

# **The role of Joint Implementation and greenhouse gas emissions trading for project finance**

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## **1. Basics of international climate policy**

After long international negotiations, the Kyoto Protocol of 1997 was approved including legally binding emission targets for a basket of six greenhouse gases. These targets are differentiated and apply to most OECD countries and countries with economies in transition (the so-called Annex B). A novel feature is the use of a commitment period that runs from 2008 to 2012 instead of a single target year. The Kyoto Protocol defines national greenhouse gas emission budgets for industrialised countries for 2008-2012. The U.S. have to reduce their emissions by 7%, the EU by 8% compared to 1990 levels. The Protocol leaves open how these targets are reached. The possibility of allowing countries to credit emission reductions in other countries towards their national emissions targets has been discussed since 1991 when the U.N. Framework Convention on Climate Change (UNFCCC) was negotiated. After lengthy negotiations, four flexible mechanisms were included in the Protocol: emissions trading (Art. 17) in permits derived from the emission budgets (assigned amounts), Joint Implementation (JI) (Art. 6) and projects of the "Clean Development Mechanism" (CDM) with countries without emission targets (Art. 12). While CDM credits shall already start from 2000, JI only starts in 2008. The exact rules are to be defined at COP 6b in July 2001 at Bonn. Currently U.S. opposition threatens the Protocol and it is not clear whether the EU will find enough allies to ratify the Protocol to achieve its entry into force.

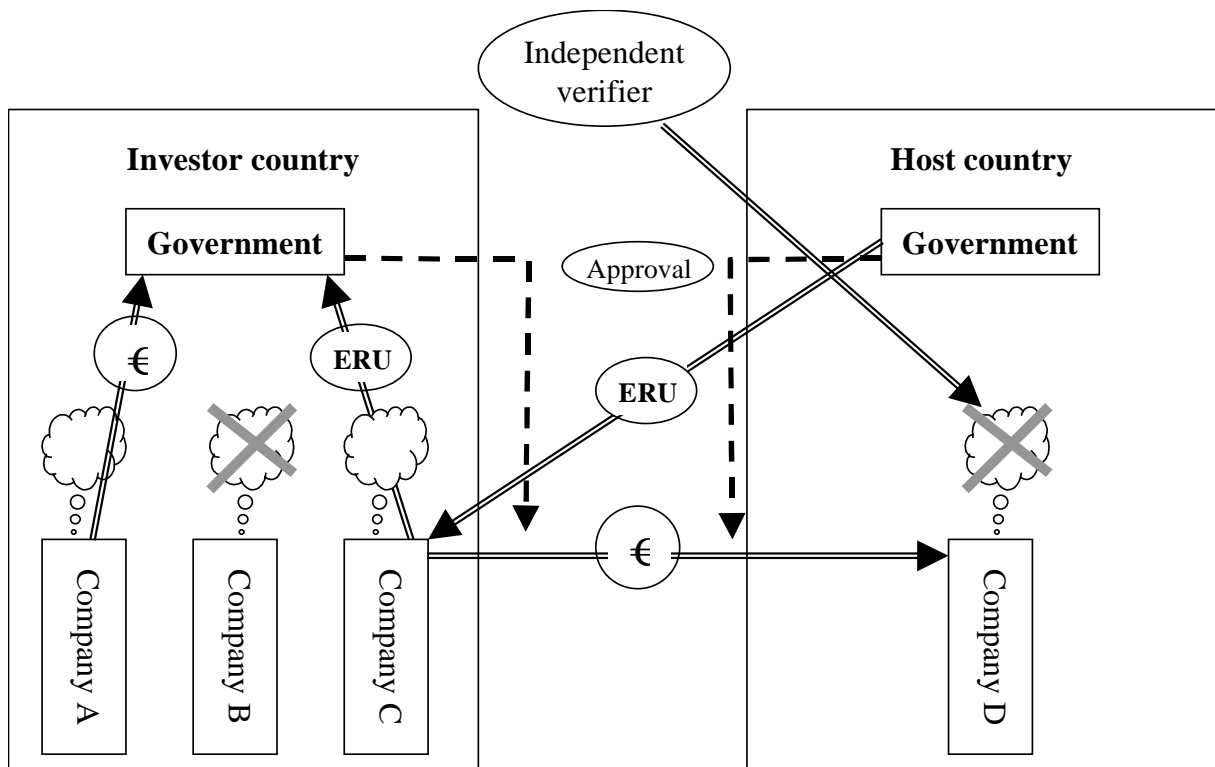
From an economic point of view, it is efficient to give countries with emission targets a maximum of flexibility concerning the location of emission reduction due to the global mixing of greenhouse gas emissions. Thus, the cheapest measures should be taken first regardless where they take place. However, incentives for long-term innovation have to be provided to ensure that short-term savings do not lead to higher long-term costs and/or detrimental social-economic effects on the country where they take place.

## **2. What is Joint Implementation?**

The basic rules for JI can be found in Article 6 of the Kyoto Protocol. Art. 6, 1 allows industrialised countries to acquire emission permits through investment in emission reduction or sequestration projects in other industrialised countries. The criteria for projects are the same as in the AIJ pilot phase that is described below in more detail (Art. 6, 1a and b). Emission permits created in that way are to be considered equal to emission permits from emission trade under Art. 17 (Art. 3, 10 and 11). Emission permits ("Emission reduction Units", ERUs) cannot be acquired if annual reporting requirements have not been met or the reports do not comply with the binding rules (Art. 6, 1c). If a review team has doubts about the compliance of the host country the permits shall still be tradable but are "frozen" until the doubts are resolved (Art. 6, 4). Currently it is unclear whether host countries which do not fulfil the reporting requirements should be allowed to do JI provided there is independent verification of the emissions reductions.

A necessary condition for JI investment by private companies is the existence of domestic climate policy instruments such as an emissions tax or an emission trading system against which the ERUs can be credited (see Figure 1).

**Figure 1: How Joint Implementation works**



Company A pays an emission tax while company B invests in emission reduction. Company C invests in a JI project abroad reducing the emissions of company D. Both governments have to approve the project and negotiate the number of ERUs created. Company C then gets a tax exemption in exchange for the ERUs.

Rules for JI can be less stringent than for the CDM as the fact that both countries have emission targets means that even in the case of wrong calculation of emissions reductions, there will not be an extra emission. This of course only holds as long as no country overshoots its emission target due to the wrong calculation of ERUs. Thus strong compliance rules are needed.

### 3. Potential financial flows into countries in transition

The price of an Emission Reduction Unit (ERU) depends strongly on the demand and on the exact rules of the Kyoto Mechanisms. For example the solution of the question, whether Russian and Ukrainian surplus permits (so-called "hot air") can be sold freely or are subject to restrictions will have an enormous impact on the market. The current market price estimate without any surprises concerning the rules lies around 5-10€ t CO<sub>2</sub>. The average price of the first ERUPT tranche has been at 8.5 € The more stringent voluntary company emissions trading programmes such as those of BP and Shell have started with prices of 20 €/t but recently come down to 7-14 € Market prices for grey permits in the U.S. are much lower at 1-3 €/t. Currently price transparency is very low and quality of offered permits varies considerably. Moreover, it is not clear which permits will eventually fulfil the international rules. If the U.S. does not ratify the Protocol, the demand for ERUs will be much lower than anticipated, leading to a downward pressure on prices.

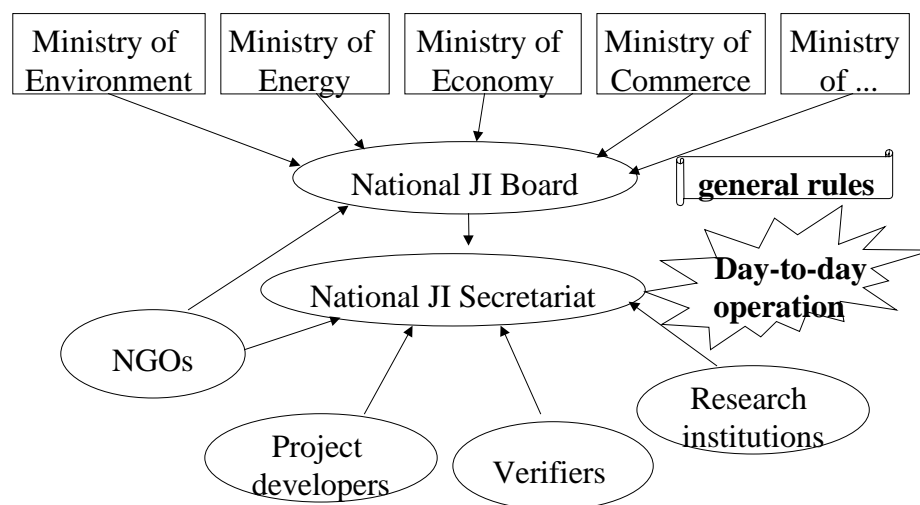
### 4. Project types with benefits for nature protection

There is a wide range of JI project types, but only a few have benefits for nature protection. The category with the highest benefit is surely forest and wetland protection but here the definition of the baseline will be difficult. Afforestation and reforestation can be helpful if done in an ecologically correct way. Monocultures would clearly be counterproductive. Sequestration in soils may offer a way to preserve extensively used high-biodiversity non-forest lands. Forest management projects can help to implement modern forestry methods that allow an increase in biodiversity. Renewable energy projects can have a positive indirect effect by reducing the mining of fossil fuels with its related impact on nature. For example, a reduction in Estonian oil shale mining would have an enormous impact on nature conservation in large areas of Estonia. Capture and utilisation of landfill/wastewater methane can help in preserving aquatic ecosystems.

## 5. Institutional framework in host countries

It is unlikely that a country will develop a successful JI strategy without appropriate institutions. The setup of institutions takes time and costs money. However, the AIJ pilot phase shows that only those countries with clear institutional responsibilities could actually implement projects without long delays.

**Figure 2: A recommendation for national JI institutions**



The National JI Board would consist of representatives of ministries and have the task to define national JI groundrules, priority sectors and project types as well as setting of incentives and definition of ERU allocation. As a standing body, the National JI Secretariat would approve projects, market the host country worldwide and coordinate capacity building. It would also help in soliciting finance and host a website

## 6. First JI pilot programmes

Due to opposition from the developing countries against crediting of emissions reduction abroad, the 1<sup>st</sup> UNFCCC Conference of Parties (COP 1) in Berlin 1995 decided to set up a pilot phase for projects without crediting of the emissions reduction that was scheduled to last until 1999. These projects were termed “Activities Implemented Jointly” (AIJ). In the time between Berlin and Kyoto the opposition of major developing countries such as India and

China against JI with crediting of emissions reduction hardened again many analysts thought that projects with crediting would ultimately– if at all – only be possible between countries with emission targets. Thus, the interest for AIJ concentrated on countries in transition.

While AIJ developed on the ground, the adoption of the Kyoto Protocol in 1997 had a major impact on the discussion of emission reduction abroad. A curious interaction of the U.S. and Brazil gave birth to the concept of the Clean Development Mechanism (CDM), i.e. emission reduction projects with credits in developing countries. Astonishingly, there was no opposition from developing countries and it was stated that projects could already begin in 2000. Similarly, “Joint Implementation” (JI) projects with countries with emission targets were allowed, but from 2008 only. As now the emission targets got a legally binding character, the attention towards these “Kyoto Mechanisms” was growing quickly. This had a twofold impact on AIJ. On the one hand, AIJ was seen to be an interim mechanism that would soon be supplanted by the Kyoto Mechanisms. On the other hand, AIJ allowed to gain experiences that could be used for CDM and JI development at a later stage.

When it became clear that the rules for CDM and JI would not be elaborated soon but became the centre of difficult negotiations that culminated in the failure of COP 6 in late 2000, the role of AIJ gained attention again. AIJ gave the chance to develop “mothballed” CDM projects and pave the way for agreements on JI projects. For example, the Netherlands have signed a letter of intent with Poland on AIJ projects that would be later converted into JI. The credit sharing was already agreed!. It is not surprising that COP 5 in 1999 prolonged the pilot phase indefinitely (Decision 13/CP.5).

The political basis of AIJ rests on decision 5/CP.1 of COP 1. This decision states that

- AIJ must be compatible with and supportive of the relevant national environment and development priorities and strategies and contribute to cost-effective global environmental benefits and encompass all greenhouse gas sources and sinks.
- AIJ under the pilot phase requires prior acceptance, approval or endorsement by the governments of the Parties participating in these activities.
- AIJ must bring about real, measurable and long-term environmental benefits related to the mitigation of climate change that would not have occurred in the absence of such activities (additionality).
- Finance of AIJ projects has to be additional to Global Environmental Facility (GEF) funds and official development assistance.
- No Party may accrue credits to his own obligations from the UNFCCC with regard to GHG from emission reductions achieved by AIJ in the pilot phase.

As of September 2000, 143 AIJ projects had been officially reported to the UNFCCC secretariat. 38 countries are hosting projects while 12 countries have invested in projects. The following tables are based on the information provided by UNFCCC and classify the AIJ projects by investor and host countries.

**Table 1: Investor countries**

Country	Number of projects
Sweden	52
United States	38
Netherlands	23
Norway	7
Australia	6
Japan, Germany*	5
France*	4
Switzerland	2
Belgium, Canada*, Italy	1

\* The same project has been reported by three investor countries

**Table 2: EIT host countries**

Country	Number of projects
Latvia	24
Estonia	21
Lithuania, Russia	9
Czech Republic, Hungary, Romania, Slovakia	4
Poland	3
Bulgaria, Croatia	1
Sum	84

The development of the AIJ phase over time is shown in Table 3. The extension from the countries in transition to the developing countries after Kyoto can be clearly seen. There is a big lag in host country approval. The list in *the Joint Implementation Quarterly* consistently shows about 30 projects more than registered with the UNFCCC secretariat.

**Table 3: Development of AIJ over time**

	1995	1996	1997	1998	1999	2000
Accepted projects	10	16	61	95	122	143
Projects actually being implemented*	0	3	13	60	86	n.a.
Investing countries	3	3	5	8	11	12
Host countries	7	7	12	24	34	38
EITs	5	5	7	10	11	11
Share of countries in transition in all projects (%)	60	50	74	72	65	58
Planned emission reduction (mill.t.CO <sub>2</sub> )**	23	111	140	162	217	366
Share in countries in transition (%)	56.5	39.5	32.6	31.3	24.3	15.6

\* These are estimates as no reliable information exists. The implemented projects tend to be small projects in countries in transition.

\*\* The emission reduction actually implemented is much lower (see previous note).

While in the beginning, forestry projects had by far the largest share of reductions, projects in the energy sector have taken a higher share in the post-Kyoto phase. The current distribution is as follows:

**Table 4: Project types in EITs**

Project type	Number	Reductions (million t CO <sub>2</sub> )
Afforestation	1	0.3 (costs 0.15 M€)
Forest preservation	2	10.7 (costs 55.7 M€)
Fugitive gas capture	3	31.2
Fuel switch	8	8.8
Renewable energy	28	2.1
Energy efficiency	42	7.1

The Netherlands plan to use JI in a comprehensive way. To avoid a challenge by the World Trade Organisation, they have developed the ERU Tender Programme (ERUPT). Companies offer amounts of emission reduction and the Dutch government buys the cheapest ones. A necessary condition is a Memorandum of Understanding with the host country government that the host country will eventually allocate ERUs in the amount specified by the contract

with the company. So far, such Memoranda exist with Poland, Slovakia, Romania and Bulgaria. In April 2001, the Netherlands allocated 36 million € for 5 projects in EITs that generate 4 million t CO<sub>2</sub> reduction. So far no sink project is included but there is a Polish afforestation project in the pipeline (15,000 ha, sequestration 137,500 t CO<sub>2</sub> p.a., costs 30 million €). Annual tendering is scheduled to remain at 35 million €

Also the World Bank's Prototype Carbon Fund (PCF) is a pilot programme where 17 companies and 6 governments have pooled 180 million \$. Contributors, or "Participants," in the PCF will receive a pro rata share of the emission reductions, verified and certified in accordance with carbon purchase agreements reached with host countries. The PCF is endeavouring to achieve a balanced portfolio both geographically and technologically. Approximately half of the investments will be made in JI projects in EITs Renewable energy and energy efficiency projects are prioritised. No more than approximately 10% of the PCF's assets will be invested in sinks projects; so far not a single sink project has been financed by the PCF.

A lot of private banks have carbon funds at different stages of development. Several of them address sink projects, but mainly in developing countries.

## **7. Synergy between JI and nature protection?**

Only a few JI project types have immediate benefits for nature protection. However, JI projects can help to afforest and to protect forests and wetlands. Experience from pilot projects has shown that investment can be substantial under the right framework. However, there may be an incentive to plant monocultures to maximise the carbon sink. The baseline calculation poses problems. The financial revenue from ERU sales strongly depends on the future course of climate negotiations.

## **8. Further reading**

Very useful information on the progress of AIJ/JI programmes and projects is found in the *Joint Implementation Quarterly*, published by Joint Implementation Network (JIN), Groningen, The Netherlands, and available online <http://www.northsea.nl/jiq/>

The official AIJ website with detailed reports of most projects and contact addresses of the national focal points can be found at <http://www.unfccc.int/program/aij/index.html>

Information on the Dutch ERUPT programme is available at <http://www.senter.nl/erupt/main.htm>, including the tender rules, baseline regulation and legal texts.

Details on the World Bank Prototype Carbon Fund can be found at [www.prototypecarbonfund.org](http://www.prototypecarbonfund.org)

Information on the BP internal emissions trading system is available at [http://www.bp.com/key\\_issues/environmental/climate\\_change/emissions\\_trading/bp\\_et\\_system.asp](http://www.bp.com/key_issues/environmental/climate_change/emissions_trading/bp_et_system.asp)