

Increasing Demand and Reducing supply – A Rescue for the CDM?

Martin Stadelmann, Ken Newcombe and Axel Michaelowa



Increasing Demand and Reducing supply – A Rescue for the CDM?



Martin Stadelmann
Research Assistant
University of Zürich
MartinStadelmann@
cpivenice.org



Ken Newcombe
CEO
C-quest Capital
KNewcombe@
cquestcapital.com



Axel Michaelowa
Senior Founding
Partner
Perspectives GmbH
michaelowa@
perspectives.cc

- A global strategy to reduce greenhouse gas emissions can be cost-efficient only if backed by incentives for mobilizing the lowest-cost options for emission reduction. As only a subset of nations today have country-wide emission commitments, and sector-based programmes have been slow to evolve, the project-based carbon market is a crucial element in a global mitigation strategy.
- The Clean Development Mechanism (CDM) has registered over 6000 emission reduction projects in developing countries and has generated over 1.2 billion emission credits. However, it has been jeopardized by the crash in the prices for emission credits, from over €10 in 2011 to a few cents. This crash is due to the economic crisis and lack of political ambition, reducing the demand for emission credits in industrialized countries.
- Cost-efficient mitigation of global emissions will require stability in the carbon price in developing countries, restoration of private-sector confidence in carbon markets and preservation of human capacity on how to organize mitigation projects, *inter alia*. Saving the CDM could build a bridge until national and sector-wide carbon markets become operational.
- Rescuing the CDM can be achieved by (1) increasing credit demand, e.g. by deeper emission-reduction targets or the inclusion of international targets in the carbon market, and (2) by cutting the credit supply, e.g. by discounting credits or excluding project types that are already business-as-usual. Such a rescue programme will also have to improve the environmental integrity and the image of the CDM.
- Today's low market price offers a unique opportunity for public actors to source low-cost abatement projects that fit their own strategies, as anyone paying more than the market price can decide on the type of credits to be supplied.
- CDM rescue programmes can also help to strengthen environmental integrity and sustainable development, e.g. by excluding specific project types and promoting others. Such interventions could be quickly implemented by decentralized buyer actions, whereas centralized UN interventions that preserve market uniformity would take more time.

The Fridtjof Nansen Institute (FNI) is an independent, non-profit institution engaged in research on international environmental, energy and resource management politics. Perspectives is an independent service enterprise that works in consultation with the private sector as well as governments and NGOs in realizing and enhancing instruments in the international greenhouse gas market. FNI exercises quality control and editing of the papers, but the views expressed are the sole responsibility of the authors.



Increasing Demand and Reducing supply – A Rescue for the CDM?

1. The CDM at the bottom

The Clean Development Mechanism (CDM), a widely used flexible mechanism under the Kyoto Protocol (KP), is currently in free fall. The KP allows industrialized countries to meet part of their CO₂ emission targets by using emission credits from mitigation (CDM) projects in developing countries. With more than 6000 CDM projects registered and over 1.2 billion emission credits (CERs) issued by the end of 2012, the CDM exceeded even the most optimistic expectations. But since mid-2011 the CER price has been steadily declining – from over €10 to a few cents in early 2013.¹ Due to this price crash, the monthly inflow of new projects has dropped from several hundred to barely a dozen. The large universe of project developers and service providers has already unravelled and will soon be lost completely.

Two factors have led to the CER price decline. The first is the economic crisis that reduced the credit demand below projected levels. The main market for CERs, the EU emission trading scheme, has been hit by the decline in industrial production in Europe. There is no net demand remaining in the EU trading system, and policy-makers have so far been unable to stem the trend. The second factor is the general political unwillingness to engage in greenhouse gas (GHG) mitigation. Since the Copenhagen climate summit in 2009, no relevant new emission commitments have been made internationally.

The CDM has also been weakened by curtailed access to credits from certain project types and host countries to emission trading systems around the world. These access barriers are due at least in part to criticism of the CDM from environmentalists and some researchers regarding its low environmental integrity and limited contributions to

sustainable development.² Another criticism is that the CDM rather favours advanced developing countries like China, whereas Least Developed Countries hardly benefit. The CDM regulators have in fact reacted to these criticisms, by revising the assessment of additionality and introducing measures to improve CDM access for poorer countries and smaller projects (as through Programmes of Activities, PoAs). Despite these reforms, access to CDM credits has been curtailed. At the current CER price, hardly any emission reduction projects can be financed, and any remaining projects are likely to be non-additional.

2. Why we need to rescue the CDM

Global climate change requires a global response, as GHGs are spread across the globe. In theory, a global carbon pricing system (complemented by interventions to address market failures, such as knowledge spill-overs) would be most efficient, but that will not be politically realistic for many decades. We must live with a situation where only some countries have national or sectoral emission commitments. Project-based mechanisms are needed to provide incentives elsewhere and lower the global cost of climate change mitigation. Furthermore, the CDM is needed as bridge towards planned national and sectoral market mechanisms, which are slow to evolve due to their complexity, low capacity and lack of political willingness. If we take the 2°C target seriously, massive mitigation must start globally sooner than

² For an earlier critique, see L. Schneider (2007) *Is the CDM fulfilling its environmental and sustainable development objectives? An evaluation of the CDM and options for improvement*. Report prepared for the WWF. Öko-Institut, Berlin. For a more recent assessment, see Spalding-Fecher, R., Narayan Achanta et al. 2012. *Assessing the Impact of the Clean Development Mechanism*. Report commissioned by the High-Level Panel on the CDM Policy Dialogue.

¹ See www.pointcarbon.com for current market prices

later; the emissions gap by 2020 has been estimated at several billion tonnes CO₂. Letting the CDM die now will remove an instrument that allows the necessary carbon price signals to be transmitted from industrialized to poorer developing countries without national targets. Nor should the side benefits of the CDM be underestimated: the private sector in the South receives an incentive to invest in low-carbon technologies, human capacity is built in designing climate-friendly investments, and finally, global institutions and rules have been established that set a global standard for crediting emission reductions.

A rescue programme for the CDM is urgently needed. Such a rescue programme would help to restore the confidence of the private sector and ensure continuity in institutional and human capacity.

- **Restoring private-sector confidence:** With the price crash and the lack of political will to support the market price, the private sector has lost confidence in carbon as an asset class. A rescue programme with fresh demand may help to restore confidence in carbon markets so that the private sector can be more favourably inclined to the many new market-based mechanisms envisaged for addressing climate change. Restoring confidence will probably be hardest, as it can be achieved only if a CDM rescue programme is embedded in generally heightened ambitions in climate policy that send out the right signals.
- **Ensuring continuity in the carbon price signal and human capacity:** Waiting for new market mechanisms like sectoral crediting schemes or emission trading systems to be established under the UN is not an option if policy-makers are serious about the 2°C target: setting up such mechanisms will take at least 5–10 years, as experience from the CDM and the EU Emission Trading System shows. In the meantime, only the CDM as the established carbon market institution at the UN can enable continuity in the carbon price incentive in developing countries and point their emission paths downwards. Either more ambitious targets or cancelling of purchased CDM credits will be needed to ensure net global reductions. Continuation of the CDM will also ensure that host country and international carbon market knowledge is not lost. Once experienced players leave the market – as has already

begun – it will take time to build up such knowledge later.

Furthermore, a CDM rescue programme may have substantial benefits for public finance institutions in the current situation, as the CDM offers many features that attractive to governments: the CDM is a quick disbursement channel (there is a pipeline of many thousand mitigation projects with excellent documentation), it can mobilize private finance, and the robust independent performance verification fits well with the trend toward results-based finance in the donor community. Through advanced CDM features like PoAs or standardized baselines, even a transition from carbon offset projects to more policy-based and country-driven approaches (such as sector-based crediting) might be possible. Clearly, any rescue programme will have to reflect the criticisms the CDM has faced, and ensure that most supports goes to projects and programmes that are generally additional to business-as-usual.

Finally, rescue programmes can enable public institutions to offset CO₂ emissions cost-effectively with the desired projects: if public institutions issue tenders with given project requirements (e.g. sustainable development, host-country ownership) they can obtain CERs from high development impact projects at around €5 per tonne of CO₂. Such a tendering process would be feasible if secondary market prices exceed €10, as project owners would opt to retain credits to sell on the spot market. Clearly, this is just a short-term benefit, less relevant compared to the longer-term goal of substantially reducing emissions.

Summing up, a CDM rescue programme has many benefits: re-establishing private-sector confidence in carbon markets, ensuring continuity of market founding institutions and human capacity, and preserving the opportunity for public institutions to deal cost-effectively with climate impacts through investment in the developing countries while enabling a step-wise transition to more sectoral or national carbon markets.

Opportunities abound for swiftly and efficiently addressing both the supply and demand side, as described below. It is more a question of the political will and clear thinking by governments to take the necessary measures, acting alone or collectively under the UN Framework Convention on Climate Change.

3. CDM rescue options – demand side

The most obvious opportunity is perhaps the least likely: **sovereign buy-up and retirement of cheap CERs** at today's spot market price. It is economically far more efficient to mop up the surplus at low cost until prices reach a level that stimulates new investment, than to try to address the oversupply problem piecemeal. An ideal situation would be if initial acquisition by sovereigns mobilizes private capital looking for speculative opportunities and starts buying CERs.

Near-term measures rest with those sovereign states, industrialized or industrializing, which can **allow the use of CERs in their newly emerging domestic trading regimes** as compliance tools for their industries and government-owned entities. The most striking example is China, which has committed to develop a domestic trading regime, and has well-advanced plans. Enabling their industries to use Chinese-origin CERs to meet domestic obligations would both increase demand and reduce supply of CERs. China has recently announced that it will allow the use of domestic CERs for compliance. Other emerging trading schemes could follow suit, e.g. the emerging system in Sao Paulo is considering the use of CERs for compliance. Furthermore, in Doha, the Parties to the KP agreed that countries without emissions commitments under the second commitment period (CP2) may use CERs to meet their domestic obligations. Aggregate demand from Japan, New Zealand and Korea could reach several hundred million CERs if these countries honour their pledges. Australia is willing and able to create additional CER demand, as it has agreed to be a Party to CP2. The only reason it reduced compliance use from 50% of obligations to 12.5% for liable entities was to accommodate the EU's parity concerns in agreeing to include Australia in the EU ETS. Concerted outreach to Australian politicians, especially the current opposition, could bring moderation of this stance based solely on economic grounds of lowering the cost of compliance in the short term.

Individual **governments can also directly acquire CERs** in the period through 2020. Norway and Sweden are already doing this; Sweden is currently buying CERs at over €3. Others could follow their example. Most such intervention will be focused on the LDCs and/or projects with clear additionality and obvious development co-benefits, such as

efficient cooking stoves. Sweden, Norway and possibly other Nordic countries are exploring a sovereign guarantee fund, the Prototype Methane Financing Facility, for purchases of emissions reductions from methane- and black carbon-avoiding projects in the name of addressing short-lived forcers of climate change. Through its G8 Methane Initiative, the USA is following an almost-identical path; but, as it is not a party to the KP, it will not support purchases of CERs, only VERs. In March 2013, the World Bank President announced an initiative to restore carbon prices, and has begun quietly courting sovereign states to mobilize funds for engaging in large-scale buying for selected high development impact carbon assets, including small-scale biogas applications. One further step that could help additional countries to acquire CERs is revising the text of the Kyoto Protocol to allow any party to buy and trade CERs.

A huge source of potential demand for CERs is the **international airline and maritime industry**. The EU worked hard to enforce emissions reductions obligations on airlines entering EU airspace, backing off temporarily in the face of fierce opposition, which gave the airline industry itself time to come up with an alternative. The International Civil Aviation Authority (ICAO) has resisted the idea of a global cap on airline emissions with the use of market mechanisms, or a carbon tax with the ability to offset the tax with purchase of carbon credits. However, ICAO will seriously consider mitigation policy instruments at its assembly in autumn 2013. If airlines were to realize their opportunity to use CERs as part of an early obligation, they could negotiate a pathway to compliance at very low cost while gradually removing CDM surplus. Acquiescence to emissions reductions obligations will not come this year, but pressure is building and some obligation is inevitable. Airline demand could reach 2 billion tonnes by 2020. Similar demand could arise from market-based measures under the International Maritime Organization (IMO).

In the context of carbon tax systems, **CERs can reduce carbon tax liabilities of companies**, as envisaged in South Africa.

4. CDM rescue options – supply side

Apart from stimulating demand, policy-makers may strengthen the CDM market by cutting CER supply. In particular, CDM regulators consider discounting of CERs, as well as excluding certain project types (e.g. HFC projects) and likely non-additional projects (large-scale renewable power plants, industrial waste heat recovery).

Discounting of CERs would immediately reduce the quantity of CERs, and be consistent with the declared aim of most governments of making market mechanisms contribute to global emission reductions. This could be differentiated according to host countries or to project types. Host-country-specific discounting could provide an incentive to advanced developing countries to shift from CDM to sectoral or national market mechanisms. This would achieve two aims: reducing supply, and generating global reductions. Justifying project-type specific discounting is more difficult, as not all projects of a type have the same characteristics.

Excluding industrial gas projects or other project types from the CDM is another option. In the early CDM years, policy-makers had their reasons for including HFC-23-reducing projects. When the CDM began to register projects in 2003, there was great uncertainty about supply and a huge need to demonstrate that the CDM could become operational at scale. European industry was concerned about the cost of compliance in the EU ETS, and looked to the CDM as a pressure-release valve in the event that EU allowance prices grew too high. In this environment, the opportunity to bring to market high volumes of CERs from elimination of industrial gases was welcome. Through its Umbrella Carbon Facility, the World Bank encouraged and facilitated China to develop and deliver CERs from HFC-23 incineration in order to augment supply from the CDM and wed China firmly to a global carbon market. The move proved controversial, as these emissions reductions cost less than €1 per CER; as a result, the asset class and China now dominate the CDM global portfolio.

The EU and almost all other buyer nations no longer accept HFC 23 and adipic acid CERs, so this supply has essentially been excluded from the market already. Complete exclusion may help to stabilize CER prices; nevertheless, from the perspective of confidence and

continuity, it is crucial that these CERs are not rendered worthless, as many of them constitute real and additional emissions reductions. From a confidence perspective, the best solution would be a dedicated acquisition fund linked with a transition of coverage of operating cost of the destruction equipment through the Multilateral Fund of the Montreal Protocol.

Sizable volumes of CERs from projects with dubious additionality are still in trade and are likely to be sold at almost any price. This is especially true of waste heat recovery projects that regularly game additionality assessment by operating with fictitious transfer prices, and large-scale wind and hydro where governments provide lavish subsidies or feed-in tariffs, making CER revenues unnecessary for such projects.

Not penalizing developing countries for adopting policy measures to support low carbon alternatives by ruling that the resultant emissions reductions were non-additional was justified while these renewable energy technologies were in their infancy. But the 2005 regulatory decision not to consider subsidies for mitigation policies in the additionality assessment is no longer justified in most situations. Learning-curve effects have made wind power in particular part of the least-cost solution, alongside much of the undeveloped large hydropower resources; and it is increasingly unrealistic to argue that carbon value makes the difference in obtaining financial closure for such projects.

This indicates **including all mitigation support policies in additionality determination**, ideally with a 5-year sunset clause for LDCs and small island states. In order not to lose mitigation opportunities in renewable energy, the use of mitigation policies in combination with PoA-type instruments could generate credits under new market mechanisms.

Qualitative restrictions – for example as regards the contribution of projects to sustainable development – unique to each domestic trading regime should be a natural complement to expanding the use of CERs for domestic compliance purposes.

The CDM Executive Board has the option of **changing the length of crediting periods, and questioning the credibility of baselines as part of baseline reviews** when a crediting period is renewed. Baseline renewal reviews by the CDM EB have so far been a non-event.

Overview of Rescue Options

Demand side

Opportunity	Scale	When likely	Key decision point
New sovereign funds	Modest	By end 2013	In or before Poland CoP
Advanced developing countries using CERs domestically in ETS or carbon tax systems	Significant	2015 and beyond	China takes lead in launch of domestic cap and trade regime
Airlines and maritime industry measures using CERs	Significant	2015 or later	ICAO and/or IMO decision

Supply side

Opportunity	Scale	When likely	Key decision point
Discounting of credits	Significant	End 2013	Poland CoP; CDM reform decision
Supporting HFC 23 projects via Montreal Protocol, not CDM	Significant	End 2013	Poland CoP; decision within the Montreal Protocol
Taking into account all support policies in additionality determination	Significant	End 2013	Poland CoP; CDM reform decision
Quality restrictions (e.g. contribution to sustainable development)	Significant	End 2013 / ongoing	Poland CoP; CDM reform decision, buyers' decision
Crediting period change and additionality check when renewing the crediting period	Significant	End 2013 / ongoing	CDM EB and CDM reform

However, a process could be adopted whereby at first renewal of the crediting period, project additionality would be scrutinized according to current rules and taking into account the changing project environment and all support policies. If projects were found to be non-additional, crediting would stop immediately. This would be likely for large-scale energy projects where CER revenues probably had zero impact on whether the projects were financed and proceeded. In theory, non-renewal of crediting period could also be applied on a more general level, e.g. for specific project types likely to be non-additional. Any retroactive changes would have to be applied with caution, so as not to undermine the confidence of the private sector.³

5. Conclusions

Keeping global warming below 2°C requires a massive global effort to mitigate GHG emissions, an effort that will dwarf anything that done in the last two decades. Market mechanisms are crucial for mobilizing emissions mitigation at lowest cost. However, it is unlikely that a global cap-and-trade system will be adopted in the near to medium term, so project-based offset mechanisms are required to spread the market price signal to all countries, including the small and poor ones. The project-based CDM has had unexpected success in registering thousands of GHG mitigation projects in developing countries. Especially in its early years, the CDM was criticized for lack of environmental integrity and limited contributions to sustainable development, but it has been reformed substantially. The recent crash in prices of CDM credits (CERs) has led to an erosion of confidence that carbon market mechanisms provide credible, long-term incentives for climate change mitigation, in turn triggering a loss of human capacity experienced in setting up mitigation projects in highly diverse environments. A full decade

³ See also Lazarus, M., P. Erickson and R. Spalding-Fecher (2012). *Transitioning away from large-scale power projects: A simple and effective fix for the CDM?* Stockholm Environment Institute Policy Brief

may be lost without an incentive or GHG emissions mitigation in developing countries.

To prevent a hiatus or even complete loss of trust in market mechanisms, a CDM rescue programme is required. It should beef up CER demand while reducing the supply of CERs from non-additional projects or projects without sustainability benefits. Demand-side action should include CER acquisition through bilateral sources, acceptance of CERs for compliance with domestic policies in advanced developing countries or policy instruments used in international air and maritime transport. Supply-side action should include discounting of CERs, consideration of all mitigation support policies in determining additionality, and stringent additionality checks at the renewal of a crediting period. However, any measure that involves retroactively cutting supply of credits may be criticized, as it could undermine investor confidence. Therefore, supply-cut measures will have to be applied with great caution.

Any rescue programme for the CDM will be challenged by governments and NGOs, questioning whether the CDM can address countries' development needs and ensure environmental integrity. The question of realignment with development needs may be addressed by crafting CDM rescue options so as to promote development priorities. One possibility is to focus new credit demand on PoAs, most of which allow better alignment with national development policies compared to stand-alone projects. Furthermore, CDM purchase programmes could be restricted to project types like cooking stoves and energy access that address crucial development challenges, such as health or forest preservation. Finally, the CDM market may have to be restricted to project types likely to generate reductions of business-as-usual emissions. This would then lead to a price differentiation between CERs and other project types.

The window of opportunity for the CDM rescue programme will not remain open long – probably closing before the end of 2013. Governments and multilateral agencies can provide a bridge across the ‘valley of death’ of the CDM in order to ensure that market mechanisms can continue to play a role in containing mitigation costs in the long run. But this is possible only if the private sector retains sufficient confidence and human capacity.

About the authors

Martin Stadelmann is a research assistant at the chair “Political Economy and Development”, University of Zurich, until February 2013. He is a contributing author to the finance chapter of the 5th Assessment Report of the IPCC.

Ken Newcombe is CEO of C-quest Capital, which is investing in carbon reduction programmes in poorer communities. He instigated and led the World Bank team to design and establish the Prototype Carbon Fund as the first global carbon fund, and went on to originate and manage the implementation of eight additional carbon funds and then left the Bank to work for Climate Change Capital and Goldman Sachs.

Axel Michaelowa is head of the group on international climate policy at the chair “Political Economy and Development”, University of Zurich, senior founding partner of the consultancy “Perspectives” and lead author in the 4th and 5th Assessment Report of the IPCC.