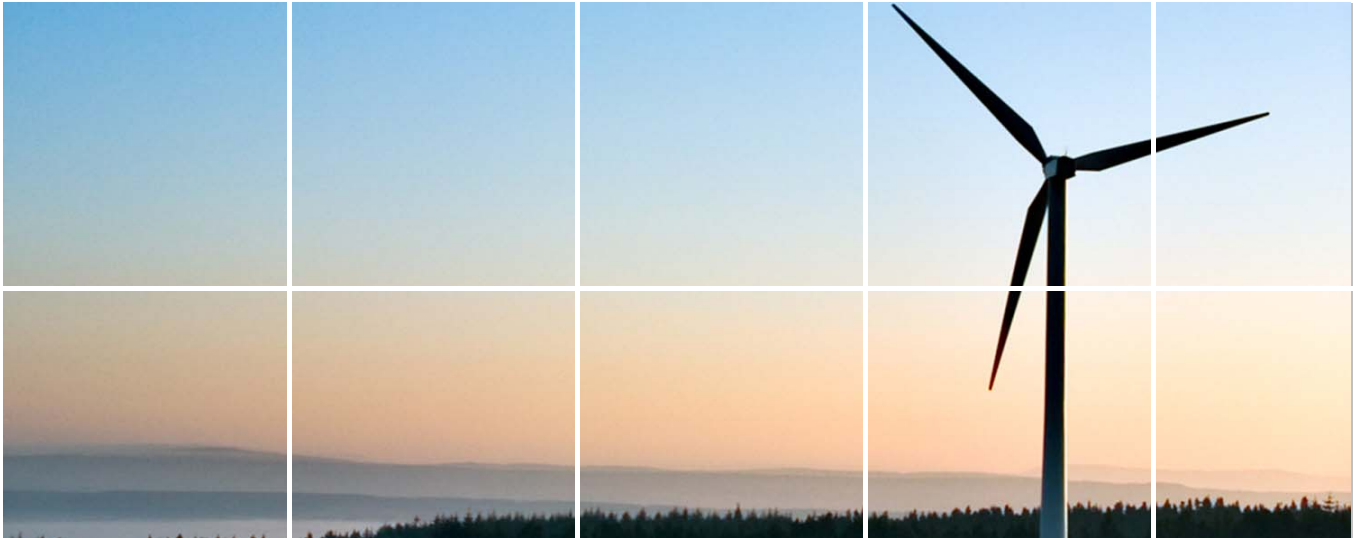




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Briefing paper “Political Lock-in in the context of the CDM”

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1 **Summary of key findings**

- 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 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.

2 Introduction

The Cancún Agreements acknowledge the need of limiting the global temperature increase to two degree Celsius from pre-industrial levels. Taking into account rapidly increasing GHG emissions from emerging economies and a long-term trend of emission growth foreseen in developing countries, a post-2012 international agreement will need to find ways to ensure enhanced actions from all parties. Consequently the Kyoto Protocol's flexible mechanisms including the CDM will need to be adapted to the scale of actions required to alter the emission trajectories of developing countries seen since 1990.

Despite the gap between the emission reductions ambitions required for 2050 and the level of commitments in the existing international agreements (the Convention & the Kyoto Protocol), the ongoing negotiations have not so far gained sufficient political momentum to move to a more ambitious post-2012 agreement. Parties are not sufficiently motivated to make the transition from the CDM to wider reaching, new market-based mechanisms, especially those which could capture mitigation potential beyond project levels, i.e. 'scaled-up mechanisms' (IEA 2010, see section 6). Due to the structure of incentives and disincentives in the current system Parties are stuck with the existing framework and continue to support the CDM even though they are aware of the limitations of its institutional settings and scalability. The above situation can be described as 'political lock-in'.

This paper approaches the concept of political lock-in through the following methodology: Chapter 3 provides a clearer understanding of the reasons for political lock-in in the CDM. Chapter 4 analyses what role the CDM has played in enhancing or limiting participation of developing countries in international climate agreements and the carbon market. Chapter 5 focuses on ways to un-lock the process by changing the incentive structure. The above analysis is used to consider how the structures of the reformed CDM and new mechanisms could encourage developing countries to participate in a future agreement and scale-up the international carbon market and net emission reductions.

3 Key drivers for and consequences of political lock-in

The CDM has played a major role in enhancing participation of developing countries in the carbon market, but it has also limited their contributions to overall emission reduction efforts as a result of offsetting emission growths in Annex I Parties and disincentives to take ambitious action. The CDM has contributed to a political dynamic which seeks to maintain the current system (Vasa & Neuhoﬀ 2011). To lay the groundwork for our later discussion on ways to unlock the status quo, this chapter focuses on key drivers for and consequences of political lock-in.

Political lock-in exists on at least three levels: developing countries, Annex 1 countries and market participants. Below we provide an overview of what is driving political lock-in at each level.

3.1 Developing countries

There are a number of reasons for why developing countries profit from the current CDM system, and therefore see no benefit to move away from it.

First, following their initial scepticism at the start of the CDM developing countries have demonstrated a large interest in obtaining additional revenue streams related to the mechanism. For example, China and India have gained significant revenues from taxes on the sale of CERs (Liu 2010 quoted in Vasa & Neuhoﬀ 2011). China has a schedule of tax rates determining the government's share of revenues to be received from different types of CDM projects, ranging from 65% for HFC and PFC projects, 30% from N₂O to 2% for priority areas (e.g. improving energy efficiency, renewable energy sources, coal mine methane recovery and use, and reforestation) (UN AGF 2010). 'Some CDM projects are so lucrative that their continued availability might deter advanced developing countries from taking domestic responsibility for these reductions' (European Commission, 2010). The same issue will be discussed from a project developer perspective in section 3.3.

Second, the CDM has supported the low-carbon development of developing countries. It has extended the carbon price signal far beyond Annex I Parties, and has helped developing countries identify low-cost mitigation potentials, thereby kick-starting their paths to a low-carbon economy. Proponents of the CDM argue that these successes justify the continuation of the mechanisms, in particular in the absence of any concrete and operational alternatives. Yet, it is precisely the continuation of the current CDM that could seriously hamper the development of any alternatives developments.

Third, the CDM stimulates international technology transfers (see the Briefing Sheet on Technology Transfer and Sustainable Development). The transfer rates, however, vary across countries. A recent modelling analysis concludes that 68% of projects in Mexico involve an international transfer of technology, and the transfer rates are 59%, 40%, and 12% respectively in China, Brazil, and India (Dechezleprêtre et al. 2010)

Fourth, a majority of CDM projects have been concentrated in a few developing countries (i.e. China, India, Mexico, Brazil)¹, and the majority of the remaining developing countries only recently started building portfolios of CDM projects. Both groups of countries are interested to see, subject to there being a new commitment period under the Kyoto Protocol, the current project-based CDM continue beyond 2012. Concerning renewable energy projects which now account for 62% of the CDM projects,² the above top four countries host the largest numbers of wind power projects while solar power projects, a higher-cost project type, have been more widely distributed (e.g. China, South Korea, India, Thailand).³

Fifth and lastly, some developing countries have had suspicion about the intention of developed countries to introduce sectoral approaches, initially including cooperative sectoral approaches as well as crediting and trading mechanisms. They fear that their initiatives for sectoral benchmarking would become a back-door to impose sectoral targets on industry sectors in developing countries with higher carbon costs involved. Nevertheless, '[T]he G-77/China said that sectoral efforts could be included in "the toolbox for NAMAs" (Nationally Appropriate Mitigation Actions)' (ENB 2009).

¹ CDM projects hosted by Brazil, China, India and Mexico together account for 80%. 'CDM projects by host region', CDM/JI Pipeline (<http://cdmpipeline.org>), last updated 1st May 2011.

² 'CDM projects by type', CDM/JI Pipeline.

³ 'CDM projects by host region', CDM/JI Pipeline.

3.2 Developed countries

Annex I Parties and capped installations in these countries are not necessarily motivated to phase out the CDM. CDM projects have seen a significant uptake by Annex I countries and their GHG-intensive industries to lower compliance costs. The CER price remains attractive compared with that of EUAs, and companies can get directly involved in CDM projects. This is also the case with government profiting from CERs because emission reductions through the CDM are often cheaper and easier to achieve than through domestic measures. However, for the latter, the purchase of CERs is not even the cheapest option any longer, since cheap AAUs are also available on a larger scale. In 2009 the volume of CER transactions world-wide declined sharply while the AAU market grew seven-fold (Kossoy & Ambrosi 2010).

3.3 Project developers

As it has taken time to get the CDM up and running, the private sector is particularly keen to see the CDM and JI further developed and refined (WBCSD 2010). Learning by doing, developers have become familiar with the existing rules and procedures and gained experience in CDM projects on the ground. Other benefits include the value of CER as an international currency and the access to international capital markets (UN AGF 2010).

Moreover, some developers have been able to benefit from economic rents (for further discussion see section 8). In theory the scale of infra-marginal rent can be calculated as the difference between the carbon market price and the cost of abatement (UN AGF 2010). Some projects (e.g. HFC and adipic N₂O abatements) are fully financed through the carbon income stream resulting from the rent while many other projects (e.g. in the field of renewable energy) received it as one of the multiple income streams to finance abatement activities.

This rent can be captured by domestic or international project developers and intermediaries. If profits do not get fully expatriated, the rent can be seen as a net asset to the host country. This issue will be further discussed in section 5.1.2.

In general project developers have not been well informed of the potential role they could play in scaled-up mechanisms. The World Business Council for Sustainable Development, an organisation working closely with business leaders to develop climate solutions, has explored the role of the private sector in carbon market mechanisms in general and sectoral crediting and NAMAs in particular, and has concluded that there is an overwhelming consensus among stakeholders that the engagement of the private sector in carbon finance can still grow significantly both in intensity and in the quality of interaction with the different bodies and panels of existing and future mechanisms (WBCSD 2010).

4 Experience gained from the CDM

Experience gained in the framework of the current CDM system has shown that market mechanisms can play a significant role in helping developing countries implement abatement activities and attract private funding. The CDM has helped developing countries start gathering data and information in selected project areas regarding their GHG emissions. This is an important step towards a more comprehensive system for measuring, reporting and verification (MRV) of emission reductions. It has accelerated transfer of know-how in a number of emerging economies, thereby contributing to capacity building.

Capacity building in data collection and MRV is also the first step towards implementation of scaled-up mechanisms and domestic cap-and-trade schemes. In this respect the CDM has laid the foundation for implementation of scaled-up mechanisms. This point will be further discussed in chapter 5.1.

Lessons learnt from the CDM also indicate that to mobilise the private sector, clear rules will have to be implemented. It is important to engage the private sector from the initial design phase onwards and keep interaction with them throughout the process. This will also help prevent any resistance from the private sector to move away from current project-based mechanisms such as the CDM (IETA, 2009).

4.1 The major limitations of the project-based CDM

While the CDM has a number of merits and has played a role in engaging developing countries in the carbon market and negotiations for a post-2012 agreement, it has been subject to criticism and calls for reform and its transformation into scaled-up mechanisms. Major limitations include perverse incentives for 'technological lock-in', perverse incentives for domestic policies and measures by developing countries, and its insufficient scale with regard to emission reductions.

On the demand side Annex I country buyers need to ensure that CERs they purchase are issued for emission reductions that are proved to be additional. The current CDM, however, raises questions about the additionality of some CERs. If non-additional CERs are used for compliance within the EU ETS, this could result in net-emission growth (Vasa & Neuhoﬀ 2011; see also the Briefing Sheet on Additionality and Baseline).

The availability of CERs as a compliance option enables Annex I Parties to avoid costly emission reductions at home, for example abatement activities through de-carbonising energy systems, causing 'technological lock-in'.

Annex I country buyers also need to ensure that their payment does not simply provide extra income for emission-intensive industries in developing countries. It is possible that the CDM provides financial support for carbon- or energy-intensive activities (e.g. fossil-fuel power stations, upgrades to improve efficiency of steel plants, ultra- or super-critical fossil-fuel power stations, and other industrial activities) resulting in 'technological lock-in'. Rent arising from the difference between the CER price and the cost of abatement (see sections 3.1 and 3.3) could lead to increasing activities and growth in these sectors, compensating in part the greenhouse gas efficiency gains reached through the CDM (Vasa & Neuhoﬀ, 2011). Whether new mechanisms can help to avoid these pitfalls depends on the mechanism designs.

On the supply side, the CDM has created perverse incentives not to adopt domestic policies and measures in developing countries. While the needs for institutional setting, regulatory frameworks, and legislations are well understood, potential interaction between CDM rules and the domestic law of host countries has been less analysed. Among several areas of potential conflict is possible impacts of domestic laws on the additionality of CDM projects (Curnow and Hodes 2009).

Under the CDM the use of a baseline scenario to determine the level of crediting may hinder more ambitious policies and measures due to the underlying impact they can have on the CDM baseline calculation and additionality testing (in case it affects the investment analysis). Paragraph 45(e) of the CDM rules states that a baseline shall be established 'taking into account relevant national and/or sectoral policies and circumstances' (UNFCCC, 2001), so policies that reduce emissions would also reduce the baseline and consequently the number of credits that can be generated by a CDM project. To reduce disincentives for taking such policies, the E+/E- tool was put in place. Type E+ foresees that those national or sectoral policies and regulations that give comparative advantages to more emissions-intensive technologies or fuels over less emissions-intensive technologies or fuels should

be discarded when setting the baseline and assessing additionality if they were put in place after to the adoption of the Kyoto Protocol (11/12/1997). Similarly, type E- foresees that policies and regulations where the comparative advantage is in favour of less emissions-intensive technologies or fuels, can also be ignored if they have been implemented since the adoption of the Marrakesh Accords (11/11/2001). These guidelines have been applied to Chinese wind- and hydro- power projects, where it was deemed that reductions in feed-in tariffs for renewables constituted an E+ policy (see Box 1; see also Vasa & Neuhoﬀ 2011; Curnow & Hodes 2009, p.34).

Box 1. The case of Chinese wind-power projects

Based on the E+/E- assessment tool, the CDM Executive Board (EB) in 2009 implemented an unprecedented review of whether a number of Chinese wind projects satisfied United Nations Framework Convention on Climate Change (UNFCCC) additionality requirements. At the EB 51 prior to COP 15 in Copenhagen ten Chinese wind projects were rejected on the grounds that the CDM EB was not content with the "suitability of the applied tariff as a means of assessing additionality" (UNFCCC, 2009). With a total of 143 Chinese wind projects having used the same additionality claim in 2009 this ruling came as a surprise (He & Morse 2010). The justification given by the CDM EB for these rejections was related to the decrease in power tariff set by China's National Development and Reform Commission (NDRC). China's feed in tariff pricing can be ruled as an E- (emissions-reducing) policy, which would mean that stimulus feed in tariffs and their related revenue would have no effect on the additionality investment analysis tests. Therefore it is logical to consider that feed in tariff decreases as seen in China constitute an E+ policy and should therefore be ignored.

The E+/E- issue highlights the limitations of a project-based mechanism. On the one hand, ignoring domestic subsidies for less-emitting investments would result in crediting business-as-usual domestic activities under the CDM. On the other hand, incorporating emissions-reducing domestic policies into the baseline against which CDM projects are compared would create a perverse incentive against implementing such policies (He & Morse 2010). This could incentivise the government to remove or revise domestic laws that could impact on CDM project development (for a host country's legal issues with the CDM, see Curnow & Hodes 2009).

The project-based CDM would also fail to reach the scale of GHG emission reductions required by 2050 (Decision 1/CP.16; see also the Briefing Sheet on Scalability and Cost-effectiveness). This is partly due to difficulties in increasing the number of projects registered. Problems include the complex process of registering project by project as well as the hypothetical and counter-factual nature of the process (Schneider, 2007). The current project-based CDM procedures result in significant delays (e.g. too much time from the request for validation to the final issuance of CERs) and high monitoring, transaction, and administrative costs (see the Briefing Sheet on Additionality and Baseline). The insufficient scale of the CDM in emission reductions is also partly due to the shift in project types. The share of low-cost large industrial gas projects (e.g. HFCs and N₂O, landfill gas) is decreasing among registered projects. They are replaced by higher-cost projects (e.g. renewable energy, energy efficiency) now predominant in the early stage of the project pipeline (UN AGF 2010).⁴ Consequently the average size of projects is getting smaller (UNEP quoted in Exhibit 3, UN AGF 2010).

⁴ 'CDM projects by type', CDM/JI Pipeline (<http://cdmpipeline.org>), last updated 1st May 2011.

5 How to break the political lock-in

The previous sections undertook analysis of the drivers and consequences of lock-in caused via the CDM. The following sections build on this background, and analyse ways to break the lock-in. Chapter 5 sets out key elements of a new mechanism, compares new mechanism options under consideration, discusses how a sectoral mechanism could benefit from the CDM infrastructure, identifies specific barriers and explores ways to overcome them, and briefly assesses related EU and UN initiatives.

5.1 New market mechanism options under consideration

A new crediting mechanism can be built upon the existing CDM (infra-) structure for data collection, MRV, institutional setting, and domestic legislations. Such a mechanism should address the three major limitations identified in section 4: perverse incentives for ‘technological lock-in’; perverse incentives for domestic policies and measures; and insufficient scale.

New market mechanism options include Nationally Appropriate Mitigation Actions (NAMAs), sector – based market approaches (e.g. sectoral crediting, sectoral trading), Programs of Activities (PoAs) and standardised baselines. The latter two are already being applied under the current CDM while the former two are scaled-up mechanisms (e.g. NAMAs and sectoral approaches). Table 1 gives a brief insight of the possible operational features of these mechanisms. The specific application details of these mechanisms and an in-depth assessment against the above criteria are beyond the scope of this briefing sheet and will be covered to some degree in other briefing sheets (e.g. Scalability and cost-effectiveness) and Phase II of the project. Comments on new mechanisms made throughout this briefing sheet mainly refer to sectoral mechanisms.

Table 1: New market mechanism options for mitigation actions in developing countries

Mitigation Action	Description	Possible Funding Sources	MRV Options
Nationally Appropriate Mitigation Actions (NAMAs)	Countries communicate NAMA s, and actions are voluntary and non-binding. NAMAs aim to achieve a deviation in emissions relative to business-as-usual (BAU) emissions in 2020. Extent and scope of actions that can generate credits are likely determined by each country (e.g. NAMAs could include the CDM).	<p>“Unilateral” or “domestically supported” NAMAs: the host country’s own resources.</p> <p>“Internationally supported” NAMAs: climate finance provided by governments of developed countries.</p> <p>“Credited” NAMAs: mainly carbon finance through credit markets</p> <p>Note: Developing countries are invited to submit information on NAMAs seeking international support, along with estimated costs and emission reductions as well as the anticipated time-frame for implementation.</p>	A registry to record NAMAs seeking international support will be established. Internationally supported actions will be measured, reported and verified domestically and will be subject to international MRV in accordance with international guidelines. Domestically supported actions will be measured, reported and verified domestically in accordance with general guidelines to be developed under the Convention. There will be international consultations and analysis (ICA) of biennial reports under the Subsidiary Body for Implementation (SBI). See Cancún Agreements (Decision 1/CP.16).
Sector-based Market	Developing countries make GHG reduction	Public finance: In return for a no-lose target to be	MRV procedures for sectoral approaches can

Approaches	commitments in specific sectors (e.g. electricity, industry), even if they do not take on economy-wide targets. Developing countries could take on a "no-lose" target for the covered sector that will be set below business-as-usual (BAU) emissions. Emissions reductions achieved beyond the target would be credited for sale on international carbon markets. Failure to meet the target would not be penalised.	set below the BAU, the host developing country could receive financial support from developed countries to achieve abatements. Private finance: Once these abatements beyond the target are credited and sold on carbon markets, the host developing country could receive additional finance from the private sector.	be developed on the basis of data collected through the Asia Pacific Partnership on Clean Development and Climate (APP), the World Business Council for Sustainable Development (WBCSD) Cement Sustainability Initiative (CSI). Good data may be lacking in some major developing economies (MDEs).
Programs of Activities	Programs of Activities (PoAs) of the CDM in specified sectors that generate carbon credits. PoAs could expand the scope of mitigation actions from projects to programmes of activities. A sectoral crediting mechanism could further enlarge the scope beyond programmes to the entire sector (e.g. electricity, industry).	Carbon markets	MRV procedures are clearly defined for the CDM. Project developers monitor and report on emission reductions in a manner consistent with the approved monitoring methodology
Standardised Baselines	The current CDM methodologies could be adapted to include more standardised figures thus facilitating a wider up take by project developers. The UNFCCC would set these standards and update them in the CDM methodologies.	Carbon markets	MRV procedures are clearly defined for the CDM. The UNFCCC sets the baselines Project developers monitor and report on emission reductions in a manner consistent with the approved monitoring methodology

There are a number of merits on scaled-up market mechanisms compared with the project-based CDM that, if appropriately designed can alleviate some of the lock-in problems of the CDM.

First, scaled-up mechanisms could generate a larger volume of credits, enhance market participation and reduce transaction costs, thereby increasing revenues from the sale of credits compared to what the current CDM provides. These revenues can become an important part of the climate finance needed to help developing countries adapt to climate change and mitigate emissions below Business as Usual, as foreseen in the Cancun agreement. Scaling up the carbon market also means engaging the private sector 'much more in real, tangible mitigation'⁵ as entire sectors could be covered.

Second, these mechanisms could build on proposals put forward by some developing countries (NAMAs, Sustainable Development Policies and Measures (SD-PAM) (see Winkler 2004)). The

⁵ Statement by C. Figueres, UNFCCC, 'High-level Inter-parliamentary Debate on Climate Change', Brussels, 19 April 2011.

Republic of Korea and South Africa have been instrumental in the elaboration of these respective proposals. The up-scaled mechanisms would give the host developing country a greater sense of ownership relative to the CDM. In practice, these options provide developing countries with significant flexibility as to implementing policies to limit emissions below the agreed baseline. For example sectoral mechanisms and NAMAs could avoid the unintended interaction between baseline setting and the implementation of mitigation policies (see section 4.1). This stands in contrast to the current CDM which has some restrictions on eligible activities in accordance with international rules (e.g. the Marrakech Accords).

Third, implementation of scaled-up mechanisms in advanced developing countries could address developed country concerns of a need for enhanced mitigation actions in developing countries that can be measured, reported, and verified while circumventing additionality tests at the project level.

Fourth, sectoral mechanisms could build on the structures and experience the CDM has put in place so far to facilitate technology deployment as well as catalysing entrepreneurship, and provide broader market prospects. i.e. using successful elements of the CDM structure such as methodologies, experience, capacity, accreditation frameworks and elements of the MRV rules

Fifth and lastly, scaled-up mechanisms would help developing countries consolidate domestic policy frameworks with additional income streams, building on initiatives led by domestic stakeholders to achieve a low-carbon economy whilst avoiding the setting of baselines on project by project. They will encourage developing country governments to carry out policies combining the promotion of economic growth and sustainable development. This approach involves direct cooperation with governments to enhance their ability to implement regulatory frameworks for low carbon transitions (Vasa & Neuhoﬀ, 2011). Revenue from the sale of sectoral credits or NAMA credits could be coupled with tax breaks/incentives, subsidies, feed-in tariffs, or direct pay outs to reward the operators for financing upfront investments and achieving abatements beyond the baseline.

5.1.1 How can a scaled-up mechanism benefit from experience gained from the CDM?

Setting of standardized baselines (also called multi-project baselines) could be a first step in preparation for a sectoral baseline. Without accurate historic emissions data or the capacity to forecast emissions fairly accurately, setting standardised baselines becomes a very difficult if not impossible task. Institutional capacity is also crucial. Standardised baseline setting could be supported by independent technical institutions or even be driven by the private sector as currently seen under the CDM.

Sectoral benchmarking has been proposed as a CDM methodology for the cement sector by the World Business Council for Sustainable Development (WBCSD) Cement Sustainability Initiative (CSI). The methodology uses benchmarks based on the carbon intensity per cement or clinker tone in a given region and is used to calculate baseline scenario emissions and demonstrate additionality (Fujiwara 2009). The reference data is based on the local and global performance indicators, sourced from the CSI Cement Industry Database under the Getting Numbers Right (GNR) initiative and is consistent with the Cement CO₂ Protocol. The environmental integrity of the project is also enhanced owing to the dynamic nature of the baseline, adjusted for business-as-usual improvements (Egenhofer & Georgiev 2010). However, the methodology has been rejected due to unresolved leakage issues. This experience nevertheless shows how the CDM could lay the foundation for implementation of sectoral mechanisms, especially baseline setting, MRV and most importantly data collection.

5.1.2 Specific barriers to breakthrough

There are at least four specific barriers to removal of the political lock-in: the scale of rent; the current baseline setting; lack of institutional or technical capacity; and emissions from sectors that are not easily measurable, reportable or verifiable.

One of the existing incentives to maintain the status quo with the CDM is financial: for project developers to secure economic rent as an additional income stream; and for a host country to get a share of it by taxation on CER revenues (e.g. China, Vietnam) (Curnow and Hodes 2009). The concern remains the scale of potential rents not the rent per se: for an indicative purpose, infra-marginal rents associated with CDM projects at 2020 are estimated in the range of US\$ 8-14 billion per year under a medium price scenario at the price of \$25 per tonne (UN AGF 2010). However, the share of industrial gas projects, which have been most associated with the rent, is estimated to fall

from 77% in 2010 to 38% in 2012 (ERI NRDC & WB 2011). It is also noted that in a country such as China, projects generating CERs have been almost exclusively initiated and financed by the Chinese themselves with net contribution to the financing being estimated about 3-5% only (Lütken 2010).

Some developing countries have taken actions to keep themselves locked-in the CDM. The Chinese government has developed a system that enables most of the rent to stay within its country: by limiting the eligibility for an entity to conduct projects (i.e. the Chinese majority ownership) and the export of post-2012 CERs in the approval letters⁶; and by re-investing the revenues into new projects through the China CDM Fund.⁷

Second, as long as there will be demand for CDM credits, there will be a lack of incentives for developing countries to set baselines well below business-as-usual emissions, which is a pre-condition for Annex I Parties and their industry sectors to support new crediting mechanisms.

The third barrier is lack of technical capacity to implement new mechanisms, particularly sectoral crediting mechanisms. Many developing countries do not have robust accounting systems and require considerable capacity building upon the existing CDM support structure. More specifically, the host country's inability to set up meaningful benchmarks is one of the main barriers to implementing widespread use of sectoral benchmarking methodology for CDM projects. Countries that currently have DNAs established and have ongoing experience approving CDM projects will be at the higher end of the learning curve. So will countries that have already begun to implement domestic sectoral policies or NAMAs such as industrial energy efficiency standards (Hampton et al., 2008). Data availability, comparability and reliability are a major challenge to participants in sectoral crediting. The participating countries will need to develop the ability i) to set the boundary of the sector or sub-sector, ii) to collect data, iii) forecast emissions projections, using conservative emission assumptions, and iv) to monitor, report, and verify (MRV) emissions and activity data for the relevant sectors and its installations.

Fourth and lastly, the scope of NAMAs crediting or sectoral crediting is limited to the sectors where emission reductions can be easily monitored, reported and verified. The requirements for the implementation of sectoral mechanisms in terms of institutional capacity would tend to favor its development in highly structured industries, usually capital intensive ones, and in countries with higher degrees of industrial governance (Hampton et al., 2008). Other sectors with diffused sources and actions, such as transport, buildings and appliances, may not be able to meet the rigorous MRV requirement for crediting emission reductions.

5.1.3 Overcoming specific barriers

This section looks at the specific ways to overcome the four barriers identified in section 8. An Annex I Party can alter the incentive structure of the CDM through demand-side measures, e.g. banning, a positive list, discounting/premiums (for discounting see UN AGF 2010, pp.34-35), listing eligible CERs by geography or by project types, giving a premium to the value of CERs. Some of these measures could reduce the demand for questionable CERs, but at the same time would create uncertainty to developers some of whom may not have profited from the rent. The Annex I Party can also encourage non-Annex I Parties to move on to new market mechanisms with financial support linked to a no-lose target below business-as-usual emissions and technical assistance for capacity building. In parallel a host developing country could adapt designs of NAMAs without direct MRV, e.g. 'success indicators'.

Second, Annex I Parties' financial support has been explicitly linked to non-Annex I Parties' enhanced mitigation actions in negotiations under the Bali Action Plan. It is important to note that if a political lock-in is to be avoided, the benefits of these new mechanisms should be well understood by the developing countries so that they do not see them as a backdoor to be drawn into legally binding national GHG commitments (see section 2.1) but as an opportunity to obtain financial support for their development plans and policies.⁸

Developed countries set a goal of mobilizing new and additional resources of climate finance, initially \$30 billion in 2010-12 and up to \$100 billion per year by 2020, for mitigation and adaptation actions in

⁶ Majority of the projects are undertaken by government entities. Therefore no foreign property rights are violated by restricting the export of post-2012 CERs (Lütken 2010).

⁷ The fund is estimated in value of about US\$0.75 billion as of April 2010 (ERI NRDC & WB 2011). The floor price for primary CERs set by the government might have helped to reach the sum. The fund is now able to begin selecting and financing its own projects in the country.

⁸ Interview with a climate consultant at one of the big four auditing and consultancy firms. 30 March 2011.

developing countries (Decision 1/CP16) (e.g. EU Council 2010; European Commission 2011⁹). Towards this goal the international carbon market needs to be broadened and deepened to play a larger role in scaling up emission reductions in developing countries. Leveraging private investments through new market-based mechanisms will be necessary especially at a time when many governments are experiencing fiscal and budgetary constraints (UN AGF 2010).

A sectoral crediting mechanism combined with a sectoral no-lose target (SNLT) could provide additional revenues from the sale of credits for abatements achieved beyond the agreed baseline on a sectoral basis. The difference between actual emissions and the sectoral baseline could be monetised in the carbon market. A no-lose target is a way to induce a host developing country to set a baseline below business-as-usual emissions without delivery risk: a host country will be rewarded for abatements achieved but will not be punished for its under-performance. To reflect the lower risk involved in no-lose targets, the Alliance of Small Island State proposes i) to treat any resulting credits as non-fungible with units resulting from binding commitments, or ii) to discount their value (Grenada's submission, UNFCCC AWGLCA 2011b).

Major developing countries already informed voluntary commitments as part of NAMAs (Box 2), some of which (e.g. Brazil and South Africa) could be used as a basis of SNLT if they decide to enter into sectoral crediting mechanisms.

Box 2. Major developing countries' voluntary commitments as part of NAMAs

Brazil: an expected emissions reduction of between 36.1% and 38.9% below its projected emissions in 2020.

China: to lower its CO₂ emissions per unit of GDP by 40-45% by 2020 compared with the 2005 level; to increase the share of non-fossil fuels in primary energy consumption to around 15% by 2020 and to increase forest coverage by 40 million ha and forest stock volume by 1.3 billion m³ by 2020 compared with the 2005 levels.

India: to reduce the emissions intensity (excluding the agriculture sector) of its GDP by 20-25% by 2020 compared with the 2005 level.

Mexico: to reduce its GHG emissions by up to 30% compared with the business as usual scenario by 2020. The full implementation of its Special Climate Change Programme adopted in 2009 and including NAMAs would achieve a reduction in total annual emissions of 51MtCO₂eq by 2012 compared with the business as usual scenario.

Republic of Korea: to reduce its national GHG emissions by 30% from the business as usual emissions in 2020.

South Africa: to enable a 34% deviation below the business as usual emissions by 2020 and a 42% deviation below the business as usual emissions by 2025 for the country's emissions to peak between 2020 and 2025 and decline in absolute terms thereafter.

Source: UNFCCC AWGLCA 2011a (emphasis added by authors)

Capacity building requires upfront funding before financial flows are generated from the carbon market. Capacity building is estimated to cost around \$5.1 billion (ECOFYS 2009 quoted in UN AGF 2010), which is a fraction of climate finance currently under consideration. Capacity building efforts in developing countries, especially those aimed at data collection and MRV, could benefit from the proposed Green Climate Fund. The fund supports projects, programmes, policies and other activities in developing country Parties using thematic funding windows (Decision1/CP16). Governments of Annex 1 Parties are expected to directly step in and provide concerted finance for the development of capacity to establish and operate sectoral mechanisms in non-Annex I Parties (Hampton et al., 2008).

Third, technical assistance needs to be enhanced. It is essential for developing countries to gain the Annex 1 Parties' trust in how emission reductions are measured, reported, verified and how benchmarks are established (IETA, 2009). At an early stage technical support for data collection as well as development of sectoral benchmarks and MRV systems will need to be provided from Annex 1 Parties at a sectoral or national level. The WBCSD-CSI's GNR initiative shows how an industry sector can play a role in building a sectoral database to facilitate data collection and sharing among its member companies in the cement sector.

⁹ European Union, 'Mobilising \$100 billion per year by 2020 for climate actions in developing countries "challenging but feasible", says Commission report', press release, IP/11/452, 08 April, 2011 [online]. <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/452>

Fourth and lastly, the scope of NAMAs or sectoral activities eligible for crediting could expand significantly without direct MRV. New market mechanism options can be designed to reward GHG emission reductions in the sectors that are not easily measurable, reportable, or verifiable and therefore fall outside the project-based CDM. Some of the early proposals for SD-PAMs or more recent submissions on NAMAs would be suitable to the sectors with diffused emissions, such as transport, buildings and appliances and enable to directly reward policies and measures. For instance, the Republic of Korea proposed an innovative system involving 'success indicators' for NAMAs as a tool for indirect MRV.¹⁰ Examples of success indicators can include the percentage of energy-efficient appliances, average carbon intensity of the national or regional vehicle fleet etc (Republic of Korea's submission, UNFCCC AWGLCA 2011b). To ensure the environmental integrity the UN Advisory Group on climate change financing suggests that discounting of NAMA credits could be one way of dealing with uncertain actual abatement outcomes (UN AGF 2010).

5.2 Initiatives by the UNFCCC Parties and the EU to unlock the status quo

New market-based mechanisms have been considered under the Ad-hoc Working Group on Long-term Cooperative Actions of the UNFCCC in preparation for the 17th session of the COP. Upon invitation Parties have presented views on the elaboration of new market based mechanisms (Decision 1/ CP16; UNFCCC AWGLCA 2011b, 2011c). For example, Grenada on behalf of the AOSIS argues that any new mechanism should complement and build upon the existing Kyoto Protocol mechanisms including the CDM. The group calls for broadening participation in market mechanisms through opportunities for sectoral trading or crediting. Parties should ensure that the new mechanism 'incentivises far deeper emission reductions in developing country Parties than those available through the CDM' among other requirements. Instead of NAMAs the group recommends sectoral crediting and sectoral trading in which a baseline and an absolute target for a given sector can be set 'substantially below business as usual emissions' (Grenada's submission, UNFCCC AWGLCA 2011b). On the other hand, the Chinese government is opposed to scaling up the CDM beyond the project level. The country argues that the possible market mechanism to be established under the Convention should be a project based mechanism comparable to those mechanisms established under the Protocol and shall not replace those market-based mechanisms under it (China's submission, UNFCCC AWGLCA 2011b).

In addition, upon invitation about 50 developing countries have communicated NAMAs which contain voluntary quantified commitments to GHG emissions (see Box 2) as well as concrete action plans in key emitting sectors or activities (Decision 1/CP16; UNFCCC AWGLCA 2011a). Some countries (e.g. Brazil) do not exclude possibility for co-existence between NAMAs and the CDM based on the latter's continuation beyond 2012 (UNFCCC AWGLCA 2011a), which may then require arrangements to avoid double counting between these mechanisms.

However, considering the time left till 2012 these discussions under the UNFCCC have provided limited guidance on how to move from the current project-based CDM to new mechanisms. Part of the reasons could be found in the two-track procedures. The operation of the CDM falls within the mandate of the AWG-KP while the elaboration of a new market-based mechanism falls within that of the AWG-LCA. Currently the most likely scenario under the UNFCCC is that the CDM will continue after 2012.¹¹ There is no UN body to oversee the process for moving from existing mechanisms to new ones. The lack of a single negotiating track or forum will make it difficult to find a comprehensive solution that encompasses the reformed CDM and scaled up mechanisms and that is acceptable to all Parties.

The EU has been bolder and, due to the lack of conclusions at the UN negotiations, has taken some own measures to implement limitations on CER use on the demand side and to set a legal base for negotiating bilateral sectoral agreements. While the EU ETS Directive allows operators to use CERs for their compliance, the amended EU ETS Directive (EU 2009a) has introduced various restrictions on their use in Phase III (2013-20). To the extent to which the levels of CER use have not been used

¹⁰ It is generally understood that eligibility for NAMA crediting has been limited to NAMAs whose emissions reduction or avoidance are rigorously measurable, reportable and verifiable. In the country's view, where such MRV (direct MRV) is clearly not feasible, success indicators could be adopted as the baseline level which has to be achieved for credits (indirect MRV) (Republic of Korea's submission, UNFCCC AWGLCA 2011b).

¹¹ The Cancun Agreements states that " (b) Emissions trading and the project-based mechanisms under the Kyoto Protocol shall continue to be available to Annex I Parties as a means to meet their quantified emission limitation and reduction objectives..." (Paragraph 6, Decision 1/CMP6).

up in 2008-12, operators can surrender CERs issued before 2012, and those registered before 2013. The ETS Phase III will also accept CERs issued from new projects starting from 2013 in LDCs, those from projects in third party countries who conclude a bilateral agreements with the EU, even though such agreements would primarily focus on credits from new market mechanisms¹². The Effort Sharing Decision (EU 2009b) also determines the eligibility of CERs as well as similar restrictions on their use in the same period. Additionally the EU Member States voted in January 2011 in support of the European Commission's proposal to implement a ban on credits from certain industrial gas projects (HFC-23 and adipic N₂O) for their use in the EU ETS from 1st May 2013.¹³

¹² Article 11a, 2009/29/EC (EU 2009).

¹³ European Union, 'Emissions trading: Commission welcomes vote to ban certain industrial gas credits', press release, IP/11/56, 21 January, 2011 [online]. Website: <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/56>

6 Conclusions

This paper highlights the complexity of political lock-in that exists on the level of developing countries, compliance buyers, and project developers trying to maintain the project-based CDM. It identifies the specific barriers that need to be overcome and proposes possible solutions. It becomes clear that there is no silver bullet for reform. Different mechanism options need to be tested at different levels, involving all key players. A combination of incentives as well as restrictions to encourage participation in these reforms need to be put in place. New mechanism that enhance developing country mitigation policies and encourage MRV need to be put in place. These mechanisms will ensure activities are scaled up and that the complex project-by-project additionality constraints are removed. The interaction between a market driven systems with realistic crediting watermarks, developing country mitigation policies (with local feed in tariffs, subsidies etc) and well applied capacity building support funds will ensure the success of these changes. This transformation needs to ensure developing countries as well as the market players that there is a real financial opportunity to go beyond the crediting thresholds. Other non market support funding will also be required to ease the burden of reaching the reductions threshold level. In parallel restrictions such as CER discounting, country exclusion, CER taxing or other sanctions should be put in place so as to further ensure developing country uptake of the new mechanisms.

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