CLIMATE CHANGE, CARBON MARKETS AND THE CDM: A CALL TO ACTION

Report of the High-Level Panel on the CDM Policy Dialogue

CDM Policy Dialogue

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Executive Summary

The world faces an unprecedented triple threat on climate change – an unfortunate confluence of three corrosive trends:

- The Earth's climate system is on a precipice, with staggering impacts of climate change already felt around the world. From devastating droughts, floods and extreme storms to rapid ice melt, climate change is already here and about to get much worse.

- International climate action is falling far short of what the world needs to avoid potentially unmanageable consequences. Nations are doing only slightly more than half of what the world needs now.

- Global carbon markets – an important policy instrument that the international community has developed over the past decade to facilitate real-world emissions mitigation – are collapsing with potentially devastating consequences. This is particularly true of the world's largest carbon market designed specifically to link developed and developing countries, an instrument operated by the United Nations known as the Clean Development Mechanism (CDM).

To diffuse this triple threat, the international community must act quickly and decisively.

While not sufficient in themselves, well regulated carbon markets have proved essential to addressing climate change, and nations must as a high priority restore faith in global carbon markets generally and in the CDM specifically. Carbon markets enable nations to meet their mitigation targets in a flexible and cost-effective manner, by counting emission reductions regardless of where they occur. As such, carbon markets can both increase the cost-effectiveness of mitigation activities and also facilitate the adoption of more ambitious mitigation targets. Over the past decade, the CDM alone has helped nations mitigate approximately one billion tons of greenhouse gas emissions in a manner that realized US$3.6 billion in savings for developed countries. Over this same period the CDM has mobilized more than US$215 billion in investments in developing countries, thereby accelerating economic growth and poverty alleviation.

Global carbon markets have enabled many developing countries to better understand their own potential to mitigate emissions in nationally appropriate ways. Favourable experiences with the CDM have enabled Brazil, China, Mexico, South Korea, and other major emerging nations to explore domestic carbon market systems. Although the CDM has been criticized for approving some projects with questionable environmental and sustainable development benefits, the CDM has improved markedly in recent years and its positive impact extends well beyond specific projects. The CDM has helped combat climate change by creating a global culture for action and by mobilizing the private sector through markets.

Unfortunately, the CDM is imperilled. Carbon prices in the CDM market have declined 70 % in the past year alone and are projected to fall further. Why? Mitigation targets are so modest that they no longer create strong incentives for private international investment and local action in developing nations. And many countries with mitigation targets have not linked the implementation of their targets to the use of the CDM. Policymakers and climate advocates alike increasingly question the continuing value of instruments like the CDM under these circumstances. Furthermore, governments, private investors, and financial institutions are losing confidence in the CDM market, a trend that is likely to accelerate in the absence of new solutions, weakening global carbon market technical capacity.

Some might not mourn the potential death of the CDM. After all, nations have begun work on a new generation of market instruments that hold perhaps greater long-run promise. Yet, new solutions will take years to design and make operational. For the balance of this decade the CDM is likely to remain the world's foremost – and possibly sole – means of gaining the benefits of a truly global carbon market. This means that a strong CDM is necessary to support the political consensus essential for future progress. A robust CDM, furthermore, is necessary to bring the benefits of carbon markets' to developing countries now.

If nations permit the CDM market to disintegrate, the political consensus for truly global carbon markets may evaporate along with much of the world's developing country carbon market capacity. Developing countries and the private sector are unlikely to see sufficient benefits to justify aggressive emissions mitigation steps in those nations. The collapse of the CDM, in short, could seriously set back international climate cooperation, with potentially devastating consequences for all.

CDM Project: 1558: Ratchaburi Farms Biogas Project at SPM Farm, Thailand. The crystal clear benefit from CDM on a pig farm in Thailand

Asger Olesen

To avoid this self-inflicted wound, the international community must take four essential and mutually reinforcing actions as a matter of great urgency.

First, nations must **intervene forcefully to address the immediate crisis** and substantially increase their mitigation ambition. Not only would this reduce their own climate pollution but also it would create more demand for international carbon transactions, thereby accelerating progress elsewhere. They should also actively consider the establishment of one or more funds to purchase carbon credits and stabilize carbon prices in order to restore market confidence about future prices.

Second, the international community must **adapt the CDM to new political and market conditions** by enhancing its role. Perhaps the greatest contribution the CDM has made to date has been helping nations and stakeholders gain valuable experience with innovative climate solutions through hands-on practical action. To ensure it continues to perform as a priority this learning-by-doing function, the CDM should expand to include the latest potential policy tools, such as by: (i) testing sector-wide approaches that could mitigate emissions at scale, including by reducing emissions from deforestation; and (ii) assisting with the design of new financing instruments, including the Green Climate Fund. The CDM can also advance this leadership role by facilitating the widespread adoption of best practices and uniform technical standards, as well as by promoting appropriate international links across carbon markets worldwide.

Third, the CDM must **substantially reform its operating procedures** and greatly expand its assistance to participating countries to maximize its impact. The CDM has long struggled with a perception that it does not contribute enough to emissions mitigation and sustainable development. Though partly deserved, this perception is also somewhat out of date as the CDM has made significant improvements in recent years. Nevertheless, these negative perceptions and some continuing weaknesses threaten the credibility of the CDM and the long-term viability of global carbon markets. For this reason, the CDM needs to improve its standards and outcomes through fundamental reforms to its operating procedures. The CDM must also work harder to enable a broader number of countries to gain meaningful access to its benefits.

Fourth, the CDM must **strengthen and restructure its governance** to become a more accountable and efficient organization. Despite commendable recent progress, the CDM remains burdened by a perception that it is slow, opaque, unresponsive and politicized. To address any remaining shortcomings and improve its reputation, the CDM must strategically allocate responsibilities between its governing body and staff, enhance its openness, transparency and opportunities for stakeholder participation, create avenues to hear appeals and address grievances, and reduce costs and delays.

Well regulated global carbon markets can help to avoid the unacceptable risks of climate catastrophe.

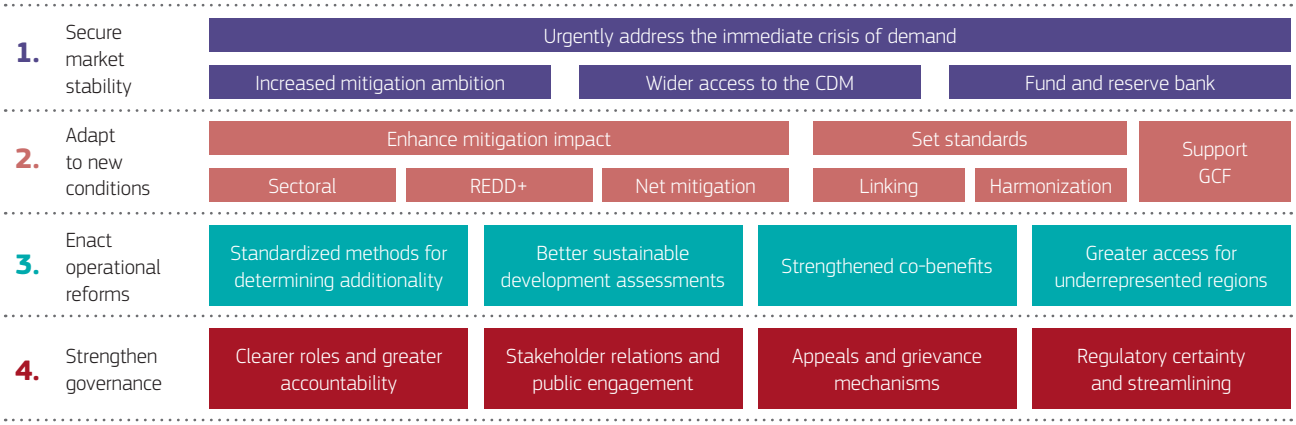
They reduce costs and promote ambitious climate action around the world better than just about any other international climate policy developed so far. They have also demonstrated enormous potential to mobilize private-sector financing. Global carbon markets link developed and developing countries, providing them with joint incentives to tackle climate change.

Despite many successes, the CDM – the world's only truly global carbon market today – is collapsing for reasons outside its scope, and nations must intervene to avert this downfall. The CDM is an admittedly imperfect instrument and by the end of the decade promising new mechanisms may emerge. Yet the CDM is and will continue to be for some time the best means of promoting practical collaboration among developing nations, developed nations and the private sector, and for this reason it must be safeguarded. Strengthening and reforming the CDM is not an end in itself but a means to spur action and provide an essential bridge to future solutions. This is why nations must reverse the continuing slide of the CDM market while modernizing the institution to carry out its vital role.

Based on these considerations, we have formulated a set of concrete recommendations to help address the short-term crisis in the carbon market and to lay the foundation for the effective operation of market mechanisms, including as appropriate the CDM, to contribute to addressing climate change. These recommendations are set out in full in the following sections, together with the stakeholder views expressed on the different topics, and our own research findings that underpin our recommendations.

The Panel urges that its recommendations be implemented fully and without delay, with a timetable agreed that will bring them into effect by the United Nations Climate Change Conference scheduled for December 2013.

Figure 1: Overview of recommendations



Recommendations

The Panel recommends the following 51 actions across 12 areas to address the crisis in international carbon markets and to make the CDM fit for the future (the actors responsible for each recommendation are indicated in brackets at the end of each paragraph):

1. Urgently address the immediate crisis of demand

1.1 As a matter of urgency, increase mitigation ambition by strengthening the pledges that have been made under the United Nations Framework Convention on Climate Change and by adopting corresponding domestic policies and measures. What is important for the future of international carbon markets is that mitigation targets are tightened and taken seriously. ***(National governments)***

1.2 Ensure access to the CDM as a tool to help national governments (and the emitters that they regulate) to achieve their mitigation targets in a cost-effective manner. The use of the CDM should not displace the focus on effective domestic mitigation actions. To unlock the full potential of the CDM, all countries should be enabled to use CERs, not only those with mitigation targets under the Kyoto Protocol. ***(National governments, CDM Executive Board)***

1.3 Investigate the establishment of a new fund and/or enable existing or emerging funds to purchase and to cancel part of the current overhang of CERs. National governments could be invited to meet part of their commitments to international carbon finance through contributions to this fund. The CDM Executive Board could be authorized to use a portion of the financial reserves of the CDM to establish and commence the operations of this fund. ***(National governments, CMP, CDM Executive Board)***

1.4 Consider the establishment of an institution to serve as a de facto reserve bank for CERs, charged with stabilizing the market. ***(CMP, CDM Executive Board)***

1.5 Pending the restoration of realistic pricing in CER markets, care should be taken in expanding the supply of CERs without creating disincentives for project developers or investors. ***(CDM Executive Board)***

2. Develop new approaches to enhance mitigation impact

2.1 Develop and test sectoral approaches within the CDM, while maintaining the availability of the current project-based approach. ***(CDM Executive Board)***

2.2 Develop and test project-based and/or national/subnational REDD+ programmes, while implementing appropriate controls to mitigate risks. ***(CMP, CDM Executive Board)***

2.3 Develop and test approaches to achieve a net mitigation impact, on both buyer and seller sides, while avoiding disincentives for project developers and investors. ***(CMP, CDM Executive Board)***

2.4 Stop registering new projects involving gases with comparatively low marginal costs of abatement (e.g. projects that reduce HFC-23 and projects that reduce N_2O from adipic acid plants), which have matured to the point of being ready to graduate from the CDM. Regulation may be needed to ensure the phase-out of these industrial gases. ***(CMP, CDM Executive Board)***

3. Set robust standards to enable linking and harmonization

3.1 Identify and develop standards that anticipate the needs of emerging market-based mechanisms, particularly in the measurement, reporting, and verification of emission reductions and the tracking of mitigation outcomes. ***(CDM Executive Board, UNFCCC Secretariat)***

3.2 Actively seek opportunities for collaboration with other market-based mechanisms, including those designed and implemented at the national level, around common functions such as standard-setting, accreditation, registration and issuance, capacity-building, and communication. ***(CDM Executive Board, UNFCCC Secretariat)***

3.3 Ensure the comparability among the standards used across market-based mechanisms, both inside and outside the Convention, in order to minimize regulatory inconsistency, to safeguard environmental integrity, and to promote fungibility. ***(National governments)***

3.4 Establish a common registry function that tracks mitigation outcomes effectively, so as to avoid double counting across different types of market-based mechanisms. ***(National governments, UNFCCC Secretariat)***

3.5 Improve regulatory engagement and outreach efforts to regulators of emissions trading systems, including through the dissemination of lessons learned from the CDM. ***(CDM Executive Board, UNFCCC Secretariat)***

4. Support the rapid implementation of the Green Climate Fund

4.1 Promote the use of CDM standards and methodologies in accounting for payments for verified results, so as to leverage the achievements, knowledge, and resources of the CDM. ***(Green Climate Fund Board, CDM Executive Board)***

4.2 Apply the standards and methodologies developed under the CDM as a way to facilitate the implementation of mitigation activities supported by the Green Climate Fund. ***(Green Climate Fund Board, CDM Executive Board)***

5. Implement standardized methods for assessing additionality

5.1 Increase the use of standardized approaches, such as performance benchmarks, in the assessment of additionality. These should be set conservatively to ensure additionality across a population of similar projects, and should account for technology- and context-specific factors, moving away from more subjective and unverifiable financial additionality tests. These changes should by no means lead to weakening of the additionality test as conducted today, and in fact may lead to questioning the continued inclusion of certain technologies in specific locations where they are likely to be the norm. A timetable should be set for implementing these changes. ***(CDM Executive Board, UNFCCC Secretariat)***

5.2 Identify positive lists to simplify additionality assessments for project types and contexts where there is a low risk of non-additionality. ***(CDM Executive Board, UNFCCC Secretariat)***

5.3 Ensure that the focus of incentives constantly shifts to the next generation of technologies, in order to drive technological change. In order to achieve this, standardized baselines and parameters must be periodically reviewed according to the pace of technological progress. ***(CDM Executive Board, UNFCCC Secretariat)***

6. Ensure that CDM projects help to achieve sustainable development

6.1 Assess the contribution of CDM projects to sustainable development in the project approval process in a transparent, inclusive, and objective manner. Where host countries do not have the capacity to do this, and at their request, the CDM Executive Board could designate an appropriate and mutually acceptable independent authority to do so, and should also help national authorities to develop such capacity. ***(Host countries, CDM Executive Board)***

6.2 Report, monitor, and verify sustainable development impacts in a more systematic and rigorous manner throughout the lifetime of a CDM project. Project participants should be required to declare, in their requests for registration and issuance, how a project assists the host country to achieve sustainable development in a manner that allows for comparison across projects. ***(Host countries, CDM Executive Board, project participants)***

6.3 Enhance safeguards against negative sustainable development impacts. If a credible allegation is made that a project has negative impacts, it should be investigated by the host country and, if substantiated, result in corrective measures. Some negative impacts (e.g. the use of child labour) are non-negotiable reasons to reject a project. ***(Host countries)***

6.4 Enable a host country to withdraw its approval of a CDM project if, following an objective and transparent assessment process, the project is proven to have a harmful impact on sustainable development. ***(Host countries, CDM Executive Board)***

6.5 Provide increased support, including capacity-building and best-practice examples, to host countries that request it in order to perform the above functions. ***(CDM Executive Board, UNFCCC Secretariat)***

7. Strengthen co-benefits and enhance the scope of energy technology

7.1 Encourage the increased development of projects with high co-benefits (e.g. household-level service projects), including through simplifying requirements, standardizing registration and issuance procedures,

and using positive lists. ***(CDM Executive Board, UNFCCC Secretariat)***

7.2 Explore opportunities for cooperation with other international institutions and financial mechanisms in support of co-benefits generated by CDM projects. ***(CDM Executive Board, UNFCCC Secretariat)***

7.3 Promote greater take-up of new energy technologies in the CDM, such as energy efficiency, renewable energy, and carbon dioxide capture and storage in geological formations. ***(Host countries, CDM Executive Board)***

7.4 Stimulate collaborative technology development and local technology innovation. ***(CDM Executive Board)***

8. Encourage greater access to the CDM for underrepresented regions

8.1 Prioritize the development of CDM projects in developing, non-high-income countries, with very few projects that have issued CERs. ***(CMP, CDM Executive Board, UNFCCC Secretariat)***

8.2 Enhance the accounting of suppressed demand for energy services, so as to increase the potential for participation in the CDM in low-income countries with currently low levels of emissions. ***(CDM Executive Board)***

8.3 Accelerate the development of standardized parameters, including baselines, and simplified procedures for household-level services (e.g. electrification, water purification, sanitation, cooking) and public services (mass transport, lighting and municipal renewable energy programmes). ***(CDM Executive Board, UNFCCC Secretariat)***

8.4 Introduce a new grant scheme and expand the existing loan scheme to further reduce financial barriers to the implementation of CDM projects. ***(CDM Executive Board)***

0268: Lages Methane Avoidance Project, Brazil. Local community using machines to work in reforested areas. Lages project uses only forestry wood waste from reforested areas.

Julio Alberto Pavese

8.5 Mobilize finance towards building capacity for hosting CDM projects in underrepresented countries. ***(International, regional, and national development banks)***

8.6 Share experiences and best practices, particularly within regions. ***(Designated national authorities)***

9. Rethink existing governance arrangements

9.1 Reorient the CDM Executive Board towards policy and strategy issues, while delegating project-specific and technical decision-making to the UNFCCC Secretariat (including rulings on requests for registration and issuance). ***(CDM Executive Board, UNFCCC Secretariat)***

9.2 Adopt an accountability framework to clarify and strengthen the relationship between the CDM Executive Board and the UNFCCC Secretariat. This framework should include a service level agreement with performance indicators for the UNFCCC Secretariat, as part of the annual Management Plan, and the CDM Executive Board should be responsible for performance management of the UNFCCC Secretariat in the discharge of these duties. This framework should also identify what the CDM Executive Board should do to facilitate and to enable the UNFCCC Secretariat to deliver on its mandate. ***(CDM Executive Board, UNFCCC Secretariat)***

9.3 Develop and implement robust codes of conduct for all members of the CDM governance structure, including the CDM Executive Board and the UNFCCC Secretariat. These codes of conduct must include means for objectively assessing and addressing conflicts of interest. ***(CDM Executive Board, UNFCCC Secretariat)***

9.4 Revise the criteria for the composition of the CDM Executive Board to reflect not only regional distribution, but also professional knowledge and experience (e.g. from carbon markets, economics, communication, legislation, governance, and working experience from other boards). Based on such revised criteria, a transparent process of selecting candidates, following a public call for nominations, should be undertaken by a selection committee. The committee would propose candidates to be appointed by national governments. ***(National governments)***

9.5 Enforce term limits on membership of the CDM Executive Board, with terms as members and as alternate members both taken into account. The suggested term limit is two three-year terms. After a combined six years of service, whether as a member or as an alternate member, a person should not be eligible to be nominated to the CDM Executive Board again. Care should be taken to ensure that the expiry date of terms is phased so that the CDM Executive Board has a mix of experienced and new members and retains institutional memory. ***(National governments)***

9.6 Over the longer term, the CDM should evolve toward a more decentralized system of operation in which the issuance of CERs could be undertaken by certified national and regional authorities in accordance with guidelines by the CDM Executive Board. ***(National governments, CMP)***

10. Improve stakeholder interactions and public engagement

10.1 Improve accessibility and respond to stakeholders properly and professionally, promptly answering complaints and queries. ***(CDM Executive Board, UNFCCC Secretariat)***

10.2 Designate a contact person or "account manager" within the UNFCCC Secretariat for stakeholders in respect of individual cases, with the ability to provide technical clarifications and guidance. ***(UNFCCC Secretariat)***

10.3 Adopt a strategic communications policy, including processes for responding to criticism and for enabling the dissemination of accurate and accessible information to a broad audience, to ensure the fair coverage of issues relating to the CDM. ***(CDM Executive Board, UNFCCC Secretariat)***

10.4 Establish guidelines for adequate local consultation procedures to ensure local community stakeholders are properly notified and consulted on proposed project activities. ***(CDM Executive Board, UNFCCC Secretariat)***

11. Establish independent mechanisms for appeals and grievances

11.1 Implement the appeals mechanism, which is currently being negotiated, for registration and issuance decisions. Both positive rulings (i.e. approvals) and negative rulings (i.e. rejections) should be appealable. Grounds for appeal should be limited to procedural and substantive issues related to the CDM modalities

and procedures. Provisions should disallow frivolous or vexatious appeals, require appeals to be filed within a reasonable and defined timeframe, and require appellants to satisfy admissibility criteria. Remedies should include confirming, remanding, reversing, and/or modifying the decision. The appellate body should be independent from the CDM Executive Board and operate according to a strict code of ethics and conduct. Members of the appellate body should be appointed by the CMP. ***(CMP)***

11.2 Establish a grievance mechanism for local stakeholders to address environmental and social concerns and to facilitate the resolution of issues emerging after the registration of a project, while fully respecting national sovereignty and without impeding ongoing project operations. The mechanism should be established at the national level, but can be supported by existing CDM institutions if requested by a host country. ***(Host countries)***

12. Promote regulatory certainty and streamlining

12.1 Designate a champion among the members of the CDM Executive Board to identify and propose streamlining measures, to be supported by the UNFCCC Secretariat. ***(CDM Executive Board, UNFCCC Secretariat)***

12.2 Pursue the digitization of content and the automation of workflows in order to facilitate transparency and consistency. ***(UNFCCC Secretariat)***

12.3 Increase the use of standardized approaches and elements in validation and verification procedures. ***(CDM Executive Board, UNFCCC Secretariat)***

12.4 Strengthen the training of, and communication with, designated operational entities in order to ensure a common understanding of rules and expectations of validation and verification results. Parallel training for project developers should also be provided. ***(CDM Executive Board, UNFCCC Secretariat)***

12.5 Revise rules and procedures only at pre-defined points so as to guarantee a certain level of confidence and consistency in the application and interpretation of current rules, while avoiding retroactive application. ***(CDM Executive Board, UNFCCC Secretariat)***

About the CDM Policy Dialogue

The CDM Policy Dialogue was launched at the United Nations Climate Change Conference held in Durban, South Africa, in 2011 by the Chair of the CDM Executive Board and the Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC). Its objective was to make recommendations on how best to position the CDM to respond to future challenges and opportunities and also on how to ensure the effectiveness of the CDM in contributing to future global climate action.

An independent High-Level Panel was formed to lead the CDM Policy Dialogue, consisting of 11 individuals reflecting a balance of expertise and regions. It commissioned a wide-ranging research programme addressing 22 topics across three main areas: the impact of the CDM to date; the governance and operations of the CDM; and the future context in which the CDM could operate. It also organized a stakeholder consultation programme holding dozens of formal and informal meetings around the world.

The full report of the Panel contains an overview of information gathered from the Panel's research findings and stakeholder consultations, as well as its conclusions. It was presented at the 69th meeting of the CDM Executive Board (September 2012) and subsequently made public. The full report, as well as the research reports and the summaries of the stakeholder consultations, are available on the website of the CDM Policy Dialogue:

www.cdmpolicydialogue.org

Foreword

On behalf of my fellow members of the High-Level Panel on the CDM Policy Dialogue, I have the privilege of submitting our final report. At the outset, the Panel was tasked with ensuring an independent, inclusive and transparent process, and in the process of compiling this report it has sought to fulfill that mandate.

The work of the Panel has taken place at a critical moment in the evolution of the global climate system and carbon markets. Climate change poses a profound threat to humanity, the earth and its ecosystems. The time to act is rapidly running out for any reasonable prospect of meeting the 2ºC target, let alone the 1.5ºC target. But carbon markets are profoundly weak, due to mitigation pledges that fall far short of what is needed. The global community is on the brink of losing the assistance which carbon markets, and the CDM in particular, can and should provide.

The current climate crisis demands a significant step up in ambition. And when this increased ambition materializes, the world will need to have all tools at hand to handle the task. This sense of crisis and of urgency has pervaded the Panel's consideration of its mandate. The Panel was convened to determine how best to position the CDM for a future that presumes increased ambition. We have put forward our recommendations in this spirit. The CDM can indeed play a role in the future climate policy framework, but it will need to be significantly reformed in almost every aspect.

This report was produced with the members of the Panel but has been made possible only by the extensive contributions of stakeholders over the last nine months. The dedication of those stakeholders and the passion of their arguments were an inspiration to the Panel.

We would also like to commend the research teams that have been able to develop at such short notice outstanding pieces of work to support our deliberations. We would also like to thank the UNFCCC Secretariat for its excellent analytical and logistical support.

Finally, this report would not have been made possible without the initiative of the CDM Executive Board. I would like to extend our thanks to the CDM Executive Board for the trust that they have placed in us and the support they have given us throughout the process.

I am confident that our report and its recommendations will be given serious consideration by the CDM Executive Board, the UNFCCC Secretariat, national governments, and all other stakeholders in the CDM and in global carbon markets.

Valli Moosa (Chair)

The High-Level Panel for the CDM Policy Dialogue comprises the following members:

Valli Moosa (Chair), former Environment Minister, South Africa
Joan MacNaughton (Vice Chair), President of the Energy Institute, Global Advisor Sustainable Policies, Alstom
Luciano Coutinho, President, Brazilian Development Bank
Maggie L. Fox, President & CEO, The Climate Reality Project
Ross Garnaut, Professor of Economics, Australian National University
Prodipto Ghosh, Distinguished Fellow, The Energy and Resources Institute - TERI
Yolanda Kakabadse, President, World Wide Fund For Nature
Margaret Mukahanana, Permanent Secretary, Ministry of Tourism and Hospitality Industry of Zimbabwe
Paul Simpson, Chief Executive Officer, Carbon Disclosure Project
Nobuo Tanaka, Global Associate for Energy Security and Sustainability, The Institute of Energy Economics, Japan
Changhua Wu, Greater China Director, The Climate Group

The biographies of the Panel members are contained in Appendix F.

The members of the High-Level Panel for the CDM Policy Dialogue have served on the Panel in their individual capacities, and this report of the Panel does not necessarily reflect the views of the organisations to which the Panel members belong.

Acknowledgements

The Panel wish to thank the many different **stakeholder groups, organizations and individuals** (none named, none forgotten) who have contributed to the CDM Policy Dialogue in different ways and inspired the Panel to make the recommendations in this report. Without them, no dialogue would have existed.

It would not have been possible to meet the demands placed on the Panel by its mandate without the dedication and professionalism that a large team of experts and collaborators brought to the project.

The Panel would like to express their deepest appreciation to their **Senior Expert Advisers (SEAs)** for the research work, the extensive engagement with stakeholders and the advice and guidance they provided over the months that led up to the launch of this report.

- **Ingrid Burfurd,** Ph.D. Candidate, University of Melbourne (SEA to Panel Member Ross Garnaut)
- **Vanessa Cassano,** Executive Assistant & Project Manager, Carbon Disclosure Project (SEA to Panel Member Paul Simpson)
- **Helle Juhler-Verdoner,** Vice President Global Affairs, Environmental Policies & Global Advocacy, Alstom (SEA to Vice-Chair Joan MacNaughton)
- **Akihiro Kuroki,** Managing Director, Global Environment & Sustainable Development Unit, The Institute of Energy Economics, Japan (SEA to Panel Member Nobuo Tanaka)
- **Margaret Lo,** Senior Program Development Manager, The Climate Group (SEA to Panel Member Changhua Wu)
- **Crispian Olver,** Director, Linkd Environmental Services (SEA to Chair Valli Moosa)
- **Nigel Purvis,** President & CEO, Climate Advisers (SEA to Panel Member Maggie L. Fox)
- **Ritika Tewari,** Research Associate, Centre for Global Environment Research, Climate Change Division, The Energy and Resources Institute – TERI (SEA to Panel Member Prodipto Ghosh)
- **Sergio Weguelin,** Deputy Director, Environment Area, Brazilian Development Bank (SEA to Panel Member Luciano Couthino)
- **Naoyuki Yamagishi,** Climate Change Programme Leader, Conservation Division, World Wide Fund For Nature, Japan (SEA to Panel Member Yolanda Kakabadse)
- **Petronella Shoko,** (SEA to Margaret Mukahanana)

Special mention should be made of **Crispian Olver** and **Helle Juhler-Verdoner** for their extensive work in support of Chair Valli Moosa and Vice-Chair Joan MacNaughton respectively.

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- **Maria Paola Andreoni,** independent consultant
- **Paulo Roberto de Oliveira Araújo,** Banco Nacional de Desenvolvimento Economico e Social
- **Pedro Martins Barata,** independent consultant
- **Luiza Almeida Curado,** Banco Nacional de Desenvolvimento Economico e Social
- **Kevin Curtis,** The Climate Reality Project
- **Samuel Grausz,** Climate Advisers
- **Johan Mellerup,** Adviser, Environmental Policies, Alstom
- **Njogu Morgan,** independent consultant
- **Shravya Reddy,** The Climate Reality Project
- **Nicholas Silver,** independent consultant

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- **Laurence Boisson de Chazournes,** Université de Genéve
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- **Erik Haites,** Margaree Consultants
- **Michael Lazarus,** Stockholm Environment Institute
- **Donna Lee,** Climate Focus
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- **Nimisha Pandey,** TERI
- **Stephen Seres,** Climate Solutions
- **Randall Spalding-Fecher,** Poyry Consulting
- **Ernesta Swanepoel,** international environmental law consultant
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- **Catherine Warburton,** Imbewu Sustainability Legal Specialists
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I. Statement from the Panel

Courtesy of Adeel Halim

The world faces an unprecedented triple threat on climate change – an unfortunate confluence of three corrosive trends:

- The Earth's climate system is on a precipice, with staggering impacts of climate change already felt around the world. From devastating droughts, floods and extreme storms to rapid ice melt, climate change is already here and about to get much worse.

- International climate action is falling far short of what the world needs to avoid potentially unmanageable consequences. Nations are doing only slightly more than half of what the world needs now.

- Global carbon markets – an important policy instrument that the international community has developed over the past decade to facilitate real-world emissions mitigation – are collapsing with potentially devastating consequences. This is particularly true of the world's largest carbon market designed specifically to link developed and developing countries, an instrument operated by the United Nations known as the Clean Development Mechanism (CDM).

Climate change is an existential threat. Average global temperatures are increasing due to human activities, and should this increase exceed 2°C above pre-industrial levels, the consequences could be dire. The Intergovernmental Panel on Climate Change has warned that, if current mitigation efforts and commitments of countries are sustained at the same levels, there will be a temperature increase of 4-6°C[1]. Time to act is rapidly running out: greenhouse gas emissions continue to grow, yet they will need to peak and begin to fall within this decade to maintain a reasonable prospect of meeting the 2°C target, let alone the safer 1.5°C target that some Parties and stakeholders are calling for. By 2050, a reduction in global emissions in the range of 50 %, and possibly up to 85 %, below 2000 levels will be necessary[2]. Progressively ambitious mitigation targets will need to be set – and met.

To diffuse this triple threat, the international community must act quickly and decisively.

While not sufficient in themselves, well regulated carbon markets have proved essential to addressing climate change, and nations must as a high priority restore faith in global carbon markets generally and in the CDM specifically. Carbon markets enable nations to meet their mitigation targets in a flexible and cost-effective manner, by counting emission reductions regardless of where they occur. As such, carbon markets can both increase the cost-effectiveness of mitigation activities and also facilitate the adoption of more ambitious mitigation targets. Over the past decade, the CDM alone has helped nations mitigate approximately one billion tons of greenhouse gas emissions in a manner that realized US$3.6 billion in savings for developed countries[3]. Over this same period the CDM has mobilized more than US$215 billion in investments[4] in developing countries, thereby accelerating economic growth and poverty alleviation.

The CDM occupies a unique space in international carbon markets. It is by far the largest international offset mechanism and enjoys broad support from developed and developing countries alike. Operational since 2001, it has more than 4,400 registered projects in 76 developing countries[5] and has generated approximately one billion credits, which can be traded and used by developed countries to offset their emissions and to support meeting their mitigation targets.

Global carbon markets have enabled many developing countries to better understand their own potential to mitigate emissions in nationally appropriate ways. Favourable experiences with the CDM have enabled Brazil, China, Mexico, South Korea, and other major emerging nations to explore domestic carbon market systems. It has been a major source of learning for verification bodies and for mitigation action, and it has enabled capacity-building in developing countries, showing that emissions can be reduced in a manageable and cost-effective way. Although the CDM has been criticized for approving some projects with questionable environmental and sustainable development benefits, the CDM has improved markedly in recent years and its positive impact extends well beyond specific projects. The CDM has helped combat climate change by creating a global culture for action and by mobilizing the private sector through markets.

In addition to providing flexibility for developed countries to meet their targets in a cost-effective way, the CDM was also intended to support sustainable development in countries hosting projects. The CDM has clearly contributed to sustainable development in terms of the criteria specified

1 IPCC; Fourth assessment report (2007)

2 UNEP; Bridging the emissions gap (2011)

3 High-Level Panel on the CDM Policy Dialogue: Research report: Assessing the impact of the Clean Development Mechanism (2012)

4 High-Level Panel on the CDM Policy Dialogue: Research report: Assessing the impact of the Clean Development Mechanism (2012)

5 UNFCCC CDM web page (2012): http://cdm.unfccc.int/Statistics/index.html

by the host countries themselves, particularly in technology transfer and local employment. While some stakeholders dispute this, the lack of commonly agreed indicators and monitoring mechanisms prevents accurate quantification of such contributions.

Unfortunately, the CDM is imperilled. Carbon prices in the CDM market have declined 70% in the past year alone[6] and are projected to fall further. Why? Mitigation targets are so modest that they no longer create strong incentives for private international investment and local action in developing nations. And many countries with mitigation targets have not linked the implementation of their targets to use of the CDM. The lack of demand has resulted in a sizeable overhang of credits from the CDM, which may suffice to meet expected levels of demand until at least 2020, even if no new projects are approved beyond those operating or already in the pipeline.

The declining prices that threaten the benefits of international carbon markets have not been caused by inherent flaws in carbon markets or in the CDM itself, but rather by a lack of sufficiently ambitious national mitigation targets. This has undermined demand for carbon market mechanisms, including the CDM, resulting in depressed prices that are far too low to drive investment.

Policymakers and climate advocates alike increasingly question the continuing value of instruments like the CDM under these circumstances. Furthermore, governments, private investors and financial institutions are losing confidence in the CDM market, eroding the knowledge and capacity the international community has built over the past decade, a trend that is likely to accelerate in the absence of new solutions.

Without action to tackle the supply and demand imbalance, the CDM cannot continue to operate. More importantly, the climate and sustainable development benefits of all carbon market instruments will be jeopardized. It is imperative that mitigation ambition be stepped up in order to restore demand in carbon markets generally and in the CDM in particular. Once this happens, market mechanisms can be expected to play an increasing role over time. But unless this happens, any market mechanism will be doomed to irrelevance.

In the interim, until demand can be restored, specific and targeted measures need to be taken to stabilize the carbon market, to stem the continued hemorrhage of expertise and resources, to allow developing countries to continue to host CDM projects, and to prevent an irretrievable loss of confidence by investors in the CDM, which will also stymie the development of future carbon market instruments.

Some might not mourn the potential death of the CDM. After all, nations have begun work on a new generation of market instruments that hold perhaps greater long-run promise. Yet, new solutions will take years to design and make operational. For the balance of this decade the CDM is likely to remain the world's foremost – and possibly sole – means of gaining the benefits of a truly global carbon market. This means that a strong CDM is necessary to support the political consensus essential for future progress. A robust CDM, furthermore, is necessary to bring the benefits of carbon markets to developing countries now.

If nations permit the CDM market to disintegrate, the political consensus for truly global carbon markets may evaporate along with much of the world's developing country carbon market capacity. Developing countries and the private sector are unlikely to see sufficient benefits to justify aggressive emissions mitigation steps in those nations. The collapse of the CDM, in short, could seriously set back international climate cooperation, with potentially devastating consequences for all.

To avoid this self-inflicted wound, the international community must take four essential and mutually reinforcing actions as a matter of great urgency.

First, nations must **intervene forcefully to address the immediate crisis** and substantially increase their mitigation ambition. Not only would this reduce their own climate pollution but it also would create more demand for international carbon transactions, thereby accelerating progress elsewhere. They should also actively consider the establishment of one or more funds to purchase carbon credits and stabilize carbon prices in order to restore market confidence about future prices.

Second, the international community must **adapt the CDM to new political and market conditions** by enhancing its role. Perhaps the greatest contribution the CDM has made to date has been helping nations and stakeholders gain valuable experience with innovative climate solutions through hands-on practical action. To ensure it continues to perform as a priority this learning-by-doing function, the CDM should expand to include the latest potential policy tools, such as by: (i) testing sector-wide approaches that could mitigate emissions at scale, including by reducing emissions from deforestation; and (ii) assisting with the design of new financing instruments, including the Green Climate Fund. The CDM can also advance this leadership role by facilitating

6 Point Carbon on-line data: www.pointcarbon.com (2012)

the widespread adoption of best practices and uniform technical standards, as well as by promoting appropriate international links across carbon markets worldwide.

Third, the CDM must **substantially reform its operating procedures** and greatly expand its assistance to participating countries to maximize its impact. The CDM has long struggled with a perception that it does not contribute enough to emissions mitigation and sustainable development. Though partly deserved, this perception is somewhat out of date as the CDM has made significant improvements in recent years. Nevertheless, these negative perceptions and some continuing weaknesses threaten the credibility of the CDM and the long-term viability of global carbon markets. For this reason, the CDM needs to improve its standards and outcomes through fundamental reforms to its operating procedures. The CDM must also work harder to enable a broader number of countries to gain meaningful access to its benefits.

Fourth, the CDM must **strengthen and restructure its governance** to become a more accountable and efficient organization. Despite commendable recent progress, the CDM remains burdened by a perception that it is slow, opaque, unresponsive and politicized. To address any remaining shortcomings and improve its reputation, the CDM must strategically allocate responsibilities between its governing body and staff, enhance its openness, transparency and opportunities for stakeholder participation, create avenues to hear appeals and address grievances, and reduce costs and delays.

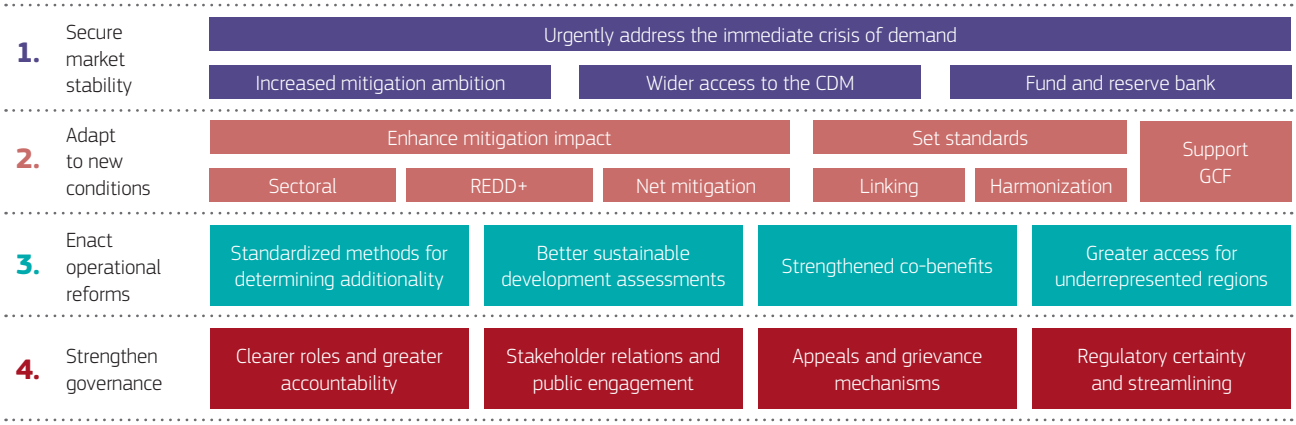
Well regulated global carbon markets can help to avoid the unacceptable risks of climate catastrophe. They reduce costs and promote ambitious climate action around the world better than just about any other international climate policy developed so far. They have also demonstrated enormous potential to mobilize private-sector financing. Global carbon markets link developed and developing countries, providing them with joint incentives to tackle climate change.

Despite many successes, the CDM – the world's only truly global carbon market today – is collapsing for reasons outside its scope, and nations must intervene to avert this downfall. The CDM is an admittedly imperfect instrument and by the end of the decade promising new mechanisms may emerge. Yet the CDM is and will continue to be for some time the best means of promoting practical collaboration among developing nations, developed nations and the private sector, and for this reason it must be safeguarded. Strengthening and reforming the CDM is not an end in itself but a means to spur action and provide an essential bridge to future solutions. This is why nations must reverse the continuing slide of the CDM market while modernizing the institution to carry out its vital role.

Based on these considerations, the Panel has formulated a set of concrete recommendations to help address the short-term crisis in carbon markets and to lay the foundation for the effective operation of market mechanisms, including as appropriate the CDM, to contribute to addressing climate change. These recommendations are set out in full in the following sections, together with the stakeholder views expressed on the different topics, and the Panel's own research findings that underpin its recommendations.

The Panel urges that these recommendations be implemented fully and without delay, on a timetable that will bring them into effect by the United Nations Climate Change Conference scheduled for December 2013.

Figure 2: Overview of recommendations



II. The CDM Policy Dialogue

Courtesy of Evan Thomas

Background

The CDM Policy Dialogue was launched at the United Nations Climate Change Conference held in Durban, South Africa, in 2011 by the Chair of the CDM Executive Board and the Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC). Its objective was to make recommendations on how best to position the CDM to respond to future challenges and opportunities and also on how to ensure the effectiveness of the CDM in contributing to future global climate action.

An independent High-Level Panel was formed to lead the CDM Policy Dialogue, consisting of 11 individuals reflecting a balance of expertise and regions. Each Panel member appointed her/his own senior expert adviser, and the Panel as a whole was supported by the UNFCCC Secretariat, which provided logistical support and essential linking to United Nations information. Fully independent, the Panel appointed its staff, set its own agenda, and managed its own budget.

The approach

At its initial meeting in February 2012, the Panel agreed on its approach to generating recommendations. In this regard, it was guided by views submitted in response to a call for input by the CDM Executive Board on the scope of issues to be addressed. It also committed to undertake its work in an independent, inclusive, and transparent manner, seeking to gain a full and unbiased picture of all aspects of the CDM.

The Panel commissioned a wide-ranging research programme, addressing 22 topics across three main areas: the impact of the CDM to date; the governance and operations of the CDM; and the future context in which the CDM could operate[7]. Each area was coordinated by a lead researcher and supported by teams of topic-specific researchers.

The Panel also organized a stakeholder consultation programme, holding dozens of formal and informal meetings in countries around the world. It consulted governments, intergovernmental organizations, and non-governmental organizations, including business associations, environmental groups, and project developers. It also solicited views from the CDM Executive Board, designated national authorities, designated operational entities, and the UNFCCC Secretariat.

The report

This report sets out the final recommendations of the Panel for the role, design, and operations of the CDM. Presented at the 69th meeting of the CDM Executive Board (September 2012) and subsequently made public, it affirms the importance of maintaining the CDM as a tool to help address the climate change challenge, proposing 51 recommendations across 12 areas.

The recommendations address not only the CDM Executive Board and the UNFCCC Secretariat, but also the many other stakeholders in the CDM. There is an urgent need for broad and cooperative action aimed at reviving the mechanism and repositioning it so that by learning from the past it will be an even more useful policy tool for the future.

These recommendations are made on the understanding that they will be applied to strengthen the mechanism in the future, and are not intended to have retroactive application in a manner that would disadvantage CDM stakeholders.

7 The findings are presented in separate research reports accessible, from September 2012, at www.cdmpolicydialogue.org:

- High-Level Panel on the CDM Policy Dialogue: Research report: Assessing the impact of the Clean Development Mechanism (2012)
- High-Level Panel on the CDM Policy Dialogue: Research report: The future context of the CDM (2012)
- High-Level Panel on the CDM Policy Dialogue: Research report: Governance of the Clean Development Mechanism (2012)

CDM Policy Dialogue

III. Recommendations

Courtesy of Boris Bronger

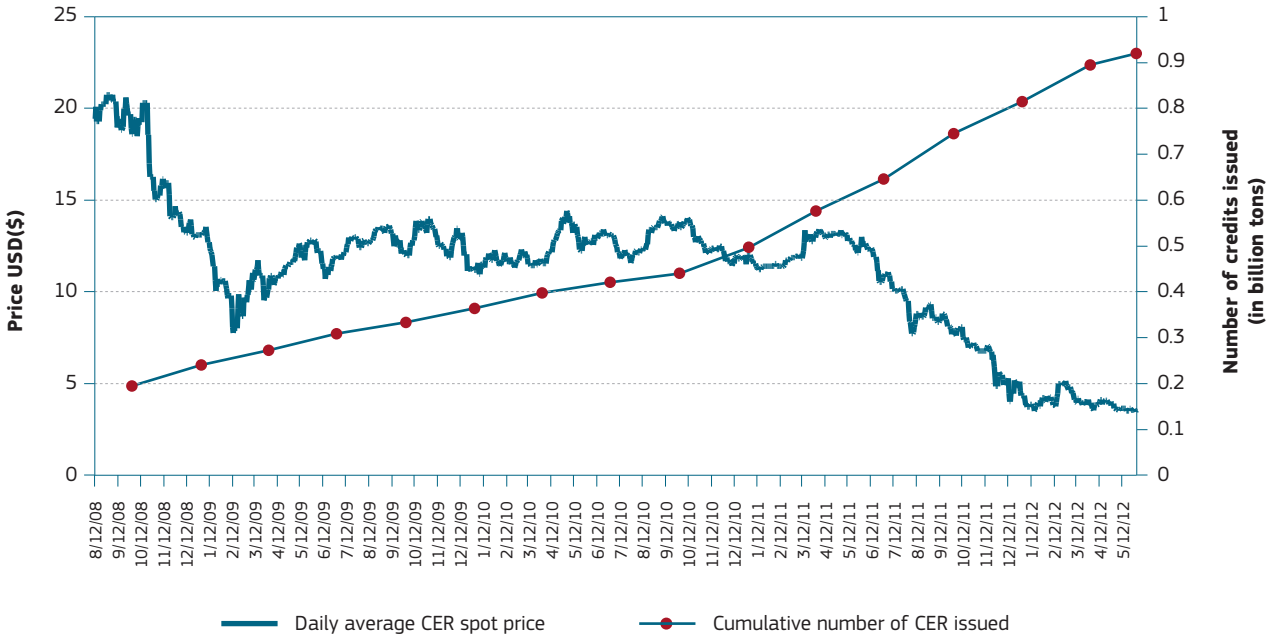
1. Urgently address the immediate crisis of demand

Context

Current levels of greenhouse gas mitigation ambition fall significantly short of what is required to limit the global temperature increase to a maximum of 2ºC above pre-industrial levels, the ceiling that would give the world a reasonable chance of avoiding the worst impacts of climate change, let alone the safer 1.5ºC target that is also advocated within the international negotiations. The mitigation pledges that countries have made under the Convention are too low, and the domestic policies being pursued by most countries are insufficient.

International carbon markets, including the CDM, can play a role in helping to meet global mitigation targets, in that they increase the cost-effectiveness of mitigation actions and can also facilitate an increase in overall ambition. However, carbon markets – like all markets – require a sensible balance between supply and demand in order to function effectively, and demand has been hampered by the lack of ambition. The restoration of the supply and demand balance is both a priority and a pre-requisite for further action regarding the CDM.

Figure 3: Supply and demand imbalance caused CER prices to plunge

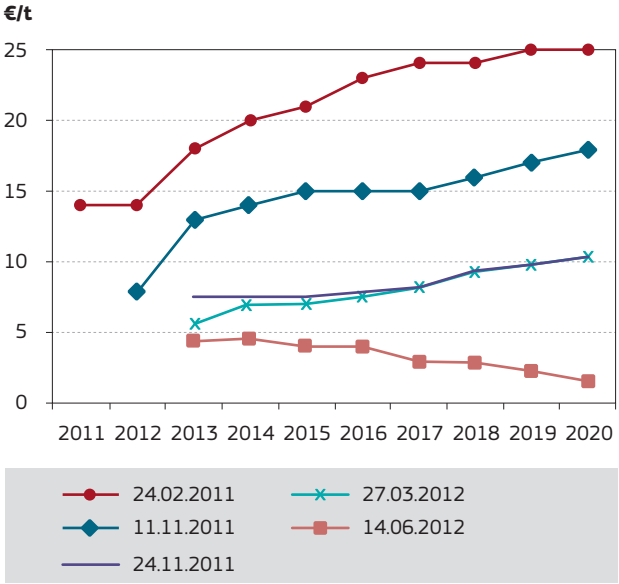


Based on daily average BlueNext CER spot price Source: Vivid Economics; BlueNext, Institute for Global Environmental Strategies, 2012

Research findings[8]

In the market for international offset credits – of which CDM credits (known as "certified emission reductions" or "CERs") form the vast majority – there is a significant imbalance between supply and demand. CER prices have plunged by approximately 70 % over the past year and show little sign of recovery in the short to medium term.

Figure 4: CERs price forecast: constantly reviewed down over the last couple of years



Source: data from Point Carbon

Regarding supply, approximately one billion CERs have been issued to date. Scenarios for future supply (2013 to 2020) are varied, ranging from a low of 1.4 billion to a high of 11.9 billion. Lower estimates tend to assume the continuation of the CDM in more or less the shape that it is now, with few to no new projects being registered after 2012. A key consideration in this assessment is the lack of economic viability in current markets, brought on by the impending restrictions of the use of CERs within the European Union's emissions trading system, the world's largest. Higher estimates tend to assume a gradual expansion of the CDM through ongoing standardization and the facilitation of programmatic CDM. The average of most studies published in the past two years suggests a total supply from 2013 to 2020 of approximately 2.5 billion CERs.

Regarding demand, an exact estimate of current use is hindered by the lack of specific data, but based on historical information, the use of CERs to meet compliance obligations in the European Union's emissions trading system has ranged from 82 million in 2008 to 176 million in 2011, giving a cumulative estimate of approximately 500 million to date. To this should be added sovereign demand from countries with mitigation targets under the Kyoto Protocol, although the exact number of CERs that will be used for such purposes will not be known with certainty until the conclusion of the compliance process for the first commitment period under the Kyoto Protocol (estimated to occur in mid-2015). Scenarios for future demand (2013 to 2020) are varied, ranging from a low of 0.9 billion to a high of 3.9 billion. Lower estimates tend to assume that no new demand arises on account of a lack of political will. Higher estimates tend to assume that countries will strengthen their mitigation targets and enable the use of CERs within their emissions trading systems. The average of most studies published in the past two years suggests a total of approximately 1.25 billion CERs.

When the above figures are considered, it is clear that there is a significant overhang of CERs that needs to be addressed if the CDM is to be revitalized: more CERs have been issued than have been used, and the imbalance is likely to grow for the remainder of this decade. Measures therefore need to be taken to restore prices to a level where they can drive changes in behaviour. These can relate either to supply or to demand:

- Supply-side measures might include: restricting the eligibility of project types to be registered; imposing significantly more stringent criteria in assessing projects; and – as a somewhat drastic measure – ceasing the registration of new projects and/or the issuance of new CERs until prices recover to reasonable levels;

- Demand-side measures might include: setting more ambitious mitigation targets; promoting the continued use of CERs to meet these targets; and extending access to the use of CERs beyond developed countries with mitigation targets under the Kyoto Protocol.

8 Data and numbers presented in this section are derived from the CDM Policy Dialogue research, summarized in: High-Level Panel on the CDM Policy Dialogue: Research report: The future context of the CDM (2012)

The Panel notes that the CDM has been largely successful in making cost-effective opportunities available for many developed countries to achieve part of their mitigation targets under the Kyoto Protocol, and has also assisted many emitters under domestic/regional emissions trading systems to meet part of their commitments under such systems. A conservative estimate of savings realized by the CDM in meeting mitigation targets is US$3.6 billion to date. This should be taken into consideration when assessing what measures to adopt, and particularly whether to impose measures that would restrict the operation of the CDM.

Stakeholder inputs

A widely held stakeholder view is that there is insufficient demand for CERs. Several stakeholders say that future demand is highly contingent on international rules, with clarity needed to reduce uncertainty and to generate trust. Some stakeholders believe that the agreement reached at the United Nations Climate Change Conference in Durban in 2011 was too weak for the private sector and that this would lead to low expectations in the short term, with private actors and knowledge leaving the sector. Many stakeholders report that the CDM is already losing private-sector expertise.

"Ambition needs to be increased, and longer-term ambition needs to be agreed, with targets for 2020 and beyond long overdue. The lack of future targets is highly detrimental to the Carbon market."

Project Developer

"If there is no demand there will be no carbon market."

Emissions Trader

Stakeholders generally believe that the immediate future of carbon markets will be characterized by price volatility and/or low prices, with some stakeholders proposing price controls to manage the volatility in prices. A few stakeholders believe that there would be a sizable demand for CERs in the future, but this view is not widely shared.

There is virtual unanimity that the CDM should continue to operate, subject to appropriate reforms. Many stakeholders envision that the role for a project-based mechanism, as the CDM largely is today, will decline in importance over time. Instead, they envision a greater need for a mechanism that can certify other offset mechanisms.

Several stakeholders propose that there should be greater coordination and dialogue between regulators (i.e. between the CDM Executive Board and the regulators of domestic emissions trading systems) in order to rectify the current unfavourable market situation.

Conclusions

The Panel believes that the CDM is a valuable tool that – with appropriate reforms that are the subject of the remaining recommendations in this report – should be retained and scaled up to enhance the cost-effectiveness of, and to promote, global mitigation activities.

For the CDM to survive, however, there is an urgent need to address the supply and demand imbalance. In this regard, demand-side measures are the significantly superior option to be pursued. Increasing mitigation ambition ought to be the fundamental aim, not just in order to rescue carbon markets, but also to meet the 2°C target. In addition, access to the CDM should be encouraged as a means to assist all countries to meet their mitigation targets, whether these are inscribed under the Kyoto Protocol or elsewhere. Technically, access to the CDM for countries without commitments under the Kyoto Protocol could be achieved quite easily through increasing the use of cancellation accounts in the existing CDM registry. Although the CDM was originally designed as a mechanism to assist developed countries to meet their mitigation targets under the Kyoto Protocol, the percentage of the world's emissions that is covered by the Kyoto Protocol, particularly in its second commitment period, is small.

Demand can be further stimulated by enabling means for purchasing and then cancelling CERs (i.e. not using them for offsetting purposes). This can be done by creating a new fund or by enabling the finance flowing into existing or emerging funds, such as the Green Climate Fund, to be used for such purposes. National governments could be invited to meet part of their commitments to international carbon finance through contributions for this purpose. In addition, as a complementary measure, it may be helpful to establish a further institution to serve as a de facto reserve bank for CERs, charged with stabilizing the market; the institution would not, however, be a "fund", but instead would aim to

make a profit on operations that could be used to expand the institution and/or to support other mitigation activities.

Supply-side measures (such as new restrictions on project registration and CER issuances) would be unwise to pursue. Even though they would be straightforward to implement within the existing CDM architecture, they would send a poor signal to investors by introducing an element of regulatory risk that would further chill investment, and may drive them either to explore other offset mechanisms or to exit the field entirely. Restricting the operations of the CDM would also inhibit its ability to explore and to innovate. Finally, the effectiveness of such measures may be questionable, as the CDM remains relatively small in comparison to the size of national/regional emissions trading systems: constricting the supply of one portion of the international carbon market may not have a significant impact on the overall supply and demand situation.

RECOMMENDATIONS

1.1 As a matter of urgency, increase mitigation ambition by strengthening the pledges that have been made under the United Nations Framework Convention on Climate Change and by adopting corresponding domestic policies and measures. What is important for the future of international carbon markets is that mitigation targets are tightened and taken seriously. ***(National governments)***

1.2 Ensure access to the CDM as a tool to help national governments (and the emitters that they regulate) to achieve their mitigation targets in a cost-effective manner. The use of the CDM should not displace the focus on effective domestic mitigation actions. To unlock the full potential of the CDM, all countries should be enabled to use CERs, not only those with mitigation targets under the Kyoto Protocol. ***(National governments, CDM Executive Board)***

1.3 Investigate the establishment of a new fund and/or enable existing or emerging funds to purchase and to cancel part of the current overhang of CERs. National governments could be invited to meet part of their commitments to international carbon finance through contributions to this fund. The CDM Executive Board could be authorized to use a portion of the financial reserves of the CDM to establish and commence the operations of this fund. ***(National governments, CMP, CDM Executive Board)***

1.4 Consider the establishment of an institution to serve as a de facto reserve bank for CERs, charged with stabilizing the market. ***(CMP, CDM Executive Board)***

1.5 Pending the restoration of realistic pricing in CER markets, care should be taken in expanding the supply of CERs without creating disincentives for project developers or investors. ***(CDM Executive Board)***

2. Develop new approaches to enhance mitigation impact

Context

The decisions made at the United Nations Climate Change Conferences in Cancun, Mexico, in 2010 and Durban, South Africa, in 2011 reveal a strong interest in the development of new approaches to enhance the mitigation impact of market mechanisms. These include the statement in Cancun that new market-based mechanisms should stimulate mitigation across broad segments of national economies (such as sectors) and achieve a net decrease and/or avoidance of emissions, followed by the establishment in Durban of a new mechanism that would be guided by these principles. These decisions are complemented by ongoing discussions on the role that can be played by REDD+ (i.e. reducing emissions from deforestation and degradation, including the conservation and enhancement of carbon stocks).

Research findings

Sectoral approaches[9]

A sectoral approach considers greenhouse gas emissions from across an entire economic sector, rather than being limited to a single project or a series of related projects, and it issues credits corresponding to mitigation beyond a reference level set substantially below business-as-usual emissions. The concept was advanced in academic and policy literature in the 2000s and was subsequently introduced into the international climate negotiations. It has since evolved into a slightly more flexible concept that includes not only approaches across a sector but also approaches across a sub-sector, a segment of the economy, or even a group of emitters. In this sense, the important characteristic is that mitigation is considered at a broad level of aggregation.

Strengths of sectoral approaches include the possibility of scaling up mitigation efforts, a way to address leakage within a country, and a means by which host countries can develop mitigation infrastructure and know-how. On the other hand, challenges associated with sectoral approaches include the effective distribution of incentives when mitigation efforts are measured across multiple (and typically competing) emitters, the difficulty of sourcing national-level data, and the need to address the political reality that some countries are unlikely to pursue such approaches without receiving improved technology and/or incentives for industry restructuring.

There are no inherent barriers to reforming the CDM to pursue sectoral approaches. Indeed, the combination of standardized baselines and programmatic CDM – whereby groups of similar emitters may be considered together – suggests that the apparatus for pursuing such approaches is already operative, if unused. Perhaps the largest barrier faced by such approaches is one of demand, given that existing CDM projects are expected to meet all sources of demand until 2020, and perhaps beyond.

If sectoral approaches are implemented, appropriate measures would need to be adopted to preclude the double counting of mitigation efforts in cases where pre-existing CDM projects operate within the boundary of a sector. This can be achieved by, for example, excluding the issuance of CERs from projects that are covered by a sectoral mechanism, or adjusting the baseline of the sector in order to account for reductions achieved by the CDM. Based on CDM experience, detailed accounting procedures would be needed to resolve the problem.

REDD+[10]

REDD is an acronym for "Reducing Emissions from Deforestation and Forest Degradation", and the "+" symbol refers to supplementary activities such as the sustainable management of forests and the enhancement of forest carbon stocks. A major source of global greenhouse gas emissions comes from poorly managed forests and deforestation practices. However, for a variety of technical and political reasons, the inclusion of such activities within the scope of international carbon markets has been uncertain. The CDM currently excludes all land use, land-use change and and forestry activities, with the exception of afforestation and reforestation activities.

9 Data and numbers presented in this section are derived from the CDM Policy Dialogue research, summarized in: High-Level Panel on the CDM Policy Dialogue - Research report: The future context of the CDM (2012)

10 Data and numbers presented in this section are derived from the CDM Policy Dialogue research, summarized in: High-Level Panel on the CDM Policy Dialogue: Research report: The future context of the CDM (2012)

A number of national governments and think-tanks argue that technical problems have been solved and many of these reasons are now obsolete. A number of countries have joined in partnerships to develop REDD+ initiatives, sponsoring major programmes for the protection of forests. Market-based initiatives for the crediting of REDD+ projects and programmes are proceeding, albeit outside the Convention, such as through initiatives linking up emissions trading systems in North America and REDD+ programmes in the Amazon rainforest.

The inclusion of REDD+ activities in the CDM has potential benefits and risks:

- Potential benefits include: promoting sustainable development; shifting the distribution of CERs towards a more equitable balance among countries (as several forested developing countries do not have many opportunities in other sectors); creating further options for generating cost-effective reductions; and facilitating learning-by-doing for how to include REDD+ in carbon markets.

- Potential risks include: oversupplying the market and further decreasing CER prices; harming local communities and indigenous groups if not implemented with appropriate safeguards, particularly in respect of land tenure.

Careful design should be able to mitigate many of the risks associated with including REDD+ in the CDM. As such, limited project-based REDD+ and/or larger-scale (sub-national or national) pilot activities should be allowed into the CDM. Doing so would create important learning-by-doing opportunities for the international community in anticipation of future REDD+ mechanisms, which may accelerate their development.

Figure 5: REDD+ project in Mai Ndombe, DRC, supported by the Congolese government, one of the members of the REDD+ Partnership

Including REDD+ in the CDM would also help direct CDM projects and programmes toward nations that might not otherwise participate in the sustainable development benefits of the CDM and might not otherwise gain experience with carbon markets.

Improving the mitigation impact of the CDM[11]

There is a growing interest for market mechanisms to have a net mitigation impact (i.e. for the emissions that they mitigate to exceed the emissions that they offset), as reflected in the decisions in Cancun and Durban. In this context, the issue of performance of the CDM to date arises, and whether the CDM can be re-oriented in a way to achieve a net mitigation impact.

Assessing the mitigation impact of the CDM to date is difficult because any answer hinges on judgements of several factors, some of which cannot be accurately quantified:

- Factors that could result in a positive mitigation impact include: conservative baselines; the bias for conservative assumptions within methodologies (for example, for the efficiency of off-gas flares a default factor of 90% destruction is widely applied, where in reality the efficiency is generally significantly above 90%); uncredited emission reductions beyond project crediting periods; and CERs that are not used for offsetting purposes (e.g. if they are cancelled).

- Factors that could result in a negative mitigation impact include: insufficiently conservative baselines; the registration of non-additional projects; and leakage not captured under current CDM methodologies.

In this context, attention has been paid to projects that reduce emissions of certain industrial gases (e.g. projects that reduce HFC-23 and projects that reduce N_2O from adipic acid plants). They have been the dominant sources of CERs to date (75%), and they have been among the most controversial types of projects, as earlier versions of the methodologies created perverse incentives and/or failed to properly account for leakage, resulting in more CERs being issued than actual mitigation achieved. However, subsequent changes in the methodologies and the expected decrease in CERs issued should render these projects relatively less important in the future. For projects that reduce emissions of certain industrial gases, the main aims of the CDM in these areas have now been achieved.

There are several options for increasing mitigation impact, each with a set of advantages and limitations. Some options, such as conservative baselines and conservative default factors, are already established and available within the CDM and can be further strengthened. Another option is discounting, whether supply-side discounting (i.e. less than one CER is issued per ton of mitigated emissions) and/or demand-side discounting (i.e. more than one CER is required per ton of emissions to be offset).

Stakeholder inputs

Sectoral approaches

On sectoral approaches, many stakeholders assert that as an instrument the CDM has not proved readily scalable or able to assist significantly in the mitigation challenge that countries are tackling. Therefore, they foresee the CDM remaining a project-based mechanism, possibly being phased out in the long term, while sectoral approaches develop in the context of other mechanisms. However, several stakeholders see an opportunity for the CDM itself to develop sectoral approaches.

It may be complicated for developing countries to develop sectoral approaches: some stakeholders list such challenges as the difficulty in defining what a sector is, incorporating and addressing the huge number of technologies and heterogeneity within a sector, the allocation of benefits of a sector among different entities, the allocation of responsibilities if targets are not met, and the lack of resources for designated national authorities to gather data. Several stakeholders also note that the direct investments by private financing in individual projects may be difficult to achieve for sectoral approaches if it is the performance of the whole sector that ultimately determines whether CERs are generated.

REDD+

Some stakeholders question the possible inclusion of REDD+ in the CDM on the grounds of additionality hurdles and technical challenges. Others argue that the inclusion of REDD+, with its lack of institutional development and acceptance, may reduce the credibility of the CDM. Also, they suggest that an influx of REDD+ CERs would drive prices down, further endangering the credibility of the CDM market. Some stakeholders do, however, see a future for REDD+ in the CDM: it could create a stable, low-cost source of future CERs. Others maintain that, instead of taking up all

11 Data and numbers presented in this section are derived from the CDM Policy Dialogue research, summarized in: High-Level Panel on the CDM Policy Dialogue: Research report: Assessing the impact of the Clean Development Mechanism (2012)

activities within the scope of REDD+, development of those activities already covered by the CDM in afforestation and reforestation should be pursued further.

Improving the mitigation impact of the CDM

Many stakeholders criticize the CDM for not delivering net emission reductions. They also state that the CDM may create perverse incentives that draw investment away from other mitigation activities. These stakeholders also mention that the CDM should be used only for projects with higher marginal costs of abatement (e.g. not certain industrial gases) in order to avoid creating perverse incentives.

Others, however, believe that the CDM has performed as expected in identifying low-cost mitigation opportunities and that this should remain the primary focus of the CDM. Some stakeholders believe that the conservativeness of baseline methodologies and conservative choices for parameters and default factors lead to an underestimating of baseline emissions, and that therefore emission reductions credited are less than emission reductions achieved. Some stakeholders suggest that a net mitigation impact can be achieved through measures on the buyer side (and not only on the seller side), such as through discounting CERs that are used for compliance purposes.

"Inclusion of REDD+ under CDM is a positive step because it gives an incentive for countries that are conserving forests to continue doing so. It also gives these countries opportunity to pursue CDM independently based on their forest cover and not have to be dependent on annex 1 countries to support project development in their countries."

Designated National Authority

"Project offsetting without strong targets and significant reduction of emissions at source will not contribute to climate change mitigation."

Non-Governmental Organization

"It is essential to build on and not "re-invent" the existing flexible mechanisms. Whereas the CDM has been used primarily as a tool for offsetting, it can, through appropriate stringent baseline be a tool that can contribute to emission reductions."

Business Organization

Conclusions

The CDM should explore new approaches to increase the mitigation impact of market mechanisms: the current period of "dormancy" for the CDM, which will likely last until mitigation ambition is raised to the levels necessary to stimulate investment, should be used productively to test approaches that can, if successful, be applied in the decades to come. In this context, sectoral approaches represent a promising way of scaling up mitigation efforts and can be piloted through the combination of standardized baselines and programmatic CDM. Equally, low-cost mitigation opportunities through REDD+ should be introduced on a trial basis. Finally, measures should be taken to move beyond pure offsetting and to enable the CDM to have a net mitigation impact.

The current direction of market mechanisms worldwide seems to favour innovative measures such as those listed above, as reflected in the intergovernmental negotiations for the new market-based mechanism under the Convention as well as a framework for accommodating a broader scope of national/regional market-based mechanisms. Indeed, if the CDM fails to reform effectively, it may bring about its own marginalization. The effectiveness of such reforms are, of course, contingent upon the supply and demand balance in carbon markets being addressed.

RECOMMENDATIONS

2.1. Develop and test sectoral approaches within the CDM, while maintaining the availability of the current project-based approach. ***(CDM Executive Board)***

2.2. Develop and test project-based and/or national/sub-national REDD+ programmes, while implementing appropriate controls to mitigate risks. ***(CMP, CDM Executive Board)***

2.3. Develop and test approaches to achieve a net mitigation impact, on both buyer and seller sides, while avoiding disincentives for project developers and investors. ***(CMP, CDM Executive Board)***

2.4. Stop registering new projects involving gases with comparatively low marginal costs of abatement (e.g. projects that reduce HFC-23 and projects that reduce N_2O from adipic acid plants), which have matured to the point of being ready to graduate from the CDM. Regulation may be needed to ensure the phase-out of these industrial gases. ***(CMP, CDM Executive Board)***

3. Set robust standards to enable linking and harmonization

Context

A wide range of emissions trading systems are emerging around the world, including national systems in Australia, New Zealand, and South Korea, as well as sub-national systems in Brazil, Canada, China, and the United States. Many such systems contemplate the use of offset credits, whether domestic or international in nature.

This growth is a sign of confidence in the ability of carbon markets, including offset mechanisms, to contribute to meeting the climate change challenge. However, the proliferation of different markets also creates potential risks. The role of the CDM in helping to address these risks deserves consideration.

It should be noted that a current subject of discussion under the international climate change negotiations is a framework for market-based (and possibly non-market-based) mechanisms that are developed and implemented at the national or regional level, including how credits and allowances generated from such mechanisms may be used to meet mitigation targets. These discussions remain at a preliminary stage.

Research findings[12]

Linking

The benefits of linking global carbon markets should not be overlooked. There are considerable efficiencies to be gained through the linking of different markets, in that they would further encourage the implementation of low-cost mitigation opportunities, thereby driving down compliance costs and potentially facilitating an increase in mitigation ambition. Further, more integrated markets tend to be less susceptible to price volatility that is induced by regional economic shocks.

Direct linking between different emissions trading systems can be difficult to achieve in practice, not least because it entails conducting external negotiations on domestically politically sensitive matters such as rules on market oversight and standards for measurement, reporting, and verification. An alternative method of linking is indirect, whereby different emissions trading systems enable the same type of third-party offset credit to be used for compliance purposes.

The use of indirect linking via the CDM is somewhat varied. The European Union and New Zealand currently accept the use of CERs for compliance purposes under their respective emissions trading systems, while Australia is considering allowing their use. China is considering using a similar standard based on the CDM. The US state of California and the Canadian province of Quebec are explicitly not allowing CERs to be used for compliance, although they have studied the experiences of the CDM in designing their own offset mechanisms. Each of these stances is informed by domestic factors, both economic and political.

A role for the CDM in enabling the indirect linking of emissions trading systems is possible and broadly desirable. It provides a mature infrastructure that other mechanisms may take some time to develop unaided. It has a global reach, thereby opening up mitigation opportunities worldwide. It may also have better environmental integrity than other options, at least in the short term, due to its institutional capacity and ongoing reforms addressing past shortcomings. Its origins in the Convention and Kyoto Protocol processes imbue it with legitimacy in the view of a wide range of countries. Finally, it is the mechanism with the largest body of practical experience, gained through over a decade of operation.

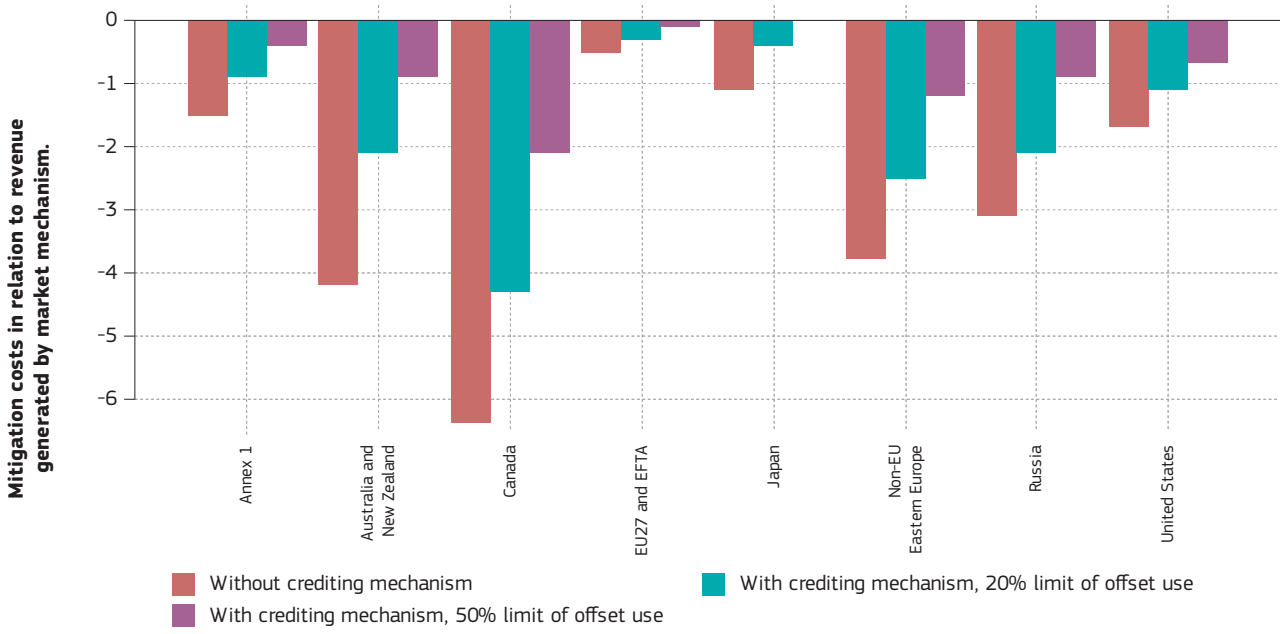
Harmonization

A world in which all emissions trading systems are linked, either directly or indirectly, is arguably the best-case scenario for increasing market liquidity and fungibility, maximizing cost-effectiveness, and facilitating greater mitigation ambition. However, such a scenario may not be feasible, at least in the short to medium term, on account of domestic policy considerations and technical challenges.

A second-best scenario – but still preferable to a wholly fragmented world – is one in which standards are harmonized to the greatest extent possible. The benefits of

12 Data and numbers presented in this section are derived from the CDM Policy Dialogue research, summarized in: High-Level Panel on the CDM Policy Dialogue: Research report: The future context of the CDM (2012)

Figure 6: Estimated savings from linking schemes together through fungible offsets



Source: Dellink et al., Towards Global Carbon Pricing: Direct and Indirect Linking of Carbon Markets, 2010

harmonization include regulatory consistency across jurisdictions and lower costs of compliance. Harmonization would also help to address several risks associated with the emergence of multiple types of offset mechanisms in different jurisdictions. Different offset mechanisms may apply different standards of measurement, reporting, and verification, thereby promoting a deterioration of overall environmental integrity; and a failure to harmonize measures for the tracking of credits and allowances, such as through common registry standards, may lead to the double counting of mitigation outcomes.

To date, several emissions trading systems and voluntary offset mechanisms have looked to the CDM as a reference point in the design of their own offset mechanisms, particularly in the areas of measurement, reporting, and verification, as well as project methodologies. This is not surprising: the CDM has built up a considerable body of knowledge and experience during its lifetime, and it is instructive for national policymakers to consider the lessons learned from the CDM when designing their policies on the use of offset credits.

Stakeholder inputs

Stakeholders generally agree that the CDM has contributed much learning on market mechanisms, including building information databases of market- and country-based intelligence

"It is essential that Governments that wish to pursue carbon markets as a mitigation option should consider establishing direct and indirect linkages among different markets as a way to reduce the overall costs of abatement, which would build more liquidity and enhance price signals for low-carbon investments."

Business Organization

"If you look at the American systems or any other systems in the voluntary sector, you will see that they have organized their systems modeled on the CDM. The CDM has been a template for all."

Non-Governmental Organization

for many sectors. Regardless of whether the CDM is reformed and coexists with other mechanisms, or is replaced by other mechanisms, most stakeholders consider it imperative to ensure that lessons learned and accumulated knowledge are used, especially as there is no reason to assume that new mechanisms would not face similar problems to those that the CDM has encountered and addressed over the years.

Linking

In a world with many systems with different standards, having CERs fungible in each system provides an indirect link and may assist in keeping standards harmonized across systems. Although ultimately the decision of whether CERs are fungible is one for each system to decide, the knowledge and experience developed over the years and the quality of the monitoring, reporting and verification standards achieved to date by the CDM would make it an ideal candidate for the role, according to several of the stakeholders consulted. These stakeholders suggest that the CDM could act as a common currency linking markets into a global platform, upholding global standards for the measurement, reporting, and verification of emission reductions.

"The CDM has a critical role to play in the market and, irrespective of future agreements under the UNFCCC, that role must continue. It is our view that the institution should establish itself as the single agency delivering international abatement units under all current and future mechanisms agreed within the UNFCCC (CDM, REDD+, NAMAs etc)."

Business Organization

"Due to its unique legitimacy as a [United Nations] mechanism the CDM can indeed set an internationally accepted best practice standard providing direction to other standards. Furthermore emerging new market mechanisms can build on the wealth of experience generated with the CDM. If the CDM did emerge as a global common standard it would provide a much better framework for achieving cost-effective GHG mitigation activities with private sector support, than if the carbon market was fragmented by different national/regional standards."

International Development Bank

Harmonization

Some stakeholders hold that several new domestic mechanisms are superior to the CDM, both in terms of cost and time for monitoring and verification, and in realizing greater mitigation benefits from projects. As such, they do not insist upon the CDM as the sole means of ensuring comparability across mechanisms. Other stakeholders state that some of these new domestic mechanisms are sacrificing environmental integrity by taking shortcuts to reduce transaction costs.

Conclusions

Significant benefits would accrue to the linking, whether direct or indirect, of international carbon markets. In view of the difficulties attached to negotiating direct links between different emissions trading systems, indirect linking is more likely. If this is to be pursued, then the CDM would be a suitable candidate to provide third-party offset credits acceptable in different emissions trading systems.

Whether or not linking is feasible, the CDM can nevertheless play an important standard-setting role for international carbon markets. In many cases, CDM standards are already being used in existing and emerging offset mechanisms. While this confirms that the CDM is already providing internationally agreed standards and methodologies, there is no formalized method to ensure the effective sharing of the information and experiences of the CDM. By better understanding the views of these new markets, and by seeking to respond to their needs, the CDM can proactively encourage the development of common standards that are robust and harmonized.

RECOMMENDATIONS

3.1. Identify and develop standards that anticipate the needs of emerging market-based mechanisms, particularly in the measurement, reporting, and verification of emission reductions and the tracking of mitigation outcomes. ***(CDM Executive Board, UNFCCC Secretariat)***

3.2. Actively seek opportunities for collaboration with other market-based mechanisms, including those designed and implemented at the national level, around common functions such as standard-setting, accreditation, registration and issuance, capacity-building, and communication. ***(CDM Executive Board, UNFCCC Secretariat)***

3.3. Ensure the comparability among the standards used across market-based mechanisms, both inside and outside the Convention, in order to minimize regulatory inconsistency, to safeguard environmental integrity, and to promote fungibility. ***(National governments)***

3.4. Establish a common registry function that tracks mitigation outcomes effectively, so as to avoid double counting across different types of market-based mechanisms. ***(National governments, UNFCCC Secretariat)***

3.5. Improve regulatory engagement and outreach efforts to regulators of emissions trading systems, including through the dissemination of lessons learned from the CDM. ***(CDM Executive Board, UNFCCC Secretariat)***

4. Support the rapid implementation of the Green Climate Fund

Context

Various research reports, including that of the United Nations Secretary-General's High-Level Advisory Group on Climate Change Financing in 2010, have indicated the extent of the climate finance challenge and the need to redirect finance to tackle climate change. In response, national governments agreed at the United Nations Climate Change Conferences in Cancun (2010) and Durban (2011) to set out the basis for the Green Climate Fund, with the purpose of financing mitigation and adaptation efforts at scale.

"The essential idea behind the Green Climate Fund is to use public money to help developing countries confront the climate crisis. There could be an opportunity to engage the private sector which could provide a portion of the funds. This could also help address the problem of regional distribution of CDM projects, as funds would be directed to countries that need them the most."

INVESTOR

The Green Climate Fund is expected in the near future to define the various modes of financing that it will undertake, including in relation to payment for verified results in mitigation of greenhouse gas emissions. There is a potential opportunity – and mutual gain – for the CDM and the Green Climate Fund to work together in testing and piloting approaches for the deployment of funds.

Although this issue did not arise in the initial research programme of the Panel or in stakeholder consultations, it is a matter that the Panel found relevant to its remit and has hence researched and subsequently deliberated upon[13].

Conclusions

An opportunity for capitalizing on the achievements of the CDM in facilitating global mitigation would be to collaborate with the Green Climate Fund as this instrument begins to identify how to manage the flows of its funds towards mitigation and adaptation actions in developing countries.

Cooperation with the Green Climate Fund would enable the deployment of the knowledge accumulated in the CDM infrastructure, the know-how that was developed through the learning-by-doing approach, and its vast collection of market- and country-based intelligence, for the purpose of strengthening mitigation and adaptation. The Green Climate Fund could benefit by accessing the mature approach of the CDM to the assessment of mitigation actions. This could give investors confidence in the quality of the initiatives selected for funding, thus enabling quicker establishment of operations.

As specified in the Governing Instrument of the Green Climate Fund, "the Fund may employ results-based financing approaches, including, in particular for incentivizing mitigation actions, payment for verified results". There may therefore be scope for collaboration on the design of any process for payment of verified results, including steps to leverage the CDM infrastructure, knowledge base, and lessons learned. These could include contracting with the CDM to make proposals for the design of a process for payment of verified results or even to outsource development and management of this process to the CDM structure. These measures will need to respect the decisions reached by national governments under the Convention defining the requirements for measurement, reporting, and verification applicable to developing countries.

13 Federico Gallo: Paper developed for the CDM Policy Dialogue: Exploring the complementarities between the Green Climate Fund and the CDM: Developing the GCF's Project Certification and Credit Issuance Process (2012)

RECOMMENDATIONS

4.1. Promote the use of CDM standards and methodologies in accounting for payments for verified results, so as to leverage the achievements, knowledge, and resources of the CDM. (Green Climate Fund Board, CDM Executive Board)

4.2. Apply the standards and methodologies developed under the CDM as a way to facilitate the implementation of mitigation activities supported by the Green Climate Fund. (Green Climate Fund Board, CDM Executive Board)

CDM PROJECT: 2969 Lusaka Sustainable Energy, Zambia.

Burkhard Seifert

5. Implement standardized methods for assessing additionality

Context

A CDM project is additional if it reduces emissions below the level of emissions that would have occurred in its absence. Additionality is generally seen as a core attribute of environmental integrity: if CERs were issued for non-additional activities, and if those CERs were used to offset emissions elsewhere, then the CDM would have a negative mitigation impact.

Failing to adequately demonstrate additionality is the most common reason why projects are rejected. Determining additionality is inherently difficult because it requires – by definition – comparison with a counterfactual situation in which the CDM does not exist, and reviews instigated by additionality concerns are time-intensive to consider and resolve.

Research findings[14]

The project-by-project approach

To date, the CDM has largely relied on a project-by-project approach when determining additionality. This necessitates the scrutiny of each request for registration in order to hypothesize the counterfactual situation, to consider the individual characteristics of the project against a variety of tests, and then to determine whether the project is additional.

The project-by-project approach poses several drawbacks. First, it imposes high transaction costs, as it requires individual assessments of each request for registration (both for those preparing and for those reviewing the documents). These costs prevent many smaller projects from being submitted and therefore may also deny them – and their host countries – access to the CDM. Second, it has led to inconsistency, even across projects of a similar type, with some projects accepted but similar ones rejected. This creates unpredictability and additional risk for project developers. Third, it is not readily adaptable to handling larger volumes of requests for registration (i.e. it is not "scalable"), thereby minimizing the future usefulness of the CDM.

Particular concerns apply to the determination of financial additionality (i.e. whether the revenues of the submitted project scenario would be higher or lower than the most likely alternative). It relies heavily on judgements about rates of return and discount rates of future conditions, most of which are uncertain. It also requires the CDM Executive Board to second-guess the personal risk-reward appetite of project participants, which is hazardous and inherently unverifiable.

That being said, there is no conclusive evidence, as is sometimes claimed, that a large number of CDM projects are non-additional. Rather, there is evidence that there are several project types where additionality is difficult to prove and there is a risk of non-additional projects being registered.

Standardized approaches

The objective for policymakers in designing an offset mechanism should be to minimize errors while controlling transaction costs. As such, it would be helpful for the CDM Executive Board to elaborate objective, stable, and unambiguous rules for determining additionality.

Standardized approaches (i.e. pre-approved values or procedures for input data used in the determination of additionality) can make the determination of additionality easier and reduce the cost of demonstrating additionality. The three most prominent types of standardized approaches are: positive lists, whereby projects fulfilling certain criteria (e.g. renewable energy projects in least developed countries) are deemed to be automatically additional; performance benchmarks, which compare a project against a performance standard in an appropriate population (e.g. top 25% of performers within an economic sector); and penetration rate thresholds, which query whether a project ought to be deemed additional on the basis of its expected prevalence.

As different technologies and different locations pose different questions for the assessment of additionality,

14 Data and numbers presented in this section are derived from the CDM Policy Dialogue research, summarized in: High-Level Panel on the CDM Policy Dialogue: Research report: Governance of the Clean Development Mechanism (2012).

standardized approaches would need to be context-specific and technology-specific. For example, in relation to the policy environment, countries with very aggressive promotion policies for renewable energy face different issues from countries where such policies, for a variety of reasons, have not been established.

It is necessary to acknowledge, when considering the implementation of standardized approaches, that they would impose costs – mostly upfront and potentially substantial – in terms of research, data collection and analysis, model building, and maintenance. Performance benchmarks (e.g. for a given technology or sub-sector) would entail a bespoke analysis and require a custom decision tree for determining additionality and forecasting a baseline. They would also require a careful investigation of technologies, economics, and behaviour.

Following development, standardized approaches would also require ongoing testing and evaluation and periodical reviews and updates in line with technological developments in each of the sectors and activities involved. These activities would all require extensive coordination and consultation, the investment of effort by other stakeholders (including host country governments), all on an ongoing basis.

Finally, there would still be a concern that that standardized approaches may result in the registration of projects that would not have been found additional under a project-by-project approach. To address this, the CDM Executive Board could impose appropriate system-wide safeguards, such as tougher standards and a commitment to review and update criteria on a frequent basis.

Stakeholder inputs

Stakeholders frequently criticize the additionality determination process as overly politicized, subjective, unpredictable, impractical, and/or too costly. They express a desire for a less complex additionality process with low transaction costs that is simultaneously rigorous and error-proof.

The CDM Executive Board is criticized for doing too little work on additionality, and some stakeholders say that the complexity of the additionality rules has prevented good projects from being implemented. Several stakeholders suggest standardized baselines and positive lists as potential solutions. They also suggest doing away with the financial additionality requirement, or introducing shorter crediting periods.

"The CDM's project-based approach in which it assesses the additionality and eligibility of each project on a ton-by-ton basis is very time- and resource-intensive, inefficient, and does not seem capable of effectively being applied to a large number of projects to generate a large supply of offset credits."

Non-Governmental Organization

"Given that project-by-project additionality testing is inherently inaccurate, the CDM must be limited to those project types that are not being built on their own, and for which the CDM substantially increases the numbers of projects going forward."

Non-Governmental Organization

"A comprehensive positive list that lists all the transition technologies should be created by each developing country taking into account its national circumstances, which can further enable such a transition. Any project that employs a technology from this list would be automatically deemed additional."

Environmental Policy Centre

Conclusions

The project-by-project approach to determining additionality is cumbersome, subjective, and limiting. In particular, financial additionality is difficult to determine conclusively, as it requires modelling of economic conditions several years into the future and is highly dependent on factors that are hard to assess independently.

Standardized approaches would not necessarily be straightforward to implement, but if their challenges can be overcome, they would significantly improve the performance of the CDM. They would simplify the system, reduce transaction costs, increase objectivity and predictability, and enable scalability. Appropriate measures would need to be taken at a system-wide level in order to address concerns about the environmental integrity of specific projects.

RECOMMENDATIONS

5.1. Increase the use of standardized approaches, such as performance benchmarks, in the assessment of additionality. These should be set conservatively to ensure additionality across a population of similar projects, and should account for technology- and context-specific factors, moving away from more subjective and unverifiable financial additionality tests. These changes should by no means lead to weakening of the additionality test as conducted today, and in fact may lead to questioning the continued inclusion of certain technologies in specific locations where they are likely to be the norm. A timetable should be set for implementing these changes. ***(CDM Executive Board, UNFCCC Secretariat)***

5.2. Identify positive lists to simplify additionality assessments for project types and contexts where there is a low risk of non-additionality. ***(CDM Executive Board, UNFCCC Secretariat)***

5.3. Ensure that the focus of incentives constantly shifts to the next generation of technologies, in order to drive technological change. In order to achieve this, standardized baselines and parameters must be periodically reviewed according to the pace of technological progress. ***(CDM Executive Board, UNFCCC Secretariat)***

6. Ensure that CDM projects help to achieve sustainable development

Context

As stated in Article 12, paragraph 2, of the Kyoto Protocol, one of the purposes of the CDM is to assist developing countries to achieve sustainable development. Under the CDM modalities and procedures, each developing country has the authority to assess whether a CDM project helps it to achieve sustainable development according to its own national development priorities.

The issue of whether the CDM contributes to sustainable development has attracted considerable stakeholder, media, and public attention over the years. In particular, allegations that certain CDM projects have had negative sustainable development impacts have prompted calls for increased standards and scrutiny in this area.

Research findings[15]

Although there is no consensus definition of what exactly constitutes "sustainable development", there is a general understanding that it encompasses three broad areas: *economic impacts* (e.g. financial returns to local entities, a positive balance of payments), *environmental impacts* (e.g. improved local air and water quality, better waste management), and *social impacts* (e.g. employment, education, poverty alleviation, health and welfare).

Most studies of the sustainable development impacts of the CDM conclude that it has had an overall positive impact over and above the mitigation of greenhouse gas emissions, with benefits being distributed across all three areas, and with renewable energy projects being particularly beneficial for developing countries. Enhancement of the local economy through employment generation and poverty alleviation is the most commonly reported impact of CDM projects, followed by the reduction of pollution, the promotion of reliable or renewable energy, and capacity-building of the local population. It should be noted, however, that

Figure 7: CDM Project 2307: Federal Intertrade Pengyang Solar Cooker Project, China. Solar cookers provide access to clean energy in Northwest China

Tao Ketu

most studies employ varying criteria to assess impacts and occasionally lack any ex-post assessments, relying on information provided by project developers when requesting registration, rather than on post-implementation data.

The Panel analyzed a random sample of 202 project design documents looking for self-declared sustainable development criteria. Of this sample, 96% mention economic benefits, 74% mention environmental benefits, and 86% mention social benefits. Among the possible indicators, the most commonly cited specific benefits are *improved local quality of life* (82%), *employment generation* (80%), and *contribution to national energy security* (76%). Benefits tend to be mentioned more often by small-scale projects

15 Data and numbers presented in this section are derived from the CDM Policy Dialogue research, summarized in: High-Level Panel on the CDM Policy Dialogue: Research report: Assessing the impact of the Clean Development Mechanism (2012)

than in large-scale projects. The Panel also analyzed seven cases that were pointed out as having negative sustainable development impacts; it found either that the CDM projects were not themselves the cause of the negative impacts or that there was insufficient evidence to conclude that the CDM projects had caused any worsening of a negative pre-project situation, where these existed.

A comparison of projects across different countries shows that their contribution to sustainable development depends both on project type and host country.

By project type, industrial gas projects may have fewer positive impacts in comparison to renewable energy and forestry projects. Renewable energy projects can be particularly beneficial for rural areas in developing countries, as they enhance energy access and lead to the development of the local economy.

By country, one study found that Indian projects have a far greater impact on infrastructural development than do Brazilian or Chinese projects, but involve less technology transfer. On the other hand, Chinese projects largely promote the protection of the local environment and natural resources, but it is not clear whether this can be attributed to China's preference for energy efficiency and renewable energy projects in order to achieve self-sufficiency of energy resources.

Some research studies have undertaken a comparative assessment to verify whether the sustainable development performance of projects labelled by external organizations (such as the Gold Standard) is better than the sustainable development performance of non-labelled projects. However, such studies conclude that labelled projects do not significantly exceed the sustainable development benefits of the non-labelled projects.

Stakeholder inputs

Stakeholders express divergent views on whether the CDM has assisted host countries to achieve sustainable development. Many stakeholders hold that the CDM has successfully promoted sustainable development with reference to the three areas of impact indicated above. While acknowledging that criticism may be justified for some projects, they argue that this criticism should not obscure the contributions of the thousands of other registered projects that have sustainable development benefits. Some stakeholders even advance the view that the mitigation of greenhouse gas emissions is, by definition, a form of sustainable development.

In contrast, other stakeholders maintain that the CDM has not contributed significantly to sustainable development. Some stakeholders go one step further, stating that the CDM has not only failed to have a positive impact, but has also had a negative impact in a number of cases. Some claim that the root cause of the issue is that host countries lack the capacity to make assessments effectively, or that the lack of a definition of sustainable development may lead to a lowering of standards, suggesting that reviews of host country assessments need to be undertaken, and that granting responsibility for assessments to host countries may compromise the outcome.

The lack of capacity among many designated national authorities (and the pressure that they may face to approve projects) leads some stakeholders to believe that designated national authorities are not necessarily well placed to guarantee that sustainable development benefits will materialize. Some stakeholders indicate that the capacity of host countries to follow up on the initial assessment of a project's contribution to sustainable development is limited, given the paucity of resources in many cases. Some stakeholders and host countries feel that the CDM Executive Board or the UNFCCC Secretariat could provide more structured guidance on sustainable development and monitoring criteria.

A point raised by several stakeholders is that one mechanism may be incapable of delivering on both mitigation and sustainable development. In this context, it is felt that the CDM should focus on the former, possibly with special arrangements for projects considered a priority because they contribute to benefits in addition to mitigation. Others note that the existing coverage of methodologies in the CDM does not extend to sectors and areas of activity with the highest sustainable development potential, or those which contribute most to transformational change, but is limited to those where investors find cost-effective mitigation opportunities. According to these stakeholders, areas with high sustainable development potential, such as transport, housing or agriculture are, in practice, outside the CDM.

Some stakeholders also note that the CDM Executive Board has been confronted with allegations of human rights violations arising from CDM projects. Some suggest that, taking into account the fundamental principles reflected in the Charter of the United Nations, the CDM Executive Board has a responsibility to consider such allegations, even if the designated national authority has assessed that the project has positive sustainable development effects.

"Offset programmes are designed to have least cost emission reductions and sustainable development. Under CDM some things work well for both mitigation and sustainable development, but some things do not."

Small Scale Working Group Member

"Sustainable development will continue to be an objective of future carbon mechanisms. With the possible exception of some industrial gas projects, I can't envisage a CDM project that hasn't contributed to sustainable development. Most CDM projects improve the efficiency of old factories, use waste streams, create employment and transfer technology."

Business Organization

"The CDM from now onwards should focus on sustainable development. This can be done by reducing the scope of projects eligible under the CDM."

Methodologies Panel Member

Conclusions

It is not possible to reach a definitive conclusion on the sustainable development impacts of the CDM to date, given the insufficiency of objective data. The CDM appears to have had more positive impacts than negative impacts in most cases. There are also strong assertions of negative impacts, although the lack of requirements and guidance for monitoring and reporting makes it impossible to assess the actual sustainable development effects with a degree of certainty.

Given that the contribution to sustainable development is one of the stated objectives of the CDM, this situation must be addressed. There is a clear need to improve the reporting, monitoring, and verification of the sustainable development impacts of CDM projects, and to implement safeguards against projects with negative impacts, without imposing unnecessary costs or barriers to project development and implementation.

RECOMMENDATIONS

6.1. Assess the contribution of CDM projects to sustainable development in the project approval process in a transparent, inclusive, and objective manner. Where host countries do not have the capacity to do this and at their request, the CDM Executive Board could designate an appropriate and mutually acceptable independent authority to do so, and should also help national authorities to develop such capacity. ***(Host countries, CDM Executive Board)***

6.2. Report, monitor, and verify sustainable development impacts in a more systematic and rigorous manner throughout the lifetime of a CDM project. Project participants should be required to declare, in their requests for registration and issuance, how a project assists the host country to achieve sustainable development in a manner that allows for comparison across projects. ***(Host countries, CDM Executive Board, project participants)***

6.3. Enhance safeguards against negative sustainable development impacts. If a credible allegation is made that a project has negative impacts, it should be investigated by the host country and, if substantiated, result in corrective measures. Some negative impacts (e.g. the use of child labour) are non-negotiable reasons to reject a project. ***(Host countries)***

6.4. Enable a host country to withdraw its approval of a CDM project if, following an objective and transparent assessment process, the project is proven to have a harmful impact on sustainable development. ***(Host countries, CDM Executive Board)***

6.5. Provide increased support, including capacity-building and best-practice examples, to host countries that request it in order to perform the above functions. ***(CDM Executive Board, UNFCCC Secretariat)***

CDM PROJECT: 1900 Duerping Coal Mine Methane Utilization Project, China

Ruben Martinez Rubio

7. Strengthen co-benefits and enhance the scope of energy technology

Context

Although the CDM was designed to support mitigation and sustainable development, it has become clear that it can also contribute to a range of other policy goals. These relate to energy (including energy security and energy access), the transfer and diffusion of clean technology, and new and additional finance for mitigation activities.

The question therefore arises whether – and to what extent – the CDM can achieve or enhance complementary benefits ("co-benefits") in these other policy areas.

Figure 8: CDM Project 0079: Kuyasa low-cost urban housing energy upgrade project, Khayelitsha, South Africa. One of a number of Kuyasa residents who were selected, trained and employed as solar hot water installers

Nic Bothma

Research findings[16]

Energy

The impact of the CDM on securing energy access in developing countries, such as through increased self-reliance on domestic sources and technologies, is unclear. On the one hand, the CDM pipeline contains many renewable energy projects; on the other hand, some large-scale fossil-fuel projects may in some instances increase dependence on external sources of primary energy (e.g. coal or natural gas imports). At this stage, it can be said this effect is unclear, but could potentially be large and positive depending on host country choices of technologies and sources.

The impact of the CDM on the renewable energy market varies significantly across technologies, countries, and scales. Large-scale renewable power is the largest project category in the CDM, with wind, hydropower, and biomass being the largest contributors to new capacity. Registered CDM projects account for more than 110,000 MW of renewable electricity capacity over the last 10 years, which is roughly the total power generation capacity of Africa. More than 90% of this capacity is in five countries: Brazil, China, India, Mexico, and Vietnam.

Other project types (e.g. landfill gas) make up a smaller share of total CDM capacity, but have been successful in opening up new renewable energy markets. For large-scale wind, hydropower, and biomass, however, the limited impact of carbon revenue on project economics combined with the high share of CDM projects in many national markets has led to some questioning over additionality. The CDM also includes substantial investments in natural gas and high efficiency coal, as well as power generation using waste heat and waste gases.

To date, demand-side energy efficiency has been almost entirely absent from the CDM, with few approved methodologies and projects. This arises because the traditional barriers facing energy efficiency (for example split incentives, information asymmetries and transaction costs) are not adequately addressed in the CDM. Tapping the full potential in this sector will require the greater deployment of programmatic CDM, in which multiple energy efficiency programmes could be considered together.

Technology transfer and technology diffusion

Research studies on the level and type of technology transfer caused by the CDM have arrived at different results, partly depending on how technology transfer is defined. In general, it has been found that approximately 25%–30% of registered CDM projects have resulted in some type of international technology transfer. Technology transfer is more prevalent in larger project types and is most common in projects in Asia (excluding China and India). The level of technology access and readiness in the host country can have both a positive effect (enabling the adoption of new technologies) and a negative effect (having access to inferior alternative local technologies). In terms of countries, some authors find that technology transfer rates are declining steeply over time in Brazil, China, and India, but more slowly in other countries. This is attributed to the higher levels of technological capabilities in these three countries, so that technology transfer, particularly for large-scale renewable power generation, is less and less necessary over time.

Some designated national authorities also require that CDM projects contribute to national-level technology diffusion (i.e. the replication of, and capacity-building for, the technology beyond the CDM project itself). This has not been evaluated to any great extent, but some of the countries applying this criterion host a large number of CDM projects, indicating that technology diffusion should be common, at least in these countries.

New and additional financing

The estimated capital investment for the CDM projects currently in the pipeline (i.e. registered or soon to be registered) is US$215 billion. Annual investment peaked in 2008 at about US$41 billion. A large number of projects are undergoing validation, and these could lead to a new, much higher, peak for annual capital investment in 2012. Capital investment is dominated by wind and hydro projects and is concentrated in eastern Asia.

In terms of leveraging new and additional finance, most investment in CDM projects comes from domestic sources. However, the share of projects with foreign investment has been rising as project size has increased and the industry has grown. The average capital investment in renewable energy projects has also increased significantly over the past decade. About half of the projects with foreign investment receive funds from multiple countries. When the investment comes from a single country, it is only slightly more likely to come from a developed country than a developing country.

16 Data and numbers presented in this section are derived from the CDM Policy Dialogue research, summarized in: High-Level Panel on the CDM Policy Dialogue: Research report: Assessing the impact of the Clean Development Mechanism (2012)

Figure 9:
CDM Project 1734: Xinjiang Tianfeng Dabancheng Second Phase Wind Farm Project, China. A worker takes a break from inspecting the wind turbine while admiring the blue autumn sky
Chris Zink

"The CDM has leveraged new and additional financing for diffusion of well-known technology, in particular renewable energy."

Market Player

"In many projects technology is still imported or was produced locally already before the CDM. However, these CDM projects have resulted in a far greater diffusion of these technologies than in periods before the CDM mechanism was available."

Designated Operational Entity

"Sure, it has contributed to technology transfer. At least it has accelerated the introduction of renewable technologies like wind, hydro, biogas and waste gas usage, which would not have been introduced in many countries at all or at least with the same speed. It has been proven by the CDM that a market based mechanism is able to direct private investment into development programmes which would have otherwise required governmental or multinational subsidy regimes."

CDM Participant

Stakeholder inputs

Stakeholders note that the CDM has played a role in promoting renewable energy projects, increasing awareness of clean energy, and drawing private finance.

Some stakeholders mention that the CDM has enabled technology transfer and significant capacity development in developing countries, including an ability and willingness to embrace emissions trading systems.

On the role of the CDM in leveraging finance, some stakeholders believe that the level of transaction costs involved in the development of projects has severely stunted the possibilities for transformational levels of finance. In this view, the risk-reward balance is considered inadequate. Some stakeholders suggest further exploration of the way in which the CDM can leverage greater amounts of finance. This implies also looking in particular at the relationship between private flows of finance through the CDM, and public flows of finance through either multilateral instruments or bilateral climate finance.

Conclusions

The CDM has conferred complementary benefits, including in the areas of energy (including energy access and energy security), technology transfer, and new and additional finance. Nevertheless, further action is required to achieve or enhance co-benefits. The ability of the CDM to support the transfer of clean technology and know-how to developing countries has to be recognized and enhanced through streamlined methodologies and procedures for such technologies, including positive lists. In addition to this, the CDM should also stimulate collaborative technology development and local technology innovation.

Energy efficiency, renewable energy, and carbon dioxide capture and storage in geological formations are three major technologies for mitigation. These sectors should continue to be promoted by the CDM, provided that their environmental and social risks are adequately addressed.

All new technologies should be carefully assessed to avoid negative environmental and social impacts before they are implemented under the CDM. In the case of carbon dioxide capture and storage in geological formations, issues that require adequate treatment (as set out in the relevant decisions in Cancun and Durban) include very high upfront costs due to low technological maturity, adequate infrastructure for the transport of carbon dioxide, social acceptance, appropriate geological conditions in the context of seismic risks and possible adverse impact on groundwater, and the development of legal and regulatory frameworks to ensure the safe and permanent storage of carbon dioxide and to address liability.

RECOMMENDATIONS

7.1. Encourage the increased development of projects with high co-benefits (e.g. household-level service projects), including through simplifying requirements, standardizing registration and issuance procedures, and using positive lists. ***(CDM Executive Board, UNFCCC Secretariat)***

7.2. Explore opportunities for cooperation with other international institutions and financial mechanisms in support of co-benefits generated by CDM projects. ***(CDM Executive Board, UNFCCC Secretariat)***

7.3. Promote greater take-up of new energy technologies in the CDM, such as energy efficiency, renewable energy, and carbon dioxide capture and storage in geological formations. ***(Host countries, CDM Executive Board)***

7.4. Stimulate collaborative technology development and local technology innovation. ***(CDM Executive Board)***

8. Encourage greater access to the CDM for underrepresented regions

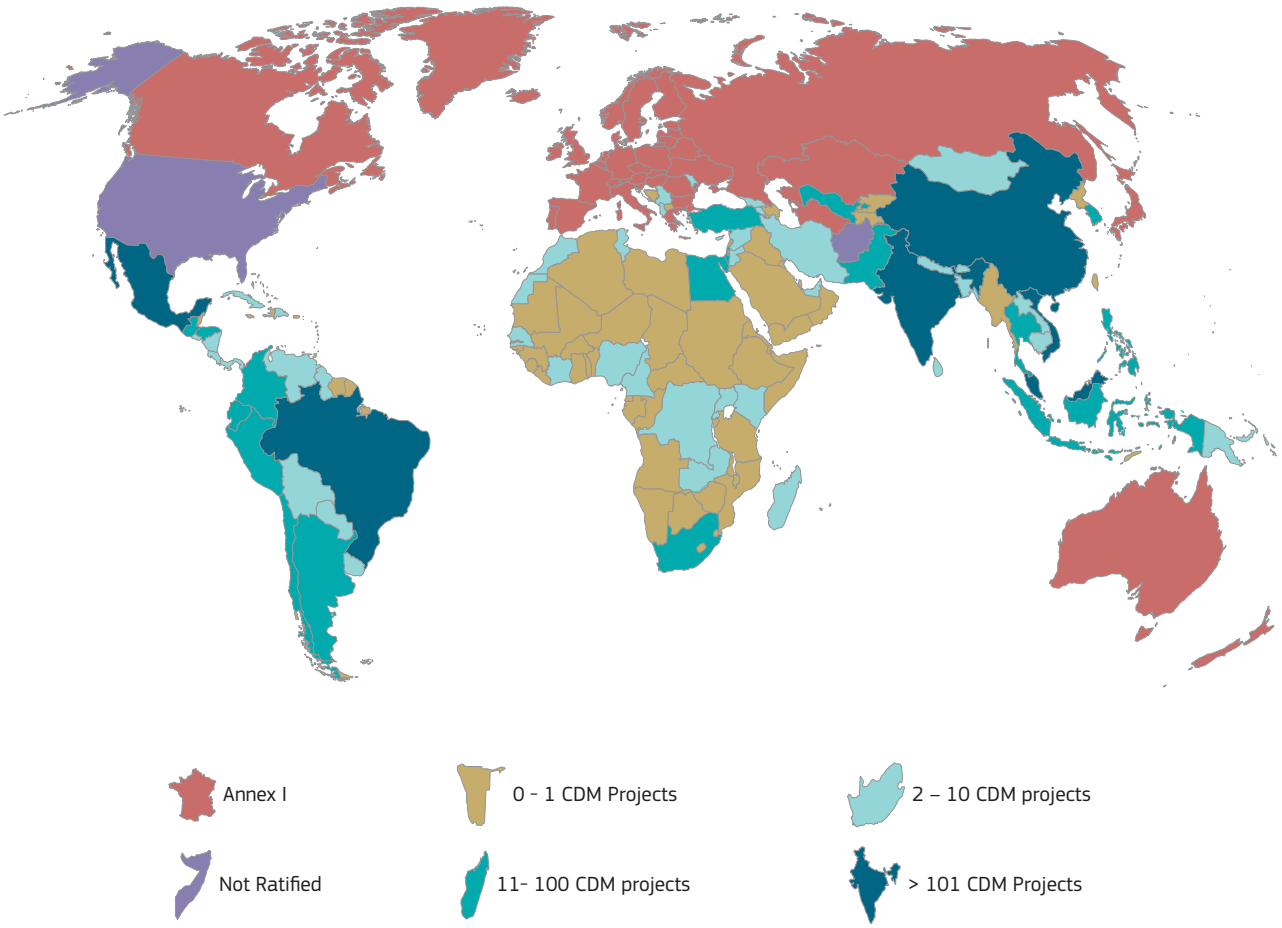
Context

The geographic distribution of registered projects and issued CERs is uneven. Over two-thirds of all registered projects – and over two-thirds of all CERs – originate from two countries: China and India. Only 43 other developing countries have generated any number of CERs at all. Most countries in Africa, as well as most least developed countries, have no registered projects at all, although this pattern appears to be gradually changing with the emergence of programmatic CDM.

Various measures have been discussed and implemented in an attempt to address this uneven distribution, including targeted capacity-building efforts, the elaboration of methodologies that are likely to be particularly applicable to under-represented countries, and the creation of a loan scheme to support the development of projects in countries with fewer than 10 registered projects.

Based on the above, the Panel sought to understand the factors affecting the geographic distribution of registered projects and issued CERs, and also to investigate possible opportunities to improve access to the CDM for those countries that have fewer activities.

Figure 10: Distribution of CDM projects by country as of 1 May 2012



"Note: adapted from Henk Sa, EcoMetrix by authors, with data from UNEP CDM Pipeline as of 1 May 2012. "Registered projects" is the registration pipeline, including request for registration, request for review, under review, and registered, but excludes projects rejected, withdrawn or at validation."

Research findings[17]

Multiple factors explain the uneven geographic distribution of registered projects and issued CERs. These factors are in some instances specific to the CDM, and in other instances relate more generally to the characteristics of host countries and therefore the challenges faced by investors in these countries. As the CDM is a market-based mechanism which tends toward the lowest-cost mitigation opportunities, it is understandable that projects will tend to originate from countries and sectors where there is significant potential for gains and emissions levels are the highest. However, there are other factors that are equally important.

Factors specific to the CDM include: national CDM capacity (i.e. having well-staffed and adequately-resourced designated national authorities); familiarity with the CDM within the public and private sectors, particularly the financial sector; access to the services of designated operational entities and project consultants; and design features of the CDM that require significant host country input, such as in the development of standardized baselines, and that therefore disproportionately affect countries with less capacity and experience.

Factors that are more general in nature include: the size of the economy and economic growth rates across the economy and/or within CDM-relevant sectors; the ease of doing business; the strength of the regulatory and policy environment; and the strength of local capital markets and commercial banks, as many CDM projects are domestically financed. Another factor is the existence of corruption, although it must be stressed that this problem is not specific to developing countries.

"It is difficult to judge how to grow the economies of countries with low development - with completely different economic situations to the rest of the world - in the context of the low carbon economy. CDM may not be a right mechanism for such countries."

Afforestation & Reforestation Working Group member

There are various opportunities to promote a more even distribution of registered projects and issued CERs.

Perhaps most significantly, methodologies that consider only current levels of energy consumption, particularly in relation to household services (e.g. heating and cooking energy, lighting, potable water), may fail to reflect the real demand for energy. Demand is, in many instances, arguably higher than consumption on account of a lack of infrastructure, lack of natural resources, or poverty, particularly given the high costs of these services relative to household incomes. As such, taking account of this suppressed demand increases the levels of potential emissions in a country or sector, attracting investors as it would be expected to do. As an additional benefit, the CDM could facilitate the necessary transfers of knowledge and technology that would create incentives for such countries to develop on low-emission trajectories.

Other opportunities include: the adoption of standardized parameters and baselines, so as to simplify the registration and issuance processes; the promotion of additional grant and loan schemes (building on the recent initiative of the CDM Executive Board); and the mobilization of domestic and international finance in a coordinated fashion.

Stakeholder inputs

There is a general concern with geographic distribution in the CDM, particularly the under-representation of African and least developed countries. However, some stakeholders suggest that reducing emissions from least developed countries may not be feasible because these countries do not have significant emissions, and that shifting the focus of the CDM to these countries will reduce the mitigation impact of the CDM, although it could affect the potential growth path of future emissions.

Some stakeholders note that the CDM is a market-based mechanism and that private investors are likely to seek the greater security of economically advanced developed countries. Some stakeholders suggest that the under-representation of land use, land-use change, and forestry projects in the CDM may be an explanatory factor, as these projects may be more likely to relate to rural populations.

High fees charged by designated operational entities are seen as a barrier to project development, with the CDM being too expensive for small-scale projects.

17 Data and numbers presented in this section are derived from the CDM Policy Dialogue research, summarized in: High-Level Panel on the CDM Policy Dialogue: Research report: Assessing the impact of the Clean Development Mechanism (2012)

Stakeholders propose softening strict procedural requirements in the project cycle and increasing investor security to improve the regional distribution of the CDM, and they suggest that programmatic CDM has had a positive impact where applied. Several stakeholders, including project developers, advise that standardized and simplified procedures, plus standardized parameters are options to improve access.

Conclusions

It is imperative to enable all developing countries to have equal access to the CDM for multiple reasons, not least that the CDM contributes to long-term global mitigation efforts by building market readiness. Moreover, through its co-benefits, the CDM can provide additional valuable contributions to both sustainable development and mitigation in developing countries.

In designing measures for enabling the geographic distribution of registered projects and CER issuances, it should be acknowledged that there are many factors affecting implementation, some being specific to the CDM, and others being applicable to investment conditions more generally.

RECOMMENDATIONS

8.1. Prioritize the development of CDM projects in developing, non-high-income countries, with very few projects that have issued CERs. ***(CMP, CDM Executive Board, UNFCCC Secretariat)***

8.2. Enhance the accounting of suppressed demand for energy services, so as to increase the potential for participation in the CDM in low-income countries with currently low levels of emissions. ***(CDM Executive Board)***

8.3. Accelerate the development of standardized parameters, including baselines, and simplified procedures for household-level services (e.g. electrification, water purification, sanitation, cooking) and public services (mass transport, lighting and municipal renewable energy programmes). ***(CDM Executive Board, UNFCCC Secretariat)***

8.4. Introduce a new grant scheme and expand the existing loan scheme to further reduce financial barriers to the implementation of CDM projects. ***(CDM Executive Board)***

8.5. Mobilize finance towards the building of capacity for hosting CDM projects in underrepresented countries. ***(International, regional, and national development banks)***

8.6. Share experiences and best practices, particularly within regions. ***(Designated national authorities)***

9. Rethink existing governance arrangements

Context

The two main entities involved in the governance of the CDM are the CDM Executive Board and the UNFCCC Secretariat. In theory, the CDM Executive Board was intended to serve as a strategic body and the UNFCCC Secretariat to serve as a supporting body. In practice, their roles differ markedly from the original intent. The CDM Executive Board has adopted a significantly more hands-on approach, devoting considerable time and attention to the scrutiny of individual requests for registration and issuance. Meanwhile, the UNFCCC Secretariat has taken on a broader role that includes preparing drafts of all major documents for the CDM Executive Board, advising the CDM Executive Board on strategic issues, organizing much of the work of the support structure to the CDM Executive Board, and coordinating stakeholder forums.

It is not inherently problematic that the CDM Executive Board and the UNFCCC Secretariat, through the organic growth of the CDM, are playing different roles from what was originally intended. Indeed, it may be desirable in the long-term for the UNFCCC Secretariat, as a full-time body, to be delegated greater responsibilities in areas of technical decision-making, thereby enabling the CDM Executive Board to focus on policy development. However, what is problematic is having bodies that lack appropriate internal governance arrangements to perform their functions effectively, compounded by an unclear relationship between them.

In the past, both the CDM Executive Board and the UNFCCC Secretariat have been criticized for inefficiency, particularly in relation to the management of the project cycle. A comprehensive review in 2009 by an external consultancy highlighted the absence of any systematic and balanced measurement of how well these bodies are performing, making it difficult to judge progress and to set targets for improvement.

Research findings[18]

Internal arrangements

Problems with the internal governance of the CDM Executive Board include: the lack of implementation of criteria (other than regional balance) for the nomination of members; the lack of transparent processes by which members are nominated by their regional groupings; and the absence of an explicit code of conduct for members that does not rely on each individual member deciding on what should be reported and on whether he or she is in a position of conflict of interest.

Problems with the internal governance of the UNFCCC Secretariat include: the fundamental tension between its responsibility to provide services to the CDM Executive Board and its status as an independent structure with its own accountability systems; the lack of a strict separation of its functions between supporting the setting of standards and supporting the assessment of projects; and the absence of a formal CDM-specific code of conduct for staff members working on CDM matters.

Relationship between the CDM Executive Board and the UNFCCC Secretariat

In order to govern the CDM effectively, there needs to be mutual accountability between the CDM Executive Board and the UNFCCC Secretariat. At present, Management Plans prepared by the UNFCCC Secretariat and approved by the CDM Executive Board set out clear objectives and deliverables with timeframes for each of the required actions, but they do not describe ongoing service provision roles in any detail, nor do they contain performance standards or benchmarks for these services. As a management tool, they are therefore incomplete.

Both governance entities have recognized the need for the CDM Executive Board to focus more on its supervisory

18 Data and numbers presented in this section are derived from the CDM Policy Dialogue research, summarized in: High-Level Panel on the CDM Policy Dialogue: Research report: Governance of the Clean Development Mechanism (2012).

CDM Project 1762: Wind Electricity Generation Project, India. Renewable wind power has many benefits and a very small footprint. The land around the windmills can be ploughed and cropped

Devesh P. Pimpale

functions by having the UNFCCC Secretariat and other support bodies manage a larger share of the operational aspects of the mechanism. However, this division of roles has not been formalized.

Measures for improvement

The UNFCCC Secretariat has indicated that proposals to implement key performance indicators and targets have been implemented. However, some stakeholders dispute the extent of such reforms. In addition, such measures have not yet been fully institutionalized in an accountability framework. The UNFCCC Secretariat is currently undertaking a significant overhaul of its governance structure, which should allow for greater efficiency in delivery and effectiveness of reporting to the CDM Executive Board. The existence of such reforms needs to be made public to reassure stakeholders that their concerns are being addressed.

The UNFCCC Secretariat has indicated that it seeks to ensure neutrality and distance from decisions ultimately taken by the responsible bodies. International best practice requires the clear separation of the role in supporting standard-setting from the role in assessing compliance with such standards, with process and negotiation support being further separated. This can be achieved through an appropriate internal organizational structure.

Stakeholder inputs

Stakeholders generally recognize that the governance of the CDM has improved in recent years, but very few feel that these improvements have been sufficient.

Regarding the CDM Executive Board, stakeholder claims include the following:

- As a part-time body, it cannot handle the workload required to supervise the CDM effectively;
- There are no clear criteria for nominations of members (e.g. merit or professional experience), with members being appointed based on regional origin and their role as negotiators, and often with a lack of private-sector experience;
- Members are not necessarily independent from national and/or private interests, and there is no objective code of conduct to address this;
- Portions of CDM Executive Board proceedings are closed to the public and lack transparency;
- It is a conflict of interest for CDM Executive Board members to serve as climate negotiators on behalf of their national governments on the body that oversees the CDM Executive Board (i.e. the CMP);
- Decision-making is too political.

Regarding the UNFCCC Secretariat, stakeholder claims include the following:

- It is reluctant to make decisions;
- It lacks accountability to the CDM Executive Board;
- It has poor internal division of labour, which gets in the way of managing workloads.

Regarding the relationship between the two bodies, stakeholders suggest that there is an unclear division of labour, that the respective roles should be clarified and underpinned by quantitative performance benchmarks, and overall that greater transparency, consistency, and clarity in the governance of the CDM is needed.

Conclusions

In the early years, the CDM suffered from weak governance arrangements that impeded its effective operation and frustrated stakeholders. Governance has subsequently improved, thanks to a concerted effort by the CDM Executive Board and the UNFCCC Secretariat to remove bottlenecks and to improve clarity and efficiency in the CDM project cycle. However, further improvements are needed, particularly to reinforce the distinction between the policymaking role of the CDM Executive Board (e.g. setting standards for registering projects and issuing CERs) and the UNFCCC Secretariat's role in implementing the policies and rules for the

"CDM governance is under the control of the Executive Board, which answers to the CMP. However, the same Executive Board members also represent their Parties on CDM issues at the CMP. "

Independent CDM consultant

"One area that would need to be examined is whether a deeper separation between the oversight and regulatory aspects of the work would be beneficial, with clearer delineations between the CMP oversight process and the regulatory process of the Executive Board. "

Policy and Research Centre

"Liability within the CDM is an enormous issue. There needs to be much more clarity on accountability when things go wrong. There are no clear procedures, and the current proposal is to put the liability on designated operational entities for everything."

Non-Governmental Organization

CDM (e.g. assessing whether individual projects meet these standards).

The internal governance of the CDM Executive Board needs to be strengthened, particularly in relation to the process of nominating members, membership criteria, and conduct. In addition, the current practice of nominating individuals consecutively as members and then as alternate members as a way to circumvent the existing term limits for service on the CDM Executive Board (which refer only to consecutive terms of service as members) is undermining its credibility.

The internal governance of the UNFCCC Secretariat needs to be improved further. The UNFCCC Secretariat has the capacity and expertise to consider technical issues, and in practice it is already assuming the role as decision-maker for most technical issues. With this increased responsibility assigned to the UNFCCC Secretariat, the system of performance accountability needs to be strengthened.

The long term arc of governance reforms should be toward a more decentralized structure, in which greater operational responsibility is delegated to the UNFCCC Secretariat, designated national authorities, and designated operational entities. For example, a system of centralized governance and decentralized operation could include the issuance of CERs by certified national and regional authorities within guidelines issued by the CDM Executive Board.

RECOMMENDATIONS

9.1. Reorient the CDM Executive Board towards policy and strategy issues, while delegating project-specific and technical decision-making to the UNFCCC Secretariat (including rulings on requests for registration and issuance). ***(CDM Executive Board, UNFCCC Secretariat)***

9.2. Adopt an accountability framework to clarify and strengthen the relationship between the CDM Executive Board and the UNFCCC Secretariat. This framework should include a service level agreement with performance indicators for the UNFCCC Secretariat, as part of the annual Management Plan, and the CDM Executive Board should be responsible for performance management of the UNFCCC Secretariat in the discharge of these duties. This framework should also identify what the CDM Executive Board should do to facilitate and to enable the UNFCCC Secretariat to deliver on its mandate. ***(CDM Executive Board, UNFCCC Secretariat)***

9.3. Develop and implement robust codes of conduct for all members of the CDM governance structure, including the CDM Executive Board and the UNFCCC Secretariat. These codes of conduct must include means for objectively assessing and addressing conflicts of interest. ***(CDM Executive Board, UNFCCC Secretariat)***

9.4. Revise the criteria for the composition of the CDM Executive Board to reflect not only regional distribution, but also professional knowledge and experience (e.g. from carbon markets, economics, communication, legislation, governance, and working experience from other boards). Based on such revised criteria, a transparent process of selecting candidates, following a public call for nominations, should be undertaken by a selection committee. The committee would propose candidates to be appointed by national governments. ***(National governments)***

9.5. Enforce term limits on membership of the CDM Executive Board, with terms as members and as alternate members both taken into account. The suggested term limit is two three-year terms. After a combined six years of service, whether as a member or as an alternate member, a person should not be eligible to be nominated to the CDM Executive Board again. Care should be taken to ensure that the expiry date of terms is phased so that the CDM Executive Board has a mix of experienced and new members and retains institutional memory. ***(National governments)***

9.6. Over the longer term, the CDM should evolve toward a more decentralized system of operation in which the issuance of CERs could be undertaken by certified national and regional authorities in accordance with guidelines by the CDM Executive Board. ***(National governments, CMP)***

10. Improve stakeholder interactions and public engagement

Context

The effectiveness of the CDM relies to a large extent on the interaction between the CDM governance entities (the CDM Executive Board and the UNFCCC Secretariat) and its stakeholders. These stakeholders constitute a large and diverse group, including governments, designated operational entities, project developers, local communities, investors, and environmental groups. The need for informed interaction with these stakeholders is very important to enable the smooth operation of the CDM.

Public support is also essential for the acceptance and operation of the CDM. The CDM is a policy instrument created, used, and regulated by national governments, who, as a general rule, are understandably sensitive to public opinion. This opinion is in turn shaped by opinion-makers such as researchers, non-governmental organizations, and the media.

Research findings[19]

Stakeholder engagement

Interaction with stakeholders has increased in recent years, helping them to engage and comply better with CDM rules, while also increasing their involvement in the development of CDM policies. The focus of these stakeholder interactions has mostly been on designated national authorities, designated operational entities, and project participants. These stakeholders have a stated interest in improving the CDM and often a sense of shared ownership of the mechanism. Major work is underway to consolidate, clarify, and simplify CDM rules to facilitate their more effective engagement.

Part of this effort is aimed at strengthening the direct communication between the UNFCCC Secretariat and stakeholders on registration and issuance requests. Under the new rules, the UNFCCC Secretariat consults directly with designated operational entities and project participants to clarify issues that may be easily resolved but in the past would have led to rejection. Project participants and designated operational entities are now also able to call the UNFCCC Secretariat to seek clarification on review questions raised by the UNFCCC Secretariat. However, implementation of these measures is not yet consistent.

There are also concerns about lack of responsiveness from the CDM Executive Board and the UNFCCC Secretariat to queries from project participants. Other concerns include the closed nature of decision-making, inconsistency across decisions, and inadequate articulation of the rationale for decisions.

Public communications

The CDM suffers from a negative reputation, which originates primarily from weaknesses dating back to the early years of the CDM, such as the issuance of non-additional CERs from industrial gas projects, as well as claims of human rights violations at the site of a small number of projects. The situation was not helped by the lack of any proactive communication effort by the CDM Executive Board and the UNFCCC Secretariat to highlight the improvements and benefits of the CDM in subsequent years.

The CDM Executive Board and the UNFCCC Secretariat appear reluctant to respond to criticism of the CDM. In part, this arises because the CDM lacks a process for formulating and disseminating responses to criticism (particularly wrongful allegations) about the CDM, and cannot rely on a database containing up-to-date information on topical issues to substantiate responses with objective facts. In addition, inadequate resources are devoted to communications at a strategic level.

Stakeholder inputs

Most stakeholders believe that stakeholder interaction should be strengthened. Specifically, the lack of direct consultation with project developers was raised as a problem. Some stakeholders feel that the CDM has failed to engage non-governmental organizations and has thereby lost the

19 Data and numbers presented in this section are derived from the CDM Policy Dialogue research, summarized in: High-Level Panel on the CDM Policy Dialogue: Research report: Governance of the Clean Development Mechanism (2012).

Figure 11: CDM stakeholders are a large and diverse group, and interaction with them needs to improve across a range of media

"Being transparent is not only about making your rules and regulations public – it's about making them understandable and that is a big failing of the CDM."

Non-Governmental Organisation

"The degree of the civil society's hatred against the CDM has proven yet again that no good deed goes unpunished. Civil society seems unable to see what the CDM has accomplished in terms of sustainable development. The civil society campaigns have transformed the EU sentiment to an extraordinary degree. The business community now feels abused and astonished with these claims."

Business Organization

trust of some important players in the climate change arena.

Many stakeholders consider that a more "customer-oriented approach" would increase the overall attractiveness of the mechanism. Despite provisions to ensure transparency by the CDM Executive Board and the UNFCCC Secretariat, there are still complaints about the closed nature of much of the CDM Executive Board's decision-making.

There are calls for improved transparency and public participation during the CDM project cycle, despite existing requirements in the CDM rules for information sharing and consultation with stakeholders, above and beyond the existing requirements for information sharing and consultation with stakeholders.

There are calls for a more robust communication arm to the CDM governance system that should anticipate and respond to strategic information-based challenges.

Conclusions

Although interactions with stakeholders have improved in recent years, further improvements are needed. Measures should be taken to promote accessibility, timeliness, and the accuracy of information about the CDM. Measures to improve the integrity of the CDM more broadly, such as consistency of interpretation of the CDM rules, clarity of guidance, and transparency of decision-making, are essential components of such an approach.

The communication activities of the CDM Executive Board and the UNFCCC Secretariat need to evolve further so as to improve the perceptions of the CDM among the whole range of direct and indirect stakeholders. Communication can and should build on the significant wealth of facts and information available about the CDM, and be shared in a more proactive manner, not least to counter unfounded negative allegations.

RECOMMENDATIONS

10.1. Improve accessibility and respond to stakeholders properly and professionally, promptly answering complaints and queries. ***(CDM Executive Board, UNFCCC Secretariat)***

10.2. Designate a contact person or "account manager" within the UNFCCC Secretariat for stakeholders in respect of individual cases, with the ability to provide technical clarifications and guidance. ***(UNFCCC Secretariat)***

10.3. Adopt a strategic communications policy, including processes for responding to criticism and for enabling the dissemination of accurate and accessible information to a broad audience, to ensure the fair coverage of issues relating to the CDM. ***(CDM Executive Board, UNFCCC Secretariat)***

10.4. Establish guidelines for adequate local consultation procedures to ensure local community stakeholders are properly notified and consulted on proposed project activities. ***(CDM Executive Board, UNFCCC Secretariat)***

11. Establish independent mechanisms for appeals and grievances

Context

The idea of a mechanism for appealing case-specific decisions (i.e. rulings on requests for registration and issuance) has been under active consideration for several years. This was initiated by the call for inputs launched by the CDM Executive Board in early 2009 on strategic improvements of the CDM.

After considering this matter, the CDM Executive Board chose in late 2010 to escalate it to the CMP, as it felt that it lacked the jurisdictional competence to decide on a mechanism to consider appeals against its own rulings. From 2011 onward, the CMP has been negotiating this issue and has drafted a text for the operation of an appeals mechanism that resolves several of the reported issues. However, a small number of crucial questions remain unresolved, most notably whether appeals should be limited only to "negative" rulings (i.e. rejections of requests for registration or issuance), or also extend to "positive" rulings (i.e. approvals of requests for registration or issuance). An analysis that considers such questions could therefore be helpful in moving the debate forward.

Research findings[20]

Appeals

A mechanism is needed for appealing the CDM Executive Board's rulings on requests for registration and issuance. Most importantly, this would promote accountability, owed both to entities affected by such rulings and also to the source of delegated power (i.e. the CMP). Other reasons include the need for greater transparency of decision-making, consistency, and predictability, all of which will enhance the legitimacy of the CDM as a whole.

If the appeals mechanism is to be meaningful and trusted by stakeholders, independence from the CDM Executive Board would have to be one of the key features in its design and functioning.

The research indicates that the scope of the appeals mechanism should cover both positive and negative rulings, as it would be arbitrary and questionable under rule-of-law principles to limit the scope to only one type of ruling.

Standing to make appeals should be granted to affected stakeholders. In order to prevent an unmanageable number of appeals from being made, it would be advisable to prohibit persons or entities who are unaffected by a ruling to file an appeal, and also to set clear and reasonable time limits for filing appeals. The design and application of appropriate admissibility criteria would be useful in this regard.

The grounds for appeal should cover both procedural as well as substantive issues limited to those arising from the application of the CDM modalities and procedures, although deference on substantive matters would be appropriate in matters where the original decision-making body has technical expertise.

On balance, it would be preferable to enable the appellate body not only to affirm or remand rulings by the CDM Executive Board, but also to modify or reverse them. This would increase efficiency by preventing back-and-forth between the appellate body and the CDM Executive Board and by preventing the misinterpretation of the appellate body's decisions.

Grievances

To complement the appeals mechanism, it would be helpful to create a parallel mechanism at the national level to address grievances from local stakeholders about the impact of CDM projects, with a goal of resolving such grievances before they escalate. A grievance mechanism could act as a first stop for any affected stakeholder, potentially reduce the number of appeals before the appeals mechanism, and consider aspects of projects that might affect local stakeholders but are not strictly part of the CDM project criteria. Host countries could be encouraged to establish such a mechanism if one is not already available under national law.

20 Data and numbers presented in this section are derived from the CDM Policy Dialogue research, summarized in: High-Level Panel on the CDM Policy Dialogue: Research report: Governance of the Clean Development Mechanism (2012).

Stakeholder inputs

Several stakeholders (including governments, businesses, and non-governmental organizations) give significant prominence to the right to make an appeal against case-specific rulings. Several stakeholders request that local communities affected by CDM projects be allowed to appeal positive rulings. On the other hand, project developers express concern regarding the level of uncertainty this would introduce into the process.

Several stakeholders note that, in terms of local participation, the CDM rules do not stipulate how, where, and when consultations are to take place, which may give rise to grievances. More specifically, the lack of unambiguous guidelines as to who constitutes a stakeholder is a source of criticism, as is the insufficient reach of consultations. Furthermore, criticism has been raised about opaque reporting practices, and even fake consultations in some early cases. There is also criticism on the lack of any formal process to receive comments from the public and from directly affected stakeholders after the initial stage of validation, when the project is actually operating and its impact may be more visible.

Conclusions

An independent appeals mechanism is needed for the CDM. The right to seek recourse, and a right to be heard, are core rights in any regulatory structure, and an appeals mechanism would help to secure these rights. In order to limit the uncertainty and risk for project developers and investors, it would be necessary to set firm and reasonable limits on the permissible grounds for appeal and on the persons and entities having standing to appeal, though care should be taken not to deny this right to an entire class of potential litigants. Additional measures can be applied to prevent the appeals mechanism from being overloaded, including a deferential approach on highly technical matters, admissibility criteria for appellants, and time limits for filing appeals.

A parallel grievance mechanism may also be useful in helping to address local concerns.

"The CDM has been improved tremendously but can be further improved when the appeals procedure will be implemented. Another improvement would be to provide the UNFCCC with the right to communicate directly with project developers should a problem arise."

Business Organization

"It is ... essential that project-affected peoples and civil society groups have the right to appeal decisions by the Board"

Non-Governmental Organization

CDM Project: 0268: Lages Methane Avoidance Project, Brazil. Small insect enjoying the flowers on the surroundings of Lages project which generates energy to more than two hundred thousand people.

Julio Alberto Pavese

RECOMMENDATIONS

11.1. Implement the appeals mechanism, which is currently being negotiated, for registration and issuance decisions. Both positive rulings (i.e. approvals) and negative rulings (i.e. rejections) should be appealable. Grounds for appeal should be limited to procedural and substantive issues related to the CDM modalities and procedures. Provisions should disallow frivolous or vexatious appeals, require appeals to be filed within a reasonable and defined timeframe, and require appellants to satisfy admissibility criteria. Remedies should include confirming, remanding, reversing, and/or modifying the decision. The appellate body should be independent from the CDM Executive Board and operate according to a strict code of ethics and conduct. Members of the appellate body should be appointed by the CMP. ***(CMP)***

11.2. Establish a grievance mechanism for local stakeholders to address environmental and social concerns and to facilitate the resolution of issues emerging after the registration of a project, while fully respecting national sovereignty and without impeding ongoing project operations. The mechanism should be established at the national level, but can be supported by existing CDM institutions if requested by a host country. ***(Host countries)***

12. Promote regulatory certainty and streamlining

Context

In recent years, the CDM has undergone considerable reform to become more efficient. Many of these changes resulted from the 2009 review by an external consultancy of the UNFCCC Secretariat's operations in administering the CDM, which found significant inefficiencies and recommended a range of improvement measures.

The results are reflected in the elimination of the backlog of cases, reduced processing times, consolidated rules, improved procedures for communicating with the CDM Executive Board and the UNFCCC Secretariat, and the introduction of measures such as standardized baselines and programmatic CDM. The UNFCCC Secretariat's involvement in the CDM has also been reorganized, with separate operational units established to support the setting of technical standards, to assess projects and designated operational entities against these standards, and to service the CDM Executive Board and its support structure, respectively.

Nevertheless, considerable scope remains to improve the operations of the CDM by promoting greater regulatory certainty and further streamlining the project cycle. The CDM Executive Board is aware of inefficiencies throughout the project cycle operations, and is working on proposals to improve these in the annual Management Plan.

Research findings[21]

Automation of workflows and digitization of content

Project developers have expressed a need for automated workflows, particularly in relation to the checking of requests for registration and issuance, in order to reduce the risk of formal and immaterial mistakes, to increase predictability, and to shorten processing times. Initial measures might include the simplification and shortening of the project design document template. More significant measures might include the automated consistency of parameters throughout the project design document and the provision of software that determines the materiality of data.

The current CDM process also requires the creation and transmission of documents that require manual data entry and thereby increase the possibility of errors and fraud, rather than the creation and transmission of electronic data. A fully digitized system may be helpful to enhance efficiency. The CDM Executive Board is expected to consider this matter shortly to decide on work to be undertaken in this regard.

Enhanced use of standardized approaches and baselines

The CDM relies on individual assessments of projects against a set of standards and guidelines. Although this has some advantages, including precise estimates of each project's contribution to overall emission reduction efforts, it has significant limitations. First, assessing each request for registration and issuance is resource-intensive. Second, it is costly for project developers to develop project-specific methodologies. Third, this mode of work introduces potential inconsistencies, as individual assessments increase the difficulty of consistent treatment across projects.

Many stakeholders have called for the use of standardized approaches, such as positive lists for additionality determination, default values, standardized baseline emission factors, emission baselines set on a sectoral or even country-wide level, as well as less intensive monitoring techniques, such as sampling.

Some steps have been consolidated, such as default factors that are shared by many methodologies. The UNFCCC Secretariat is currently conducting an assessment of all methodologies with a view to going further with standardized approaches, as set out in the annual Management Plan. There is also scope for standardization by the host countries, for example through the establishment of national grid emission factors, which are success factors for grid-connected renewable energy projects.

21 Data and numbers presented in this section are derived from the CDM Policy Dialogue research, summarized in: High-Level Panel on the CDM Policy Dialogue: Research report: Governance of the Clean Development Mechanism (2012).

The performance of designated operational entities

A key observation of the report by the external consultancy in 2009 related to the quality of the submissions (e.g. requests for registration and issuance) being made by designated operational entities. In theory, designated operational entities were intended to serve as the "extended arm" of the CDM Executive Board, accredited for the purpose of preparing requests that would require minimal scrutiny on the part of the regulator. In practice, however, designated operational entities were found to be submitting requests of an overall poor quality, necessitating considerable remedial work on the part of the UNFCCC Secretariat and contributing to excessive processing backlogs.

The report recommended that measures be urgently implemented to improve the quality of submissions. These measures were to include enhancing the capacity of designated operational entities and developing tougher standards for their performance. They were also to include improving the quality, consistency, and clarity of guidance provided by the UNFCCC Secretariat, so as to reduce confusion and to increase the ability of designated operational entities to perform their functions effectively.

"The efficiency and timeliness of the CDM process has been identified as a key barrier to participation and further growth of the CDM."

Business Organisation

"The CDM Executive Board has continuously expressed concerns regarding the quality of designated operational entities' work, and these concerns have been reflected in the increase in requests for review at registration, and in suspensions of leading designated operational entities."

Research Institute

Stakeholder inputs

Several stakeholders maintain that administrative problems have led to substantial delays and costs, and in some cases prevented projects from proceeding. Some request that routine steps in validation and verification be moved onto electronic platforms and digitized, thereby freeing up resources and increasing the level of quality and predictability of scrutiny of projects by the UNFCCC Secretariat and designated operational entities. Some stakeholders propose avoiding redundant double-checking by merging the validation and verification steps.

Several stakeholders suggest that they would be keen to help define streamlined and automated processes, where feasible. There are also requests for more training and capacity development of major stakeholders in order to improve their performance and efficiency, particularly for designated operational entities.

Stakeholders are generally supportive of standardized baselines as a way to reduce uncertainty and to bring down costs for project developers. Acknowledging the potential dangers to environmental integrity from ill-defined baselines, several stakeholders support conservative approaches, enabling the generation of smaller quantities of CERs with greater flexibility and speed.

Some stakeholders would like the UNFCCC Secretariat's role to shift from reviewing submissions towards capacity-building among designated operational entities and other stakeholders. In essence this would entail the enhancement of the support functions of the UNFCCC Secretariat, and suggests a much more decentralized structure of operations, whereby designated operational entities would be delegated more responsibilities and receive a greatly increased level of accredited training.

Several stakeholders believe that the CDM Executive Board should stop changing modalities and settle on ones that are already agreed for the sake of system efficiency and certainty.

Conclusions

Project cycle procedures have been streamlined and consolidated recently, but there are opportunities for further streamlining. Increased standardization, digitization of content, and automation of workflows would contribute to simplification and consistency of the validation and verification process.

Designated operational entities have a key role to play, and building their capacity has been repeatedly highlighted as a priority, both to ensure increased confidence in the

process, and also to expand the scope of the CDM to new project areas and regions. Over the medium to long term, the CDM should evolve towards a system of centralized governance and decentralized operation, as originally envisioned when establishing the regime for accrediting and regulating designated operational entities.

Stability of the regulatory environment is important to ensure efficiency and to cut costs. As an example, revisions of methodologies (which have been quite frequent) have contributed to an increased incidence of reviews, due to the fact that projects previously compliant became non-compliant with the revised rules in the course of the registration process.

RECOMMENDATIONS

12.1. Designate a champion among the members of the CDM Executive Board to identify and propose streamlining measures, to be supported by the UNFCCC Secretariat. ***(CDM Executive Board, UNFCCC Secretariat)***

12.2. Pursue the digitization of content and the automation of workflows in order to facilitate transparency and consistency. ***(UNFCCC Secretariat)***

12.3. Increase the use of standardized approaches and elements in validation and verification procedures. ***(CDM Executive Board, UNFCCC Secretariat)***

12.4. Strengthen the training of, and communication with, designated operational entities in order to ensure a common understanding of rules and expectations of validation and verification results. Parallel training for project developers should also be provided. ***(CDM Executive Board, UNFCCC Secretariat)***

12.5. Revise rules and procedures only at pre-defined points so as to guarantee a certain level of confidence and consistency in the application and interpretation of current rules, while avoiding retroactive application. ***(CDM Executive Board, UNFCCC Secretariat)***

CDM Policy Dialogue

IV. Conclusion

Courtesy of Luis Fredes

The world stands at a critical moment. The climate system is at a precipice, with the staggering impacts of climate change already being felt around the world. Climate change poses an existential threat, and the time to act is rapidly running out for any reasonable prospect of meeting the 2ºC target, let alone the 1.5ºC target. Carbon markets are profoundly weak, due to mitigation pledges that fall far short of what is needed. And the CDM has essentially collapsed, a victim of weak ambition. The global community is on the brink of losing the assistance which carbon markets, and the CDM in particular, can and should provide.

The High-Level Panel on the CDM Policy Dialogue has found that well regulated carbon markets, including mechanisms such as the CDM, have an important contribution to make in the global mitigation effort. Carbon markets can both increase the cost-effectiveness of mitigation activities and also facilitate the adoption of more ambitious mitigation targets. However, inadequate mitigation targets are undermining demand for carbon markets, resulting in depressed prices that are far too low to drive investment. This has reached the point where action to halt the loss of a depth of knowledge and capacity which has taken several years to build is vital – and urgent.

It is imperative that mitigation ambition be stepped up in order to restore demand in carbon markets generally and in the CDM in particular. Once this happens, market mechanisms can be expected to play an increasing role over time. But unless this happens, any market mechanism will be doomed to irrelevance. In the interim, until demand is restored, specific and targeted measures need to be taken to stabilize the carbon market, to stem the continued hemorrhage of expertise and resources, and to allow developing countries to continue to host CDM projects.

Based on these considerations, the Panel has formulated its recommendations to help address the short-term crisis in the carbon market and to lay the foundation for the effective operation of carbon market mechanisms, including the CDM, to contribute to addressing climate change. All of this is, of course, conditional on agreement by national governments to increase their levels of ambition and to commit to the actions necessary to meet at least the 2º C target.

At the outset, the Panel was tasked with ensuring an independent, inclusive and transparent process, and in the process of compiling this report it has sought to fulfill that mandate. The Panel's request in return is that the Executive Board, the UNFCCC Secretariat, national governments, and the many other stakeholders of the CDM give serious consideration to its findings and recommendations, and act to address the crisis in carbon markets.

The Panel urges that its recommendations be implemented fully and without delay, with a timetable agreed that will bring them into effect by the United Nations Climate Change Conference scheduled for December 2013.

CDM Policy Dialogue

Appendices

Courtesy of Pedro Guinle

A. Glossary

Afforestation and reforestation: The only project types involving land use, land-use change, and forestry that are eligible in the CDM. Afforestation refers to converting land that has not been forested for 50 years or more into a forest. Reforestation refers to converting land that was not forested on 31 December 1989 into a forest.

CDM Executive Board: The governing body of the CDM. Established by the CMP.

Clean Development Mechanism (CDM): The mechanism defined in Article 12 of the Kyoto Protocol to assist developing countries in achieving sustainable development and in contributing to the ultimate objective of the Convention and to assist developed countries in complying with their mitigation targets under the Kyoto Protocol.

Certified emission reduction (CER): A credit issued for mitigation achieved by a CDM project activity, equal to one metric ton of carbon dioxide equivalent.

Conference of the Parties (COP): Collectively, the countries that have ratified the Convention, and its highest decision-making authority. Responsible for keeping under regular review the implementation of the Convention.

Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP): Collectively, the countries that have ratified the Protocol, and its highest decision-making authority. Responsibilities relating to the Protocol are broadly similar to those of the COP relating to the Convention.

Designated national authority (DNA): A body (generally a government agency) authorized by a country to approve, and to authorize participation in, CDM projects.

Designated operational entity (DOE): An entity designated by the CMP, based on a recommendation by the CDM Executive Board, to validate requests for the registration of CDM projects and to verify requests for the issuance of CERs.

Kyoto Protocol ("the Protocol"): A protocol to the Convention that was signed in 1997 and entered into force in 2005.

Least developed country (LDC): A country that meets United Nations criteria for LDC status, which relate to per capita income, human resource weaknesses (e.g. nutrition, health), economic vulnerability, and a population of less than 75 million.

Project design document (PDD): The document prepared by the project participant(s) of a CDM project which details the project that is to be undertaken.

Programmatic CDM: A policy/measure covering emissions across a group of emitters, rather than at a single installation. Also known as "programmes of activities" or "PoAs".

REDD+: REDD refers to "Reducing Emissions from Deforestation and forest Degradation". The "+" symbol refers to additional activities, such as the sustainable management of forests and the enhancement of forest carbon stocks.

UNFCCC Secretariat: The Secretariat to the Convention and the Protocol.

United Nations Framework Convention on Climate Change ("the Convention"): An international agreement that was signed in 1992 and entered into force in 1994, with the ultimate objective of achieving the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

B. Terms of reference of the CDM Policy Dialogue

I. Background

1. The Executive Board of the clean development mechanism (CDM) (hereinafter referred to as the Board), at its sixty-third meeting, decided to launch a policy dialogue to review past CDM experience and help ensure the readiness and positioning of the CDM to meet the challenges of the post-2012 period. These terms of reference represent an overall set of activities, and actors and will require further elaboration during the early stages of the dialogue.

2. The necessity of such a policy dialogue arises from the need to address challenges to the future operation and development of the CDM, engage a wide range of representatives of civil society, policymakers and market participants in considering the future of the CDM, and incorporate the outcomes into the work of the Board and the secretariat, as well as the Board's contributions to the intergovernmental negotiations regarding the future of the CDM and the international climate regime.

II. Process and outcomes

3. The objective of the policy dialogue is to make recommendations regarding how to best position the CDM to respond to future challenges and opportunities and ensure the effectiveness of the mechanism in contributing to future global climate action, based on a wide-ranging assessment of experience, benefits and shortcomings of the CDM and engagement with civil society, policymakers and market participants.

4. The dialogue is to be conducted by a panel of distinguished members drawn from civil society, policymakers and market participants. The panel is to make its recommendations to the Board, which will consider them in the context of its annual report and recommendations to the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP). The panel is to conduct the dialogue in an independent manner under its own responsibility. It is to select a chair and may establish working groups as necessary to conduct work of a more technical nature. The work of the panel is to be conducted in a transparent and balanced manner and it is to be supported by the secretariat.

5. The main output of the dialogue is to be the publication of a report addressing the objective set out in paragraph 3 above. It is expected that the report's recommendations will be of particular relevance to the ongoing intergovernmental negotiations on the future international climate regime, the revision by the CMP of the modalities and procedures of the CDM, and the work of the Board and the secretariat. The final report is to be available by September 2012.

6. The panel is to comprise up to 12 members, invited jointly by the Chair of the Board and the Executive Secretary of the UNFCCC, in consultation with the Board. The membership is to be authoritative and independent, and is to reflect a balance of regions, constituencies and expertise.

7. The panel is to ensure a wide and representative range of inputs and views in its work and the preparation of its report through the effective engagement of representatives, including from governmental, intergovernmental, business, environmental, research and other communities.

8. The panel is to interact with the Board and the secretariat to receive and take account of inputs.

III. Activities and milestones

9. The dialogue is to include the key activities and milestones outlined below. The panel is to undertake further detailed planning and provide periodic updates to the Board on the dialogue.

Date	Key activities and milestones
October 2011 (EB64)	Approval of the terms of reference for the dialogue. Public call for inputs to suggest issues to be addressed in the dialogue, including the identification of external forces, challenges, opportunities, broad directions, etc.
October/November2011	Invitations to potential members of the panel. Preparation of a detailed plan and budget (for incorporation in the CDM management plan for 2012).
November/December 2011	Official dialogue launch at CMP 7 in Durban, South Africa, through an event with wide and high-level participation and strong media presence.
February/March 2012	Release of a discussion paper/s to facilitate the consultation phase.
March to July 2012	Consultation phase to engage with representatives, including from governmental, intergovernmental, business, environmental, research and other communities, for example through submissions, workshops, hearings, visits and working groups.
By September 2012	Release of the final dialogue report

C. Overview of the CDM

This appendix reproduces sections II and III of the background paper prepared by the UNFCCC Secretariat. The full version of the paper is available at: http://www.cdmpolicydialogue.org/background/CDM_policy_background.pdf.

1. Description of the CDM

Operations

1. Under the CDM, a project to reduce emissions may be implemented in a developing country. To the extent that this project reduces emissions below the level that they would have been at in the absence of the project, also known as the "baseline" level of emissions, a quantity of emission offset credits ("certified emission reductions" or "CERs") may be issued equivalent to the number of tonnes of carbon dioxide (or equivalent in other greenhouse gases) that are reduced. These CERs may then be transferred to other entities, most commonly so that they may be used to counterbalance, or offset, their emissions.

2. Broadly, the functioning of the CDM comprises two stages:

a. Registration: This stage refers to the formal recognition of a project as an activity that reduces, or may be capable of reducing, emissions below the baseline level of emissions. Registration follows the preparation of a project proposal and all necessary supplementary documentation, including a letter from the government of the country where the project is located confirming that the project will assist it to achieve sustainable development;

b. Issuance: This stage refers to the creation of CERs in a quantity equal to the emissions that are reduced by a registered project. Issuance follows the monitoring of emissions at the project and the verification of the results of this process.

3. Responsibility for the implementation of the project lies with one or more public or – more commonly – private entities, known as "project participants". The rules of the CDM require project participants to receive authorization from their respective national governments to implement a project under the rules of the CDM. Following registration, project participants are responsible for operating the project and monitoring emissions. In many cases, project participants contract external specialists, among them project developers, consultants, or other experts, to assist them in implementing the project and navigating the CDM process.

4. To ensure the quality of requests for registration and issuance, project participants are required to contract a third-party auditor that is responsible for ensuring that the project meets the rules of the CDM and for submitting requests for the registration of the project and subsequent issuances of CERs. These auditors, known as designated operational entities ("DOEs"), must be accredited under the rules of the CDM.

5. With limited exceptions, a CDM project may encompass any type of activity or technology that reduces emissions. Examples of existing CDM projects include facilities for the capture of methane at landfill sites, the implementation of public transit systems, and the construction of renewable energy generation facilities such as wind farms. More recently, it was agreed that activities that capture carbon dioxide and store it in geological formations, such as coal seams or saline aquifers, are eligible under the CDM. The list of ineligible activities or technologies is relatively limited, and to date includes only:

a. Nuclear facilities;

b. Most activities involving land use, land-use change, and forestry, with the exception of afforestation (e.g. converting land that has not been forested for 50 years or more into a forest) and reforestation (e.g. converting land that was not forested on 31 December 1989 into a forest), both of which are eligible under the CDM.

6. A CDM project need not be limited to a single geographic location. Facilities at multiple locations in a developing country may be considered together for registration and issuance purposes. Examples include the distribution of compact fluorescent light bulbs to households across a region or nation, or the installation of solar water heaters in multiple villages. The term "programmatic CDM" (also known as

CDM Project 1208: Superior Hog Farms Methane Recovery, Philippines. Steward of the land, steward of our future

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"programmes of activities" or "PoAs") is frequently used to describe activities that are geographically diffuse and, while individually small in terms of the emissions that they reduce, potentially significant when measured collectively.

7. A CDM project may generate CERs for a limited period of time, known as a "crediting period", which may be a seven-year period renewable twice (for a total of 21 years) or a non-renewable 10-year period. The determination of which crediting period to apply is made by project participants, who in making their choice frequently balance their preference for a longer overall crediting period (and, by extension, more CERs) against the consideration that renewals of crediting periods are subject to review under the rules of the CDM and may result in a reduction in the number of CERs that may be issued or, in some cases, a rejection of a request for renewal.

Governance

8. The CDM, as a mechanism established under the Kyoto Protocol, is ultimately subject to the authority and guidance of the countries that have ratified the Kyoto Protocol, which provide guidance in the form of one or more decisions promulgated at their annual meeting. This guidance is typically heavily negotiated and reflects the work of delegates drawn from a wide range of these countries.

9. The operations of the CDM are supervised by an Executive Board (the "Board"), which is composed of ten members who are nominated and elected by national governments, taking fully into account the consideration of regional balance. (The Board is composed of one member from each of the five United Nations regional groups (i.e. the African Group, the Asia-Pacific Group, the Eastern European Group, the Latin American and Caribbean Group, and the Western European and Others Group), two additional members from developed countries, two additional members from developing countries, and one additional member from a small island developing country.) The nomination of each member is accompanied by the nomination of an alternate from the same constituency, who may stand in for the member as appropriate. Each member and alternate is required to serve in her/his personal capacity.

10. Under the Board's rules of procedure, decisions are intended to be taken by consensus. Where consensus cannot be achieved, decisions may be taken by voting; the threshold for passage is 75 per cent of members present and voting.

11. To help it perform its functions, the Board has established five support bodies composed of Board members and outside experts as appropriate. Each of these bodies is tasked with advising the Board on specific aspects under its responsibility, and include:

a. The Accreditation Panel, which advises on standards for accrediting DOEs and on the compliance of DOEs with these standards;

b. The Afforestation and Reforestation Working Group, which advises on issues concerning afforestation and reforestation;

c. The Methodologies Panel, which recommends guidelines for methodologies for calculating baseline levels of emissions and monitoring plans and also prepares recommendations on submitted proposals for such methodologies;

d. Registration and Issuance Teams, which assists in the Board's consideration of requests for the registration of projects and the issuance of CERs;

e. The Small-Scale Working Group advises on all issues concerning projects below certain thresholds (i.e. (a) renewable energy projects with a maximum output capacity of 15 MW (or equivalent); (b) energy efficiency projects with a maximum output of 60 GWh per year (or equivalent); and (c) other projects that reduce emissions by no more than 60,000 tonnes of carbon dioxide (or equivalent in other greenhouse gases) per year).

12. While the Board (both in its own right and via its support bodies) retain ultimate responsibility for all operational aspects of the CDM, including the registration of CDM projects and the issuance of CERs, much of the preparatory work is performed by two other bodies, namely:

a. DOEs, which as noted above are responsible for confirming that projects comply with the rules of the CDM and for submitting requests for registration and issuance;

b. The secretariat, which services the Board and its support bodies and in particular, after performing checks on the completeness and accuracy of the requests for registration and issuance that are received from DOEs, advises the Board on whether such requests should be accepted or rejected.

13. At present, decisions of the Board are final. A proposal is currently being discussed by the countries that have ratified the Kyoto Protocol to implement a procedure for considering appeals of decisions made by the Board in respect of project registrations and CER issuances.

2. Context of the CDM

Origins

14. As noted above, the CDM was established under the Kyoto Protocol, which was itself established under the United Nations Framework Convention on Climate Change (the "Convention"), the international community's overarching treaty for addressing climate change. A brief review of the Convention and the Kyoto Protocol may be helpful in understanding the circumstances in which the CDM emerged.

15. The Convention – which was adopted in 1992 and entered into force in 1994 – has as its ultimate objective the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous human-induced interference with the climate system. To achieve this objective, it declares that all countries shall undertake certain

commitments (e.g. the development and publication of national emissions inventories). However, it also declares that developed countries should lead efforts to address climate change and its adverse effects, and accordingly sets out additional commitments for these countries (e.g. the adoption of policies and measures to mitigate emissions, the provision of financial resources and technology to developing countries, and the delivery of assistance to particularly vulnerable developing countries to meet the costs of adapting to climate change). Under the Convention, developed countries are defined as the Parties listed in Annex I to the Convention and are referred to as "Annex I Parties", whereas developing countries are defined as all other Parties and are referred to as "non-Annex I Parties".

16. The Convention enjoys near-universal membership, with 195 entities having ratified it (each a "Party" and together the "Parties"). The Parties meet annually as the Conference of the Parties ("COP") in order to review the implementation of the Convention.

17. At COP 1 (1995), Parties agreed that the commitments under the Convention were inadequate for addressing climate change, and they launched a process for strengthening them. As part of this process, they further agreed that the focus of these efforts ought to be on developed countries, which would be called upon, first, to accept quantified targets for their emissions, and second, to elaborate policies and measures to meet these targets.

18. The outcome of the above process was the Kyoto Protocol, which was adopted in 1997 and entered into force in 2005. The Kyoto Protocol establishes a legal framework in which developed countries accept emission targets over specific periods of time, known as commitment periods, and sets out emission targets applicable to the first commitment period (1 January 2008 to 31 December 2012). The Kyoto Protocol does not provide for emission targets for developing countries.

19. The Kyoto Protocol has been ratified by 193 of the 195 Parties to the Convention, with one further Party having recently announced its intention to withdraw from it. The Parties to the Kyoto Protocol convene annually as the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol ("CMP"), concurrently with the COP, in order to review the implementation of the Kyoto Protocol.

The role of the CDM under the Kyoto Protocol

20. As noted above, the Kyoto Protocol sets out emission targets for developed countries. However, the Kyoto Protocol does not require a developed country to reach its target solely through domestic actions that reduce its own emissions. Instead, it also sets out three flexible mechanisms by which a developed country may cooperate with one or more other countries in order to meet its emission target in a collective manner.

21. The CDM is the largest and best-known of these mechanisms, and CERs may be used by developed countries to meet their emission targets under the Kyoto Protocol. The other two mechanisms available under the Kyoto Protocol are joint implementation (JI) and international emissions trading (IET). In short, JI operates on a similar principle as the CDM but relates instead to projects in other developed countries, whereas IET allows developed countries to reallocate their emission targets amongst each other.

22. It should be noted that the CDM is unique among the three mechanisms in having a second purpose other than simply that of assisting developed countries to meet their emission targets. As set out in the Kyoto Protocol, the CDM is also intended to assist developing countries to achieve sustainable development and to contribute to the ultimate objective of the Convention as identified above.

23. The appropriate balance between domestic actions and international cooperation is inexact. At CMP 1 (2005), it was agreed that the use of the flexible mechanisms shall be "supplemental" to domestic action and that domestic action shall therefore represent a "significant element" of the effort made by each developed country to meet its emission target under the Kyoto Protocol. However, Parties have not yet agreed on any quantitative limits on the use of the flexible mechanisms.

24. Finally, it should be noted that the CDM is the main source of income for the Adaptation Fund, which finances projects and programmes in developing countries that are particularly vulnerable to the adverse effects of climate change, in order to assist them to adapt to these effects. Two per cent of all CERs issued under the CDM, other than those from projects in least developed countries, are diverted to a special account where they are sold and the proceeds remitted to the Adaptation Fund.

The role of the CDM in relation to national and regional approaches

25. Although the CDM was established to assist developed countries to meet their emission targets under the Kyoto Protocol, it may also be used – subject to national and/or regional laws – to assist individual emitters, such as power plants and industrial installations, to meet compliance obligations imposed on them under national or regional emissions trading systems. It is generally accepted that the primary driver for the rapid growth of the CDM has been the demand for CERs from emitters that face compliance obligations under such systems, particularly the European Union's Emissions Trading System ("EU ETS"), the world's largest. Other systems that allow the use of CERs by emitters include those in Australia, Japan, and New Zealand.

26. In addition, CERs may be purchased and cancelled on a voluntary basis by entities seeking to offset their emissions. The volume of CERs used for such transactions is, however, currently very small.

Possible changes to the role of the CDM

27. The climate change conference in Durban in December 2011 (COP 17/CMP 7) was significant for the role of the CDM in two key respects:

a. Parties agreed to commence negotiations to develop "a protocol, another legal instrument or an agreed outcome with legal force" that would be "applicable to all Parties", such negotiations to conclude by 2015 and such protocol, instrument, or outcome to be effective from 2020;

b. The Parties to the Kyoto Protocol agreed to establish a second commitment period under the Kyoto Protocol, starting on 1 January 2013 and ending on 31 December 2017 or 31 December 2020 (to be decided at CMP 8 in 2012).

28. Taken together, the role of the CDM within the global climate change system appears to be preserved in essentially its current form until the end of 2017 or 2020, although its role beyond 2020 would appear to be less certain.

29. A further change to the role of the CDM seems likely to be prompted by restrictions that are being introduced on the use of CERs in the EU ETS. Effective in 2013, the EU ETS intends to ban the use of CERs (as well as emission offset credits issued under JI) that originate from the destruction of certain industrial gases. Equally, the EU ETS intends to ban the use of CERs (as well as emission offset credits issued under JI) from projects that are registered on or after 1 January 2013, with the exception of CERs from projects located in least developed countries. CERs issued from projects registered before this date will, however, continue to be eligible in the EU ETS.

D. Research topics

This list sets out the main research topics considered by the Panel. The three research reports, as well as individual subject reports, are available in full at the CDM Policy Dialogue website: http://www.cdmpolicydialogue.org.

I. Impact

1. Should the CDM contribute to net mitigation of greenhouse gas emissions?

2. Does the CDM allow annex I parties to increase their mitigation ambition by reducing mitigation costs?

3. Has the CDM contributed to sustainable development? Should it?

4. Is the contribution of CDM to increased energy security in developing countries a significant factor to consider in future operations of CDM?

5. To what extent does CDM contribute to technology transfer?

6. To what extent does CDM leverage new and additional financing for mitigation?

7. Should the CDM aim at increasing the regional distribution of projects and mitigation activities? If so, how?

8. To what extent has the lack of standardized baselines and accounting for suppressed demand resulted in distortions in the CDM mechanism?

II. Governance

9. Can the project cycle be further streamlined to improve efficiency and reduce costs? How can it be done?

10. Should the current validation/verification model be reformed? If so, how?

11. Should the methods for determining additionality be changed? If so, How?

12. Should the CDM Executive Board be professionalized in terms of composition and conduct? If so, how?

13. How should the major points of dispute regarding the registration/issuance appeals process be resolved?

14. Should the current requirements for stakeholder consultation be strengthened? If so, how?

III. Context

15. What should be the role of the CDM under each of the plausible future scenarios for the international carbon market?

16. In light of the emergence of other carbon mechanisms, what is the CDM's comparative advantage? What role, if any, should CDM play in improving standards for carbon mechanisms around the world?

17. In light of the emergence of new carbon markets outside of the UNFCCC and the European Union's emissions trading system, what role, if any, should the CDM play in directly issuing credits to these markets?

18. Without prejudging global negotiations, how could CDM promote useful learning-by-doing on REDD+?

19. Without prejudging global negotiations, how could CDM promote learning-by-doing on sectoral mitigation?

20. Should project-by-project offset generation, as currently carried out in the CDM, remain part of the future climate mitigation architecture?

21. Should the CDM remain embedded in the United Nations / UNFCCC? If so, who should operate it?

22. How has the world has changed since Kyoto (1997)?

E. Stakeholder consultations

This list sets out the stakeholder consultations organized by the Panel in 2012. A synopsis of each consultation is available at the CDM Policy Dialogue website: http://www.cdmpolicydialogue.org.

Date	Participants	Panel members (advisers)	Location
13 March	50 stakeholders including from developed and developing countries, intergovernmental organizations, carbon market industry players	Changhua Wu (Akihiro Kuroki, Margaret Lo)	Partnership for Market Readiness, Shenzhen
22 March	80 participants from UNFCCC Secretariat and designated national authorities	Valli Moosa, Margaret Mukahanana (Njogu Morgan, Crispian Olver, Ritika Tewari)	DNA Forum, Bonn
23 March	20 participants – primarily European governments, business groups and non-governmental organizations	Joan MacNaughton (Vanessa Cassano, Helle Juhler-Verdoner)	Centre for European Policy Studies, Brussels
23 March	Mr. Jos Delbeke, Director-General DG Climate, and staff	Joan MacNaughton (Vanessa Cassano, Helle Juhler-Verdoner)	DG Climate, Brussels
23 March	Ms. Lisa Elges and Ms. Alice Harrison (Transparency International) and Ms. Anja Kollmus (CDM Watch)	Valli Moosa, Margaret Mukahanana (Njogu Morgan, Crispian Olver, Ritika Tewari)	DNA Forum, Bonn
24-25 March	Sustainable Development Mechanisms Joint Coordination Workshop - CDM Executive Board and its support structure. Designated national authorities, designated operational entities, environmental non-governmental organizations, emissions traders, project developers, and consultants	Valli Moosa, Margaret Mukahanana (Njogu Morgan, Crispian Olver, Ritika Tewari)	Sustainable Development Mechanisms Joint Coordination Workshop (SDM/JCW), Bonn
24 March	Mr. Werner Betzenbichler, Chair DOE/AIE Forum; Ms. Melanie Eddis, ERM CVS; Mr. Flavio Gomes, BVC; Mr. Edwin Aalders	Valli Moosa (Njogu Morgan, Ritika Tewari)	SDM/JCW, Bonn
24 March	CDM Executive Board – Mr. Maosheng Duan, Chair, Mr. Martin Hession, Vice-Chair, Mr. Jose Domingos Miguez, Member	Valli Moosa, Margaret Mukahanana (Njogu Morgan, Crispian Olver, Ritika Tewari)	SDM/JCW, Bonn
25 March	Mr. Miles Austin, CMIA, Mr. Gareth Phillips, PD Forum, Ms. Susanne Haefeli-Hestvik, PD Forum, Mr. Henry Derwent, IETA	Margaret Mukahanana (Crispian Olver)	SDM/JCW, Bonn
25 March	Members of Methodologies Panel, Small-Scale Working Group, Accreditation Panel, Afforestation and Reforestation Working Group and Registration and Issuance Team	Valli Moosa, Margaret Mukahanana (Njogu Morgan, Crispian Olver, Ritika Tewari)	SDM/JCW, Bonn

28 March	12 stakeholders, including carbon investors, major business groups and non-governmental organizations – includes a separate meeting with Mr. Frank Jotzo on 26 March and meeting with carbon market professionals on 24 April	Ross Garnaut (Ingrid Burfurd)	Melbourne University
10-12 April	A broad cross-section of stakeholders in the North American and other carbon markets including project developers, financers and verifiers, credit purchasers, and regulators	Maggie Fox (Samuel Grausz)	Navigating the American Carbon World Conference, San Francisco
18-20 April	A wide spectrum of actors including carbon investment firms, project developers, multilateral organizations, civil society organizations, government agencies and media.	Margaret Mukahanana (Njogu Morgan, Crispian Olver)	African Carbon Forum (ACF), Addis Ababa
18 April	Project developers at African Carbon Forum	Margaret Mukahanana (Njogu Morgan, Crispian Olver)	ACF, Addis Ababa
18 April	Open consultation at African Carbon Forum	Margaret Mukahanana (Njogu Morgan, Crispian Olver)	ACF, Addis Ababa
18 April	Not-for-profit institutions at African Carbon Forum	Margaret Mukahanana (Njogu Morgan, Crispian Olver)	ACF, Addis Ababa
18 April	Multilateral agencies and financial institutions at African Carbon Forum	Margaret Mukahanana (Njogu Morgan, Crispian Olver)	ACF, Addis Ababa
1 May	US non-governmental organizations stakeholder meeting	Maggie Fox (Nigel Purvis)	Climate Reality Project, Washington DC
10-11 May	Japanese designated national authority	Nobuo Tanaka (Akihiro Kuroki, Naoyuki Yamagishi)	Tokyo
10-11 May	South Korean stakeholders	Nobuo Tanaka (Akihiro Kuroki, Naoyuki Yamagishi)	Tokyo
10-11 May	Japanese industry and project participants	Nobuo Tanaka (Akihiro Kuroki, Naoyuki Yamagishi)	Tokyo
10-11 May	Japanese research institutes and non-governmental organizations	Nobuo Tanaka (Akihiro Kuroki, Naoyuki Yamagishi)	Tokyo
15 May	23 Chinese participants, including representatives from Chinese Government Agencies, carbon markets and research	Changhua Wu (Margaret Lo)	Beijing
16-18 May	Chinese DOEs, carbon industry, government, academia	(Margaret Lo)	Beijing
16 May	World Bank	Maggie Fox (Nigel Purvis)	Washington DC
16 May	US Business community	Maggie Fox (Nigel Purvis)	Washington DC
17 May	Alliance of Small Island States; Least Developed Countries group	Prodipto Ghosh, Margaret Mukahanana (Crispian Olver)	Bonn
18 May	European Union member States	Margaret Mukahanana (Crispian Olver)	Bonn

18 May	Umbrella Group, including Australia, Japan, New Zealand, and Norway	Prodipto Ghosh, Margaret Mukahanana (Naoyuki Yamagishi)	Bonn
19 May	Mr. Liu Qiang, deputy director, CDM Project Management Centre, and Mr. Maosheng Duan, Chair of the CDM Executive Board	Prodipto Ghosh, Margaret Mukahanana (Crispian Olver)	Bonn
21 May	CDM Executive Board, non-governmental organizations, academia, financial institutions, emissions traders, project developers, and consultants	Joan MacNaughton, Paul Simpson (Vanessa Cassano)	London School of Economics
21 May	Representatives from the government of India	Prodipto Ghosh, Margaret Mukahanana	Bonn
24 May	Brazilian stakeholders	Luciano Coutinho (Sergio Weguelin)	BNDES, Rio de Janeiro
Various dates	Brazilian stakeholders	(Luiza Curado, Sergio Weguelin)	Rio de Janeiro, Sao Paulo
1 June	Carbon Expo consultation	Joan MacNaughton (Helle Juhler-Verdoner, Ritika Tewari)	Cologne
4 June	Wide spectrum of African actors including carbon market players, intergovernmental organizations, and designated national authorities	Valli Moosa, Margaret Mukahanana (Crispian Olver, Njogu Morgan)	Johannesburg
8 June	Government, designated operational entities, business groups, and non-governmental organizations	Prodipto Ghosh, Changhua Wu (Ritika Tewari)	Bangkok
9 June	Mr. Greg Barker, DECC Minister of State, UK Government	Paul Simpson (Vanessa Cassano)	London
11 June	Mr. Peter Liese, MEP	Paul Simpson (Vanessa Cassano)	Brussels
11 June	Mr. Bas Eickhout, MEP	Paul Simpson (Vanessa Cassano)	Brussels
11 June	Mr. Kriton Arsenis, MEP	Paul Simpson (Vanessa Cassano)	Brussels
15 June	Latin and South American stakeholder consultation	Yolanda Kakabadse, Margaret Mukahanana (Claudia Amarante, Vanessa Cassano, Luiza Curado, Lina Dabbagh, Tasneem Esop)	Rio de Janeiro
16 June	Mr. Matthew Wyatt, DFID Head of Climate and Environment, UK Government	Paul Simpson (Vanessa Cassano)	London
16 July	India stakeholder consultation	Prodipto Ghosh (Ritika Tewari)	New Delhi
17 July	CDM Executive Board	Ross Garnaut, Yolanda Kakabadse, Margaret Mukahanana, Changhua Wu (Vanessa Cassano)	Bonn

F. Panel members

Valli Moosa, Chair

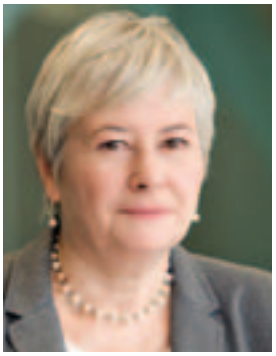
Valli was an active participant in the South African freedom struggle. He was detained without trial on numerous occasions for his opposition to Apartheid. He served as member of the National Executive Committee of the African National Congress. He served on President Mandela's team which negotiated the peaceful transition from Apartheid to democracy in 1994. Valli played a central role in drafting the new South African Constitution.

He served in the first democratically elected government as Minister for Constitutional Development in President Mandela's cabinet from 1994 to 1999, and, as Minister for the Environment from 1999 to 2004. He hosted the World Summit on Sustainable Development in 2002 and served as Chairman of the United Nations Commission on Sustainable Development in 2003.

In 2004 Valli retired from government to join the private sector. He is a principal of the Lereko Metier Capital Growth Fund and Lereko Metier Sustainable Capital. He serves on the boards of Lereko Investments, Sun International, Anglo Platinum, Sanlam and Imperial Holdings. He previously served as Chairman of Eskom.

Valli served as the President of the International Union for the Conservation of Nature (IUCN) from 2004 to 2008. He served as a member of the Global Leadership for Climate Action under the Chairmanship of President Ricardo Lagos of Chile until 2009. He is a member of the CCICED (China Council of International Cooperation on Environment and Development) and is Chairman of WWF (South Africa).

Valli was born in Johannesburg in 1957. He completed a BSc degree in 1979 with majors in Mathematics and Physics.



Joan MacNaughton, CB, Vice-Chair

Joan MacNaughton has been an influential figure in the energy policy debate in a variety of roles at the national and international level.

An Honorary Fellow and President of the Energy Institute, and Executive Chair of the World Energy Council Policy Assessment, Joan is also Senior Research Fellow at the Oxford Institute for Energy Studies and, among other appointments, a member of the Board of Governors, Argonne Laboratory at the University of Chicago, and of the Boards of CCSA and IETA. She is a Companion of the Order of the Bath.

From 2007 to 2011, Joan led Alstom's policy department and spearheaded the company's clean power advocacy: to advance clean, sustainable energy and reduce power generation CO_2 emissions. She now acts as Global Adviser on Sustainable Policies for Alstom.

Prior to joining Alstom, Joan played a key role in shaping UK energy policy. As Director General of Energy she led a major change programme and made a significant contribution to international energy policy, including overseeing the energy agenda during the UK Presidency of the EU and leading the work on the energy part of the climate change proposals agreed at the G8 Gleneagles Summit. From 2004 to 2006, she was elected Chair of the Governing Board of the International Energy Agency, leading a review of the IEA's strategy and leading the emergency response to the supply disruption caused by Hurricane Katrina.

Luciano Coutinho, Panel Member

An expert in industrial and international economics, Luciano Coutinho authored and edited several books, besides an extensive list of articles, published in Brazil and abroad.

In 1994, he coordinated the Study on the Competitiveness of Brazilian Industry, a work involving almost one hundred specialists who mapped out the Brazilian industrial sector with unprecedented thoroughness.

Between 1985 and 1988, he was Executive-Secretary for the Ministry of Science and Technology and took part in the structuring of the Ministry, also working on policies addressing highly-complex areas, such as biotechnology, information technology, fine chemistry, precision mechanics and new materials.

He was partner at LCA Consultores, acting as consulting specialist in competition defence and foreign trade before taking office as President of the BNDES in 2007.

Under his presidency, the BNDES implemented the Production Development Policy (PDP), with the objective of carrying out the expansion of the Brazilian industrial sector, the advancement of innovation and competitiveness, as well as the implementation of infrastructure works in keeping with the federal government's Growth Acceleration Plan (PAC).

The main focus of Luciano's academic career has been industrial policy and the real economy. He has been a guest professor at the Universities of São Paulo, Paris XIII, Texas and at Instituto Ortega y Gasset, besides being a tenured professor at the University of Campinas (Unicamp).

He holds a PhD in Economics from Cornell University, USA; a Master's degree in Economics from the Institute of Economic Research at the University of São Paulo, USP; and a BA in Economics from the same university, during which he received the Gastão Vidigal Award for best Economics student in São Paulo.

Maggie L. Fox, Panel Member

Maggie L. Fox is the President and Chief Executive Officer of The Climate Reality Project and The Climate Reality Action Fund. Since joining the group in early 2009, Maggie has led a campaign to help citizens around the world discover the reality of the climate crisis and take meaningful steps to bring about change. Along with the group's founder Vice President Gore, the Climate Reality Project has trained thousands of Climate Leaders from around the world, most recently in Beijing, China, Jakarta, Indonesia and San Francisco, USA.

Maggie has served on the boards of numerous environmental and women's organizations. She currently serves on the board of the Green Fund and was honored by the Women's Council on Energy and the Environment as the 2010 Woman of the Year. She is past National President of America Votes, a progressive coalition of over 40 organizations spearheading the largest voter mobilization and education effort in the nation. She spent 20 years working at the Sierra Club, including as its Deputy Executive Director. She began her career teaching and community organizing on the Navajo and Hopi Reservations of Northern Arizona. In addition, Maggie has consulted with a number of organizations and foundations on their energy and climate campaigns, including the Hewlett Foundation, the Western Conservation Foundation, the Energy Future Coalition, and Western Resource Advocates.

She has a Master's degree in Education, and a Juris Doctor (JD) with an emphasis on Environmental and Natural Resource, Energy Law.

Ross Garnaut, Professor, Panel Member

Professor Ross Garnaut (AO) is a Vice-Chancellor's Fellow and a Professorial Fellow in Economics at the University of Melbourne as well as a Distinguished Professor of the Australian National University.

In 2009, Ross was awarded the degree of Doctor of Letters, honoris causa, from the Australian National University and was made a Distinguished Fellow of the Economic Society of Australia.

Ross is currently Chairman of the Papua New Guinea Sustainable Development Program Limited (Singapore), and its nominee Director on the Board of Ok Tedi Mining Limited (Papua New Guinea). He is a member of the board of several international research institutions and was foundation Chairman of Lihir Gold Limited from 1995 to 2010. He was a member of the Board of Trustees of the International Food Policy Research Institute (Washington DC) from 2003 to 2010 and its Chairman from 2006.

Ross is the author of numerous books, monographs and articles in scholarly journals on international economics, public finance and economic development, particularly in relation to East Asia and the Southwest Pacific.

In addition to his distinguished academic career, Ross has also had longstanding and successful roles as policy advisor, diplomat and businessman. He was the Senior Economic Adviser to Australian Prime Minister R.J.L. Hawke from 1983 to 1985 and subsequently served as the Australian Ambassador to China (1985 to 1988).

In September 2008, Ross presented the Garnaut Climate Change Review to the Australian Prime Minister. This review, commissioned by the Australian government, examines the impact of climate change on the Australian economy and provides potential medium to long-term policies to ameliorate these. In November 2010 the Minister for Climate Change and Energy Efficiency commissioned Ross to update his 2008 Garnaut Climate Change Review, and the final report was presented to the Australian Government in May 2011.

Prodipto Ghosh, Ph.D., Panel Member

Prodipto Ghosh is a multidisciplinary professional specializing at the interface of science, economics, and public policy.

Currently, he is Distinguished Fellow at The Energy and Resources Institute (TERI), New Delhi. His concurrent positions include: Member of the Prime Minister's Council on Climate Change; Member of the Eminent Persons Group on G-20 matters of the Ministry of Finance and Scientific Consultant in the Office of the Principal Scientific Adviser to the Government of India. He was a member of India's Core Group for international Climate Change Negotiations from 2001 to 2009 (Leader of the Official Team during 2003-2007), and Principal Author of India's National Climate Change Action Plan. He is also Chair of the Task Force on Climate Change of the Federation of Indian Chambers of Commerce and Industry (FICCI).

He is a former Secretary, Ministry of Environment & Forests, Government of India (September 2003 to May 2007).

He has consulted with the UNDP, FAO, and IAEA, World Bank, and Asian Development Bank, and held Visiting Faculty positions in several national and international institutions. He authored 40 peer reviewed publications and several books in the fields of energy, environment and development.

He is the recipient of several awards for contribution to national development, resource conservation and international environmental policies. He is a Member of the American Economic Association and a Fellow of the Institution of Engineers (India/UK).

Prodipto holds a Ph.D. in Economics and Policy Analysis from the Carnegie-Mellon University, USA; and a B.Tech. in Chemical Engineering from the Indian Institute of Technology, New Delhi.

Yolanda Kakabadse, Panel Member

Yolanda Kakabadse is WWF's International President and the former Ecuadorian Minister of Environment.

Yolanda's work with the environmental conservation movement officially began in 1979, when she was appointed Executive Director of Fundación Natura in Quito, where she worked until 1990. During this time she helped Fundación Natura become one of Latin America's most important environmental organizations and, in 1993, she created Fundacion Futuro Latinoamericano, an organization dedicated to promote the sustainable development of Latin America through conflict prevention and management. She was its Executive President until 2006 and remains as Chair of the Advisory Board.

From 1990 until 1992, Yolanda coordinated the participation of civil society organizations in the United Nations Conference for Environment and Development (Earth Summit) in Geneva. From 1996 to 2004 she was President of the World Conservation Union (IUCN) and Member of the Board of the World Resources Institute (WRI). In August 1998 Yolanda was appointed Minister of Environment for the Republic of Ecuador, position she held until January 2000.

During 2001 she was a visiting professor at Yale's School of Forestry and Environment, USA. She co-chaired the Environmental Sustainability Task Force of the UN Millennium Project, 2002 – 2005, then chaired the Scientific and Technology Advisory Panel of the Global Environment Facility (STAP / GEF) from 2005 to 2008. She took office as WWF's International President on 1st January 2010.

Yolanda was born in Ecuador and studied Educational Psychology at the Catholic University of Quito.

Margaret Mukahanana, Panel Member

Margaret Mukahanana has spent 26 years of her career working for the Ministry of Environment and Tourism of Zimbabwe where she served as the Permanent Secretary for six years. She is currently the Permanent Secretary of the Ministry of Tourism and Hospitality Industry of Zimbabwe.

She has been a lead negotiator under the United Nations Framework Convention on Climate Change and the Kyoto Protocol since the preparations for the Rio Summit in 1990. She has also participated in negotiations under the other two conventions derived from the 1992 Earth Summit, namely the Convention on Biological Diversity and the United Nations Convention to Combat Desertification.

Margaret was the Chair of the Ad Hoc Working Group on Long-term Cooperative Action (AWG-LCA) under the UNFCCC up until the sixteenth session of the Conference of the Parties that was held in Cancun in 2010. She served as the vice-chair of the working group at the seventeenth session of the Conference of the Parties that was held in Durban in 2011.

She has sat on the Board of Biotechnology and the Board of Infrastructure Development of Zimbabwe.

Margaret holds a Bachelor's degree in Administration from the University of Zimbabwe; a Master's degree in Natural Resources Management from the University of Manitoba, Canada; and a Master's degree in Business Administration from the University of Zimbabwe.

Paul Simpson, Panel Member

Paul Simpson is co-founder and CEO of the Carbon Disclosure Project (CDP), an independent non-profit organization that exists to prevent dangerous climate change, protect natural resources and create long-term prosperity through the efficient allocation of capital. CDP acts on behalf of 655 signatory investor entities that collectively manage $78 trillion in assets. In response to this financial authority, over 3,700 of the largest companies in the world, and 73 cities with total 244 million inhabitants all report through the CDP system.

Previously, Paul worked with Chesham Amalgamations & Investments Ltd as well as the International Society for Ecology & Culture, and is the former Director of the Social Venture Network. as well as the International Society for Ecology & Culture and Earthcare Education Aotearoa.

His non-executive roles include; sitting on the World Economic Forum Global Agenda Council on Measuring Sustainability, the board of Ethical Investment Research Service (EIRIS), the advisory panel of Guardian Sustainable Business, and on the steering committee of Forest Footprint Disclosure. Paul is also an Advisor to Greeenstar, and is a visiting lecturer in the Management School on the business implications of climate change and sustainable and responsible business.

He holds a BSc in Business and Finance from City University, London and an MSc in Responsibility and Business Practice with distinction from the University of Bath.

Nobuo Tanaka, Panel member

Nobuo Tanaka is currently the Global Associate for Energy Security and Sustainability at the Institute of Energy Economics, Japan (IEEJ) and has been since September 2011.

As Executive Director of the International Energy Agency (IEA) from 2007 to 2011, he oversaw a seminal period in the Agency's work and direction. Under his leadership, the IEA initiated a collective release of oil stocks in June 2011, the third such collective action in the Agency's history, opening new scope and a new era for IEA emergency action. He was responsible for pioneering the concept of *comprehensive energy security*, while also expanding the Agency's focus on climate change, renewable energy and the transition to a low-carbon energy economy. He also played a crucial and personal role in the strengthening of ties with major IEA non-member energy players, including China, India and Russia.

Nobuo began his career in 1973 in the Ministry of Economy, Trade and Industry (METI) in Tokyo, and has served in a number of high-ranking positions in METI, including Director-General of the Multilateral Trade System Department. In this capacity, he led many trade negotiations at the World Trade Organisation (WTO) and for bilateral Free Trade Agreements.

He was deeply engaged in a range of bilateral trade and economic issues with the US as Minister for Industry, Trade and Energy at the Embassy of Japan, Washington, DC from 1998 to 2000, as well serving as the first secretary of the Embassy from 1982 to 1985.

With a strong background in international affairs, Nobuo has served as both Deputy Director and Director for Science, Technology and Industry (DSTI) of the Paris-based Organisation for Economic Co-operation and Development (OECD).

Changhua Wu, Panel Member

Changhua Wu is the Greater China Director of The Climate Group. A China specialist for nearly 20 years and an environment and development policy analyst, she leads the organization's strategic development in the region and manages its Greater China operations.

Changhua heads The Climate Group's China Redesign, a catalyzing leadership program to shift China's energy and resource consumption toward low emissions while accelerating green growth.

Changhua is the spokesperson for the organization on China, and a frequent commentator at international and Chinese media on China's ambition, efforts, progress and challenge to achieving green growth and low carbon development.

She has worked with former UK Prime Minister the Rt Hon Tony Blair on a joint initiative to support a constructive Copenhagen international agreement. Currently she is Vice Chair, World Economic Forum's Global Agenda Council on Climate Change; Vice Chair, Asia-Pacific Water Forum Governing Council; Member, UNFCCC High-Level Panel on the CDM Policy Dialogue; Member, Foundation Board of Global Energy Basel; Vice Chair, China Philanthropy Fund, All-China Federation of Returned Overseas Chinese. She is also a member of the judging panel of the World Economic Forum's Technology Pioneers, and KPMG's Infrastructure 100.

Before joining The Climate Group, she was Executive Director of China Operations of ENSR, working closely with multi-national corporations to support their business development in China and also their compliance with Chinese regulations. Before returning to China, she directed the Program for China Studies at the World Resources Institute (WRI) in Washington, DC, and consulted for multinational organizations like the World Bank, UNEP, and UNDP. She was the 1993 Fellow of World Press Institute and 2004 Fellow of the Temple Law School's US-China Roundtable on Environmental Law and Policy.

She holds two graduate degrees, one in Law from the Chinese Academy of Social Sciences and the other in Environmental Policy from the University of Maryland, USA.