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# Additionality in the Clean Development Mechanism

Why and What?

Benito Müller

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## Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>IV</b>
<b>1. INTRODUCTION .....</b>	<b>5</b>
<b>2. WHY? SAFEGUARDING ENVIRONMENTAL INTEGRITY!.....</b>	<b>6</b>
2.1. ENVIRONMENTAL INTEGRITY OF OFFSETTING UNDER A PURE CAP-AND-TRADE REGIME .....	7
<i>a. Definitions.....</i>	7
<i>b. Linking offsets to integrity.....</i>	7
2.2 ENVIRONMENTAL INTEGRITY OF OFFSETTING UNDER A ‘PURE CDM REGIME’ .....	8
<i>a. Definitions.....</i>	8
<i>b. Linking offsets to integrity.....</i>	9
<i>c. A selection of arguments .....</i>	9
<i>d. Conclusion: Need for a pragmatic compromise.....</i>	11
<b>3. THE STATUS QUO: OFFSETTING UNDER THE KYOTO PROTOCOL.....</b>	<b>11</b>
3.1 ENVIRONMENTAL INTEGRITY AND CARBON LEAKAGE .....	11
3.2 THE LACK OF LEVEL PLAYING FIELD IN OFFSET GENERATION.....	12
<b>4. WHAT ADDITIONALITY?.....</b>	<b>13</b>
APPENDIX 1: ADDITIONALITY TO COMPLY WITH ART. 4.7 .....	17
APPENDIX 1I: TOOL FOR THE DEMONSTRATION AND ASSESSMENT OF ADDITIONALITY .....	18

## Executive Summary

The rules of the Kyoto Protocol Clean Development Mechanism (CDM) stipulate that activities which would (have) occur(ed) in the absence of the CDM – projects that are ‘non-additional’ – should not be certified as offsets in the form of Certified Emission Reductions (CERs).

Why should this be so? By far the most common justification in defence of CDM additionality is that it protects the *environmental integrity* of the regime. However, this paper presents a case on assumptions that are not undisputed. Moreover, as the Kyoto Protocol stipulation that developing countries should not be subject to emission limitations can also be used to argue against CDM additionality, the paper observes that, in certain cases, there are indeed reasons for introducing additionality, and in others, reasons for rejecting it. On this issue it concludes that the only way forward is to try to come to a mutually acceptable compromise between the proponents and the opponents of additionality in the CDM.

The paper then turns to consider current practice in the light of these findings and concludes that, if one does wish to opt for (investment) additionality, there is really no reason for the current differentiated treatment between offset generation in Annex B and offset generation in non-Annex I, where only the former is subject to (investment) additionality tests. However, for pragmatic reasons, it may be better *to level the playing field by abandoning (investment) additionality tests throughout the regime.*

This, it is argued, would not mean giving up additionality or, for that matter, environmental integrity. Indeed, there are situations where these tests can be abandoned without weakening the stringency of these concepts: The notion at the heart of the additionality/integrity issue – namely, ‘Business as Usual’ (BaU), or, ‘what would have happened in the absence of the CDM’ – is purely hypothetical. As such, it describes a situation that cannot be known, but only inferred. There are different but equally valid ways in which this can be done; different ways of interpreting/operationalising that notion, of which one is the sort of *scenario analysis* currently employed in CDM methodologies. However, BaU can also be interpreted/operationalised in terms of BaU *trend projections*, based on historic trends of measurable parameters. The paper suggests that this trend-projection interpretation of BaU/additionality – which does not require investment or any other analyses of decision making processes – be used wherever possible. Where it is not possible, used, such as in the case of ‘green-field’ projects or in the absence of stable trends, the investment additionality tests should be dropped from the unavoidable scenario analysis to level the playing field. This would make the CDM not only *fairer*, but *more transparent, without infringing on the environmental integrity* of the regime.

## I. Introduction

Article 12.5 of the Kyoto Protocol specifies that emission reductions are only to be certified under the Clean Development Mechanism (CDM) if they *are additional to any that would occur in the absence of the certified project activity*. The primary question to be pursued in this discussion paper is simply: Why? What are the reasons for imposing such a restriction on what activities are to be admitted under the CDM?

The aim of this exercise is, in a first instance, to get a better understanding of what this additionality condition is meant to achieve, and secondly to have either clearer ideas of ways in which it might be improved to achieve this stated aim, or clearer arguments as to why it should be rejected. Some of the arguments that can be put forward for the use of additionality will be listed at the end of this section. To try and avoid misunderstandings, it may be useful to precede this list with a few general remarks.

First, one needs to keep in mind that CDM ‘additionality’ appears in (at least) three different tiers of generality: first, at the most general level, there is the concept as used in Art. 12.5 (see above). Second, there is the way in which this concept has been operationalised first in the Marrakesh accords, and subsequently by the CDM Executive Board (in terms of ‘investment-’ and ‘barrier tests’ etc.). Third, there is the issue whether specific projects are additional according to these operational guidelines (consistent with them).

This discussion is emphatically *not* meant to be about the third of these tiers of ‘additionality discourse’. While it will have to take into account the second tier, i.e. the way in which ‘additionality’ has, *de facto*, been interpreted by the EB, the discussion is meant to be more fundamental, by asking why ‘additionality’ is seen to be essential for the CDM in the first place. The second tier provides us with a concrete meaning of ‘being additional’, which itself may contain clues as to why the concept is meant to be of importance for the CDM. To put it differently, the question here is not whether the criteria used by the EB properly reflect the notion of ‘CDM additionality,’ but *why* this notion – say as operationalised by the EB – *should be evoked in the first place?*

There are a number of different ways in which additionality constraints under the CDM can be argued for. For example, there are arguments (i) from ‘environmental integrity’, (ii) from implementing Article 4.7, and (iii) from the need to safeguard Annex I domestic mitigation efforts. The third type, I believe, is not really cogent. A need for CER supply restrictions does not imply a need for CDM additionality, since the former can easily – and more efficiently – be achieved by other means. The second one does have its merits, but is not widely used, which is why it is treated in an Appendix. By far the most important and widely used argument, which this paper will focus on, is that additionality is needed *in order to protect the environmental integrity of the regime*.

## 2. Why? Safeguarding Environmental Integrity!

The reasoning most frequently put forward as to why additionality is needed in the CDM is what can be called the *argument from environmental integrity*. It has recently hit the headlines in terms referring to ‘fraudulent credits’<sup>1</sup> or emission reductions which are ‘not genuine’.<sup>2</sup> Roughly speaking, the argument is that, being an offset mechanism, the CDM requires additionality in order to preserve the regime’s ‘environmental integrity’, in the sense that any ton emitted in developed countries against a CER *must not increase the level of emissions permitted under the regime*. But what *exactly* does that mean? What is the ‘integrity baseline’ against which such integrity infringing increases are to be assessed?

The first thing to be clarified in this context is: what is the relevant ‘regime’? And to be more precise, what is its geographical scope? In the context of the CDM, the geographic scope of the ‘regime’ is that of the Kyoto Protocol; the relevant integrity baseline is given by quantified emission caps for developed countries; and by ‘Business as Usual’ (BaU) baselines – often defined in terms of ‘*what would otherwise have happened*’ – for developing country emissions. In other words, the integrity baseline is made up of two fundamentally different components, due to the fact that the regime, as is, contains both Parties with emission targets (Annex B Parties), and parties which participate in the regime purely on a project basis (non-Annex I Parties). The definitional heterogeneity of environmental integrity in the current Kyoto Regime creates *sui generis* problems which we shall turn to in due course (Section 3). For explanatory purposes, let us begin by discussing this ‘argument from environmental integrity’ by focussing on the environmental integrity of a *pure cap-and-trade regime*.

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<sup>1</sup> ‘[W]e are exporting emissions that are difficult to address and importing, through carbon trading, the easiest and cheapest cuts. [...] while the emissions we export are certain and verifiable, the cuts we buy *through carbon credits are often fraudulent*. [...] 96% of the carbon credits from hydroelectric dam construction were issued after construction had begun: the dams would have been built without the carbon market, so no additional cuts have been achieved.’ [George Monbiot, ‘Traded Away – A cunning new loophole has wrecked the government’s Climate Change Bill’, 25 July 2008].

<sup>2</sup> ‘One flaw in the CDM in particular is that credits are being claimed for investments that would have happened anyway, without the added stimulus of earning carbon credits. These projects should not qualify for the CDM because they do not create additional emissions reductions. In fact, they actually make matters worse by allowing companies in the rich world to exceed their limits without genuinely offsetting it elsewhere. [...] Perhaps surprisingly, there is a widespread view among investors and politicians alike that this is perfectly acceptable. Almost any project that cuts emissions is entitled to carbon credits, they argue - even if those investments would have happened anyway. In Monaco, green technologists were keen to show how adept they were at earning CERs, but many also claimed their schemes would be profitable anyway, without the windfall of carbon credits.’ [Fred Pearce, ‘Carbon trading: dirty, sexy money’, *New Scientist*, 19 April 2008. <http://environment.newscientist.com/channel/earth/mg19826521.600-carbon-trading-struggles-to-cut-our-emissions.html>]

‘The system is intended to give western firms a low cost way of achieving emission targets while at the same time getting businesses in developing nations involved in tackling climate change. But it only works if the carbon credits generated by projects in developing nations really do represent genuine emission cuts.’ [Mark Gregory, ‘The great carbon bazaar’, BBC News Channel, 4 June 2008, <http://news.bbc.co.uk/1/hi/business/7436263.stm>]

## 2.1. Environmental integrity of offsetting under a pure cap-and-trade regime

### a. Definitions

In the case of a pure Cap-and-Trade (C&T) regime, the regime *integrity baseline* – the level of *permitted emissions* under the regime – is the sum-total of all the permitted emissions (the caps) under the regime, that is to say, the sum of its Assigned Amounts. Note that for present purposes, we are using ‘baseline’ simply to refer to a (time) series of emission figures – measured, say, in tCO<sub>2e</sub> – used to gauge the effects of certain activities. As such, baselines can be used for a variety of different purposes. One of which, as mentioned, is to define the environmental integrity of an (offsetting) regime. Another is to identify the ‘starting-line’ for offsetting activities themselves. Each of these functions will have specific characteristics that will determine the way in which the relevant baselines are specified. The one (and only) thing these functions have in common is that they involve a comparison of measured and baseline emission levels.

Under a C&T regime, offsets (called ‘credits’) are generally<sup>3</sup> defined in terms of mitigating emissions relative to certain targets or, to be more precise, reductions below certain target-based offset baselines (*‘target baselines’*, for short).<sup>4</sup> The credits thus generated can be used to offset emissions against (usually<sup>5</sup>) a target baseline other than the one they are generated from. Target baselines – used both to generate credits and to ‘consume’ them – can be based on national targets, or sub-national ones, for instance pertaining to targets assigned to entities subject to a domestic C&T scheme.

### b. Linking offsets to integrity

Given that the integrity and offset baselines are all target-based, it is possible to interpret (i) the *generation* of a credit as diminishing the level of permitted emissions by the credit amount, and (ii) the *use* of the credits as an increase by the same amount, thus leading back to the original level of permitted emissions (= integrity baseline). Offsetting in a pure C&T regime is thus safeguarded against integrity infringements, at least if both the integrity and offsetting baselines are target-based. This is why offsetting in C&T regimes is generally regarded as harmless. However, it is important to point out that this is only the case for pure C&T regimes. In mixed regimes such as the one given by the Kyoto Protocol, credit generation *in Annex B countries* can

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<sup>3</sup> Having said this, offsets need not be target related even in a (pure) C&T regime. They can also be project-based, as witnessed in the current regime in the ERUs generated through the Joint Implementation (JI) mechanism.

<sup>4</sup> A ‘target-based’ baseline is a baseline derived from an emission (mitigation) target. As everything has to be translated into emission figures in order to carry out offsetting, one can, without loss of generality, simply think of targets as emission caps (which, in that case, they themselves constitute the relevant offset baselines).

<sup>5</sup> The entity generating the credit may actually choose to bank the credit as insurance for their own compliance.

actually compromise the environmental integrity of the regime (see the points on ‘carbon leakage’ below).

## 2.2 Environmental integrity of offsetting under a ‘pure CDM regime’

‘Environmental integrity’, as used here, is inextricably linked to the use of offsets, which in turn are linked to some kind of mitigation targets. It is therefore not really meaningful to speak of the former in the absence of emission targets, as one would have to in the context of a ‘pure CDM regime’. But it does make sense to use the term if we look at it simply with reference to offset *generation*, i.e. with reference to whether the reductions in question are ‘*genuine*’ or not. The integrity baseline then becomes the defining level for such genuine reductions.

### a. Definitions

In the case of a C&T regime, the benchmark for the environmental integrity of the regime – its ‘integrity baseline’ – was self-evident: the regime-wide (‘global’) cap. Unfortunately, this is not as clear in the case of a regime based on CDM-type activities: What would be the level of ‘*permitted emissions*’ under such a regime? What would be the baseline that determines genuine emission reductions? This is at the heart of how the CDM relates to environmental integrity. The answer that seems to correspond most closely to the ideas underlying the current CDM criteria is:<sup>6</sup> the levels *that would have been emitted in the absence of the mechanism*. In other words, the integrity baseline is defined in terms of a hypothetical situation, usually referred to as *Business as Usual* (BaU). The offset activities (‘projects’) themselves have offset baselines that are also defined in terms of what would have been the case in the absence of the mechanism, which in this context is referred to in terms of projects being *additional* or not.

To understand the issue of additionality, it is important to keep in mind that this ‘mechanism specific’ interpretation is by no means the only possible interpretation of ‘business as usual’. Take the case of the CDM: the reason why CDM additionality is an issue is because there can be what one would have to refer to as ‘BaU emission reductions’, that is to say, genuine emission reductions even in the absence of the CDM. They may be carried out because they are ‘no regret measures’ (i.e. at no or negative cost), because they were mandated (by law/regulation), or indeed because someone had a social and environmental conscience. The point is that they *are* emission reductions from a ‘business-as-usual’ level, but obviously not from the BaU level defined in terms of the absence of the CDM. Conceptually, one thus needs to differentiate this BaU conception from, for example, the emissions (baseline) in the absence of these BaU activities, say, BaU<sup>(-)</sup> (‘BaU-minus’). The ‘additionality issue’ is that these BaU emission reductions are included in the BaU baseline, and hence not

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<sup>6</sup> This rather cautious formulation simply reflects the fact that the issue of a supervening integrity baseline is not usually discussed in CDM additionality debates.



additional, not because they are not really reductions, but because they do not comply with the condition that they would not have happened in the absence of the CDM.

### b. Linking offsets to integrity

Given the role of ‘what would have been obtained in the absence of the mechanism’ in the definitions of both the regime integrity baseline and the relevant project offsetting baselines, it is surprising that offset generation is again directly linked to integrity: a project, given these definitions, is non-additional if and only if it is part of the overall BaU situation of the regime.<sup>7</sup> This, in turn, implies that to avoid regime integrity infringements, offsets should *only* be allocated to additional projects. But unfortunately, this does not really provide an answer to the first title question: *Why Additionality?*

The problem is that the conception of ‘environmental integrity’ used in this context includes the relevant additionality constraints as part of its *definition*. In other words, the correctness of the argument from environmental integrity, in this context, has no real explanatory content. It cannot provide an answer to the first title question because it constitutes what logicians call an ‘analytic truth,’ i.e. it is true by virtue of the definitions of the terms involved. To say that someone is unmarried because he is a bachelor is true, but trivial, as it is part of the definition of ‘bachelor’ to be unmarried. The same holds for the claim that granting offsets to non-additional projects would infringe the environmental integrity of the regime as currently conceived: it is true, but only because we chose to *define* environmental integrity in that manner. The only way to justify additionality with reference to environmental integrity in the context of such a CDM-type regime is to give a proper justification of why ‘environmental integrity’ should be defined in the chosen manner. Is this possible?

### c. A selection of arguments

With respect to the CDM (in its current form), such a justification can at least partially be given based on the fact that under the Kyoto Protocol, developing countries are meant to be *exempt from emission limitations*. This suffices to conclude that ‘Business as Usual’ emissions must be regarded as permitted and hence as legitimate objects for offsetting activities. But it does not suffice to conclude that emissions that were or would have been reduced under BaU conditions should not be permitted (and hence not be creditable); i.e., that the integrity baseline should be BaU and not (some form of) BaU<sup>(-)</sup>, to use the terminology introduced in the previous section.

Why? Because if the emissions that were reduced under BaU conditions are regarded as *not* permitted, then the BaU baseline in effect becomes a *target baseline* (defining what are and what are not permitted emissions). Had they not undertaken the BaU reductions, then they would have been in non-compliance with the ‘BaU target’, something which clearly does not square with the idea that they should not be

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<sup>7</sup> If a project would have happened in the absence of the mechanism, then it would be part of the scenario of all things that would have happened in the absence of the mechanism

subject to emission limitations. To put it differently, by not crediting *actual* BaU emission reductions – for reasons of not being additional – the current CDM practice can be regarded as *de facto* introducing the BaU baseline as a target baseline. Any emissions that were reduced under BaU conditions were in ‘non-compliance’ with that BaU target, which is why they are not to be certified. Clearly this sort of argumentation does not sit easily with the idea that developing countries are not meant to have emission limitations. Indeed, it could be turned on its head as an argument as to why non-additional reductions *should* be credited. Moreover, there are other arguments both for and against crediting non-additional emission reductions.

There is, for example, a widespread and often strongly-held belief that BaU emission reductions should *not* be credited if they are carried out at no or negative cost. This belief is rooted in a particular paradigm<sup>8</sup> concerning the nature of the mitigation issue, namely that it is about *sharing a common burden*. According to this paradigm, it is perfectly acceptable that one may not be required to take on a share of this burden. What is unacceptable is ‘to profiteer’ from the problem, say by getting additional money for something which would have been profitable on its own.<sup>9</sup> As it happens, this is closely related to arguments concerning the generation of offsets under a cap and trade regime as discussed in Section 3.2, namely a regime with a free initial allocation of emission permits (‘grandfathering’). Anyone reducing emissions below the target level will have a surplus of allocated permits. The question then is whether they should be allowed to sell these permits if the relevant reductions were at no or even negative cost. According to the burden-sharing paradigm, this should not be permitted. Indeed, according to that paradigm selling should only happen to cover the costs incurred.

This sort of conclusion is clearly contrary to the main purpose of having a trading regime in the first place, namely to foster economic efficiency. Indeed, it is a typical conflict between moral and efficiency aims. However, it is important to keep in mind that the moral argument in question critically depends on a specific paradigm regarding the mitigation issue, i.e. a specific view of the nature of the *mitigation problem* in general. The fact is, there are other paradigms, other fundamental ways of interpreting the nature of this problem, which do not support the ‘no pain no gain’ view. To exemplify this, assume the ‘mitigation problem’ is identified as the problem of assigning country targets, or rather allocating assigned amounts. In that context, the issue appears as the question of whether surplus permits (‘hot air’) should be tradable. According to the burden sharing paradigm, they clearly should not be. However, the allocation of assigned amounts – particularly in the context of a cap and trade regime – can also be seen in a different paradigm, namely as *the allocation of* (property rights to) *a natural resource*. In *that* paradigm, it *can be* perfectly justifiable to receive surplus permits and to sell them on at a profit. What *is* seen to be inadmissible, by contrast, are attempts to prevent this. Moreover, this conclusion can be intuitively persuasive, particularly when the surplus belongs to poor countries, or individuals, such as would be the case if one were to allocate emission rights globally to individuals on an equal *per capita* basis. How could it be morally wrong for

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<sup>8</sup> In *The Structure of Scientific Revolutions* (U. Chicago Press 1962), Thomas Kuhn defines a scientific paradigm as: what is to be observed and scrutinized; the kind of questions that are supposed to be asked and probed for answers in relation to this subject how these questions are to be structured, how the results of scientific investigations should be interpreted.

<sup>9</sup> As it happens, under that paradigm, any sale of CERs at a profit should be banned, not just the ‘windfall profits’ from no regret measures.

subsistence farmers in Africa to sell their surplus permits at a profit?

Returning to the CDM, it can hence be argued – at least in the case of developing countries *which would have surplus* AAUs under the resource allocation paradigm – that *all* emissions have to be *permitted*, and therefore that *all* (actual) emission reductions have to be treated as creditable, whether or not they would have taken place in the absence of the CDM. The resource allocation paradigm thus provides another argument against (investment) additionality, at least for countries that would be allocated surplus AAUs. In shorts, while the burden-sharing paradigm provides an argument *for* investment additionality – albeit at the price of economic efficiency – the resource allocation paradigm provides moral reasons against (investment) additionality, in addition to the earlier mentioned BaU target baseline arguments.

#### d. Conclusion: Need for a pragmatic compromise.

To be quite clear, none of these arguments is self-evidently persuasive – after all, if one of them were, there would be no additionality issue. The main conclusion to be drawn from the above analysis is that the issue is as inherently ambiguous as the mitigation problem in general: there are reasons for introducing additionality (in certain cases), and others for rejecting it (in certain circumstances). The only way forward is to try to come to a mutually acceptable compromise, which is the aim of the final section of this paper. Before that, it is useful to see how the results obtained thus far relate to the actual Kyoto Protocol regime.

### 3. The Status Quo: Offsetting under the Kyoto Protocol

The Kyoto Protocol offsetting regime is a mixture between the two types discussed so far: offset generation in Annex B is part of a cap and trade regime, while in non-Annex I countries, it is governed by the CDM – the prototype of the regimes discussed in the preceding section. While many of the characteristics of the two sub-regimes are as in their ‘pure’ application, there are problems that arise not only because of the mix, but also because of certain *de facto* differential treatments between them.

#### 3.1 Environmental integrity and carbon leakage

As concerns the *use* of offsets generated in Annex B, the integrity of the current Kyoto regime remains ultimately safeguarded by the commitment of the relevant governments to comply with their targets. But the same cannot be said of Annex B *offset generation* itself.<sup>10</sup> Why? It is well known that mitigation activities in Annex B have the potential to cause ‘carbon leakage’, i.e. the ‘migration’ of emitting activities from Annex B to non-Annex I. Clearly, any amount ‘leaked’ into non-Annex I due to an Annex B mitigation activity/project will, *ceteris paribus*, be above the non-Annex I BaU baseline (‘what would have happened in the absence of the regime’). It would

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<sup>10</sup> Note that offset generation is not restricted to project-based regimes. For example, under a grandfathering cap and trade regime, potential offsets are generated if emissions are reduced below the cap, and thus permits freed for selling on as offsets.

thus infringe environmental integrity, if it is not compensated by a commensurate cut in the relevant Annex B target. In other words, the current regime fails to safeguard its own environmental integrity by not discounting Annex B mitigation levels by the amount of carbon leakage they cause.<sup>11</sup> It is to be noted is that this has nothing to do with the lack of investment additionality testing for these activities. It is an issue that would have to be addressed even if Annex B offset activities were subject to investment additionality constraints. At the same time, it is seems clear that addressing this sort of integrity infringement in practical terms would be very difficult, if not impossible. The point of raising this issue of carbon leakage here is simply to try and dispel the common myth that integrity infringement is only a problem for the CDM, and not for Annex B offset activities, often portrayed as completely innocuous.

### 3.2 The lack of level playing field in offset generation.

The previous section demonstrated that there is no fundamental difference between offset generation in Annex B and in non-Annex I as regards the potential for infringing environmental integrity. The generation of credits in Annex B can lead to integrity infringements due to carbon leakage, while crediting for BaU emission reductions would lead to infringements under a BaU interpretation of non-Annex I integrity.

Given this symmetry, it is difficult to see why offset generation in Annex B should be given a moral waiver as concerns the ‘profiteering’ argument used in defence of the application of investment additionality tests in the case of non-Annex I offset generation. In other words, if one argues for the adoption of BaU as integrity baseline – thus rejecting any BaU emission reductions as offsets – on the grounds that ‘pure profit’ (i.e. profit without costs) is immoral in this context, why should offset generation in Annex B not be subject to the same moral scrutiny? Why should it be moral to generate credits in Annex B at negative costs, and immoral to do so in non-Annex I?

It must be emphasised, that this question is not purely theoretical. The one-sided application of investment additionality criteria imposes genuine economic differences between offset generation in Annex B and in non-Annex I. It opens up the possibility that one and the same project/activity<sup>12</sup> would yield negative cost offsets (credits) in

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<sup>11</sup> See also: Geres, Roland; Michaelowa, Axel (2002): A qualitative method to consider leakage effects from CDM and JI projects, in: *Energy Policy*, 30, p. 461-3.

<sup>12</sup> Note that, for the present purpose, any mitigating activity which results in offsets – whether they are in the form of CERs, or AAUs (generated through mitigating below the target-baseline) – are referred to a ‘projects’. It is important to keep in mind that it is possible to generate credits even in the context of an emission target, by reducing one’s emissions below that target, thus freeing assigned amounts. Further, it is possible to do so with ‘no-regrets’ measures, i.e. at a zero or negative cost.

Annex B, while it would be refused offsets (CERs), for not being additional, when carried out in non-Annex I.<sup>13</sup>

One might try to argue that this differentiated application of investment additionality tests, and the resulting competitive advantage of Annex B offset generation is justified by virtue of the safeguards and overall mitigation effort of Annex B governments; that Annex B offset generation should be permitted ‘non-additional’ credits in recompense for the fact that Annex B countries have taken on mitigation commitments/burdens (at least those whose emission caps are binding). Be that as it may, the fact remains that, at the project level, the playing field in offset generation is not level. This is unlikely to be seen as anything but unfair, particularly when combined with prevailing differentiated responsibilities and respective capabilities.

One way of levelling that playing field would be to extend the investment additionality test to *all* offset generating activities, wherever they may occur.<sup>14</sup> However, given the issues that have arisen with this in the context of the current CDM, it would probably be better to level the playing-field (wherever possible) the other way round, by dispensing with the investment analysis *wherever* it is possible.

#### 4. What Additionality?

Apart from the lack of a level playing field under the current mitigation regime, the real problem with additionality in the CDM (as mentioned in the conclusions to Section 2.2) is that there are valid reasons why it should be kept, and equally valid ones why it should be rejected. And as suggested, the only way forward is to try and find a mutually acceptable compromise between the proponents of the two contradictory paradigms. But how exactly could this be achieved?

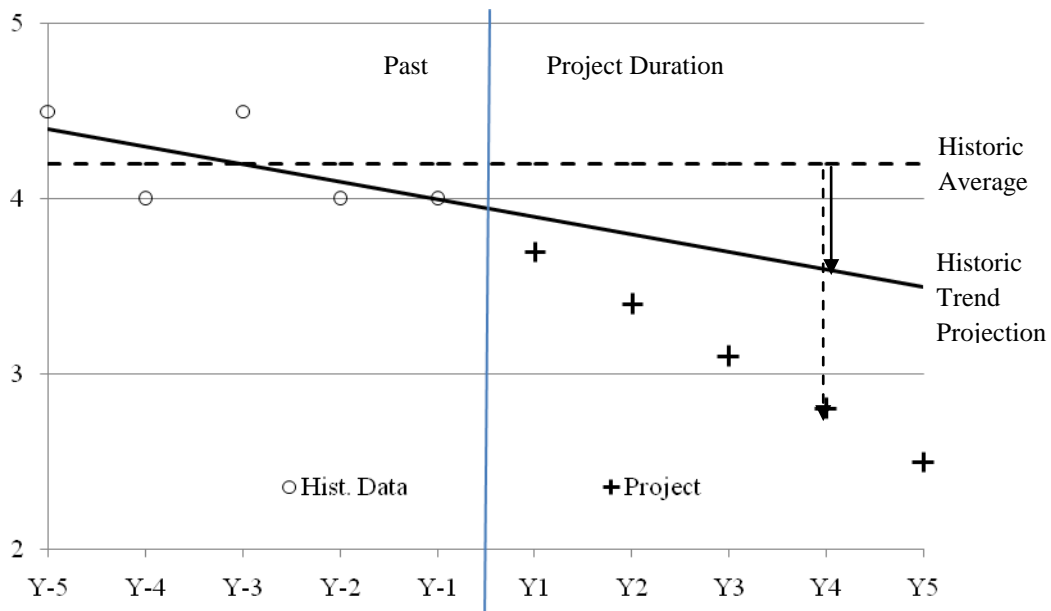
One step in the direction of such a compromise concerns the need for investment analyses in determining whether a project is additional – in the above mentioned ‘narrowed’ sense of the word – or not. Is it possible to ***dispense with ‘investment analyses’ without abandoning the idea of BaU integrity and thus of additionality?*** As it turns out, there are cases where this can be done through a judicious choice of how the notion of ‘BaU’ – of ‘*what would have been the case in the absence of the mechanism*’ – is interpreted (or, if we wish, operationalised).

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<sup>13</sup> It might look as if the argument here only applies to ‘grandfathering’ contexts. However, even in the ‘profiteering argument’ it could also be applied in the context of a regime with permit auctioning, where ‘credit generation’ would have to be the acquisition of permits over and above one’s actual needs. The profiteering would be in the selling of these credits with a profit (i.e. above cost)

<sup>14</sup> There is no conceptual reason why a non-additional (Annex B) reduction below a project target baseline could not also be disallowed as generating surplus AAUs. Indeed, conceptually, the regime could easily be adapted by introducing ‘target discounting’ for Annex B activities. The results of any non-additional actions would be subtracted from the target before establishing compliance. It stands to reason that the environmental *stringency* of the regime would be increased, if the playing field were levelled, by applying the investment additionality rules throughout the regime (and not just in developing countries).

The practice in the current CDM is to operationalize BaU in terms of hypothetical scenarios. The CDM *combined tool to identify the baseline scenario and demonstrate additionality*,<sup>15</sup> for example, employs a scenario analysis to establish both the offset baseline and the additionality of a project. The methodology for establishing the baseline essentially involves putting up a list of scenarios – in this case descriptions of projects that ‘provide outputs or services with comparable quality, properties and application areas as the proposed CD project activity (including the project and all alternatives) – which are practically possible with respect to available technologies, potential barriers, and legal constraints,’ and then designate the ‘most economically or financially attractive alternative scenario’ as ‘baseline scenario’. Whether or not reductions from that baseline are creditable depends on a number of additional additionality tests, among them an investment analysis. However, the scenario interpretation of BaU is not the only way in which that notion can be operationalised. Indeed, there are interpretations which do not require the sort of auxiliary baselines relied on in scenario interpretations.



**Figure 1: Trend Projection BaU. A hypothetical example**

For instance, there is what might be called the *(historic) trend interpretation* referring to ‘what one could reasonably expect to happen/to have happened on the evidence of past experience’. In more operational terms, it refers to historic trend projections of the relevant parameters, as used in the field of econometrics. Accordingly, the ‘trend interpretation’ of what emissions should be considered ‘permissible’ – i.e. below the ‘environmental integrity (baseline)’– under a (pure) CDM-type regime would be given by parameter projections based on historical data.

<sup>15</sup> UNFCCC CDM EB, ‘Combined tool to identify the baseline scenario and demonstrate additionality’ (Version 02.2) EB 28 Report, Annex 14, 15 December 2006.

As it happens, something akin to this interpretation of ‘permissible emissions’ is already present in the current tool kit of the CDM, namely as baseline determinant in a renewable power methodology. To explain this, consider a ‘micro regime’ based on a single power grid. According to this methodology, the offsetting baseline for renewable projects feeding into that micro-regime, is, in essence, defined by the average emissions intensity of the grid over the past five years. In other words, the number of CERs which a renewable project would be assigned is determined by its impact on this grid parameter and by the past performance of that parameter (whether or not a project actually does get CERs even if it reduces the grid intensity below the historic average depends on further additionality tests, such as an investment analysis).

By comparison, the integrity baseline of this micro regime under a historic trend interpretation could be defined in terms not of a historic average, but a historic trend projection of the grid intensity, which would also serve as the relevant project offset baseline. The main difference would be that the trend projection would define the permissible emissions, and *any* reduction below that integrity baseline would by definition be additional (regardless of hypothetical financial decisions).

To be clear, while there would be cases of projects that would be judged additional – and hence allocated CERs – under this methodology, and not under the existing one (e.g. because they fail the investment test), that does not mean that overall, the trend methodology would always (or even generally) allocate more CERs than the traditional scenario-based one. After all, as suggested in Figure 1, the grid intensity trend projection could be decreasing below the historic average used in the current methodology, in which case projects which are additional under the current methodology would be allocated fewer CERs under the trend-based methodology. Thus, in the example depicted in Figure 1, if the project were to be judged to be additional under the current methodology, it would generate more than twice as many CERs under that interpretation than under the trend projection one.

It is important not to misinterpret the fact that projects would generate different amounts of CERs under these two methodologies, and indeed under the two corresponding interpretations of BaU, i.e. the trend-based and the scenario-based one. Even though there may be cases such as ‘greenfield’ projects, where a scenario-based approach may be unavoidable because trend-projections are obviously not possible due to a lack of historic data, this does not mean that the scenario approach is somehow ‘the correct one,’ and the trend-projection one ‘merely an approximation’. The situation is rather more complex. If anything, both approaches are approximations. What is more, they are approximations of something unknowable (namely of what would have happened otherwise), which makes it unlikely that one could even judge their accuracy. Of course, if we *knew* for certain ‘what would otherwise have happened’, then the situation would be different. But then we would not need BaU scenarios or BaU trend projections in the first place. Yet we do *not* know, which is why we need to have recourse to tools such as scenarios and/or



projections. To think that either tool is somehow intrinsically epistemically superior is simply wrong.

This ‘epistemic parity’ between the two interpretations of ‘BaU’, of ‘environmental integrity’, of ‘permissible emissions’, and of ‘being additional’, is both extremely important and subtle. Thus, it may be useful to look at the two approaches in a different context, namely that of forecasting the future, of establishing ‘what will happen’. The main difference between this task and the one of establishing ‘what would have happened otherwise’ is that the future is *not* unknowable, and that forecasts can be assessed with regards to their accuracy, once the future has happened, as it were. It is well known that both forecasts based on historic trends or on scenario analyses are usually proved wrong, and that neither is always better than the other. The choice of approach depends very much on the context, and ultimately has to be decided on pragmatic grounds. The same is true in the context of establishing what would have happened otherwise.

This is not to say that the interpretations do not have considerable asymmetries regarding the practicability of their application in particular contexts. For one, as mentioned already, there are situations where the scenario based interpretation – with its investment analyses – would seem to be unavoidable, if only because historic trend projections are not possible due to a lack of historic data (such as in the case of green-field projects). However, given the experience with the scenario based approach – particularly with respect to the issues arising from its investment analyses – it stands to reason that whenever the trend projection approach is feasible,<sup>16</sup> it is probably preferable on purely pragmatic grounds, not least because it would not involve second guessing people’s motivations. Indeed, it is likely that this superior transparency would even outweigh receiving less CERs in cases which would be additional under both interpretations.

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<sup>16</sup> Note that the trend-projection methodology may also be less suitable if the trends in question are highly unstable, or non-existent, even in the presence of reliable data.



## Appendix I: Additionality to comply with Art. 4.7

The *argument from implementing Article 4.7* is the justification of an additionality criterion to CDM projects on the grounds that, because of the differentiated historic responsibilities for the climate change problem, and the respective capabilities to solve it, developed countries need to pay for the incremental cost of mitigation actions in/by developing countries, but not for more.

This incremental cost argument implies that if there is no incremental cost – or to put it in the language of economics, if the cost of the mitigation activity is negative – then there is no need for a developed country contribution. As it happens, the CDM additionality condition reflects this by rejecting such negative cost projects as non-additional, thus depriving them (consistent with the incremental cost argument) of CER revenues.

However, this consistency breaks down in the context of projects that do have genuine (positive) incremental carbon costs. The CDM additionality rule also excludes a significant class of projects, namely those with a viable non-carbon component, from receiving CERs (carbon revenue) on the grounds of being non-additional.

In short, additionality in the CDM cannot be justified on grounds of the incremental cost argument. Indeed, as a vehicle to operationalise this argument, it is rather biased by only fully reflecting the case where developed countries are not meant to contribute (the negative cost cases). At the same time, it excludes a sizable segment of activities which ought to be compensated for genuine incremental costs. The only way to rectify this asymmetry would be to restrict non-additionality solely to the negative cost cases.

Of course, this only shows that, due to the existing additionality rule, the current CDM is not an appropriate mechanism to operationalise the incremental cost argument. Moreover, there are clearly other, (for example, non-carbon, market-based) ways in which this argument could be operationalised. Thus the conclusion here has to be that CDM additionality, in its current form, cannot be justified in terms of paying incremental carbon costs of mitigation activities in developing countries.

## Appendix II: Tool for the demonstration and assessment of additionality

CDM EB 23

