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IMPROVING THE CLEAN DEVELOPMENT MECHANISM

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About the report

This report is based on a background study and seminar on the functioning of the Clean Development Mechanism (CDM) organised under the auspices of European Climate Platform (ECP),^a which is a joint initiative by CLIPORE and CEPS. It contains an analysis of the CDM from strategic and operational perspectives, and addresses the question of how the CDM could be improved in order to transform it from a limited instrument to a major tool to achieve long-term climate change objectives. The Executive Summary contains key messages and a number of concrete and operational policy recommendations for CDM reform, to improve its immediate functioning and to fully exploit its future potential. The recommendations are addressed to the negotiating Parties of the United Nations Framework Convention of Climate Change gathering at the 11th Conference of the Parties and 1st Meeting of the Parties in Montreal in December 2005. Some of them may also be relevant to other key players influencing the functioning of the CDM, such as the CDM Executive Board (EB), the Designated National Authorities (DNAs), international organisations, non-governmental organisations or the corporate sector. The main report delves deeper into the key issues and gives the background of many of the policy recommendations. Approximately 30 climate stakeholders and experts participated in the seminar and were given the opportunity to review the report.^b Although the report attempts to reflect the views of all participants, responsibility for this report lies solely with the authors and the seminar Chairman, Bo Kjellen.

Appendix I lists participants in the seminar. Appendix II contains a glossary of terms and abbreviations used in this report.

Disclaimer: The key issues and recommendations in this report are based on an ECP seminar in which about 30 climate stakeholders and experts (listed in Appendix I) participated in their personal capacity. Drafts of the report have been discussed with the seminar participants. However, the responsibility for the content lies solely with the authors and the Chairman.

^a For further information on the ECP, please see the back cover of this report or visit: http://www.ceps.be/Article.php?article_id=484.

^b Discussions in the seminar were based on two ECP Background Papers, which can be accessed at: http://www.ceps.be/Article.php?article_id=485. All seminar participants are listed in Appendix I of this report.

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IMPROVING THE CLEAN DEVELOPMENT MECHANISM

EXECUTIVE SUMMARY

I. Defining the Challenge

The creation of the CDM – as well as the other Kyoto Protocol flexible mechanisms – is an unprecedented achievement. It has created an international market-based cooperation mechanism for sustainable development to the benefit of both industrialised and developing countries. However, learning-by-doing has demonstrated the difficulty of achieving the environmental and development aims envisioned for the CDM. Both environmental and development priorities require a rapid transition away from fossil-fuel-based economic development in developing countries. In addition, the scale of the climate challenge necessitates an efficient use of resources for reducing emissions in industrialised countries. From this perspective, clearly, the scale of the contribution that can be made by the CDM under current conditions is insufficient.

Although small in its current form, *over time* the CDM could radically transform international economic and environmental cooperation, notably by using the power of markets to achieve economic efficiency in meeting Annex I emission targets while stimulating the deployment of renewable energy and energy-efficient technologies in developing countries. To harness this potential without sacrificing the environmental effectiveness of the mechanism requires an upgrading of the institutional capacity to manage and use the mechanism (in industrialised and developing countries). Moreover, in order to fulfil its tasks, the CDM must meet the fundamental challenge of linking together two hitherto separate international logics; that of global capital markets and that of international negotiations between sovereign nation states.

II. Key Messages

Objectives

1. The CDM is designed according to its objectives as stipulated in the Kyoto Protocol (sustainable development and helping Annex I parties to reach their Kyoto target). However, it is often judged against other objectives or intentions, such as its potential to stimulate technology transfer, Foreign Direct Investment (FDI) or to lead to decarbonisation of (future) economic activities. This is not to say that these objectives are not valid and should not be pursued. However, the CDM – in its current form – should not be held hostage to unrealistic expectations.
2. In the long-term, it is essential to reconsider the objectives of the CDM if it should make a meaningful contribute to long-term climate change objectives. Most important will be whether the CDM in the post-2012 framework will become the principal tool for reducing GHG emissions in non-Annex I Parties or just one of the options available. If the CDM is to become a major tool, it will need to depart from a ‘project-by-project’ approach in order to achieve the necessary scale. At the same time, the CDM would also need to provide more incentives for technology transfer as ultimately the long-term climate change policy aspiration can only be met by large-scale deployment of clean technologies.

Governance

3. The CDM is hampered by governance issues, notably the functioning of the CDM Executive Board (EB) and some of the Designated National Authorities (DNAs) of CDM host countries. The two have in common that they both need sufficient resources to

perform their tasks. The CDM Executive Board (EB) does not operate in a vacuum and must be judged in its role as part of the UNFCCC system. It is a body that had to explore new unprecedented ground and that notably operates in an incomplete and uncertain framework.

Market functioning

4. The uncertainty about the future post-2012 regime has a major impact on market dynamics. Hence there is a need for clarification of as many points as possible as soon as possible. In addition, as national or regional carbon markets are emerging, the infrastructure for the trading market is far from complete. Principal missing parts are the International Transaction Log (ITL) and the infrastructure for emissions trading as set forth in Article 17 of the Kyoto Protocol. These are the preconditions for the proper working of the CDM market.

Project scope

5. As a market-based instrument, the CDM tends to favour projects where they are cheapest and most secure. This has put countries with weak economies and a lack of adequate institutional infrastructure in a disadvantageous position to benefit from the CDM, as reflected in the regional imbalances in the pool of projects currently under implementation. This limitation is a barrier to avoiding fossil-fuel-based development in countries in earlier stages of economic development and, further, undermines broad support for the CDM. In the short-term, measures such as lower fees could be introduced to improve the competitiveness of projects in such countries. A strategy for the long term, however, must attempt to eliminate these barriers. This will require additional, complementary, approaches (or policies).
6. There are good arguments in favour of an extension towards a broader range of forestry and bio-energy projects, such as avoided deforestation, land degradation and revegetation. Allowing the issuance of CERs (certified emissions reductions) for unilateral CDM projects and notably transforming the CDM into a more programmatic or sectoral mechanism, however, deserves further consideration, notably in the light of the envisaged objectives and scale the CDM should have post-2012.

III. The Time Frame for CDM Reform

The CDM has seen difficulties, often related to the challenges of bringing the logics of capital markets and the international negotiations together. Problematic areas can be grouped under four headings; objectives, governance, market functioning and project scope. This report has identified for each of these categories short, medium and long-term issues.

- Short-term issues in essence are related to governance of the CDM Executive Board and capacity-building in CDM host countries. Since the window of opportunity of launching projects aimed at reducing emissions within the Kyoto Protocol's first compliance period essentially closes by the end of 2006, governance issues need to be addressed at COP11/MOP1 and immediately thereafter.
- Medium-term challenges relate to the phase between now and when agreement is reached on a post-2012 regime. The CDM will have to deal with a situation where projects that are initiated after 2006 face considerable uncertainty. The Parties should end this uncertainty by either reaching a pre-agreement on the format and scope of the CDM in a future regime or by securing the continuation of the CDM through domestic policies, such as for instance the EU Emissions Trading Scheme or its extension and potentially through other national or regional schemes.

- The long-term (post-2012) would allow for a rethinking of the CDM in the light of long-term greenhouse gas abatement objectives and emission trends.

IV. Recommendations

Specific recommendations are included under each heading below. Where appropriate, the time-frame is indicated.

Objectives

1. In the period until 2012, accelerated efforts should be put in place to clarify to project proponents how additionality and sustainable development are defined and assessed by the CDM Executive Board (EB) and the Designated National Authorities (DNAs), respectively. Some further improvements could be made to the additionality tool of the EB, in order to sharpen the focus on the additionality of emission reductions and not on the CDM project as such, for instance by deleting the provision on the impact of CDM registration.
2. The objectives and envisaged role and scale of the CDM in a post-2012 regime should be reconsidered before discussing its design. Issues include its role vis-à-vis technology transfer, FDI, ODA and other international treaties, protocols and agreements.
3. Parties should seriously consider setting technology transfer objectives at the outset when defining the role of the CDM in a future regime, for instance through the building-in of time-bound incentives for the use of environmentally-preferred technologies.
4. If a serious scaling-up of the CDM were envisaged in terms of emission sources, sectors and regions, Parties should consider broader approaches (such as programmatic or sectoral CDM). Preconditions for such a scaling-up are the political will of Annex I Parties to create sufficient demand for CERs and methods in non-Annex I countries for harmonising the CDM with other policies. In such a case, more work must be done on CDM design and implementation.

Governance

5. The design and operational structure of the CDM must integrate the logic of markets, meaning the integration of an understanding of business conduct, investment strategies and language.
6. Members of the CDM EB should be nominated and elected by their regional groups on the basis of a yet-to-be-designed Terms of Reference. Despite that, it can have advantages when Board Members are close to their DNAs, such as the benefit of having first-hand knowledge, to avoid the impression of conflicting interest one criterion should be the independence of EB members from DNAs. Moreover, the EB as such should exhibit a mix of expertise including financial, policy, regulatory, administrative, business or other, and include people with relevant management experience.
7. The EB/CDM Management Plan should set out ways on how to promote transparency, efficiency and consistency in the EB's decision-making process and include a budget indicating the allocation of resources to specific tasks, staff and consultancy activities. In particular, the plan should include the respective roles of the EB Chair and Members, publication of minutes and other relevant information, the rules and functions of technical panels and working groups, and procedures for

- involving market participants. After a proposal by the EB, there should be a consultation process with stakeholders before the Management Plan is adopted.
8. The EB should focus on governance, policy and supervisory functions. The EB Secretariat should be answerable to the EB rather than the UNFCCC Secretariat, and should support and implement the decisions of the EB. There should be more extensive use of delegation to panels and working groups.
 9. The EB should establish a help desk for project developers and Designated Operational Entities (DOEs).
 10. To increase transparency, the EB should set-up an easily accessible compilation of all valid EB decisions.
 11. It is of crucial importance that the CDM truly becomes self-financing no later than 2008 and that Parties ensure that sufficient resources are actually delivered to the EB's accounts in the period until 2008. Therefore, Parties that have pledged financial contributions should pay up immediately. The COP/MOP should allocate a sufficient percentage of the share of the proceeds on the sale of CERs to the Executive Board. The 15 cents per CER for small-scale projects and 20 cents per large-scale projects that have recently been proposed should be considered the minimum.
 12. Until 2008, Annex-I Parties should not only pledge, but also actually deliver sufficient funding to keep a global institution with significant financial impact up and running.
 13. The capacity of DNAs needs strengthening. This could be achieved, for instance, through accelerated support from development agencies. DNAs play a vital role not only in promoting the CDM, but also in creating awareness of climate change and options for reducing greenhouse gas emissions at project level. Project developers can be encouraged by clear and timely responses to envisaged projects.

Market functioning

14. The necessary trading infrastructure consisting of the International Transaction Log and the International Emissions Trading needs to be put in place no later than 2008.
15. As the post-2012 framework will have a major impact on market dynamics, international negotiators should strive to clarify as many of the design issues as possible.
16. Annex I Parties to the Kyoto Protocol should guarantee and enable the continuation of the activities of the CDM EB, in case the post-2012 regime remains uncertain after 2008, and send a clear signal that credits will be recognised beyond 2012.

Project scope

17. Government tenders and carbon funds should address and attempt to rectify imbalances in project types, sectors and regions. Governments should also support efforts to develop new methodologies addressing emission sources that are currently underrepresented (e.g. Japanese Future CDM project).
18. If a continuation of the CDM in its current form and scope is envisaged, Parties should reconsider the inclusion of a broader range of forestry and bio-energy projects, such as avoided deforestation, land degradation and devegetation.
19. The COP/MOP should decide whether or not it envisages a serious scaling-up of the CDM. This would require additional work on technical issues related to design (i.e. the exploration of, for example, programmatic and sectoral approaches) and implementation.

IMPROVING THE CLEAN DEVELOPMENT MECHANISM

MAIN REPORT

1. Introduction

The creation of the Clean Development Mechanism (CDM)¹ – as well as the other Kyoto Protocol flexible mechanisms – is an unprecedented achievement. It has created an international market-based cooperation mechanism for sustainable development to the benefit of both industrialised and developing countries. Although small in its current form, *over time* this mechanism could radically transform international economic and environmental cooperation, notably by using the power of markets to achieve economic and environmental goals.

The CDM creates unprecedented challenges to the international community. It constitutes a first, albeit small step towards a global governance of a global environmental market. It is often overlooked that the CDM is breaking ground when it comes to designing a global institutional (and supervisory) framework for emerging global carbon markets. To date, environmental markets have been limited to national (e.g. US) or regional organisations such as the EU. The CDM and the Kyoto flexible mechanisms or the linking of national and regional emissions trading schemes will necessarily have to operate in a new environment.

At the same time, the CDM falls somewhat between two different logics. On the one hand, there is the logic of how sovereign nation states negotiate or operate in international negotiations and finally decide by consensus. On the other hand, there is the logic of international financial or commodity markets that react to incentives and promises of return on capital. Should the CDM and other flexible mechanisms succeed in the end, there is a need to bring these two different logics together. In this respect, as a first step it is important to increase mutual understanding and integration of the needs, working methods and ways of communication of both logics in the implementation of the CDM.

2. Background of the CDM: Objectives and expectations

One of the central features of the Kyoto Protocol has been the creation of the three flexible mechanisms, which together would form the backbone of the international emissions trading regime. Such a system was considered essential to achieve cost-effectiveness and ensure cooperation by the corporate sector. Since the Kyoto Protocol had set absolute caps, global emissions trading was an almost logical consequence, not only to reduce total compliance costs, but also to ensure equal marginal abatement costs across Parties. The CDM would be the principal tool for abatement options in the non-Annex I Parties or developing countries.

The objectives of the CDM are i) to help Annex I Parties to meet their emissions targets and ii) to assist non-Annex I Parties in achieving sustainable development and in avoiding future emissions. It was hoped *inter alia* that the flexible mechanisms would trigger investment, speed-up technology transfer and ultimately help bring countries onto a lower carbon trajectory. These ideas were catalysed by modelling results presenting large volumes of potential CDM credits given the relatively low abatement costs estimated in non-Annex I Parties (e.g. Jansen, 2002 and Vrolijk, 2000). The Marrakech Accords, agreed at the COP in 2001, reflect the intention of Parties to make the CDM a tool for attracting technologies to developing countries (Decision 17 CP 17/CP.7).

¹ This report does not contain a general introduction to the CDM, which can be found for instance at <http://www.unfccc.int/cdm> or in “CDM and JI in charts” (<http://www.iges.or.jp/en/cdm/report01.html>). For the latest news on the CDM, we refer to various magazines, such as JIQ, JIKO info, CDM highlights and the CDM Investment Newsletter.

The CDM was furthermore considered as a tool to engage various stakeholders, notably developing countries and business by involving them in the project of designing a global climate change regime and carbon markets. The objectives and expectations regarding potential benefits of the CDM are listed in Box 1.

Box 1. CDM objectives and expectations regarding potential benefits

CDM objectives (Kyoto Protocol, Art 12):

- Help Annex I Parties to meet their emissions targets
- Assist the non-Annex I Parties to achieve sustainable development and to contribute to the ultimate objective of the Convention

Other intentions, expectations or anticipated benefits:

- Achieve real reductions of greenhouse gases in developing countries
- Extend low-cost abatement options (cost-effectiveness); both for Parties needing to fulfil their Kyoto commitment and for the legal entities covered by the EU emissions trading scheme
- Create one of the pillars of the international emissions trading market; a considerable pillar in terms of volumes
- Involve developing countries in climate change mitigation
- Increase awareness of climate change and of opportunities for the use of clean technologies
- Involve the private sector in the climate change regime
- Make new investments (e.g. in the energy sector) more environmentally friendly
- Stimulate the transfer of low and zero carbon technologies
- Attract FDI to developing countries

3. The CDM reality and why it is important to improve it

As of mid-October, 23 CDM projects were registered and 302 were in the process of validation or in another stage of the CDM registration process. Taken together these projects aim to abate some 456 Mt CO₂e by 2012 (Fenhann, 2005). Also in October, the first actual CERs were issued, for a project generating 17,800 CERs (certified emissions reductions) per year.² Overall, CDM traded volumes are currently expected to remain relatively small. It is even unsure whether the anticipated volume in financial terms of \$1.1 billion per year can be reached before 2012 (Ellis et al., 2004)³. Nevertheless, it has been estimated that \$1 of CDM finance can leverage \$5 of additional finance.

The conditions foreseen by the architects of the flexible mechanisms are not in place, especially with regard to the participation of the US. Its withdrawal has had a tremendous impact on confidence in, and the pace of development of the carbon market in general and CDM in particular. Today it seems that the supply of CERs will not come close to the potential demand (see the section on market functioning below), even without demand from the US. It has become clear that the original models mapping a much larger amount of CERs overlooked the importance of key factors in their projections, such as weak economies and institutional infrastructure in potential host countries, the consequences of the political uncertainty surrounding demand in the first compliance period and the continuation of the CDM in a future regime, and the transaction costs of CDM projects.

Hence, the CDM in its current shape seems not be able to live up to the expectations it has raised in terms of its intentions, and anticipated benefits. A collapse of the CDM could reduce interest on the part of business to become engaged in climate change policy. It could furthermore undermine technology transfer and the deployment of clean technologies. More

² Press release UNFCCC, "First emissions credits issued under the Kyoto Protocol", 20 October 2005.

³ In comparison, the main financial mechanism for the financing of environmental projects, the Global Environment Facility, has spent \$1.8 billion in the period 1991-2004.

practically, the absence of a functioning CDM will deprive Parties as well as entities under the EU Emissions Trading Scheme of vital compliance options.

More important, a collapse of the CDM could also jeopardise an emerging international emissions trading system. Without such a system, it is difficult to see how a post-2012 regime could be based on targets (whether absolute, sectoral, relative or no-loose), which is seen by many as the way forward (see Pallemmaerts et al., 2005; PEW, 2005; and Warren & Drexhage, 2005). These weaknesses, in turn, would raise questions about the suitability of the Kyoto Protocol and the UNFCCC structure as the key elements of international climate change policy.

4. A strategy to improve the CDM

The following sections discuss identified problems in the categories of objectives, governance, market functioning and project scope and repeat the policy recommendations for each of these categories. The overview does not intend to be extensive, but rather to highlight the issues that surfaced in debate during the seminar. The analysis distinguishes between issues of a short, medium and the long-term timeframe.

The **short-term** describes the period within which changes can still affect the CDM as a compliance tool for the first Kyoto Protocol commitment period. As the World Bank and International Emissions Trading Association have stressed, the window of opportunity for launching new projects to use for compliance reasons will essentially close by autumn 2006 as a result of project development lead times (Lecocq & Capoor, 2005). Hence, short-term changes will essentially be linked to CoP11/MoP1 in Montreal. The **medium-term** perspective focuses on the transition of the CDM to the post-2012 period and essentially covers how to manage the CDM in a period of uncertainty where the overall shape of the future agreement is likely to be unknown. Projects that will be initiated as of 2007 will most likely only be concluded for the post-2012 period and hence, be subject to considerable uncertainty. The **long-term** (post-2012) allows for a complete rethinking of the CDM in the light of long-term greenhouse gas abatement objectives, development goals and emission trends. Here the role of the CDM vis-à-vis other policies seems to be one of the key questions.

While the short-term agenda is the most urgent, the three (short, medium and long-term) perspectives relate to each in that decisions affecting the short-term may influence both the medium and long term. Perhaps most important is to keep the CDM alive in the medium-term through an early commitment regarding its continuation post-2012 in order to reduce current uncertainty and safeguard the mechanism for the future. Hence, a critical element of any CDM strategy is to ensure consistency between the short, medium and long term.

4.1 Objectives

With regard to the CDM's objectives, the most important issues that have been addressed in literature on the CDM have been the definition of contributions to sustainable development (e.g. Cosbey et al., 2005) as well as the capability of the CDM to stimulate technology transfer (Millock, 2002; Kartha et al., 2005). In a longer-term perspective, i.e. post-2012, there are a number of fundamental questions, such as what role the CDM could play as a driver for FDI (see Saner, 2005) or its interface with ODA. There are also questions on how the CDM relates to other international treaties, protocols and agreements.

With regard to additionality, the debate has focused on how this concept has been defined and operationalised. According to project developers, the Executive Board (EB) of the CDM has focused too much on whether the project as such is additional (intent of the project) than on whether its emissions reductions are additional (IETA, 2005b). It might very well be the case, however, that with the approval of more (consolidated) methodologies, additionality may disappear as an issue far more quickly than expected, since it will become more transparent for project developers which types of projects would qualify and for what reasons. Current

problems relate to technical issues such as how to better explain the terminology used. There might also be some scope for improving the additionality tool of the CDM Executive Board, for instance by removing the provision on the impact of CDM registration (IETA, 2005b). It should be noted, however, that it is not obligatory to use this tool. Nor is it obligatory to demonstrate the financial additionality of projects, which some allege would be difficult to demonstrate.

The EB has no mandate to assess whether or not a project contributes to sustainable development. The Marrakech Accord leaves the definition of sustainable development to host countries. This has inevitably led to a situation where different countries have defined it differently, which according to project developers can add to uncertainty (Cosbey et al., 2005). Furthermore the projects allowed by host countries so far have raised questions among NGOs and other observers regarding their tangible contribution to sustainable development (Muller, 2005).⁴ While this might be an area for further improvement and harmonisation between countries, progress is likely to be small as it would require additional host-country experience as well as capacity-building.

A somewhat longer-term issue is to provide incentives for both the application of clean technologies and technology transfer. Ultimately, this issue needs to be settled, given that long-term climate change policy aspirations can only be met by the development and deployment of advanced technologies. Given the limited volumes of the CDM as well as the modest aspiration of the Kyoto Protocol targets, the role of the CDM for technology transfer currently is negligible. This means that other additional ways of transferring technologies may need to be devised or strengthened for the period until 2012. In addition, extra and time-bound incentives for the use of environmentally preferred technologies could be taken into consideration. For example, the EB could reduce fees for project registration and/or host countries could create tax incentives and disincentives that promote a focus on prioritised project and technology types.⁵ It should be kept in mind that technology transfer is a complex and multi-faceted issue that in itself will need further understanding.

For the long-term it is essential to reconsider the objectives and the scope of the CDM. It is necessary to clarify whether the objectives of the CDM as stipulated in the Kyoto Protocol should be extended to explicitly include technology transfer and/or other objectives. It is important to discuss the goals that are to be achieved through the mechanism (in terms of volume, gases and geographical coverage) and then to redesign it accordingly. It is moreover important to determine whether the CDM is to be one of the options available or *the* principal tool for avoiding greenhouse gas emissions in non-Annex I countries.

Scaling-up the CDM in order to achieve larger reductions of GHG emissions implies a willingness to create sufficient demand for CERs and to go beyond a 'project-by-project' approach in order to create sufficient supply (for example by means of a sectoral approach). A broader approach to the CDM could enable it to create more significant opportunities for attracting FDI to developing countries and could also lead to a larger degree of technology transfer. It can be expected that buyer countries in order to create sufficient demand will increasingly argue in favour of using ODA in order to reinforce CDM capacity-building efforts or projects with high sustainable development benefits. An important question is how the CDM in such a scenario would relate to incentives in fast-growing developing countries to start implementing not-CDM related abatement measures.

Recommendations:

- In the period until 2012, accelerated efforts should be put in place to clarify to project proponents how additionality and sustainable development are defined and assessed by

⁴ To address these concerns a set of 'higher standards' for CDM projects has been established under the so-called 'Gold Standard'. Application of the gold standard is voluntary (see for further information: <http://www.cdmgoldstandard.org/>).

⁵ For example, China has decided to install a tax on f-gases projects (HFCs). See also Muller (2005).

the CDM Executive Board (EB) and the Designated National Authorities (DNAs), respectively. Some further improvements could be made to the additionality tool of the EB, in order to sharpen the focus on the additionality of emission reductions and not on the CDM project as such, for instance by deleting the provision on the impact of CDM registration.

- The objectives and envisaged role and scale of the CDM in a post-2012 regime should be reconsidered before discussing its design. Issues include its role vis-à-vis technology transfer, FDI, ODA and other international treaties, protocols and agreements.
- Parties should seriously consider setting technology transfer objectives at the outset when defining the role of the CDM in a future regime, for instance through the building-in of time-bound incentives for the use of environmentally-preferred technologies.
- If a serious scaling-up of the CDM were envisaged in terms of emission sources, sectors and regions, Parties should consider broader approaches (such as programmatic or sectoral CDM). Preconditions for such a scaling-up are the political will of Annex I Parties to create sufficient demand for CERs and methods in non-Annex I countries for harmonising the CDM with other policies. In such a case, more work must be done on CDM design and implementation.

4.2 Governance

The debate on governance of the CDM has notably focused on the functioning of the EB but also on the capacity of DNAs in CDM host countries.

The CDM EB does not operate in a vacuum but is faced with a number of strategic problems. The first is the UN's role in creating an international market and how to ensure its credibility. Another important issue concerns the limitations that the lack of a post-2012 framework necessarily imposes with regard to certainty and stability of markets. Finally, the EB has a mandate from the COP, which sets a number of tasks. The basic task of the EB under the Kyoto Protocol is to 'supervise projects' as to whether they provide 'real' and 'measurable' reductions that are 'additional'. Initially, as there has been no comparable institution with a similar role, its task was based on a bottom-up approach, i.e. building up 'case law'. Over time, it is expected to switch over to a more top-down approach – for instance regarding project types where new methodologies might be needed or regarding how project proponents can increase the chance for approval of their projects.

The principal question has been the efficiency of the EB,⁶ with main issues being management and funding. There are concerns that the EB will not be able to cope with 400 expected projects, including 80 methodology proposals that are currently being evaluated by the Methodology Panel.

As to management, the principal criticism has been that there has been too much focus on day-to-day management. There is a sense that the EB attempts to undertake all the work itself (i.e. micro-management rather than management by exception with too little delegation). It should focus on strategic issues and strive to delegate as much as possible to staff and subordinate panels. Second, there are concerns regarding the work of the EB having become politicised due to perceived conflicts of interest of EB members. This concern relates particularly to EB members that have retained roles as 'negotiators', especially those involved in or related to national DNAs. A third criticism is the lack of consultation with stakeholders, notably with project participants. Fourth, persons acting as secretariat of the EB are employed by the UNFCCC Secretariat and therefore answerable to their superiors in this organisation. Hence, the EB 'secretariat' in the strict sense does not serve the EB but rather, the UNFCCC Secretariat, creating unclear responsibilities.

⁶ See for instance IETA (2005a).

It has been acknowledged that many problems are related to a lack of funding. As a consequence there have been too few staff, resulting in too little communication within the EB and with the outside world, and in EB members performing multiple roles. Many problems are moreover related to an insufficient ability by the EB to grasp (or emphasise with) the logic of markets.

The CDM is intended to become a self-financing body. The EB has recently proposed that revenue from issued CERs ('share of proceeds to cover administrative expenses') would be in cash. More concretely it has proposed that this fee be set at \$0.20/CER for large and \$0.15 for small-scale projects (including registration fee). The EB's proposal will be discussed at the COP/MOP, which ultimately decides on the fee (JIQ, 2005). It is generally acknowledged that the fee should not impose a substantially large additional transaction cost to projects, making it even more difficult to develop them. It should however also ensure that the EB is to become financially independent as soon as possible, given the current experiences with insufficient resources actually being delivered to the EB.

Another aspect influencing the governance of the CDM is the functioning of the DNAs (designated national authorities), especially those in CDM host countries. Project developers can be encouraged by a clear and timely response to envisaged projects. DNAs play a vital role not only in promoting the CDM, but also in creating awareness on climate change and options for reducing greenhouse gas emissions at project level. Not all Parties have set-up a DNA yet, which excludes them from participation in the CDM. The majority of already-existing DNAs and especially those of CDM host countries would moreover suffer from a lack of resources and technological know-how which has led to considerable delays in project approval.

Recommendations:

- The design and operational structure of the CDM must integrate the logic of markets, meaning the integration of an understanding of business conduct, investment strategies and language.
- Members of the CDM EB should be nominated and elected by their regional groups on the basis of a yet-to-be-designed Terms of Reference. Despite that, it can have advantages when Board Members are close to their DNAs, such as the benefit of having first-hand knowledge, to avoid the impression of conflicting interest one criterion should be the independence of EB members from DNAs. Moreover, the EB as such should exhibit a mix of expertise including financial, policy, regulatory, administrative, business or other, and include people with relevant management experience.
- The EB/CDM Management Plan should set out ways on how to promote transparency, efficiency and consistency in the EB's decision-making process and include a budget indicating the allocation of resources to specific tasks, staff and consultancy activities. In particular, the plan should include the respective roles of the EB Chair and Members, publication of minutes and other relevant information, the rules and functions of technical panels and working groups, and procedures for involving market participants. After a proposal by the EB, there should be a consultation process with stakeholders before the Management Plan is adopted.
- The EB should focus on governance, policy and supervisory functions. The EB Secretariat should be answerable to the EB rather than the UNFCCC Secretariat, and should support and implement the decisions of the EB. There should be more extensive use of delegation to panels and working groups.
- The EB should establish a help desk for project developers and Designated Operational Entities (DOEs).
- To increase transparency, the EB should set-up an easily accessible compilation of all valid EB decisions.

- It is of crucial importance that the CDM truly becomes self-financing no later than 2008 and that Parties ensure that sufficient resources are actually delivered to the EB's accounts in the period until 2008. Therefore, Parties that have pledged financial contributions should pay up immediately. The COP/MOP should allocate a sufficient percentage of the share of the proceeds on the sale of CERs to the Executive Board. The 15 cents per CER for small-scale projects and 20 cents per large-scale projects that have recently been proposed should be considered the minimum.
- Until 2008, Annex-I Parties should not only pledge, but also actually deliver sufficient funding to keep a global institution with significant financial impact up and running.
- The capacity of DNAs needs strengthening. This could be achieved, for instance, through accelerated support from development agencies. DNAs play a vital role not only in promoting the CDM, but also in creating awareness of climate change and options for reducing greenhouse gas emissions at project level. Project developers can be encouraged by clear and timely responses to envisaged projects.

4.3 Market functioning

Although the market for CERs and other emissions credits is still very young, there are serious concerns that demand for CDM credits may outstrip supply. Haites (2004) has estimated the total Annex I demand for CERs to be between 217 and 640 Mt CO₂e per year by 2010, out of a total demand for total credits of 869-1,098 Mt CO₂e. In comparison, it has been estimated by Ellis & Levina (2005) that on the basis of current data (on current projects, registered, proposed and in the pipeline) a total supply of 178 Mt CO₂e per year until 2008 and 100 Mt CO₂e per year between 2008-12 can be expected. EU member states alone have already indicated a demand of about 140 Mt CO₂e (both CDM & JI) per year in their National Allocation Plans of the EU Emissions Trading Scheme.⁷ This does not yet cover potential demand by the sectors covered in the EU Emissions Trading Scheme (EU ETS) that can use CERs (and ERUs) for compliance.⁸

Other pointers that the market is not functioning well are the price gap between EU Allowances and the CERs and the fact that more than half of the market participants in the CDM market are governments or international organisations (Saner, 2005). The price differential between the EU Allowances obtained under the EU ETS and CERs is surprising since the EU's Linking Directive has established a link between the two markets.⁹ One possible explanation for the difference is the registration and delivery risk of CERs, especially during the first phase of the EU ETS from 2005 to 2007 (Lecocq & Capoor, 2005). Another explanation is that not all EU member states have implemented the Linking Directive in national laws. Only when this has occurred will the sectors covered in these countries be able to use CERs for compliance with the EU ETS.

Another important reason why the markets are not yet fully functioning is the missing market infrastructure. This includes first of all the absence of the International Transaction Log (ITL) but also the eligibility requirements Parties have to fulfil in order to engage in IET as outlined under Article 17 of the Kyoto Protocol and relevant articles in the Marrakech Accords. Only with large efforts can these infrastructures be expected to be in place as of mid-2007.

⁷ Figure provided by CANEurope (see Van Schaik & Egenhofer, 2005).

⁸ CERs from nuclear projects and sinks are excluded. For large hydro projects, relevant international criteria and guidelines, including those contained in the report of the World Commission on Dams November 2000, "Dams and Development – A New Framework for Decision-Making", are to be respected.

⁹ Although EU allowances have consistently stood at above €20 for more than half a year, between January 2004 and April 2005, CERs traded between \$3 and \$7.15/ t CO₂e with a weighted average of \$5.63/ tCO₂e (Lecocq & Capoor, 2005). The price of yet-to-be generated credits – whereby the risk is with the buyer – is even lower with an average of \$4.23.

Possibly the most important ‘missing link’ is the lack of certainty about the CDM’s role in the post-2012 period. While some argue that Parties already at COP11/MOP1 should agree on the continuation of the CDM, this would constitute a major prejudgement of the future regime. And even if the Kyoto Protocol partners were firm on continuity of the current regime, this would provide no absolute guarantee to the continuation of the CDM. Given the necessity of leaving these options open in the negotiating process, it is important to find a way to ensure – at a minimum – that credits generated after 2012 by projects being registered today will be recognised. Other ways for Parties to demonstrate their commitment to a continuation of the CDM post-2012 are to launch new CDM tenders and/or to set up or continue with domestic emissions trading schemes in which CERs are eligible credits. The EU Emissions Trading Scheme is expected to continue its operation irrespective of whether a global post-2012 regime is achieved or not. In its current form, the caps set within this scheme are related to the GHG reduction commitments of the EU member states under the Kyoto Protocol, but the EU could decide to set longer-term targets irrespective of its international post-2012 commitment. Such circumstances, however, would almost certainly mean that it would be the EU ETS that determines market dynamics on the CDM market.

Recommendations:

- The necessary trading infrastructure consisting of the International Transaction Log and the International Emissions Trading needs to be put in place no later than 2008.
- As the post-2012 framework will have a major impact on market dynamics, international negotiators should strive to clarify as many of the design issues as possible.
- Annex I Parties to the Kyoto Protocol should guarantee and enable the continuation of the activities of the CDM EB, in case the post-2012 regime remains uncertain after 2008, and send a clear signal that credits will be recognised beyond 2012.

4.4 Project scope

In the current pool of projects, most of the CERs are to be obtained from HFC₂₃ destruction, followed by methane and N₂O capture from animal waste (Lecocq & Capoor, 2005). There are relatively few CERs from energy efficiency projects. India has been the most successful host country in generating CDM activities. It has been difficult to generate projects in many of the least developing countries.

The imbalance of project types should come as no surprise. A market-based system will always tend to favour projects where reductions are cheapest and most secure. Rather than being a sign of imperfection, the fact that the volume of the CDM follows market opportunities is inherent in the design. Imbalances in project types are not a failure but, rather, a result of this market-based approach. Markets exploit the possibility of arbitrage, hence different cost potentials.

The focus on limited project types or gases, however, reduces the environmental effectiveness of the CDM as many reduction opportunities that might exist are not attractive under the current CDM framework, but of crucial importance for avoiding future emissions. Moreover, since only projects for which (consolidated) methodologies have been approved are eligible, it is important to have methodologies covering as many types of projects as possible available and to ensure rapid development of new methodologies when new technologies for reducing emissions emerge. Currently the project proponents carry the burden of developing methodologies. The Japanese Future CDM project¹⁰ is a good example where the development of methodologies is funded publicly so as to ease the burden for private sector project developers and to extend the range of project types for which methodologies are available.

¹⁰

http://www.meti.go.jp/policy/global_environment/kyomecha/050531FutureCDM/FutureCDM_main.htm.

The reasons for regional imbalances are somewhat similar to imbalances in project types. In themselves, such imbalances are to be expected. One would expect projects in countries where historical and projected emissions are high. The yardstick against which geographical distribution will have to be judged is whether the portfolio of projects reflects historical and projected emissions of countries or regions. This is currently under examination by the OECD.

Differences between countries however are also related to the – for CDM – relevant investment climate in the countries where projects can be undertaken (Niederberger & Saner, 2005). Countries with weak economies and a lack of insufficient institutional infrastructure are in a disadvantageous position to benefit from the CDM. This limitation is a barrier to avoiding fossil-fuel-based development in countries in earlier stages of economic development and, furthermore, undermines support for the CDM and the international climate change regime from those countries that are largely excluded. Success of the post-2012 framework is most likely to depend on the capacity of the international community to move forward jointly. To ensure broad political support for a future climate change regime, broad geographical balance of CDM projects will be needed.

To reduce the imbalances, complementary actions may be needed such as blending different finance instruments – such as ODA and financing from international finance institutions – with carbon finance. Another option would be to build in time-bound incentives in the form of reduced registration fees and share of proceeds for certain types of projects or host countries. In the long term, as emission reduction targets are expected to become more stringent and to cover more countries, demand may increase, leading to hitherto ‘uneconomic’ CDM projects becoming more profitable. Nevertheless, the CDM as market-based instrument will never be a guarantee for balanced distribution. Therefore, structurally complementary tools to address imbalances may also be needed, such as reduced fees or tax incentives for certain types of projects with a large potential in regions where few CDM projects are currently carried out.

Small-scale CDM projects (< 50,000 tCO₂e reduction¹¹) are subject to favourable conditions compared to regular CDM projects. There is a simplified project cycle for small-scale projects and their registration fee is lower. Nevertheless it appears difficult to get these projects going.

There are arguments in favour of an extension of the CDM towards a larger range of forestry and bio-energy projects, such as avoided deforestation, land degradation and devegetation.¹² It seems furthermore relevant to include biomass projects into the CDM, even if emissions from fossil fuels are not part of the baseline. For example this would make it easier to combine afforestation/reforestation with the use of biomass as a single project to submit to the CDM Executive Board.

Unilateral CDM projects are carried out without an established Annex-I investor. The CDM Executive Board allows these projects to become registered, but credits cannot be issued without a buyer in place. The advantage of enabling unilateral generation of CERs is that doing so would allow freer market development by reducing buyer control of project development. In practice, projects that are unilaterally developed and registered have already been seen to reduce buyer risk, thereby increasing sales prices. Such projects may also have lower transaction costs as a consequence of higher degrees of human capital, institutional and infrastructure capacity and domestic capital available for project developers based in the host countries (Jahn et al., 2004). They could also stimulate increased supply of projects, ultimately strengthening the role of CERs in the market vis-à-vis ERUs and AAUs. On the

¹¹ Small-scale CDM projects are either renewable energy projects with an installed capacity below 15 MW, energy efficiency projects achieving energy savings up to 15 GWh p.a. or other project types not exceeding an annual emissions reduction of 15,000 tonnes.

¹² See for instance the contributions on: http://www.fao.org/sd/dim_en2/en2_050601a1_en.htm and Schlamadinger & Jürgens, 2005)

other hand, unilateral CDM by definition does not involve FDI and therefore the degree of technology transfer in the projects is likely to be lower.

In the debate on a post-2012 regime various authors have proposed to move away from the project-based approach to the CDM towards a broader approach, such as a programmatic, policy-based or sectoral mechanism¹³ for avoiding emissions in non-Annex-I countries. A paper by the Wuppertal Institute synthesises the debate on sectoral CDM and highlights a countervailing interpretation particularly with regard to the public vs. private sector character of a sectoral CDM (Sterk & Wittneben, 2005). They conclude that positive aspects of sectoral CDM include lower transaction costs and the establishment of the necessary infrastructure for GHG data collection in the covered sectors. Questions arise when considering how a sectoral CDM should be organised and whether or not demand would be sufficient to absorb the greatly increased numbers of CERs that would presumably become available when going beyond a project-based approach. It is therefore necessary to consider the approach to the CDM in the overall context of the objectives and scope the CDM is intended to fulfil in a future international agreement.

Recommendations:

- Government tenders and carbon funds should address and attempt to rectify imbalances in project types, sectors and regions. Governments should also support efforts to develop new methodologies addressing emission sources that are currently underrepresented (e.g. Japanese Future CDM project).
- If a continuation of the CDM in its current form and scope is envisaged, Parties should reconsider the inclusion of a broader range of forestry and bio-energy projects, such as avoided deforestation, land degradation and devegetation.
- The COP/MOP should decide whether or not it envisages a serious scaling-up of the CDM. This would require additional work on technical issues related to design (i.e. the exploration of, for example, programmatic and sectoral approaches) and implementation.

5. Conclusions

The CDM is an important element of the current Kyoto Protocol structure, with significant potential for the future. It is an instrument with the potential to contribute significantly to efficiently achieving the emissions reductions and avoidance that are required, which would accomplish the ultimate objective of the UNFCCC. Most likely, the CDM – and all other tools of the current framework – may look different in the future. However, there is no time to wait. If the CDM is to survive as a potential contributor to a post-2012 regime, it is important to avoid its collapse in the near term. We would like to emphasise once more that a collapse of the CDM under the first compliance period could jeopardise further efforts to implement the Kyoto Protocol as well as the option of basing a post-2012 regime on absolute caps. This, in turn, could call into question the suitability of the Kyoto Protocol and the UNFCCC structure as the key elements of international climate change policy.

To avoid collapse it is necessary to bring about immediate changes related to governance, market functioning and project scope, along the lines of the recommendations put forward in this report. These are the first steps in building a CDM bridge to the future. Modifications made in the short-term are best done in the context of a strategic perspective with clearly defined objectives. It is critical that such changes be significant enough to create continuity, the perception of continuity and to restore confidence in the UNFCCC's ability to implement the mechanism. This will be particularly challenging in light of developments in the negotiations over the medium-term, in which we can only expect a post-2012 regime to emerge slowly.

¹³ For further information on the sector-based approach as such, see Helme (2005). For information on the 'sectoral crediting mechanism', see Bosi & Ellis (2005).

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Appendix I

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Appendix II

Glossary of Terms and Abbreviations

AAU	Assigned Amount Unit, a part of the overall absolute target of GHG emissions assigned to Annex B Parties to the Kyoto Protocol
Additionality	CDM activities have to “additional”. According to the Marrakech Accords a CDM project activity is additional if GHG emissions are reduced below those that would have occurred in the absence of the registered CDM activity.
Annex 1	Annex 1 of the UNFCCC refers to industrialised countries (including many economies in transition)
CCAP	Center for Clean Air Policy (see: http://www.ccap.org)
CDM	Clean Development Mechanism: Art. 12 of the Kyoto Protocol establishes that Annex I Parties (and firms in these countries) can transfer certified emissions reductions (CERs) from projects in developing countries
CEPS	Centre for European Policy Studies, a Brussels-based think-tank established in 1983 (see: http://www.ceps.be)
CER	Certified emission reductions; credits that can be obtained through CDM projects
CLIPORE	Climate Policy Research Programme of the Swedish Foundation for Strategic Environmental Research, Mistra (see: http://www.clipore.org)
COP	Conference of the Parties, comprising representatives of governments that are Party to the UNFCCC. The COP is the supreme decision-making body in the UNFCCC negotiations
CO ₂	Carbon dioxide, the main greenhouse gas (GHG) covered in the Kyoto Protocol
CH ₄	Methane, one of the six GHGs covered in the Kyoto Protocol
DNA	Designated National Authority; the entity in each Party responsible for the CDM (see: http://cdm.unfccc.int/DNA).
DOE	Designated Operational Entity; an organisation designated by the COP/MOP, based on a recommendation of the EB, that is qualified to validate proposed CDM project activities as well as verify and certify GHG emission reductions.
EB	Executive Board of the CDM; entity responsible for governing the CDM under the auspices of the MOP (see: http://cdm.unfccc.int/EB)
EC	European Communities, referring to the economic competencies of the European Union
ECP	European Climate Platform, initiative by CLIPORE and CEPS to improve the interaction between climate policy research and policy-making (see: http://www.ceps.be/Article.php?article_id=484)
ERU	Emission Reduction Units, credits that can be obtained through CDM projects

ET	Emissions Trading: generic term for trade of emissions rights (see also EU ETS, IET, International Emissions Trading)
EU	European Union (see also EC)
EU ETS	EU Emissions Trading Scheme, covering CO ₂ emissions from industry and the power sector
FDI	Foreign Direct Investment
Flexible Mechanisms	Those market-based mechanisms established by the Kyoto Protocol that allow the transfer or exchange of emissions reductions obligations between Parties. Sometimes also referred to as the Kyoto Mechanisms or Mechanisms (see also CDM, JI, ET)
GHG	Greenhouse gas, usually referring to one of the six gases covered by the Kyoto Protocol: carbon dioxide (CO ₂), methane (CH ₄), nitrous oxide (N ₂ O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF ₆).
G-8	Regular summit of the heads of the eight most important economies
GtC	Gigatonne of carbon (1 Gt = 1,000 Mt)
GtCO ₂	Gigatonne of carbon dioxide
Host Party	A Party not included in Annex I of the UNFCCC on whose territory the project activity is physically located.
IEA	International Energy Agency
IET	International Emissions Trading, as established under Article 17 of the Kyoto Protocol, allowing Annex B Parties to trade Assigned Amount Units (the GHG emission units of the Kyoto Protocol)
ITL	International Transaction Log, the system which record “transactions” of CERs from the CDM Registry to the national registries of Annex I Parties in accordance with the Kyoto Rules
JI	Joint Implementation: Art. 6 of the Kyoto Protocol establishes that Annex I Parties (and firms in these countries) can transfer Emission Reduction Units from individual projects
Kyoto Protocol	1997 Protocol under the UNFCCC to reduce GHG emissions globally. It entered into force on 16 February 2005 and will cover the period from 2008-2012; After 2012, a new framework or protocol will be needed. See “post-2012 framework”
LULUCF	Land use, land-use change and forestry activities that influence GHG emissions.
Marrakech Accords	Various decisions covering the implementation of the Kyoto Protocol, signed in Marrakech at COP 7. Contains the majority of international provisions on the CDM.
Methodology	Defines the baseline of a project activity or how emissions from this project will be monitored. Once approved (first by the DOE and than by the EB, with help of its Methodology panel) a methodology can be used as well for similar projects. Approved methodologies are available at http://www.unfccc.int/cdm .
MOP	Meeting of the Parties, comprising representatives of governments that are Party to the Kyoto Protocol. The MOP is the supreme decision-making body of the Kyoto Protocol (see also COP).

MtCO ₂ e	Millions of tonnes of carbon dioxide equivalent, the most commonly used way to express quantities of GHGs
NGO	Non-Governmental Organisation
N ₂ O	Nitrous oxide, one of the six GHGs covered by the Kyoto Protocol
ODA	Official Development Aid
OECD	Organization for Economic Cooperation and Development
Parties	Countries that are party to the UNFCCC. The European Community is also a Party
Post-2012 framework	Describes the – yet to be established – global framework beyond 2012 to reduce GHG emissions, when the Kyoto Protocol expires
Sinks	The ability of land to absorb CO ₂ . Land-use changes that lead to sinks (such as afforestation, reforestation) or remove sinks (e.g. deforestation), are counted against a country's emissions
Sector-specific target	A GHG emissions reduction target for specific sectors (e.g. energy intensive industry)
UNFCCC	United Nations Framework Convention on Climate Change, agreed at the UN Conference on Environment and Development (Rio de Janeiro, 1992). The ultimate objective of the UNFCCC is to stabilise GHG emissions at a level that would prevent dangerous anthropogenic interference with the climate system. The most important climate agreement negotiated in the UNFCCC so far is the Kyoto Protocol

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European Commission

About the European Climate Platform ECP

The ECP is a joint initiative of the Climate Policy Research Programme (Clipore) of the Swedish Foundation for Strategic Environmental Research (Mistra) in Stockholm and the Centre for European Policy Studies (CEPS) in Brussels. Established in 2005, the ECP aims to facilitate interaction within the policy research community, mainly but not exclusively in Europe. Its working methods consist of bringing together a select number of policy-makers, negotiators and experts to vigorously debate key topics in the area of international climate change policy and to widely disseminate its conclusions. The ECP actively seeks dialogue with policy-makers and other stakeholders while being dedicated to academic excellence, unqualified independence and policy relevance. The ECP is governed by a steering group, drawn from government and academia. For further information, see: http://www.ceps.be/Article.php?article_id=484.

About the Climate Policy Research Programme CLIPORE

Clipore is an international research programme that aims to stimulate policy-oriented research that contributes to moving forward global efforts to combat climate change. A steady and integrated process of research and dialogue with stakeholders lies at the foundation of the Clipore programme: spawning, developing, sharing, scrutinizing and refining ideas. The programme is comprised of two large climate policy research projects, independent university positions and the Clipore Policy Forum. For more information see: www.clipore.org

About the Centre for European Policy Studies CEPS

Situated in the nexus between academia, business and policy-making, CEPS performs a unique role as an independent analyst and critic of European policy. CEPS' core expertise is the conduct of policy research on European affairs including climate change and the broad dissemination of its findings through a regular flow of publications and events. (See: www.ceps.be on CEPS in general and for a description of its energy, climate change and sustainable development programme: http://www.ceps.be/Article.php?article_id=12).



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