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**The Climate Convention:
Criteria and guidelines
for joint implementation**

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**The Climate Convention:
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February 20, 1992

Preface

The main idea of joint implementation of commitments in a Convention on Climate Change was discussed at a workshop organized by CICERO in Talloires, France on December 6-7, 1991 with participation from a number of delegations to the INC/FCCC. During the workshop several questions for clarification were raised. On this occasion Tata Energy Research Institute, Institute for Environmental Studies, Amsterdam and CICERO volunteered to produce a common paper on these issues as an input to INC/FCCC V. Later on it was agreed that the Chair of Energy Economics, University of Essen should join the effort.

This policy note does not present the main idea of joint implementation, since it is already well known. Instead we deal with questions that have been raised and try to clarify them. From our knowledge of the relevant studies of alternative policy options we conclude that there is a strong case for moving towards cost-effectiveness on the national, regional and global level.

In this policy note we discuss mainly how the Parties to the Climate Convention could gradually develop a mechanism for joint implementation. Our basic argument is that as long as verification of the positive abatement effect of projects carried out jointly is safeguarded, the Parties should allow themselves flexibility in developing cooperative strategies during what could be regarded as a pilot phase.

We have not had the time to achieve full agreement in every detail about the issues discussed in the policy note. Some questions are clearly of a nature that has to be left for negotiating. It is still our hope that this policy note may be of interest and even of some help for the delegations to the INC/FCCC.

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February 20, 1992

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Introduction

In the work of the INC/FCCC substantial attention has been paid to the possible provision for Parties to the Climate Convention for joint implementation of commitments. It appears that paragraphs necessary to allow for joint implementation are to be found in the texts on the table for session V of the INC/FCCC.

On the general level a mechanism for joint implementation could serve two purposes. 1) To allow for as cost-effective implementation as possible, and 2) to provide funding for climate related projects - in line with development/restructuring programs - for countries to which financial resources are very scarce or lacking.

One will have to recognize that cost-effectiveness is only one of the negotiating objectives. A balance between different objectives could be foreseen, such as primary responsibilities for action by and in countries that contribute the most to the accumulation of greenhouse gases in the atmosphere. The case for cost-effectiveness will be strengthened if it can be argued that it contributes to e.g. optimizing the level of abatement and to equity in burden-sharing. Cost-effectiveness is a necessary and above all desirable condition for rational abatement strategies, even if it is not a sufficient condition.

It should be noted that cost-effectiveness has been discussed so far mostly on the global level. It is unlikely that full effectiveness on this level can be achieved. One will probably have to negotiate a package of abatement strategies which is not fully cost-effective, but which leads in this direction.

How the Parties may want to achieve cost-effectiveness across branches, sectors and regions in their countries will have to be left up to them. There are reasons to consider guidelines that could fit differences in circumstances and policy preferences among the contracting Parties. Parties may, however, want to ensure coordination and harmonization of comparable measures through relevant international bodies.

1. The case for cost-effectiveness

Cost-effectiveness is achieved when a given level of abatement is achieved at a lower cost than otherwise possible, only under optimal conditions at a minimum cost. Note that the basis for any assessment of cost-effectiveness

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1. The case for cost-effectiveness

Cost-effectiveness is achieved when a given level of abatement is achieved at a lower cost than otherwise possible, only under optimal conditions at a minimum cost. Note that the basis for any assessment of cost-effectiveness

is a given environmental objective. The phrase does not apply to the study of what the objective should be, only to how it could be achieved with the least interference with other economic objectives. A given and verifiable environmental objective is a most important criteria for an effective cost-effective strategy.

One can define cost-effectiveness on the level of the individual consumer, the firm, the economic sector, the country, the regional and the global level. It could be seen as a desirable objective to organize abatement strategies in such a way that measures could sum up additionally in this respect. Definition on a global level and from there to smaller scales is most preferable. However, a compromise may have to be made for a number of reasons.

In the case of abatement policies contracting Parties may want to start out with approaching cost-effectiveness at their national level. To achieve this a flexible system of implementation of their commitments, including a mixture of taxes, emission credits, technical standards, subsidies and information campaigns is likely to be considered.

The usefulness of emission credits will vary with differences of marginal costs across firms and economic sectors. On the regional level what can be achieved by the use of cost-effective schemes of cooperation through joint implementation may increase substantially, particularly for smaller countries with small internal differences e.g. in efficiency of energy systems. The potential for improving cost-effectiveness is likely to increase further on the global level, because of even larger differences in marginal costs of abatement measures.

The first generation of international environmental agreements negotiated during the last two decades did not, or not fully, succeed in using the potential for cost-effectiveness. Generally they have been agreements of equal reductions in emissions from all contracting Parties within their own borders. In the case of climate change there is strong evidence that such an approach would 1) constitute an implied unequal burden-sharing, and 2) is far from cost-effectiveness on the global and regional level.

For example a recent OECD-study concluded that when cost-effectiveness policies are introduced, average annual welfare losses in 2020 from imposing Toronto-type abatement targets fall from 3,5% of World GNP to 1,5 %. Several other studies in the literature confirm this result and indicates an even much larger scope for cost-saving (e.g. a study for the

EC-countries concluded that stabilization of CO₂ emissions could be achieved with marginal or no effect on GNP growth (DRI,1991)).

Given that the resources likely to be allocated for abatement measures worldwide will be limited at any time, one would expect that cost-effectiveness will indirectly contribute to a more ambitious solution, closer to a global optimum.

2. National versus joint implementation

By definition all commitments under a Climate Convention will be national. The provision for joint implementation will not in any way interfere with the issue of national responsibility. It will mainly serve to open a new arena for cooperation in abatement strategies, based on mutual benefits.

One concern that has been raised is that a mechanism for joint implementation would lead to some countries meeting all or almost all of their commitments abroad and thereby continue the increase of their emissions indefinitely. In this respect joint implementation has been characterized as "targets-leakage" and as a "cheap way out". Any mechanism and verification machinery should ensure that crediting and environmental benefits are fully tied.

First of all one should note that joint implementation in principle would only appear if some countries will not have any "no regrets" options for meeting their commitments nationally. However, it will be very hard to find a country that meets this requirement.

Secondly, joint implementation should not be regarded as a "cheap way out". Cost-effectiveness will by no means leave an investing Party with no cost. The only pay back for the investing country Party of any investment made through a mechanism for joint implementation will be the credit. The project will remain the property of the receiving country Party and will be of no value to the investing Party after the agreed contract time.

Thirdly, projects likely to be parts of agreements for joint implementation will always entail a certain risk of being unsuccessful. This risk will under the convention have to rest with the investing Party.

On this basis, there is very little reason to believe that joint implementation will be a dominating part of developed country Parties' response strategies. However, it has been suggested that the industrial

countries could agree on a common abatement target. With such a target in the bottom, one would have a safer basis for the necessary definition of the objective, a clear point of departure for assessment of cost-effectiveness. Any assessment of cost-effectiveness will need detailed case by case analysis and evaluation. Restrictions in Parties in search for least cost limitations of emissions is likely to increase not only the costs of reaching a certain target, but also the problem of acceptance, especially in industrial nations with ambitious targets.

In any case a number of procedural requirements could be set up to take care of the concern. Country Parties which want to meet part of their commitments jointly could be required to demonstrate the measures they intend to undertake on their own territory before entering into joint implementation. This will be part of the national strategy to be reviewed by the Parties of the Convention. Secondly, the cost-effectiveness of investments in joint projects will have to be documented as compared to projects inside the investing Party's territory. By this requirement one would set a political incentive for each Party to do all that is feasible on their own territory and to prove that joint implementation is feasible.

3. Definition of Baseline

Ideally a mechanism for joint implementation would start out from firmly defined "emission" targets or "quantitative emission trajectories over time" for each contracting Party, i.e. quantitative "as a function of time." However, such a situation may be hard to achieve - as is the case for most conditions for market oriented policy instruments to work optimally. Since the possible gains from least cost options, as compared to command and control strategies, may be very large in some cases, a usual pragmatic approach could be foreseen.

Definition of the baseline from which limitations of emissions (including when agreed on a scientific basis for conservation/enhancement of sinks) should be calculated will need close inventories and "quantitative national emission projections" as a basis for all implementation of commitments under the Convention. For many Parties the material is already available. However, technicalities remain to be resolved by decision of the Parties later on. The discussion on how to calculate enhancement of sinks as part of response strategies illustrates that additional scientific clarification is needed.

When joint implementation takes place among Parties with specific commitments, no particular problems of calculation and verification should occur. The accounting procedures will of course have to guarantee that double accounting is avoided.

When joint implementation takes place between Parties where one or more have no specific commitments, particular attention will have to be paid to definition of the baseline. Such a mode of operation could only work as a pilot phase for the mechanism of joint implementation. In principle the mechanism can work most effectively when the parties concerned have national quantitative baselines.

In the first pilot phase, to establish credibility one could work along the following lines:

Those Parties with no specific commitments intending to contract joint implementation will have to produce national strategies and related emissions scenarios as part of their development/restructuring plans, including how energy needs are to be met. These documents could be reviewed by panels set up by decision of the Parties. The national strategies and scenarios will serve as a baseline.

In order to facilitate verification further, a detailed description of each project to be funded under the mechanism for joint implementation will be needed, including information on how maintenance of the abatement effect is to be provided (ref. para. A above). It may be necessary to define as a baseline for the abatement credit in a certain project, e.g. a power plant, the degree of efficiency otherwise achieved and not the degree of efficiency achieved until the agreement on joint implementation. The project-oriented approach will allow for a continuous review by the Parties of the beneficial effect of the climate of the mechanism as such.

The important question is whether the amount of abatement measures and the limitation of net emissions will actually benefit from a mechanism for joint implementation. Even if the perfect conditions for such a mechanism is not established in the pilot phase, one might argue that the environmental benefit will increase because:

1. Many Parties of the Convention do not have the financial resources necessary to undertake active efforts to limit emissions, even if relevant projects are available.

2. A mechanism for joint implementation is likely to reduce costs and thereby reluctance in industrial countries to take on specific commitments. In this case the bulk of commitments will increase.

When considering the benefits and disadvantages of a mechanism for joint implementation, one could choose to accept only the perfect conditions for joint implementation: (all parties have quantitative targets or trajectories. In case this goal is not achievable one may wish to start the mechanism in a pilot phase with reviews by expert panels under the guidance of the Conference of Parties.) A certain risk of target leakage will have to be accepted.

With a view to such a second best solution one could, while allowing for joint implementation, promote a gradual development of more ambitious national strategies for Parties which do not take on specific commitments in the first phase. The risk of leakages would be reduced if such strategies could, after some experience has been gained, entail commitments to controlled growth of emissions e.g. in developing countries in the second stage.

4. Identification of Projects

A. Assessment of Climate Effect

The Parties of the Convention will have to decide on criteria to be met by all projects eligible for acceptance under the mechanism. These criteria will have to specify how the actual effect on limitation of emissions/enhancement of sinks should be documented, not only for the short period after the investment is made, but also for the whole period of contract between Parties joining in the implementation.

These criteria could then be flexibly developed completely in line with requirements set out for national implementation of commitments. Transparency will be of vital importance to establish credibility.

B) Assessment of Cost-Effectiveness

The investing country Parties will have to provide, as part of their national strategies, a detailed list of measures to be implemented inside their own

borders, including indication of where they see the break point where marginal costs will reach an unacceptable level and where they will have to consider projects for joint implementation.

On this basis the approval of projects for joint implementation by the Parties will rely on relevant material that will indicate to what degree joint implementation will contribute to cost-effectiveness as well as to a more equitable burden-sharing among countries with specific commitments.

C) Definition of Property Rights

The credits given to the investing Parties will actually serve as leased emission permits for a contracted period. This period is likely to be set in line with the feasible lifetime of the investment, e.g. a modern energy project, power station etc.

The investment for joint implementation to be contracted between the Parties in this case will be the property of the receiving Party and remain so after the contracting period, if not otherwise agreed upon by the Parties. Similarly, conditions and provisions for maintenance etc. will have to be part of the contract.

As the mechanism develops and gains credibility, more flexible definitions may be agreed upon, whereby varying responsibilities and entitlements to each contracting Party may be reflected in the sharing of costs and pay-offs.

D) The Role of the Private Sector

By definition a contract of joint implementation will be between Parties, i. e. member states. The Parties will have to present projects to the Clearing House and will be responsible for implementation and maintenance. There is no need in any way to inhibit close bilateral cooperation in developing projects.

However, the Parties may agree in the contract that enterprises on one or both sides shall contribute to the planning, funding, physical implementation and maintenance of each project. Indeed, Parties may find that this will contribute to effectiveness, speed of implementation and actual success of the mechanism.

In practice, one will probably find that a mechanism for joint implementation will not differ from most other cooperative strategies in economic and other policies to which countries agree.

5 Issue of Credits

A) Time Span of Credits

The need for defining a time span for the credits to be issued by the Clearing House is obvious for theoretical reasons. It will be impossible to calculate the cost of an open-ended contract.

There are also other reasons. In the longer term the receiving Parties will have increased their use of energy and their emissions as their economies develop, and the mechanism for joint implementation should not foreclose this in any sense, but rather contribute through provision of technology and know-how for these Parties to achieve economic growth with the lowest possible emissions of GHG gases and by the least possible harm to sinks.

The time span can hardly be decided on a general level. Obviously one will have to base the agreement of the time span of the technical nature of each project. In cases where investing Parties will be looking at the relatively long term credits, one could expect that the cost ("price") will be higher.

B) Possible Overcompensation

The investments that are made through the mechanism for joint implementation are actually serving as internationalization of environmental costs by the investing Party. If the Parties of the Convention will consider such projects for carrying a special risk with regard to their actual effect in limiting emissions, or for other political reasons would like to contribute to the credibility of the mechanism, one could consider a certain overcompensation. A decision of the degree of overcompensation can hardly be based on a principle, and one will have to choose a certain percentage, say 10 or 20 percent.

From an economic point of view this would increase the cost of joint implementation projects and thereby undermine the total economic feasibility of certain options otherwise likely to be funded.

C) Sharing of Credits

Suggestions have been made for a scheme for sharing of credits. This idea will have to be taken into account.

In cases where the receiving Party will find it economically feasible to contribute a part of the funding of a certain project, which would contribute to the "partnership idea" of the mechanism, this will obviously be necessary. In such cases the Clearing House could actually serve as a cover for incremental cost of upgrading new energy investments (e.g. power stations) to the best available technology.

In cases where the receiving Party is likely to take on specific commitments, such "joint ventures" would actually be very useful and serve as incentives for new Parties to take on commitments.

In the case of the receiving Party being a low income developing country it is on the other hand very hard to see what value a share of the credit would have. A system of shared credits will in this case only serve as a means to increase the cost of joint implementation projects.

However, as part of the normal review process all contributions to limit emissions and/or enhance sinks should be reported and political credit given to those Parties which actively seek cooperation to achieve given development goals with the lowest possible harm to the environment.

6. The Incentive effect of the Mechanism

The most important incentive effect of the mechanism for joint implementation is that it will encourage more Parties to take on specific commitments as they realize that excessive costs may be avoided by increased cost-effectiveness.

Secondly, it will give an incentive to more Parties taking on general commitments, including the provision of national strategies and thereby joining into a cooperative framework where know-how, introduction and development of new technologies are important. Capital and technology

transfer, training of workers and improvement of managerial skills are of crucial importance for striking a better balance between environmental and development strategies in developing countries and countries in economic transition. This process of harmonization of energy and environmental policies can prove important in the long run.

On the negative side one will have to recognize that the existence of a mechanism for joint implementation in the worst case could serve as an incentive for countries without specific commitments to not implement projects that are actually profitable and feasible, expecting that they will be funded by the Clearing House. If one would decide to reject the provision for joint implementation on this basis, however, one will have to take the same attitude to most mechanisms for transfer of financial resources from one country to another.

6. Institutional Support

Concern has been raised as to whether a multilateral mechanism for joint implementation will need a large bureaucracy to function. It would certainly be a major obstacle if that was needed.

The issue should be approached in a pragmatic way on the basis of necessary tasks to be fulfilled:

1. Supplement bilateral contracting by serving a contact function
2. Register with documentation all projects for joint implementation by contracting Parties.
3. Organize non-biased scrutiny of projects according to procedures agreed by the Parties of the Convention.
4. Issue credits to Parties in accordance with their contribution.

One possible institutional set-up suggested is a multilateral Clearing House as a part of the financial mechanism of the Convention.

The tasks mentioned above may be administered by the secretariat with the technical support of existing multilateral organizations. The Parties may want to assign expert panels to carry out scrutiny of projects in order to secure that projects presented for crediting actually will produce the

abatement effect. In this respect one could consider linking the scrutiny to the more general review process to be organized under the Convention.

It should be obvious that the institution or institutions assigned to facilitate joint implementation should not itself participate in any contracts or "trading of quotas".

The establishment of a new, costly and powerful multilateral institution should not be necessary. The mandate of the institution should be restricted to supporting joint implementation as a means to achieve the main objective of the Convention.