

A Post-2012 Vision for the Clean Development Mechanism

*Christiana Figueres and Charlotte Streck**

1. Introduction

Despite the many calls to reform the flexibility mechanisms of the Kyoto Protocol, their conceptual underpinnings are strong and it is likely that the idea of the mechanisms, in fact the mechanisms themselves, will survive in a post-2012 climate regime. It is therefore timely to review the strengths and weaknesses of the architecture of the mechanisms, in particular of the Clean Development Mechanism (CDM), in the light of a post-2012 international climate treaty. Whether and how the CDM should continue serving the UN Framework Convention on Climate Change (UNFCCC), and which additional mechanisms could complement its mandate is the subject of this paper.

The core of this chapter is dedicated to investigating how a post-2012 climate treaty could provide incentives for greater emission reductions in developing countries. We start by summarizing the current frustrations with the CDM and review incremental modifications that could be considered to strengthen the mechanism without requiring a decision of the Parties to the Kyoto Protocol or changes to the Marrakech Accords.¹ We then explore a potential post-2012 scenario that combines three possible financial mechanisms to promote large-scale mitigation in developing countries: the activity-based CDM as we know it albeit improved, a second market mechanism which would seek to improve the long-term emission trends of developing countries, and a third, non-market based financial mechanism which would follow a scheme of payment that is not commoditized and does not create international offsets.

* This chapter is based on an article by the same authors, 'The Future of the CDM in a Post-2012 Climate Agreement' (2009) 3 Journal of Environment and Development.

¹ The Marrakech Accords were adopted at the 7th Conference of the Parties to the UNFCCC and confirmed by the 1st Meeting of the Parties of the Kyoto Protocol and contain the implementation guidelines for the Kyoto Protocol. Decisions 1-19/CP.7 reflected in decisions 2-13/CMP.1

2. The Clean Development Mechanism: the Expectations of Success

The Intergovernmental Panel on Climate Change (IPCC) has left no doubt that there is an urgent need to scale up mitigation to levels that go far beyond that which was intended by the Kyoto Protocol and its flexibility mechanisms. We now know that the CDM falls short of delivering the emission reductions needed to lower the emission trajectories of developing countries in the longer term. But the CDM must be recognized as a crucial starting point in developing country efforts to contribute to global emission reductions. So much has been accomplished over the past decade that we have fallen into a permanent inflation of expectations, which obscures the beginnings of the instrument. The CDM was created in 1997 by Article 12 of the Kyoto Protocol, that is nothing more than a short 10-paragraph text that defines the mechanism and its two goals. These emphasize that eligible 'emission reductions resulting from each project activity' must be certified on the basis of 'real, measurable, and long term benefits related to climate change', and that reductions must be 'additional to any that would occur in the absence of the certified project activity'.² Parties to the Protocol have since then elaborated the full modalities and procedures for project activities and established the Executive Board (EB) as the operational decision making body, assisted by various expert panels and working groups.³ With the linking into the International Transaction Log⁴ and the connection to the European Union's Community Independent Transaction Log,⁵ the international operational structure for the functioning of the CDM is complete.⁶ The volume of transactions under the CDM has more than tripled from US\$5.25 billion in 2006 to US\$18 billion in 2008.⁷ The achievements of the past 10 years cannot be underestimated: the CDM has established a structure that facilitates a functional carbon market by defining the standards and processes for creating tradable emission reductions, consolidating methodologies, streamlining procedures, and reducing global mitigation costs.

² Article 12.5(b) and (c) of the Kyoto Protocol.

³ For a description of all Panels, Working Groups and Teams see <<http://cdm.unfccc.int/Panels/index.html>>, accessed 21 May 2009. For a list of operational entities see <<http://cdm.unfccc.int/DOE/list/index.html>>, accessed 21 May 2009.

⁴ The International Transaction Log (ITL) is the system that verifies emission reduction transactions among the industrialized countries that have emission reductions obligations under the Kyoto Protocol. The ITL ensures the transactions are consistent with all established rules before authorizing the transfer of reductions from one registry account to another.

⁵ The European Union established its own transaction log to verify the transactions among members of the EU and this transaction log is now electronically linked to the International Transaction Log.

⁶ As a result the price spread between EU allowances and secondary CERs decreased substantially: Axel Michaelowa and A Vasa, 'Uncertainty in climate policy-impacts on market mechanisms' in G Gramelsberger and J Feichter (eds) *Dealing with Uncertainty in Climate Research and Policy* (Springer, forthcoming 2009).

⁷ World Bank, 'State and Trends of the Carbon Market' (2009) <http://carbonfinance.org/docs/Carbon_Trends_2009>, accessed 27 July 2009.

Ironically, however, success breeds rising expectations. As the supply of CDM projects has grown, and as the need for increased mitigation in developing countries has become clearer, stakeholders clamor for 'more and better' from the CDM. The past two years in particular have seen a plethora of publications expressing frustration with the CDM. Given the breadth and depth of those writings we simply summarize here the main areas of discontent.

2.1 Shortcomings

The long-term success of the CDM can be best measured in respect to its capacity to measurably mitigate the emissions of green house gases (GHG). However, this evaluation is not easy as the CDM creates emission reductions that can be used to offset emissions in industrialized countries. A crucial aspect of CDM emission reductions is that they be 'additional' to what would have occurred otherwise. The additionality concept of the CDM has been debated vigorously, with some authors claiming that many registered projects would have occurred anyway⁸ while practitioners in the field and business associations complain that the EB is being excessively stringent in its assessment of additionality.⁹ In between both arguments remains the fact that the additionality of individual projects is difficult to prove and even more difficult to validate.

2.1.1 Inefficient operation

After a slow start, the CDM has seen an explosion of projects that was unimaginable in 1997 or even in 2004 when the first project was registered. Over the past four years the CDM has registered 1,500 projects and is gearing up for an additional 2,800 projects which are now in the pipeline.¹⁰ After long delays the CDM system is now fully funded and the technical support provided by the Secretariat has grown to meet the demand. There have been copious complaints

⁸ Axel Michaelowa and Pallav Puohit, 'Additionality determination of Indian CDM projects. Can Indian CDM project developers outwit the CDM Executive Board?' (Discussion Paper CDM-1, Climate Strategies, London, 2007) <www.noe21.org/docs/Michaelowa-teripress-2007>, accessed 21 February 2009; Lambert Schneider, 'Is the CDM fulfilling its environmental and sustainable development objective? An evaluation of the CDM and options for improvement' (Report prepared for WWF by Oeko Institut, Berlin 2007) <www.oekoinstitut.de/oekodoc/622/2007-162-en.pdf>, accessed 21 February 2009; Rie Watanabe et al, *The Bali Roadmap for Global Climate Policy—New Horizons and Old Pitfalls* (Wuppertal Institute for Climate, Environment and Energy, 2008).

⁹ In particular, for its use of investment analysis as a litmus test. International Emissions Trading Association (IETA), 'State of the CDM 2008' (2008) <<http://www.ieta.org/ieta/www/pages/getfile.php?docID=3111>>, accessed 21 February 2009; UNFCCC, 'Call for Input on Non-Binding Best-Practice Examples on the Demonstration of Additionality to Assist the Development of PDDs, Particularly for SSC Project Activities' (2007) <http://cdm.unfccc.int/public_inputs/dev_PDDs/cfi/R5142ZGKFD6FF61W5MZEID3DJJKYH>, accessed 12 March 2009. Some of the comments prove the dissatisfaction with the additionality tool.

¹⁰ It has been shown that not all pipeline projects move forward to registration due to barriers including financing, regulatory risks, transaction losses, etc.

about year-long delays in the approval of methodologies,¹¹ about the one- to two-year time lag in the assessment of projects,¹² and, recently, criticisms about the ineffectual operation of Designated Operational Entities (DOEs), which have become new bottlenecks in the functioning of the CDM.¹³ It seems that one of the consequences of demand-driven growth is an inevitable delay between appearance of the demand and response of the system.

2.1.2 Insufficient contribution to sustainable development

The CDM was created with two objectives: lowering the cost of global climate change mitigation and contributing to the sustainable development of developing countries.¹⁴ However, as a market mechanism that gives monetary value only to emission reductions and searches for the highest volumes at the lowest price, the CDM has been more effective in reducing mitigation costs than in broad contribution to sustainability.¹⁵ In this criticism most authors assume a definition of sustainable development that focuses on local stakeholder participation, local job creation, and small scale renewable energy supply.¹⁶ From a climate change perspective, however, one could argue that it is much more worrisome that the CDM has not promoted sustainable development writ large: it has not moved developing countries toward low carbon development paths¹⁷ based on more sustainable energy production and consumption patterns and more sustainable forest management practices.

¹¹ IETA (n 9 above). ¹² Michaelowa and Purohit (n 8 above); IETA (n 9 above).

¹³ J Hoogzaad, A Korhnius, C Streck, 'A Call to Reform' (October 2008) 5 Carbon Finance, 16, 17.

¹⁴ Kyoto Protocol to the United Nations Framework Convention on Climate Change (adopted 11 December 1997, entered into force 16 February 2005) 37 ILM 22, art 12.

¹⁵ Karen Holm Olsen, 'The Clean Development Mechanism's Contribution to Sustainable Development: A Review of the Literature' (2007) 84 Climatic Change 1; C Sutter and JC Parreño, 'Does the Current Clean Development Mechanism (CDM) Deliver its Sustainable Development Claim? An Analysis of Officially Registered CDM Projects' (2007) 84 Climatic Change 75; Karen Holm Olsen and Jørgen Fenhann, 'Sustainable Development Benefits of Clean Development Mechanism Projects. A New Methodology for Sustainability Assessment Based on Text Analysis of the Project Design Documents Submitted for Validation' (2008) 36 Energy Policy 8; Patrick Nussbaumer, 'On the Contribution of Labelled Certified Emission Reductions to Sustainable Development: A Multi-Criteria Evaluation of CDM Projects' 37 Energy Policy 91 (2008).

¹⁶ A Cosby and others, 'Realizing the Development Dividend: Making the CDM Work for Developing Countries' (International Institute for Sustainable Development Research Paper 2005) <www.iisd.org/pdf/2005/climate_realizing_dividend.pdf>, accessed 21 February 2009; K Brown and others, 'How do CDM projects contribute to sustainable development?' (Tyndall Centre for Climate Change Research Technical Report 16, 2004) <http://www.tyndall.ac.uk/research/theme2/final_reports/it1_13.pdf>, accessed 21 February 2009; Axel Michaelowa and K Umamaheswaran, 'Additionality and Sustainable Development Issues Regarding CDM Projects in Energy Efficiency Sector' (HWWA Discussion Paper No. 346 2006) <<http://ssrn.com/abstract=908824>> accessed 21 February 2009.

¹⁷ Figueres and others, 'Programmatic CDM Project Activities: Eligibility, Methodological Requirements and Implementation' (Study for the Carbon Finance Business Unit of the World Bank, 29 November 2005) <http://figueresonline.com/publications/Programmatic_CDM.pdf>, accessed 26 February 2009; Michael Wara, 'Is the Global Carbon Market Working?' (2007) 445 Nature 595; Michael Wara and David Victor, 'A Realistic Policy on International Carbon Offsets' (April 2008) PESD Working Paper, Stanford University <http://pesd.stanford.edu/publications/a_realistic_policy_on_international_carbon_offsets>, accessed 21 February 2009.

2.1.3 Weakness of the incentive

The incentive of the CDM has been too weak to foster the necessary type of transformation in the economy, without which emission paths in developing countries will continue to increase.¹⁸ The CDM was effective in quickly eliminating a substantial portion of HFC₂₃ and N₂O industrial gases which gave an early spur to the market although contributing little to sustainable development.¹⁹ More recently, the CDM has shown that it can catalyze uptake of commercially proven technologies to capture waste heat and waste gases in carbon-intensive manufacturing industries (iron and steel, cement, chemicals). Likewise, CDM has begun to support a wave of renewable energy projects, methane capture and use projects, efficiency activities in coal mining, and oil and gas exploration and distribution. However, NGO concerns, and even more importantly the relatively low price of carbon, have impeded the CDM from appropriately addressing the largest source of greenhouse gas emissions globally coal fired power plants.²⁰ Up until recently the CDM was practiced on the basis of single site projects (eg, a wind farm, a hydroelectric dam, a biodigester, etc), which were submitted and registered as CDM project activities. The 2005 decision of the conference of the parties to the UNFCCC serving as the meeting of the parties to the Kyoto Protocol COP/MOP to also open the option for submitting and registering a potentially unlimited number of mitigation activities that are widely dispersed (eg efficient cooking stoves, compact fluorescent lights, etc) under a single CDM program, may be a first step to including demand side energy efficiency and distributed clean energy generation in the CDM. However, programmatic CDM is still in its infancy and the fact remains that the CDM has not supported any increased efficiencies in households, buildings, or transportation systems—which together comprise more than half global carbon emissions²¹ and are the fastest growing sources of carbon emissions in the emerging markets.²²

¹⁸ Wolfgang Sterk, 'From Clean Development Mechanism to Sectoral Crediting Approaches—Way Forward or Wrong Turn?' (JIKO Policy Paper Wuppertal Institute for Climate, Environment and Energy January 2008) <http://www.wupperinst.org/en/publications/entwd/index.html&beitrag_id=790&bid=86>, accessed 21 February 2009.

¹⁹ —, 'UNEP Risoe CDM/JI Pipeline Analysis and Database' <<http://www.cdmpipeline.org/overview.htm>>, accessed 26 February 2009.

²⁰ As energy demand growth in some developing countries is currently satisfied with coal-fired plants, the introduction of ultra-critical coal-fired plants is both a promising and contentious issue. The first methodology for potential power plant energy efficiency and supercritical coal-fired CDM projects, AMCM13 was approved in 2007 (EB39). See UNFCCC, CDM Meeting Archive <http://cdm.unfccc.int/EB/archives/meetings_08.html#039>, accessed 26 February 2009.

²¹ Kahn S Ribeiro and others, 'Transport and its infrastructure' in B Metz, OR Davidson, PR Bosch, R Dave, LA Meyer (eds) 'Climate Change 2007: Mitigation'. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (2007) (Cambridge University Press: Cambridge) (IPCC, 2007).

²² D Sperling and D Salon, 'Transportation in Developing Countries: An Overview of Greenhouse Gas Reduction Strategies' (Paper Prepared for Pew Center on Global Climate Change 2002) <http://www.pewclimate.org/doCUPloads/transportation_overview.pdf>, accessed 26 February 2009.

2.1.4 Weak governance

The CDM has failed to develop a due process to guarantee fundamental fairness, justice, and respect for property rights. The overwhelming majority of the entities trading in the CDM market belong to the private sector. The CDM is unique in regulating a market dominated by private players that depend on a United Nations committee (the EB) to approve the calculation methods and projects that create the market's underlying asset. The credibility of the CDM market depends largely on the robustness of its regulatory framework and private sector's confidence in the opportunities provided by the mechanism.²³ There are mounting complaints about the continued lack of transparency in the Board's decision-making and the lack of predictability.²⁴ The governance structure of the CDM would have to be reviewed taking into account the need to provide in particular the private sector participants that are not represented in the Conference of the Parties with due process, ensuring the conditions for fair and predictable decisions.

Not all of the above issues will ever be solved by the CDM, but there is ample room for improvement toward 2012 and evolution beyond 2013, and there has certainly been no lack of suggestions on how to change and enhance the CDM. Here we do not undertake an in-depth explanation of these proposals instead evaluate what may be politically acceptable to all Parties, given the necessary scale of mitigation post-2012 and particularly the short time-frame available to debate a 2009 Copenhagen agreement.

3. Political Realities

There are three main political constellations that shape the potential consensus around a future climate deal. First, the US (until recently the largest national source of CO₂ emissions²⁵ and by all counts the most historically responsible) has made little attempt to reduce emissions. The administration of President Obama has initiated the development of domestic legislation, and the

²³ Charlotte Streck and Thiago Chagas, 'The Future of the CDM in a Post-Kyoto World' (2007) 1 *Carbon & Climate Law Review* 53; Ernestine Meijer, 'The International Institutions of the Clean Development Mechanism Brought Before National Courts: Limiting Jurisdictional Immunity to Achieve Access to Justice' (2007) 39 *NYU JILP* 877; Charlotte Streck and Jolene Lin, 'Making Markets Work: A Review of CDM Performance and the Need for Reform' (2008) 19 *EJIL* 409.

²⁴ International Emissions Trading Association, 'Strengthening the CDM' (IETA Position Paper for COP 11 and COP/MOP 1 2005) <<http://www.ieta.org/ieta/www/pages/getfile.php?docID=1132>>, accessed 26 February 2009.

²⁵ China is believed to have overtaken the US in absolute national terms during 2006, see JS Gregg and others, 'China: Emissions Pattern of the World Leader in CO₂ emissions from fossil fuel consumption and cement production' (2008) *Geophys Res Lett* 35 <<http://www.agu.org/pubs/crossref/2008/2007GL032887.shtml>>, accessed 26 February 2009.

expectation is that the US will undertake efforts that are comparable with other industrialized nations. The political will has been established by the new leadership, but the procedural necessities will take time. Even with all good will, the US will first develop its domestic emissions regulations before considering entry into a multilateral agreement and this is unlikely to occur by December 2009.²⁶ The consequence for the international agreement could be either that the 2009 Conference of the Parties (COP) to the UNFCCC may be suspended in December to be continued in June 2010 (as was done with COP 6), or that the Copenhagen agreement, in close consultation with the US team, may have to be crafted as an architectural ‘docking station’ where the major architectural design is set for the US to later ‘dock in’.

The second political reality is that among the industrialized nations the EU has announced the strongest post-2012 reduction commitments, and even those are insufficient and tenuous. Unlike the US where international commitments tend to follow domestic policies, the EU has had a practice of defining international targets first before deciding on how to attain those targets. Although the EU has been careful to differentiate its unilateral mitigation commitment (20% below 1990 levels by 2020) from an additional 10% reduction in case of a satisfactory—from the point of view of the EU—international agreement,²⁷ it is not guaranteed that Member States would be willing to uphold the unilateral reduction level in the event of a failed or unsatisfactory international agreement.

The third political constellation is that of developing countries. These countries understand that the reduction in GHG emissions needed to avoid catastrophic climate disruptions cannot be attained by industrialized countries alone, even if those reductions reach 80 or 90% below 1990 levels. However, developing countries’ contribution to global mitigation must take into account that:

- Developing countries will consider emission reductions only once all industrialized countries (including USA, Japan, Canada and Australia) have demonstrably taken the lead.
- Developing countries include a broad spectrum of economy sizes, which has a direct bearing on both responsibility,²⁸ as well as capability,²⁹ to mitigate. A few emerging economies have felt the pressure to contribute to mitigation efforts in the near term due to their current rapidly increasing

²⁶ The Waxman-Markey climate bill which sets short-term greenhouse gas emission reduction targets, will likely face substantial resistance in the Senate.

²⁷ The EU climate goal forms part of an energy and climate strategic package presented by the EU Commission on 23 January 2008, and endorsed by the Council on 4 December and the European Parliament on 13 December 2008. The reference line for reductions has been defined as 2005, as opposed to the previous 1990 levels, due to resistance of some Member States. See European Commission, ‘EU ETS post 2012’ <http://ec.europa.eu/environment/climat/emission/ets_post2012_en.htm>, accessed 26 February 2009.

²⁸ Responsibility could be proxied as either cumulative emissions or annual emissions, and either could be measured on a per capita basis.

²⁹ Capability could be proxied as either GDP or GDP per capita.

emission levels and growing economic development levels. China, India, South Korea, Mexico, Brazil, and South Africa have all come forward with first estimates of their mitigation potential. In addition, there is a group of middle-income developing countries that are not currently being 'targeted', but whose growth patterns could lead them, under a business as usual scenario, to relatively high GDP and emission levels over the next 20 years (eg, Chile, Argentina, Iran, Saudi Arabia, etc). The largest number of developing countries is however comprised of small economies whose emissions are negligible now and in the future. They may continue to contribute to mitigation efforts, but most likely under little or no international pressure to curb their emission growth.

- Developing countries will not immediately enter into absolute reduction commitments but rather may sequence their nationally appropriate mitigation actions³⁰ to gradually move up the stringency ladder. The larger developing countries could start with a focus on climate-friendly development policies without explicit mitigation commitments, and transit over time, based on demonstrated responsibility and capability, to limiting emission growth and finally at some point in time, to adopting emission reduction or at least emission intensity targets (Figure 26.1). In order to uphold the integrity of the system, all mitigation efforts would have to be domestically measured and reported, and independently verified.
- As two-thirds of future emissions will come from developing countries, they could potentially provide most of the mitigation needed for stabilization, but they cannot be expected to pay for it. Financial support for substantial mitigation in developing countries is made more palatable to industrialized nations by the fact that these are the most cost effective mitigation efforts. The UNFCCC Secretariat estimates that 68% of the mitigation necessary for stabilization is achievable in developing countries and would cost 46% of the total global mitigation.³¹

The conditional transfer of resources from the industrialized countries for purposes of underwriting part of the mitigation costs in the developing world is what is at the heart of the CDM and is likely to continue to be the *modus operandi* of the financial mechanism(s) that could be devised for post-2012 mitigation.

³⁰ The Bali Action Plan, Decision 1/CP13 envisages '[n]ationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building in measurable, reportable and verifiable manner.'

³¹ UNFCCC, 'Investment and Financial Flows Relevant to the Development of an Effective and Appropriate International Response to Climate Change' (2007) <http://unfccc.int/cooperation_and_support/financial_mechanism/items/4053.php>, accessed 26 February 2009.

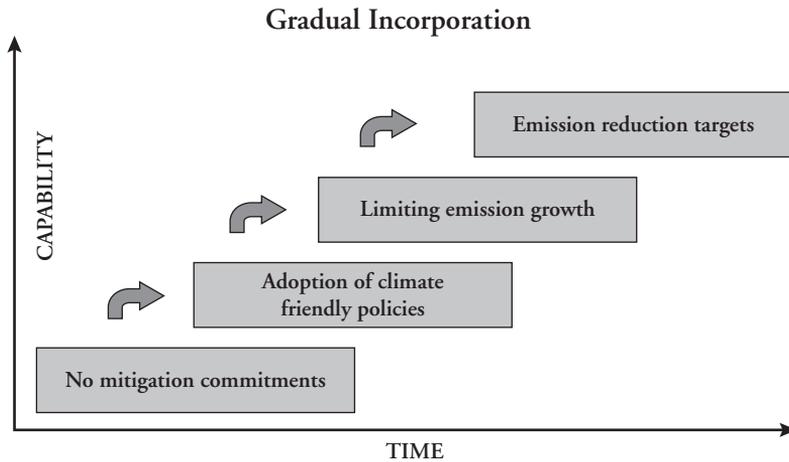


Figure 26.1. A possible scheme for gradual incorporation of developing countries

Source: Christiana Figueres, 'The Bali Batik: Design Options for the post 2012 Climate Regime' (Paper Written for Economic Commission of Latin America and the Caribbean, Santiago de Chile, July 2007) <<http://figueresonline.com/publications/balibatikenglish.pdf>>, accessed 26 February 2009.

4. Scaling up Emission Reductions in Developing Countries

One of the main challenges of a post-2012 agreement is thus to define a framework which creates incentives for developing countries to reduce emissions beyond those currently mobilized by the CDM. The following paragraphs summarize the challenges of scaling up the current CDM to access broader emission reductions.

4.1 Environmental integrity

Environmental credibility is particularly important in the CDM where emission reductions are credited as offsets, thus not leading to an overall reduction but only to a displacement of the emission reduction to a source of more cost efficient GHG emissions abatement. The current CDM is based on project-based crediting, supported by rigorous checks and balances to ensure that emission reductions are additional, and that any emission reductions are correctly monitored and verified. The environmental integrity of any and all future market mechanisms must be upheld.

4.2 Uncertainty over demand

As with any market, the carbon market is based on the notion of scarcity. Incentives to innovate, seek low-cost emission reduction options and invest in

relevant technology are dependent on an environment where the circulating number of allowances and credits are below the actual level of emissions. In order to ensure that credits remain scarce and prices high, the design of emission trading schemes normally involve limitations for the import of credits. In order to protect the EU Emission Trading Scheme from the flooding of CDM credits, for example, the market regulator has capped the number of Certified Emission Reductions (CERs) from the CDM authorized for transfer.³² Any future market mechanism must have appropriate demand as a key design feature.

4.3 Market and non-market

The post-2012 international climate agreement will probably have to rely on a mix of market and non-market based mechanisms. The carbon market so far has proven to be a successful way to involve private entities in treaty compliance, but has yet to be tested as a means to generate public finance. Carbon finance and the private sector contributions to a future climate regime are essential to mobilize the required scale of funding, but governments need to have access to stable resources in order to adopt and implement policies and programs that lead to GHG emission reductions.

Without minimizing the need for more effectiveness, it is probably not realistic to attain anything more than incremental changes to the CDM during the current commitment period. While practitioners and some parties clamor for significant improvements, many developing countries are still learning the ropes of the instrument, and others are focused on the new agreement and tools for scaling up post-2012 mitigation.

4.4 Three possible levels of improvement

In order to organize the steps in a possible evolution, it may be helpful to distinguish three levels of improvements/changes to the current CDM, which could ultimately result in two or three financial mechanisms, functioning in parallel and in a complementary manner to one another.

4.4.1 The activity-based CDM

Both projects and programs can be submitted to the CDM for registration, however they must be activity-based. By 'activity-based' we mean that the emission reductions must be directly traceable to a specific and concrete mitigation activity. Assuming the CDM will continue to operate within this restriction imposed by the Marrakech Accords,³³ at least until the end of the current commitment period, there are incremental improvements that could be

³² EU ETS post-2012 (n 27 above).

³³ Decision 17/CP 7 as adopted by COP/MOP 1 as Decision 3 CMPI.

undertaken by the EB itself, supported by a decision of the COP/MOP if it occurs, but not dependent on that mandate.

4.4.2 A trend-changing market mechanism

Given the need to scale up mitigation in developing countries beyond what can be delivered by the CDM, it may be necessary to create a second market mechanism, inside or outside of the current CDM, inside or outside of the Kyoto Protocol, which focuses on impacting long-term emission trends particularly in large emerging economies.

4.4.3 A non-market mechanism

In the post-2012 regime it may be necessary to limit the scope of the offset market and create a complementary financial mechanism to promote certain mitigation efforts in developing countries without creating international offsets in order to keep the global reductions and timelines within the ranges demanded by science.

We discuss each of these possible mechanisms below.

5. The Activity-based Clean Development Mechanism

Today's wisdom demands higher emission reduction levels than those made possible through a project-based CDM, and many voices have understandably joined the chorus to expand the CDM (or create another mechanism) toward sector-wide mitigation efforts. However, it is likely that the CDM (or at least part of it) may remain an activity-based market mechanism, now and beyond 2012. The logic of a system based on the measurement of concrete mitigation activities is to measure tons reduced by individual projects rather than encourage a shift in emission trends.³⁴ In this system, baselines and additionality are determined at the individual project activity level.

The Marrakech Accords flow from an activity-based logic. To change that logic the CDM Executive Board would need a decision of the COP/MOP, and there is little political space to make such a shift before 2012.³⁵ Over the next two years negotiators are not likely to consent to material changes, particularly if they could lead to higher CERs volumes. Industrial and developing countries

³⁴ Christiana Figueres, 'From Tons to Trends' in Lydia Swart and Estelle Perry (eds), *Global Environmental Governance, Perspectives on the Current Debate* (Center for UN Reform Education: New York, 2007).

³⁵ Substantial changes to the CDM, which were discussed under Art 9 negotiations at COP/MOP 4 in Poznan, did not prosper and were deleted from the text even before the entire Art 9 was dropped.

alike fear that a substantial change in rules could open a floodgate to supply which would overwhelm demand, depress prices, and cause environmental damage due to the offsetting nature of the CDM. Thus it appears unlikely that the CDM will be subjected to much serious revamping during the first commitment period.

This is not to say that the CDM is a finished product. Importantly, it should incorporate several key administrative improvements and the sooner the better. In the following we list: (i) measures that could be undertaken directly by the EB without changing the Marrakech Accords and without the need for a COP/MOP decision; and (ii) improvements of the CDM requiring a COP/MOP decision that revises the Marrakech Accords but without touching the fundamental principles of the CDM. Any changes undertaken by the EB for the first commitment period would presumably stay in place after 2012, while reforms that require a more profound reform of the CDM would likely only take effect in 2013.

5.1 Improvements that can be enacted by the Executive Board itself

5.1.1 Increased delegation to the Secretariat.

Assuming that the level of CDM submissions continues to rise and that nominations to the Board will, at least for the next three years, continue the current practice of part-time voluntary Board members who have limited technical knowledge or regulatory experience, it is inevitable that the Board will have to delegate even more responsibility to the Secretariat than it has in the past. Over the past two to three years the Secretariat has been recruiting and training staff to support the various functions of the EB. This trend will probably continue. The ultimate responsibility will certainly continue to reside with the Board, but project review could be shifted even further to the Secretariat, avoiding unnecessary delays and allowing the EB to focus more on policy decisions.

5.1.2 Review of the EB's administrative rules

Currently, there are only a few formalized provisions governing the interaction between project proponents, the EB, and its panels. Insecurities regarding communications, hearings and time lines often make processes cumbersome and opaque. From the perspective of project participants, there is a perception of insufficient and circuitous communication. As a result, there is an undefined period of legal and planning insecurity during which project participants: (i) must retain resources to answer an undefined and unlimited number of new questions; and (ii) have no indication on whether they can move ahead with developing the corresponding CDM project activities. Parties could consider the

adoption of administrative due process rules governing communication amongst the various CDM actors.³⁶

5.1.3 Role of Designated Operational Entities

The functional relationship between the EB and the Designated Operational Entities (DOEs) requires urgent improvement. DOEs are charged with ensuring that any project submitted for registration meets all CDM requirements. However, the reality is that DOEs have not been performing to expectations. DOEs argue that they are understaffed and that it is difficult to find suitably qualified people. The EB argues that DOEs should learn from the published EB reports. Either way, DOEs cannot stand outside EB decisions—they need to be incorporated more organically into the EB decision-making process. The recent approval of a Validation and Verification Manual should be of help. However, the EB reaches decisions with direct regulatory implications at every meeting and the DOEs should be the first to know of, and understand, these decisions. Were the EB to clearly state the rationale for decisions on registration and issuance, DOEs and project proponents would be able to more effectively derive the lessons learned and then apply these in the preparation of future projects, over time improving the performance of DOEs.

5.2 Improvements requiring a COP/MOP decision

The above issues could be considered directly by the EB or decided by Parties in a COP/MOP decision for the current commitment period. In addition, there are other elements which represent more fundamental changes to the CDM which are not likely to be considered for enactment before 2013 and would have to stem from a decision of the Parties.

5.2.1 Professionalizing the EB

The current EB has been established as a United Nations committee, rather than as a professional regulatory authority overseeing the carbon market. However, the EB is in the position of a *de facto* market regulator. In order to effectively fulfill this role, a first step in this direction would be to professionalize the EB.³⁷ Presently, the majority of its members have a background in international environmental negotiations, not in market regulatory work (for example, work experience in financial or energy regulatory authorities). As a result, the considerations of the EB tend to be oriented towards agendas raised during international negotiations rather than to the sort of issues related to the creation and maintenance of an efficient international market. The professionalization of the

³⁶ Charlotte Streck and Jolene Lin, 'Making Markets Work: A Review of CDM Performance and the Need for Reform' (2008) 19 *European Journal of International Law* 409.

³⁷ *Ibid.*

EB would require the recruitment of full-time salaried individuals whose collective experience spans the entire range of responsibilities (including project finance, law, business management, science) and is grounded in practical, project-level experience and knowledge of the CDM. Staffing the EB with professional staff would also help avoid conflict of interests since individuals would no longer have to serve several agendas and interests in parallel, and could devote themselves full time to the EB. The current regional UN representation could be maintained by ensuring that the professionals stem from the respective regions of the world.

5.2.2 Review mechanism

In addition, a review mechanism of the decisions of the EB could be put in place. The COP/MOP decisions foresee a review procedure of some contested decisions when a decision improperly affects a Party's interest. The review is conducted by the enforcement branch of the Protocol's Compliance Committee.³⁸ These procedures, however, do not extend to non-Party participants in CDM projects. Under the existing guidelines, procedures and rules, the procedural rights of private parties are very limited. Affected project participants are afforded no opportunity for review of EB decisions. In order to strengthen the quality and legitimacy of the EB's decisions, the COP/MOP could establish an appeal mechanism which gives standing to individuals that are granted rights and obligations under the CDM and guarantees a full review of EB decisions.³⁹

6. A Trend-changing Market Mechanism

The reductions achieved under the Kyoto Protocol will not make a dent in global emissions, and so far has had even less of an effect on emission trajectories. The decarbonization that the current CDM has not been able to achieve in developing countries needs to be aggressively pursued in the post-2012 period. While economic growth must continue, particularly in developing countries, the efficiency of energy consumption must improve and the carbon intensity of production must swiftly decrease. Decoupling growth from emissions is the only way to

³⁸ Decision 27/CMP.1, Annex, Procedures and mechanisms relating to compliance under the Kyoto Protocol, sections IX and X.

³⁹ Charlotte Streck, 'The governance of the Clean Development Mechanism—the case for strength and stability' in David Freestone and Charlotte Streck (eds), *The Kyoto Protocol and Carbon Finance: Current legal status of Carbon Finance and the Flexible Mechanisms (CDM and JI)* [2007] Environmental Liability 91; Charlotte Streck and Thiago Chagas, 'The Future of the CDM in a Post-Kyoto World' (2007) 1 *Climate and Carbon Law Review* 53; also chapter 15 above. An alternative remedy has been proposed by Ernestine Meijer under which decisions of the EB would be open for review by national courts E Meijer, 'The International Institutions of the Clean Development Mechanism Brought Before National Courts: Limiting Jurisdictional Immunity to Achieve Access to Justice' (2007) 39 *New York University Journal of International Law and Policy* 877.

pursue economic development and climate protection simultaneously, and this requires a radical shift in the policies that regulate the productive sectors.

Unlike the current CDM, the next chapter of the carbon market must play an important role in introducing and implementing the policy changes needed to put developing countries onto a low carbon path. It could be argued that programmatic CDM is a first step in the direction of decarbonization by enacting climate friendly policies. Indeed, that was the original intent. Stemming from the firm conviction that the market needs to promote climate friendly policies and not just isolated projects, proponents tried to introduce the eligibility of policies and standards in the CDM during the COP/MOP negotiations held in Montreal in November 2005. The compromise that was reached is encapsulated in the COP/MOP-1 decision that gives rise to programmatic CDM:⁴⁰

A local/regional/national policy or standard cannot be considered as a clean development mechanism project activity, but project activities under a programme of activities can be registered as a single clean development mechanism project activity.

The decision differentiates between the existence of a policy (not eligible) and its implementation through specific activities (eligible). The adoption of rules governing programmatic CDM was important for opening the CDM to projects in sectors that are highly dispersed over space and time. However, programmatic CDM continues to fall short of triggering the needed level of GHG emission reductions at the scale of whole economies and does not allow the crediting of GHG emission reductions at the policy level.

The next chapter of the climate regime must be built around the active and deliberate promotion of climate friendly policies throughout the developing world. Over the past few years a plethora of proposals has emerged suggesting options for making this shift.⁴¹ Here we highlight the subset of proposals that revolve around sectoral concepts, as they seem to have most political attention. While authors take various perspectives on what has become the 'magical' and overly used term 'sectoral', there are basically two groups of proposals with varying degrees of elaboration: those that stem from an agreement among industries that operate in the same sector but are located across different countries, and those that evolve from a national government decision to implement a specific policy or measure within a sector.

6.1 Industry agreements

Arising from concerns over leakages and negative competitiveness effects associated with country-specific mitigation commitments,⁴² industry has taken the

⁴⁰ Paragraph 20, Decision 2/CMP1.

⁴¹ Cosby et al describe 44 proposals which have been made within and outside of formal UNFCCC processes, and additional ones have emerged since then. Cosby (n 16 above).

⁴² International Energy Agency, 'Issues Behind Competitiveness and Carbon Leakage' (IEA Information Paper, 2008) <http://www.iea.org/Textbase/papers/2008/Competitiveness_and_Carbon_Leakage.pdf>, accessed 27 February 2009.

initiative to establish transnational, industry-led networks that promote climate change mitigation policies involving different sectors in developed and emerging countries alike. A key purpose is to avoid that competitiveness gains could be obtained through regulatory arbitrage, a particular concern for trade-exposed industries such as cement, aluminum, and steel, which are so energy intensive that they alone represent a significant share of emissions.⁴³ Transnational voluntary policy co-operations exist for the aluminum sector (under the auspices of the International Aluminum Institute), for the cement sector (Cement Sustainability Initiative, under the auspices of World Business Council for Sustainable Development), for the iron and steel sector (administered by the Iron and Steel Institute) and in the form of multi-sectoral, public/private partnerships (Asia-Pacific Partnership on Clean Development and Climate).

The private sector approach to sectoral crediting has three major flaws. First, it would need to be based on firm commitments, and yet the participation in private sector agreements is voluntary by definition. Second, even though industry today confesses wholeheartedly to the objectives of sustainable development, the level and quality of commitments taken are meager. Thirdly, voluntary commitments by private stakeholders are by definition outside the purview of the UNFCCC process where only states can enter into international agreements. Therefore, agreements that are reached in the realm of the private sector could be complementary to, but cannot substitute, agreements reached among governments within the UNFCCC process.

6.2 Government actions

Referred to by some authors as the 'policy-based approach',⁴⁴ but by others as a form of a 'sectoral' approach,⁴⁵ this approach centers on the generation of emission reductions by developing countries that adopt binding or non-binding policies, voluntary or mandatory standards that measurably reduce GHG

⁴³ C Egenhofer and others, 'Global Sectoral Industry Approaches to Climate Change: The Way Forward' (Center for European Policy Studies: Brussels 2008); N Höhne, and C Ellermann, 'A sectoral approach and technology transfer for the cement sector' (Paper Commissioned by Federal Office for the Environment FOEN: Switzerland, 20 August 2008) <http://www.bafu.admin.ch/klima/index.html?lang=en&download=NHZLpZeg7t,lnp6l0NTU042l2Z6ln1ad1iZn4Z2qZpnO2Yuq2Z6gpJCFeYR6fGym162epYbg2c_JjKbNoKSn6A-.pdf>, accessed 27 February 2009.

⁴⁴ W Sterk and B Wittneben, 'Enhancing the clean development mechanism through sectoral approaches: definitions, applications and ways forward' (2006) 6 International Environmental Agreements: Politics, Law and Economics 271-87; Bosi and Ellis, 'Exploring Options for Sectoral Crediting Mechanisms' (Organization for Economic Cooperation and Development 2005), 6 <www.oecd.org/dataoecd/55/61/34902644.pdf>, accessed 12 March 2009.

⁴⁵ Dan Bodanksy, 'International Sectoral Agreements in a Post-2012 Climate Framework' (Pew Center 2007) <<http://www.pewclimate.com/docUploads/International%20Sectoral%20Agreements%20in%20a%20Post-2012%20Climate%20Framework.pdf>>, accessed 12 March 2009; Bosi and Ellis (n 44 above).

emissions. Under the approach originally proposed by Samaniego and Figueres,⁴⁶ developing countries would develop regional, sectoral, sub-sectoral, or cross-sectoral mitigation efforts, which would be the result of specific sustainable development policies, measure the attained reductions against a sector-wide baseline, and sell those on the international emission reduction market. The mechanism would be comparable to the CDM, but covering a whole sector rather than a particular activity.

In order to assign some of the cost to developing countries and increase the net gain to the climate by not converting all reductions into offsets, some authors have evolved the above concept toward Sectoral No-Lose Targets (SNLTs). Under SNLTs developing countries would voluntarily propose a domestic interest crediting baseline over a commitment or 'management' period of time which would be below the business as usual projection and be negotiated internationally. The country would reach the crediting baseline through domestic efforts, and would then be allowed to sell any surplus emission reductions which are achieved beyond the crediting baseline, but would have no penalty for not achieving that baseline.

Proponents of the SNLT mechanism propose that crediting baselines be negotiated at the same time as Annex I country targets for post-2012 in order to avoid the need for proving additionality. However, benchmarking has its own set of enemies, is very data-intensive and may not be realistic in some countries or some sectors,⁴⁷ particularly if the target date of agreement is COP15 at the end of 2009. Furthermore, SNLTs make sense for larger developing countries with a stable investment climate that seeks to significantly scale up private sector investment according to their sustainable development priorities, and where current carbon market policy tools, such as the various forms of CDM, are not considered adequate to the task.⁴⁸ The aggregation of revenue potential could provide financial leverage sufficient to transform the sector over a 10–20 year period. Developing countries, however, will be careful to not accept any target that would operate as a cap on development. They are, therefore, likely to argue for setting baseline emissions, if at all, on the basis of the national emission intensity of the sector in question. Developing countries will also avoid any

⁴⁶ J Samaniego and C Figueres, 'Evolving to a Sector-Based Clean Development Mechanism' in K Baumert, O Blanchard, S Llosa and J Perkaus (eds) *Building on the Kyoto Protocol: Options for Protecting the Climate* (World Resource Institute: Washington DC, 2002).

⁴⁷ C Egenhofer and N Fujiwara, 'Global Sectoral Industry Approaches to Climate Change. The Way Forward' (Center for European Policy Studies: Brussels, 2008) <<http://se1.isn.ch/serviceengine/FileContent?serviceID=ISN&fileid=E66EBE8F-1AF5-0C10-8914-FB462048AB24&lng=en>> accessed 12 March 2009; Ward and others, 'The Role of Sector No-Lose Targets in Scaling up Finance for Climate Change Mitigation Activities in Developing Countries' (Paper prepared for International Climate Division, Department for Environment, Food and Rural Affairs 2008) <http://www.sectoral.org/images/presentations/defra_paper%20on%20sector%20no%20lose%20targets_final.pdf>, accessed 12 March 2009.

⁴⁸ Ward and others (n 47 above).

mechanism that is perceived as a back door strategy to push them into binding national targets.

The policy-based or sectoral crediting approaches open an avenue for a financial mechanism that can complement current CDM practices and help to take mitigation efforts to scale. In order to be successfully implemented, the expanded mechanism would require major alterations to the carbon market as we know it, if only to safeguard the integrity of a system that will trigger mitigation efforts at a scale heretofore unknown. Taking into account the risk of driving emission reduction prices down by enabling high supply levels, the comparative advantages of market based against non-market based mechanism will have to be carefully assessed. Parties would decide whether this new market channel is created inside the CDM under the guidance of the EB (but with modalities different from those of Marrakech), or whether it should have a separate structure and regulating body.

In any case, the following issues would need to be addressed.

6.2.1 At the mitigation level

The logic of the system needs to evolve from focusing on the project activity to focusing on the policy that spurs the emission reductions. Decarbonization will simply not occur without the necessary regulatory framework. Only regulatory certainty will stimulate an adequate and reliable new source of risk capital to finance technology shifts on the scale of whole economies. In addition to promoting activity-based emission reductions as in the traditional CDM, the next (or expanded) emission reduction mechanism must promote the necessary sector-wide transformation, attained by cost effectively channelling capital and know-how to decarbonize carbon intensive sectors such as energy, transport, and infrastructure.⁴⁹ As discussed, some are interested in transforming some of these sectors at the international level, but it would seem that developing countries will claim their sovereignty and consider only national level policies which lead to decarbonization.

6.2.2 At the financing level

Mitigation action needs to be appropriately rewarded, reflecting the different strengths and constraints of private versus public financing. The conditions under which the private sector accepted the CDM as an international incentive mechanism include: (i) low exposure to host country risk, which in the CDM is limited to the issuance of a letter of approval; (ii) ability to control project risk and independence of carbon credit allocation to an individual project from

⁴⁹ Figueres and Newcombe, 'Evolution of the CDM, 2012 and Beyond' (United Nations Foundation Document 2007), <figueresonline.com/publications/Post_2012_CDM.pdf>, accessed 12 March 2009.

broader policy failure; and (iii) despite all flaws, trust that the international governance structure will reward emission reductions with tradable carbon credits. Governments on the other hand rarely act as carbon speculators. They are unlikely to create budget lines on the basis of a future promise of carbon credits unless they receive a price guarantee and assurance that credits will actually be issued. Experiences with the establishment of Assigned Amount Unit (AAU)-backed Green Investment Programs in countries with an over-allocation of AAUs in Eastern Europe have shown that trading of carbon credits by governments, even if they come in the form of allocated allowances as in the case of AAUs, raises issues related to state budget rules, sale of state assets, ownership of emission rights, constitutional limitations, predictability of funding, and allocation of proceeds.⁵⁰

6.2.3 At the crediting level

Governments could have the right to propose sectoral or policy-based crediting schemes involving tradable carbon credits or opt for other negotiated and determined incentives (e.g. cash, loans, guarantees). Performance could be measured against an agreed and adopted baseline, an SNLT, or any other performance indicator. The mechanism could foresee the allocation of tradable carbon credits based on a reduction of emissions below a certain baseline. In order to reduce the price risk, governments could negotiate the sale of the credits in advance against a fixed price per ton of CO₂e equivalent reduced. Annex I governments would have to decide whether they will open private carbon markets to these credits; if not, other agreements would be needed to give developing countries the assurance that there is a real demand for emission reductions. Alternatively, governments could also opt not to receive tradable carbon credits, instead receiving cash for emission reductions e.g. via an abatement fund. This would spare governments the additional complication of managing and selling carbon credits, while at the same time reduce the supply of credits to international carbon markets. A private sector crediting scheme, a CDM-like mechanism, could be integrated into the system to attract private sector financing against the reward of tradable carbon credits. Double counting would have to be eliminated by deducting emission reductions that form part of an activity based crediting mechanism from government achievements.

6.2.4 At the administrative level

An international regulatory body would have to administer the mechanism and any agreements concluded or programs approved. To ensure consistency among various mechanisms, the mandate of such regulatory body—either a reformed Executive Board or a newly constituted body—could include the management

⁵⁰ See further Simonetti and de Witt Wijnen, chapter 7 above.

and supervision of an expanded crediting mechanism. This body would have to be composed of professional regulators who understand and have expertise in the relevant sector. Technical experience should therefore be the governing criterion for the selection of relevant experts.

The participation of private sector entities in an expanded crediting mechanism would require the establishment of administrative procedures that ensure a transparent, legitimate and fair process. This would imply the establishment of due process based on administrative procedures on the international level and relevant laws on the national level. Where carbon crediting takes place on the government level, laws would have to ensure that rights to emission reductions from a particular actor or activity be transferred to governments and that the initial holders of emission rights be duly compensated.

7. A Non-market Mechanism

While the CDM has proven to be an effective vehicle for stimulating investment into emission reductions in developing countries it encapsulates the major flaw of creating offsets which are used to cover emissions elsewhere, and hence do not contribute to limiting or reducing overall global emissions. A non-market mechanism could be used to scale up mitigation efforts.

While during the first commitment period demand and supply seem to be approximately in balance, in the post-2012 period supply may overwhelmingly dwarf demand. Leaving the environmental integrity of offsets aside for the moment, the limitations in demand for offset credits dictates a necessary restriction to the supply of carbon credits.

A non-market financial mechanism could be created to reward policy efforts and emission reductions without creating tradable carbon credits. In principle, the concept is not much different from the Sustainable Development Policies and Measures (SD-PAM) proposal originally suggested by Baumert and Winkler,⁵¹ with the difference that emission reductions resulting from the policies would have to be quantified. In contrast to the current CDM, the focus would be on large-scale policies and measures, not individual projects. Furthermore, developed countries would support the voluntary efforts of developing countries, both financially and through technology transfers, but not on the basis of the purchase of offsets.

Many questions remain unanswered by this non-market financial mechanism, but perhaps the most important is the actual appetite that industrialized countries might have for such funding, considering there would be no emission

⁵¹ K Baumert and H Winkler, 'SD-PAMs and International Climate Agreements' in R Bradley, K Baumert and J Pershing (eds) *Growing in the Greenhouse: Protecting the Climate by Putting Development First* (World Resource Institute: Washington, DC, 2005).

crediting. Another question relates to the predictability and stability of any particular funding source. The details of the mechanism will have to be answered by the negotiations. However, industrialized countries could be reassured by the fact that any distribution of funds would be success based, rewarding only those emission reductions that have actually occurred, as confirmed by measurement, reporting, and verification.

8. Conclusion

The gradual and incremental approach that has been outlined above is the 'path of least resistance' to the next iteration of financial mechanisms for long-term (2013 and beyond) mitigation. As we continue with the international negotiations for the future climate regime, options that can be agreed to by all nations are constrained by the current political constellation. At a time in which rapidly emerging countries are focused on economic growth, climate science requires them to initiate efforts to deviate from uncontrolled emissions, and to soon impose some type of restriction on emission growth. However, neither the North nor the South are racing to meet the requirements of science. Entrenched in their traditional defensive positions that reflect a deep lack of trust of the other side, both sides are currently only willing to contribute to a solution that represents the minimum common denominator, and is at best gradual and incremental.

There is however one factor that could substantially alter the path forward and that is the global financial crisis. A traditional interpretation of the crisis would foresee even less engagement on climate given the dwindling availability of capital. Ironically, it is also possible that this is precisely the pressure that is needed to radically shift the course of events.

The low carbon agenda can act as an engine for job creation and economic recovery while at the same time increasing energy and climate security. Governments and private sector could make strategic investments to dramatically improve efficiency in buildings and power, and to replace 19th century technologies that depend on carbon-based fuels with 21st-century technologies that use renewable fuels, all as part of a concerted effort to revive and redirect the economy. Contrary to historical behavior, the challenge of solving the climate crisis could move us into the realization that we now live in a multi-polar world where solutions cannot be implemented only by a very few. The recent G20 meetings are a first evidence of what could be a profound shift in global power and influence. A new world order that incorporates emerging economies into the solutions group, albeit gradually, is a sound harbinger of a durable development framework.