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# DISCOUNTING OF CERs TO AVOID CER IMPORT CAPS

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Axel Michaelowa  
Institute of Political Science  
University of Zurich

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### Contact Details

UK

Managing Director: Jon Price  
jon.price@climatestrategies.org

US

Research Director: Thomas L. Brewer  
thomas.brewer@climatestrategies.org

Climate Strategies  
c/o University of Cambridge  
13-14 Trumpington Street  
Cambridge, CB2 1QA, UK  
Office: +44 (0) 1223 748812  
[www.climatestrategies.org](http://www.climatestrategies.org)

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## *Abstract*

*The current offset-based Clean Development Mechanism (CDM) lacks environmental integrity due to a substantial number of non-additional projects. This is one of the main reasons why the EU Commission and the European Parliament have asked for a stringent cap of imports of emissions credits (CERs) from CDM projects that would essentially close the European market. European policymakers have also asked for a contribution of the CDM to global emissions reductions. Such a contribution should depend on the development level of countries.*

*To make the CDM palatable to policymakers and to avoid a blunt, inefficient capping of CER imports, a discount could be introduced, so that one t of emissions reductions from a CDM project would yield less than one Certified Emission Reduction (CER). A discount factor that increases with the level of development of a country would reflect the principle of "common but differentiated responsibilities". The short-term price that would have to be paid in terms of economic efficiency would be a differentiation of marginal abatement cost of CDM projects according to the discount rate. This would however be offset by the improved overall efficiency of emissions reduction due to a higher EU import of CERs.*

Key words: Clean Development Mechanism, post-2012 climate policy, additionality, import limits, discounting of CERs

## Introduction

The Clean Development Mechanism (CDM) allows industrialized countries to generate emissions credits (Certified Emission Reductions, CERs) through emission reduction projects in developing countries. CERs can be used to achieve compliance with the emissions targets specified in the Kyoto Protocol. As developing countries do not have any emissions targets, an elaborate body of rules and supervisory institutions has been set up to ensure that CERs reflect "real, measurable and long-term" emission reductions (Art. 12, 5b Kyoto Protocol). In just three years, the CDM has mobilized around 3000 projects of which over 1000 have been formally registered with the CDM Executive Board (EB), the regulatory body overseeing its rules. More than 2.7 billion CERs are expected to be generated by these projects and over 9 billion € have been budgeted for CER acquisition.

So far, the CDM has been a pure offset mechanism, where one t CO<sub>2</sub> equivalent reduction from a CDM project allows to increase emissions in the Annex B by one t. Theoretically, this is no problem as long as the reduction from the CDM project is real and as long as incentives for introduction of emission reduction policies in developing countries are not distorted. Are these conditions fulfilled?

The real character of CERs has recently been the subject of a heated debate which spilled over into the mass media. It relates to the "additionality" of CDM projects. The CDM should stimulate additional low-emitting activities that would not have happened otherwise. Any CDM project that purports to create emission reductions compared to a baseline when those reductions are based on a business-as-usual project has not legitimately earned those credits. If CDM regulators lose sight of this crucial point, then the CDM will be generating meaningless paper credits that displace real reductions in industrialized countries. An analysis by Michaelowa and Purohit (2007) finds a high number of non-additional projects among a sample of 52 registered projects from India. Our results are corroborated by a study by Schneider (2007) who concludes that about 40% of projects and 20% of the CER volume is unlikely to be additional.

## The EU's limitation of CER imports

The EU Commission (EC) outlined its views on the role of the CDM in EU climate policy in January 2008, when it unveiled its climate and energy package. The EC shows a deep mistrust regarding the CDM and wants to limit its role in the period between 2013 and 2020 as far as possible. One has the impression that the EC regrets setting a lenient import threshold in the first commitment period of the Kyoto Protocol, which allows companies to import up to 1.4 billion CERs between 2008 and 2012. In their new proposal, the EC wants to block any new CER import for private companies if the international climate policy agreement fails or does not lead to a EU emission reduction target of more than 20%. For governments, it wants to allow an import of 0.7 billion CERs. Even if international negotiations are successful and the EU takes up a 30% reduction target, companies would just be allowed an import of 1.4 billion t, which would be a stricter annual import cap than today.

In early October 2008, the Environment Committee of the European Parliament defined its position regarding CER imports. Only "high quality" CERs are eligible for imports. Industry lobbying to expand CER imports did not bear fruit. Essentially, companies that restrict their imports before 2008 would be able to import more later. The new rule would limit imports to 0.7 billion CERs before 2008 (half of the current limit of 1.4 billion, which would still remain valid as alternative), while granting 0.7 billion in 2013-2020. So on aggregate, it would not be attractive. However, on a company-by-company base it could become attractive to switch, especially for companies from countries with low import caps before 2013.

Now negotiations between the EC, the Parliament and the Council will begin. Several member states have announced that they would like to alleviate the threshold, among them Germany

and the UK. However, with the outbreak of the economic crisis calls for protectionism are increasing.

What will be the effect of a protectionist EU on the CDM market? Essentially, it would separate into "EU accepted" and "non-EU-accepted" CERs. If non-EU CER demand is weak, the latter would trade at a substantial discount. Project developers have an incentive to get CERs as quickly into the EU as possible, which would put a strain on the regulatory system. Overall, a boom and bust cycle would become likely.

Some observers also argue that the proposal to limit CER imports is a message to developing countries that the EU is unwilling to provide large CDM revenues unless developing countries join the EU and put pressure on rest of industrialized countries for strong commitments.

EC representatives have also repeatedly stressed that they want to develop the CDM beyond a pure offset mechanism into a mechanism that contributes to global emission reductions. It would be possible to make such a contribution and induce the EU to refrain from protectionism.

## The principle of discounting CERs and numerical examples

The idea of discounting to safeguard overall additionality of the CDM originates from Greenpeace (2000). Chung (2007) proposed discounting as contribution of developing countries to global emission reductions without having to resort to country-specific commitments. Discounting would reflect the principle of "common but differentiated responsibilities" enshrined in the UN Framework Convention on Climate Change. This could best be achieved if the discount factor would be progressively linked to the level of development of the host country. I thus develop a scheme, which would generate the discount factor according to parameters that describe the development status of a host country as objectively as possible.

A simple development index would be defined as a combination of per capita income (measured in PPP) and per capita emissions thresholds, which captures both ability to pay and the 'polluter pays' principle. Each criterion should get the same weight as both principles are equally important and are not directly correlated. If both figures are weighted with 50%, we get the results shown in Table 1. The world average for GDP per capita (8492 \$ in 2005) and CO<sub>2</sub> eq. per capita (4.22 t in 2005) are equal to the index value 1 for the respective component (data are taken from IEA 2007).

To illustrate calculation of the development index we use the example of Qatar. It has a GDP of 39,000 \$ per capita (GDP index component = 4.6) and annual per capita emissions of 44.7 t CO<sub>2</sub> (Emissions index component = 10.6). The development index of Qatar reaches 7.6 and is shown in the first line of Table 1. If we start discounting from a development index of 1, emission reductions from CDM projects in Qatar would be discounted by a factor of 7.6.

Table 1: Discounting CERs according to levels of emissions and per capita in-come for selected countries

|              | <b>Develop<br/>ment<br/>index</b> | <b>1 t CO<sub>2</sub> eq.<br/>reduction<br/>gives x CERs</b> | <b>Gross monetary loss<br/>from not taking up a<br/>commitment (€/t<br/>CO<sub>2</sub>)*</b> | <b>Reduction in 2013-2020<br/>CERs from projects in the<br/>pipeline (** million)</b> |
|--------------|-----------------------------------|--|--|---|
| Qatar        | 7.6                               | 0.13   | 17.4   | 29.6  |
| Saudi Arabia | 2.5                               | 0.40   | 12   | 0   |
| Israel       | 2.4                               | 0.42   | 11.6   | 12.2  |
| Korea        | 2.3                               | 0.43   | 11.4   | 118.8   |
| South Africa | 1.4                               | 0.71   | 5.8  | 8.7   |
| Argentina    | 1.2                               | 0.83   | 3.4  | 4.3   |
| Malaysia     | 1.2                               | 0.83   | 3.4  | 14.6  |
| Chile        | 1.1                               | 0.91   | 1.8  | 4.7   |
| Iran         | 1.1                               | 0.91   | 1.8  | 0   |
| Mexico       | 1.0                               | 1  | -  | 0   |
| Thailand     | 0.8                               | 1  | -  | 0   |
| China        | 0.8                               | 1  | -  | 0   |
| Brazil       | 0.7                               | 1  | -  | 0   |
| Indonesia    | 0.4                               | 1  | -  | 0   |
| India        | 0.3                               | 1  | -  | 0   |

Note: \* at a price of 20 €; \*\* using UNEP Risoe Centre (2008)

Under the index version used in Table 1, about 190 million CERs would be slashed, i.e. only 5.6% of CERs expected from 2013-2020.

The development index can of course be used for different degrees of discounting, i.e. that more countries get a discount and the discount becomes steeper. As many industrialized countries have argued that China should participate in the global effort, and China has an index level of 0.8, discounting could start from an index level of 0.5. The outcome is shown in Table 2.

Table 2: Discounting CERs from on the basis of a development index starting at half of the global average

|              | <b>Develop<br/>ment<br/>index</b> | <b>1 t CO<sub>2</sub> eq.<br/>reduction<br/>gives x CERs</b> | <b>Gross monetary loss<br/>from not taking up a<br/>commitment (€/t<br/>CO<sub>2</sub>)</b> | <b>Reduction in 2013-<br/>2020 CERs from<br/>projects in the pipeline<br/>(million)</b> |
|--------------|-----------------------------------|--|---|---|
| Qatar        | 7.6                               | 0.07   | 18.6  | 31.6  |
| Saudi Arabia | 2.5                               | 0.2  | 16  | 0   |
| Israel       | 2.4                               | 0.21   | 15.8  | 22.9  |
| Korea        | 2.3                               | 0.22   | 15.6  | 165.5   |
| South Africa | 1.4                               | 0.36   | 14.8  | 21.6  |
| Argentina    | 1.2                               | 0.42   | 11.6  | 14.7  |
| Malaysia     | 1.2                               | 0.42   | 11.6  | 49.8  |
| Chile        | 1.1                               | 0.45   | 11  | 28.7  |
| Iran         | 1.1                               | 0.45   | 11  | 0   |
| Mexico       | 1.0                               | 0.5  | 10  | 37.7  |
| Thailand     | 0.8                               | 0.63   | 7.4   | 6.4   |
| China        | 0.8                               | 0.63   | 7.4   | 752.6   |
| Brazil       | 0.7                               | 0.71   | 5.8   | 57.1  |
| Indonesia    | 0.4                               | 1  | 0   | 0   |
| India        | 0.3                               | 1  | 0   | 0   |

Now, 962 million CERs would be slashed, i.e. 28.2% of the total supply.

An even simpler approach would be to base the discount purely on per capita emissions but this is likely to raise objections due to the delinking from the ability to pay principle. g based on per capita emissions starting again from the global average. About 270 million CERs would be retired, i.e. 10% of the supply

Table 3 shows discounting based on per capita emissions starting again from the global average. About 270 million CERs would be retired, i.e. 10% of the supply

Table 3: Discounting CERs based on per capita emissions

|              | Per capita emissions (multiple of world average) | 1 t CO <sub>2</sub> eq. reduction gives x CERs | Gross monetary loss from not taking up a commitment (€/t CO <sub>2</sub> ) | Reduction in 2013-2020 CERs from projects in the pipeline (million) |
|--------------|--|--|--|---|
| Qatar        | 16.1   | 0.06   | 18.8   | 32.0  |
| Saudi Arabia | 3.9  | 0.26   | 14.8   | 0   |
| Israel       | 2.9  | 0.34   | 13.2   | 19.1  |
| Korea        | 2.6  | 0.38   | 12.4   | 131.6   |
| South Africa | 2.3  | 0.43   | 11.4   | 19.2  |
| Argentina    | 1.9  | 0.53   | 9.4  | 11.9  |
| Iran         | 1.8  | 0.56   | 8.8  | 0   |
| Malaysia     | 1.7  | 0.59   | 8.2  | 35.2  |
| Chile        | 1.2  | 0.83   | 3.4  | 8.9   |
| Mexico       | 1.2  | 0.83   | 3.4  | 12.8  |
| Thailand     | 1.0  | 1  | 0  | 0   |
| China        | 0.9  | 1  | 0  | 0   |
| Brazil       | 0.4  | 1  | 0  | 0   |
| Indonesia    | 0.4  | 1  | 0  | 0   |
| India        | 0.2  | 1  | 0  | 0   |

## Effects on the carbon markets

Any differentiated discount will impact the functioning of the market, by introducing a wedge between marginal abatement costs and revenues from abatement. Projects in advanced developing countries will lose competitiveness compared to those using the same technology in less developed ones. On the margin one would see a crowding out of the projects with the highest marginal abatement costs in the most advanced countries. Therefore, on the basis of economic theory, discounting is only a second best solution for the global carbon compared to a fully free market where all reductions are credited equally.

The alternative of an EU closed to CER imports would lead to even lower efficiencies, as no projects with low abatement costs would be mobilized in developing countries. If discounting leads to a higher import threshold in the EU, it will thus increase global efficiency because cheaper abatement options will be used than in a pure protectionist scenario. Therefore it will be a better scenario than a boom and bust cycle in the case of strict EU protectionism. It also has the benefit of making projects in poor countries more attractive and thus improve the regional distribution of CDM projects. This would be an important reason for those countries to support the CDM. Given the past failure of the CDM to mobilize projects in those countries, one might otherwise expect opposition from these countries against a continuation of the CDM in its current form.

## Potential for collaboration on CDM

CDM is a key bridge between industrialized and developing countries and decisive for the post-2012 climate policy regime. To avoid a standoff between the EU and developing countries, they should assess shortcomings of the current CDM and develop joint proposals for CDM reform. These should be done in the spirit of the "Bali Action Plan", in which the CDM could be expanded into concept of the "monitorable, reportable and verifiable" financing of mitigation action in developing countries. CDM discounting would allow the CDM to contribute to global reductions; moreover its validation and verification rules would fulfil the aim of the Bali Action Plan. Obviously, this will only be acceptable to developing countries if the industrialized countries substantially strengthen their emissions commitments and thus increase overall demand for CERs. Import caps are not the right answer to the current shortcomings of the CDM!

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