

Has Joint Implementation reduced GHG emissions? Lessons learned for the design of carbon market mechanisms

Introduction

Joint Implementation is one of two offsetting mechanisms under the Kyoto Protocol, along with the Clean Development Mechanism. Both allow for projects that are certified as reducing greenhouse gas (GHG) emissions to issue credits for each tonne of carbon dioxide equivalent (CO₂e) abated, which can then be transferred for use in another country. CDM projects are hosted by developing countries, which do not have emission reduction commitments under the Kyoto Protocol, whereas JI projects are hosted by countries with commitments under the Kyoto Protocol.

As of March 2015, almost 872 million Emission Reduction Units (ERUs) had been issued under JI, about a third of all Kyoto credits. This policy brief summarizes a systematic evaluation of the environmental integrity of JI in the first commitment period of the Kyoto Protocol, 2008–2012.

Impact of JI on global emissions

In principle, offsets are a zero-sum game for the atmosphere. Buyers of offsets can increase their emissions by a corresponding amount above the target level, while emissions are reduced by that amount in the host country, keeping global emissions the same. If offsets come from non-additional or overcredited projects, however, using them will lead to an increase in global emissions relative to a scenario without the use of offsets.

The design of JI should, in theory, avoid that outcome. Under the Kyoto Protocol, each country with an emissions target receives allowances (called Assigned Amount Units, AAUs) equivalent to its total emissions budget for the commitment period. For every ERU it issues, a host country must cancel one AAU. Thus, if a JI project is overcredited or not additional, the host country would have to make up the difference and engage in more mitigation action.

However, in the first commitment period, several countries had emissions targets well above their business-as-usual (BAU) emissions, resulting in large AAU surpluses. In such cases,

Key findings

- As of March 2015, almost 872 million Emission Reduction Units (ERUs) had been issued under Joint Implementation (JI). Host countries must cancel one of their emission allowances for every ERU issued, but more than 95% of ERUs were issued by countries with significant surpluses of allowances in the first commitment period of the Kyoto Protocol.
- A detailed analysis of a sample of 60 projects shows that for 73% of the ERUs issued, it was implausible that the projects required carbon revenues to go ahead. In other words, they were unlikely to be additional.
- Of the six largest project types, only one – N₂O abatement from nitric acid production – had overall high environmental integrity; for the rest, additionality seems unlikely or questionable, or unrealistic assumptions were used that significantly overestimate emission reductions. Overall, 80% of ERUs issued came from project types with questionable or low environmental integrity.
- Overall, the use of JI may have enabled global GHG emissions to be about 600 million tCO₂e higher than they would have otherwise been.
- To date, 97% of ERUs were issued under Track 1, which allows JI host countries to largely establish their own rules for approving projects and issuing credits, without international oversight. The share of ERUs issued from project types with plausible environmental integrity was considerably larger under Track 2, which provides for international oversight.
- Auditors – in particular the entity which audited most projects – did not perform their auditing functions appropriately. Under Track 1, they had no incentives to do so, as appropriate oversight was not provided, and any non-performance had no consequences.

host countries can use surplus AAUs to cover their ERUs, and will not have to engage in additional mitigation action. Thus, non-additional or overcredited JI projects in those countries will lead to higher global emissions.

Plausibility of additionality claims

The plausibility of additionality claims of JI projects was assessed through an in-depth review of a random sample of 60 projects, selected to be representative in terms of host countries, project types and project scale. Figure 1 shows that for 43% of the projects and 73% of the ERUs, the additionality claims were not plausible based on the available information. Another 12% of the projects reviewed had questionable additionality claims.

If applied to all JI projects, this suggests that the use of JI may have enabled global GHG emissions to be about 600 million tCO₂e higher than they would have otherwise been.

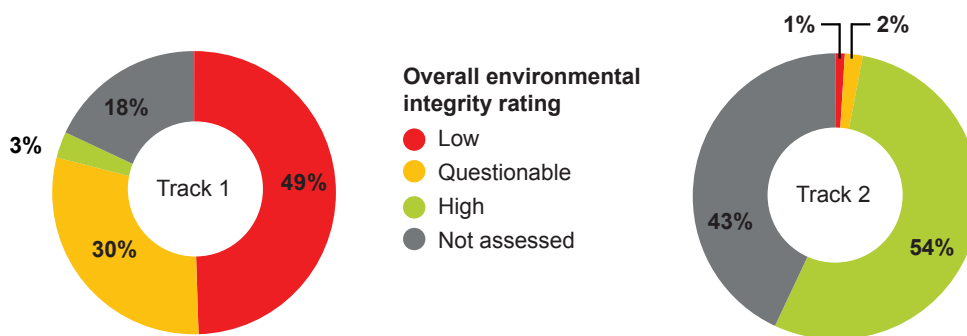


Figure 3: Environmental integrity of project types under Tracks 1 and 2, by ERUs issued

Data source: Evaluation of the largest six project types, applied to the portfolio of 642 projects registered under Track 1 and Track 2 as of March 2014

tion expert statements are very brief and do not specify how key requirements are assessed.

Most host countries rely on AIEs accredited under Track 2 to perform determination and verification functions under Track 1, while their performance is only monitored and assessed by the JISC for functions performed under Track 2. For this reason, AIEs did not have to fear sanctions if they did not perform their functions appropriately under Track 1. Moreover, the fact that JI project participants select and pay their AIE may create an inherent conflict of interest.

One AIE, Bureau Veritas Certification Holding SAS, audited 56% of all projects, which together generated 78% of total ERUs. Overall, Bureau Veritas audited more projects with low environmental integrity than other AIEs. In our sample, 77% of the projects determined by Bureau Veritas made additionality claims that were not plausible, and 17% had questionable claims, while only 12% of projects determined by other AIEs made implausible additionality claims, and 46% made questionable claims.

Differences in host countries

The four countries with the highest ERU issuances – Ukraine, Russia, Poland and Germany – registered 439 projects and issued more than 800 million ERUs, accounting for 94% of ERU issuance. An assessment of the project portfolio in each country indicates significant environmental integrity concerns for over 80% of ERUs from Russia and Ukraine, whereas the environmental integrity was rated as high for 70% of ERUs in Poland and 97% in Germany.

Lessons learned for the design of crediting mechanisms

A key finding of our analysis is that crediting mechanisms need to be very carefully designed to ensure environmental integrity. In particular, our evaluation of the environmental integrity of JI offers the following insights:

- **Crediting mechanisms should adopt project cycle procedures which ensure full transparency and make all documentation publicly available.** Lack of transparency is an important concern in some JI host countries, where key project documentation, such as project design documents, monitoring reports, and determination and verification reports are not available or incomplete for a number of projects. To avoid this problem, crediting mechanisms need rules and enforcement to ensure timely and complete reporting. However, it is important to note that transparency, though crucial for ensuring environmental integrity, is not enough by itself. One

host country, Ukraine, ensured a high degree of transparency but nevertheless issued mostly ERUs of low environmental integrity.

- **Only internationally accepted methodologies should be eligible for use.** Many projects applied their own, JI-specific approaches for additionality demonstration and the calculation of emission reductions. In many cases, these projects used inappropriate approaches or assumptions which lead to overcrediting. Therefore only internationally accepted methodologies that have undergone thorough review by experts and were developed for specific and defined project types should be used.
- **Auditors should be fully accountable for all their activities to the authority regulating the mechanism.** Crediting mechanisms should adopt accreditation systems which continuously monitor the performance of auditors and which apply sanctions in the case of non-performance, including the suspension or withdrawal of accreditation. Merging the two tracks and the JI and CDM accreditation systems could further improve the oversight of the operations of AIEs.
- **Retroactive crediting should not be allowed.** Retroactive crediting of emission reductions has seriously undermined the integrity of JI. Current and future crediting mechanisms should avoid any retroactive crediting and provide for procedures which ensure that projects must be approved or pre-approved (e.g. through a letter of endorsement) prior to the decision to proceeding with their implementation.
- **Investors should have reasonable certainty:** In several JI host countries, project developers faced considerable uncertainty as to whether their projects would ultimately be approved and ERUs issued. This uncertain environment may have favoured projects that did not rely on ERU revenues, thereby also negatively affecting the overall environmental integrity of the project portfolio. A stable and predictable regulatory environment for crediting mechanisms should be established.

The JI Guidelines are currently under review, offering an opportunity to address these issues. However, addressing the serious shortcomings identified in our analysis would require far greater reforms than are now on the table. For example, the current draft JI Guidelines would allow existing projects to register again without having their additionality reassessed, which could potentially enable numerous projects with low environmental integrity to undermine global mitigation efforts during the second commitment period of the Kyoto Protocol.

