Grant Research Project "Enhanced Flexibility in European Effort Sharing by Application of a European Project Mechanism – EPM"

Use of Project Mechanisms in Europe - insights from Joint Implementation (JI)

Discussion paper

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Contents

1 Executive Summary

Based on literature analysis and expert interviews this paper sums up main aspects the inspirational background JI is able to offer for the establishment of an European Project Mechanism (EPM). The following conclusions are made:

Environmental integrity is no real problem for an EPM.

On environmental integrity this papers take-away is very positive: In the ESD II context (absence of hot air, no rationale for a bypass of AEA sales via an offset instrument) integrity is likely to be no important problem at all. JI experience even confirms that there was high environmental integrity in European MS. In the unlikely case of non-additional projects under the EPM this would be to the disadvantage of the host country's inventory – thus there will be a strong natural incentive for governments to restrict such effects.

Design focus should rather be on practicability.

The analysis of JI (market experience) in its context (political setup) shows that there is a strong influence of the environmental context on the success of the instrument. This involves both limiting and facilitating aspects that deserve proper attention. Thus the debate on how to design the instrument should focus much on practicability.

State interests, esp. those of host countries must be considered first.

This means in the first place that an EPM must address state concerns, most importantly the general requirement for the instrument to be attractive for host countries. If this issue is neglected an EPM could fail because of reluctance of MS to host projects.

This issue is important and goes beyond the general benefits and functionalities that an instrument like JI may offer – if properly implemented (e.g. search function). JI as an example offers some insights on how this may be done. At the core of this solution is the creation of net benefits for a host country. This paper presented standardized baselines for crediting (that go beyond the status quo) as one solution. Another may be a share of proceeds with the host country keeping parts of the AEAs for its own budget.

Last but not least: Do not forget about private sector interests.

Assuring practicability also means to take private sector interests seriously. This paper highlights the importance of an early definition of an instruments framework – as this will help the private sector prepare and the search function may set in earlier. Establishing a predictable political environment includes also positive signals by nations, declaring their willingness to use and host EPM projects or early definitions of project approval processes and conditions.

The JI framework offers a good basis to build on.

Specific elements like the establishment of an early project endorsement step could help facilitate the project cycle. The same applies to recycling of the existing volume of JI project methodologies or its auditing provisions. In the end many facilitating elements can and should be taken from JI as there is a lot of good experience in the instrument – especially from EU MS – to build on.

2 Background and objectives

Project background

The EU Commission announced a regulatory proposal on the Effort Sharing Decision after 2020 (ESD II) for the first half of 2016. It will also contain proposals with view to enhance flexibility in the ESD II by application of a project based mechanism. We call such an

instrument "European Project Mechanism" (EPM).[1] Based on good design, it could become an important additional building block for meeting the long term emission reduction targets of the EU in a cost-effective manner.

The EPM is a European instrument. It may though heavily draw on experience and other usable input for its implementation from the framework of other existing offset instruments. In the future, this might also include new developments like under the international climate regime through the Paris Agreement (PA), adopted at the UN climate conference last December. The PA contains two parallel frameworks on markets and flexibility mechanisms: one for cooperative approaches that allows the use of internationally transferred mitigation outcomes, and the other for a new "mechanism to contribute to the mitigation of greenhouse gas emissions and support sustainable development", likely to replace the Kyoto Protocol's flexible mechanisms CDM and JI. The UN level guidance and provisions regarding these frameworks shall be worked out over the coming years. It is true that an EPM might also deliver valuable input for new flexibility instruments defined under the PA.

About this paper

In this context, the paper aims to inform the research and discussion on the design of an EPM by looking at Joint Implementation (JI) as a reference mechanism. As an established scheme with a remarkable track record in the EU, JI is an obvious reference point for discussing the future EPM. To this aim this paper shall lay the foundation by highlighting experiences and lessons learnt from JI in the EU.

The paper is based on an intensive literature research and analysis, as well as on practical experience from implementation of projects by the authors and interviews with stakeholders on JI.

Starting with a brief introduction to the instrument's general functionality and market experiences, the paper then analyses the national experiences of EU MS in more detail, shedding light on sector experiences and priorities as well as institutional setups. This is complemented by two dedicated sections: The first looks into the issue of environmental integrity as basic requirement of JI. This matter is important and there was reasonable critique vis-à-vis JI based on experiences gathered from its implementation outside of the European Union. The second dedicated section focusses on the special experience from application of the programmatic approach (PoA) in Germany, where most of these projects were implemented. In fact there are good arguments to the assumption that an EPM would take on many JI PoA-like features.

The analysis concludes with a section on such implications for the future, presenting both success factors and barriers that ought to be considered when conceptualizing the future EPM.

[1] This term is taken from a report by Ecologic, published in mid-2015: Nils Mayer-Ohlendorf et al (2015), EU Effort Sharing Decision after 2020: Project-Based-Mechanisms and Other Flexibility Instruments.

3 Acronyms

AAU	Assigned Amount Units
AEA	Allocated Emissions Allowance
AIE	Accredited Independent Entity
CDM	Clean Development Mechanism
CO_2e	Carbon dioxide equivalent
COP	Conference of the Parties (under UNFCCC)
EPM	European Project Mechanism
ERU	Emission Reduction Units
ESD	Effort Sharing Decision
ETS	Emissions trading system
EU	European Union
EU COM	European Commission
GIS	Green Investment Scheme
JI	Join Implementation
k	thousand
LoA	Letter of Approval
LoE	Letter of Endorsement
MRV	Monitoring Reporting and Verification
MS	Member States (of EU)
PoA	Programme of Activities

4 JI in the carbon market

4.1 General functionality

JI under Kyoto

Joint Implementation is one of two project based offsetting mechanisms under the Kyoto Protocol. It allows a country with an emission reduction or limitation commitment under the Kyoto Protocol (Annex B Party) to earn Emission Reduction Units (ERUs) from an emission reduction project in another Annex B Party, each equivalent to one tonne of CO_2, which can be counted towards meeting its Kyoto target. Joint implementation should thus offer countries a flexible and cost-efficient means of fulfilling a part of their Kyoto commitments, while the host country benefits from foreign investment and technology transfer.

ERUs for AAUs

Under the Kyoto Protocol, the countries with commitments (Annex B Parties) have accepted targets for limiting or reducing emissions. These targets are expressed as levels of allowed emissions, or "assigned amounts," over the 2008-2012 commitment period. The allowed emissions are divided into "assigned amount units" (AAU). For every issued ERU, a host country must cancel one AAU. Thus, if a JI project is over-credited or not additional, the host country would have to make up the difference and engage in more mitigation action.

The following key characteristics apply to the instrument. They will be further discussed in this paper.

Table 1: Key JI characteristics

- offset mechanism under the Kyoto Protocol (baseline and crediting type) – facilitating Annex A parties' compliance
- built on a bottom-up process for project development
- host-country adjusted implementation along national policy conditions, priorities and interests
- bringing potential net benefits to host country mitigation compliance/emissions position in long-term and short-term
- open for existing CDM methodologies and new project-specific approaches

Source: own

4.2 General market experiences 2008-2012

Using UNEP Riso data
cum grano salis

Success in the market may be defined by quantitative indicators, i.e. by project number as well as by amount of achieved emission reductions. In the following we discuss the track record on these parameters by reference to the all-over project pipeline and the information on registered projects, as published by UNEP DTU[2] (in the following: UNEP database).

While it is possible to draw some helpful interpretations from this dataset such analysis has also its limits. Actually the UNEP database is compiled from a vast array of disaggregated data (mostly PDD information or UNFCCC data on project by project basis), thus there

[2] Jørgen Fenhann/UNEP DTU Partnership (2015), JI Pipeline, Version from 1 Oct 2015/15 Oct 2015. See: http://www.cdmpipeline.org/

may be well founded doubts regarding its completeness and precision. This is partially due to the fact that in case of track 1 projects – the major track for JI as we will see later in this analysis – project information is often not published or only partially published. Still as information source the UNEP database is the best data compilation available and by looking at it with a grain of salt we can generate useful insights.

Host countries

Projects in the pipeline (see Table 2, 1st and 2nd columns)

In Western Europe France and Germany stand out both by number of stand-alone JI projects in the pipeline (>10) and expected annual generated ERU volumes from that (around 10 Mio).

We see even higher numbers of projects in the pipeline in Eastern Europe. Within this group of countries the Czech Republic with 59, Poland with 40 and Bulgaria with 38 projects stand out. Countries with more than 10 projects include Lithuania, Romania, Estonia and Hungary.

Analysis by ERU volumes

When considering also the expected ERU volumes from projects in the pipeline a multifaceted picture of JI in Eastern Europe emerges. There are countries where fairly little ERU volumes were expected from large numbers of projects (Czech Republic, Estonia or Bulgaria) as well as countries like Poland, Lithuania or Romania, where also large amounts of ERU volumes were expected.

Table 2: Stand-alone JI projects

	JI (per PDD information)			
	Number of **all JI projects** in the pipeline	Expected annual ERU volumes from **all projects** ($MtCO_2$)	Number of **registered JI projects**	Expected annual ERU volumes from **registered projects** ($MtCO_2$)
Belgium	2	0.40	2	0.20
Bulgaria	38	6.95	30	2.96
Czech Republic	59	0.61	58	1.26
Estonia	14	0.82	12	0.42
Finland	3	0.97	3	0.17
France	17	9.18	17	2.83
Germany	13	13.50	12	4.48
Hungary	13	7.18	11	1.95
Latvia	1	0	1	0.06
Lithuania	20	8.53	18	2.05
Poland	40	20.05	36	5.14
Romania	21	8.94	18	4.75
Spain	3	0	3	0.16
Sweden	2	1.34	2	0.44

Source: UNEP database (1 Oct. 2015)

Registered projects (see Table 2, 2nd and 3rd columns)

The performance of JI projects – measured by registered project data – confirms the generally varied picture: Whereas the Czech Republic gains only 1.26 $MtCO_2$ per year from a stunning 58 registered projects Romania for example needs only 18 projects to gain 4.75 $MtCO_2$ per year. On average a project in the Czech Republic creates only 22,000 ERUs per year whereas Romanian projects create around 264,000 ERUs on average.

Analysis of ERU volumes

In general the ratio of ERUs by project seems to give a good hint at the importance of or potentials in the industry base of a host country. As a matter of fact such projects are in general comparatively large in size. Germany as a strongly industrialized country has thus many

large scale projects in its portfolio. We further dwell on this issue in chapter 4.1 below when presenting sector specific experience.

Lion share of projects reach registration status

A clear indicator giving proof to the procedural success of JI is the remarkably high number of projects that actually qualified for registration. When leaving out Greece or Slovakia where attempts at first project realization were choked all together, Bulgaria record the highest loss of projects on the way to registration with a moderate eight projects out of 38. All together only 27 out of 250 projects did not pass registration (<11%). As per UNEP published data, only further 3 projects were withdrawn.

A further indicator is the actual ERU issuance volume. As per UNEP data more than 85 million credits were issued by EU MS by fall 2015. Figure 2 below presents disaggregated issuance data by host country.

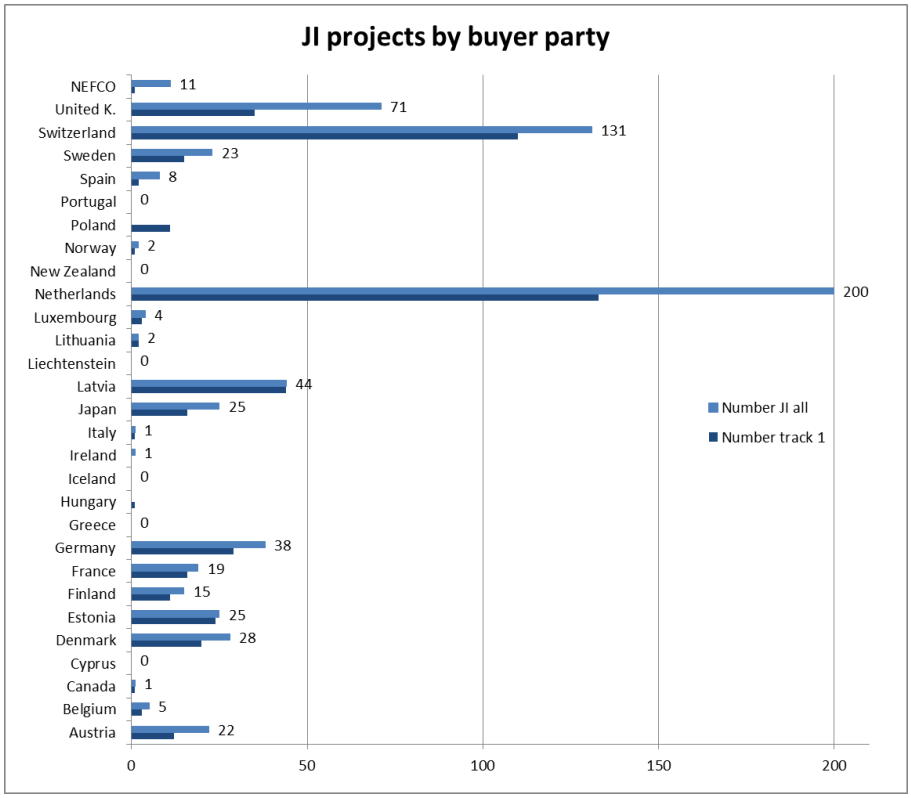
ERU buyers

With JI, buyers may be private or institutional – including governments. Drawing on PDD information, the UNEP database provides an aggregated overview of all such buyers by national origin in the general JI market.

Nordic dominance

Data shows exceptional demand for ERUs coming from Northern European countries (see Figure 1 on purchase transactions from projects). The most prominent buyer country of all is the Netherlands with 200 contracts. Denmark (28), Sweden (23) and Finland (15) are also involved in a respectable number of projects. NEFCO (11 projects) is a financial institution founded by the 5 Nordic countries (above mentioned 3 countries plus Norway and Iceland) that also supported JI projects early on.

Figure 1: JI project buyer party world wide



Source: UNEP database (1 Oct. 2015)

Note: ERUs from projects are generally sold to more than one buyer as well as more than once. Thus purchase agreements do allow for conclusions regarding absolute numbers of involved projects.

The United Kingdom, Latvia, Germany, Estonia, Austria and France are also relevant investor countries with more than 15 purchase transactions each. It is important to note here that by far most of this demand was coming from private investors or companies sourcing ERUs for their ETS compliance needs.

Special facilitating relevance of track 1

Figure 1 also highlights the fact that most ERUs on the market were actually produced by Track 1 projects. This corresponds with the data from projects in the pipeline in general, where the lion's share of projects was actually registered under Track 1. In fact one may conclude that Track 1 procedure was an important facilitator of JI. It seems difficult to imagine any such market success in the absence of this rather flexible approach to project implementation and realization (see also 4.2).

JI PoA

All data above does not include PoAs which in the past were of special relevance in Germany. All in all there were 18 PoAs in European MS, two of these in Poland, three further in France and 13 programmes in Germany out of which 11 were actually registered.

See also dedicated analysis (section 4.4)

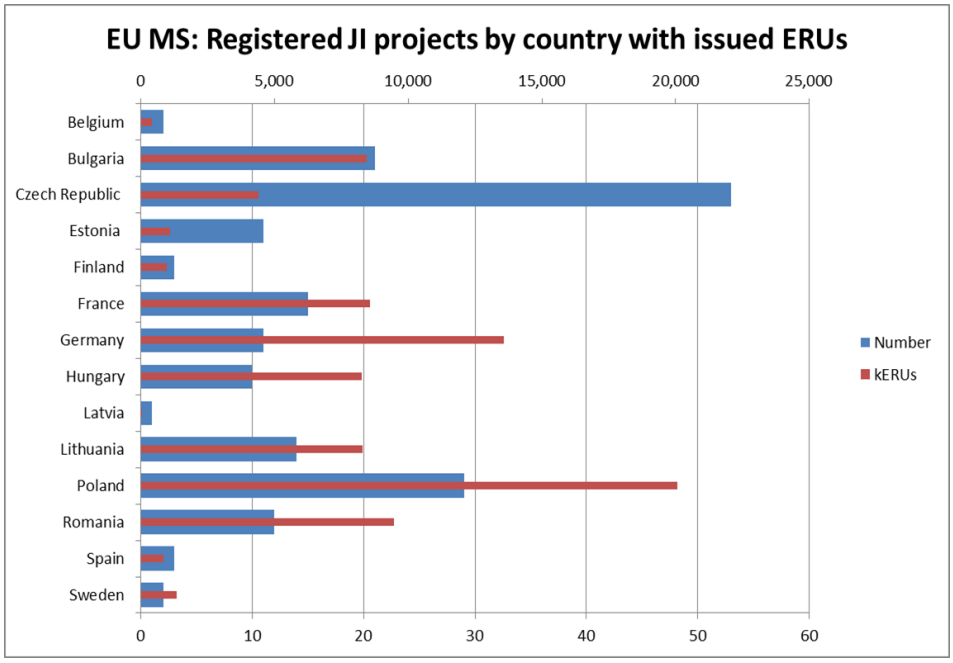
The successful German PoA track record is likely to inform the debate on an EPM. Therefore, this paper also includes a special section on JI PoA (section 4.4), highlighting lessons learned from Germany.

National AAU position

Being long not the only motivation for allowing and supporting JI

Figure 2 below gives a graphical overview of the performance data by JI host country. We slightly adjusted this information by also looking at UNFCCC information (see note below). What strikes is the fact that JI was not just used by host countries with a clear surplus of AAUs but also by countries like Germany or France that did not have a guarantee of easily meeting their respective compliance positions.

Figure 2: Registered JI projects and issued kERUs in Europe



Source: UNEP database

Note: The graph is based on UNEP RISO Data. In case of Latvia and Spain project numbers are adjusted on the basis of UNFCCC information (http://ji.unfccc.int/JI_Projects/ProjectInfo.html)

5 Sectoral and institutional experiences at country level

5.1 Sector experiences

The kind of JI projects differ much by sector and type. In the following the major project types are presented, followed by a brief analysis of European Member States JI project portfolios.

Prominent project types

Land-fill projects

The highest amount of listed projects was recorded in the landfill gas sector with all together 64 projects (out of which 63 were registered). By far most of these are in the Czech Republic (48 projects). Apparently in the Czech Republic there was a strong potential for this project type and it was rigorously focused on with JI. Other countries with landfill gas projects in their pipeline were Poland, Hungary and Greece.

Nitric acid projects

The second largest project type in terms of project number (45 projects out of which 42 were registered) was nitric acid production. This is one of the most prominent project types under JI. In terms of the realized mitigation volume it is also by far the most relevant. Nearly all countries using JI had some projects in this sector. But France with 10 and Germany with 6 registered projects hosted by far the most.

Renewables projects

Renewables projects were also prominent in JI. There were 42 listed wind energy projects mainly in Lithuania (15), Poland (13) and Estonia (8). Also 25 Biomass energy projects were listed inter alia in Bulgaria, Hungary and Estonia. Almost half of all listed hydro energy production projects, altogether 19, are in Bulgaria (10).

Coal mine methane and energy efficiency

The UNEP database contains 16 listed projects for use or flaring of methane from coal mines. Poland had eventually 11 projects registered, Germany 3 projects. Other project types include energy efficiency in industry with 9 listed projects.

Brief analysis

JI inspired projects in many different areas

The JI pipeline in EU MS with its large portfolio of different project types gives proof to the broadness of approaches brought forward for using JI.

The following overview lists the spectrum of project types in sectors covered by ESD I where this also led to registered activities:

- Agriculture
- Biomass energy
- Cement
- Coal bed/mine methane
- Energy distribution
- EE households
- EE industry
- EE own generation
- EE service
- EE supply side
- Fossil fuel switch
- Fugitive
- Geothermal
- HFCs
- Hydro
- Landfill gas
- Methane avoidance
- N_2O
- PFCs and SF6
- Transport
- Wind

Strong sector penetration possible

In most cases the relevance of JI vis-à-vis the all-over available market potential was limited. Prominent exceptions are the presented landfill sectors (Czech experience) and the N_2O mitigation projects in the field of nitric acid production: In fact the penetration of JI in this production sector stands at around 50% which shows how far JI was fit to address vast parts of a sector.[3]

JI potentials and limitations defined by national circumstances

Table 3 shows the most important sectors for JI stand-alone projects in different European countries. In Western European countries the largest number of projects was in the industrial field. In Eastern Europe the use of renewable energies is fairly often supported by JI. Seven out of the nine countries here had a high number of such projects, also with considerable share in ERUs, while in Western Europe this experience is quite limited.

Table 3: Most important types in listed European projects by number and ERU volume

	All projects in pipeline	Most important sectors by number of projects	Most important sectors by expected kERUs (by 2012)
Belgium	2	Nitric acid (2)	Nitric acid (433)
Bulgaria	38	Hydro Power (10) EE industry (6) Biomass energy (5)	Hydro Power (3,157) Energy distribution (2,601) Fossil fuel switch (2,341)
Czech Republic	59	Landfill gas (48) Biomass energy (5) Hydro (4)	Nitric acid (2,975) Landfill gas (2,107) Biomass energy (620)
Estonia	14	Wind (8) Biomass energy (4) Landfill Gas (1)	Wind (1,292) Biomass energy (148) Landfill gas (89)
Finland	3	Nitric acid (3)	Nitric acid (574)
France	17	Nitric acid (12) EE industry (1) HFC's (1)	Nitric acid (8,866) Biomass energy (908) HFC's (508)
Germany	13	Nitric acid (8) Coal mine methane (4) PFC's and SF6 (1)	Nitric acid (14,380) Coal mine methane (1,081) PFC's and SF6 (466)
Greece	2	Landfill Gas (2)	Landfill Gas (2,795)
Hungary	13	Biomass energy (5) Landfill gas (3) Methane avoidance (2)	Nitric acid (4,000) Biomass energy (3,502) Landfill gas (1,071)
Latvia	1	Landfill Gas (1)	Landfill gas (301)
Lithuania	20	Wind (15) Nitric acid (3) Fugitive (1)	Nitric acid (6,915) Wind (1,067) Fugitive (152)

[3] Benoit Leguet (2015), How a crediting mechanism can assist countries in their INDCs (presentation given on 30 November 2015 at JISC side event at Paris, http://ji.unfccc.int/Workshop/1115.html

Poland	40	Wind (13) Coal mine methane (11) Landfill gas (6)	Nitric acid (14,432) Wind (3,519) Coal mine methane (2,159)
Romania	21	Nitric acid (4) Wind (3) Hydro (3)	Nitric acid (10,610) Hydro (2,423) EE supply side (1,288)
Slovakia	2	Landfill gas (1) Coal mine methane (1)	Landfill gas (76) Coal mine methane (63)
Spain	3	Nitric acid (3)	Nitric acid (538)
Sweden	2	Nitric acid (2)	Nitric acid (1,105)

Source: UNEP database (1 Oct. 2015)

JI PoA

Opening up new sectors for mitigation action

See also dedicated analysis (section 4.4)

From a quantitative perspective PoAs play only a minor role in European JI. The main project type among the 18 projects was the exchange/modernization of heating or steam producing boilers, often also involving the change of fuels used. By UNEP database category there were all together 11 energy efficiency and 5 biomass projects among the projects. Furthermore in France there were two more projects in the agricultural sector and in Germany there was one innovative transportation PoA. Thus PoA clearly broadened the scope of stand-alone JI projects. The remaining potential in all above mentioned areas may still be considerable.

5.2 Institutional structure

5.2.1 JI governance cycle

Project design stage

The JI governance or project cycle is marked by two stages. The first stage may be referred to as the project design stage. During this phase the basis for project implementation is laid – i.e all requirements for proper MRV processes are laid down and project approval is applied for. The core documentation to this is the Project Design Document (PDD) that is drafted by the project proponents, validated by a verifier and finally checked together with the auditor's determination report by the authorities for final registration.

Project implementation stage

Only registered projects may generate credits. For this an emission report is subject to review by a verifier. The issuance of certificates is done by the host country through its registry, based on the conversion of AAUs into ERUs.

Two distinct JI tracks

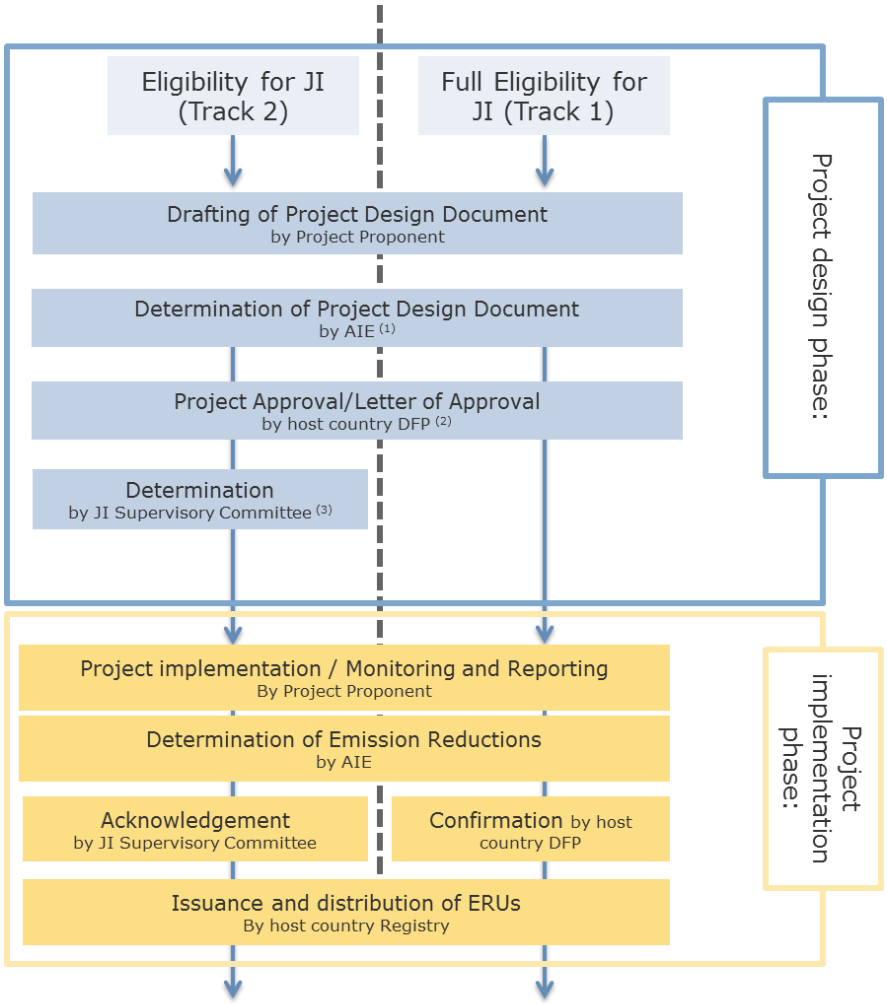
Standard JI track 1

JI projects can be implemented under two distinct tracks. The track 1 procedure – often referred to as a "simplified" JI procedure – is actually the original standard model as envisaged by Parties when drafting the JI guidelines. It allows parties to establish their own rules for approving projects and issuing ERUs, without international oversight. In principle track 1 may be used in any given JI host country that fulfils all the eligibility requirements listed in the JI Guidelines. This status of full eligibility is given though only to parties that among other things have also submitted the required most recent emissions inventory and implemented accurate accounting for AAU. To date, 97% of ERUs have been issued under track 1.

JI track 2

For countries that do not meet any or both of these two requirements but all other accounting requirements from the Kyoto framework, JI track 2 was designed. This was meant as a facilitation as to help these countries with deficits regarding the basis for accounting to participate in the market – now under international supervision. This safeguarding function under track 2 is born by a body under the UNFCCC that reviews projects and assures due processes (see Figure 3). For track 2 relevant international rules and modalities are defined.

Figure 3: JI project cycle



Source: own

1. Accredited Independent Entity (AIE): auditors, accredited for defined project scopes by the JISC based on international standards. They ensure that the emission reductions meet the requirements of the Kyoto Protocol and the JI Guidelines.

2. Designated Focal Point (DFP): national authority, responsible for JI. In most cases the same national body take on the related tasks for JI and CDM (in the latter case called DNA or designated national authority). A list of all authorities can be found at: https://ji.unfccc.int/JI_Parties

3. JI Supervisory Committee (JISC) supervises the operation of Track 2 and stands under the authority and guidance of the CMP. It defines procedural rules apart from those contained in the JI Guidelines, provides templates for project documentation and cares for MRV guidelines and accreditation of AIEs.

5.2.2 Political environment: limiting and enabling projects

Limitations to JI due to political environment

The vast variety of projects presented above (4.1) emerged in spite of political limitations and some considerable degree of uncertainty on the side of the project participants. The long-time discussed prolongation of JI for the second commitment period as was the imminent and eventual termination by the end of 2012 has clearly shunned away interest and thus development perspectives for the JI instrument.

In some countries there was further uncertainty coming from the general question on whether they would finally allow JI projects within their borders and the project specific uncertainty on whether their activities would ultimately be approved and ERUs be issued. Other limitations came from changes in the important framework set by the EU ETS: Due to the scope extension as of 2013, nitric acid projects (as well as adipic acid projects) were included in the ETS – thus generally loosing eligibility under JI. For the viability of renewable energy project type under JI the issue of state support or subsidies like national feed-in tariffs played an important role – as well as special EUA reserves for such projects.

Create enabling environment for JI

In fact countries also tried hard to create the supporting environment for JI.

Facilitation for JI cycle

In order to reduce the uncertainty for project developers most JI countries applied a two-stage approval process: In a first step participants could obtain an endorsement (Letter of Endorsement, LoE), signalling general support by the host country for the project measure at hand at an early point in time. Efforts to compile this short Project Information Note were quite limited vis-à-vis the efforts required to compile a PDD that is necessary for obtaining a Letter of Approval.

Provisions opening the door for specific project types

On renewables, up to 2012 Eastern European Member States made use of a specific rule under the Linking Directive which allowed projects for electricity production by using renewables (mainly wind).

In spite of all this the experience under JI is encouraging as it helped tapping potentials in many different fields.

Broadening the reach by allowing JI PoAs

The support for PoA project development under track 1, e.g. in Germany or France, was a clear benefit for JI as a whole. The applied bottom-up definition of methodologies (review by national DFP and auditors) supported the testing of new approaches and delivering experiences – including the important proof of concepts.

Standardization

Also in the Czech Republic, the Ministry of the Environment facilitated project implementation by providing substantial support: For its large number of the landfill projects the national Department of climate changes under the Ministry of Environment issued a methodology that defines a facilitating reference level for baseline emissions.

In France the government took on the task of defining methodologies, thereby also offering easy standardized baselines to project participants in defined fields.

5.2.3 Using JI for state purposes

Use of JI along different purposes

Above described examples show that States in the end also used JI

Search tool for bottom-up innovation

Germany – and some of its Federal States – used PoA as a laboratory. Based on JI track 1 flexibility it supported the development of new approaches and methodologies, e.g. through innovative projects for example in the transportation sector. Some project types actually came by real surprise. This is especially the case with nitric acid mitigation technology and its large implementation success under JI – something not foreseen at all when the project mechanism was established. JI thus helped disclose this potential. This quality is often referred to as the search function of an offset instrument.

Vehicle for bilateral capacity building

It furthermore used this experience through bilateral capacity building and support in exchange with Poland that used German experience for launching first PoAs also there.

Easy to adjust top-down tool

In contrast to that France used the flexibility of track 1 for a top-down definition of methodologies in selected sectors. This allowed the objective of using JI as an element fitting into and complementing the existing national policies' framework. France by the way derived such general rules for benchmarks from single project proposals – thus again using bottom-up private investor experience in its top-down approach.

Driver for net mitigation benefits

France, Germany and others also used the definition of baselines as standard reference for crediting in a way that allowed them to obtain substantial net mitigation benefits from projects: As the baseline was very strict, crediting was actually limited well below the projects' mitigation effects, thereby also supporting the national emissions balance. On this please see also the primer on performance benchmarks below.

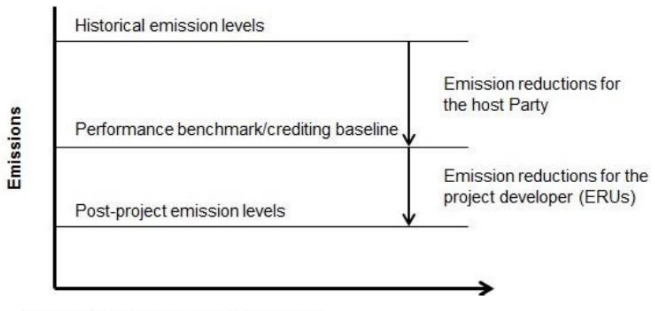
Primer on emission performance benchmarks

Emission performance benchmarks are voluntary technical approaches applied by JI host countries. They are applicable to specific sectors. The benchmarks were determined by best available technology or the national regulations.

The lower crediting baseline compared to real historical emission levels gives strong incentives for achieving an enhanced mitigation performance.

Furthermore emission reductions beyond the crediting baseline (see figure illustration below) could be used to issue ERUs for the benefit of the host country, generating revenues from sale of these, or be used as a direct additional contribution for achievement of quantified targets of the party. We call such contribution an "inventory net mitigation benefit".

Division of emission reductions under the performance benchmark approach



Abbreviation: ERUs = emission reduction units.

Source: Note by the Secretary for SBI 42nd Session (June 2015) FCCC/SBI/2015/INF.1

5.3 Excursus on integrity

The dispute put into perspective

The discussion of environmental integrity of JI started early on during the compliance period from 2008 until 2012 and was again brought to our attention by a systematic analysis of the Stockholm Environment Institute (SEI) in mid-2015. [4] In the following we briefly present main issues as a take-away from our analysis of this debate: The main points are:

- JI in European MS has a good record on environmental integrity while there were large integrity problems for JI in Russia and Ukraine (countries that brought large amounts of ERUs onto the European market)
- JI as such was not the problem in Ukraine and Russia but a mixture of hot air and governance problems, leading to an abuse of the JI system for transfer of hot air into the European market.

Essentials of environmental integrity

At the core of the concept of environmental integrity in the offset context is the requirement that emission reductions are additional to what would otherwise happen (hypothetical), thus real. Safeguards to this are firstly procedures with proper independent supervision and review functions as well as secondly adequate methodologies for correct accounting of emission reductions and thirdly adequate transparency on all that. In an environment of strict and fair country targets though this issue is less pressing as potential lack of additionality for issued credits will not change the all-over integrity of the system – i.e. in our case the ESD cap remains unchanged. For more on this see also section 6.2 below.

Track 1: functions at the discretion of parties

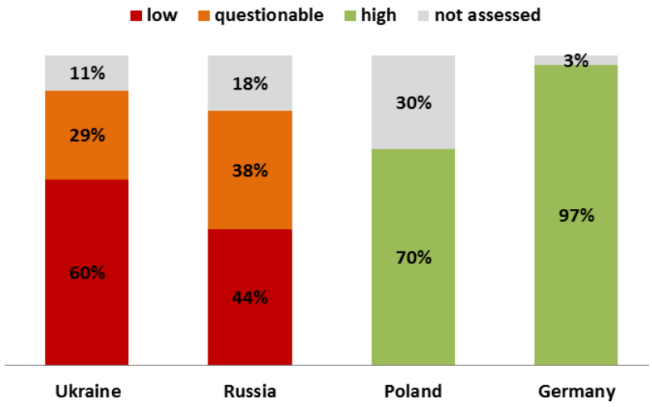
Under track 1 projects these essential functions were at the discretion of countries. This counted much as most projects were realized under track 1. As a result of this matter, transparency as a first principle was essential. The evident lack of such transparency gave rise to critique: In some JI host countries key project documentation (such as PDDs, monitoring reports, and determination and verification reports) were not available or incomplete for a large number of projects. In its analysis of Ukrainian and Russian JI projects the SEI tried to bring light into this and identified evident integrity problems with the majority of projects of the researched samples.

Sharp differences between European MS and Russia/Ukraine

What is also eye-catching in the results is that project samples from Western European JI projects displayed a high performance on environmental integrity. Figure 4 below is taken from the report and shows the results for both Ukraine and Russia on the left (with percentage of low or questionable projects) and for Poland and Germany on the right (with figures that confirm high integrity).

[4] Stockholm Environment Institute (SEI), Working Paper 2015, Has Joint Implementation reduced GHG emissions? Lessons learned for the design of carbon market mechanisms http://www.carbon-mechanisms.de/en/publications/details/?jiko[pubuid]=421

Figure 4: Environmental integrity of ERUs issued in each country by project type



Source: SEI (2015)

Not a JI track 1 but a governance problem, further catalysed by large volumes of "hot air"

A closer look at the integrity issue thus reveals that it was obviously not JI track 1 as such that led to the integrity problem with Ukrainian or Russian JI. It was rather a combination of governance problems where the competent authorities did not take care for adequate procedures along the defined integrity principles. This was further catalysed by the size of the surplus in AAUs – where countries obviously did not feel inclined to care for integrity for sake of their respective country inventories. In face of the unwillingness of other countries to buy AAUs from Ukraine and Russia, both countries seem to have abused JI as a helpful opportunity to export ERUs (based on hot air and non-additional projects) into the European (ETS) market.

5.4 Excursus on programmatic JI in Germany

In this brief section main features of JI PoA are presented together with lessons from their implementation. This is done on the basis of an analysis of the German PoA portfolio which was by far the largest in Europe.

General track record

Between 2008 and 2012 11 PoAs out of a number of 13 programmes were registered in Germany under JI track 1 procedure. The replacement of heat and steam producing boilers – often combined with fuel change – was the main project area and the most successful project type.

Efforts for Managing Entity or individual projects

The Managing Entity of a PoA had to cover slightly more expenses than the owner of an ordinary JI project. This was still reasonable as expenditures on the side of individual participants under the programme are low. For them the participation meant a clear financial contribution. Elements keeping costs and other expenses down were streamlined MRV procedures (reporting vis-à-vis the Manging Entity) and on-site audits with random checks by the AIE only. This was an essential trade-off with allowing less precision for the sake of higher practicability.

Benefits from two-stage approval process

The two-stage approval process was also essentially important for PoAs: Based on the endorsement (LoE) that usually contained requests for clarification or set conditions for later approval, the project developer had a good basis to estimate the likelihood for

approval. In case of a likely registration, he could use this prospect as starting point for searching for potential participants ("real cases"). In case the endorsement revealed substantial hurdles the project could be stopped at this early point in time – without creating further expenditures from preparation of the more comprehensive documentation for approval (LoA). In many cases the two-stage approval was crucial for overcoming barriers in the project cycle, namely for kick-starting an economic feasibility check and determining achievable potentials.

Success recipe: Blend of strong basic principles and project adjusted flexibility

Obtaining a project approval normally took more than 1 year. At first this was because of the capacity building within the DEHSt (2007/8); later increasing formal demands in regarding proof of additionality and other proofs (e.g. for sustainability of combustibles in case of biomass use). A comparison of documentation of early PoAs (e.g. JIM.NRW) with late PoAs (e.g. EC Bioenergy) gives proof to our observation that more detailed requirements for PoA participation as necessary in late PoAs did not necessarily improve the selection outcome. JIM.NRW was functioning well as it was based on clear and simple basic requirements regarding additionality as formulated in the ProMechG. Combined with expertise for evaluation of the single case at the DEHSt this guaranteed a good handling.

Too much detailed criteria may become a burden

Benefits from standardization

Luckily at the same time while such complexity was on the rise further standardization meant helpful facilitation for all stakeholders. Most notable amongst these standardizations are the emerging baselines which were de facto benchmarks (see section 4.1).

A valuable commodity: ERUs from domestic JI

ERUs from German PoAs were mainly sold to the voluntary market. Prices paid were usually higher than for the general market. This gives proofs to the observation that there is special demand for indigenous reductions projects in the larger society.

In section 6.1 below an overview also including further success factors and barriers from JI implementation experience is presented.

6 Implications for an EPM

6.1 JI success factors and barriers

Special focus on lessons learnt from PoA

In this paragraph we sum-up experiences from both stand-alone JI and programmatic JI (PoAs). In fact there are good reasons to ascribe special relevance to PoA lessons as a European instrument may focus rather on scattered potentials, using bundling approaches. JI PoA clearly shows a vast variety of project types demonstrate potentials that could be readdressed with a new project based mechanism. A PoA-like EPM seems adequate as

- mitigation potentials at single emission sources seem limited/if not in some areas already exhausted so that a focus on smaller mitigation measures is more promising;
- most large single emission sources are covered by the ETS while the ESD covers transport, buildings, agriculture – i.e. small and diffuse sources;
- more standardized approaches targeting even whole sectors promise significant gains in efficiency and may considerably reduce mitigation costs by streamlining processes.

Success factors

+ Two-staged approach for project approval
+ Benefits from standardization (standard baselines)
+ Stringency and necessary flexibility under a track 1 process
+ Simplicity, clarity, practicability of PoA participation criteria
+ Early start, allowing participants to benefit from crediting for at least 3 to 5 years (until the end of crediting period in 2012)

  Independent Managing Entity with excellent regional network (e.g. EnergieAgentur.NRW), caring for both
  - administrative services and
  - regional marketing und acquisition of participants.
+ Using their existing marketing/sales structure, regional utilities were also successful in developing of respective programmes.

Barriers/challenges

- Lack of publicity of mechanism ("JI what"? "JI not possible inside EU")
- Economic crisis
- Generally bad reputation of the principle of offsetting
- Gradual increase of requirements for approval
- Deadline 2012: Most important barrier in reality
- Integrity problems in countries with large surplus of AAUs and governance problems

6.2 JI implications for an EPM to consider

Acceptance of EPM counts

On governance, the general mistrust in market instruments deserves proper attention. In order to improve acceptance of flexibility instruments, all information that shed light on the integrity of a project should be made available to the general public. This does not preclude that sensitive information may be kept confidential. Still any such non-disclosure should be explicitly stated, justified and subject to a full auditor's review.

Integrity in ESD II no real problem as there is…

No hot air/general AEA shortage

No rationale for an AEA sale bypass

When put into proper perspective, the problems with JI under track 1 in Eastern Europe were actually national governance problems (see chapter 4.4). Moreover an EU environment of ESD II that most probably will not only be without hot air but generally short in AEAs, governments will take care for the integrity of projects. This is so firstly because a lack in proper accounting would imperil the States' own national emissions positions. Secondly, any potential surplus could be traded between Member States anyway, even without the requirement of "conversion" into project credits.

Focus should rather be on practicality and other State interests

The discussion shows that while the integrity issue is much debated this risk is of minor relevance – if it exists at all for the EPM. At the same time there are important issues that politicians should rather focus on: This is on how to make the EPM a practical instrument that helps realize mitigation targets while also meeting other state interests.

State interests

Building on experience with existing functions

Search function

Policy enabling

It is also true that not all state interests with view to using an EPM are the same as with JI. Under JI the instrument was mainly used as a search tool. This JI function shall also apply to an EPM. Under JI it helped identify "low-hanging fruits", provided the proof of concept for new mitigation approaches and eventually also paved the way to the inclusion of a sector under the EU ETS (nitric acid production). In the same way the EPM should also be seen as a strategic enabler. While the low hanging fruits are maybe gone governments could stick to this function, using the EPM for addressing the many small mitigation potentials that in sum may also contribute to mitigation. Being designed to fulfil the search function by providing for flexibilities and facilitations (track 1, two-staged approval process, PoA approach, standardization) an EPM here may complement and inspire the whole climate policy environment.

Adjusting design for host country attractiveness

Driving net mitigation benefit

What is generally new with an EPM is the fact that its very existence helps MS jointly as a European Community to meet the ESD targets (while under JI ESD emissions were simply shifted to the ETS compliance system). Still in the absence of an AAU surplus MS will consider carefully whether to use an EPM or not. This is so as the EPM will hand on the benefits of using low-cost potentials in the first place to buyer states while leaving the administrative burden with the seller. This interest situation may ultimately result in a state of reluctance to use the EPM. One way to address this agent problem would be by application of the principle of generating "net benefits" for the host countries. This could be done e.g. by use of performance benchmarks (see section 5.2.3).

The important take-away from this is a general requirement: A functioning EPM must be supported by potential host countries. Only if host countries receive valuable benefits from the EPM implementation they will allow use of the instrument.

A further way of helping host countries may come from granting substantial flexibility or leeway to them when project conditions on the ground are concerned (like under JI track 1).

Project participants' interests

In order to work well, the EPM must also accommodate other participants', notably project developers' interests.

Matter of timing

First of all it seems important to enable the EPM at an early point in time. Thus the private sector could prepare itself and the positive search function may set in earlier.

Being fast is especially important as the period of ESD II, thus the legal background for the EPM, is defined only until 2030. Any too short deadline (like the 2012 deadline under JI) will certainly have detrimental effects on project development.

Predictable environment

Moreover, JI experience tells us there is a strong need for a stable and predictable regulatory environment for crediting mechanisms. The absence of certainty, notably the dependency on sometimes delayed definition of important elements such as the project approval processes could be negative to the marketization success of an EPM.

Facilitation of project cycle and tools

This paper highlighted that there are proven ways of facilitation in JI that could be used to increase predictability also in an EPM. The EPM project cycle could benefit a lot from an early project endorsement step (LoE). Standardized approaches, e.g. standardized baselines and not least programmatic approaches (PoA), may help raise the attractiveness for private sector participants and eventually the all-over success of an EPM.

MRV and accountability must follow principles of good governance. In their own interest, national authorities would exercise here a key function in supervision.

Using proven methodologies

Past implementation of JI and CDM has produced a large volume of available and proven methodologies. The future EPM should allow their use for accounting. This also includes JI track 1 approaches in European MS with their simplified or standardized procedures for additionality demonstration or calculation of emission reductions. Acceptance of and allowing review of the methodologies may lie in the hands of MS as usually have to be adjusted to national circumstances.

Independent auditing

Regarding maintaining high audit performance, respective accreditation rules and procedures for auditors should apply. For facilitation international accreditation as applicable under the CDM or JI could also be accepted under an EPM. Apart from that regular performance checks should be available.