

## Practical aspects of Joint Implementation

Axel Michaelowa

HWWA-Institute for Economic Research, Neuer Jungfernstieg 21, 20347 Hamburg, Germany

### Abstract

Article 4, 2a of the UN Framework Convention on Climate Change states the possibility of joint policies of different countries to achieve national greenhouse gas reduction commitments ("Joint Implementation"). The cost of reducing greenhouse gas emissions can be reduced drastically if industrialized countries shift abatement activities to developing countries as marginal cost of reduction is much higher in the former countries. In this way economic efficiency of abatement measures can be raised to the point where marginal cost is equal all over the world. At the Conference of the Parties in Berlin in March 1995, criteria for Joint Implementation are to be established. The paper discusses possible forms of Joint Implementation and develops criteria.

### 1. JOINT IMPLEMENTATION AS AN INSTRUMENT TO ACHIEVE EMISSION REDUCTION AT REDUCED COSTS

It is improbable that there will be an international agreement on efficient global instruments to abate greenhouse gas emissions such as an international carbon tax or tradeable emission rights. Therefore, globally inefficient national policies will prevail that use fiscal or regulatory instruments. To achieve higher efficiency, national policies can be extended by Joint Implementation. Emission reductions achieved through projects abroad are credited to the national goal. Domestic emitters will face reduced taxes or regulation if they prove a reduction abroad. Joint Implementation is a very flexible instrument and does not address difficult distributional issues like taxes or tradeable permits do. It also does not depend on the existence of a global agreement; only the domestic incentives are a necessary condition. Private firms, non-governmental organizations (NGOs) and individuals can take part in Joint Implementation projects if there are sufficient incentives. The level of incentives depends on the amount of tax relief and regulatory concessions granted.

The prevailing huge differences in marginal costs of reduction can be reduced via Joint Implementation; this leads to a rise of global abatement efficiency. Moreover, Joint Implementation can be decisive in helping developing countries to attain a development path which is less emission-intensive than the business-as-usual case. These countries could avoid high sunk costs in this way. Some caveats apply, though. Transaction costs, market failures and intransparencies can seriously hamper the efficiency of Joint Implementation. The calculation of reductions achieved through projects depends on a realistic reference scenario ("baseline"). Verification and evaluation of emission reduction seem rather difficult. The necessary precaution should not lead to inappropriate regulation.

## 2. INSTITUTIONAL DESIGN OF JOINT IMPLEMENTATION

The Framework Convention on Climate Change states in Art. 4,2a that OECD countries and countries in transition are allowed to implement abatement measures and measures to protect greenhouse gas sinks jointly with other contracting parties. Art 4, 2b allows cooperation to achieve national abatement goals. The first Conference of the Parties shall develop criteria for this cooperation (Art. 4,2d). In the sessions of the Intergovernmental Negotiating Committee in 1993 and 1994 it became obvious that there is no international consensus concerning Joint Implementation. Especially some of the developing countries fear that the industrialized countries will use Joint Implementation as "cheap buy out". As this argument is not based on economic, but only on political reasons, it will not be discussed in detail. Other criticisms are more valid and will be mentioned below. Nevertheless, the political pressure of the opponents has led to the postponement of crediting reductions of Joint Implementation projects until a pilot phase of several years to test the concept has been completed. Some of the following possibilities to institutionalize a Joint Implementation regime should be tried in the pilot phase:

### 2.1. Multilateral approach: international fund

Countries wishing Joint Implementation credits contribute to an international fund whereas other countries offer projects. The fund management selects suitable, efficient projects. Contributors receive a credit proportional to their share of the total project portfolio. The experience of multilateral institutions (e.g. the Global Environment Facility) could be used and project risks would be pooled. On the other hand the incentive to minimize transaction costs would be reduced as the difference between the stipulated price per ton carbon reduced and the actual marginal costs of reduction accrues to the fund. Moreover, costs of bureaucracy tend to rise. Therefore, this approach should not be pursued further. Some of its advantages can be utilized by installing an international database where investors and project hosts are matched. Access to the database should be free, whereas a fee could be levied for successful matching.

### 2.2. Bilateral contracts

Governments can organize Joint Implementation projects on a national, regional or local level and have them funded by other governments. Especially the local level seems appropriate as cities often have strong ties to twin cities abroad. On the other hand the investing government can hire private firms or NGOs as subcontractors. Moreover, governments can act as facilitators by concluding framework contracts to recognize projects of private firms and NGOs acting independently if a government agency gets a certain amount of information from the project participants. The existence of investment protection contracts can facilitate Joint Implementation contracts.

### 2.3. Contracts between private firms

Private firms are interested in investing into Joint Implementation projects if they can get tax relief or reduced regulation in their home country and the project-related costs are lower than the tax or costs of regulation. Furthermore, such "green" investments are valuable for marketing or lobbying purposes at home and for market entry abroad. Hosts of Joint Implementation projects receive new technology and additional capital at no cost.

Governmental recognition of the projects is essential. Private projects will not require costly

bureaucracies and should keep transaction costs low. Additional monetary and technological transfers into developing countries can be generated in this way.

#### **2.4. Contracts with participation of NGOs**

NGOs are transferring huge amounts of money into developing countries. Therefore, they should be able to invest and participate in Joint Implementation projects. The projects must be recognized by the governments as indicated above and an investing NGO should be granted an amount equal to the tax relief granted for a private firm as incentive. NGOs are able to implement projects in fields which are not attractive for private or governmental activity, e.g. grass-roots projects with many participants and low budget projects, which do not fit into government priorities, e.g. with information-sharing and educational content. NGOs should be able to integrate large parts of the population in the developing countries into abatement efforts especially in the primary sector whereas in industrial countries they can promote measures in the household sector. They can contribute to behavioural changes. Many NGOs, though, are against Joint Implementation and therefore will be reluctant to take part in projects.

### **3. CRITERIA FOR JOINT IMPLEMENTATION**

#### **3.1. Eligible greenhouse gases**

All greenhouse gases should be eligible for Joint Implementation projects. In the beginning, though, only those gases shall be considered which are mentioned in the Framework Convention. New scientific results which lead to changes of emission factors or global warming potentials should only apply for new projects, not for ongoing projects as the investment decision cannot be altered any more. Only where obviously negative effects on climate are recognized as a result of new scientific knowledge, the project should be discontinued.

#### **3.2. Acceptable measures - both reduction and sink enhancement**

The most promising category of emission reduction projects is the raising of efficiency in electricity generation on the base of fossil fuels. Further options are substitution of fuels, reduction of energy use in production processes and household use. Another option is the reduction of agriculture-related emissions through change of feedstocks. Sink enhancement, e.g. afforestation or restoration of wetlands should also be accepted, if it can be sustained for a long time.

#### **3.3. Baseline scenarios**

The most important question concerning Joint Implementation is the calculation of the reduction achieved. One therefore has to calculate the emission level occurring if the project had not taken place - the baseline scenario. The *indirect* effects of the projects, e.g. price changes, have to be considered if the baseline shall be realistic. Obviously, developing an aggregated baseline scenario is a complex and expensive matter. As the baseline problem occurs whenever any national reduction goal has to be decided, it is not only a problem of Joint Implementation. A project-related baseline developed with an internationally accepted methodology should be sufficient to evaluate impacts of Joint Implementation.

### **3.4. Discount rates**

As Joint Implementation projects have very different durations and the national goals are standardized on certain years there has to be some discount factor for the valuation of reductions at different points of time. It should be positive because there is a distinct probability that damage caused by climate change could rise sharply after certain thresholds of greenhouse gas concentrations have been passed. As abatement now lowers the probability that these thresholds will be passed, it is more valuable than abatement in the future.

### **3.5. Crediting**

Crediting of emission reductions should only be possible after independent verification of the reduction and should be in full. Any partial crediting raises marginal reduction costs and is therefore inefficient. Moral hazard, i.e. the tendency to declare unrealistically high reductions, should be contained by strict verification.

### **3.6. Reduction of leakage**

By reducing the difference between marginal reduction costs the tendency to relocate production facilities with high emissions abroad ("leakage") if greenhouse gas taxes will be reduced for firms investing in Joint Implementation. The same applies for trade-related effects. The comparative advantage of countries with no climate policy measures is reduced as well as the climate policy-related cost of domestic firms.

### **3.7. Incentives for transfer and development of technology**

The autonomous technology transfer into developing countries is likely to be reduced because of the new, relatively strict GATT rules on intellectual property rights. Joint Implementation can reverse this trend by alleviating the transfer of latest technology, e.g. in the case of renewable energy use, as this is the only way to achieve high emission reductions. Because of secondary effects like training of technicians the indigenous technology capacity of developing countries should rise. Economies of scale should become relevant in the case Joint Implementation leads to a rise in application of new, hitherto expensive technology.

### **3.8. Verification**

Verification procedures should be compulsory. Any project is to be certified by independent accountants. A national verification board can check the quality of any verification. Standards for verification should be harmonized internationally. As the accuracy of verification is still rather low, the development of more reliable measuring methods should be encouraged and funded. Again, verification is not only necessary for Joint Implementation but also for the control whether national goals have really been reached.

### **3.9. Sanctions**

If project participants have intendedly overstated the quantity of emission reduction, they should be excluded from the mechanism of Joint Implementation forever. If countries are involved directly, dispute settlement similar to the new GATT procedures should be applied. It should consist of several layers and include an independent panel and appellate procedures. Finally, countries should be allowed to use retaliatory measures if their counterpart does not comply with the recommendations of the panel.