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INTERNATIONAL ENERGY AGENCY

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# **JOINT IMPLEMENTATION: CURRENT ISSUES AND EMERGING CHALLENGES**

Katia Karousakis, OECD  
October 2006

**Unclassified**

**COM/ENV/EPOC/IEA/SLT(2006)7**



Organisation de Coopération et de Développement Economiques  
Organisation for Economic Co-operation and Development

**25-Oct-2006**

**English text only**

**ENVIRONMENT DIRECTORATE  
INTERNATIONAL ENERGY AGENCY**

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**Katia Karousakis, Organisation for Economic Co-operation and Development**

The ideas expressed in this paper are those of the author and do not necessarily represent views of the OECD, the IEA, or their member countries, or the endorsement of any approach described herein.

**JT03216583**

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## FOREWORD

This document was prepared by the OECD and IEA Secretariats in September-October 2006 in response to the Annex I Expert Group on the United Nations Framework Convention on Climate Change (UNFCCC). The Annex I Expert Group oversees development of analytical papers for the purpose of providing useful and timely input to the climate change negotiations. These papers may also be useful to national policy-makers and other decision-makers. In a collaborative effort, authors work with the Annex I Expert Group to develop these papers. However, the papers do not necessarily represent the views of the OECD or the IEA, nor are they intended to prejudge the views of countries participating in the Annex I Expert Group. Rather, they are Secretariat information papers intended to inform Member countries, as well as the UNFCCC audience.

The Annex I Parties or countries referred to in this document are those listed in Annex I of the UNFCCC (as amended at the 3rd Conference of the Parties in December 1997): Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, the European Community, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, and United States of America. Korea and Mexico, as OECD member countries, also participate in the Annex I Expert Group. Where this document refers to “countries” or “governments”, it is also intended to include “regional economic organisations”, if appropriate.

## ACKNOWLEDGEMENTS

This paper was prepared by Katia Karousakis of the OECD. The author would like to thank Dennis Tirpak, Jane Ellis and Ellina Levina for comments and ideas, as well as delegates for the information they provided.

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## Executive Summary

This paper reviews issues and challenges associated with implementing Joint Implementation (JI) under the Kyoto Protocol. The paper begins with an overview of the current JI portfolio and the existing market developments: who are the major buyers and sellers, what sectors are involved, and what are the current market prices for emission reduction units (ERUs). Though JI is currently only a small part of the developing carbon market, JI is developing rapidly: 101 JI projects have Letters of Approval as of October 2006. The paper subsequently examines the following issues:

- Status of host country arrangements, including institutional issues.

This includes information on host country JI policies, national registries and responsible organisations, as well as a discussion on the status of JI Track I and II<sup>1</sup>, and the approaches that are being taken to develop national guidelines and procedures for these.

- Buyer-side criteria for investment.

The key determinants of the investment climate for JI transactions are outlined, including the differences between public and private sector investment, and the essential versus 'desired' parameters that investor countries would like to see in host countries.

- JI baselines and monitoring

The differences between JI and CDM with respect to development/approval of baselines and monitoring are identified, with the aim of assessing any implications for the carbon market.

Over the past year, Parties to the Kyoto Protocol have taken a number of significant steps to advance the implementation of JI. Important institutional advances have been made at the national level that will facilitate the effective participation of host countries in JI, and should result in greater interest from potential buyers of ERUs. Despite this progress, a number of host countries are still only developing their policies, procedures and institutional arrangements. To facilitate the development of the ERU market, further co-operation and efforts are needed to develop institutional, legal and technical capacities in these countries, including increasing awareness and providing support to potential project developers about JI.

Different governments and the private sector have different objectives and criteria for investment into JI projects. A clearer understanding of these can help host countries establish priorities for action. Important issues identified include increasing the timeliness of host country approval processes and the transparency and access to information.

There is no approval of baselines and monitoring methodologies taking place at the JI Supervisory Committee (JISC) level in contrast to the processes of the Executive Board (EB) under the Clean Development Mechanism (CDM). It is left to Accredited Independent Entities to assess the baselines and monitoring plans based on the criteria in Appendix B of the JI guidelines. Approaches to baseline setting and monitoring are therefore likely to vary much more under JI and be more dependent on any national guidelines that host countries develop. Concerted collaboration and co-ordination amongst host countries could be useful and would reduce both the development costs for host countries and the search costs for investors.

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<sup>1</sup> Track I and II refer to the two procedures that are available for the approval of JI projects.

## 1. Introduction

This paper reviews issues and challenges associated with implementing Joint Implementation (JI) under the Kyoto Protocol. The paper begins with an overview of the current JI portfolio and the existing market developments: who are the major buyers and sellers, what sectors are involved, and what are the current market prices for emission reduction units (ERUs).

It then provides a review and assessment of current issues in the field of JI, including the status of host countries and their institutions, buyer side criteria for investments, and baselines and monitoring methodologies and issues under the two JI Tracks. The objective is to identify issues and derive lessons for host and investor countries alike so as to increase transparency, streamline the JI procedures, and enhance the number and scope of JI projects.

Information for this paper was collected primarily via interviews with JI designated focal points and other relevant individuals from investor countries and climate funds, as well as through review of available literature on JI.

### 1.1 Joint implementation: origins, objectives and evolution

The concept of joint implementation (JI), first introduced in Article 4.2(a) of the United Nations Framework Convention on Climate Change (UNFCCC), allows Annex I countries the option of contributing to the Convention's objectives by implementing policies and measures 'jointly' with other countries. The rationale for JI is to reduce the aggregate costs of greenhouse gas (GHG) mitigation, since the environmental impact of emissions is the same irrespective of the geographic location of the emissions source, whereas the marginal abatement costs of emissions reductions across countries and sources are likely to vary significantly. Moreover, JI enables the transfer of efficient activities, technologies and techniques to countries that are hosting the projects, thereby contributing to respecting their commitments under the Kyoto Protocol (KP), as well as to sustainable development. The general expectation for JI was that the more developed Annex I countries would invest in projects in Annex I Economies in Transition (EITs)<sup>2</sup> where marginal abatement costs were expected to be lower.

In 1995, the first Conference of the Parties (COP1) to the UNFCCC created a pilot phase of Activities Implemented Jointly (AIJ). This pilot phase had the objective of establishing expertise with project-based mechanisms. In 1997, the third Conference of the Parties established the Kyoto Protocol, including Article 6 which stipulates that "for the purpose of meeting its commitments... any Party included in Annex I may transfer to, or acquire from, any other such Party emission reduction units resulting from projects aimed at reducing anthropogenic emissions by sources or enhancing anthropogenic removals by sinks of greenhouse gases in any sector of the economy." Thus, any Annex I Party can be a host and/or an investor country at any one point in time.

The 2001 Marrakech Accords (Decision 16/CP.7) provide the rules and modalities relating to JI. They indicate that a JI host country can qualify for JI via either of two tracks, depending on its ability to meet certain eligibility requirements. Under Track I, host country requirements are stricter, but there is less international oversight. Track I requires a Party to the Kyoto Protocol to establish an assigned amount and create a national registry for tracking the transfer of any assigned amounts. Countries eligible for Track I must also have a national system in place to estimate emissions and removals by sinks; submit an annual inventory to estimate GHG emissions; and have accurate accounting of their assigned amount and

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<sup>2</sup> Annex I EITs under Annex B of the Kyoto Protocol are Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russian Federation, Slovakia, Slovenia and the Ukraine.

submissions of information. To qualify for Track II JI, a host country must only fulfil three of the eligibility requirements: They must be a Party to the Kyoto Protocol, establish an assigned amount and have a national registry in place.

If a host country meets all the eligibility requirements and qualifies for Track I, it is allowed to set its own national guidelines and procedures for the approval of JI projects, verification, and transaction of emission reduction units (ERUs). If a host country does not meet all the eligibility requirements and therefore follows Track II, the host country must follow the international rules for JI project approval and verification of ERUs and be supervised by the JI Supervisory Committee (JISC). The role of the JISC is to establish the rules of procedures for JI including the elaboration of standards and procedures for the accreditation of independent entities, and the accreditation of independent entities. These accredited independent entities (AIE) are required to undertake third party verification of a JI project under Track II. Track I guidelines are therefore more flexible than Track II because host countries can decide on the methodologies themselves without the involvement of the JISC. However, Track I JI requires a stronger capacity of the host country government and more elaborate technical requirements for baseline setting. Another important provision of the Marrakech Accords stipulates that JI projects may begin as of the year 2000, but can only generate ERUs beginning in 2008.

## 1.2 Recent developments

The current market for JI in 2006 is substantially different from what was envisaged when the KP was first established in 1997. For example, eight of 13 economies in transition joined the EU in 2004 and another two (Bulgaria and Romania) will accede on 1 January, 2007. These countries will need to comply with the *acquis communautaire* (see IGES, 2005) and will be subject to the EU Emissions Trading Scheme (ETS). In order to prevent double-counting, installations covered by the ETS cannot also be involved in JI projects unless an equal number of allowances are cancelled from the registry of the Member State of the ERUs origin. The potential volume of ERUs in the EIT countries is therefore likely to be significantly reduced in energy-related sectors, as these emissions reduction will now occur under the EU ETS instead of JI. However, given the higher transaction costs associated with JI in comparison with emissions trading, it is likely that on the whole, more emissions reductions will be cost-effective in EITs, resulting in lower global CO<sub>2</sub> emissions. The market for ERUs for non-CO<sub>2</sub> emissions, such as for JI projects that reduce emissions of CH<sub>4</sub> and N<sub>2</sub>O, generally remain unaffected by the EU ETS<sup>3</sup> (which currently covers CO<sub>2</sub> only). Preliminary evidence also suggests that the recent linking of JI and the CDM to the EU ETS via the EU Linking Directive (2004/101/EC) has stimulated investment into project-based mechanisms by EU companies/private sector.

JI has had a slow start in comparison to the CDM, where the regulatory framework was given impetus through a “prompt start” that has led to the registration of certified emissions reductions (CERs). In contrast, the rules and modalities of JI were far less developed because the JISC was only established at COP/MOP1 and held its first meeting in early 2006. Prior to this, guidelines for a number of important procedures, ranging from Project Design Document (PDD) templates<sup>4</sup> to baselines and monitoring methodologies, did not exist. Important progress has been made in the JI institutional framework at the international level whereby for example at its most recent fourth meeting, the JISC has established

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<sup>3</sup> There could be some exceptions to this. For example, JI projects at large landfills that would reduce CH<sub>4</sub> emissions. However, if these landfills are large enough (i.e. have an electricity-generating capacity of >20MW) they would be included in the EU ETS.

<sup>4</sup> PDD templates provide a uniform reporting format and thus increase the comparability and transparency across projects.



procedures for accrediting independent entities, has prepared the determination and verification JI report forms. JI Track II is therefore ready and due to be officially launched on October 26, 2006.

## 2. Background

Joint Implementation has received much less attention than the CDM so far, in part due to its later crediting date and national institutional constraints. To obtain a better understanding of the current scope and potential of JI, this section provides an up-to-date overview of the existing JI portfolio of projects, the size and sectoral mix of the projects, and the developing market for ERUs.

### 2.1 JI projects in the pipeline (JI portfolio)

The number of JI projects under development is continuously increasing. However, data and information on these projects is not officially collected in a central place. This is expected to change given that Track II JI will be officially launched on October 26, 2006, whereupon it is anticipated that Track II projects will be made available on the UNFCCC JI website. Aggregated information on JI projects at this time is therefore incomplete.

All host countries have provided information on the number of JI projects that have Letters of Approval (LoAs) as of October 2006. In total there are currently 101 JI projects with Letters of Approval. The majority of these are situated in the Czech Republic, Bulgaria and Hungary (Table 1). Several host countries have also provided information in the number of JI projects that currently have Emissions Reduction Purchase Agreements (ERPAs)<sup>5</sup>. These include the Czech Republic with 32 projects at the ERPA stage; Bulgaria with 14 JI projects; Poland with 4 projects with an ERPA; and Latvia with 1 JI project with an ERPA.

Information is also available on the total number of JI projects based on the PDDs that have been made available for public comment by the DOEs acting as AIEs<sup>6</sup>. For some countries, this is a subset of projects that have LoAs, but for other countries there are more proposed projects with PDDs than have LoAs. According to this data, there are currently 132 JI projects in the pipeline<sup>7</sup> which have the potential to generate about 84 million ERUs (to 2012) (compared to 1.5 billion for CDM over the same timeframe). The 132 JI projects that have had their PDDs made publicly available are located in 12 countries and are unevenly distributed geographically (most projects are in the Czech Republic, Bulgaria, Russia and the Ukraine) (right-hand columns in Table 1). According to the PDD data, the investors originate from 10 different countries as well as the World Bank's Prototype Carbon Fund (PCF) and the Nordic Environment Finance Corporation (NEFCO) which is managing the Baltic Sea Region Testing Ground Facility (TGF).

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<sup>5</sup> An ERPA details the contractual arrangements between the seller of emissions reductions and the buyer. It also provides the purchaser with all rights, title and interests in and to all or a part of the emission reductions or removals generated by a specified project. It also stipulates the purchase price, provides for payment upon delivery of the contracted amount and other provisions to ensure satisfactory implementation of the project (BASREC, 2006).

<sup>6</sup> According to the Guidelines for the Implementation of Article 6, para 31 states that "Project participants shall submit to an AIE a project design document that contains all information needed for the determination of whether the project: (a) Has been approved by the Parties involved"...

<sup>7</sup> This data has been collected by UNEP Risoe and is available at <http://www.cd4cdm.org/Publications/CDMpipeline.xls> (October, 2006).

Table 1: Number Credits and JI Projects per Country (kt CO<sub>2</sub>-eq)<sup>8</sup> based on LoAs and PDDs

Country	Expected credits based on LoAs (2008-2012)	Number of JI projects with LoAs	Expected credits based on PDDs (2008-2012)	Number of JI projects with PDDs
Bulgaria	11379	15	15945	19
Hungary	10532	15	6480	10
Ukraine	10002	4	13350	15
Czech Republic	3781	34	4070	21
Estonia	993	8	2295	9
Slovakia	750	1	1425	3
Lithuania	548	3	673	4
Poland	139	7	3050	10
Latvia	82	1	0	0
Romania	--	11	9715	15
Germany	--	2	1120	3
Russia	0	0	22810	18
New Zealand	0	0	2555	5
Total	--	101	83720	132

-- : Data not available

Source: Data in the first two columns on LoAs were obtained via personal communication with national JI experts and/or focal points; data in the second two columns on PDDs is from UNEP/Risoe database [www.cd4cdm.org](http://www.cd4cdm.org) (October, 2006).

Given the available data on JI projects with PDDs, there is also an imbalance with regard to the sectoral distribution of JI projects in the pipeline (see Table 2). Hydro (25) and wind (16) projects are strongly prevalent, as are landfill gas (19) and biomass energy projects (14). In contrast, there are currently only a very limited number of afforestation, agriculture, coal bed/methane, and EE household projects.

In terms of buyers, European countries have been the largest purchasers of project-based reductions (both JI and CDM) created in 2005 and Q1 2006. Of these, 77% of the purchases (or 43% of total market volume) are attributed to private sector buyers<sup>9</sup>. Japan is the second largest buyer with the private sector accounting for nearly all JI transactions (World Bank, 2006).

<sup>8</sup> Data are from the UNEP Risoe database on projects with PDDs that have been opened for public comments by the designated operational entities (DOEs) acting as accredited independent entities (AIEs) in the interim, until the JISC officially performs the accreditation procedure.

<sup>9</sup> Several interview sources have said that the private sector buyers tend to be from installations covered by the EU ETS.

Table 2: JI Projects per Type in the Pipeline based on PDDs

Type of project	1000 ERUs per year	Number of JI projects
Renewable Energy	5547	68
Fossil fuel switch	3036	8
Energy distribution	2041	9
N <sub>2</sub> O	1798	3
Fugitive	1023	7
EE households and industry	862	12
Landfill gas	1688	19
Coal bed/mine methane	603	4
Afforestation	82	1
Agriculture	64	1
Total	16744	132

Source: UNEP/Risoe database based on PDDs opened for public comment. [www.cd4cdm.org](http://www.cd4cdm.org) (October, 2006).

## 2.2 JI market developments

JI is currently only a small part of the developing carbon market. During the first quarter (Q1) of 2006, JI accounted for 4.7% of project-based volumes (or 2% of the entire volume of carbon credits from emissions trading and project-based transactions). The average ERU price over this three month period was US\$7.18 (€5.58). In 2005, the average price for ERUs from JI projects was US\$4.63 (€3.60), representing a 22% decrease from the 2004 average price of US\$5.95 (€4.63) (see Table 3) (World Bank, 2006). ERU prices are estimated to range between €3-7.5 per ton. This is below the average CER prices<sup>10</sup>, and has been partly attributed to perceived risks and uncertainties relating to the JI institutional framework at the national and international level (World Bank, 2006).

Table 3: Volume of ERUs and Market Value

	2004	2005	2006Q1
Volume (MtCO <sub>2</sub> e)	9.10	17.78	3.29
Value (MUS\$)	54.19	82.41	19.29

Source: World Bank, 2006.

<sup>10</sup> In comparison, in 2005, the (volume-weighted) average price paid for Verified Emission Reductions (VERs - candidate CERs from CDM projects that have not been registered by the CDM Executive Board) was US\$4.43, up 12% from US\$3.95 in 2004. In Q1 2006, the average VER price was US\$5.65, up 14% from the 2005 average price. The average price for CERs (candidate CERs from CDM projects that have been registered) in 2005 was US\$7.04, up 37% from US\$5.15 in 2004. In Q1 2006, the average CER price jumped to US\$11.56, up 64% from the 2005 average price. In the secondary market, the average price for CERs in 2005 was US\$22.21, or nearly 300% higher than the 2004 average price of US\$5.82. In Q1 2006, the average price was US\$23.33 (World Bank, 2006).

Information on the relative transaction costs between a JI and a CDM project is not readily available. Transaction costs for JI include search costs, negotiation costs, PDD development costs, approval costs, monitoring costs, validation and verification costs, and registry costs (Michealowa et al. 2003). Preliminary indications are mixed as to whether JI entails similar or higher transaction costs in comparison with CDM. At its fourth meeting, the JISC introduced a fee to cover the administrative costs of JI, similar to that of CDM, and hence this aspect of transaction costs across the two project-based mechanisms are similar. An intermediate evaluation of the Dutch JI policy in 2005 showed that the transaction costs related to the purchase of JI credits by the Netherlands Government amounted to almost 25% of the nominal prices paid for these credits.<sup>11</sup>

In terms of the costs of developing a JI project, rough estimates suggest that in New Zealand the cost of developing one JI project is about €40,000-75,000 with project development costs accounting for €30,000-62,500 and validator costs ranging between €10,000-12,500<sup>12</sup>. In Romania for example, the estimated cost of a PDD preparation is €25,000-50,000, and validation costs by an independent entity is about €15,000-20,000. Validation costs for CDM have been declining over last couple of years, and are likely to do so in JI as well. Overall, administrative and transaction costs are project-specific, and likely to vary by project type (e.g. higher for new developments such as renewable energy, and lower for projects on sites that already exist, e.g. for landfill gas projects<sup>13</sup>). Moreover, in some cases the data required to develop the baseline already exists and is easily accessible whereas in other cases it may be difficult and costly to obtain.

According to SenterNovem, an agency of the Dutch Ministry of Economic Affairs which currently holds 23 JI projects, under a public procurement programme, it took approximately 6-12 months to get a project off the ground, from the project idea note (PIN) to the contract. However, under the new Emissions Reductions Unit Procurement Tender (ERUPT) programme, it takes about 6-8 months from the PIN to approval of an emission reduction purchase agreement (ERPA). Delays are partly due to the fact that JI is not properly institutionalised in most host countries and that in some countries there are no obligatory deadlines for certain procedures e.g. for Letter of Approvals (LoA). According to the PCF, experience indicates that there is not much difference between the times it takes to get a JI vs. a CDM off the ground. As in the CDM, this time is likely to vary significantly according to the host country involved.

### **3. JI: Assessing the Current State of Implementation**

This section begins with an examination of the status of existing institutional capacities in the host countries, and then looks at the buyer side criteria for investment into JI. Finally, the baseline and monitoring guidelines that are being developed under the two JI Tracks are considered.

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<sup>11</sup> CE, 2005. Interim Evaluation of the Dutch Joint Implementation Programme, Delft, the Netherlands, p.10, table 5.

<sup>12</sup> O'Brien, 2005. Presentation by Carbon Market Solutions.

<sup>13</sup> For the latter, planning permissions or an EIA for an already existing site is not required, whereas these are necessary for a wind turbine.

### 3.1 Status of host country institutions

The relatively low level number of and prices for JI credits are due in part to the perception of regulatory and institutional risks<sup>14</sup>. In order for a host country to participate in the JI mechanism effectively, several requirements and institutional arrangements need to be in place. These are:

- I. Fulfilling the necessary JI eligibility requirements (depending on whether a country follows JI Track I or II) [Para 21 (a-f), Dec9/CMP.1];
- II. Informing the UNFCCC Secretariat of its designated focal point for approving projects [Para 20(a), Dec9/CMP.1]; and
- III. Informing the UNFCCC Secretariat of its national guidelines and procedures (including the consideration of stakeholders' comments, as well as monitoring and verification procedures) [Para 20(b), Dec9/CMP.1]

The eligibility requirements for JI govern the ability of a Party to trade ERUs under the Protocol. Associated with the requirements above, a country will need to establish a JI institutional framework/infrastructure, including establishing the mandate and responsibilities of the institutions (e.g., assigning a Minister responsible for the approval of JI projects), and securing resources and capacity (e.g., training staff) (Levina, 2005). Table 4 summarises JI responsibilities and the status of host countries in 2006.

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<sup>14</sup> Regulatory risk refers to the risk that a verified emissions reduction (VER) may not be registered as an ERU (or CER in the case of CDM) since it has not undergone all the necessary procedures and may not meet the requirements for verification, certification and issuance of ERUs (or CERs). It is the buyers of VER that assume all regulatory risk and therefore tend to pay a discounted price for VERs, which takes the inherent regulatory risks into account. Institutional risk refers to gaps in institutional capacities or frameworks which, defined broadly, can include processes or functions, organisations that carry them out, and mandates (such as legal backing) for them.

Table 4: JI Responsibilities and Status in 2006

Country	JI National Guidelines	National Registry*	JI Unit/DFP	JI Staff	Institutions involved	Track I eligibility expected
Bulgaria	Yes	No 2007	Yes	3	Ministry of Environment and Water	By 2008
Czech Republic	No	No 2007	Yes <sup>1</sup>	2-3	Ministry of Environment	By 2008
Estonia	Yes	Yes Nov 2005	Yes	0.3	Ministry of Environment & Environment Information Centre	By 2008
Germany	Yes	Yes March 2005	Yes	6	Ministry of Environment & Emissions Trading Agency	By 2007
Hungary	Yes	Yes	Yes <sup>1</sup>	0.5	Ministry of Environment and Water	By 2008
Latvia	Yes	Yes Nov 2005	Yes	0.25	Ministry of Environment	By 2008
Lithuania	Yes	Yes Nov 2005	Yes	3-4	Ministry of Environment & Environmental Investment Fund	By 2008
New Zealand <sup>2</sup>	Under development	Yes	Yes	4	Ministry of Environment	By 2007
Poland	Yes	No	Yes	2	Ministry of Environment	By 2008
Romania	Yes	No Dec 2006	Yes <sup>3</sup>	4	Ministry of Environment and Water Management	By 2007
Russia	No	No	No	0.5	Ministry of Economic Development and Trade	--
Slovakia	Yes	Yes	Yes	3	Ministry of Environment	By 2008
Ukraine	Yes	No Sept 2006	Yes	4-5	Ministry of Environmental Protection	By 2007

Source: Author via personal communication with national government experts.

\* Target date or date when host country acquired a national registry; <sup>1</sup> Emissions Trading Unit; <sup>2</sup> For the Project to Reduce Emissions (PRE) programme which forms the basis of JI; <sup>3</sup> Climate Change Unit.

### *JI National Guidelines*

The Guidelines for the implementation of Article 6 require that a Party involved inform the UNFCCC Secretariat of its national guidelines and procedures for approving projects, including the consideration of stakeholders' comments, as well as monitoring and verification. There is no further elaboration however on the minimum level of detail that would be appropriate or any other guidance on what this should entail. Most of the Parties that are hosting potential JI projects have some form of national JI guidelines in place, though the level of detail varies across countries. These are often general, outlining the implementational procedures and the relevant institutions responsible for different tasks. In some cases, procedures, rules and criteria for JI project approval exist but have not yet been officially approved. Estonia for example has approved a number of projects although it lacks formal JI procedures. Moreover, the recent empowerment of the Ministry of Environment to issue Letters of Endorsement (LoEs) and Letters of Approval (LoAs) is expected to reduce the relatively long approval process. Russia still lacks the legal and policy framework for hosting JI projects.

In contrast, Bulgaria has clear guidelines and procedures for the assessment and approval of JI projects. The Bulgarian climate change strategy and the specific measures are described in the Second National Action Plan on Climate Change which has been developed for 2005-2008. Bulgaria has also established PIN and LoE templates, and as well as carbon emissions factors for the Bulgarian energy sector<sup>15</sup>.

Overall, information on national JI guidelines from host countries is not always easily accessible however, and in some cases has not been translated into the JISC working language (English) to facilitate transparency. Moreover, as of October 2006, none of the existing potential host countries have informed the UNFCCC Secretariat of their national guidelines and procedures for approving JI projects. Only a handful of what are currently investor countries have provided the Secretariat with information on their national guidelines and procedures<sup>16</sup>.

### *Project Criteria*

General JI project criteria have been developed in all host countries. The Czech Republic for example has identified high-priority areas for JI projects, including renewable energy, district heating, landfill gas, and greening of public transport, but intends to develop and improve the project criteria. Slovakia's criteria includes that projects must comply with the National Environmental Strategy, and that the price received for an ERU is preferably above 5USD/tCO<sub>2</sub>. Some countries have more specific requirements such as Romania which requires that the ERUs generated must be between 0.1 and 2.0 million tCO<sub>2</sub>e in the crediting period, and that a project mentioned in a privatisation contract cannot be developed as a JI project. Similarly, the Ukraine requires that the estimated annual emissions reductions are above 20,000 tCO<sub>2</sub>e per year.

### *Approval Processes*

The approval processes are fairly similar across countries following the general guidelines under Article 6 (see BASREC, 2006). Several countries require a signed Memorandum of Understanding (MoU) between the host and investor country, including Estonia and Bulgaria<sup>17</sup>.

A number of countries have established national Steering Committees, through which JI projects must be reviewed. Romania for example has a National Commission on Climate Change (NCCC) which was established by the Governmental Decision 1275/1996 and was reorganized this year by the Governmental Decision 658/2006. The NCCC functions as the main advisory body to the Minister of Environment and Water Management on decisions regarding climate change policy and has a role also in the approval of JI projects. This commission includes 12 members from relevant ministries and NGOs. Bulgaria has also established a Steering Committee to assess JI projects which includes 12 members from relevant ministries and institutions, including the Ministry of Environment and Water, Ministry of Economy and Energy, Ministry of Finance, Ministry of Regional Development and Public Works, Ministry of Agriculture and Forestry, and the Energy Efficiency Agency. The Committee evaluates the JI proposal based on the existing national criteria and advises the Ministry of Environment and Water on whether or not to issue a Letter of Approval for each of the project proposals. Steering Committees can help to increase the transparency of the approval process, improve the co-ordination between stakeholders and raise the level of political awareness for climate change and JI.

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<sup>15</sup> [http://www.moew.government.bg/index\\_e.html](http://www.moew.government.bg/index_e.html)

<sup>16</sup> [http://ji.unfccc.int/JI\\_Parties](http://ji.unfccc.int/JI_Parties)

<sup>17</sup> [www.pointcarbon.com](http://www.pointcarbon.com) 14.09.06. To date, Bulgaria has signed 7 MoUs namely with the Netherlands, Austria, Switzerland, the PCF, Denmark, Japan, and Sweden.

In the Ukraine, the approval process for JI projects has recently entered into force. In addition to the baseline and monitoring plans, the PDD must contain a business plan and a plan for financing, incorporating ERU revenues. An Environmental Impact Assessment is also required (with the exception of forestry projects). Early this year the Ministry of Environmental Protection was empowered to issue LoEs and LoAs, and to decide on project requirements and criteria. As a result, there is a general expectation that interest in JI projects will increase in the Ukraine and that there will be a smoother approval procedure.

#### *JI Unit / Designated Focal Point*

All proposed JI host countries have some form of JI Unit in place. In some cases, the JI staff operates through a Climate Change or Emissions Trading Unit, and is responsible for multiple tasks in addition to those related to JI. Challenges identified by different countries include a lack of human and financial resources, and insufficient capacity and expertise to fulfil all the responsibilities, and in some cases a leakage of expertise due to a high staff turn-over. Though many countries have established designated focal points for JI, they have yet to inform the secretariat officially and thus yet to make the information easily accessible to the public.

#### *Status of Preparations to Enter Track I*

As noted previously, in addition to meeting all the eligibility requirements, transitioning to Track I requires the host country to establish national guidelines, procedures and institutions, including procedures for approving projects, monitoring and verification. There is to date however little development in this area, with most countries still focusing on meeting the eligibility criteria (which is also necessary for joining the EU ETS and is therefore an important priority). Germany is an exception, in which its 2005 Project Mechanism Act has only regulated Track I JI.

Several other countries have begun to consider what the national guidelines and procedures for Track I JI would entail, including the Czech Republic, Romania, and Bulgaria. The Czech Republic has recommended, based on their experience with Track II, that Track I guidelines should be simple and standardised to the maximum extent, and that projects should be pooled. At present, Romania and Bulgaria have started to consider the frameworks necessary for Track I JI.

Romania is the only EIT country that has explicit legislative language with regard to JI Track I. In its *National Action Plan on Climate Change (2005-2007)*, Item 4.2: *Develop Procedures for JI Project Approval under Track I*, states that:

“Based on the experience from promoting projects under Track II it will be possible to establish the degree of flexibility that may be granted to the development of Joint Implementation projects under Track I.” and will include the following:

Elaborate a procedure for the approval of Joint Implementation projects under Track I, to include the format for the required documentation, the deadlines for review and issuance of approval by the Ministry of Environment and Water Management (MEWM). The procedure shall also include the identification of baseline definition methodologies and monitoring requirements.

To implement this, Romania is working in collaboration with the Netherlands and has an approved bilateral technical assistance project in place. The objective is to have established procedures, including those for monitoring and baselines, by March 2007.

Bulgaria has started a capacity building project in September 2006 with the support of the Danish Environmental Protection Agency. The project is proposed to help Bulgaria meet the eligibility criteria for JI Track I and to establish a well-functioning administrative system for JI. The project includes:



1. Status analysis for Track I compliance;
2. Development of National JI Guidelines;
3. Development of baselines for selected JI project types; and
4. Establishment of a mechanism for the reporting to the European Environment Agency on GHG emissions.

With regard to Track I, host countries could work together to develop their national procedures and guidelines and to improve the exchange of information on the approaches they are taking, challenges they encounter and actions to address them. Greater communication relating to experiences and lessons learned would facilitate the development of similar national procedures and guidelines in other host countries, and would reduce the costs of designing and implementing these. Similar national approaches for Track I national guidelines and procedures, where possible, would facilitate the transparency of project approvals and help to streamline the procedures and guidelines. An effective and efficient transition to Track I JI would be one way of increasing the number of projects by reducing the transaction costs associated with a project and making them more financially attractive for investor countries. However, for countries with only a few JI projects in the pipeline (e.g. Lithuania), establishing Track I national guidelines is not a major priority at the present time.

Overall, there have been significant improvements over the past year in establishing a more concrete international institutional framework for JI. The recent creation of the JISC will help to eliminate much of the uncertainty that has previously surrounded JI. Important institutional arrangements have also been developed at the national level (e.g. in the Ukraine), that will facilitate the effective functioning of JI. Nevertheless, there is still substantial variation in the status of host countries and their institutional frameworks.

To summarise, the general problems identified by host countries include the following:

- Insufficient capacity within the government institutions, particularly a lack of human and financial resources and expertise;
- Lack of guidelines or manuals regarding JI criteria and approval processes that would permit expertise to remain in-house despite a high-turnover in staff; and
- Lack of clarity with regard to terms and definitions related to JI, including the EU Linking Directive.

Stronger communication links between the JISC and the host countries would encourage greater information exchange. A forum for information exchange, similar to the CDM DNA forum which the EB has agreed to establish, could be created for designated focal points. Such a forum could provide an important avenue to build capacity through cooperation and exchange of experiences relating to building adequate infrastructure and to overcoming other barriers in JI.

In addition to the institutional constraints, there are several external factors that contribute to the uncertainty surrounding JI and/or could reduce the volume of JI projects. These are:

- The EU ETS, which will enter into force in 2007 for new member countries. It will diminish the opportunities for JI projects in sectors covered by the EU ETS, mainly to non-CO<sub>2</sub> gases and small projects.

- The Ukraine and Russia are expected to host many JI projects in the near future thereby causing a shift of JI projects to these countries.
- In sectors such as landfill, transportation, and agriculture where JI potential is strong, there is also the possibility of undertaking Green Investment Schemes (GIS). Though concrete evidence does not exist, these are expected to be more flexible and less costly (GIS projects are likely to have lower transaction costs and do not involve consultancy fees) and hence more attractive.
- The UNFCCC Ad hoc Working Group on Article 3.9 of the KP is just beginning its work. It is unclear how its deliberations will affect JI in the future.
- The first review of the Kyoto Protocol under its Article 9 is due to take place at the second session of the Conference of the Parties serving as the Meeting of the Parties to this Protocol in November 2006. This may also affect the future implementation of JI.

### 3.2 Buyer-side criteria for investment

Identifying and clarifying the buyer-side criteria for investment into JI projects can help host countries establish priorities for action. This will improve the match between the supply and demand of JI credits, facilitating the development of a more dynamic and liquid market for ERUs, and thus promote the number of JI projects.

How do investors select projects and decide where to invest? According to Frankhauser and Lavric, (2003) three general elements are key determinants, namely:

- a) The scope for cheap emissions reductions (i.e., low marginal abatement costs);
- b) The institutional capacity of a host country; and
- c) The general business environment including political and economic stability, progress in privatisation, liberalisation and structural reforms, quality of the legal system, and prevalence of corruption.

However, the public and private sectors in different countries have slightly different approaches and criteria for investment in JI projects. Generally, public entities have a broader set of objectives for investing in JI projects, including contributing to the development of JI both nationally and internationally. Countries also assign responsibilities and allocate funds to undertake JI and CDM projects in different ways. For example, in Denmark and the Netherlands different ministries are responsible for JI and CDM projects. Each ministry is allocated separate funds to invest in emissions reducing projects thus making it difficult to have a cohesive strategy. In other countries, funds for project-based mechanisms, JI and CDM, are centrally managed with no restrictions or quotas on the relative proportions of each (e.g. in Belgium).

Governments also have different national criteria and objectives for investing in a JI project. Belgium for example places a high emphasis on the sustainability of projects<sup>18</sup>, and selects projects based on the following criteria: Sustainability (using the Gold Standard sustainability criteria<sup>19</sup>); cost; and certainty of delivery. Belgium uses a scoring mechanism and consequently ranks the project proposals to identify which projects will be approved for funding. It has also established a maximum threshold of €2.3 million to be paid per project for emissions reductions. The criteria under the Dutch ERUPT government

<sup>18</sup> [www.climate.be/jicdmtender](http://www.climate.be/jicdmtender)

<sup>19</sup> For more information, see [www.cdmgoldstandard.org](http://www.cdmgoldstandard.org)

programme is more general, giving priority to renewable energy, fuel switching, energy efficiency, methane capture and utilisation, and other industrial processes.

In contrast, countries such as Germany and the UK have decided not to establish a government/federal procurement programme. These countries believe that: 1) the private sector should be the driving force behind emissions reductions; and 2) a large portion of emissions reductions should be achieved via domestic policies and measures. Further, declining net emissions in these countries since 1990 also means that they have a lower need for credits, including from JI and the CDM.

Even without public procurement programmes, national governments may nevertheless be (indirectly) involved in JI through international funds such as the Testing Ground Facility (TGF) under BASREC (i.e. Nordic countries and Germany) and the World Bank's Prototype Carbon Fund (PCF)<sup>20</sup>. The TGF is a regional public-private partnership and gives priority to energy related projects such as renewable energy, fuel switching, supply side energy efficiency and cogeneration, and demand side efficiency and energy conservation. Moreover, projects are subject to standard viability criteria including economic, financial, technical, institutional and environmental feasibility. The TGF has also identified countries of priority for investment, namely Estonia, Latvia, Lithuania, Ukraine and N.W. Russia<sup>21</sup>.

The PCF, a public-private partnership, is involved in both CDM and JI projects. In 2006, JI accounted for 15% of the expected emissions reductions from the current portfolio of the PCF. One reason for this is that the absolute JI emissions reductions potential is lower than for CDM and some of the high-volume, cheap emissions reductions such as HFC23 are not available in EITs. However, additional reasons why JI constituted a smaller proportion than CDM are that the institutional frameworks (both international and national) are still not fully operational. Moreover, additional costs may have to be incurred to align the existing proposed JI projects with the procedures and methodologies that are evolving through the JISC.

With regard to private sector criteria for investment, many think that JI is more speculative and that investment criteria places a stronger emphasis on price and project risk. Additional factors that are important for private sector investment in JI include, *inter alia*, the duration of the project (longer time periods imply higher transaction costs); whether there are established business relationships in the host country; and whether countries need up-front payments. With regard to risk, the private sector considers JI to entail additional elements of risk in comparison with the CDM because the host country has to be deemed eligible for JI, and the host country issues the ERUs as opposed to the UNFCCC.

There are several steps that potential host countries can take to promote JI (and CDM) projects. This includes developing an overall positive investment climate, including a stable government, economic and technology policies and legal frameworks. More specifically with regard to JI, the following additional enabling conditions are important:

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<sup>20</sup> Another recent initiative is by the European Bank for Reconstruction and Development (EBRD) and the European Investment Bank (EIB) which are establishing a joint Multilateral Carbon Credit Fund, designed to develop the carbon market in countries in transition to market economies. The eligible countries are Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Russia, Kazakhstan, Serbia and Montenegro, Kyrgyz Republic, Latvia, Lithuania, FYR Macedonia, Moldova, Poland, Romania, Slovak Republic, Slovenia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan. The size of the fund will be initially capped at €150 million. According to the EBRD, the carbon market in countries in transition is potentially significant and could account for 35% of global project-based carbon credit transactions (whereas in 2005 it accounted for less than 4%). [<http://www.ebrd.com/country/sector/energyef/carbon/mccf/index.htm>]

<sup>21</sup> [www.nefco.org](http://www.nefco.org)

- Clear criteria and procedures for JI projects: The criteria used to assess if a project assists in achieving sustainable development in the host countries should be published; the process for the issuance of LoEs and LoAs should be clear and transparent and the share of proceeds or taxation – if any- has to be defined.
- A favourable investment climate: This should include a stable economic environment and a legal framework.

Additional desired parameters for investors also include:

- One-face-to-the-customer: The DNA/DFP should act as a focal point and should facilitate governmental coordination required to have transparent processes without delay of the issuance of LoAs and the transfer of certificates.
- Support to potential investors: This would include the development of a portfolio of priority projects and networking information to promote project activity; assistance to potential investors to understand and navigate the host country rules in relation to particular sectors (e.g. energy, waste) and other rules such as foreign direct investment and taxation; and active communication with potential project hosts to help to identify projects and to avoid a mismatch between the expectation of investors and project hosts.

### 3.3 JI baselines and monitoring methodologies

The JI baseline is “the scenario that reasonably represents the anthropogenic emissions by sources or anthropogenic removals by sinks of greenhouse gases that would occur in the absence of the proposed project...”.<sup>22</sup> Baselines are important because they enable the calculation of emissions reductions achieved by the project. The choice of a baseline methodology can significantly affect the size of the emissions benefits that are derived from a project (Ellis and Bosi, 2000).

The actual greenhouse gas (GHG) emissions of a project are determined by monitoring the projects’ performance over time. Different monitoring methodologies for a project can affect the consistency, transparency and predictability between different projects (Ellis, 2002). Monitoring methodologies may also significantly affect the size of emissions credits generated from a project. Accurate and consistent baselines and monitoring methodologies are therefore important in ensuring that an ERU from one project or country is equivalent to an ERU from another.

To facilitate the development of baselines and monitoring methodologies under JI, Decision 10/CMP.1 para 4 (a) in *Implementation of Article 6 of the KP*<sup>23</sup> established that: “Methodologies for baselines and monitoring, including methodologies for small-scale project activities, approved by the Executive Board of the clean development mechanisms, may be applied by project participants under joint implementation, as appropriate.” This applies to Track II JI projects that need to go through the stringent third party verification procedure. However, host countries which fulfil all the eligibility requirements – thus qualifying for Track I JI - but nevertheless wish to adopt the baseline and monitoring methodologies approved by the CDM EB are free to do so.

<sup>22</sup> See decision 9/CMP.1 entitled “Guidelines for the implementation of Article 6 of the KP” (Appendix B) in document FCCC/KP/CMP/2005/8/Add.2

<sup>23</sup> in document FCCC/KP/CMP/2005/8/Add.2

Until recently, it has been unclear amongst host countries whether JI baselines and monitoring methodologies would simply be based on CDM approved methodologies, or whether they would have to follow the methodologies exactly. Recent language in the UNFCCC *Working Paper Guidance on Criteria for Baseline Setting and Monitoring* (Para 15 and 22) specifies that project participants may either (i) apply methodologies for baselines and monitoring approved by the CDM Executive Board or (ii) establish a baseline that is in accordance with Appendix B of the JI guidelines. With the latter, selected elements or combinations of approved CDM baseline and monitoring methodologies may be used for Track II JI projects<sup>24</sup>.

If a project developer selects option (i), then baseline and monitoring methodologies across different projects would likely be consistent. If option (ii) were selected, this would raise the potential for inconsistencies across different JI projects of a similar type. This inconsistency is caused by the lack of a centralised methodology approval body for JI projects – unlike the CDM EB. Rather, for JI it is up to Accredited Independent Entities (AIE) to assess the baselines and monitoring plans based on the criteria in Appendix B of the JI guidelines. Hence, the AIEs have a larger responsibility than the designated operational entities (DOEs) in the CDM<sup>25</sup>. Though the JISC is providing further guidance on Appendix B *Criteria for Baseline Setting and Monitoring*, the approaches to baseline setting and monitoring are likely to vary more under JI and be more dependent on any national guidelines that host countries develop.

Moreover, methodologies for some potential CDM project types have yet to be developed and/or approved by the CDM Executive Board. This implies that for certain JI projects types not yet covered by approved CDM methodologies, new baseline and monitoring methodologies will need to be verified by the AIEs e.g. for district heating projects; the built environment; and energy efficiency projects<sup>26</sup>. Again, this raises the strong possibility that projects from these sectors in different countries which use different AIEs to validate the baseline and monitoring methodologies will not be consistent. This problem may even arise across projects within a single host country that has several AIEs.

These issues are likely to be exacerbated when it comes to Track I JI, when national governments are allowed to establish their own guidelines for approval of projects and baseline and monitoring methods. Illum and Meyer (2004) argue that Track I will not reduce the need for credible baselines as the host countries will need to ensure that the sales of ERUs do not jeopardise the ability of the country to meet its commitments under the KP. Under Track I, there is no creation of emissions rights as with CDM, and it is a zero sum game. It is in the host country's interest to ensure that the JI project generates effective, measurable and sustainable reduction emissions. This responsibility has been designated to AIEs. Moreover, Armenteros and Michaelowa (2003) argue that if common standards are lacking for Track I, investors would be tempted to obtain more ERUs from JI projects in those host countries which assume less stringent criteria on both baseline and monitoring than others<sup>27</sup>.

Though the JISC does not have the same mandate as the CDM EB, once the JISC approves of a project with a specific baseline methodology in a sector not covered by the CDM approved methodologies, then it will be desirable for all other projects in that sector to use baseline methodologies that are consistent with that project. This would create a more centralised approach to methodologies that would also serve to

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<sup>24</sup> [www.ji.unfccc.int/CallForInputs/PublicInput/WorkingPaper.pdf](http://www.ji.unfccc.int/CallForInputs/PublicInput/WorkingPaper.pdf)

<sup>25</sup> Though this will not affect the environmental integrity of the JI since it is a zero-sum game, the host countries involved can be affected.

<sup>26</sup> These are not covered by the EU ETS and only limitedly covered by CDM.

<sup>27</sup> If a host country issued more ERUs than a project had earned, environmental integrity of the ERUs would still be guaranteed since the host Party would have to compensate by making further reductions elsewhere in its inventory.

reduce the transaction costs of project participants identifying and developing baseline methodologies on an *ad hoc* basis.

Overall, there is likely to be more variability in the baselines and monitoring approaches in JI than there is in the CDM. This could result in discrepancies in the number of ERUs that are actually generated across similar projects, particularly given the lack of a centralised decision-making body<sup>28</sup>. Rigorous approval procedures under the JISC could help to reduce such discrepancies. With regard to Track I JI national guidelines on baselines and monitoring, concerted collaboration and co-ordinated efforts across different countries would help to reduce the costs of developing national guidelines and would ensure that there is a greater degree of consistency across projects as well as countries. Facilitative guidelines could be developed to aid in the design of, and investment in, JI projects.

## 4. Conclusions

JI currently plays a very small role in the GHG market, accounting for 4.7% of the total project-based credit volumes traded during the first quarter of 2006. Information on JI projects under development is currently patchy. Despite some data discrepancies, available information based on PDDs indicates that there are about 132 JI projects in the pipeline, and 101 JI projects with Letters of Approval. Overall, the relatively low number of projects and price for JI credits is partly attributed to risks and uncertainties relating to the JI institutional framework at the national and international level.

The potential benefits that countries can derive from JI vary substantially. Countries with small JI potential, for example, do not have strong incentives to invest scarce financial and personnel resources into this mechanism. Important obstacles to JI development include a lack of human and financial resources and expertise; a lack of transparency; and a lack of information exchange and support to project developers in host countries to increase awareness of the potential opportunities associated with JI.

Since COP/MOP1, Parties to the Kyoto Protocol have taken a number of significant steps to advance the implementation of JI. The recent creation of the JISC eliminates much of the perceived uncertainty surrounding JI. Important institutional advances have also been made at the national level that will facilitate the effective participation of host countries in JI, and should result in greater interest from potential buyers of ERUs. Despite this progress, a number of host countries are still in the process of developing their policies, procedures and institutional arrangements.

Further improvements are needed to make JI more attractive for investors. Greater emphasis needs to be placed on increasing transparency in procedures at the national (host country) level. This would entail simple and effective administrative procedures, transparent guidelines for investors, well-trained administrators, and web-based reporting and information system. In addition,

- Stronger communication links between the JISC and the host countries would encourage greater information exchange. A forum for information exchange, similar to the CDM DNA forum which the EB has agreed to establish, could be created for designated focal points. Such a forum could provide an important avenue to build capacity through cooperation and exchange of experiences relating to building adequate infrastructure and to overcoming other barriers in JI.
- National guidelines and procedures for Track I, if developed quickly and cost-effectively, could increase development of JI projects. Coordination across host countries when developing Track I JI

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<sup>28</sup> The degree to which this uncertainty is larger than the additionality or baseline scenario uncertainty under the CDM is difficult to assess.

guidelines would also increase the consistency across projects, reduce the costs of developing guidelines for approval across different countries, and the complexity for buyers. Countries may wish to consider an informal collaborative effort to identify possible common interests among interested host countries, investor countries and institutions. This would further serve to foster information exchange and therefore more informed policy-making processes.

Buyer-side criteria for investment in JI projects vary between the public and private sector, and between different national governments. Government objectives and criteria for investment tend to be broader than those of the private sector. Governments are generally interested in gaining experience and contributing to the development of JI both nationally and internationally and in inexpensive credits at low risk. The private sector seeks clarity with respect to the host country criteria and approval processes. This includes the process for issuance of letters of endorsement and approval for JI projects, including specific deadlines, and that designated focal point information should be publicly available.

Methods to establish baselines and to monitor project emissions are likely to vary much more for JI projects than for the CDM, and especially under Track I JI. Co-ordinated efforts amongst countries and facilitative guidance for developing Track I national guidelines and procedures could reduce both the development/approval costs for host countries and the search costs for investors.

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## APPENDIX

### Criteria for baseline setting and monitoring (Appendix B)<sup>29</sup>

#### I. Criteria for baseline setting

1. The baseline for an Article 6 project is the scenario that reasonably represents the anthropogenic emissions by sources or anthropogenic removals by sinks of greenhouse gases that would occur in the absence of the proposed project. A baseline shall cover emissions from all gases, sectors and source categories listed in Annex A, and anthropogenic removals by sinks, within the project boundary.
2. A baseline shall be established:
  - a) On a project specific basis and/or using a multi-project emission factor;
  - b) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, data sources and key factors;
  - c) Taking in to account relevant national and/or sectoral policies and circumstances, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector;
  - d) In such a way that emission reduction units (ERUs) cannot be earned for decreases in activity levels outside the project activity or due to force majeure;
  - e) Taking account of uncertainties and using conservative assumptions.
3. Project participants shall justify their choice of baseline.

#### II. Monitoring

4. Project participants shall include, as part of the project design document, a monitoring plan that provides for:
  - a) The collection and archiving of all relevant data necessary for estimating or measuring anthropogenic emissions by sources and/or anthropogenic removals by sinks of greenhouse gases occurring within the project boundary during the crediting period;
  - b) The collection and archiving of all relevant data necessary for determining the baseline of anthropogenic emissions by sources and/or anthropogenic removals by sinks of greenhouse gases within the project boundary during the crediting period;
  - c) The identification of all potential sources of, and the collection and archiving of data on increased anthropogenic emissions by sources and/or reduced anthropogenic removals by sinks of greenhouse gases outside the project boundary that are significant and reasonably attributable to the project during the crediting period. The project boundary shall encompass all anthropogenic emissions by sources and/or removals by sinks of greenhouse gases under the control of the project participants that are significant and reasonably attributable to the Article 6 project activity;
  - d) The collection and archiving of information on environmental impacts, in accordance with procedures as required by the host Party, where applicable;
  - e) Quality assurance and control procedures for the monitoring process;
  - f) Procedures for the periodic calculation of the reductions of anthropogenic emissions by sources and/or enhancements of anthropogenic removals by sinks by the proposed Article 6 project, and for leakage effects, if any. Leakage is defined as the net change of anthropogenic emissions by sources and/or removals by sinks of greenhouse gases which occurs outside the project boundary, and that is measurable and attributable to the Article 6 project;
  - g) Documentation of all steps involved in the calculations referred to in subparagraphs (b) and (f) above.
5. Revisions, if any, to the monitoring plan to improve its accuracy and/or completeness of information shall be justified by project participants and shall be submitted for the determination referred to in paragraph 37 of the present annex on guidelines for the implementation of Article 6 of the Kyoto Protocol by the accredited independent entity.
6. The implementation of the monitoring plan and its revisions, as applicable, shall be a condition for verification.

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<sup>29</sup> Decision 9/CMP.1 in FCCC/KP/CMP/2005/8/Add.2

## Glossary

AIE	Accredited Independent Entity
BASREC	Baltic Sea Region Energy Co-operation
CDM	Clean Development Mechanism
CEE	Central and Eastern Europe
DFP	Designated Focal Point
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EIT	Economies in Transition
ERUPT	Emissions Reductions Unit Procurement Tender
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
KP	Kyoto Protocol
LoA	Letter of Approval
LoE	Letter of Endorsement
ODA	Official Development Assistance
PCF	Prototype Carbon Fund
PDD	Project Design Document
PIN	Project Idea Note
UNFCCC	United Nations Framework Convention on Climate Change