European Commission Study on the Integrity of the Clean Development Mechanism

Summary by CDM Watch

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Executive Summary

In December 2011, the European Commission published the "Study on the integrity of the Clean Development Mechanism"[1]. Under European Commission contract, this study was carried out by AEA, the Stockholm Environment Institute (SEI), the Centre for European Policy Studies (CEPS) and CO2logic. The study consists of one final report presenting the findings of seven accompanying briefing papers. The objectives of this study were to develop an in-depth understanding on the current CDM system (its merits and shortcomings) and options for reform as well as potential alternative mechanisms and their impacts. In particular the study aims to:

- Assess merits and shortcomings of the CDM as it currently stands;
- Recommend action at UN (supply-side) and EU (demand-side) level to further improve governance, effectiveness, efficiency, regional distribution and contribution to sustainable development and technology transfer of the CDM, and drive a transition away from project-based crediting in advanced Developing Countries (DCs) towards sectoral mechanisms and global policies
- Provide a practical focus on large hydro and energy intensive sector (e.g. steel, cement, and aluminium) projects, including the evidence base relating to alleged concerns about additionality, competitiveness and carbon leakage and options for applying use restrictions under Article 11.a(9) of the EU ETS directive, and;
- Provide a scoping study on JI track 1 projects, including a review of additionality issues.

It is noteworthy, that the study summarises the merits of the CDM in five bullet points while allotting five entire pages to its shortcomings. Similarly, it adds a long list of both, supply-side and demand-side options. It provides three general reform options to address concerns about non-additionality and sustainability impacts: it identifies standardized baselines and additionality testing as a supply-side reform option and assesses discount factors and negative lists from a demand-side perspective. The study also assesses how new mechanisms (such as sectoral crediting mechanisms) can address identified shortcomings and scale up emissions reductions.

The study focuses particularly on hydro power projects reviewing the arguments related to concerns about additionality and sustainability of hydro power projects and assesses possible reform options. In order to explore the practical aspects relating to the use of negative lists, including the arguments for and against additionality testing and sustainability impacts, the study assessed specifically demand side reform measures for the hydro power sector. Due to increased public scrutiny of hydro projects within the CDM, the focus on hydro power should also provide an example and make the analysis relevant to the current debate. Key recommendations provided in the study include:

[1] http://ec.europa.eu/clima/policies/ets/linking/studies_en.htm

1. **Standardisation of baseline and additionality determination:**

- Sponsor methodology development efforts on project types of particular relevance to EU objectives (LDCs);
- Identify and partner with DNAs that share similar perspectives on national and regional circumstances and submit developed methodologies;
- Support data development efforts relevant to benchmarks and baselines for sectoral crediting mechanisms (SCM);
- Develop proposals and provide support for administrative systems to review and approve standardised approaches, especially those submitted by DNAs; and
- Balance the development and promotion of innovative baseline and additionality mechanisms while limiting the scale of risk to environmental integrity. For example, by setting a gradual cap to the total number of CERs to be issued in order to avoid and assess if any unexpected consequences happen.

2. **CDM reform options with focus on hydro power projects:**

- Further analysis needed of market implication and alternative mechanisms or financial accelerators to see how truly additional hydro projects in LDCs and middle income countries can be supported. Based on this, a ban can be introduced to restrict large hydro projects from all countries except LDCs;
- Size and criteria for defining large hydro projects needs to be reconsidered for an aggregated negative list option;
- Political feasibility possible if parallel proposals for alternative mechanisms and financial accelerators support the hydro sector in developing countries;
- Market acceptability of this option will remain low under any circumstances due to unavoidable lost rent opportunities for big investors;
- Continue to pursue further clarity on the definition of sustainability within the CDM validation and registration process;
- Continue to improve the guidelines for additionality testing and the development of alternative methodologies (e.g. standardised baselines and additionality tests);
- Develop options for ex-post validation of sustainable development at project level, and the role of DNAs, DOEs and the EB in this process. Consider proposals for including the introduction of harm assessments as proposed by CDM Watch;
- Continue to engage with the EU Member States in understanding the practicalities of using the WCD guidelines and the causes of any delays in the approval process for the use of hydro power project CERs in the EU ETS;
- Continue to engage with IHA on the potential for improved stakeholder participation in refining the HSAP and for assessing the comparative advantage and disadvantage of using the HSAP over the current harmonised guidelines for approving CDM hydro power project CERs from the demand side.
- Develop approaches for minimum thresholds for sustainability;
- Engage with DNAs to develop measures to further support the assessment of sustainability, including guidance and tools; and
- Work closely with Member States towards full adoption of harmonised guidelines and templates for assessment of compliance with Article 11b (6) of the Linking Directive.

3. **New market mechanisms**

- To gradually set rules for setting crediting baselines;
- Continue to develop capacity for Monitoring, reporting and verification (MRV);
- Collect data, develop transparent and consistent methodologies for data processing; build upon the CDM and past and existing initiatives;
- Start developing a blueprint for governance and institutional options to be discussed and brought forward bilaterally or within UN negotiations, and more generally;
- Identify capacity building needs consistent with the challenges outlined above;
- Accompany the proposal for a SCM with technology support policies;
- And where appropriate restrictions of the CDM.

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1 Merits and Shortcomings of the CDM

Based on the findings of the accompanying briefing papers, the study summaries the merits of the CDM in five bullet points and allots five entire pages to its shortcomings:

1.1 Merits

- Positively influencing "the awareness and understanding about clean technologies, emission trading and future action for climate change both in the private and public sector" (Schneider, 2007);
- Helping to attract financing for clean energy development projects in developing countries;
- Enabling developing countries to gain first-hand experience and to enhance their local human capacity and institutions (e.g. DNAs) for managing and controlling GHG mitigation;
- Building significant carbon market infrastructure for project development, verifications, and finance services; and,
- Providing a unique laboratory in better understanding how to regulate and support carbon markets.

1.2 Shortcomings

Topic	Key Findings
Baselines setting and additionality testing	As the most contested of the CDM issue, it comes as little surprise that numerous limitations have been identified. These include, among others: • Methods and guidance is often insufficient, or simply not followed, leading to subjectivity in interpretation and application (e.g. variations in baseline calculations using same methodology), and unpredictability; • Delays in the process and unpredictable outcomes of the review and registration process discourages investors; • Perceptions regarding the lack of transparency and inconsistency of EB decisions; • DOE verifications, particularly of additionality and baselines, are widely critiqued in terms of: inadequate rigour and transparency, conflicts of interest (due to direct selection and payment of DOEs by project participants), and lack of clear penalties for DOE misconduct; • The fundamental incentive for host countries and project participants to maximize the creation of CERs may bias toward less stringent baselines • Data requirements for baseline determination, as well as elements of the additionality tool (assessing common practice) can be costly or difficult to fulfil; • Difficulties in determining baselines for conditions of suppressed demand limit applicability, especially in LDCs • Unclear definition of several concepts (first-of-its kind, common practice, types of barrier.
Technology transfer through the CDM	The CDM has delivered only limited technology transfer benefits, concentrated within some countries and sectors. The CDM is failing to induce low carbon technology transfer to many CDM countries, such as, in Africa, and in many of the important sectors such as transport, thus missing out on large opportunities for emissions reduction. While contributing to some project level technology transfer, through aiming for cheap end-of-pipe9 technologies, the CDM plays a very passive role in influencing overall policy changes to support transformation of energy systems in developing countries.
Sustainable	The inability of the CDM to effectively deliver on its sustainable development

development through the CDM	(SD) objective derives from: • Unclear definition of SD, non-ambitious criteria and poor criteria application; • Contradictions between claims and expectations (in the PDD) and actual conditions and future outcomes (as projects are implemented) • Absence of monitoring of sustainability criteria over the life of the project; • Insufficient stakeholder consultation; • Low potential for CERs in high sustainable development project types given the current mix of approved methodologies as well as low BAU emissions in less developed communities; • The lack of financial incentives for pursuing SD benefits.
Competitiveness distortion and carbon leakage	There is little evidence of significant cost or profit advantages or carbon leakage due to the CDM projects in steel, cement, and aluminium sectors. It finds limited financial incentive for increased production, as the CDM projects typical provide only small improvements in carbon intensity. Among these sectors, risk of carbon leakage may be greatest within/among non-Annex 1 countries for blended cement projects, an issue best, and perhaps already adequately, addressed through the CDM methodologies themselves.
Scalability and cost effectiveness of CDM projects	This paper reviews the growth of projects under the CDM and finds that despite recent reforms of the CDM by the CDM EB, the current CDM does not have the institutional capacity to significantly transform the energy systems of developing countries and generate sufficient financial flows for scaled up emission reductions. From cost effectiveness perspective, while, the CDM has reduced the cost of compliance for Annex-1 countries the GHG reductions could have been achieved at a lower cost if “own-actions” were taken by developed and developing countries.
CDM Governance	Stakeholders are concerned about a perceived lack of transparent and consistent decisions, ineffective communications, EB conflicts of interest, and other issues; however, such concerns are not always backed by robust evidence. These concerns include: • Inefficiency in the EB decision making regarding project registration and the issuing of certified emissions reductions (CERs); • Lack of transparency and consistency in the EB and the DNA decision making; • Inadequate due process, including lack of appeals procedures for stakeholders and project participants; • Lack of standards for materiality; • Unsatisfactory performance of DOEs in their role as validators and verifiers; • Failure to control the negative impacts of some CDM projects on human rights and other harmful issues.
Political lock-in	Three main factor may drive resistance to change among some developing countries, Annex I Parties and capped installations (compliance buyers) and project developers: • The current generous approach to baseline setting; • The scale of economic rents: • The concentration of technical and institutional capacity within existing mechanisms.

2 Options for Reform

Based on the identified merits and shortcomings of the current CDM, the study identifies a range of options for reform that are expected to potentially address these weaknesses. In particular, three options are put forward that could potentially address multiple concerns:

1. Standardised baselines and additionality tests (supply-side reform option)
2. Discounts and/or multipliers (demand-side reform option)
3. Positive/Negative Lists (and other use restrictions) (demand-side reform option)

The study also assesses how new mechanisms can address the identified shortcomings of the reformed CDM and/or scale up emission reductions. The study also considers sectoral crediting mechanisms as potential reform option.

2.1 Standardisation of baseline and additionality determination (Supply-side CDM reform)

The report provides an in-depth overview on different types of standardisation and explains how performance standards work. The study identifies standardised baseline (SB) and additionality tests with the highest potential to address multiple concerns on the supply-side of the mechanism.

The increasing standardisation of crediting methodologies is an emerging approach and a strategy believed to help towards expanding the reach, efficiency, and effectiveness of the mechanism mainly because of greater predictability. Standardisation is expected to offer lower transaction costs, increased project flow to underrepresented regions and improved environmental outcomes. However, the study highlights that there are fundamental technical and administrative challenges that need to be addressed before standardised approaches can live up to their promise. The study uses crediting methodology for coal power projects (ACM13) as an example to show that predicting the outcomes in terms of project activity and environmental integrity will be hard even if performance standards and parameters are in place.

Moreover, the study notes that the implementation of SB could lead to further political lock-in and resistance to potentially more effective mechanisms in the future. This could be reversed if done well by creating a more robust basis for agreement to set baselines. Baselines are important because they will be required for most other market mechanisms currently under consideration, such as sectoral crediting.

Although standardised approaches have been explored for many years, success has been limited. The truth is they face structural and procedural challenges and risk to environmental integrity and the evolution of new market mechanisms such as sectoral crediting if not done well. There are several types of standardised, additionality and baseline approaches and the study has identified the following as better positioned to deliver changes to CDM shortcomings: 1) deemed or default values, 2) positive and negative lists, and 3) use of performance standards (benchmarks) penetration rate thresholds. It is concluded that a mix of them across a range of project types is in fact expected to provide a solution capable of meeting environmental integrity, economic efficiency and political feasibility criteria.

In order to yield the identified advantages, the report of the study proposes a two-pronged focus:

1) Targeting underrepresented sectors, such as households, agriculture, traditional industries including charcoal production and transportation and regions such as LDCs, could be relatively easy to implement and send clear incentives to project developers.

2) Establishing sufficiently stringent standardised baselines in well represented sectors and regions could generate net environmental benefits.

Given that SBs would need to be adopted through the CDM EB, the EU should assist through position papers and submissions to the UNFCCC and conduct projects and direct assistance to LDCs. The following points summarise more specific recommendations to the EU in the context of SBs and environmental integrity. The EU should:

- sponsor methodology development efforts on project types of particular relevance to EU objectives (LDCs)
- identify and partner with DNAs that share similar perspectives on national and regional circumstances and submit developed methodologies
- support data development efforts relevant to benchmarks and baselines for sectoral crediting mechanisms
- develop proposals and provide support for administrative systems to review and approve standardised approaches, especially those submitted by DNAs, and
- balance the development and promotion of innovative baseline and additionality mechanisms while limiting the scale of risk to environmental integrity. For example, by setting a gradual cap to the total number of CERs to be issued in order to avoid and assess if any unexpected consequences happen.

2.2 CDM reform options with focus on hydro power projects (Demand-side CDM reform)

The study looks particularly at the hydro power sector because of significant sustainability and additionality concerns that the study had previously identified during initial research. Negative lists and discounting are presented especially for large hydro power projects as potential reform measures.

Main criticism in the study relate to the fact that hydro power projects often pass additionality tests although most of these projects would have been implemented without the CDM revenue support. The study emphasises that this is the case especially in emerging economies such as China and India. Large hydro projects, those generating more than 20 MW, are of particular concern. This is significant given that they constitute about 30% of all registered projects for which 331 million CERs are expected to be issued by 2012 (about 15%). This is equivalent to the annual GHG emissions of a country like Spain. The study also highlights the need to address further concerns on the sustainability of such projects.

The study identifies following main concerns of large hydro projects:

Additionality	• Current additionality assessment is too subjective. The additionality tool is not robust enough to prevent non-additional hydro projects from being registered: • Investment analysis is inappropriate. In India developers are guaranteed specific returns on their equity investment making and Internal Rate of Return (IRR) analysis meaningless. In China projects receive preferential loans from banks making hydro projects financially feasible. • Common practice test: Medium and Large Hydro projects are common because these are centrally organised in China and India with the support of strong national policies.
Sustainability	• The contribution of hydropower projects to sustainable development is questioned. The study could not identify any CDM projects to have been rejected on the basis of sustainability criteria. • Problems include: unclear definition of sustainability, weak guidelines for assessment and monitoring, and inconsistency between what PDDs say and the reality. • DNAs fail to monitor projects beyond the initial LoA. Once a project has been registered, there is no way to ensure that sustainable development criteria are enforced by project developers. This can lead to environmental and social impacts or human rights violations that were unknown at the time of registration. • Large hydro projects deliver less sustainable development benefits than smaller projects. Large hydro projects constitute 41% of all registered hydro projects until July 2011.
Human rights	• There are increasing concerns about how hydro projects violate human rights and

	bring harm to communities in the long run.

The study recommends following reform options to address some of these concerns:

1) **Negative list**: is an option to ban some or all large hydro project CERs from use for compliance by EU ETS entities. Such a ban could apply to either all CERs from hydro dam projects, only to those from a specific category (e.g. new dams, plants in countries with strong renewable policies, plants build after a certain date, a combination of these, etc.), or on the basis of a "project-by-project" assessment against specific exclusion criteria. The study's suggestion to use a negative list focuses on a comprehensive EU ETS ban and not on a Member State basis. The study outlines the following types of negative lists:

    a. **Aggregated negative lists**:

        i. **Project-type negative list**: considers a ban on specific project types such as either only new dam projects (>20MW), both retrofit and new dam projects or all three projects (new dams, existing dams and run-of-river). Considering that 82% of CERs from all types of large hydro projects issued before the end of 2020 are expected to come from projects registered post 2012, a ban under article 11.a(9) of the EU ETS Directive could therefore be very effective in limiting the environmental damage from non-additional CERs.

        ii. **Project type negative lists:** this option offers either 1) a ban on CERs from large hydro projects from certain countries where national policies are already in place to support the hydro power sector, therefore, making CDM hydro projects inherently non-additional; 2) ban credit purchase from all countries except LDCs, even if these projects were registered before 2013. However, the latter option does not necessarily provide a solution to sustainability or additionality concerns unless adequate assessment tools on the supply or demand side are further improved.

    b. **Project-by project use restrictions**: foresees a credit purchase ban for projects that fail to meet defined assessment criteria. Although some sustainability assessments for hydro projects already exist, these involve little civil society participation. Improvement is needed to ensure the inclusion of dam affected people and networks in the negotiations.

2) **Discounting**: obliges users to retire more than one large hydro CERs for each tonne of compliance obligation, under the presumption that some fraction of large hydro CERs are non-additional and do not represent real reductions. Similar to use restrictions, discounts can be applied to all or specific hydro power projects.

3) **Standardised baselines**: although the study focuses rather on the two above, it also mentions that a standardised approach could have a role in the application of demand side project-by-project restrictions (see 2.1).

The study particularly assesses the impact in case the EU would introduce further quality restrictions (similar to industrial gases) as a demand-side measure to address additionality and sustainability concerns. However, it is to be noted that the analysis on the likely future demand for and supply of credits represents the view of the author by Deutsche Bank's carbon team, and a broader view would need to take account for a more realistic scenario.

Large hydro projects are a concern especially in China and India where they enjoy robust domestic policy support. Such a measure would not be the first time since the EU has already implemented such measures to large CDM hydro projects by adding sustainability requirements based on the World Commission on Dams. Among all options described before, an aggregated negative list approach is favoured as a measure to safeguard the environmental merits of the EU ETS if sustainable development is a real concern. Discounting is a less favourable option because of low political and market acceptability, while the challenge with a project-by-

project approach is how to determine a robust standardised approach to identify un-sustainability and non-additionality.

With a view to a potential EU ban of large hydro carbon credits, the study recommends the following:

- Further analysis needed of market implication and alternative mechanisms or financial accelerators to see how truly additional hydro projects in LDCs and middle income countries can be supported. Based on this, a ban can be introduced to restrict large hydro projects from all countries except LDCs.
- Size and criteria for defining large hydro projects needs to be reconsidered for an aggregated negative list option.
- Political feasibility possible if parallel proposals for alternative mechanisms and financial accelerators support the hydro sector in developing countries.
- Market acceptability of this option will remain low under any circumstances due to unavoidable lost rent opportunities for big investors

On a more general note, it makes the following suggestions to support the European Commission in taking forward its work on future CER use restrictions:

- Continue to pursue further clarity on the definition of sustainability within the CDM validation and registration process;
- Continue to improve the guidelines for additionality testing and the development of alternative methodologies (e.g. standardised baselines and additionality tests);
- Develop options for ex-post validation of sustainable development at project level, and the role of DNAs, DOEs and the EB in this process. Consider proposals for including the introduction of harm assessments as proposed by CDM Watch;
- Continue to engage with the EU Member States in understanding the practicalities of using the WCD guidelines and the causes of any delays in the approval process for the use of hydro power project CERs in the EU ETS;
- Continue to engage with IHA on the potential for improved stakeholder participation in refining the HSAP and for assessing the comparative advantage and disadvantage of using the HSAP over the current harmonised guidelines for approving CDM hydro power project CERs from the demand side.
- Develop approaches for minimum thresholds for sustainability;
- Engage with DNAs to develop measures to further support the assessment of sustainability, including guidance and tools; and
- Work closely with Member States towards full adoption of harmonised guidelines and templates for assessment of compliance with Article 11b (6) of the Linking Directive.

2.3 New market mechanisms

In an extensive section, the study examines merits and challenges of sectoral crediting mechanisms (SCM) and compares them to the CDM. It concludes that SCM offer considerable scope to overcome some of the problems related to CDM, while at the same time they create further concerns. Advantages of sectoral crediting are that they have a huge potential to scale up emission reductions while at the same time they can address environmental effectiveness and integrity, economic efficiency and (partly) political feasibility.

Sectoral crediting mechanism is a baseline-and-credit scheme rewarding GHG emission reductions from a covered sector against a pre-determined threshold possibly below business as usual (BAU) levels. A crediting baseline in SCM is set well below BAU emissions and credits can only be granted if the sector has achieved mitigation below BAU. Overachievement would be credited while non-achievement would not be penalised. To date, crediting itself remains an important design element. Credits originated from SCM could be issued either to the government hosting a SCM or to participating companies. If the government is credited, it might redistribute credits to companies which would raise all kinds of technical, equity or subsidy issues. Another issue is the question whether only the host government can sell credits into other carbon markets or the private sector can do so as well.

The paper emphasises that despite the number of advantages compared to the CDM, political acceptability remains uncertain. Also, beyond technical and institutional challenges that could be addressed through appropriate measures, there is a problem of demand. A sectoral crediting mechanism will only be attractive if carbon markets generate sufficient demand for credits such as having a higher emissions reduction target. Another identified barrier is political lock-in such as, for example, fear by host countries to lose out from current CDM benefits. Certainly some countries will be interested in switching to a sectoral crediting mechanism but the decisive issue might well be the negotiations to define the crediting baseline: e.g. the EU benchmarks used for the EU ETS allocation may not be acceptable for developing countries. However, having inflated benchmarks risks again undermining the environmental outcome of such a mechanism.

The study provides an **outline of possible solutions** to the identified challenges, including concrete process-oriented recommendations, some of which are based on the lessons learned from the CDM. These are:

- To gradually set rules for setting crediting baselines,
- Continue to develop capacity for Monitoring, reporting and verification (MRV),
- Collect data, develop transparent and consistent methodologies for data processing; build upon the CDM and past and existing initiatives,
- Start developing a blueprint for governance and institutional options to be discussed and brought forward bilaterally or within UN negotiations, and more generally,
- Identify capacity building needs consistent with the challenges outlined above

To **overcome political lock-in** the report recommends to

- Accompany the proposal for a SCM with technology support policies
- And where appropriate restrictions of the CDM

The report finally stresses that the attractiveness of sectoral crediting as any other mechanism depends on the effective demand for credits created by EU legislation and other domestic carbon markets.

3 Key Findings of Briefing Paper

1) Baseline Setting and Additionality Testing within the CDM

This briefing paper summarises the merits and shortcomings of the Clean Development Mechanism (CDM) in determining the setting of baselines and demonstrating additionality. The additionality requirement was originally introduced in the CDM to protect its environmental integrity. Tools and methodologies have been developed accordingly, which have been improved upon via a “learning by doing” process since its inception. However, significant concerns remain regarding demonstrating additionality and setting baselines.

Recent assessments give an overview of the main shortcomings of the current additionality test, highlighting its subjectivity, unpredictability, lack of clarity in the guidance, loopholes in the role of the DOEs and in the CDM Executive Board data gathering requirements. The current mechanism requires costly data collection which results in high bureaucratic costs. The counterfactual nature of baseline setting also leads to non-additional emissions reductions being included.

To address these concerns the paper notes that further clarity is needed in the guidelines for the use of tools and methodologies as well as in the delegation of tasks to the DOEs. A better understanding of how decisions are made by the CDM EB is also essential. The paper considers potential alternatives to the way that additionality is currently demonstrated and baselines are determined that could help resolve these issues. Examples include the use of positive/negative lists, benchmarks, default values, penetration rates and discounting approaches. The different approaches to reforming additionality and baseline testing include looking at standardised and project-by-project solutions. The paper also proposes adapted solutions that are dependent on project type, project size and geographical location.

2) JI Track 1 preliminary assessment

This paper identifies the main and increasingly worrying problems of JI Track 1. These are:

- Reliability of national procedures to set methodologies: As countries using Track 1 are entitled to set their own methodologies for baseline determination and monitoring, concerns have been raised on the reliability of the ERUs issued, and whether these reflect actual emissions reduction and are additional.
- Lack of coherence of the different national procedures: The determination of the eligibility of the project and the monitoring and verification of emission reductions are subject to national rules and procedures only.
- Transparency and access to information: National processes vary in the transparency of their procedures and decision-making. Currently most information about Track 1 is available in national languages, not necessarily in English.

Different views over:

- Additionality: Additionality testing may be justified to enhance environmental integrity of ERUs, which is central to their use for compliance with the EU ETS Directive.
- Emissions generated in a gap period: In Phase III the EU ETS Directive provides operators with a limited access to 1) ERUs issued in respect of emission reductions up until 2012 and 2) ERUs from projects that were registered before 2013 and issued in respect of emission reductions from 2013 onwards (Article 11a.2 & 3). However, the Kyoto framework does not enable ERUs to be created from 2013 onwards without new quantified emission targets being in place for host countries. A mainly political question is whether emission reductions generated after 2012, based on AAUs carried over from the first commitment period (CP1), can qualify for ERUs.

Implemented reform options:

- Improvements in the procedure: The UNFCCC launched an improved web-based interface to give Parties the opportunity to publish information on their JI Track 1 procedures and projects 'in an enhanced transparent way';
- A proposed reform option: Possibility to merge the two tracks of JI into a single track, in the

3) The potential for CDM induced leakage in energy intensive sectors

This paper focuses on a very specific aspect of the competitiveness discussion for three energy-intensive sectors: aluminium, cement and steel. It analyses how incentives provided by the CDM might alter relative production costs across regions, and thus lead to competitiveness concerns, related but distinct from those raised by the ETS.

The potential for emissions leakage is a function of the risk of activity shifting and the emissions intensity of that activity. For example, CDM could lead to shifting of production activity if increased profits from CDM projects (where CDM revenues exceed the incremental costs associated with the project) lead to increased production at CDM plants at the expense of production in non-CDM plants. This would lead to emissions leakage if the production shifted from a country with a binding emissions limit, such as the EU, to the CDM plant. It could also lead to emissions leakage if production shifted from a facility in a country without a binding limit that has less-GHG intensive production than the baseline emissions intensity of the "receiving" CDM plant. In either case, to induce shifts in production from other facilities, CDM revenue would need to exceed the incremental abatement costs (net of any energy savings) associated with the project, and profits would need to be high relative to the marginal cost of production.

The analysis reveals that the cement and primary steel sectors will most likely remain the largest sources of CERs among energy-intensive industries, absent the development of radically new methodologies for aluminium and secondary steel, which seems unlikely. The analysis indicates that CER revenues, on their own, are unlikely to provide a major incentive for activity shifting, unlike the well-documented case of adipic acid production. In the particular case of adipic acid, CDM project activities yield revenue on a similar scale as adipic acid production costs, whereas for aluminium, cement, and steel, this analysis finds that potential CDM revenues would amount to only a fraction of production costs (from 1% to 7% at 10 euros per ton, or 2% to 21% at the high price of 30 euros per ton).

The paper finds little evidence to suggest that the CDM has provided sufficient profit or production cost

advantages to result in significant shifts in global aluminium, cement, or steel production.

Key areas for further research in the paper include:

- the production, use, and trade in cement substitutes (e.g. slag and fly ash) in order to characterize the potential scale of leakage risk;
- the extent of reduction in emissions intensities associated with actual CDM projects and actual production cost data (from economic models) in order to refine the assessment of relative incentives (profits/production cost); and,
- economic assessment of leakage impacts of carbon pricing in the EU ETS (or in other developed regions), and whether results from those studies can be parameterized or adapted to the differential economic incentive provided by the CDM.
- examination of the potential impact of new and reformed mechanisms (including sectoral crediting) on competitiveness/carbon leakage and compliance costs.

4) Technology Transfer through the CDM

This briefing paper assesses the effectiveness of the CDM in transferring low carbon technologies to developing countries.

The following limitations of the CDM as a means for encouraging technology transfer have been highlighted:

- Technology transfer through the CDM prevails in a few countries and sectors, and bypasses others.
- The CDM, while contributing to individual project level technology transfer, has been incapable of encouraging more widespread policy support for technology transfer, for example in energy systems.
- Technology transfer through the CDM often means import of foreign equipment which does not improve technological understanding and capacity to innovate in developing countries.
- Technology transfer in the CDM is not consistently monitored because there is no common definition of what is considered technology transfer. Data is collected on the basis of PDD claims and cannot always be compared across projects.

While it is understood that the host countries and external factors (e.g. patent issues, international oil price, and trade barriers) play important roles in scaling-up low carbon technology transfer, this paper focuses only on the role of Kyoto Protocol and the CDM in technology transfer. The main purpose of this paper is to assess how to reform structures and policies at the supply side (UN level) and demand side (EU level) in order to scale-up technology transfer, which will ultimately help in meeting global emissions reduction targets. Alternative policy options, such as the Sectoral Crediting Mechanisms (SCM), are also considered regarding their potential for technology transfer.

The paper compiles and summarises criticisms made by various authors about the CDM's role in technology transfer. It further provides an assessment of the strengths and weaknesses of the quantitative and qualitative evidence used by critics.

The paper concludes that sectoral crediting and trading systems have advantages over the CDM in delivering low carbon technology transfer to developing countries. These are summarised below.

- Greater potential for sector-wide transfer of technologies for emissions reduction through a SCM.
- A SCM is more likely than the CDM to support large-scale technology transfer, potentially creating an incentive to import and adapt new technologies.
- By operating at a sector level rather than project level, a SCM could encourage more fundamental structural change to energy systems, to encourage widespread uptake of low carbon technology.

5) Sustainable Development and Social Equity (with focus on Large Hydro projects)

The paper explains how sustainable development considerations are currently incorporated in the development of CDM offsetting projects. It clarifies how it is the host country's prerogative to define whether a project contributes to sustainable development and social equity and why this approach often results in the failure of host countries to deliver these results. The paper compares the sustainable development criteria defined by six different DNAs, which helps to identify the differences in approaches by each host country. As the DNA criteria are only guidelines, no evidence was found that projects are rejected on this basis by the host countries or by

the CDM EB.

This paper shows that the CDM governance process largely fails to ensure sustainable development and social equity, but it also provides evidence that the CDM has the potential to encourage them. Some projects which have successfully contributed to sustainable development and social equity are presented as examples.

The limitations of the CDM are summarised as follows:

- Complex and conflicting definitions and interpretations of sustainable development;
- Unclear and non-restrictive criteria for the approval of sustainable development and social equity criteria;
- Lack of follow-up on the sustainability aspects defined in the project design document (PDD) during the life time of the project;
- The absence of guidelines on the procedure for carrying out stakeholder consultations;
- The structural challenge of undertaking GHG reduction projects with high sustainable development and social impacts in countries with low carbon footprints

Large hydro projects are identified as having particularly negative sustainable development and social impacts. The EC demand side intervention using the World Commission on Dams (WCD) criteria is explained and scrutinised. The positive contribution of this demand side intervention is highlighted, and options for improvements and clarifications on the WCD criteria are discussed.

The results of PDDs from large hydro dams analysed in this paper show that this type of projects do little to contribute to sustainable development and social equity. Recognition of a project's attainment of the sustainable development criteria is not judged on the PDD by the Non-Annex 1 host country delivering the Letter of Approval (LoA) or by the EU member state (for large hydro demand side restrictions). This part of the PDD therefore has limited value.

The study proposes reforms such as outlining a common definition for sustainable development and social equity. It also studies different options for the enforcement of sustainability by the DNA, the CDM EB and the EU (demand side), looking at the supply side and the demand side. Requirements for further enforcement through funding for DNA training as well as financial, bureaucratic and political complexities are illustrated. Multiplier and discounting possibilities are examined and the complexities these mechanisms create are described. The paper proposes premium pricing, cross subsidisation, minimum percentages, positive and negative lists, accelerated registration procedures or the application of simplified modalities for projects with high sustainable development and social equity criteria as instruments that could help reinforce the sustainable development criteria.

6) Governance of the CDM

The research has highlighted weaknesses in CDM governance regarding process, participation and accountability. Whilst there has been significant progress in recent years, further improved governance is important for both, increasing the Mechanism's integrity and lowering transaction costs. The paper suggests a number of different reforms to the EC for further consideration. These include:

- Improved efficiency through implementing the concepts of Materiality and Level of Assurance into all relevant CDM processes. This would ensure work is prioritised based on risk and impact and processes are streamlined through more-effective quality controls. It could furthermore help to reduce delays in the CDM management system and those at project level;
- Enhanced stakeholder participation in decision-making processes including right to appeal procedures. Many stakeholders, in particular on the national and local level, do not participate in decision-making even over projects that directly affect their livelihoods. These concerns could be better managed if stakeholder participation were enhanced at the validation stage and supported with ex-post monitoring of sustainability issues at the verification stages;
- Simplification of tools and standardisation of baseline setting could enhance the environmental integrity of the Mechanism and help eliminate inefficiencies in the process.

While it is suggested that the CDM integrity could be enhanced through reforms in governance, the paper argues that such reforms should avoid introducing unnecessary layers of bureaucracy that could threaten the primary goal of incentivising countries to achieve cost effective emissions reduction. In this context, the authors maintain that simplification and standardisation of the rules and procedures should be encouraged, while

ensuring the environmental soundness of the methodologies.

7) Political Lock-in in the context of the CDM

This paper argues that due to the current incentive structure in place many Parties are reluctant to change the existing international climate change framework of the Kyoto Protocol and its flexible mechanisms, even though they are aware of their limitations. Political lock-in (i.e. a political dynamic which seeks a continuation of the current CDM-related system) exists in some developing countries, for compliance buyers (i.e. Annex I Parties and capped installations), as well as for project developers.

The paper further argues that:

- The CDM has played its role in enhancing participation of developing countries in the carbon market but may also undermine efforts to scale up global emission reductions.
- New market-based mechanisms including Nationally Appropriate Mitigation Actions (NAMAs) and sectoral crediting can be built upon the CDM structure and benefit from experience in the CDM.
- These new mechanisms should address the three major limitations of the CDM: perverse incentives for 'technology lock-in'; perverse incentives for policies and measures; and the insufficient scale.
- There are at least four barriers to overcoming this political lock-in: the scale of economic rents; the current generous approach to baseline setting; the lack of technical and institutional capacity for developing alternative mechanisms; and the difficulty to credit emission reductions in sectors that are not easily measurable, reportable or verifiable.
- An Annex I Party can try to overcome these barriers through demand-side measures, provision of financial support linked to a no-lose target below business-as-usual emissions or technical assistance. A host developing country could adapt NAMA designs to influence the relevant sectors without having monitoring, reporting & verification requirements.
- Several new mechanisms have been considered in international negotiations. Developing countries have diverging views over new mechanisms while they mostly agree on the continuation of the CDM beyond 2012.
- The EU has taken its own measures to limit CER use and set a legal base for negotiating bilateral sectoral agreements.
- Building on experience in the CDM, different mechanism options need to be tested at different levels, involving all key players.
- In addition it will be essential to better communicate non-Annex I countries on the potential merits of scaled-up mechanisms and the private sector on its potential role in implementing them. It is equally important to engage them in the early stage of designing mechanisms to gain their confidence in the process that follows.

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