness of Norwegian industry. In this respect, the development of Norwegian CO_2 taxes may illustrate the problem of a small open economy trying to be in the fore-front in applying economic instruments for environmental protection. If other countries do not follow suit in imposing CO_2 taxes, it would obviously affect the cost competitiveness of the country imposing

them unilaterally. If that results in polluting activities moving to other countries, so called carbon leakage, global emissions would not be reduced. Thus, the phasing in of taxes determined to reduce emissions of greenhouse gases in small open economies like Norway's, must in the long term be coordinated with what other countries do.

For further information, we are enclosing an updated paper on the Norwegian experience with carbon taxes (from Ministry of Environment) and a preliminary summary of a study of the effect of the CO_2 tax on Norwegian emissions of CO_2 1987-1993 (Report 95/14 by Statistics Norway 1995).

Focusing particularly on the energy marked, Norway would like to stress that more than 90% of the world energy consumption is provided by fossil fuels. Whereas oil is the most important of these, coal supplies about 30% of the total consumption and the world's consumption of coal is increasing. Natural gas supplies some 20% of the total. The dominant position of fossil fuels will continue into the next century.

The use of fossil fuels creates different environmental problems, both locally and globally. Both the level of energy consumption and the composition are affected by government policy. Energy taxes and administrative regulations play a decisive role in the energy markets. The background to energy policies and measures varies, as does the reasoning behind them. Security of supplies and environmental concerns are often listed as major considerations.

OECD studies show that a restructuring of existing energy taxes and subsidies would be cost effecient within climate change policy and result in reduced emissions. The studies carried out by the OECD also show that a replacement of the current biased taxation of energy with real green taxes which better reflect environmental costs, will change the existing energy-mix to one that is environmentally sounder, and will lead to higher consumption of oil at the expense of coal. Elimination of energy subsidies would also lead to a better mix, in addition to a cleaner environment.

The above mentioned considerations should be analysed in the further work of the AGBM. The application of national policies, including energy taxation, and their environmental effects as they relate to CO_2 and other greenhouse gas emissions would form an important basis for the elaborations to be carried out as part of the negotiation process.

(iii) The use of voluntary agreements

Taxation is a suitable means of limiting CO_2 emissions, both because there are many sources of emissions and because it is easy to define a tax base, since there is a clear relationship between emissions and the use of fossil fuels. In the Norwegian view, taxation is the instrument that should be used as a general rule to limit CO_2 emissions, both on administrative grounds and because it is most cost-effective. In the case of limiting emissions of other greenhouse gases, such as CH_4, N_2O, CF_4, C_2F_6 and SF_6, it is less clear which measures are most effective. The measures to

be implemented to limit emissions of these gases must therefore be carefully evaluated in each case.

The use of voluntary agreements and other measures than CO_2 taxes may also be useful instruments for achieving emission reductions for greenhouse gases.

Norway sees a need for further analyses and assessments related to voluntary agreements. Knowing that other countries have quite long experience with voluntary agreements, it would in this respect be useful if these countries could provide the AGBM with information regarding such agreements.

Attached:

- Outline of project on "Exploring distribution of commitments- a follow-up to the Berlin mandate," by CICERO, Oslo, Norway

- Paper on the Norwegian experience with carbon taxes (Ministry of Environment)

- Preliminary summary of a study of the effect of the CO_2 tax on Norwegian emissions of CO_2 1987-1993 (Report 95/14 by Statistics Norway 1995)

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14 September 1995

OUTLINE OF

EXPLORING DISTRIBUTION OF COMMITMENTS - A FOLLOW-UP TO THE BERLIN MANDATE

PROJECT BEING PREPARED FOR THE NORWEGIAN MINISTRY OF FINANCE AND MINISTRY OF ENVIRONMENT

THE AIM OF THE PROJECT

The distribution of commitments between participating countries will be a vital feature of any future protocol (or other legal instruments) to the Climate Convention, implying legally binding commitments for industrialized countries to reduce their net emissions of greenhouse gases. The project will study necessary prerequisites for such an agreement to be established, with the aim to identify potential problems and obstacles related to the distribution of commitments and costs between participating countries, and suggestions as to how these potential problems could be solved. A better understanding of these issues might contribute to the negotiation process on the Berlin mandate. Thus some of the inherent questions and problems of such negotiations should be handled and solved.

PROJECT FRAMEWORK

The project will be an analysis of prerequisites for establishing future protocols to the Climate Convention implying legally binding commitments for participating countries. The following five prerequisites are considered important:

1. Participation: number and type of countries (e.g. all OECD countries, or OECD countries and East European countries).

2. Global target: size of emissions reduction and total cost.

3. "Fairness" of cost distribution within the group of participating countries.
(Depends *inter alia* on preferences for various ethical systems, choice of coordinated policy option and implementation, willingness to pay for emissions reduction in various countries (which, *inter alia*, depends on expected climate change consequences for each country), and the level of development, e.g. measured as GDP per capita (less important within a group of similar countries.))

4. The level of cost-effectiveness, which is an important determinant for the total cost. (Depends *inter alia* on coordinated policy option choice and implementation.)

5. The level of uncertainty with respect to total cost, cost share, and future national climate change consequences. (Countries will be less willing to participate if they e.g. anticipate a relatively large probability of substantially higher costs to meet the future target.)

Our main hypothesis is that countries must find these five prerequisites satisfied to accept climate policy commitments implying considerable cost for participating countries. Consequently the key issue is to analyze how these prerequisites can be satisfied for the necessary number of countries, in particular within OECD.

THE PROJECT

The level of coordination between Annex I or Annex II Parties within the context of new commitments can vary from a common emissions target met through national commitments and national policy measures chosen by each country, to a more cost-effective agreement on a uniform carbon tax across the participating Parties. The former type of agreement is a more likely outcome of the negotiations on the Berlin mandate than the latter alternative.

The burden-sharing implications of the distribution of commitments and costs between participating countries can be analyzed in a static or dynamic setting. In a static setting the cost can be defined as the difference between the equilibrium GDP before and after the implementation of the climate policy. In a dynamic setting an option is to analyze the transition costs of the national economy from a situation before introduction of the coordinated climate policy to the new equilibrium situation after implementation of the climate policy.

The negotiation process on the distribution of commitments can be analyzed employing dynamic game theory with respect to global target, institutional arrangements, climate policy measures, and participation. The cost is commonly expressed in terms of loss of gross domestic product in each participating country, but other welfare measures and effects should be considered (e.g. change in national wealth or change in environmental indicators). Some examples involving OECD countries will be analyzed.

Considering other greenhouse gases than carbon dioxide raises the question of implications of employing Global Warming Potentials or more sophisticated model-based methods for comparing different long-lived and well-mixed greenhouse gases with respect to the radiative forcing of climate. Furthermore, the implications of introducing gases where the climate effect depends on the geographical location of the emissions, should be considered.

Time schedule

Project start	1 August 1995
Draft final report	1 April 1996
Final report	1 June 1996

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CARBON TAXES; NORWEGIAN EXPERIENCES

(Ministry of Environment, 1995)

On January 1, 1991, a specific CO_2-tax was introduced in Norway. The rates are high compared to similar taxes that are introduced or proposed by other countries and the EU; up to equivalents of 55 dollars pr ton of CO_2. Certain changes in rates and bases have been made since the introduction, due partly to environmental concerns but mainly due to the competetiveness of Norwegian industry. Roughly 60 per cent of Norwegian CO_2 emissions face CO_2 taxes while around 40 per cent is exempted at this stage

From 1989 to 1992, precipitation levels were high and there were large supplies of cheap hydropower. This, combined with lower economic activity and the introduction of CO_2-taxes, kept CO_2-emissions below the 1989 level. In 1993, emissions reached about the same level as in 1989, and in 1994 they increased further.

The development of Norwegian CO_2 taxes may illustrate the problem of a small open economy trying to be in the fore-front in applying economic instruments for environmental protection. A unilaterally introduced tax for a global purpose is under political pressure as long as other countries do not follow suit.

Status of the CO_2-tax

CO_2 taxes were introduced in Norway in 1991, and they are high compared to those in other countries. Such taxes of different scope and magnitude have to date only been introduced in Denmark, Finland, Holland and Sweden. Other countries have "green taxes" with different names.

Developments in Norway are shown in Table 1.

Table 1. Developments in the levels of Norwegian CO_2 taxes

	1991	1992	1993	1994	1995
Gasoline	0.60 NOK/litre	0.80 NOK/litre		0.82 NOK/litre	0.83 NOK/litre
Autodiesel etc.	0.30 NOK/litre		0.40 NOK/litre	0.41 NOK/litre*	0.415 NOK/litre
Gas in the North Sea	0.60 NOK/Sm3	0.80 NOK/Sm3		0.82 NOK/Sm3	0.83 NOK/Sm3
Oil in the North Sea	0.60 NOK/litre	0.80 NOK/litre		0.82 NOK/litre	0.83 NOK/litre
Mineral Oil	0.30 NOK/litre	0.30 NOK/litre	0.40 NOK/litre	0.41 NOK/litre	0.415 NOK/litre
Coal		0.30 NOK/kg	0.40 NOK/kg	0.41 NOK/kg	0.415 NOK/kg

* Caused by change in taxation system for autodiesel vehicles.
Source: Norwegian Ministry of Finance

As one can see, there has been little change since 1992. The main reason may be, aside from economic conditions in Norway, developments- or lack of developments - in other countries. Thus, in reality there is a limit to how much a small, open economy can be in front of others.

Mainly for reasons of competitiveness (and leakage effects), the criteria of harmonization across economic sectors has not been fully implemented. Roughly 60 per cent of Norwegian CO_2 emissions face CO_2 taxes while around 40 per cent is exempted at this stage. There are conflicts of interest between reducing CO_2 emissions at least cost and international cost competitiveness of industrial firms and sectors in Norway. Thus, international coordination of the implementation of CO_2 taxes is needed.

Effects on emissions and energy efficiency

Norway's CO_2-emissions increased steadily from 1960 to 1980. Throughout the 1980s, CO_2-emissions were relatively stable, despite a steep increase in petroleum production and thus in the consumption of natural gas for energy purposes by this sector. This is primarily because the rise in emissions from the continantal shelf has been offset by a drop in the consumption of fuel oils. From 1989 to 1992, precipitation levels were high and there were large supplies of cheap hydropower. This, combined with lower economic activity and the introduction of CO_2-taxes, kept CO_2-emissions below the 1989 level. In 1993, emissions reached about the same level as in 1989, and in 1994 they increased further, mainly as a result of higher consumption of fuel oils, particularly by the the wood-processing industry.

In the long run the tax, or expectations of a tax, is expected to work through a change towards a more CO_2-effective capital stock. This will take time, depending on the level of investment in new installations and the speed of the retrofitting process. The offshore petroleum sector may serve as an example. CO_2-emissions from the petroleum sector increased by only 2.5% from 1990 to 1993, whereas petroleum production increased by 24% during the same period. The tax is expected to have contributed to making production more energy efficient and has encouraged development of projects and solutions aiming at reducing CO_2 emissions. Most of the emission reductions that have been developed and implemented by the petroleum industry the last couple of years were initiated before the introduction of the CO_2 tax and thus took place independent of the implementation of the tax. It could nevertherless be argued that a CO_2 tax the last few years has been part of the overall decision-making prosess, and might as such have contributed to an earlier implementation of some of the measures. Measures that were not necessarily economically favourable prior to the introduction of the tax have in some cases proved to be so after the tax became effective.

Carbon taxes in a small, open economy

Norway and some other countries have introduced a CO_2-tax. In the absence of more widely introduced CO_2-taxes, exemptions have been granted for part of the industry, and different tax rates are applied for various reasons. To analyse the industry's competitive situation in different countries it is necessary to compare all taxes, subsidies, regulations and other factors. Weak competitiveness for the industry can have other explanations than different energy or CO_2-taxes. So far there seems to be limited negative effects on Norwegian industry, with no dramatic changes in the competitive position, given the careful design of the tax.

The development of Norwegian CO_2-taxes may illustrate the problem of a small open economy trying to be in the fore-front in applying economic instruments in environmental policies. The design of the instrument both for practical reasons and concerns about competetiveness deviates from a first best tax covering all emissions with the same rate. Unilateral action is facing opposition as long as other countries do not follow suit, and it can be questioned whether it is, over a longer period of time, rational policy for a small country to be out of line with the majority of others in choosing measures to combat a global environmental problem.

Finally, instruments like the Norwegian CO_2-tax should not be given a final jugdement after this short time period. The effects both on the environment and on the structure of the economy will develop over a much longer period of time.

Norwegian emissions of CO_2 1987 - 1993

A study of the effect of the CO_2-tax

Reports 95/14 - Statistics Norway 1995
Bodil Larsen and Runa Nesbakken

10. Summary and Conclusion (preliminary version)

A CO_2-tax (carbon tax) was introduced in Norway in 1991. The tax was imposed in addition to the existing tax on mineral oil (the basic tax). The study attempts to establish whether changes in the CO_2-tax and the basic tax have had any effect on emissions of CO_2 during the period 1987-93. It is not enough just to compare changes in the tax with changes in emissions over time, because the emissions are also affected by a number of other factors. About 60 per cent of the CO_2-emissions are subject to tax. Thus, for the remaining 40 per cent, the CO_2-tax is not the explanation of any reductions in emissions. The total CO_2-emissions decreased from 35.6 million tonnes in 1990 to 33.9 million tonnes in 1991. The emissions increased to 37.2 million tonnes in 1994, simultaneously with a reduction in the taxes.

Stationary sources (heating) account for about 40 per cent of the emissions. The analysis of emissions from stationary sources in the production sectors covers about 40 per cent of these emissions. The results show that the CO_2-tax helped to reduce CO_2-emissions by up to 10-20 per cent per year in certain sectors, while the reductions have not been as great in other sectors. According to the calculations, emissions from stationary sources in the production sectors analysed were reduced by between 75 and 157 thousand tonnes per year during the period from 1987 to 1993, because of the CO_2-tax. The emissions, as part of the stationary emissions studied, were reduced by between 1.5 per cent and 5.9 per cent per year.

The CO_2-tax led to relatively small reductions in the stationary use of energy in households (energy use connected with the dwelling). The effect of the CO_2-tax was greatest in 1991 and 1992, with a reduction of about 3 per cent in the consumption of oil and kerosene.

Emissions of CO_2 from mobile sources account for about 40 per cent of the total CO_2-emissions, and the production sectors and households are responsible for respectively 70 and 30 per cent of these emissions. In the analysis of CO_2-emissions from the use of transport in the production sectors, the change in CO_2-emissions relative to the gross product (CO_2-intensity) was decomposed in order to obtain a picture of the cause of the change. The three components considered were changes in the structure of business and industry (sector structure), changes in energy use relative to gross product (energy intensity) and changes in the composition of the consumption of different transport oils. The CO_2-intensity decreased by 3 per cent per year from 1988 to 1992. The main reason was changes in the sector structure. The CO_2-tax may have influenced the sector structure and therefore the CO_2-intensity, but the degree to which this occurred is uncertain.

According to the calculations, emissions of CO_2 from mobile sources in households were reduced by 2 to 3 per cent per year as a result of the CO_2-tax. This corresponds to an annual reduction of between 94 and 119 thousand tonnes of CO_2.

Process emissions (from industrial processes) account for about 20 per cent of the total emissions of CO_2. Sources of energy used in industrial processes have been exempted from both the CO_2-tax and the basic tax. The changes in CO_2-emissions and the CO_2-intensity from 1988 to 1993 were small.

Emissions of CO_2 from the petroleum sector (consisting of stationary emissions, mobile emissions and process emissions) accounted for more than 20 per cent of the total emissions of CO_2 in 1993. The CO_2-intensity decreased by more than 15 per cent from 1990 to 1992, but increased by 3 per cent from 1992 to 1993. According to ECON (1994) (ECON stands for Centre for Economic Analyses) the emissions relative to the production in this sector were reduced by about 1.5 per cent as a result of measures introduced because of the CO_2-tax.

The CO_2-intensity for transport in the production sectors was reduced as a consequence of changes in the energy intensity, the composition of the transport oils and, in particular, the sector structure. The analysis is based on a period of only 4 years, and the results would have been more robust if the period of analysis had been longer. The analysis of the mobile sources of emissions has uncovered a need to collect better physical data. The data base is not good enough because the methods of calculation have been changed, and do not provide comparable series of figures over time. The chosen sector grouping was too aggregated to enable the changes in CO_2-intensity to be decomposed satisfactorily. If the sectors are not sufficiently homogenous, changes in structure within an aggregated sector can give results that are interpreted to be changes in the energy intensity. However, even if the sector grouping had been good enough to identify what were changes in structure and what were changes of another kind, it would still have been difficult to state how large a share of the change in the different components could be attributed to the CO_2-tax.

Sea transport and air transport are to a large degree exempted from CO_2-tax. Nevertheless, the reduction in CO_2-emissions is larger for these particular forms of transport than for other forms. The fishing fleet made a large contribution to the total reduction in CO_2-intensity in transport from 1988 to 1992, in spite of the fact that oil for coastal fishing is exempted from the CO_2-tax. The changes in emissions took place independent of the tax, and were a result of a strong growth in the aquaculture industry along with a decrease in traditional fishing.

Changes in the sector structure, energy intensity and composition of the energy sources are all important factors affecting changes in the emissions of CO_2. A CO_2-tax influences profitability in different industries in different ways, depending on to what degree the industries are dependent on oil and are energy-efficient. Thus the tax can cause changes in the sector structure. The CO_2-tax could also serve to speed up advances in technology, leading to an improvement in energy-efficiency. Furthermore, a CO_2-tax raises the price of oil relative to other sources of energy, so that households and industrial enterprises both substitute oil with other energy sources, if possible. Thus, changes in the sector structure, energy intensity and composition of energy sources can be a result of the CO_2-tax, but may also be due to a number of other factors such as trade conditions, the replacement of out-dated and energy-

intensive production equipment, prices, general technological advances, regulations, possibilities of switching between different energy sources, etc.

Figure 27 shows the changes in CO_2-emissions with and without taxes (CO_2-tax and basic tax) for parts of the economy. The figure includes emissions from stationary sources in households, from stationary sources in large parts of manufacturing industry and from private and public provision of services, and from mobile sources in households (use of passenger cars). The most important sources of emissions not included are process emissions, emissions from the petroleum sector and emissions from other sources than those from the households.

Figure 27. Changes in total CO_2-emissions* and changes in CO_2-emission as a result of the CO_2-tax and the basic tax. 1987 - 93. Million tonnes

* Mobile emissions from the production sectors, process emissions and about half of the stationary emissions in the production sectors (e.g. the petroleum sector) are not included.

As part of total Norwegian CO_2-emissions, the CO_2-emissions analysed fell gradually from 31 per cent in 1987 to 21 per cent in 1993 (partly due to increased emissions from the petroleum sector). Since only about 60 per cent of the CO_2-emissions were subject to CO_2-tax in the period from 1991 to 1993, the emissions studied accounted for between 41 per cent and 35 per cent of total emissions subject to CO_2-tax at this time. The petroleum sector accounted for about half of the emissions subject to CO_2-tax which are not included in figure 27.

One conclusion based on the results in this report is that the CO_2-tax has probably had some effect on emissions of CO_2 from mobile sources in households and from stationary sources. The total effect of the CO_2-tax on the emissions studied varies between three and four per cent in the period from 1991 to 1993. In comparison, the price of fuel oil and gasoline increased by

11-17 per cent and by 9-11 per cent respectively, due to CO_2-taxes[1]. Therefore, the study indicates that the CO_2-taxes have influenced the CO_2-emissions analysed. The effect on emissions from other mobile sources (manufacturing and service industries) are more uncertain, partly because the database is not good enough, and partly because variables other than CO_2-taxes may effect sector structure and energy intensity.

[1] Any possible effect of the CO_2 tax on the crude oil price is ignored, which seems reasonable when analysing a national CO_2 tax.

PAPER NO. 9: POLAND AND THE RUSSIAN FEDERATION

Letter from the Heads of the Delegations of Poland and the Russian Federation to the first sessions of the UNFCCC subsidiary bodies to the Chairman of the Ad hoc Group on the Berlin Mandate

Geneva
August 31, 1995

In accordance with the Decision 1/CP.1 of the COP-1 the negotiating process on the Berlin Mandate has been started. In particular, this decision recommends in paras 1(a) and 1(b) a way of implementation of this process taking into account the provisions of the Convention related to the principle of common, but differentiated responsibilities of the Parties.

It seems advisable in the practical work on a protocol to define some specific criteria. One such criterion, the level of GHG emissions per capita, in particular, is mentioned in para 1(d) of the Decision 1/CP.1. Some other criteria, such as GDP per capita or similar, have been proposed by delegations of Poland and Russia for consideration during the AGBM-1.

In accordance with the decision of AGBM - 1 (Doc. FCCC/AGBM/1995/L.1/Add.1, p.1 h(i)) the delegations of Poland and the Russian Federation are submitting the relevant proposals offering possible approaches aimed at implementation of the principle of common, but differentiated responsibilities (attached), which we propose to consider during forthcoming AGBM - 2. In addition, Poland and the Russian Federation offer the following measures, which might, in our opinion, facilitate the implementation of the Berlin Mandate.

- On the basis of the decision 6/CP.1, Annex I, Section A, para 5(c) the SBSTA should present the information and to provide the recommendations on any methodological and technical issues, necessary to develop protocols to the Convention, thus enabling the Parties to consider at the second session of the SBSTA the substance of proposed criteria;

- Further, these criteria could be considered at the third AGBM session, and relevant documents be proposed for consideration and possible adoption at the COP-2.

Suggestions on use of the principle of common but differentiated responsibilities

1. One of the key principles on which responsibilities under the FCCC are based is the principle of common but differentiated responsibilities of the Parties to the Convention. The Article 3.1 states that "the Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capacities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof".

However, text of the Convention does not contain a definition of the principle of common but differentiated responsibilities, in particular in its relation to determining specific commitments of the Parties in future protocols or other legal instruments.

2. Provisions of the Convention which to some extent reflect the differentiated approach to the capacities of the countries can be outlined as follows. Articles 4.1 and 4.2 generally describe division of commitments between developed and developing countries. Articles 4.3, 4.4 and 4.5 further specify some commitments of developed countries related to new and additional resources, transfer of technology, etc. Article 4.6 contains the provision taking into account special situation in the countries with economies in transition. Articles 4.7 to 4.9 touch upon specificities of the developing countries. Article 4.10 relates to countries whose economies are highly dependent on production of fossil fuels.

3. Considerations mentioned above as well as today's world realities require their adequate reflection in the Berlin Mandate process. In this connection, it is proposed to give a definition for the principle of common but differentiated responsibilities, and to adopt certain criteria for its practical implementation. The criteria should reflect social, economic and some climatic parameters relevant in the context of sustainable development.

The Convention itself contains indications that even among Annex I Parties there are countries with different economic potentials; thus potential of countries with economies in transition is presently lower in comparison to the countries of the European Union. Among developing countries there is a group of least developed countries (Article 4.9). These differences are reflected in the classification adopted by the World Bank and UNDP.

We can be more specific after analyzing a number of criteria, which should be developed for application of the principle of common but differentiated responsibilities. Among these criteria one could mention:

- GDP per capita;
- amount of anthropogenic emissions, first of all of carbon dioxide and methane, per capita and per a unit of territory;
- amount of sinks and net emissions per capita and per a unit of territory;
- levels of production and consumption of energy per capita.

4. To take into account the cumulative effect of these criteria for the purpose of determining differentiated commitments of individual countries it is proposed to evaluate specific indicators according to each criterion by summing up their reverse values.

These or similar calculations would allow the Annex I countries to determine their individual and more flexible levels of commitments under the Convention. In such a way it would be possible to implement more efficiently the principle of common but differentiated responsibilities during the Berlin Mandate process aimed at defining commitments for the period beyond the year 2000.

5. The principle of common but differentiated responsibilities in the context of the Convention is proposed to be formulated as follows:

The common responsibility of the Parties to the Convention means common actions aimed at protection of the climate system to attain the ultimate goal of the Convention. The differentiated responsibility means individual responsibilities of the Parties to the Convention related to their commitments determined taking into account their economic capabilities and stipulated in a protocol or another legal instrument.

In our opinion, this approach, which adequately reflects the present world situation, could be used as a basis for setting quantified limitation and reduction objectives with specified time-frames.

PAPER NO. 10: SWITZERLAND

ANALYSIS AND ASSESSMENT

Switzerland welcomes the opportunity to comment on the process of *Analysis and Assessment*, in particular as concerns its nature, content, organisation, and timing.

Nature of the AA process: The Berlin Mandate clearly states that the process "***will include*** *in its early stages an analysis and assessment*". It is therefore crucial that the *analysis and assessment* be conducted in parallel, not prior, to the negotiation itself.

Content of the AA process: Among policies and measures, the AGBM should focus primarily on actions that require international agreement or that would be beneficial if taken collectively. Therefore, the *analysis and assessment* process should inform the negotiation on those actions, as well as on the coordination of relevant economic and administrative instruments such as:

1. energy efficiency standards and labelling
2. fuel consumption standards for motor vehicles
3. carbon and/or energy taxes and transport-related taxes, including on aviation fuels.

Organisation of work: Most of the background work is being, or has already been, carried out within different organisations or international bodies, such as for example the IPCC, UNEP, the OECD, and the IEA. The SBSTA has a mandate to summarise the results of the work of the IPCC and to compile scientific, technical and socio-economic information. The AGBM could request that the SBSTA, in compiling this information, sort it by categories according to an indicative list of priorities. On the basis of this compilation, the different options should be prepared within sector-specific expert panels for consideration by the AGBM. The technical advisory panels to be established by the SBSTA would be ideally suited to perform this task.

Timing and priorities: We propose that this body drafts a request for the SBSTA to start work on the compilation of information without delay. In addition, an indicative list of priorities should be established on the basis of the outcome of this week's discussions. In October, the AGBM should provide guidance to the SBSTA as to which panels it wants to set up, as well as on their mandate and timeframe for output. The first results from the panels should be reported for consideration by the AGBM at its March 1996 session.

In Switzerland's view, the list of priorities should include the following:

1. coordinated energy efficiency standards for appliances, products and motor vehicles
2. coordinated economic instruments and incentive taxes in the energy and transportation sectors, including aviation
3. renewable energies
4. the regulation of PFCs and HFCs.

PAPER NO. 11: TRINIDAD AND TOBAGO (ON BEHALF OF THE ALLIANCE OF SMALL ISLAND STATES (AOSIS))

Introduction to the Draft Protocol to the United Nations Framework Convention on Climate Change submitted by Trinidad and Tobago on behalf of the Alliance of Small Island States (AOSIS)

BACKGROUND:

The text of a Draft Protocol to the United Nations Framework Convention on Climate Change on Greenhouse Gas Emissions Reduction (Draft Protocol), was submitted by the government of Trinidad and Tobago on behalf of the Alliance of Small Island States (AOSIS) on 20 September 1994, six months prior to the first Conference of the Parties (COP1), and in accordance with Article 17 of the Convention.

During COP1 in Berlin, the Draft Protocol played a central role in the negotiation of the Parties' decision on the adequacy of the commitments in Article 4.2(a) and (b) of the Convention, and in the drafting of the Berlin Mandate which establishes a process aimed at strengthening those commitments. At COP1, more than 70 Parties and signatories to the Convention associated themselves with a proposal calling for the post-Berlin process to "be based on the proposal for a protocol by the Alliance of Small Island States." The Berlin Mandate, adopted by consensus at the close of the COP1, provides that the "protocol proposal of the Alliance of Small Island States (AOSIS), which contains specific reduction targets and was formally submitted in accordance with Article 17 of the Convention, along with other proposals and pertinent documents, should be included for consideration in the process."

The following comments are based on the intervention of Ambassador Annette des Iles, Permanent Representative of Trinidad and Tobago to the United Nations, speaking on behalf of AOSIS at the 11th session of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change, and have been updated to emphasise their consistency with the provisions of the Berlin Mandate.

GENERAL OBSERVATIONS:

The primary aim of the Draft Protocol is to build on the 1992 United Nations Framework Convention on Climate Change (Convention) by strengthening the specific commitments of developed country Parties to reduce their emissions of carbon dioxide (CO_2); by requiring developed country Parties to adopt specific targets and timetables for the control of emissions of

other greenhouse gases; and by providing a mechanism for the coordination of specific measures designed to reduce greenhouse gas emissions.

The Draft Protocol does not impose any obligations on developing country Parties additional to those already contained in the Convention. It is designed to encourage developing country participation in the progressive development of climate change policy through the Draft Protocol's mechanism for coordination of measures, and by focusing on the need for accelerated transfers of relevant technologies to developing countries.

The Draft Protocol is intended to complement and not supplant the Convention. Much of its text is drawn from the Convention's consensus language or from the text of other widely accepted international agreements, or intergovernmental declarations. Parties to the Protocol would hope to rely upon the procedures, mechanisms, and institutional arrangements already established under the Convention. The Convention anticipates this relationship by authorizing its Conference of Parties to keep under review any related legal instrument it may adopt.

This approach is entirely consistent with the provisions of the Berlin Mandate, which aims to adopt a protocol or another legal instrument setting quantified limitation and reduction for Annex I Parties' anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol, without introducing any new commitments for Parties not included in Annex I.

SPECIFIC PROVISIONS:

PREAMBLE

The Draft Protocol's Preamble restates a number of elements contained in the Convention, including its Objective, and clearly emphasises that the burden of achieving this Objective rests with the developed states, that have undertaken in Article 3 of the Convention to take the lead in combating climate change.

Preambular Paragraph 4 highlights the intended focus of this Protocol by recognising the "need for developed country parties to adopt specific targets and time frames for reducing emissions of greenhouse gases to achieve the Objective of the Convention."

The final paragraph of the Preamble acknowledges the need for a long term perspective and a regime that is responsive to changing circumstances in accordance with the principle of common but differentiated responsibility.

These same principles are reflected in the preambular and operative text of the Berlin Mandate.

ARTICLE 1: DEFINITIONS

Article 1 clarifies that certain terms used in the Protocol are intended to have the same meaning as when used in the Convention, or as when used in the Convention, or as explicitly defined in Article 1 of the Convention.

Article 1(1), (7) and (8) differentiate between "Parties" to the Protocol and "Parties to the Convention". This distinction anticipates that, while all Parties to the Protocol must first be Parties to the Convention, not all the Parties to the Convention will necessarily become Parties to the Protocol. This may result in Parties to the Protocol having a different legal relationship to each other than they will have with Parties to the Convention, that have chosen not to become Parties to the Protocol.

ARTICLES 2-3: COMMITMENTS

BASIC COMMITMENT (Article 2)

This basic commitment applies to all Parties to the Protocol and restates, word for word, the core of the general commitment contained in the Convention's Article 4(1)(b), which requires, among other things, all Parties to the Convention to implement programmes containing measures to mitigate climate change. Article 2 of the Protocol, therefore, is not intended to create any additional commitments for any category of Party. It is included to signal the close relationship of the Protocol to the Convention and the far more specific focus of the Protocol on developed country greenhouse gas emissions.

The inclusion of this paragraph is consistent with the Berlin Mandate's aim of reaffirming existing commitments in article 4.1 and continuing to advance the implementation of these commitments in order to achieve sustainable development, taking into account the Convention's provisions on financial resources and technology transfer.

TARGETS FOR GREENHOUSE GAS REDUCTIONS (Article 3)

This specific commitment, which is the heart of the Protocol, requires developed country Parties to the Protocol that are included in Annex I of the Convention to reduce their emissions of CO_2 by at least 20% of 1990 levels by 2005, and to establish timetables for controlling emissions of other greenhouse gases.

The CO_2 target and timetable that would be established by the Protocol is often referred to loosely as the "Toronto Target" after the influential recommendations of the World Conference on the Changing Atmosphere held in Toronto, June 1988. The Toronto Statement declared that stabilising atmospheric concentrations of CO_2 is an imperative goal and estimated that this would require reductions of more than 50% from 1988 emission levels. The Toronto Statement recommended a 20% reduction from 1988 levels by 2005 as an "initial global goal".

In the lead up to the negotiations of the Convention a number of intergovernmental conferences supported the Toronto Target, including the Nordwijk Declaration on Atmospheric Pollution and Climate Change of 1989 and the Ministerial Declaration on Sustainable Development in the ECE, Bergen, Norway 1990. During this period, a number of developed countries made unilateral statements, or adopted domestic policies that reflected targets and timetables similar to or more ambitious than the Toronto Target.

Most recently, within the European Union, the European Parliament and the European Council have endorsed the development of specific greenhouse gas reduction targets. In September 1994, a European Parliament resolution called upon the EU and Member States to support the Toronto Target. In December 1994, the European Council had asked the Commission to present proposals for progressive reductions for CO_2 and other greenhouse gases for target years 2005 and 2010. Furthermore, the United Kingdom has proposed a target to reduce a basket of greenhouse gases by 5-10% by 2010.

Rather than adopting the "comprehensive" or "basket of gases" approach to emissions limitation, where all sources of greenhouse gases and sinks are considered collectively, the Draft Protocol proposes to deal with each greenhouse gas separately. Because of the scientific and political uncertainty currently surrounding appropriate targets for other greenhouse gases, Article 3(1)(b) does not introduce immediate emissions reductions targets, but requires that Annex I Parties, at the first Meeting of the Parties to the Protocol, adopt specific targets and timetables to limit or reduce other greenhouse gases.

The list of gases provided in Article 3(1)(b) is not intended to exclude or prioritise any particular greenhouse gases, except to exclude those controlled by the Montreal Protocol.

The Draft Protocol's approach to addressing all greenhouse gases, in a comprehensive but discrete fashion is consistent with the language in the Berlin Mandate, which calls for "coverage of all greenhouse gases, their emissions by sources and removals by sinks and all relevant sectors."

REVIEW AND REVISION OF TARGETS (Article 3(2))

Article 3(2) authorizes the Meeting of the Parties (as established by Article 8) to "review and revise" both the CO_2 targets and timetables, established in Article 3(1)(a), and the controls for other greenhouse gases that are to be adopted under Article 3(1)(b). This empowers the Meeting of the Parties to analyze the adequacy of the existing measures and to adopt further emissions reductions if required by science and agreed to by the parties.

Any revision of the Protocol's commitments is to be done "in accordance with the precautionary principle and the best available scientific information and assessment of climate change". This is intended to ensure that while the future development of the Protocol should be science driven, the lack of full scientific certainty should not be used as a reason for postponing measures designed to prevent climate change. The precautionary principle has become a standard feature of recent

environmental treaties and declarations, including the Convention itself, and notably in the Ozone and Acid Rain regimes.

ACCESSION OF NON-ANNEX I PARTIES TO THE SPECIFIC COMMITMENTS (Article 3(3))

As mentioned above, the commitments in Article 3 are binding only on the developed country Parties that are listed in Annex I of the Convention, and do not apply to developing states. However, in the same manner as Article 4(2)(g) of the Convention allows developing states or other non-Annex I countries to consent to be bound by the commitments that apply only to Annex I Parties, so Article 3(3) of the Protocol creates the identical mechanism in relation to the specific obligations in Articles 3, 4 and 5 of the Protocol. Such a provision has already proved its usefulness under the Convention, as the government of Monaco has used it to accept the commitments of Annex I countries. The governments of Slovakia and the Czech Republic have recently announced that they intend to make similar commitments. Developing and other non-Annex I Parties to the Protocol could only be bound by these commitments if they voluntarily chose to be bound.

The Berlin Mandate, similarly calls upon Parties to "take into account any result from the review referred to in Article 4.2(f), if available, and any notification referred to in Article 4.2(g)."

ARTICLE 4: COORDINATION MECHANISM

The Protocol's Coordination Mechanism is intended to create a subsidiary body that will provide advice to the Meeting of the Parties and offer a forum for the negotiation of specific economic, administrative and other instruments that may assist Parties in meeting the Protocol's Objective.

Parties, policy analysts and climate activists have long recognised that regulation of the economically integral activities that emit greenhouse gases will require a coordinated approach. Indeed, Article 4(2)(e)(i) of the Convention, requires that Annex I Parties "coordinate as appropriate with other such parties, relevant economic and administrative instruments developed to achieve the objective of the Convention."

Because the measures undertaken by Annex I Parties to the Protocol, especially those that may have an impact on trade, will affect the interests of developing countries, the Coordination Mechanism is open to the participation of all Parties. It is expected that the Mechanism's activities will be closely coordinated with the work of the Convention's COP under Article 7(2)(c) of the Convention and the Convention's Subsidiary Bodies on Scientific and Technical Advice and on Implementation.

The Berlin Mandate calls for a process that considers "as provided in Article 4.2(e), the coordination among Annex I Parties, as appropriate, of relevant economic and administrative instruments" and provides for "the exchange of experience on national activities in areas of

interest."

ARTICLE 5: REPORTING REQUIREMENTS

The Annex I Parties to the Protocol are required to submit a detailed description of the policies, programmes and measures taken to implement their commitments under Articles 2-4, and provide an estimate of the resulting effects on emissions and removals by their sources and sinks.

Although this language is virtually identical to that contained in Articles 4 and 12 of the Convention, the reporting under the Protocol will have to reflect the strengthened emissions reductions commitments it requires. The more concrete nature of the obligations under the Protocol will require more detailed an precise reports from the Annex I Parties.

Part of this detail is a new reporting requirement introduced by Article 5(2) which requires that Annex I Parties provide a cost/benefit analysis of the measures that they have undertaken. This is intended to assist the Parties in assessing the economic burdens and benefits realised by Parties as they implement the Protocol.

The Protocol imposes no additional reporting requirements upon developing country Parties.

ARTICLE 6: INSTITUTIONAL ARRANGEMENTS

Article 6 reflects the desire to ensure that the Protocol makes use of the institutions established under the Convention without unfairly imposing costs on those countries that may be Parties to the Convention, but that are not Parties to the Protocol.

ARTICLE 7: TRANSFER OF TECHNOLOGY

Article 7 enhances the technology transfer provisions of the Convention by requiring that the "best available technologies ... are expeditiously transferred to developing countries" under "fair and most favourable conditions". This language is borrowed from the Montreal Protocol on Substances That Deplete the Ozone Layer, is significantly stronger that the technology transfer provisions in Article 4(1)(c) and (g), and Article 4(5) of the Convention. It is intended to provide an incentive for developing countries to participate in reaching the Objective shared by the Convention and the Protocol and to ensure that advanced technologies "forced" by Annex I Parties' strengthened commitments will be transferred expeditiously to the South.

This article would, again, be consistent with the Berlin Mandate's aim of continuing to advance the implementation of developing country Parties' commitments.

ARTICLE 8: THE MEETING OF THE PARTIES

The Protocol establishes a Meeting of the Parties with powers to review the implementation of

the Protocol, adopt new targets and timetables, and assess the effectiveness of the steps taken by developed countries.

A long list of specific functions and powers are specified in Article 8(1), including the catch-all which entitles it to "exercise such other functions as are required for the implementation of this Protocol". The majority of these provisions are identical to powers attributed to the Conference of the Parties for the implementation of the Convention by Article 7(2) of the Convention.

Article 8(2)-(4) of the Protocol, which contains the rules governing the holding of sessions of the Meeting of Parties, and attendance, are the same as the provisions in Article 7(4)-(6) of the Convention, which govern sessions of the Conference of the Parties.

Article 8(1)(d)-(e) provides that the Meeting of the Parties will receive, review and ensure the publication of the reports submitted by Annex I Parties on their implementation of greenhouse gas control measures, and to regularly assess the overall aggregated effect of the steps taken by Annex I parties.

Essentially these provisions give to the Meeting of the Parties the function in relation to the Protocol, that the Convention, in Article 10, entrusted to the Subsidiary Body For Implementation.

The publication of national reports and the international assessment helps to promote transparency and facilitates public analysis by the media and NGOs of how effectively industrialized countries are fulfilling their commitments under the Protocol.

FINAL CLAUSES

DISPUTE SETTLEMENT

Article 9 states that any disputes are to be settled in accordance with the terms of the Convention. It leaves open the possibility that the Parties to the Protocol may decide, in cooperation with the Parties to the Convention, to make use of whatever Multilateral consultative Process may be established under Article 13 of the Convention.

AMENDMENTS

Article 10 establishes the same procedure for the proposal, adoption and entry into force of amendments to the Protocol as apply in relation to amendments to the Convention. However one notable difference is that the Convention provides for adoption of amendments by a ¾ majority when consensus cannot be reached, whereas the Protocol specifies a smaller majority at only ⅔.

OTHERS

The provisions dealing with annexes, right to vote, the depositary, signature, ratification, entry into force, reservations, withdrawals and authentic texts are the same as in the Convention.

PAPER NO. 12: UNITED STATES OF AMERICA

United States Department of State

Bureau of Oceans and International Environmental and Scientific Affairs

Washington, D.C. 20520

September 7, 1995

Letter from the Director, Office of Global Change, Bureau of Oceans and International Environmental and Scientific Affairs, United States Department of State, to the Executive Secretary of the UNFCCC

This is in response to your communication of June 23, 1995, to permanent missions in Geneva advising Parties of the September 8 deadline for the submission of views by Parties to help advance work on the implementation of the Berlin Mandate (FCCC/CP/1995/7/Add.1, decision 1/CP.1). We understand that such views will be compiled and made available in an addendum to the secretariat's note of August 17, 1995 (FCCC/AGBM/1995/Misc.1).

We request that the opening statement by the U.S. delegation at the first session of the AGBM (copy enclosed), together with the U.S. Non-Paper on the Berlin Mandate Process (copy also enclosed), which was distributed with the U.S. opening statement, be included in the compilation of views by Parties. We further request that the statement by the U.S. delegation during the afternoon session of the AGBM on August 23 (copy enclosed), together with the partial list of sources that might be tapped to provide useful inputs to the analysis and assessment process, which we distributed in Geneva with our August 23 statement, also be included in the compilation of views by Parties.

As noted in the U.S. Non-Paper, we believe that the analysis/assessment should consider, inter alia, for Annex I and Non-Annex I Parties, as appropriate, trends in historic emisssions indicators (e.g., vehicle miles travelled, energy intensity, population) and national/global emission forecasts.

The U.S. delegation noted in its August 23 statement:

> "In order to analyze and assess next steps for Annex I Parties, it is necessary to consider how their actions may affect the global environmental problem that we face. To do so, we must look at emission trends and

at the efforts that all Parties are making to deal with emissions of greenhouse gases. Only in this way can we understand how next steps by Annex I Parties will affect the global environmental problem that we face.

"In addition, it is likely that the actions taken by Annex I Parties will affect Non-Annex I countries, as has been noted by delegations from several developing Parties. For this reason as well, we cannot analyze and assess policies and measures to be taken by Annex I Parties in isolation.

"We are also aware that Non-Annex I Parties have expressed repeatedly their keen interest in matters related to technology development and diffusion. In analyzing possible policies and measures for Annex I Parties, it will be important to consider the potential for new technologies and for improved diffusion of these and existing technologies to achieve the environmental benefits that we seek. We believe -- and hope -- that all Parties will be very interested in such aspects of the analysis and assessment that our group will undertake."

The U.S. Non-Paper on the Berlin Mandate Process urged that the October AGBM meeting begin considering global emissions trends (perhaps convening a panel of experts). Unfortunately, our proposal to convene a panel of experts on this issue at the October AGBM meeting did not find its way into the conclusions of the meeting. Nevertheless, we remain convinced and believe it vital that the October AGBM meeting begin consideration of this issue.

To that end, we also request that the additional enclosed materials, which are submitted as some examples illustrating the kinds of materials that we believe should be considered with respect to global emissions trends, be included in the compilation of views submitted by Parties, together with a copy of this letter which describes our submissions. These materials include:

- A brief statement on trends in historic emissions indicators

- Two pages taken from a document entitled "Energy Use and Carbon Emissions: Some International Comparisons, March 1994" published by the U.S. Energy Information Administration (Volume DOE/EPA-0579); one page deals with "Energy and Carbon Emissions in a World Context" and makes a number of important observations, although these observations are based on a definition of "developing countries" that differs from the approach

taken in the FCCC; the other page deals with "G-7 Sectoral Analysis"

- Several tables that may be relevant to a discussion of historic emissions trends

- Several pages drawn from World Energy Outlook, 1995 Edition of the International Energy Agency that refer to historical trends, the outlook for energy-related CO2 emissions and regional variation in transport fuel consumption

- An illustrative list of reference materials on historic emissions trends and indicators

We recognize that the full publications from which these materials are drawn do not lend themselves to inclusion in a miscellaneous document. Nevertheless, we assume that the secretariat and other Parties have access to such publications and that we will begin considering global emissions trends at the October AGBM session, under an appropriate agenda item, drawing upon these and other relevant materials. With sufficient notice to facilitate shipment, we would be pleased to furnish copies of U.S. Government publications, if necessary or desirable.

We have assembled the materials enclosed in this letter quickly in order the meet the September 8 deadline. There may, in addition, be other materials that we will wish to submit to the secretariat and draw to the attention of our colleagues prior to or during the October AGBM meeting.

We appreciate the secretariat's efforts to compile the views of Parties and circulate them prior to the October AGBM meeting. We believe that this effort should help further our efforts at that session.

Enclosures:
As stated.

Opening Statement by the
United States of America
Ad Hoc Working Group/Berlin Mandate (AG/BM)
August 22, 1995

Thank you, Mr. Chairman.

The American poet/philosopher Walt Whitman once wrote "....that the more difficult passage is often the shorter one. It is sometimes the pathway which bristles with thorns, brambles and thickets."

Mr. Chairman, in Berlin, the international community chose to undertake a shorter passage toward achieving our goal of taking appropriate action for the period beyond the year 2000. This is a period which we believe bristles with "thorns, brambles and thickets" and a period which, while navigable, therefore requires us to chart our course very carefully.

Pursuant to Berlin, we are striving to develop a proposal which will enable us to take appropriate action for the period beyond 2000, including strengthening the commitments of Annex I Parties in Article 4.2(a) and (b) and reaffirming and continuing to advance the implementation of commitments in Article 4.1 in order to achieve sustainable development.

In order to make progress in our future work, it is imperative that we take stock of the past. Only a few decades ago, global climate change was an obscure concern relegated to footnotes in even more obscure scientific journals. Today it is a matter of major international discussions and a priority in domestic policy debates. I think it is safe to say that the Convention itself has been an historic achievement and remarkable success.

Nevertheless, it is clear that the Convention has not produced the progress in limiting emissions that we had hoped. The national communications of Annex I Parties clearly demonstrate that they have adopted and continue to adopt national policies and corresponding measures to mitigate and adapt to climate change. They are thus meeting their commitments under the Convention, but reaching the Convention's aim remains elusive.

The United States has developed one of the most comprehensive action plans, and we are achieving better than anticipated success from some of our voluntary programs. Still, we are not on course to meet our national commitment announced by President Clinton in April 1993. A full review of our plan should be ready this fall, but preliminary analysis shows that current trends have us on a path that will not return U.S. greenhouse gas emissions to their 1990 levels by the year 2000.

This gap results partly from dramatic economic expansion in the U.S. economy over the past two years -- a welcome event -- and from low oil prices over the same period. But however welcome, these developments also have consequences for U.S. greenhouse gas emissions.

This gap also results in part from our unique system of government. While the Administration has proposed an aggressive program to reduce U.S. emissions and save money for the American economy, the legislative branch controls appropriations. To date, Congress has not provided the funds needed fully to implement the measures contained in our national action plan, and Congressional funding decisions yet to be taken could well result in a significant shortfall.

We are working and will continue to work to meet our national commitment. At the same time, uncertainties surrounding economic growth, fuel prices, and other factors continue to bedevil our ability to achieve a particular emissions objective within a particular timeframe.

And the United States is not alone in experiencing such difficulties. Other Annex I countries are also having significant problems in reaching the goals they have set for themselves. And it is our observation that non-Annex I nations are not making as much progress as we all might like to formulate and implement measures to mitigate climate change.

These hard truths are emerging even though the preponderance of scientific evidence continues to come in that our initial precaution in reducing greenhouse gas emissions was prudent indeed. New evidence continues to mount that global climate change remains a serious challenge to the international community and must be addressed with urgency and priority.

I point this out because it is my government's view that, as we organize ourselves for the next steps, we must individually and collectively reassess the approaches we have been taking to determine whether or not they are the most efficient and reliable means of ensuring real emissions reductions. No doubt this is a difficult question, but it is a legitimate and serious one.

Are we on the right track? Are the current aims working? How might they be improved? What changes might be needed to ensure that we make real progress toward reducing emissions of greenhouse gases? If we are serious about this problem, we cannot duck these serious issues. We must think anew and act prudently to ensure that the promise of the Berlin Mandate is fulfilled.

We need to consider very carefully the factors that inhibit reaching the "aim" referenced in Article 4.2(a), and consider as well whether such factors may likewise inhibit reaching another such objective in a different timeframe. We may conclude that an altogether different approach is needed, one that will provide the needed stimulus for action without condemning us, like Sisyphus, never to reach our goal.

We believe that a period of analysis and assessment provides needed time for questions to be asked and answered and for governments to exchange ideas and approaches with respect to the main elements of a protocol or other legal instrument. In the end, we may conclude than an approach similar to the one we have already taken under the terms of the Convention is the correct path to follow. Alternatively, we may conclude that attempting to set a new, specific goal for each country to aim for is counter-productive at the present time, based on our apparent inability now -- or by 1997 -- to reach the goals which we previously set for ourselves.

Fortunately, much work for this analysis and assessment has already been done and needs only to be brought forward. Nevertheless, it is desirable to proceed in an orderly manner, emphasizing analysis and assessment as the precursor to informed and effective negotiation of a new legal instrument.

We have a more formal draft proposal on the timeline and framework for our work, but permit me for a moment to summarize some of the principle features of the analysis/assessment as we envision it unfolding:

We believe that the analysis/assessment should consider the effectiveness of current approaches and suggest ways in which future approaches can be made more credible and effective. This effort should also identify the activities undertaken by all parties in fulfillment of their obligations to advance the implementation of commitments under Article 4.1.

Among the items which might be analyzed or assessed for Annex I Parties (and for non-Annex I Parties, as appropriate) are emissions trends and the experience of parties to date in controlling them. These might include such items as trends in historic emissions indicators, as well as national and global emission forecasts, and in-depth reviews of national communications.

Among the approaches which might be analyzed are those which have been currently proposed, including the AOSIS proposal of 20 percent CO2 reduction by 2005, as well as other possible approaches, including successful experiences with policies and measures in areas such as transport, energy, industrial, residential/commercial, agriculture/forestry, and with non-CO2 gases to cite a few examples.

We should also examine the impact of various market mechanisms, including fiscal instruments and activities implemented jointly, including emissions trading. Among the technological opportunities which might be explored are the increased use of renewables, improved energy efficiency, the more efficient and safer means of conventional energy sources now in use, and methane recovery to name a few.

Finally, we may also want to look at the impact of climate change and mitigation actions, taking into account both the subsidiary body consideration of the IPCC's forthcoming Second Assessment Report and other national and international assessments, including those contained in the U.S. and other national and international country studies programs (which, in the U.S. case, are currently underway in 55 countries).

In sum, we believe that the analysis/assessment should develop output to address all aspects of the fulfillment of the Berlin Mandate. It should include an examination of the economic and environmental consequences of actions and inaction, both global and national, on both Annex I and non-Annex I Parties and include issues related to the timing of such actions. In addition, it should consider the consequences of actions on greenhouse gas emissions, the potential of shifts of industries to non-participating countries, and the effects on both employment and the investment cycle, as well as the implications for trade.

Mr. Chairman, I believe that we are all in agreement that the ultimate objective of the convention is to stabilize atmospheric concentrations of greenhouse gases at a level that would prevent dangerous anthropogenic interference with the climate system. However, given the political realities which confront us, it is clear that the next step alone is unlikely to yield that result. Thus, the analysis and assessment should assist the parties to address a fundamental issue: What is the best we can do through the Berlin Mandate toward achieving our ultimate objective?

An analysis of the impacts of near-term versus longer-term actions (e.g., in five or ten-year increments) could help to resolve this issue. It is our view that the approach contemplated by the United States would obviate the need to

establish formal sub-groups under the AG/BM and side-step the inevitable difficulties involved in such an effort, including such thorny issues as (a) under what basis would subgroups be formed? (b) how would their work be coordinated? (c) who would chair them? (c) would they have their own bureaus? and (e) what basis would be used to select them? Instead, under our proposed approach, all Parties would be able to engage fully in the process, and early analysis and assessment would better inform all negotiators.

In addition, our suggested approach takes into account the work that will be performed by SBSTA and SBI (e.g., on the review of national communications of Annex I Parties and in reviewing the results of the Second Assessment Report of the Intergovernmental Panel on Climate Change). It seeks to avoid duplication with the work to be performed by those subsidiary bodies and to build upon it.

To do so, however, it may be necessary for subsequent meetings of the SBSTA and the SBI to precede meetings of the AG/BM -- for example, in March 1996 -- so that the AG/BM may benefit from earlier discussions in the SBSTA and SBI.

Certain of the many technical questions raised in our approach might be addressed in a series of expert meetings or technical workshops coordinated by the convention secretariat. The results of such meetings or workshops could in turn be fed into the AG/BM discussions. We would encourage further discussion of this possibility during this meeting.

Mr. Chairman, I wish to reiterate both the interest and the intention of the United States to move forward in this process. We urge all nations to join us in thinking creatively and acting aggressively to confront this major challenge in a manner that is fair and certain. This Convention has been a success; if we think and work together anew, we believe that we can make it more so.

Thank you, Mr. Chairman.

SEEGC 8207

BERLIN MANDATE PROCESS: U.S. NON-PAPER

To help speed the work of the Ad Hoc Group on the Berlin Mandate (AG/BM) established by the Conference of the Parties to the U.N. Framework Convention on Climate Change, the United States has developed some preliminary views on a process that will lead to a protocol or other legal instrument pursuant to the "Berlin Mandate."

If the time frame established by the Berlin Mandate for development and adoption of a protocol or other legal instrument is to be achieved, organizational work must be well-conceived so the process is maximally efficient. The way forward is not obvious and many questions need to be addressed. There have been suggestions that negotiations begin early in the process, and yet it is not clear that governments will so soon be able to develop comprehensive positions or table texts. We also note that the Berlin Mandate itself calls for the inclusion of analysis and assessment in its early stages.

We are disappointed with our progress to date in reducing emissions and with the progress of others. We need to determine what measures have worked, which ones have not, and to chart a new course which will lead us to an effective and credible treatment of the problem which we are all confronting in developing new aims. For this reason, we believe a period of analysis and assessment will provide needed time for questions to be asked and answered and for governments to exchange ideas and approaches with respect to the main elements of a protocol or other legal instrument less formally, with more give and take than is sometimes possible once formal negotiations have begun. In the U.S. view, it will be critical to establish a credible process that builds trust and confidence among all parties and provides for the fullest consideration of optimal approaches.

Fortunately, much work has already been done and needs only to be brought forward. However, some issues remain unexplained, and it is desirable to proceed in an orderly manner, emphasizing analysis and assessment at the outset before moving to a more formal negotiating phase. Obviously, however, the analysis and assessment itself forms part of a negotiating process. We anticipate that discussions will take place throughout the process on the features of a protocol or other legal instrument; initially these discussions would be less formal than they would become by October 1996. This would facilitate early consideration of various proposals from an analytic standpoint.

In considering an approach to the analysis or assessment, it is important also to consider how the more formal negotiations would proceed, taking into account the number of meetings available to the parties and the issues to be addressed. The attached outline provides:

(1) some background on the process;

(2) an initial list of issues and approaches that should be addressed by the analysis and assessment in order to ensure informed decisions; and

(3) a discussion of the specific steps involved in completing the process.

In the U.S. view, the process for formal negotiations would likely proceed much as did the negotiations that led to adoption of the convention itself. The steps envisioned for the formal negotiations thus follow the pattern already established among the parties. Again, however, just as "negotiations" will begin even at the August meeting, the "analysis and assessment" may not end categorically in July 1996. Instead, we envision that the more formal effort at analysis and assessment will conclude in July 1996 and that the more formal negotiating process would begin thereafter.

Analytically, the analysis and assessment should assist the parties in addressing a fundamental issue: as the ultimate objective of the Convention is to stabilize atmospheric concentrations of greenhouse gases at a level that would prevent dangerous anthropogenic interference with the climate system -- recognizing that the next step alone is unlikely to yield that result -- how can we best determine how much can be accomplished by the new protocol/other legal instrument? While solutions to this are complex, some analysis on the impacts of near-term versus longer-term actions (e.g., in five or ten-year increments) may help to resolve some of the issues.

The approach contemplated in the attached outline would obviate the need to establish formal subgroups under the AG/BM and side-step the inevitable difficulties involved in such an effort (e.g., on what basis would subgroups be formed, how would their work be coordinated, who would chair them, would they have their own bureaus and what basis would be used to select them, etc.?) Instead, under this approach, all Parties would be able to engage fully in the process, and early analysis and assessment would better inform all negotiators.

In addition, the approach contemplated in the attached outline takes into account the work that will be performed by SBSTA and SBI (e.g., on the review of national communications of Annex I Parties and in reviewing the results of the Second Assessment Report of the Intergovernmental Panel on Climate Change). It seeks to avoid duplication with the work to be performed by those subsidiary bodies and to build upon it. To do so, however, it may be necessary for subsequent meetings of the SUBSTA and SUBIM to precede meetings of the AG/BM -- for example, in March 1996 -- so that the AG/BM may benefit from earlier discussions in the SBSTA and SBI.

Certain of the technical questions raised in the outline might be addressed in a series of expert meetings or technical workshops coordinated by the Convention secretariat. The results of such meetings or workshops could in turn be fed into the AG/BM discussions. We would encourage further discussion of this possibility during the August meeting.

PROPOSED STEPS IN THE BERLIN MANDATE PROCESS

Background

- The Berlin Mandate provides that the process it initiates will include in its early stages an analysis and assessment to identify possible policies and measures for Annex I Parties which could contribute to limiting and reducing emissions by sources and protecting and enhancing sinks and reservoirs of greenhouse gases.

- The Berlin Mandate also provides that the AOSIS protocol proposal along with other proposals and pertinent documents should be included for consideration in the process, and calls for strengthening the commitments in Article 4.2(a) and (b), as well as reaffirming and continuing to advance the implementation of commitments in Article 4.1.

- The AG/BM's second meeting is now scheduled to take place in Geneva for one week beginning October 30, 1995. Thereafter, three one-week meetings of the AG/BM are now contemplated in 1996: March, July, and October, and presumably, there will be three meetings also in 1997 in approximately the same timeframes as in 1996.

- Much work on the analysis/assessment has already been done and simply needs to be brought forward.

- The following sketches an approach to the analysis and assessment and the overall process that will lead to the completion of the work as early as possible in 1997, with a view to adopting the results at the third session of the Conference of the Parties.

ANALYSIS/ASSESSMENT

- The analysis/assessment should consider the effectiveness of current approaches and suggest ways in which future approaches can be made more credible and effective in terms of achieving emissions limitations. This effort should also identify the activities undertaken by all parties in fulfillment of their obligations to advance the implementation of commitments under Article 4.1.

- The analysis/assessment should consider for Annex I and Non-Annex I Parties, as appropriate:

  1) Emissions trends and experience of parties to date in controlling them, including:

     - trends in historic emissions indicators (e.g., vehicle miles travelled, energy intensity, population)

- national and global emission forecasts
- in-depth reviews of national communications
- information from all countries, including Non-Annex I countries, concerning their activities/measures to implement commitments under Article 4.1)

2) Currently suggested approaches, including:

- AOSIS proposal (20 percent CO^2 reduction by 2005)
- EU agreement (maintenance of 1990 greenhouse gas levels indefinitely after 2000)
- UK call (5-10 percent greenhouse gas reduction by 2010)
- other (including analysis of various dates through 2020)

3) Other possible approaches, including successful experiences with policies and measures (and technology development/diffusion potential) in areas such as:

- transport
- energy
- industrial
- residential/commercial
- agriculture/forestry
- non-CO^2 gases

4) Market mechanisms such as:

- fiscal instruments
- activities implemented jointly/joint implementation
- emissions trading

5) Technological opportunities including:

- improved energy efficiency
- switching to lower emitting fossil fuels and new fuel sources/increased use of more efficient and safer conventional energy conversion technologies (e.g., clean-coal technologies and nuclear power)

- increased use of renewables
- methane recovery
- alternative chemicals
- automotive/rail/air technologies

6) Impacts of climate change and mitigation actions

- linkage with subsidiary body consideration of IPCC Second Assessment Report
- other national and international assessments (e.g., U.S. Country Studies Program)

The analysis/assessment should develop output to inform all aspects of the fullfilment of the Berlin Mandate, and should include if possible:

- GDP/welfare consequences (global and national, including for Annex I and Non-Annex I Parties)
- consequences of actions on greenhouse gas emissions
- shifts (e.g. of industries) between countries
- effects on employment
- effects on investment cycle
- trade implications

STEPS IN THE PROCESS

If the target date for conclusion of the initial analysis/assessment effort is mid-1996, the AG/BM could undertake the following tasks at each of its meetings:

August 1995

-- Meet for first time

-- Deal with organizational issues (e.g., Bureau)

-- Consider and adopt workplan, including provisional dates for future meetings and provisional agenda for each meeting

October 1995

-- Identify specific analytical outputs that should be sought with respect to currently suggested approaches (both those now "on the table", i.e., AOSIS protocol, EU "stabilization", UK 2010 proposal, and possible new submissions)

-- Decide what analyses should be performed (including for the advancement of the implementation of Article 4.1 commitments, and for discussions of policies and measures in various sectors in March 1996), and within what time period

-- Begin considering global emissions trends (perhaps convening a panel of experts)

-- Begin considering experiences with market mechanisms such as fiscal instruments and activities implemented jointly

March 1996

-- Begin considering experience of parties in controlling emissions trends (based on SBSTA/SBI meetings on results of in-depth reviews of national communications)

-- Address sectoral approaches, including half-day discussions of policies and measures (e.g., for transport, energy, commerce/industry, agriculture/forestry, non-CO^2 gases), consider ways to include approaches relevant to advancing the implementation of Article 4.1 commitments

-- Consider technological opportunities

July 1996

-- Review results of analysis/assessment efforts with respect to currently suggested approaches

-- Review results of SBSTA and SBI consideration of IPCC Second Assessment Report

-- Consider advantages and disadvantages of all approaches and opportunities to combine or reconcile them

-- Consider advantages and disadvantages of technology options

****

Thereafter, and with a view to completing its work as early as possible in 1997 and adopting the results at the third session of the Conference of the Parties, the following steps are likely to be involved:

- Begin considering elements of a protocol/other legal instrument, based on textual proposals submitted by the Parties and circulated by the secretariat prior to the meeting and based on results of analysis/assessment, including recommendations on means to continue to advance the implementation of Article 4.1 commitments

- Continue considering elements of a protocol/other legal instrument, based on a draft single negotiating text prepared by the Secretariat and circulated prior to the meeting

- Adopt a revised (bracketed) single negotiating text

- Remove all but the most contentious brackets from the revised single negotiating text

- Resolve remaining brackets and adopt the final text

SEEGC 8142

Statement by the United States of America
Afternoon Session
23 August 1995

Thank You, Mr. Chairman

The United States delegation is fully aware of the Berlin Mandate and each of its provisions. We are not, in this first meeting of the AG/BM, negotiating this mandate, but are discussing an approach to the analysis and assessment activities called for in the mandate.

In order to analyze and assess next steps for Annex I Parties, it is necessary to consider how their actions may affect the global environmental problem that we face. To do so, we must look at emission trends and at the efforts that **all** Parties are making to deal with emissions of greenhouse gases. Only in this way can we understand how next steps by Annex I Parties will affect the global environmental problem that we face.

In addition, it is likely that the actions taken by Annex I Parties will affect Non-Annex I countries, as has been noted by delegations from several developing Parties. For this reason as well, we cannot analyze and assess policies and measures to be taken by Annex I Parties in isolation.

We are also aware that Non-Annex I Parties have expressed repeatedly their keen interest in matters related to technology development and diffusion. In analyzing possible policies and measures for Annex I Parties, it will be important to consider the potential for new technologies and for improved diffusion of these and existing technologies to achieve the environmental benefits that we seek. We believe -- and hope -- that all Parties will be very interested in such aspects of the analysis and assessment that our group will undertake.

Finally, we are aware that many Non-Annex I Parties are taking actions that are proving highly successful in limiting emissions and sequestering carbon. We think that these "success stories" will be of great interest to Annex I Parties in analyzing and assessing potential policies and measures, and that we should seek to bring forward this information in the course of our analysis and assessment.

We know that First National Communications from Non-Annex I Parties will not generally be available until 1997. At the same time, much information is available, or will soon be available, from cooperative country study efforts that have

been taken by Non-Annex I Parties assisted by others. If we are seeking to analyze and assess, we should not ignore potentially valuable experience and information coming from sources other than the Annex I Parties.

In closing on this point, I would note that we have not proposed to change the terms of the Berlin Mandate -- we are not, at this stage, negotiating. We are seeking to analyze and assess in order to inform the negotiations and the negotiators, and build the confidence we will need to move forward.

Turning to the subject of how we might obtain useful inputs to our analysis and assessment process from sources other than the Parties -- all the Parties -- the United States has prepared a partial list of some sources that might be requested to provide information of the assessment topics that we included in the non-paper that our delegation distributed yesterday afternoon. I will provide the Secretariat Coordinator a copy of these lists and I will also endeavor to make copies available to the delegations and observers by tomorrow.

Mr. Chairman, thank you for this opportunity to provide some clarification on how all of the Parties need to engage in the analysis and assessment activities if we are to be successful in our actions on next steps and the chance to amplify on some potentially useful sources for assistance in our group's analysis and assessment activities.

THE UNITED STATES PROPOSAL FOR A PARTIAL LIST OF ORGANIZATIONS TO CONTRIBUTE TO THE ANALYSIS AND ASSESSMENT ACTIVITIES OF AG/BM

In order to carry out the elements of the analysis and assessment described in the U. S. Non-paper on the Berlin Mandate Process, there is a need to identify organizations that might be called upon to provide input and make contributions to the conduct of elements of the analysis and assessment activities. Included in the contributors would be the Parties to the Convention as well as the many nongovernmental industrial, conservation, environmental, and labor organizations and their members, both national and international. In addition to the Parties and these groups, the United States delegation wishes to provide a **partial list** of other organizations that could provide input and contribute to the analytical process of the AG/BM.

1. Historic trends to understand emissions growth and its relation to economic growth, energy use, population and demographics, technological change, etc.:

   INPUT:
   - OECD/IEA/ECMT
   - IMF/World Bank Statistics
   - Food and Agriculture Organization (FAO)
   - The United Nations General Assembly and its organizations
   - UNEP/GRID
   - Regional Development Banks
   - Country Studies and FCCC National Communications
   - U. S. Energy Information Agency (EIA)
   - U. S. Department of Energy (DOE) National Laboratories
   - U. S. Departments of Commerce and Labor Statistical Bureaus
   - U. S. Environmental Protection Agency

2. Assumptions and projections of future demographics, economic growth, energy use, land uses, and greenhouse gas emissions, including for the years 2005, 2010, and 2020 (this subject is actually included under the first item of the U. S. paper):

   INPUT:
   - International Institute for Applied Systems Analysis (IIASA)
   - IEA/OECD
   - IMF/World Bank
   - Regional Development Banks
   - Nongovernmental academic and consulting groups including:
     - Stanford Energy Modeling Forum (EMF)
     - Massachusetts Institute of Technology
     - Oxford Consulting Group
     - East-West Center (Pacific Energy Outlook)

3. Approaches in economic sectors:

INPUT:
ISO - International Standards Organization
International Tropical Timber Organization (ITTO)
International Labor Organization (ILO)
UNIDO
CGIAR
World Bank
Regional Development Banks
FAO
IEA/OECD
UNEP/Industries Group
Voluntary Program results (for example, the U. S. Electric Utility/ U. S. DOE Climate Challenge)
U. S. DOE National Laboratories
Technical Advisory Panels established under the SBSTA

4. Broad market mechanisms, such as fiscal policies and emissions trading (including banking):

INPUT:
IPCC/WGIII
UNCTAD
IEA/OECD
U. S. DOE Laboratories
Nongovernmental academic and consulting groups including:

Data Resources Inc. (DRI)
Energy Modeling Forum
Resources for the Future (RFF)
Harvard Climate Project

5. Technological options for all greenhouse gas categories, source categories, and emissions categories:

INPUT:
U. S. EPA methane studies
International Atomic Energy Agency (IAEA)
U. S. Committee on Renewable Energy, Commerce and Trade (CORECT)
Nuclear Energy Agency (NEA)
IEA/OECD
UNIDO
U. S. DOE Clean Coal Program
U. S. DOE National Laboratories
IPCC/WGII (and former WGIII)

6. Environmental and socioeconomic impacts of climate change and mitigation actions, including effects on GDP, employment, trade and resource shifts (analysis of AOSIS, UK, German and other proposals under discussion by the AG/BM):

INPUT: U. S. EPA
U. S. DOE National Laboratories
OECD Green Model
IPCC/WGIII
IPCC Second Assessment
Nongovernmental academic and consulting groups including:

Stanford Energy Modeling Forum
Yale University
MARKAL MACRO
Oxford Consulting
Jorgensen and Associates
Brookings Institute
University of Maryland Climate Change Program

7. Adaptation measures:

INPUT: WHO
UNEP
Global Biodiversity assessment
IPCC/WGII
Country Studies
FAO
Nongovernmental academic and consulting groups including:

University of Maryland Climate Change Program
International Council of Scientific Unions (ICSU)
National Academies of Science and Engineering
Carnegie Mellon University
Massachusetts Institute of Technology

Trends in Historic Emissions Indicators

The United States believes that effective action to control greenhouse gas emissions must consider greenhouse gas emissions trends and current circumstances and the underlying factors and indicators which influence them. Since the relative importance of various sources and underlying circumstances differs among countries, appropriate policy responses may also differ among countries. Consideration of these differences should therefore be an important element of analysis and assessment under the Berlin Mandate.

This submission contains some key points regarding historic emissions trends and indicators. We have also provided some references and sources for additional information.

- The 1992 Supplement to the IPCC Scientific Assessment highlights the relative importance of the various greenhouse gases and sources globally. While the developed countries and economies in transition account for the majority of energy-related CO2 emissions, developing countries account for the majority of land-use related CO2 emissions and a large proportion of other greenhouse gas emissions.

- The fact that the relative importance of the different greenhouse gas sources differs by region has important implications. Programs focused on energy-related CO2 are not likely to reduce emissions of land-use related CO2 or anthropogenic methane. Policies to mitigate greenhouse gas emissions must consider all sources and types of greenhouse gases.

- Energy-related CO2 remains the single most important anthropogenic component of radiative forcing. The developed countries account for the bulk of energy-related CO2 emissions over the past 60 years, although their proportion of global emissions over the past two decades has declined. Trends in economic growth and energy consumption further suggest that the biggest growth in future emissions levels will occur in developing countries.

- Countries differ markedly in terms of their energy and carbon intensity per unit of economic output. Even among OECD countries with comparable levels of economic development, there are significant differences in patterns of energy consumption and related carbon emissions. This demonstrates that factors other than aggregate economic activity and population growth are important components of energy-related carbon emissions.

- Various indicators illustrate and help describe the differences among countries in emissions trends. These include, inter alia, energy consumption per unit GDP (energy intensity), carbon emissions per unit GDP (carbon intensity), and energy consumption and carbon emissions per capita. Other factors which may differ significantly among countries are sectoral structure and activity, energy efficiency, fuel mix and fuel prices. Additionally, circumstances such as the existing policy and regulatory environment and the age and type of existing infrastructure and capital stock may also influence emissions.

- Assessment of the similarities and differences among countries of key emissions factors can provide insight into opportunities for emission reduction through technological improvement and sectoral approaches. Different circumstances among countries can also lead to substantial differences in the cost of reducting emissions.

Energy and Carbon Emissions in a World Context

The purpose of this section is to place the developing countries (defined throughout the report to include the current and former centrally-planned economies) and developed countries (members of the OECD) in a global perspective with regards to such indicators as: economic output; energy consumption; and energy-related carbon emissions.

Key findings of this section include:

✓ **Since 1970, world economic growth rates have exceeded increases in energy use and energy-related carbon emissions.** Between 1970 and 1992, world gross domestic product increased 85 percent, while energy use and carbon emissions rose 66 percent and 51 percent, respectively.

✓ **Growth in world carbon emissions has been less than growth in energy consumption.** This has resulted partly from the increased relative importance of noncarbon-emitting energy sources, primarily nuclear power, and partly from a switch away from coal and towards natural gas in the non-OECD.

✓ **Economic growth has been slightly faster in developing than developed countries.** OECD economies grew 83 percent between 1970 and 1992, compared to 88 percent in the non-OECD.

✓ **Since 1970, energy use trends have differed markedly for developed and developing countries.** Between 1970 and 1992, OECD energy consumption grew only half as fast as GDP; in contrast, energy consumption grew faster than GDP in the developing countries.

✓ **Since 1970, electricity use (and associated carbon emissions) worldwide have increased faster than overall energy use and GDP.** This trend has been especially pronounced in the developing countries.

✓ **The OECD consistently used less energy to produce a unit of economic output than the rest of the world.** In 1991, for instance, the OECD produced a unit of output using little more than half the energy required by the non-OECD.

✓ **Nonetheless, developed countries, with 16 percent of world population as of 1992, accounted for 52 percent of world energy consumption.** The OECD countries in 1992 consumed about six times as much energy per capita as the non-OECD countries. Between 1970 and 1992, however, non-OECD countries increased their share of world energy consumption from 39 percent to 48 percent.

✓ **The developed countries as of 1992 accounted for about 48 percent of energy-related world carbon emissions.** As with energy consumption, the OECD's share of world carbon emissions declined between 1970 and 1992 (from 57 percent to 48 percent), while emissions from the developing countries grew rapidly.

✓ **Evolution of energy use and carbon emissions patterns in the developing countries towards patterns more like the developed countries is likely to have profound implications for world energy use and carbon emissions.** If developing countries had consumed fossil fuels and emitted carbon at the same per capita rates as developed countries did in 1990, for instance, world fossil fuel consumption would have tripled, while world carbon emissions would have nearly tripled from actual levels.

G-7 Sectoral Analysis

The purpose of this section is to provide information on structural differences among G-7 countries which help explain: 1) differences in energy consumption patterns within the G-7; and 2) changes in those patterns since 1970. To this end, the section will examine energy use patterns and trends in the major economic sectors ***(industrial, transportation, and residential/commercial, including services)****; as well as in* ***electricity generation.***[6]

Key findings of this section include:

- ✓ **The G-7 countries differ in their sectoral shares of national energy consumption.** The U.S. transportation sector, for instance, accounted in 1990 for 28 percent of U.S. energy consumption; in contrast, Japan's transportation sector accounted for only about 18 percent of Japan's energy use.

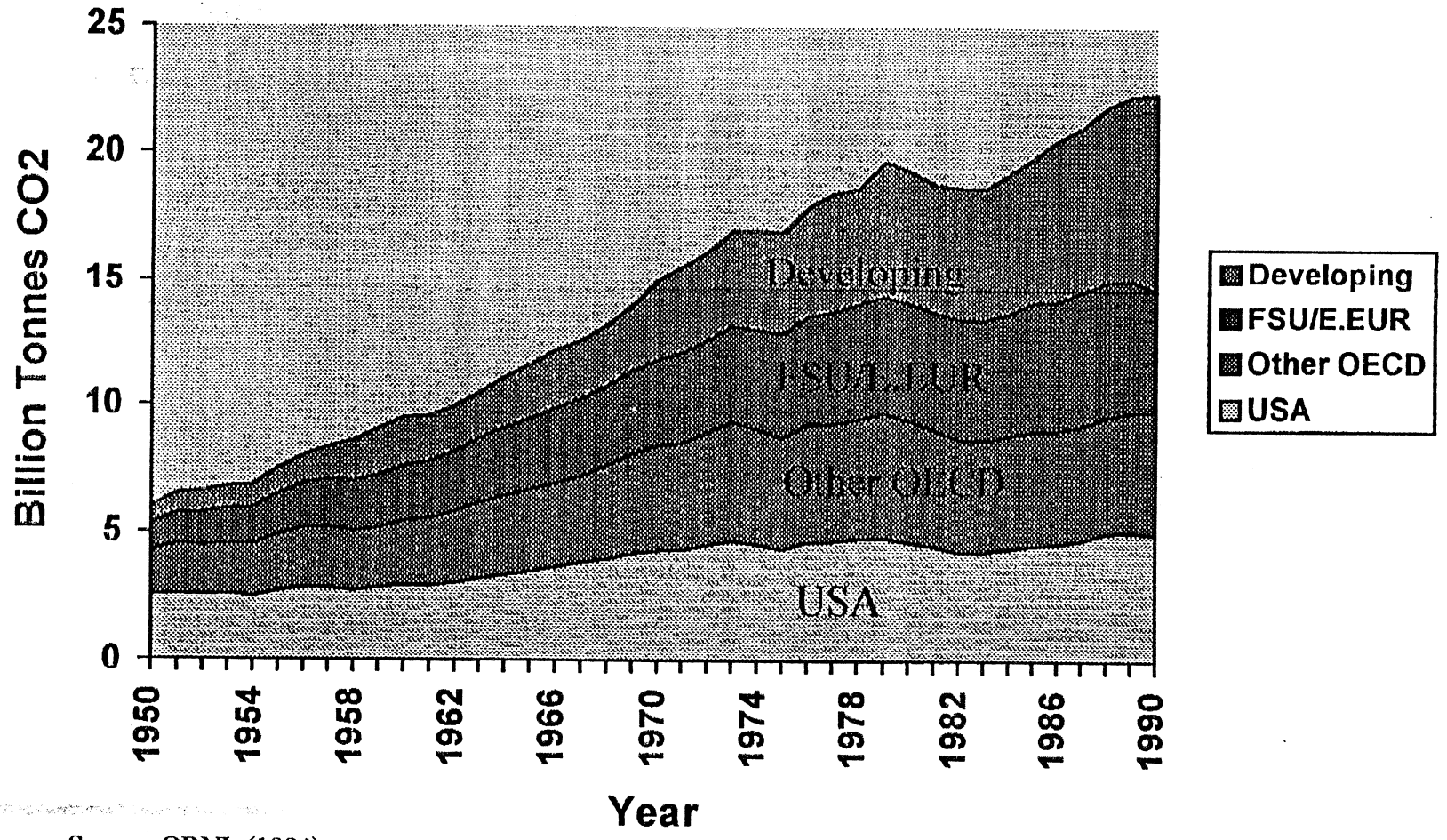
- ✓ **G-7 sectoral shares have changed over time.** Between 1970 and 1990, for instance, the transportation sector significantly increased its share of G-7 energy consumption, especially in Europe. During the same period, residential/commercial's share also increased throughout the G-7, particularly in Japan, while industry's share of total energy consumption declined throughout the G-7.

- ✓ **The G-7 countries differ in their energy use patterns within sectors.** In Canada and the United States, for instance, energy-intensive industries (such as paper and pulp, primary metals, and petroleum refining) in 1990 accounted for around 60 percent (or more) of total industrial energy consumption. In other G-7 countries, energy-intensive industries were relatively less important, and appear to have declined since 1970.

- ✓ **The G-7 countries differ in their lifestyles and living standards.** The average American, for instance, has a relatively larger home and more cars compared to citizens of other G-7 countries. Throughout the G-7, living standards (as measured by vehicles per person, appliance ownership, etc.) increased significantly between 1970 and the early 1990's.

- ✓ **The G-7 countries differ in their retail energy prices, primarily due to differences in their tax regimes.** Gasoline prices, for instance, ranged in 1992 from $3.89 per gallon in Italy to $1.13 per gallon in the United States. Average fleet efficiencies tend to be higher in those countries with higher gasoline prices.

1950-1990: Fossil Energy-Related CO2 Emissions

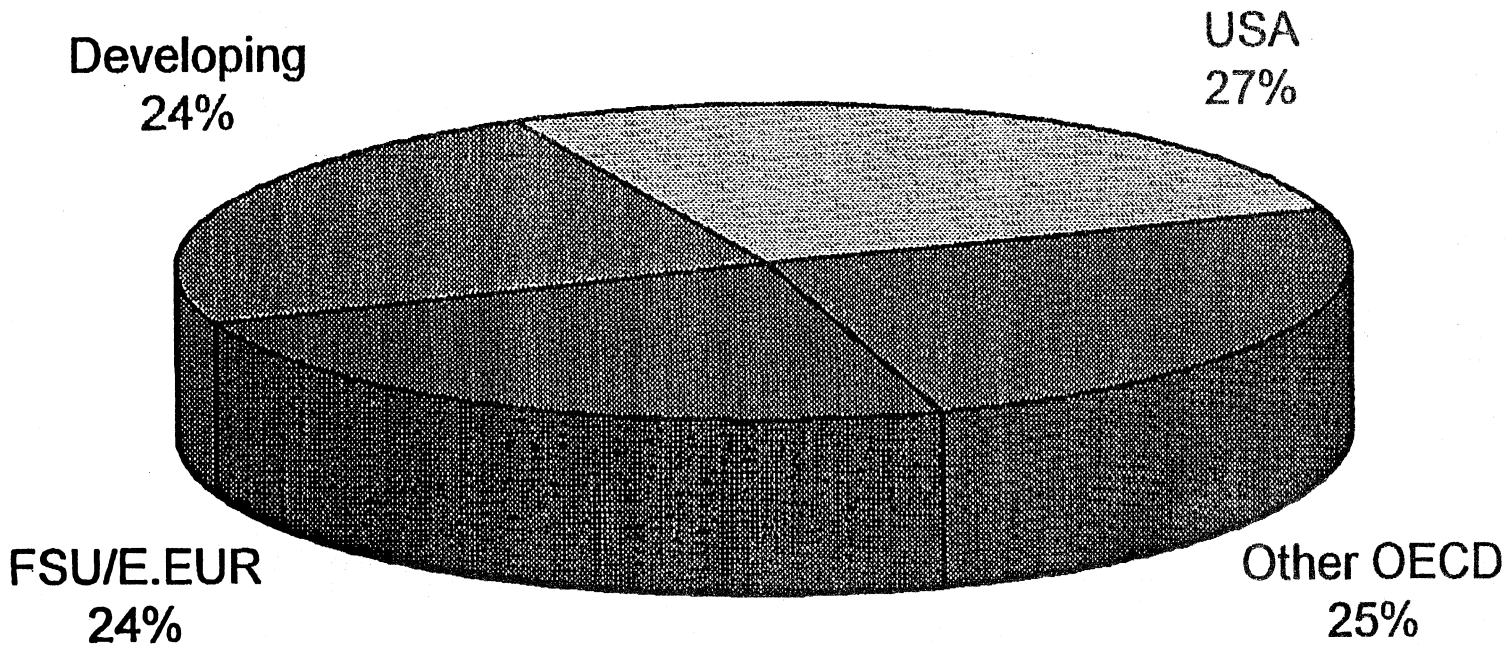


Source: ORNL (1994)

EPA

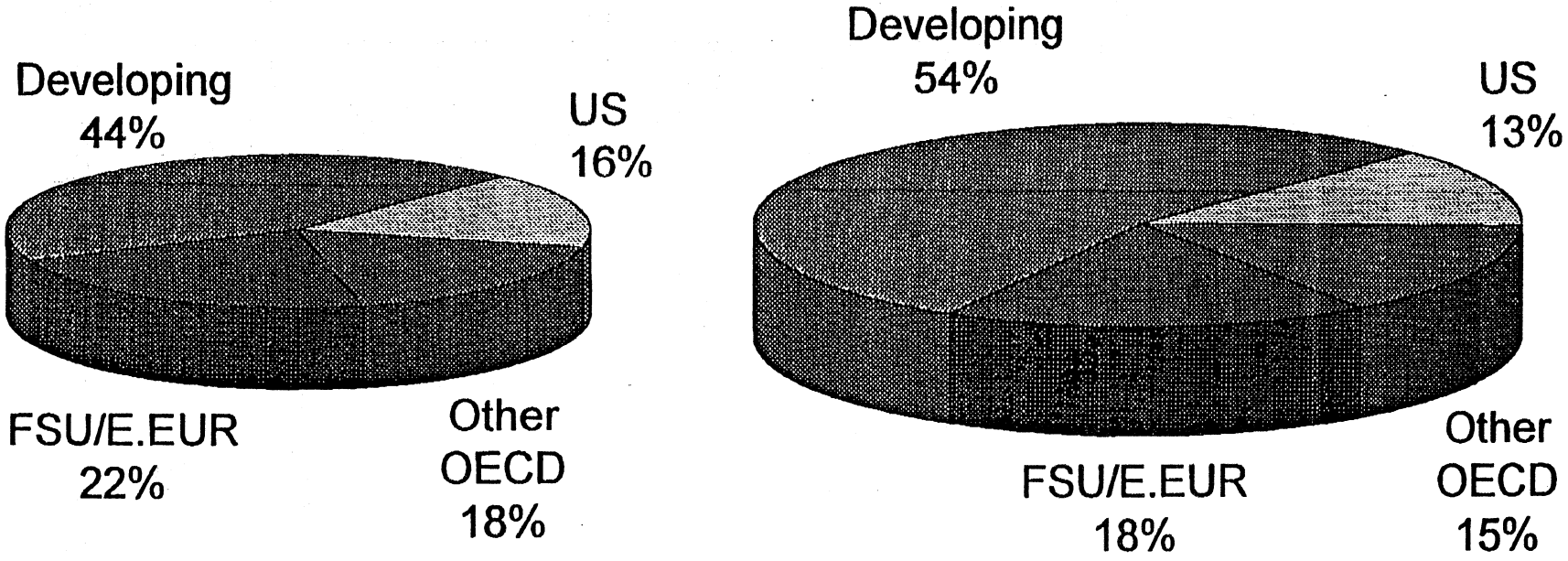
1950-1990: Cumulative CO2 Emissions Fossil Energy and Cement Production

Global Total: 159 Billion Tonnes CO2



Source: ORNL (1994)

Projected Shift in Regional Allocation of Total Emissions



Source: IPCC (1992)

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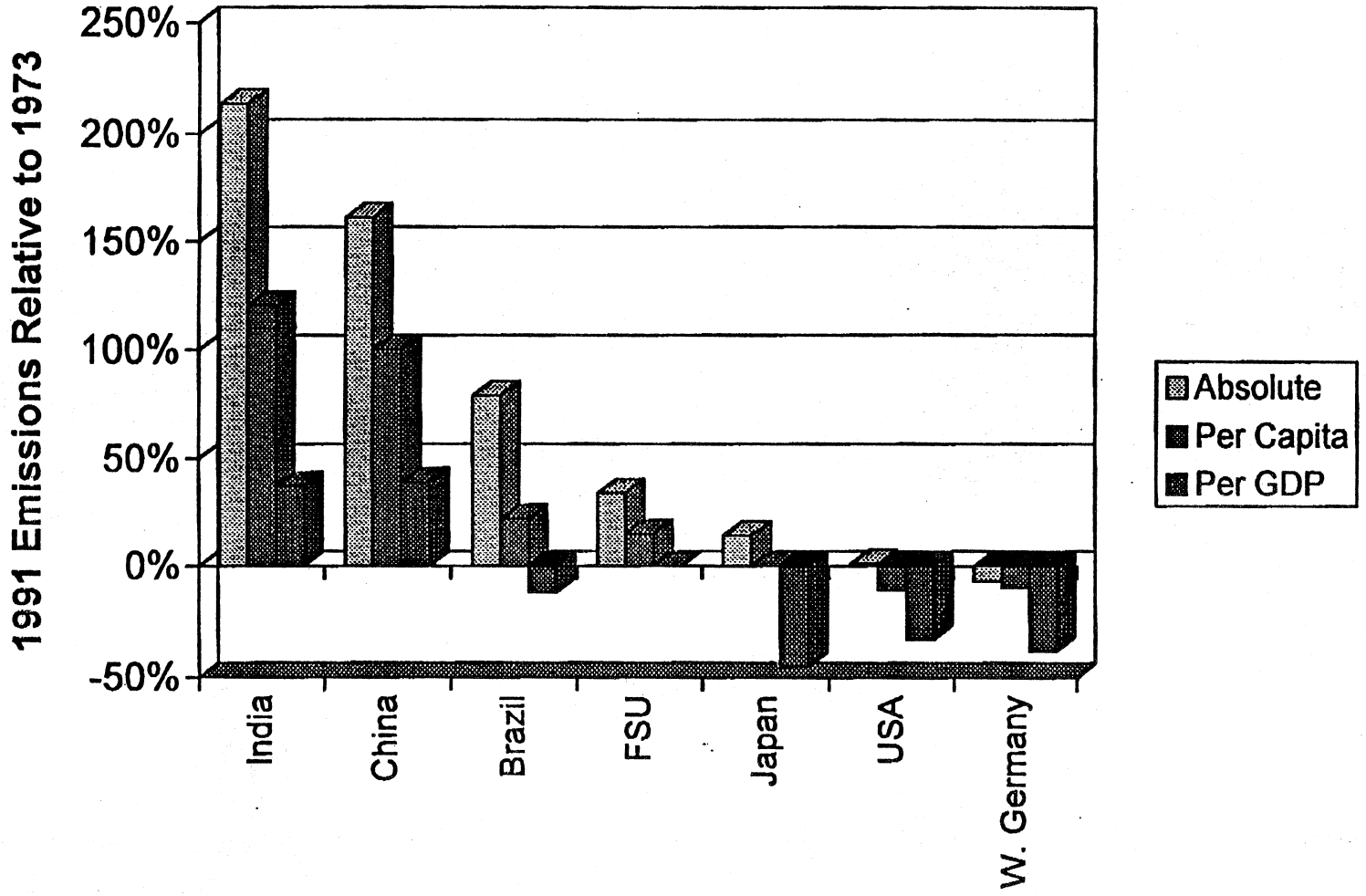
Percentage Change in CO2 Emissions Between 1973 and 1991



Source: LBL 1995 Analysis of Energy Data ("Other Industry" and "Petroleum Refining" are excluded)

EPA

INTERNATIONAL ENERGY AGENCY

WORLD ENERGY OUTLOOK

1995
EDITION

I.1. Historical Trends

According to IEA data, world carbon emissions excluding FSU/CEE (where reliable data are not available for the whole period) grew by 2.1 per cent per annum from 1971 to 1992. Over the same period, energy use grew by 2.5 per cent per annum on average, implying an average annual improvement in carbon intensity per unit of energy of about 0.4 per cent.

Table 2.1: **Average Annual Increase in Energy Demand and Energy-Related CO_2 Emissions**
(% p.a.)

	1971 to 1992		1992 to 2010			
			CC		*ES*	
	Energy	CO_2	Energy	CO_2	Energy	CO_2
OECD	1.5	0.8	1.2	1.1	0.8	0.5
ROW	5.5	5.3	4.2	4.1	3.9	3.8
World (ex FSU/CEE)	2.5	2.1	2.4	2.4	2.0	2.0
FSU/CEE	1.9	0.6	0.6	0.5	-0.1	-0.3
World	2.4	1.7	2.1	2.1	1.7	1.6

The significant difference between the growth rates of CO_2 emissions and energy consumption in the OECD over the period 1971 to 1992 arose due to the substantial growth of nuclear power. The share of nuclear power in total primary energy rose from less than 1 per cent in 1971 to over 10 per cent in 1992 or, in terms of its contribution to the electricity output mix, from 2.8 per cent to 23.5 per cent. Over the outlook period, nuclear power is expected to increase by only 0.8 per cent per annum and to lose share in the primary energy fuel mix. Consequently, *ceteris paribus*, the evolution of CO_2 emissions will follow energy demand much more closely than in the past. If an alternative measure of primary energy demand were chosen, one that does not weight nuclear power so heavily,[1] primary energy consumption grew by only 2.1 per cent per annum from 1971 to 1992, much closer to growth in carbon emissions.

In the OECD, energy intensity improved by 1.3 per cent over this period implying a reduction in carbon per unit of GDP of approximately 2 per cent per annum. In ROW, over the same period, energy intensity rose by an average of 1.1 per cent per annum implying an increase in carbon intensity per unit GDP of about 0.9 per cent.[2] By 1992, OECD carbon emissions per unit GDP measured at purchasing power parities were about 5 per cent less than those of the ROW countries.

If population is taken into account, however, there is a marked difference between the two regions. The OECD emits nearly seven times as much carbon per capita as the ROW countries. This ratio is projected to fall to between four and five over the outlook period.

I.2. The Outlook for Energy-Related CO_2 Emissions

As shown in Table 2.2, global energy-related CO_2 emissions in 2010 are projected to grow by over 40 per cent over their 1990 level under the *Capacity Constraints* (*CC*) case and by about 30 per cent in the *Energy Savings* (*ES*) case. Most of the increase in emissions is expected to occur in ROW, where CO_2 emissions are projected to more than double under each case. In the OECD countries, CO_2 emissions in 2010 will exceed their 1990 level by almost 24 per cent in the *CC* case and by over 11 per cent in the *ES* case.

In both cases, growth in CO_2 emissions in the OECD is highest in the Pacific region. Japan accounts for 80 per cent of the region's primary energy demand and for three quarters of its CO_2 emissions. Developments in Japanese energy demand and changes in its fuel mix are, therefore, of greatest significance for the region's emission levels. The relatively large increase in emissions can be explained by the growing share of solid fuels in total primary energy in Japan. In fact, the increase in emissions would be even greater without the expected large increase in nuclear power. European emissions rise almost in line with total energy demand. The increase in the share of natural gas, which should reduce the growth in emissions in OECD Europe, is offset by the assumed reduction in the share of nuclear power. In North America, like Europe, increased gas penetration compensates for the falling share of nuclear power and emissions grow roughly in line with energy demand.

The highest increase in CO_2 emissions is expected to occur in ROW, where emissions will increase from 6 billion tonnes of CO_2 in 1990 to around 13 billion tonnes in 2010. By the end of the projection period, therefore, ROW countries will become slightly larger emitters of CO_2 than the OECD and will account for nearly 45 per cent of the world total. The major reason for the increase in ROW share is the much faster energy demand growth in these countries, more than three times the growth rate in the OECD.

1. See Appendix 2 for a brief description of primary energy accounting and tables of primary energy compiled on such a basis.

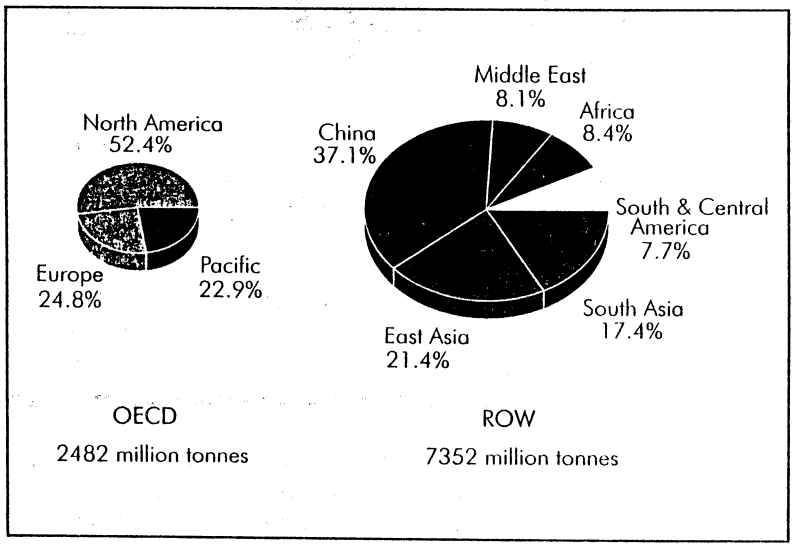
2. One factor influencing these trends is the relocation of the iron and steel industry, an issue discussed in detail in Section V of this chapter.

Table 2.2: **World Carbon Dioxide Emissions**
(billion tonnes of carbon dioxide)

	1990	2000		2010	
		ES	*CC*	*ES*	*CC*
OECD	10.4	11.1	11.6	11.6	12.9
North America	5.6	6.0	6.4	6.2	6.9
Europe	3.4	3.5	3.6	3.7	4.1
Pacific	1.4	1.6	1.6	1.7	1.9
FSU/CEE	5.2	3.3	3.5	3.8	4.4
ROW	6.0	8.8	8.9	12.8	13.4
China	2.4	3.5	3.5	5.1	5.1
East Asia	0.9	1.6	1.6	2.3	2.5
South Asia	0.7	1.1	1.1	1.8	2.0
Other	2.0	2.6	2.7	3.6	3.8
World	21.6	23.2	24.1	28.2	30.7

Rounding may cause totals to differ from the sum of individual components.

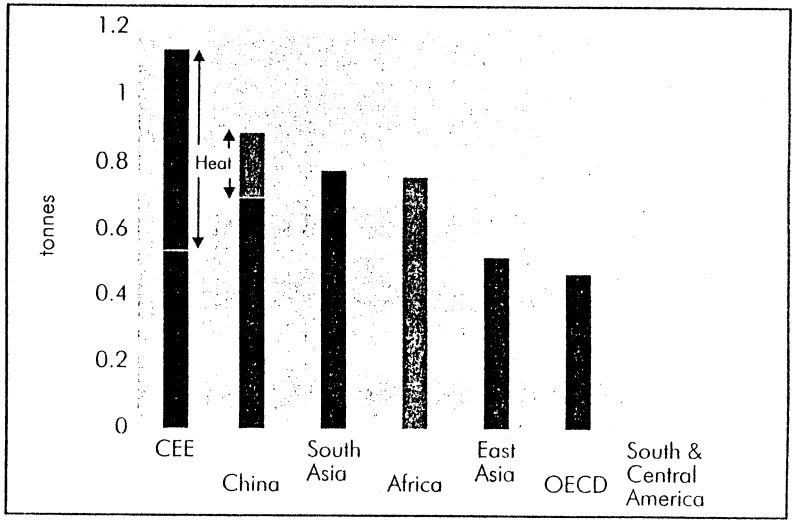
Figure 2.1: **Increase in Annual CO_2 Emissions, 1990-2010**
***Capacity Constraints* Case**



It is interesting to note that, on the basis of the projections presented here, India and China alone account for a larger amount of the increase in emissions between 1990 and 2010 than do all OECD countries combined, as illustrated in Figure 2.1. Moreover, these two countries will account for over 50 per cent of ROW emissions by 2010. What makes this comparison impressive is that, in 1990, China and India accounted for less than one third of the level of total OECD emissions.

The major fuel for power generation in two of the fastest growing non-OECD countries, India and China, is coal, the most carbon intensive of the fossil fuels. In 1992, coal accounted for around 74 per cent of total electricity generation in China, while, in India, it accounted for almost 72 per cent. As illustrated in Figure 2.2, CO_2 emissions per TWh of electricity generated in China and South Asia are among the highest in the world. It is often difficult to separate inputs to heat generation from those to electricity generation. If allowance is make for heat generation on the basis of output shares, the CO_2 emissions per TWh for regions with a large amount of cogeneration, i.e., China and CEE, are much reduced.

Figure 2.2: **CO_2 Emissions per TWh of Electricity Generated, 1992**



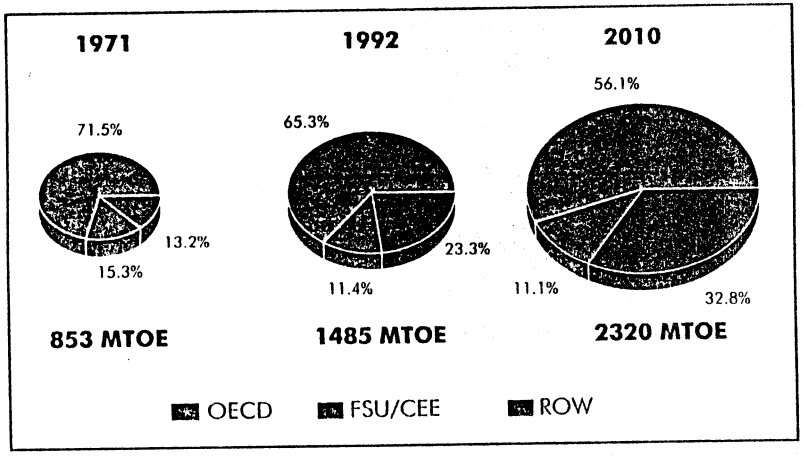
In the absence of the assumed ongoing improvements in the efficiency of power generation in the ROW countries, their combined growth in emissions would be even faster. One obvious implication is that

speed. Short trips from cold start are far more fuel intensive than trips with the engine warm. Declining average vehicle occupancy rates often lead to an increase in transport energy intensity. US data indicate a steady decline of the occupancy rate of passenger cars from 2.08 in 1966 to 1.58 in 1992.[17]

II.2. Regional Variation in Transport Fuel Consumption

Over the past twenty years, total world transport sector energy consumption has grown by 2.7 per cent per annum. Within the OECD, growth was the slowest in North America, reflecting its relative high degree of saturation in the transport sector.

Figure 7.4: **Transport Sector Energy Consumption**



Growth in ROW was more than twice the rate in the OECD. Within ROW, growth was exceptionally high in the Middle East and China. During the 1980s, total transport energy demand in South Korea grew, on average, by more than 14 per cent per annum and is now more than seven times its 1971 level. During the 1970s, growth was very high in Mexico and the Middle East and, although, growth slowed substantially during the 1980s, the composite growth rates from 1971 to 1992 were still quite high, at 5.9 and 9.6 per cent per annum respectively.

World transport energy demand is expected to grow by 2.5 per cent per annum over the outlook period. Average growth in transport sector energy demand is expected to be 1.6 per cent in the OECD, 2.4 per cent in

17. U.S. Department of Transportation (1993).

FSU/CEE, and 4.5 in the ROW, from 1992 to 2010. The highest growth is projected for South Asia, at more than 6 per cent annually, and the lowest for North America, at 1.5 per cent. As in the past, within the OECD, the highest growth rate is in the Pacific region, at 2.1 per cent. Compared with the historical trends, growth over the outlook period will be slower in all the regions, with the exception of South Asia and CEE/FSU.

Table 7.1: **Transport Energy Demand Growth Rates**
(% p.a.)

	1971-1992	1992-2010	1992-2010		
	Total Transport		Gasoline	Diesel	Aviation Fuels
North America	1.6	1.5	0.9	2.3	2.6
Mexico	5.9	3.2	3.0	3.0	5.2
OECD Pacific	3.8	2.1	2.1	2.1	2.3
OECD Europe	3.0	1.7	1.1	2.1	2.9
OECD	2.2	1.6	1.1	2.2	2.7
FSU/CEE	1.2	2.4	2.7	2.6	2.3
South America	3.2	3.3	3.6	3.4	2.9
Brazil*	4.1	3.4	4.5	3.7	3.3
Africa	3.6	3.4	3.4	3.5	3.2
South Africa	1.6	3.2	3.2	3.3	2.8
Middle East	9.6	2.9	2.8	3.0	3.0
East Asia	6.5	5.7	5.7	6.1	5.9
South Asia	3.6	6.1	7.4	6.5	4.3
China	11.8	5.4	6.4	7.9	8.7
ROW	5.5	4.5	4.6	5.0	4.6
World	**2.7**	**2.5**	**2.1**	**3.3**	**3.1**

* Data for gasoline does not include alcohol.

Of the principal road transportation fuels, demand for diesel fuel, in all the regions except Mexico, showed the highest growth rate from 1971 to 1992. Diesel is expected to continue to be the fastest growing fuel over the outlook period, with projected growth of 2.2 per cent in the OECD (compared to 1.1 per cent for gasoline), 5.0 per cent in the ROW (4.6 per cent for gasoline) and 3.3 per cent for the world as a whole (2.1 per cent

Illustrative List of Reference Materials for Historic Emissions Trends and Indicators

"Energy Use and Carbon Emissions: Some International Comparisons," Energy Information Administration, Office of Energy Markets and End Use, U.S. Department of Energy.

"Energy Use and Carbon Emissions: Non-OECD Countries," Energy Information Administration, Office of Energy Markets and End Use, U.S. Department of Energy.

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"CO2 Emissions from Developing Countries: Better Understanding the Role of Energy in the Long Term, Volume I: Summary," J. Sathaye and A. Ketoff, Lawrence Berkeley Laboratory Applied Science Division, 1991.

"Energy Efficiency, Developing Nations and Eastern Europe: A Report to the U.S. Working Group on Global Energy Efficiency," M. Levine, et al., June 1991.

"Emissions Scenarios for the IPCC: An Update," documentation in support of Chapter A3 of "Climate Change 1992: The Supplementary Report to the IPCC Scientific Assessment," Cambridge University Press, 1992.