

NATIONAL ECOLOGICAL CENTRE OF UKRAINE



# CRITICAL REFLECTIONS ON JOINT IMPLEMENTATION PROJECTS IN UKRAINE





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## THE INTEGRITY OF JOINT IMPLEMENTATION PROJECTS IN UKRAINE

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## Table of Contents

Abbreviations .....	2
Executive Summary.....	3
Introduction .....	6
Methodology.....	6
1. Background.....	7
1.1. JI as a flexibility mechanism of the Kyoto Protocol.....	7
1.2. JI in Numbers: international perspective .....	9
2. Analysis and Observations.....	11
2.1. Track 1 versus Track 2.....	11
2.2. National approval and timing of steps in JI project cycle.....	12
2.3. Early credits .....	14
2.4. The role of JI in project implementation .....	14
2.5. Accredited Independent Entities.....	15
2.6. JI risks for additional and non-additional projects .....	16
2.7. Post-2012 emission reductions .....	17
3. Recommendations.....	18
3.1. Reassessment of registered projects for the operation in CP2.....	18
3.2. Additionality .....	19
3.3. Baseline Setting .....	20
3.4. Single JI track .....	21
3.5. AIE Services.....	22
3.6. Enhancing the role of JI .....	22
Conclusions .....	23
REFERENCES .....	24
Annex 1. Timing of steps in JI project cycle in selected Track 1 projects. ....	25
Annex 2. The share of JI income in ER costs in selected projects.....	28

## **Abbreviations**

AAU – Assigned Amount Unit

AIE – Accredited Independent Entity

CDM – Clean Development Mechanism

CER – Certified Emission Unit – 1 ton of CO<sub>2</sub> equivalent

CMP – Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol

CP1 – First Commitment Period of the Kyoto Protocol

CP2 – Second Commitment Period of the Kyoto Protocol

DFP – Designated Focal Point

ER – Emission Reduction

ERU – Emission Reduction Unit

EUA – European Union Allowance

EU ETS – European Union Emission Trading Scheme

GHG – Greenhouse Gas

JI – Joint Implementation

JISC – Joint Implementation Supervisory Committee

KP – Kyoto Protocol

LoA – Letter of Approval

LoE – Letter of Endorsement

PDD – Project Design Document

RMU – Removal Unit

SEIAU – State Environmental Investment Agency of Ukraine (national DFP)

UNFCCC – United Nation Framework Convention on Climate Change

## Executive Summary

As one of so called flexible mechanisms under the Kyoto Protocol Joint Implementation (JI) is designed to reduce GHG emissions in addition to business-as-usual while minimising the costs of meeting emission reduction targets of Annex I countries. The experience of JI in the first commitment period (CP1) shows that the mechanism has achieved its primary goal only partially, whereas it helped to reduce the compliance costs both under the Kyoto Protocol and EU ETS.

JI has initiated industry bottom-up approach in emission reduction (ER) efforts and resulted in a number of worthy ER initiatives. In some cases JI has facilitated the transfer of knowledge and ER technologies. But the benefits offered by JI have been often abused and ERUs have been granted to projects that occurred anyway, despite additionality being condition. Due to the lack of stringent national emission cap the country can easily afford issuing ERUs to non-additional projects, and even use JI as a way to export its excess AAUs, while the demand for the latter is very limited.

The application of the mechanism at international and national levels has shown flaws that should be addressed for the second Kyoto commitment period to secure its environmental integrity and to ensure the continuation of JI as an emission reduction tool.

Desk review and analysis of publicly available information on Ukrainian JI projects has revealed the following:

- (1) Project baseline and additionality (including identification of alternatives, investment, barrier and common practice analyses) can be easily manipulated. Some PDD developers present argumentation better than others, and there is a tendency that documents of Track 2 projects are generally of higher quality and the justification of additionality is better articulated. However, the presence of additionality still can be questioned in projects under both tracks.
- (2) The timelines of project endorsement, approval and ERU issuance by Ukrainian national DFP lack consistency. It is observed that some projects go through the whole JI project cycle (receive Letter of Endorsement, determination report, Letter of Approval, verification report and get ERUs issued) within only a few months. It is also surprising that many projects initiate the JI cycle in 2011 or 2012, while they were implemented well before 2008. In fact, more than 40% of projects obtained LoE (the first step in JI cycle) only in 2010-2012, which is at least 3-5 years after the project start in most cases. This suggests that JI had no role at the time of project implementation, and was used as an add-on to boost the incomes later on.
- (3) Fourteen out of fifteen JI projects that were promptly endorsed and approved in 2011 under Track 1 claimed so-called “early credits” as AAUs for emission reductions prior to 2008. The volume of AAUs issued to the projects is almost 30 million, which is comparable to the volume of 47 million of AAUs sold by Ukraine via the Green Investment Scheme (GIS). Such a generous approach of Ukrainian government in distributing AAUs is related to the availability of a big surplus of the country’s assigned amount. However, the application of the early AAUs is rather limited. They are not allowed for the use in the EU ETS for compliance purposes; the governments are not likely to purchase AAUs from private entities for Kyoto compliance either.
- (4) In many projects implementation costs are by far higher than potential incomes from ERUs and may constitute around 2% of the total project costs. This is particularly notable in capital-intensive projects, such as energy efficiency in steel production, industries, power generation

and distribution. This suggests that the role of JI for the project implementation decision was insignificant. ERU incomes can cover a major part of project costs only in few project types.

- (5) Accredited Independent Entities (AIEs) have a conflict of interests in performing determination and verification of JI projects as they are selected and paid by the project participants. The quality of the audit in some cases is rather low in terms of its due diligence. It was noted that the majority of the registered Ukrainian JI projects were determined and/or verified by one AIE, which is considered to be the most flexible in the market.
- (6) In the beginning the investment in truly additional JI projects was deterred by numerous risks associated with the immature mechanism. Nonetheless, some good projects were initiated and launched owing to JI, such as landfill gas or coal mine methane capture. When the regulatory risks reduced, there was too little time remaining until the end of CP1 to implement ER measures that rely on JI. At the same time projects that were not dependent on ERUs did not face such limitations or risks and thrived, driving out additional projects and beating down ERU prices.
- (7) The uncertainty of CP2 framework prevents ER projects from seriously relying on CP2 ERUs in their implementation. Even though most of the registered and operational projects are set to claim ERUs beyond 2012, the need for further crediting can be questioned. Nonetheless, some projects may indeed rely on JI for their future operation or implementation if they are not completed yet.

Based on these findings, we propose several changes in the operational model of JI in CP2, which are called to address the highlighted issues:

- (8) Considering uneven quality and questions with environmental integrity of currently registered projects, their baselines and additionality will have to be reviewed before they are allowed to receive ERUs in CP2. Only those implemented projects, the future operation of which depends on ERU incomes should continue receiving JI support. Otherwise the next Kyoto period will suffer from outlined problems and enormous supply of low-quality ERUs will continue.
- (9) The problem of the ambiguity of ways to demonstrate additionality should be addressed. Ideally, tight emission caps of all participating countries would make the requirement of additionality redundant. In particular, we suggest that only countries with emission limitations that are below their current emissions should be able to host JI projects in CP2. Yet with loose emission caps the rules should become stricter. The proof of prior consideration of JI should be mandatory to demonstrate additionality; each project should notify the national DFP and the Governing Body about its intention to use JI at an early stage. The DFPs should establish positive lists of technologies that will be considered automatically additional, but the final approval of the proposed technologies should be performed by the Governing Body.
- (10) Baseline setting should also become more clear and transparent as the approach of the 'most likely scenario' leaves much space for manipulation. Considering that JI is a mechanism for countries with fixed emission caps that are established on historic basis, project baselines can also use historic emissions as a reference or ceiling in many cases. Thus the baselines should be set in a way to deliver net emission reductions, or so-called 'atmospheric benefits'. Standardised baselines is another alternative that can be used to reduce vagueness in baseline

setting. The baselines should be reviewed periodically; such a review may be connected with the renewal for a new commitment period of the Kyoto Protocol.

- (11) JI should operate in a single track with international oversight versus existing JI Track 1 and Track 2. The Governing Body should be able to step in the project cycle both at registration and ERU issuance stage.
- (12) Special attention should be paid to the elimination of the conflict of interests of Accredited Independent Entities in performing determination of JI projects and verification of resulting GHG reductions. As a solution, the assignment of an AIE for a project could be done by the Governing Body, which could randomly select an entity from in its pool observing on the scope and local competence.
- (13) Potential incomes from ERUs should be increased, so that JI can enable ER projects that otherwise would not be implemented. Therefore the crediting period should be maximised for projects with long payback periods, this can be achieved that CP2 lasts 8 years instead of 5. Measures to support the price of credits should be taken, such as filtering out non-additional projects as suggested above, and increasing the level of ambition of countries' QELROs.

Without a deep transformation JI will not be an effective tool of mitigating climate change and may eventually come to an end. The Parties to the Kyoto Protocol together with the JI Supervisory Committee and, possibly, the Governing Body should address the issues of the mechanism as soon as possible. It should be also realised by all stakeholders involved in JI, such as project developers and owners, ERU purchasers and traders, AIEs and host country DFPs, that it is in their interest to restore the environmental integrity and credibility of JI, and stop considering it purely as a source of cash. Otherwise the mechanism is likely to discontinue.

## Introduction

The mechanism known as “joint implementation” is established by Article 6 of the Kyoto Protocol. With the extension of the Kyoto Protocol to the second commitment period (CP2) Joint Implementation has a chance for a future. This has been the main rationale for the National Ecological Centre of Ukraine to conduct a study of the performance of JI in the first commitment period.

Ukraine is a leading JI host country and the biggest supplier of Emission Reduction Units (ERUs). JI has been operational in the country for sufficiently long time in order to monitor its performance. For this reason Ukraine has been selected to study the efficiency of JI as a climate change mitigation tool.

Originally envisioned as a catalyst to develop and transfer innovative technologies to reduce GHG emissions, JI generated both positive and negative experience. On the one hand, JI facilitated the implementation of some emission reduction projects that would not happen otherwise, specifically in Ukraine. These include mainly, but not limited to coal mine methane and N<sub>2</sub>O emission reduction projects at nitric acid plants, certain fuel switch and landfill gas projects.

It also should be admitted, as pointed out in other recent reports [1], that JI originated bottom-up approach in the industries regarding emission reduction efforts. This is fundamental for the general understanding of the importance and acceptance of the needed change by industries (private sector), in particular, for successful implementation of GHG emission reduction measures.

On the other hand, the loopholes and weaknesses of the current JI allowed many “free riders” enter into the system, i.e. projects that did not require JI for their implementation but took advantage of the mechanism to raise easy cash. This severely undermined the environmental integrity and trust in JI as well as flooded the carbon market with cheap emission reduction credits. The latter drove prices down, in combination with other factors such as the economic crisis that reduced demand for emission permits, and oversupply of CERs from CDM projects (where a similar problem with integrity exists). Consequently ER projects that have truly relied on JI revenues are suffering substantial loss, while hardly any new additional ER projects can be encouraged by JI with the current price levels.

The aim of the present study is to point out to the flaws in the current mechanism based on the available experience with JI and propose possible solutions how the system could be reformed in order to stimulate the implementation of efficient GHG emission reduction measures that would not take place in the absence of JI.

## Methodology

The study included desk review and analysis of the PDDs, determination and verification reports of 87 JI projects located in Ukraine that were published on the JI UNFCCC web-site [2] as of April 1, 2012 as registered under Track 1 or received final determination under Track 2. Other sources of information were the website of the Ukrainian National Registry [3], and the interviews with major project developers and NGO representatives working in climate change domain in Ukraine.

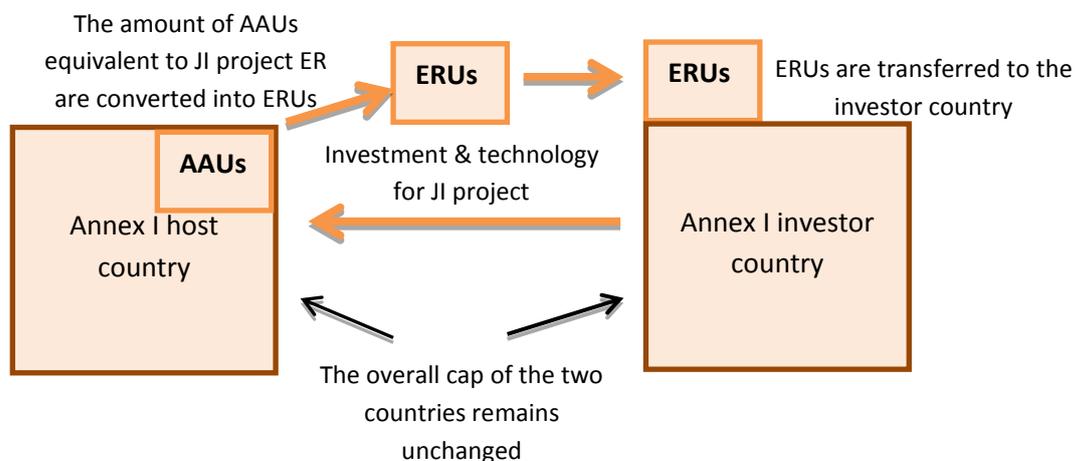
# 1. Background

## 1.1. JI as a flexibility mechanism of the Kyoto Protocol

The Kyoto Protocol [9] has defined the GHG emission reduction targets for 37 developed countries and economies in transition – so-called Annex I Parties to the UNFCCC – for the first commitment period from 2008 to 2012. Within the framework of the Kyoto Protocol, two project-based flexibility mechanisms were designed in order to help the Parties meet their emission reduction targets. The concept behind the project mechanisms is that emission reductions may take place at any place in the world where it is most cost-efficient, and emission reduction credits earned by such projects can be used to fulfil emission reduction obligations by Annex I countries. Projects that are implemented with the aid of these mechanisms have to be in addition to business-as-usual, i.e. *additional* to what would occur in the absence of the mechanisms.

The project-based mechanisms of the Kyoto Protocol are:

- (1) Clean Development Mechanism (CDM). CDM projects are located in developing countries (non-Annex I countries under UNFCCC); they generate Certified Emission Reductions (CERs).
- (2) Joint Implementation (JI). JI projects are based in the Annex I countries (which have emission reduction targets), i.e. they are implemented within capped environment. JI projects generate Emission Reduction Units (ERU), which are converted from Assigned Amount Units of a host country. Thus JI maintains overall GHG emissions cap at the same level (Figure 1).



**Figure 1: JI scheme (Source: adapted from [1])**

The principal difference between CDM and JI is that CDM generates emission permits (CERs) that are imported into the capped environment and by doing so increases emissions in Annex I countries, while JI enables for the transfer of permits (ERUs converted from AAUs) within the same cap. Therefore, in theory, JI should not increase overall emissions from Annex I countries. Annex I countries are accountable for their emissions and ER projects they host. Thus, there is more flexibility in JI as compared to CDM.

The steps in the implementation of CDM and JI projects (project cycles) are generally similar (see Table 1). The main distinctions in the procedures reflect the principal difference between the two mechanisms. There is more flexibility in JI with regards to the selection of methodologies for baseline setting and monitoring. CDM projects can use only methodologies that were approved by



the Methodology Panel, whereas in JI a project developer has a freedom to choose one of the following:

- (a) apply an approved CDM methodology;
- (b) develop an approach specifically for a given project in accordance with the JI guidelines;
- (c) use JI specific-approach that was already used in a similar JI project that received positive determination (case law approach).

Similarly, project additionality in JI can be demonstrated with the aid of either

- (a) CDM Additionality Tool.
- (b) An approach used in a similar JI project, or
- (c) Provide justification specific for a given project

The issuance of emission reduction credits is also different in CDM and JI. Under CDM CERs are issued by the central body, CDM Executive Board. CERs are not converted from any other type of emission permits, they are generated “from scratch”; thus they increase the overall number of emission permits in the Kyoto system. On the contrary, under JI ERUs are issued by a Host Party’s Designated Focal Point by converting an equivalent number of AAUs in the National Registry. Thus, this does not change the overall number of emission allowed in the system.

**Table 1: Comparison of CDM and JI project cycles and parties involved (Source: adapted from the UNFCCC website)**

<i>CDM Project Cycle</i>	<i>JI Project Cycle</i>
<b>Project Design</b> 👤 Project Participants	<b>Project Design</b> 👤 Project Participants
<b>National approval</b> 👤 Designated National Authority	<b>National endorsement</b> 👤 Designated Focal Point
<b>Validation</b> 👤 Designated Operational Entity	<b>Determination</b> 👤 Accredited Independent Entity
-	<b>National Approval</b> 👤 Designated Focal Point
<b>Registration</b> 👤 CDM Executive Board	<b>Final Determination / Track 1</b> <b>Registration</b> 👤 JI Supervisory Committee (Track 2) / Designated Focal Point (Track 1)
<b>Monitoring</b> 👤 Project Participants	<b>Monitoring</b> 👤 Project Participants
<b>Periodic Verification</b> 👤 Designated Operational Entity	<b>Periodic Verification</b> 👤 Accredited Independent Entity
-	<b>Final Verification</b> 👤 JI Supervisory Committee (Track 2 only)
<b>CER issuance</b> 👤 CDM Executive Board	<b>ERU issuance</b> 👤 Designated Focal Point, National Registry

JI projects can be developed using one of the two procedures: Track 1 and Track 2. JI Track 1 can be used only if the host country meets all eligibility criteria<sup>1</sup> that basically prove that it can be accountable for its GHG emissions and assigned amount.

<sup>1</sup> JI participation requirements and eligibility criteria are defined in the JI Guidelines: Decision 9/CMP.1.

Under JI Track 2 the JISC oversees the determination of JI projects and the verification of ERUs, as well as performs accreditation of Independent Entities. Track 2 was originated due to the belief that the countries with economies in transition would have troubles with setting up, among others, national systems for the estimation of human induced GHG emissions, GHG national registries and providing up-to-date GHG inventories - the eligibility requirements for Track 1 procedures. This was not the case for the majority of Annex I countries, which fulfilled the requirements and maintained eligibility during the most part of CP1. Ukraine, in particular, complied with the requirements by 2008 and approved its national JI procedures as early as 2006, but it had a period of non-compliance from October 2011 to March 2012, when it was unable to transfer ERUs under Track 1.

Under JI Track 1 it is the custody of the host country to define its own JI procedures and assign Independent Entities. Yet the majority of countries, including Ukraine, used determination and verification procedures elaborated by the JISC for Track 2 as a model to develop their national procedures. Likewise, Independent Entities accredited by the JISC under Track 2 are usually acknowledged by the host countries to perform determination and verification functions under Track 1.

### 1.2. JI in Numbers: international perspective

As of May 2012, there were 305 registered Track 1 projects, of which 199 projects received 127 million ERUs. There were only 39 Track 2 projects with final determination, of them 27 projects generated almost 17 million ERUs.

A significant share of the registered projects and ERUs come from two post-Soviet countries: Ukraine (90 projects) and Russia (42 projects). The numbers of new projects registered each year show that Ukraine produced the highest number of JI projects in 2011, followed by Russia that increased project registrations in 2012.

The figures below graphically show the distribution of JI project types by the number of projects, the projected amount of ERUs in CP1 and the number of ERUs issued so far. For this purpose 550 JI projects at different stages of development under both Track 1 and Track 2 contained in the UNEP Risoe database [7] were analyzed.

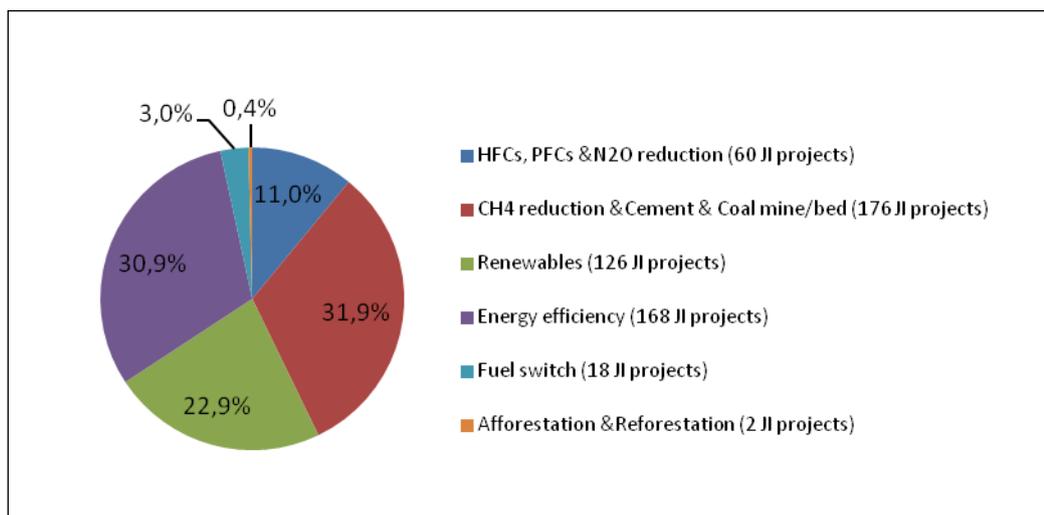
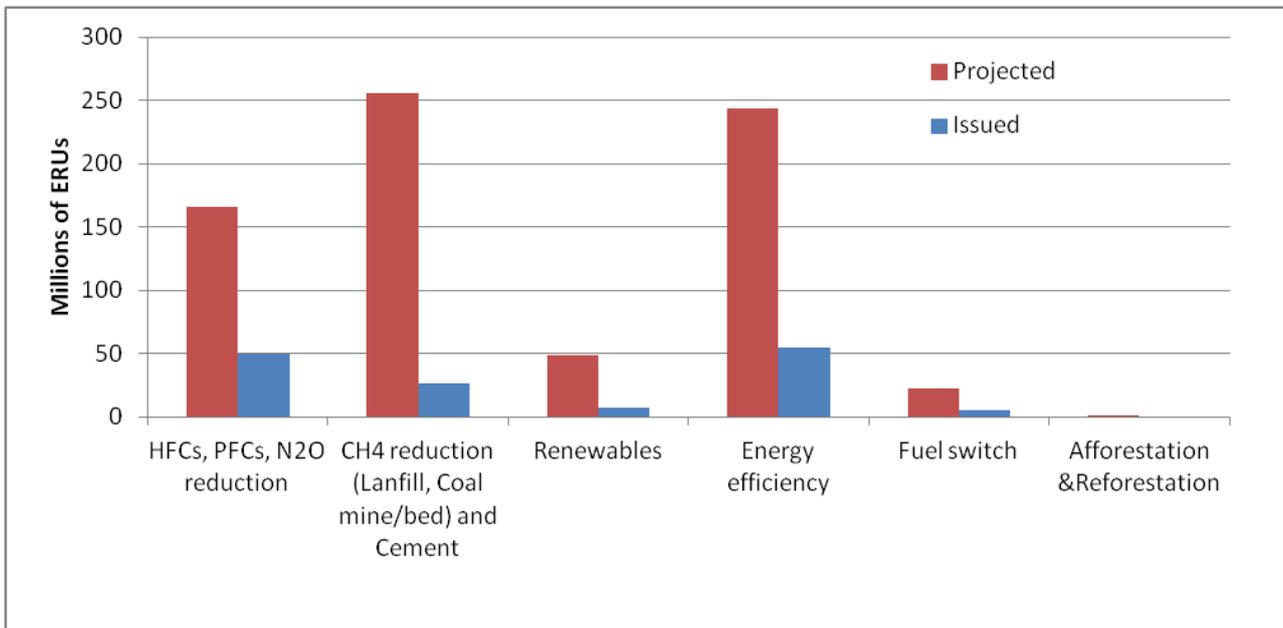


Figure 2: JI project types by the number of projects (Source: adapted from [7])



**Figure 3: JI project types by the number of projected and issued ERUs**

As can be observed from the above figures, the highest volume of the emission reductions was expected from CH<sub>4</sub> reduction projects (mainly landfill gas and coal mine methane) which are also the most numerous. In practice, however, these projects have delivered significantly less ERUs than it was projected in the PDDs (a little more than 10%). Most of the ERUs issued so far come from energy efficiency projects, followed by reductions in emissions of industrial gases. It should be noted that energy efficiency initiatives normally involve high capital investment with relatively long periods of return, the implementation of which can be hardly justified by JI. This is discussed in more detail in Section 2.4. ERU volumes from renewable energy projects and fuel switch are not significant, while no ERUs have been generated by LULUCF projects.

The price of ERU has been volatile during the whole history of JI, which presented a significant risk and uncertainty factor for JI-driven investment. There are little reliable data on ERU prices prior to the emergence of a liquid ERU market, when separate buyers offered their upfront prices, so we had to rely on interviews and opinions of some project developers and participants of the carbon market for the period prior to 2010. At the dawn of JI before the ratification of the Kyoto Protocol in 2005 governmental purchase programs such as the Netherlands' ERU Procurement Tender (ERUPT) offered around 3-5 Euro per unit. The optimism in the carbon markets gradually drove ERU prices up to the range of 10 Euro and even above in 2008. The world economic crisis and recession in many countries cooled down the prices in late 2008 – 2009, when at some points they fell to around half of their previous value. This was the first major carbon price decrease which scared off a lot of potential JI investments, particularly in Ukraine. ERU price gradually recovered and reached as high as 13 Euro in March-May 2011 according to the data of BlueNext carbon exchange [10], after which the downward trend started and reached as low as about 3 Euro in May 2012. One of the reasons of the recent ERU price drop often cited by the market participants is the oversupply of CERs and particularly ERUs from Ukraine and Russia, while the demand for them remains limited.

## 2. Analysis and Observations

### 2.1. Track 1 versus Track 2

From the beginning there were some fears that Track 1 would produce uneven level of environmental integrity and quality of ER projects as it was perceived as more “simplified” and less “stringent” in some countries than in the others. Some ERU buyers, particularly governmental purchasers, preferred ERUs from Track 2. Indeed the implementation of the national procedures showed substantial differences in project quality and transparency among countries.

Nonetheless, Track 1 was more popular among project developers as the global JI project data [6] shows. Out of 550 JI projects in the pipeline 305 projects were developed under Track 1 (of these 199 received ERUs) and 245 projects were under Track 2 (only 27 of them had ERUs issued). Project developers favoured national JI procedures as they seemed less time consuming and cheaper, as well as less risky with no extra oversight by the JISC [1]. In fact, initially there were no international fees under JI Track 1, and since 2010 a single registration fee of 20 000 US dollars for large-scale projects was introduced. At the same time, Track 2 has always involved fees for processing verification reports by the JISC, which are proportional to a project’s annual emission reductions<sup>2</sup>.

The same trend is observed in Ukrainian JI projects, where 69 out of 90 projects are registered under Track 1 (only registered projects are taken into account). The table below provides the breakdown between the two tracks by project type.

**Table 2. Ukrainian JI projects by type (Source: adapted from [7])**

<i>Project types</i>	<i>Track 1 projects</i>	<i>Track 2 projects</i>
Cement	0	1
Biogas	2	0
Biomass energy	2	0
Coal bed/mine methane	3	7
EE households	1	0
EE industry	19	5
EE own generation	4	1
EE service	2	0
EE supply side	4	1
Energy distribution	18	0
Fossil Fuel switch	2	0
Fugitive	8	1
Hydro	2	0
Landfill gas	1	3
N <sub>2</sub> O	1	1
<b>Total</b>	<b>69</b>	<b>21</b>

Only few projects types have the same number or more Track 2 projects than Track 1: cement (1 vs. 0), coal mine and coal bed methane (7 vs. 3), landfill gas (3 vs. 1) and N<sub>2</sub>O reduction projects (1 vs. 1). Although there are too few projects in each of these categories for proper statistical analysis, there could be a few reasons for such a distinction from the rest of the project types. Historically, JI Track 2 became operational earlier than Track 1, so most popular project types that were initiated

<sup>2</sup> 0.1 US dollars per ERU for the first 15 000 ERUs per year and 0.2 US dollars per ERU for the remaining volume; detailed rules can be found at the report of 29<sup>th</sup> meeting of the JISC, Annex 1.

earlier, such as landfill gas, coal mine methane and nitrous oxide emission reductions, used Track 2. In these projects JI component covers a significant share of project costs, which is discussed in more detail in Section 2.4. It could be also supposed that projects with questionable additionality would rather prefer to use Track 1 to avoid the risk of the review by the JISC, while projects with proper justification of additionality would not have problems with using Track 2. This, of course, does not mean that all Track 1 projects are non-additional or, vice versa, that there are no issues with additionality among Track 2 projects.

Another difference that we noticed during the review of the PDDs is that typically the project documentation under Track 2 is developed by an international consultant or an ERU purchaser, versus under Track 1 the PDD is often prepared by a Ukrainian company. Thus there is a general tendency that Track 2 projects are written in a better language and the justification of additionality is better articulated, though this does not necessarily mean that they are truly additional.

Closer to the end of CP1, as Track 1 received more criticism for the lack of transparency, environmental integrity and uneven quality of projects, some JI projects started migration from Track 1 to Track 2. Usually such a conversion did not involve substantial changes, even the project names remained the same (except the addition of the “Track 2” part at the end of the name<sup>3</sup>), and not to mention that the change did not affect the essence or additionality of the underlying measures.

Thus, even though Track 2 has delivered projects of generally higher standard and uniformity, the application of the international track cannot be considered as a cure to the issues with environmental integrity and additionality in JI by itself.

## **2.2. National approval and timing of steps in JI project cycle**

Ukraine started endorsement of JI projects in 2004; first projects were approved in 2006 when the national JI procedures were established (Table 3). Even though the rules envisage only one month for consideration and endorsement / approval decision by the authorities, in practice the approval process has been usually longer, around several months from the initial submission of application to receiving an LoA. Likewise, according to the JI procedures, the consideration of monitoring and verification reports is supposed to take one month and the conversion of AAU into ERUs should not take more than 10 days. These time limits usually have not been observed either.

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<sup>3</sup> Examples of conversion from Track 1 to Track 2 include projects with the following ITL numbers: UA1000266 (“Reconstruction of the agglomerate and blast-furnace production at the JSC «Zaporizhstal» *under Track 2*”), UA1000262 (“Revamping of sintering and blast-furnace production at OJSC «Alchevsk Iron and Steel Works», *under Track 2*”), UA1000048 (“District Heating System Rehabilitation of Chernihiv Region, *under Track 2*”), UA1000280, UA1000274, UA1000256, UA1000131, UA1000254, UA1000290, UA1000294, etc.

**Table 3. Approval of JI projects and ERU issuance in Ukraine (Source: adapted from [8])**

Year	Number of Issued LoEs	Number of Issued LoAs	Registered projects		Issued carbon credits	
			Track 1	Track 2	AAUs (early credits)	ERUs
2004	14	0	0	0	0	0
2005	1	0	0	0	0	0
2006	30	5	0	0	0	0
2007	33	7	0	0	0	0
2008	34	9	5	2	2 586 512	0
2009	45	10	4	4	2 155 683	3 238 322
2010	41	31	16	9	4 319 207	11 286 616
2011	59	53	44	5	20 530 277	48 332 099
<b>Total</b>	<b>257</b>	<b>115</b>	<b>69</b>	<b>20</b>	<b>29 591 679</b>	<b>62 857 037</b>

As described in Section 1.1 выше, JI cycle involves a number of consequential steps that also require some time. Normally, after the project endorsement the project developer prepares a PDD, which may take from 2 to several months; next the PDD determination by an AIE may take around 6 months or more, after which an application for LoA is submitted to the DFP. Thus, considering a few of months for approval, the time interval between obtaining LoE and LoA by a project is usually at least a year. The first verification of emission reductions could take another 6 months, after that project participants can request ERU issuance.

However, in 2010 and notably in 2011 Ukrainian DFP significantly accelerated endorsement and approval of some Track 1 projects, which can be seen in Table 3. The time intervals between LoE and LoA issuance for Track 1 projects reduced to only a few months, in some cases to one or several weeks (see Annex 1 for examples). Likewise, the time intervals between the issuance of determination and verification reports by an AIE are minimized, meaning that PDD determination and verification of emission reductions of the same project are performed simultaneously. Monitoring reports of such ‘fast track’ projects are usually produced simultaneously for several years (with the same issuance and revision dates) or one monitoring report includes several years of operation. In the case of the multiple monitoring reports corresponding verification reports usually have the same date too.

At the same time, these ‘fast-track’ projects assert that JI had been considered before the project start back in 2000-2007. This contrasts with the fact that their project documentation was submitted to the national DFP as late as in 2010-2012 (most in 2011), which resulted in a gap between the project start date and LoE issuance of up to 10 years (see Annex 1 for examples). This raises a question whether JI was truly taken into account when an upgrade – that led to emission reductions among others – was planned. Indeed, the facts listed above suggest that such projects were not conceived as JI projects before 2008, but were promptly manufactured at the end of the first commitment period. This could not be done without support of AIEs and the DFP which should have prevented such projects.

The most popular and ‘time-efficient’ AIE was Bureau Veritas, which provided both determination and verification services to the vast majority of the projects in question. The most common project participant was VEMA S.A. that is registered in Switzerland.

It should be also noted that these projects have capacity to produce substantial volumes of ERUs. For example, more than half of the projects (17 of 32) that obtained national approval in 2011 under Track 1 are large scale projects that are expected to generate more than 1.5 million ERUs during the first commitment period each.

The majority of the projects endorsed and approved in 2011 and 2012 are related to improvements in gas, electricity supply and steel manufacturing sectors. In fact, obsolete equipment inherited from the Soviet Union required maintenance and upgrades in order to continue operation and reduce the consumption of energy resources, regardless of JI. Along with the inconsistencies of timing in JI cycle, this raises serious doubts that JI was actually considered when the projects were initiated, or rather JI has been a low-hanging fruit discovered later on after the implementation of the measures.

### **2.3. Early credits**

Some JI projects started before 2008 in a hope to receive support from JI in the first commitment period. To give credit to emission reductions achieved prior to 2008 by these projects Ukrainian government established a mechanism to grant AAUs, so-called early credits, to “early mover” JI projects. Technically the issuance process is similar to that of ERUs – but without the conversion of AAUs into ERUs – the project receives AAUs that are consequently subtracted from Ukrainian national assigned amount. Yet such an issuance requires a special order by the Cabinet.

Envisioned to reward several early mover JI projects, the rules of granting AAUs turned out to have a substantial flaw that allowed many new projects claim early credits. There is no time limit for the projects to submit an application for early AAUs, neither there is a clear definition of an early mover JI project (e.g. that was approved before a certain date). Thus, there are no obstacles for any project to claim early credits, provided it obtains a verification report for the relevant period and its owner has good support of the government. In fact, out of fifteen JI projects that promptly received both LoEs and LoAs in 2011 under Track 1 fourteen claimed early credits.

The application of the early AAUs is rather limited. They are not allowed for the use in the EU ETS for compliance purposes; the governments are not likely to purchase AAUs from private entities for Kyoto compliance either. Perhaps the main end buyers of such AAUs are Japanese companies, which can use AAUs to fulfil their emission reduction targets. Despite low demand, about 30 million AAUs were obtained by Ukrainian JI projects as early credits of May 2012 [3]. The total number of AAUs transferred as early credits is comparable with 47 million AAUs that Ukrainian government managed to sell and transfer under bilateral governmental trades with the aid of the Green Investment Scheme.

Such a generous approach of Ukrainian government in distributing AAUs and approving non-additional projects is related to the availability of a big surplus of the country’s assigned amount. With a tight emissions cap no government would afford granting its AAUs or converting them into ERUs for projects that have reduced emissions anyway. By doing this Ukraine is trying make use of the enormous excess of the assigned amount, which it will not be able to sell directly under the Green Investment Scheme.

### **2.4. The role of JI in project implementation**

To fulfil the requirement of additionality and receive JI benefits every JI project asserts that without JI it would be impossible to implement the underlying ER measures. We have reviewed the demonstration and the argumentation of additionality in a number PDDs of registered projects, and analysed the costs of ER measures and expected volumes of ERUs.

It was observed that the text of the PDDs is often duplicated from one project to another (which would not be a problem as such), and in many cases the additionality is poorly argued with no citation of the references, no numbers regarding project costs, IRR, NVP, forecasted investments,

profit etc.<sup>4</sup> In some other cases where the project costs are included in the justification of additionality, questions can be raised about data sources and the reliability of numbers.

Investment and barrier analyses are often used in parallel (even though one would be sufficient), yet this does not always help to convince a reader that the project is additional. In fact, there are hardly any barriers in Annex I countries (other than economic or financial that are covered in the investment analysis) that could be overcome with the aid of JI. Even though the PDDs often list a number of barriers that are said to prevent ER measures, they usually have difficulty in demonstrating how JI helps to resolve listed problems.

It was noted that in many cases the costs of the project implementation are by far higher than potential incomes from the ERUs to be generated (see Annex 2 for examples). Comparing the numbers of estimated ERUs in the PDDs and project capital expenditure raises natural scepticism that JI-related revenues were seriously considered at the planning stage. To illustrate the scale of the difference, we assumed that a constructed price of ERU at the time of a project investment decision was 7 Euro, and that the ERU estimates presented in the relevant PDDs were used by the project participants in their investment analysis (without risk factors). Interest rates, depreciation and operation costs were not taken into account for the sake of simplicity (which would further diminish the value of the JI component). Project costs were converted into Euro if necessary.

Selected example projects are presented in Annex 2. The share of JI component is particularly low in capital-intensive projects, such as energy efficiency in steel production, industries, power generation and distribution, the implementation cost of which is usually tens or hundreds of millions Euro. Estimated ERU incomes in some large projects do not exceed a few percent. Hence the role of JI in such projects can be seriously questioned.

By contrast, the value of ERUs makes a significant share or covers all construction costs in landfill gas projects, coal mine methane and N<sub>2</sub>O reduction projects. It is notable that these projects usually started JI cycle (applications for endorsement etc.) prior to the start or in the first years of the first commitment period, obviously because JI component was important for the project implementation. In many cases actual start dates (as seen in the verification reports) were delayed compared to those initially planned in the PDDs, which suggests that the implementation of these projects was probably tied to the progress in the JI cycle, dependent on external financing etc. Thus it is more likely that JI played a fundamental role in decision-making regarding the implementation of ER measures where the JI component comprised a substantial share in the project budget.

## **2.5. Accredited Independent Entities**

It was pointed out in the reports regarding the integrity of CDM [5], there are potential conflicts of interest for the auditors of ER projects. AIEs, like Designated Operational Entities in CDM, are paid by project participants and thus they compete among each other to satisfy the customer and to build up the reputation in the local market. As there are no loud cases of punishments for misconduct, the AIE determination and verification services do not fulfil the mission to retain environmental integrity of JI projects. The quality of Ukrainian determined PDDs and verified ER reports raise concerns that AIEs are not as independent as it was envisioned.

One of the problems is that JI accreditation is granted to the main offices of international certification companies that often have previous abundant experience with CDM validation and

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<sup>4</sup> For instance, the PDD of project No. UA1000298 has no numbers in the Baseline section of the PDD, but concludes that *"Measures analogical to the measures of this Project, at current time can be conducted only on condition of receipt of predictable profit from realization of the mechanism set by the article 6 of Kyoto protocol up to UNFCCC. Thus, this Project is considered such that satisfies the criterion of additionality."*

verification. However, this does not necessarily mean that local or regional offices of these companies have the same of expertise and perform due diligence at the same level.

As mentioned above, the analysis of projects revealed that determination and verification services in Ukraine are carried out mostly by one international AIE. In fact, 60 of 69 JI projects registered under Track 1 have PDDs determined and/or ERs verified by Bureau Veritas Certification Holding SAS. The same AIE dominates among Track 2 projects, but to lesser extent: it provided services to 11 projects of 21 registered.

While Ukrainian DFP is blamed for approving dubious JI projects, according to the national JI procedures it is primarily the task of AIEs to judge the environmental integrity of JI projects. Like many other JI host countries, Ukraine allows AIEs accredited by the JISC for Track 2 projects to act under Track 1. Ukrainian JI procedures envisage that there could be also national AIEs, but in practice there no rules for accreditation and hence no independent entities accredited at the national level. The JISC-accredited AIEs are not accountable to the Ukrainian DFP – in the case of misconduct under Track 1 it cannot withdraw the accreditation or impose any other penalties. At the same time these AIEs are not responsible before the JISC for Track 1 projects. Thus, there is virtually no accountability of AIEs for their audits of Track 1 projects.

## **2.6. JI risks for additional and non-additional projects**

As any new mechanism, in the beginning JI was considered as a high-risky source of income for ER projects. Indeed, there were a lot of uncertainties before national and international rules were established. Some of the most significant risks for JI projects perceived at the time were host country approval and registration (final determination) by the JISC, as well as host country ERU issuance procedures and its eligibility to transfer the units. Even when the JISC was put in place, JI Guidelines and other basic procedures were established, it was not clear how strict the application of the rules would be in practice. Likewise, it took time for the host countries to appoint national focal points and set up JI procedures. In some countries, including Ukraine, the national approval has been a bottleneck for many years. The lack of accredited independent entities was another obstacle for JI, which delayed final decisions on the projects. In the EU member states the uncertainty with double-counting avoidance rules<sup>5</sup>, which came very late – only a year before the start of CP1, killed many JI initiatives.

ERU price risk was probably underestimated by many JI project participants, and the first drop of ERU prices in late 2008 was a surprise for many project owners with bullish expectations. Many JI projects that were under consideration at the time and expected high incomes from JI, turned out to be sensitive to the price decrease and the relevant ER measures became unattractive.

Because of these and other risk factors it was difficult to rely on JI in investment decisions and obtain advance payment for ERUs or other financing that would enable the implementation of ER projects. It took time to have JI fully operational and develop trust among business and financial institutions. This is why the number of JI projects before and in the first few years of CP1 was rather limited, and JI potential has not been fully realised.

Starting from 2009 or 2010 (when the boom of new JI projects is observed) JI has been running smoothly and most of JI-related risks have gone. By that time it was also clear that the probability of the review by the JISC is not high, some AIEs are not as strict as previously feared and problems with obtaining LoAs can be resolved with the relevant DFP, particularly in Ukraine.

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<sup>5</sup> 2006/780/EC: Commission Decision of 13 November 2006 on avoiding double counting of greenhouse gas emission reductions under the Community emissions trading scheme for project activities under the Kyoto Protocol pursuant to Directive 2003/87/EC of the European Parliament and of the Council

At the same time, it was too late to initiate new ER measures that would depend on JI because the first few years of the 5-year crediting period were gone, particularly taking into account the lead time between the decision to implement the project and the start of its operation. Very few project types would be able to generate sufficient volume of ERUs during the remaining short crediting period in order to justify investment in ER technologies. This suggests that very few truly additional projects could be commenced after 2009 or 2010.

Yet we observe a significant growth in numbers of JI projects in 2010 and 2011. It appears that the vast majority of these JI projects actually did not require JI for their implementation, but rather took an opportunity and used JI to make additional profit afterwards. Unlike additional projects, such projects do not face any substantial risks and are not sensitive to ERU prices. Their main costs are associated with the regulatory side of JI: the development of a PDD, payment of the determination and verification services, and the JISC fee (for Track 2 only). For example, if a JI Track 1 project generates 100 000 ERUs over 5 years and its regulatory costs are €100 000, the internal cost per ERU is only €0.20. Such a project is able to face extremely low ERU prices and still maintain a reasonable margin.

The abundance of cheap ERUs from non-additional projects has been one of the reasons of the recent ERU price collapse. The current prices are far below the levels that can provide any significant incentive to invest in ER technologies. Hardly any JI project can be currently initiated and rely on JI as a critical source of income with such prices. Thus non-additional projects are driving out additional ones because they are not so price-sensitive.

## **2.7. Post-2012 emission reductions**

Many JI PDDs list emission reductions beyond 2012, and some of them claim that post-ERUs were seriously considered in the investment analysis at the time of project decision-making. However, there are too many risks related to CP2 and the future operation of JI. First, the prolonged uncertainty with the continuation of the Kyoto Protocol, then actual Parties' emission reduction obligations (QELROs), which will affect future demand and price of ERUs, the ratification of the amendments to the Kyoto Protocol, as well as other real or perceived risks do not allow the business seriously rely on the future incomes from the post-2012 ERUs in the implementation of ER measures. Therefore it is hard to believe that post-2012 ERUs were crucial in the investment decisions of some implemented projects, and their need for further crediting can be questioned.

On the other hand, it is interesting to note that there are some other JI projects with final determination or registered under Track 1 that are still not operational. There are also some projects that are being registered in 2012 with starting dates just before the end of CP1. This suggests that these projects expect ERUs mainly in CP2, but in order to make sure that their ERUs will be eligible for the use in EU ETS they are getting registered before the end of 2012.

Some of these projects may indeed depend on the future ERUs, and the implementation of the underlying ER measures could be pending on the clarity regarding CP2. Others may be trying to use the opportunity and secure the registration and EU ETS eligibility while the 'gates are open', that is the requirements are quite loose.

There is also a group of projects that started operation in CP1 and truly relied on JI as the crucial source of income not only in their construction, but also in the operation and maintenance. For example, landfill gas flaring in Ukraine is not profitable by itself as it requires some operational expenses which cannot be recovered without external support<sup>6</sup>. Such projects will be able to keep

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<sup>6</sup> There is no obligation to collect and/or utilize landfill gas in Ukraine.

reducing GHG emissions in CP2 only if they continue to receive ERUs and the value of the latter is high enough to sustain the operation. Otherwise the owners of ER facilities are unlikely to support the operation at their own expense, and the equipment may be fall into disrepair and be eventually abandoned.

Thus the situation with the continuation of ERU generation in CP2 by the projects registered in CP1 is equivocal. On the one hand, the plethora of non-additional projects will be able to inundate the carbon market in the second period (as we currently witness). On the other hand, the implementation or continuation of some projects will depend on JI in the post-2012 period.

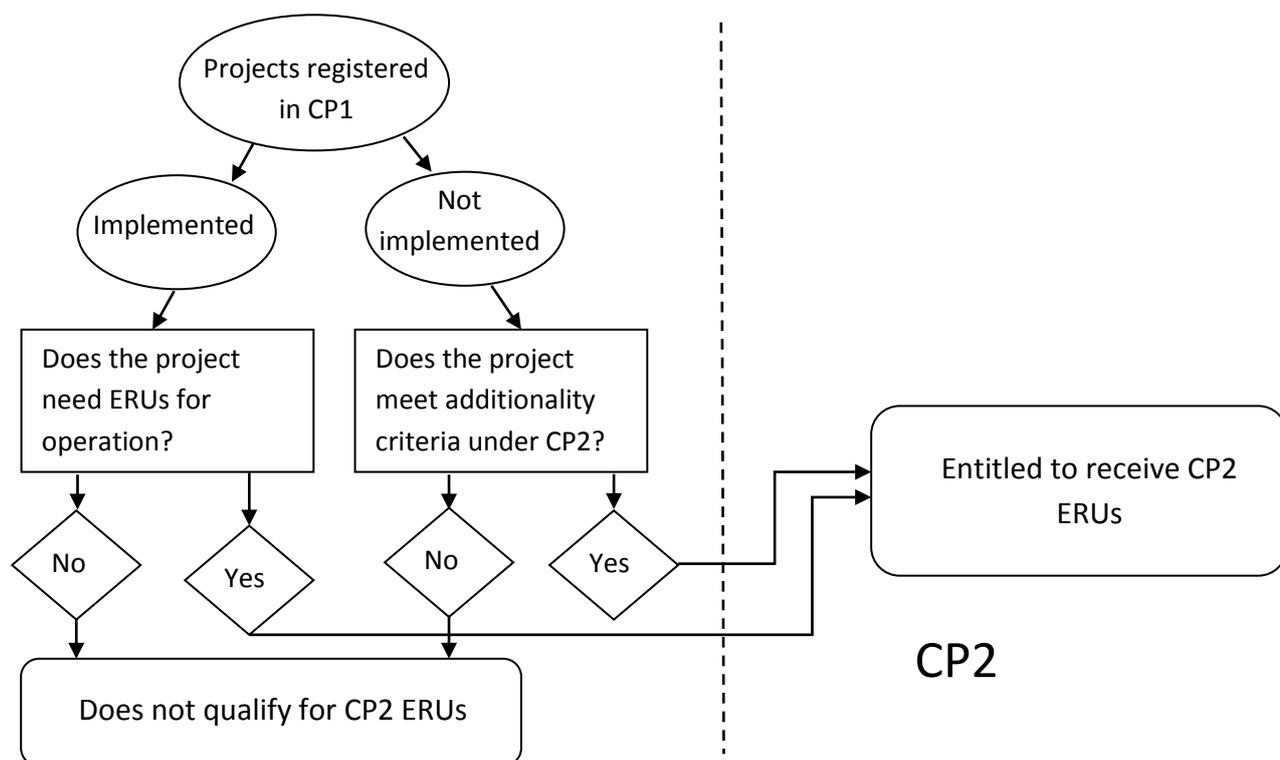
### 3. Recommendations

In response to the issues of Joint Implementation that were highlighted above in this chapter we discuss potential solutions in most problematic areas and attempt to develop recommendations for the improvement of the mechanism.

#### 3.1. Reassessment of registered projects for the operation in CP2.

Considering the problems with the environmental integrity of many existing JI projects described above and their potential to flood the carbon market, the continuation of ERU generation by them after 2012 will inevitably result in the carry-over of the same problems to the next commitment period. As shown in Section 2.7, due to the high risks and prolonged uncertainty with JI in the post-2012 regime projects registered in CP1 could hardly seriously rely on the CP2 ERUs to recover their implementation costs. Nevertheless some registered projects do require ERUs to continue operation, or were registered in CP1 but not implemented yet.

Thus we strongly recommend **reassessing existing projects before they are allowed to generate ERUs in the second commitment period** in order to filter out projects of questionable environmental integrity. This, for instance, could involve the review and update of project baselines followed by re-determination with reassessment of additionality. For implemented projects (that already have ERUs generated in CP1) the focus should be on their operational expenditure and the need to receive further ERUs in order to continue reducing GHGs. If the operation and maintenance costs of an implemented project can be fully covered by sources of income other than JI, such a project shall not receive ERUs in CP2. JI projects that were registered but not implemented in CP1 should justify the need of JI for their implementation taking into account requirements to JI projects in CP2. These projects should be equally scrutinised as projects that get registered in CP2; otherwise CP1 projects will have a 'historic' competitive advantage as they were registered under loose rules and there are likely to be 'free-riders' among them.



**Figure 4. Proposed reassessment of JI projects registered in CP1 for ERU generation in CP2**

### 3.2. Additionality

#### 3.2.1. Tight National Emission Cap

The concept of additionality proved its vagueness in practice. Barrier analyses and common practice analyses involve many parameters that can be easily manipulated into needed directions. The efforts to filter out non-additional projects in CDM (and to some extent in JI) resulted in excessive bureaucracy and hurdles in project cycle, but did not prevent business-as-usual projects from being registered and receiving credits. Direct application of CDM procedures in JI would be undesirable, and JI could use its advantage as a mechanism for countries with emission limitations.

The experience of the first commitment period shows that national approval of JI projects is more stringent in countries that have tight emission caps. Ambitious emission limitations also stimulate the elaboration of national proactive climate policies [1]. With reasonable shortage of assigned amount in every country participating in the cap-and-trade system there requirement of additionality in JI would become redundant: the overall emissions cap in the closed system remains the same and the targeted overall emission reduction will be achieved in a cost-efficient way, as shown in Section 1.1. A country with shortage of AAUs would make sure that JI projects that it approves deliver actual emission reductions; otherwise it would lose its AAUs that are granted to a project.

A country wishing to host JI projects should take on a Quantified Emission Limitation and Reduction Objective (QELRO) in CP2 that does not exceed its current emissions in CP1. Therefore we would like to encourage the Parties to the Kyoto Protocol, in particular Ukraine, to adopt more ambitious emission caps than those of the first commitment period and the pledges submitted so far. Furthermore, the transfer of the surplus AAUs from CP1 should not be allowed.

If, however, the limits in the second commitment period remain loose and the surplus assigned amount is carried over from the first period, the supply of ERUs will be virtually unlimited as compared to the demand. The issuance of ERUs to non-additional projects will simply re-distribute the assigned amount (in the form of ERUs) between the Parties, but not result in actual emission reductions. In this scenario, the requirement of additionality will have to become stricter in JI. If the Annex I countries fail to agree on a tight overall emission reduction target and reasonable limitations for each country in particular, the rules for JI projects unfortunately will have to resemble to those of CDM in order to maintain environmental integrity.

### 3.2.2. Prior Consideration of JI

Prior consideration, evidence that JI was taken into account at the planning stage of the project, can serve as one indicator that JI was instrumental in the implementation of emission reduction activity. Proof of prior consideration should therefore be a mandatory requirement for the demonstration of additionality. The concept of prior consideration was discussed by the JISC in 2011 but no consensus was possible as some members, including representatives from Ukraine and Russia, held that the concept of prior consideration would amount to introducing new requirements. This argument is not valid. Art. 6 of the Kyoto Protocol stipulates that reductions need to be additional to any that would occur in the absence of JI. The concept of prior consideration is hence not a new requirement, it is a clarification of the already existing requirements. The introduction of the requirement of prior consideration of JI should not hamper the development of new emission reduction activities under JI but prevent many non-additional projects from taking advantage of retroactive crediting in JI where JI played no role in implementation.

### 3.2.3. Positive and negative technology lists

Sectoral approach to establish baselines and additionality of ER projects is a plausible alternative to individually developed approaches that are then defended through determination and verification to prove their environmental integrity. It would make the project development process more transparent, straightforward and predictable if the national DFPs elaborate their lists of the economy sectors that particularly require upgrades to reduce GHG emissions. DFPs should set clear guidance of what the upgrades may encompass (e.g. technology types). As a result, a country may have a list of “positive” technologies for certain sectors that are to be deemed additional with no need to provide argumentation on the individual project level. Likewise, a country may have the list of project types that are considered as business-as-usual, and do not qualify for JI.

This approach, however, can be potentially misused by a host country, which may define certain project types as additional that actually do not require JI support. For this reason it is recommendable that technology lists are authorised by the Governing Body. The lists should be revised and updated periodically in accordance with the developments in the respective sectors and technology progress.

## **3.3. Baseline Setting**

Baseline setting is often biased and can be easily argued both ways. Currently baseline is defined as the most plausible scenario in the absence of the Kyoto mechanisms. Thus baseline emissions are calculated based on the assumptions of the future developments. This approach is justified in CDM, where it is hard to rely on anything else in the absence of mandatory and accurate GHG emissions accounting and historical emissions records. Also, the Clean Development Mechanism was designed as a tool for *developing* countries, where the growth in production and emissions is natural. On the contrary, Annex I countries are developed countries and economies in transition, which need transformation to a low-carbon economy rather than industrial development. These countries have proper national GHG inventory systems and fixed assigned amounts.

We suggest that an approach to establishing project baselines in Annex I countries should be in line with the approach used to set the assigned amounts. Likewise, project monitoring should be in line with GHG accounting on the country level. Under the Kyoto protocol emission limitations for Annex I countries are established as a percentage of their emissions in a base year, i.e. on the historical basis. Therefore it would make sense to establish baselines for projects in Annex I countries on the historical basis as well to the extent possible.

The following example illustrates the problem of the current baseline approach, where JI projects can receive ERUs for an increase in GHG emissions. For example, a project involves the expansion of production that results in emission growth, but ERUs are claimed for lower emissions level per unit of product. The baseline of such projects is the production increase with a low-efficient technology, while the project scenario is the installation of a high-efficient technology. In this case the project generates relative emission reductions (as compared to imaginary baseline), rather than net emission reductions. While such an approach could be acceptable under CDM where the development and production expansion is inherent, it does not make sense in an Annex I country with a fixed emission cap because it results in the net loss of assigned amount and contradicts the aim of the Kyoto Protocol. Eventually, it is the *net* emission reductions that matter for the global climate.

We see a number of potential solutions regarding baseline setting, some of which can complement or alternate each other:

- (1) Project baselines should be set on the historical basis where applicable, or, at minimum, baseline emissions should not exceed historical emissions. For example, baseline emissions could be calculated based on the average emission levels of the relevant installation or sector during several years prior to the start of the second commitment period or the project start.
- (2) Autonomous (business-as-usual) improvements in efficiencies have to be taken into account when defining the lifespan of the JI project. Therefore the baselines of projects, particularly in energy efficiency, should be reviewed every 5 or 7 years. The review periods may be tied to the commitment periods of the Kyoto Protocol, which so far do not exceed 5 or, possibly, 8 years.
- (3) Emission calculation on the project level should be in line with GHG accounting on the country level. Where applicable the projects should use emission factors and methodologies used in the national GHG inventories.
- (4) DFPs may approve standardised baselines for projects that use certain technologies.

### **3.4. Single JI track**

One of the weaknesses of the current JI framework lies within the differentiation of JI projects by tracks. Envisioned to give more freedom to the national authorities, different tracks created discrepancies in the environmental integrity and uneven quality of JI projects under different tracks and in different host countries.

In line with the proposals voiced by JISC [12], we recommend the unification of the tracks into single unified project cycle.

Supervision of the project cycle should be maintained by the Governing Body, which should be in charge of the project registration and ERU issuance and transfer. The Governing Body should have an option for a review of JI project prior to the registration, as it is currently under Track 2. Once the project is registered, it should be entitled to the automatic issuance of ERUs provided that it is

implemented and monitored in accordance with its PDD and monitoring plan. This will enhance predictability and reliability of ERU incomes, which is important for truly additional projects.

National DFPs should remain in charge of the project approval. By approving a JI project a country will agree that an equivalent number of its AAUs will be used for the issuance of ERUs for the project in the future by the Governing Body (within the approved limit). Thus the country will have no direct influence on the ERU issuance after the project approval.

### **3.5. AIE Services**

The Governing Body should remain in charge of accreditation of independent entities and maintain the supervision of the quality of the determination and verification services. More attention should be paid to the performance of the audits by local offices of the AIEs and the qualifications of the local personnel involved. Possibly, the accreditation should be made region-specific, that is IE should receive accreditation not only for certain sectoral scopes, but also for certain regions.

A mechanism to eliminate the conflict of interest which is described in Section 2.5 should be created. Ideally, AIEs should not be directly selected or hired by project participants. With the common determination and verification standard there should be no substantial differences in the audit quality among AIEs. For instance, the Governing Body could randomly select and assign an AIE from in its local AIE pool to perform services for a given project. Yet this approach would require the unification of the service costs among AIEs.

### **3.6. Enhancing the role of JI**

As demonstrated in Section 2.4 JI-related incomes are often too small to make a difference for project implementation. Projects with long payback periods, such as energy efficiency projects, require long crediting periods and predictability. Similarly, projects in the forestry sector do not absorb much CO<sub>2</sub> in the first years after planting trees; they need long crediting periods to generate sufficient number of RMUs to justify investment.

Considering that ERUs are tied to the assigned amounts, in practice the projects can rely on JI only within the horizon of a Kyoto commitment period, even though it does not set a formal limit for the crediting period. Therefore it is preferable that CP2 lasts 8 years instead of 5 (from 2013 to 2020).

The current ERU prices further diminish JI incomes and make additional projects practically impossible. First, one of the measures on the supply side should be the improvement of project quality and environmental integrity (both registered and new projects). This will help to prevent cheap carbon credits generated by non-additional CDM and JI projects from entering the carbon market. On the demand side, the carbon prices could be supported by more ambitious QUELROs and more countries taking on the obligations.

## Conclusions

The Kyoto Protocol is the first of its kind attempt to set emission caps for countries as well as to create internationally acknowledged flexible mechanisms to stimulate implementation of ER measures. The operation of JI in the first commitment period proved that there are substantial loopholes in the set framework. We witness the situation when JI is positioned and perceived by project participants and other stakeholders as a “low-hanging fruit” that can help them raise quick cash rather than an opportunity to implement ER projects. The analysis of projects conducted in this study proved that the accusations of JI in poor environmental integrity, particularly among Track 1 projects, are not unfounded.

Having big surplus of assigned amount, Ukraine does not scrutinize the environmental component of JI projects. Due to the lack of stringent national emission cap the country can easily afford issuing ERUs to non-additional projects, and even use JI as a way to export its excess AAUs, while the demand for the latter is very limited. Ukraine is not the only country with AAU surplus. Russia and other countries are acting in a similar way and overfilling the market with cheap ERUs from dubious JI projects.

AIEs, which are supposed to be the main body in the project cycle that controls the compliance of JI projects with the rules, do not always perform due checks as they are not fully independent from the project participants. The conformity with the additionality requirement is often superficial, as both project developers and AIEs understand that the majority of the projects actually do not meet the criteria. With little intervention of the JISC, non-additional projects receive positive final determinations and verifications.

So who will suffer the most, apart from the environment? In the short term, project owners or investors of truly additional JI projects, which will have difficulties recovering the costs or even cease the operation. In the long-term perspective, JI is under threat as a working mechanism to reduce GHG emissions. With the lack of trust, limited demand and the glut of cheap permits JI is unlikely to bring about new real emission reduction measures and may eventually come to an end.

We believe that JI has to go through a deep transformation in order to continue its operation and fulfil its main task of reducing emissions in a cost-efficient way in addition to the business-as-usual. First of all, the issues of JI should be realized by the Parties to the Kyoto Protocol and addressed as soon as possible at the CMP level, assisted by the JI Supervisory Committee and/or the future Governing Body. Secondly, all other stakeholders and parties involved in Joint Implementation worldwide, including DFPs, AIEs, project developers and owners, ERU purchasers and traders, industries / businesses and NGOs, should understand that it is in their interest to revive the environmental integrity and credibility of JI.

If the integrity of the mechanism is restored and the demand for credits is sustained, JI will continue to generate creative solutions for GHG emission reductions, provide a cost-effective way to reduce emissions, generate profit and stimulate investment in clean technologies, and by doing so fulfil its primary task as a climate change mitigation tool.

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12. Report of the 26<sup>th</sup> meeting Joint Implementation Supervisory Committee. Annex 4. Recommendations on options for building on the approach embodied in Joint Implementation. Available at [http://ji.unfccc.int/Sup\\_Committee/Meetings/026/Reports/Annex4.pdf](http://ji.unfccc.int/Sup_Committee/Meetings/026/Reports/Annex4.pdf)

### Annex 1. Timing of steps in JI project cycle in selected Track 1 projects.

Project title	Starting date of the project	LoE Issuance Date	PDD date (last version)	Determination report date	LoA Issuance Date	First verification report date	Gap between project start and LoE	Time between LoE and LoA	Investor Project Participant	AIE
Distribution of Energy Efficient Light Bulbs in Public and Private Sectors of Ukraine	26-Nov-07	13-Sep-11	15-Aug-11	15-Aug-11	20-Sep-11	26-Sep-11	3 years 10 months	7 days	OU Biotechno- loogia	Bureau Veritas Certification Holding SA
Reduction of Methane Emissions on the Gas Equipment of Gas Distribution Plants, Gas Armature, Flanged and Threaded Connections of Gas Distribution Networks of PJSC "Vinnitsgaz"	29-Aug-06	08-Sep-11	23-Sep-11	26-Sep-11	04-Oct-11	05-Oct-11	5 years 1 months	26 days	OU Biotechno- loogia	Bureau Veritas Certification Holding SA
Reduction of Greenhouse Gases Emissions by Gasification of Odesa Region	17-Jun-03	26-Jul-11	05-Aug-11	10-Aug-11	05-Sep-11	15-Sep-11	8 years 2 months	1 months 11 days	VEMA SA	Bureau Veritas Certification Holding SA
Reduction of Power Consumption and Waste Disposal at "Obolon" PJSC	02-Jun-00	08-Apr-11	10-Jun-11	16-Jun-11	22-Jul-11	05-Oct-11	10 years 11 months	3 months 15 days	ING Bank N.V.+ EDF Trading Limited	Bureau Veritas Certification Holding SA
Development and Upgrade of District Water Supply and Disposal System in Zaporizhzhia City	12-Jan-04	17-Aug-11	05-Sep-11	13-Sep-11	23-Sep-11	26-Sep-11	7 years 8 months	1 months 7 days	OU Biotechno- loogia	Bureau Veritas Certification Holding SA
Modernization of Electric Power Distribution System at PJSC "Kirovogradoblenergo"	22-Dec-02	31-May-11	07-Jul-11	08-Jul-11	17-Aug-11	20-Sep-11	8 years 6 months	2 months 17 days	VEMA SA	Bureau Veritas Certification Holding SA
Modernization of Electric Power Distribution System at PJSC "PC "Kherasonoblenergo"	22-Dec-02	31-May-11	07-Jul-11	08-Jul-11	12-Sep-11	20-Sep-11	8 years 6 months	3 months 14 days	VEMA SA	Bureau Veritas Certification Holding SA

Project title	Starting date of the project	LoE Issuance Date	PDD date (last version)	Determination report date	LoA Issuance Date	First verification report date	Gap between project start and LoE	Time between LoE and LoA	Investor Project Participant	AIE
Modernization of Electric Power Distribution System at PJSC "PC "Zhytomyroblenergo"	22-Dec-02	31-May-11	11-Jul-11	12-Jul-11	21-Sep-11	21-Sep-11	8 years 6 months	3 months 23 days	VEMA SA	Bureau Veritas Certification Holding SA
Reduction of Natural Gas Emissions at OJSC "Odesagas" Gate Stations and Gas Distribution Networks	12-Jan-05	05-Nov-09	10-Dec-09	26-Dec-09	25-Dec-09	25-Dec-09	4 years 10 months	1 months 20 days	Danish Ministry of Climate and Energy	Bureau Veritas Certification Holding SA
Realisation of a complex of energy saving activities at the JSC "Odessa Port Plant"	28-Feb-02	02-Aug-10	25-Sep-10	08-Oct-10	28-Oct-10	19-Nov-10	8 years 6 months	2 months 26 days	Carbon Resource Management SA	Bureau Veritas Certification Holding SA
Implementation of Arc Furnace Steelmaking Plant "Electrostal" at Kurakhovo, Donetsk Region	27-Feb-06	12-Apr-10	27-May-10	04-Jun-10	19-Sep-10	17-Aug-11	4 years 2 months	5 months 9 days	Global Carbon BV	Bureau Veritas Certification Holding SA
Reduction of Methane Emissions at Flanged, Threaded Joints and Shut-down Devices of OJSC "Odesagas" Equipment	12-Jan-05	05-Mar-10	30-Apr-10	18-Apr-11	07-Jun-10	07-Jun-10	5 years 2 months	3 months 4 days	Danish Energy Agency	Bureau Veritas Certification Holding SA
Reduction of Methane Leakage at Flanged, Threaded Joints and shut-down Devices of the Equipment of OJSC "Kyivgas"	29-Jul-05	23-Apr-10	07-Jul-10	08-Jul-10	28-Jul-10	03-Aug-10	4 years 9 months	3 months 6 days	VEMA SA	Bureau Veritas Certification Holding SA
Reconstruction of water supply and drainage system "Luganskvoda Ltd."	22-Jan-07	18-Aug-10	04-Oct-10	04-Oct-10	09-Nov-10	10-Nov-10	3 years 7 months	2 months 22 days	VEMA SA	Bureau Veritas Certification Holding SA
Development and improvement of water supply system, drainage system and wastewater treatment of "Infox Ltd." branch "Infoxvodokanal"	17-Dec-03	25-Mar-11	07-Apr-11	21-Apr-11	31-May-11	07-Jul-11	7 years 4 months	2 months 6 days	VEMA SA	Bureau Veritas Certification Holding SA

Project title	Starting date of the project	LoE Issuance Date	PDD date (last version)	Determination report date	LoA Issuance Date	First verification report date	Gap between project start and LoE	Time between LoE and LoA	Investor Project Participant	AIE
Reconstruction and Modernization of Main-line Electrical Grids of NPC "Ukrenergo"	25-Dec-03	04-Jun-11	15-Jun-11	24-Jun-11	27-Jul-11	20-Sep-11	7 years 6 months	1 months 23 days	VEMA SA	Bureau Veritas Certification Holding SA
Reduction of Methane Emissions on the Gas Equipment of Gas-distributing Points and on the Gas Armature of Gas-distributing Networks of PJSC "Mariupolgaz"	10-Dec-04	23-Jun-11	21-Jul-11	25-Jul-11	05-Sep-11	19-Sep-11	6 years 7 months	2 months 13 days	VEMA SA	Bureau Veritas Certification Holding SA
Reduction of Methane Emissions on the Gas Equipment of Gas-distributing Points and on the Gas Armature of Gas-distributing Networks of CJSC "Theodosia"	18-Jan-05	08-Jul-11	08-Aug-11	09-Aug-11	21-Sep-11	29-Sep-11	6 years 6 months	2 months 14 days	VEMA SA	Bureau Veritas Certification Holding SA
Rehabilitation of the District Heating Systems in Makivka, Mariupol, Artemivsk Cities of Donetsk Region	15-Mar-06	07-Jul-11	02-Aug-11	03-Aug-11	28-Sep-11	29-Sep-11	5 years 4 months	2 months 22 days	E-Energy B.V.	Bureau Veritas Certification Holding SA
Implementation of Resource and Energy Saving Measures in the Subsidiary "Ukrtransgas" of National Joint Stock Company "Naftogaz of Ukraine"	19-Jan-05	21-Jul-11	18-Aug-11	18-Aug-11	19-Oct-11	N/A	6 years 7 months	2 months 29 days	SIA "Vidzeme Eko"	T?V Rheinland Group

## Annex 2. The share of JI income in ER costs in selected projects.

Project title	Sectoral scope(s)	Track	ERUs in CP1	CapEx, Euro (or equivalent)	% of cost covered by ERUs at implied price of €7
Reconstruction and Modernization of Main-line Electrical Grids of NPC "Ukrenergo"	2: Energy distribution	Track 1	1 810 877	€ 508 000 000	2%
Revamping of Sintering and Blast-Furnace Production at OJSC "Alchevsk Iron and Steel Works"	9: Metal production	Track 1	7 270 772	€ 1 765 478 102	3%
"Rehabilitation of the District Heating System in Luhansk City"	1: Energy industries (renewable/non-renewable sources) 2: Energy distribution	Track 1	401 296	€ 81 300 000	3%
Cogeneration and Utilization of Waste Heat at LLC "Lukoil Energy and Gas Ukraine"	1: Energy industries (renewable/non-renewable sources) 9: Metal production	Track 1	212 571	€ 32 000 000	5%
Revamping of Sintering and Blast-furnace Production at OJSC "Dniprovskiy Integrated Iron and Steel Works named after Dzerzhynsky"	9: Metal production	Track 1	8 262 389	€ 882 739 051	7%
Reconstruction of the Agglomerate and Blast-Furnace Production at the JSC "Zaporizhstal"	9: Metal production	Track 1	1 738 152	€ 170 900 000	7%
Realisation of a complex of energy saving activities at the JSC "Odessa Port Plant"	1: Energy industries (renewable/non-renewable sources) 5: Chemical industry	Track 1	1 121 149	€ 109 443 000	7%
Greenhouse gases emission reduction due to replacement of power, generated by the traditional fuel fired power plants, as a result of rehabilitation and construction of the small hydropower plants, operated by EEE "Novosvit" and "Energoinvest", Ltd.	1: Energy industries (renewable/non-renewable sources)	Track 1	210 263	€ 12 839 841	11%
Implementation of energy efficient measures at "Donetsksteel"	4: Manufacturing industries 9: Metal production	Track 2	1 380 683	€ 76 236 554	13%
Collection and Utilization of Methane from Solid Domestic Waste Ground in Luhansk City	13: Waste handling and disposal	Track 2	55 009	€ 475 341	81%
Methane Capture and Destruction at the Solid Waste Landfill in the City of Lviv, Ukraine	13: Waste handling and disposal	Track 2	434 533	€ 2 594 641	117%
CMIM utilisation on the Coal Mine № 22 "Kommunarskaya" of the State Holding Joint-Stock Company "GOAO Shakhtoupravlyenye Donbass"	8: Mining/mineral production	Track 2	859 146	€ 3 700 000	163%
Landfill methane capture and flaring at Yalta and Alushta landfills, Ukraine	1: Energy industries (renewable/non-renewable sources) 13: Waste handling and disposal	Track 2	201 159	€ 850 501	166%
Reduction of N2O Emissions from Nitric Acid Production at OJSC "AZOT", Cherkasy, Ukraine	5: Chemical industry	Track 2	1 257 208	€ 3 750 000	235%





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