Catalogue of questions to expert pool

Client motivation

1 What was the aim of the study?

A	The study aims at investigating the environmental integrity of the global CDM project portfolio and its potential CER supply from 2013 - 2020. It concludes "overall environmental integrity" labels (low/medium/high) for 12 specific project-types. The labels are based on analysis and findings in three categories: additionality assessment, determination of baseline emissions, and other issues. Later (p.153) the authors outline that their analysis referred to environmental integrity of the CDM focusing on the quality of CERs and is not analysing the overall environmental outcome of the CDM which is also influenced by several overarching and indirect effects (awareness raising function etc.).
CF	The study is critical of compliance offsetting mechanisms in general and many features of the CDM in particular. The aim of the study seems to be to provide a technical basis for the ongoing CDM reform discussions under the UNFCCC and the use of market mechanisms in the post 2020 context. The focus of the study is on identifying shortcomings in the design and workings of the CDM with regard to environmental integrity. It is clearly not the aim to highlight positive accomplishments of the CDM. Many of the recommendations made in the study such as "overhauling the additionality tool", "shortening CDM crediting periods", "mandatory standardized baselines", "consideration of E+/E- policies" coincide with positions that the EU holds in the negotiations on the review of the CDM modalities and procedures. It is noteworthy that the study was only published shortly before SBSTA 46, more than a year after its finalization in March 2016. This might have been in view of influencing the ongoing negotiations on Article 6 of the Paris Agreement, where the EU Commission is critical of discussing the transition of the CDM rules, credits or projects to Article 6.4. This discussion had gained momentum before the release of the study.
PP	The EU Commission has been critical of the CDM for some time in the UN climate negotiations. Since about 2011, it has been calling for the replacement of project- and programme-based offset mechanisms by mechanisms at sectoral level, which contribute to global emission reduction. In particular, the Commission wants to avoid the direct transfer of the CDM into the Paris market mechanisms (Articles 6.2 and 6.4 of the Paris Convention), which is called for by a number of developing countries (Brazil, but also Africa). In this respect, the Commission is interested in studies that criticize the CDM. Since additionality has been a major issue since the beginning of the CDM and a lack of additionality has been noted for years by serious experts, this issue is a good anchor for the Commission to support its negotiating position.

2 Does the study also cover the situation of CDM projects in the host countries?

A	The study is structured according to 12 specific CDM project technologies / types along which the project samples have been then analysed. Host country situation of the projects has not been analysed systematically. However, certain regional specifics were mentioned (e.g. China).
CF	The study does not specifically address the situation of CDM projects in the host countries nor how they have been affected by the downward trend in CER prices. It concludes that "85% of the covered projects and 73% of the potential 2013-2020 CER supply have a low likelihood of ensuring environmental integrity". It is not assessed, however, whether these projects continue to still operate today and how the CER supply has to be corrected downward in view of discontinued projects or a lack of incentive to continue the verification of emission reductions. Starting point of the analysis is the total number of projects registered under the CDM (7418 by 1 January 2014, p.24). The number of CDM projects evaluated in the study is 5155 (table 1-1), which is lower than the total amount of registered projects due to the exclusion of less common technologies. The potential CER supply generated by these projects during the period 2013 to 2020 is estimated as 4829 Mt CO2e. This figure is unrealistically high as it does not take into account the actual developments in the carbon market. By mid-2017, only 350 Mt CERs with vintages 2013 and later have been issued, corresponding to only 4% of the estimated potential for the second commitment period of the Kyoto Protocol (8695 Mt for 2013 to 2020).[1]
PP	The study analyzes a small random sample of 150 CDM projects, i.e. 2% of the total project number. Programmes are completely excluded. The authors differentiate roughly for large regions. The main analysis is done rather simplistically at the technology level; occasionally regional/ country-specific circumstances are taken into account, especially in relation to China.

3 Does the study take the basis of the Kyoto Protocol into consideration which establishes that host countries should not experience disadvantages when introducing new climate policies after the adoption of the Kyoto Protocol?

A	---
CF	--
PP	No, this represents a significant weakness of the study. The authors simply argue that the non-consideration of national climate protection policies (E-policies) in the determination of additionality, a decision consciously made by the CDM Executive Board, is not appropriate. Thus, they incorporate revenues from these policies into the overall revenues from renewable energy projects which is not consistent with the Kyoto Protocol rules. Therefore, get the non-surprising result that many renewable energy projects are not additional. In the summary, which is the only element of the study that has been noted by

[1] UNEP DTU, CDM/JI/PoA Pipeline Analysis and Database, accessed 2 June 2017

	many media and politicians, this analysis contradicting the CDM rules is not being properly addressed.

4 Is it possible that the EU-users' perspective is given too much weight?

A	Generally, it is possible to imagine that a study could also have started from other perspective, e.g. from host countries, private sector, project developers with potentially a different perspectives on some of the processes but also regarding necessary reform steps. So from this perspective, the authors may have started their research pretty much in line with an EU perspective but if that led to an overemphasizing of this position would be quite speculatively.
CF	The study takes the perspective of a carbon market buyer rather than that of a seller, consistent with the EU's position as a past and potentially future user of offsets. It makes specific recommendations to buyers: which project categories to focus on, where to discontinue the purchase of CERs and how to use crediting mechanism within a broader set of policy instruments to incentivize the adoption of ambitious climate policies in host countries. The study does not consider the perspectives of either project developers or host countries. It does not consider the implications for private sector stakeholders that have invested resources to comply with the UNFCCC vetting process and whose assets are written off by the study. Nor do the authors consider the perspective of host country governments who have promoted the CDM in their countries and value its contribution to national development goals and as a starting point for domestic climate action and capacity building. The bias of the study is particularly disconcerting from the perspective of African countries, which have benefitted very little from the CDM and where many project investors struggle to earn back the costs of CDM certification.
PP	Yes, this becomes evident in many places. Already in the first paragraph of the summary, exactly the EU negotiating position is set as the "truth" ("It is clear ... the CDM will end"). There are also numerous biases by the authors when they achieve results which are contrary to the EU position. For example, the authors clearly emphasize that HFC-23 industrial gas projects are additional, but still ask that they be excluded from the CDM - with the unconvincing argument that they have low mitigation costs.

Empirical basis, definitions and methodology

5 Is this a desk study or have individual projects or actors been contacted?

How do the authors define additionality, and how was it applied to projects?

A	The study is a desk study and includes literature analysis, a qualitative

	assessment of relevant CDM rules, and empirical, quantitative evaluation of how the CDM rules were applied, economic assessment, and a sectoral analysis. No interviews with project stakeholders have been conducted. However, several comments from "insiders" were included, however, always to underline rather critical aspects (pages 57, 121,).
CF	The study is a desk-based research that does not include interviews with CDM project developers, DOEs or host country representatives. The analysis of projects is based on publicly available documentation, including their PDDs, validation, monitoring and in some cases verification reports. Overall the study combines a mix of analytical approaches. This includes statistical analysis of the UNEP DTU and IGES databases and of a randomly drawn sample of projects. The study also presents sectoral and regional assessments of selected technologies and regions and a rich and interesting history of the evolution of the CDM rules. A key resource are findings from earlier studies, including by the authors themselves. The study is very dense and brings together numerous examples and individual assessments. This comes at the cost of supporting a clear narrative. As the information presented is quite overwhelming and often anecdotal, it is difficult to follow how it supports the strong final conclusion that 85% of projects and 73% of the potential CER supply have a low likelihood of ensuring environmental integrity .
PP	It is a pure desk study, where at it should be noted that essential parts of the rich academic literature have been omitted, namely those which contradict the preconceived opinion of the authors. Overall the literature list is extremely sloppy; it would be probably rejected in an academic seminar paper. The authors should for example consider the literature on the performance of the CDM as cited in the 5th IPCC report (Chapter 13 "International Cooperation: Agreements & Instruments" in the report of WG III).

6 Is the study's empirical basis a representative one?

Is the assignation of projects to review clusters understandable and transparent?

A	From in total 7,418 registered CDM projects (as of 1st January 2014) 300 projects (4%) had been selected and clustered according to host country / region, technology, scale and time of registration year. Out of these 300 projects 150 projects (or 2%) had been selected for additionality analysis. The analysed IDs are published. The non-selected IDs were not published. However, there are projects (e.g. N2O abatement) which are included in the analysis but not listed under the 150 project IDs. In this respect the selection process described in Annex 8 is not clear. The host countries with the largest national CDM portfolios (China, India and Brazil) were reasonably chosen as single clusters, whereas the region Africa was included as "rest of the world". The technology cluster industry includes heterogeneous projects types (e.g. N2O versus cement) as well as the clusters "others" (a/re-forestation versus transport). The chosen registration year clusters (pre 2010, 2010-2011, post 2011) do not follow the CER market

	supply logic of KP periods (pre-2013 and post 2012). The study claims a large representativeness because the chosen 12 technology types correspond to 85% of the overall CER supply potential (2013-2020) (page 90).
CF	It is difficult to know whether the empirical basis of the study is representative. The UNEP DTU and IGES project databases used frequently in the study are certainly representative because they cover the complete pipeline. Next to that the main empirical source is a 300 strong project sample drawn randomly from the CDM pipeline, out of which 3x30 projects are selected for analysis in a two-step draw (first 3x50 clusters are drawn from the overall sample). The 30 randomly selected CDM projects are used in chapter 3 for evaluating the application of the three most common additionality rules (the investment analysis, the barrier analysis and the common practice analysis). No explanation is given for the size of the sample so it is difficult to judge whether it is representative. There is not a single hypothesis that is tested on the basis of the selected projects but a variety of questions are analyzed. These are generic questions, such as the level of detailed information provided in the PDDs and the use of the barrier test as a stand-alone test. The authors themselves state that the "empirical analysis aims to identify possible shortcomings in the application of general CDM rules" (pg.22). For answering questions related to the type of information provided in the PDDs the 30 randomly selected CDM projects are probably a good enough size. A mixed picture emerges in the analysis where the authors find that some issues have improved in PDDs and validation reports whereas they remain critical of other features. The 30 strong project samples across all technologies, regions, scales and registration times certainly are not representative to assess whether individual technologies in specific countries are additional. This also does not seem to be the generally intent as technologies are assessed separately in chapter 4. However it is sometimes confusing whether statements in chapter 3 on the additionality of Chinese, Indian and Vietnamese projects are based on the project sample or other information. It would generally be good to better understand the type of projects which have ended up in the project samples. Information is provided in footnote 23 for one of the 3 samples, showing a large dominance of Chinese projects (20 out of 30) in the final draw.
PP	Stratification is problematic. In principle, PoAs would have had to be included. The geographical section would have to show Africa separately. The category industry contains "apples" and "oranges" - industrial gas and energy projects differ massively. Size classes should be more differentiated, especially in the case of hydropower projects - projects of several hundred MW have different characteristics than those below 100 MW (this should also have been discussed intensively in section 4.6.3). The time stratification would have been better organized in the following periods: period before the first suspension of a certification organization by the Executive Council (end of 2008), 2009 - 2011 (phase of stable CER prices), 2012 (attempt to register projects before the EU exclusion date), 2013-present. It is unclear why later the study is subdivided in samples of 1x 30 and 2x 10 projects (the description in section 8.1 is largely incomprehensible and empty of content, respectively).

7 Does the study differentiate between the different phases of the CDM, i.e. initial phase, high phase and decreasing phase?

A	The study does not differentiate between early, intense and depression CDM phase.
CF	No distinction is made in the study between different phases of the CDM.
PP	No. The time stratification should then have been much more detailed: the period before the first suspension of a DOE by the Executive Board (end of 2008), where additionality was not consistently examined, 2009 - 2011 (phase of stable CER prices and stringent additionality tests), 2012 (attempt to register projects before the EU exclusion date - the submission peak led to the overload of regulators and certifiers), 2013-today (period characterized by low market prices with simplified additionality determination and few project submissions). The development of the additionality rules over time is well illustrated, but the time-specific analysis of the additionality of the projects, which one would actually derive from it, is missing. In some graphs, different periods are discussed (for example 3-5 to pre-estimate the CER prices), while others (3-3 and 3-4 on wind projects in China) put all projects in one basket. Still others arbitrarily pick out individual points in time (3-2: 2007 and 2014).

8 How do the authors define additionality, and how was it applied to the projects?

A	Answer given summarized in the answer to question 9!
CF	While the authors do not explicitly state how they define additionality and through which criteria, the conclusions on likely non-additional projects hold an implicit definition: "An important reason why these project types are unlikely to be additional is that the revenue from the CDM for these project types is small compared to the investment costs and other cost or revenue streams" (p.13 and p.150). The study then prominently features the percentage points by which project IRRs are increasing through the addition of CER revenues (table 2.3 and figure 2.3). The authors conclude that CER revenues have a low impact on the economic performance of renewable energy, fuel switch, energy efficiency and waste heat utilization projects and therefore the additionality of projects within these types may seem rather unlikely. The basis of this conclusion is the UNEP DTU and IGES pipelines as well as other literature sources rather than an assessment of individual projects.
PP	The additionality definition of the authors is highly problematic. They generally assume that: a) a project is only additional, if its internal rate of return through the CER revenues is increased to an extent where the "signal-to-noise ratio" exceeds a certain level (see section 2.4, and table 2-3). b) at the same time its internal rate of return should not be attractive without the CDM-proceeds. The first part of this definition (viz. a)) is highly controversial in the literature (see for example Greiner, Sandra; Michaelowa, Axel (2003): Defining Investment Additionality for CDM projects - practical approaches, in: Energy

	Policy, 31, S. 1007-1015, being overlooked apparently deliberately by the authors). Inevitably, projects in which the proceeds from the CDM are only a small part of the total proceeds are not assessed as additional. This applies to all wind and hydropower projects, and in phases of low CER prices for all projects which do not have exclusive CER revenues. It should also be noted that the authors do not define a threshold for a), but only make vague statements. If the argument is to be taken seriously, the authors would have to prove that economic actors do not in principle orient themselves to internal revenue rates (which, in fact, they postulate for large power plants but do not demonstrate). Since capital markets show that even the finest differences in return rates are recognized and levelled by economic actors, the argument is not valid. The second part of definition (b)) is universally accepted in the academic community and is only questioned by industry lobbyists like IETA.

9 Is this definition compatible with the UNFCCC criteria for the CDM?

A	Answer to 8 and 9: According to the UNFCCC Glossary "CDM terms" additionality for a CDM project activity (non-A/R) means "the effect of the CDM project activity to reduce anthropogenic GHG emissions below the level that would have occurred in the absence of the CDM project activity. Whether or not a CDM project activity is additional is determined in accordance with the CDM rules and requirements." The study investigates the four main approaches / CDM rules and requirements to determine additionality: Prior consideration, investment analysis, barrier analysis, common practice (market penetration) analysis.
CF	Additionality under the UNFCCC is operationalized through a variety of tools, including the additionality tool, the micro-scale additionality tool and the small scale positive list. Given the counterfactual nature of additionality, the concept cannot be proven and these tools have been internationally accepted as proxies. The emergence of the additionality definition at UNFCCC level has been a compromise between different factions – some arguing that one cannot assess the motivations of individual actors and as long as emissions are lower than the sector baseline, a project is additional, while others supported a strict financial additionality test and the demonstration that only for carbon revenues a project is financially viable. The author's definition is closer to a financial additionality test. Considering only the aggregate impact of carbon revenues on average IRRs of a technology ignores the finer arguments many project developers have made in their PDDs. For example, that carbon revenues are paid in international currency and play a vital role in hedging currency risks, or that carbon revenues accrue to third parties in the project that act as catalysts.
PP	Definition a) has been explicitly rejected by the Executive Board.

10 What project information was used to assess additionality?

A	The study takes into account the information provided by UNEP CDM and IGES

	database. In addition the authors apparently reviewed publically available project documents such as PDD, and validation reports since the CDM project pipeline does not contain information about which option of additionality demonstration was applied in the PDD (page 24).
CF	According to the study, PDDs, validation/monitoring reports and in some cases verification reports were consulted to assess additionality. In the body of the report, the project sample is used in chapter 3 to analyze the application of the additionality tool: It is used to explore transparency in the investment analysis where figure 3.2 shows a progression in the quality of details provided in validation reports compared to a 2007 analysis. The project sample is also used to analyze how the common practice test has been applied, concluding that, while several flaws still remain, "the introduction of the common practice guidelines has generally led to more detailed and better structured PDDs" and has "improved considerably over time" (p.53). Thirdly, for the barrier analysis, the project sample is evaluated with regard to how many projects only use a barrier test, demonstrating that this number has declined over time (figure 3-6). Whereas the aim of the empirical analysis is to identify shortcomings in the application of the CDM rules (pg.22), it also generally highlights a positive trend.
PP	The project documentation as far as it was correctly reflected in the UNEP DTU and IGES databases. This is in general the case.

Findings of the additionality assessment

11 Is it possible to classify the reasons for assessing additionality in accordance with their significance?

A	The study emphasizes that the impact of CER revenues on the economic feasibility of projects is the important indicator for the likelihood for projects (on a larger scale) to be additional (p.28). Determining the level of CER contribution needed to trigger the investment decision is difficult. The study follows in this respect the so called "signal-to-noise" ratio concept. This concept "values" the uncertainties of input parameters for investment decision and concludes that the uncertainties for CER revenues are often lower than other decisive key parameters and such it seems less likely that the CDM was the decisive trigger. This is the main basis for the conclusion for example that NON-CO2 projects (industrial gas abatement, LFG, manure, waste water treatment, CMM) with a rather high CER revenue impact are more likely to be additional than renewable CO2 projects (wind, hydro, solar) with a relatively low impact of CER revenue on IRR (page 31). This view then explains why the authors consider the sensitivity analysis in the guidelines on the assessment of investment analysis as crucial and not sufficient (page 46). Prior consideration of CDM stays a pre-condition but insufficient stand-alone-argument. Investment analysis and barrier analysis are criticized for their "subjective" character, internal benchmarks used for investment decisions could not be verified sufficiently, non-quantified barriers are hard to verify at

	all. The Barrier analysis is seen as problematic. The common practice analysis is seen as the more "objective" approach.
CF	The authors give various reasons for questioning the additionality of CDM projects, including that the revenue stream is small compared to investment costs and other revenue streams, technological progress was much faster than expected and costs have fallen considerably, or that supportive policies or mandatory regulations have been adopted (p.150). It is not explicit which of these reasons is deemed most significant. Rather they seem to apply to a different extent to different technologies.
PP	Answer given summarized in the answer to question 13!

12 What were the circumstances under which CDM projects were denied additionality?

A	The authors highlight the existing "information asymmetry" between project developers and auditors (DOEs) and thus the underlying potential for project developers to cheat, namely in applying the investment analysis. Information asymmetry exists in any "being verified party / being the verifying party" relationship. In the early days, little experience could cause poorer quality of DOE validation reports. However, DOEs over time adopted strong learning curves. Their auditors are accredited on methodology level and have to go through intense training for accreditation. So the process was improved and streamlined significantly.
CF	The authors provide a number of different reasons for putting the additionality of the majority of the CDM pipeline into question. A main concern is the information asymmetry between project developers and regulators, which according to the authors leads to an inherent flaw of the additionality tool. Another one is the small impact of CER revenues on the economic performance of projects. The study is furthermore critical of the assumption of automatic additionality for micro-scale projects and quotes several studies that show the advent of energy-efficient lighting in selected countries.
PP	Questions 11 and 12 belong together and are therefore answered jointly. The decisive reason why the authors deny the additionality to the project categories wind energy, hydropower, heat recovery and energy-efficient cook stoves is the argument that the CER revenues do not have a sufficient "signal-to-noise ratio". As stated in the answer to question 8, this reasoning is not conclusive. Here, a big argument against the additionality of essential CDM project types collapses. Furthermore, it is argued that the investment test is not reliable since the project developers could manipulate the data used. This was true for the initial phase of the CDM until 2008, when the certifiers were essentially just rubber-stamping the project developers' arguments. After the suspension of several certifiers, which led to the fact that the examinations were carried out seriously and the tightening of the rules for the investment test, the argument no longer applies. Basically, the investment test now resembles the examination of the creditworthiness of an investment project by a bank. This is carried out millions of times all over the world and is not questioned by anyone. For all renewable energy projects, the deliberate ignoring of the exclusion of the proceeds from national policy measures (i.e., the "E rule") means that additionality is assessed more negatively than if the CDM rule had been assessed. The authors rightly criticize the pure barrier analysis, but also point out that this has hardly been applied since 2008.

13 When the authors talk about a project's registration date, do they take the preparation period into account?

Do they consider the time it takes for the UNFCCC to process projects?

A	The preparation phase of a project includes early CDM consideration, PDD development und validation of a CDM project. Length of PDD development and validation can differ significantly between projects partly depending on the complexity of the underlying methodology. During the intense CDM phase 2011/12 the review at UNFCCC showed significant delay. However, this is not addressed in the study.
CF	---
PP	No, but this is not relevant for the analysis of the authors, since they do not touch upon the dates of the registration anyway. A good analysis should take these aspects into account.

14 The CDM additionality tool has been updated regularly. How do the authors assess the developments?

Do they consider the current version to be useful?

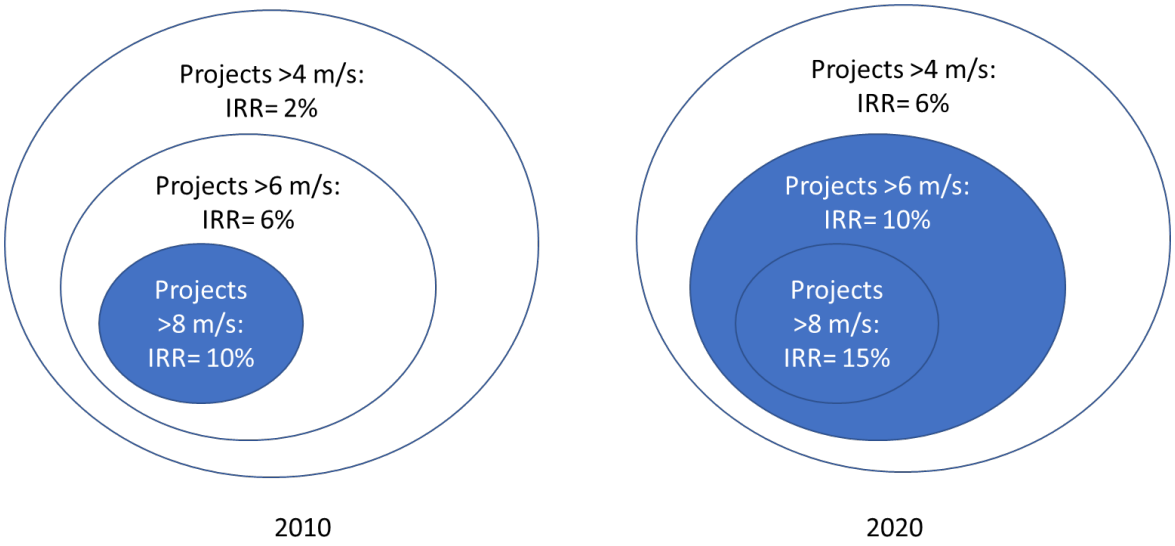
A	The study describes the developments of the additionality tool over time adequately. It also gives credits for certain improvements for example in the common practice analysis when introducing certain threshold values for common practice and clarifying certain rules (p.49)
CF	In the detailed analysis in chapter 3 the authors generally identify a progression in the development of the additionality tool and consider that approaches have become more robust over time. In the recommendation sections they suggest reforms to the additionality tool and CDM methodologies rather than a complete overhaul or abolishment. This contrasts with the overall negative bias in the conclusions that crediting mechanisms should only play a time-limited and niche-specific role due to their inherent shortcomings.
PP	The authors correctly outline the development of the additionality rules over time. They state that many improvements have been made, while general problems continue to exist. I consider the majority of these problems irrelevant. The authors judge the investment analysis not suitable to prove additionality for being "subjective". I would strongly disagree (see answer to the questions 11 and 12). However, I support the requirement that the investment analysis data should be consistent with the data used for project financing. They demand that the examination of "common practice" should include all CDM projects. If this were the case, no new CDM projects would be allowed after a short time as new projects would be considered "common practice". The authors' demands for a clearer definition of "comparable technology" and a sufficiently large comparative sample are sensible. I can also fully support the authors' demand for a more cautious approach to positive lists. For example, solar energy should now be deleted from such lists in many parts of the world, since it has become highly profitable. The example

	of a 141 MW solar power plant in Chile (p. 73) underscores this. I also support the proposed closure of the loophole for the size-dependent use of positive lists related to PoAs. How do the authors evaluate the methodology development in the CDM? What development should the methods take in the future? The authors demand that standardized methods become mandatory as soon as they have been adopted to avoid "method shopping". This is to be accepted without restriction. Also correct is the analysis that the introduction of stringent benchmarks for industrial gas methods has eliminated any perverse incentives. The criticism of excessive shares of non-renewable biomass in many countries is justified. The authors rightly estimate that the principle of "suppressed demand" does not lead to a significant increase in the number of excessive emission credits. The argument that the payment of emission credits basically leads to a "rebound effect" is not proven. Such a rebound effect can only occur in energy efficiency projects at most.

15 How do the authors assess the CDM's developments in methodology? Which course should future developments take?

A	---
CF	In future, the authors recommend to give a more prominent role to the common practice analysis. Methodologies should become sector- and technology type specific and should cover the entire country. In my view this is generally a good direction for the development of crediting mechanisms under the Paris Agreement. It is however difficult to see how this could be accomplished by individual project developers. Rather, it could mean a greater use of standardized baselines and a larger role of the host country in determining sector baselines and priority areas for crediting mechanisms in relation to a country's NDC.
PP	The authors claim that 73% of the expected emission credits between 2013 and 2020 are not additional, thus they do not represent real emission reductions. In my view, a much finer analysis of additionality in large-scale projects is necessary, especially in the context of renewable energies. This analysis would have to take into account the fact that renewable energy sources are unequally distributed (for example, wind speeds and solar radiation are geographically different), and that the advancement of technologies moves the threshold of additionality over time. There are projects "on the margin" at any time. A general exclusion of certain renewable energy technologies would unjustifiably punish the projects whose utilization rate lies below the limit of attractiveness. This is shown in the following graph: **Figure 1: "Moving" threshold of additionality during technological advances in**

wind energy



Explanation

Projects in Cedemistan are additional as long as their internal rate of return is less than 10%. In 2010, this applies to projects in areas where the average wind speed is less than 8 m/s. Due to the further advancement of wind turbine technology, the IRR for new projects is increasing. By 2020, only projects with an average wind speed of less than 6 m/s will be additional. A general exclusion of wind energy would unjustly punish these projects.
In my view, approx. 15-20% of CERs between 2013 and 2020 are not additional.

16 What is the authors' estimate for the ratio between actual reductions achieved through project measures and the number of allowances issued?

Do the authors take these limits into account when assessing the additionality of emission allowances?

A	---
CF	---
PP	---

17 How do the authors solve the problem of additionality for shorter crediting periods?

A	The study recommends 2 reforms related to crediting periods: (1) to introduce the reassessment of the baseline scenario as a new requirement for certain problematic project types and (2) to limit the overall length of crediting for specific projects types. Both suggestions address the concern that long term baseline scenarios may become invalid over time leading to potential over-crediting. The question of additionality in this respect is not addressed. However, project developers depend on a stable und rather long-term investment environment which includes also the future CER income stream taken into account when the investment decision is made.
CF	This problem is not addressed. There is an inverse relationship between financial additionality and the length of the crediting period. The shorter the crediting period, the smaller the contribution from carbon revenues to the project's financials.
PP	The problem is not solved by the authors. Basically, the general reduction of crediting periods is an unsuitable policy instrument. It only punishes technologies with long payback periods. However, these are precisely those technologies that are particularly important for the transformation towards a low-carbon economy. Instead of restricting crediting periods, the baseline scenarios should regularly be adjusted for long crediting periods. This should be done by previously defined adjustments of critical parameters.

18 What do the authors suggest instead of E+/E-?

What is their analytic approach to the topic of lock-in? How should a lock-in be prevented?

A	According to the study the consideration of domestic policies and regulations in demonstrating additionality and establishing emissions baselines has been a controversial issue for the CDM. On the one hand (1) they could lead to perverse incentives for policy makers for not implementing policies and measures that reduce emissions so that projects in this host country can secure greater carbon revenues. On the other hand (2) they could lead to undermine environmental integrity by a) over-crediting of emission reductions and thus inflating the baseline by excluding policies and measures that reduce emissions or by b) letting (in reality) non-additional projects pass the registration process by for example allowing the exclusion of subsidies in the investment analysis and thus registering projects that are economically viable and do not face barriers (page 83). In order to address these risks the CDM EB adopted two rules which exclude the consideration of the following policies for setting the baseline: • E+ policies defined as policies adopted after 1997 which "give comparative advantages to more emissions intensive technologies or fuels over less emissions intensive technologies or fuels" and • E- policies defined as policies adopted after 2001 which "'give

	comparative advantages to less emissions intensive technologies over more emissions intensive technologies The study says that addressing both risks (2a, 2b) is rather difficult to bring together as they reflect contrasting objectives. They propose therefore to judge and conclude that the risk of over-crediting of emission reductions (2a) is likely to be larger than the creation of perverse incentives for not establishing E- policies. This leads to the recommendation to prioritize: domestic policies which reduce GHG emissions (E-) should "always" be included when setting or reviewing baselines while policies that increase GHG emissions (E+) should be excluded from consideration of baseline "only" where possible (less strong). Page 157
CF	---
PP	The authors refer to certain literature sources that claim that the lock-in is significantly less relevant than the lack of additionality of renewable energy projects. In principle, I agree with this argument and would advocate for a smooth transition from an E-policy to the consideration of incentives from climate protection policies, as soon as countries have reached a middle level of income (World Bank MICs). The transition period should last for 5-10 years.

19 The authors base their arguments on groups of countries and draw their conclusions accordingly.

Are these statements comprehensible, in particular with a view to LDCs and Africa?

A	---
CF	The authors argue that the project types with the largest market share are most critical for the overall quality of the CDM and are therefore included in the analysis. The general, and often singular argumentation of 1) assumed IRR generated (based on desk studies) and 2) market penetration of technology in a selected market (e.g. China) does not sufficiently represent the situation in LDCs.
PP	LDCs and Africa are named occasionally, but not in a systematic manner. I consider a differentiation of additionality rules on the basis of country statuses to be highly problematic. It always depends on the concrete project circumstances. The statement that CER revenues are not sufficient to finance stove projects is only valid for the period after 2013, and only for projects on the free market. Many stove projects and programmes generate significantly higher purchase prices than the ones that are paid on the secondary market. With regard to wind power in China, the study "overlooks" the literature that consider the CDM to have a strong influence on project development, like Lewis, Joanna (2010): The evolving role of carbon finance in promoting renewable energy development in China. Energy Policy 38, pp. 2875–2886. Again, the fact that the Chinese government has set a minimum price for the sale of CERs in order to provide planning certainty to the project developers, is not taken into account.

Outlook and scope of suggestions for reform

20 To what extent are the suggestions for reform oriented to the Kyoto Protocol and in particular to the review of CDM modalities and procedures?

A	Generally, the reform suggestions are oriented towards the Kyoto framework and the review of CDM Modalities and Procedures. However, several important parts of the UNFCCC discussions are not addressed, for example, the reform suggestions with regard to CDM governance and the role of designated national authorities. The recommendations are generally in line with the EU position, in particular, with regard to standardised baselines and "positive lists" (though the authors' position is more critical – see question 25). Many recommendations are in line with the "Technical paper on issues relating to possible changes to the CDM modalities and procedures" (FCCC/TP/2014/1) of 2014, e.g. moving away from the "one-size-fits-all" approach towards greater consideration of sectoral and national policies; increasing the use of the common practice analysis; assessing the additionality of the project activities at the time of the renewal of the crediting period, etc. Other recommendations go significantly beyond the UNFCCC documents, for example, the recommendations to shorten the prior consideration grace period from 180 to 30 days; exclude the investment analysis as an approach for demonstrating additionality for projects types for which the 'signal to noise' ratio is insufficient to determine additionality with the required confidence; entirely abolish barrier analysis is as a separate approach in the determination of additionality at project level; generally abolish the renewal of crediting periods but allow a somewhat longer single crediting period for project types which require a continuous stream of CER revenues to continue operation; abolish the eligibility of wind, hydropower, fossil fuel switch and supply-side energy efficiency project types such as waste heat recovery under CDM, etc.
CF	In its recommendations, the study sits between the Kyoto Protocol and the Paris Agreement. It certainly contains an impressive and relevant compilation of in-depth analysis and technical reform suggestions directed at both the CDM M&P and decisions of the CDM EB. But it also judges the overall credibility of the CDM pipeline makes recommendations to the future use of crediting mechanisms under the Paris Agreement. This is problematic because the study does not discuss the differences in context given by the adoption of NDCs by all countries which may trigger an entirely different approach to additionality.
PP	The reform proposals are generally within the Kyoto framework and are strongly oriented on the negotiating positions of the EU with respect to CDM M & P. They do not take into account that this process has now been established. The authors cannot be accused of this as the European Commission has delayed publication of the study over a year.

21 Do the suggestions for reform reflect the requirements of the Paris Agreement?

Do they include the upscaling of mechanisms and integration into NDCs?

A	The study does discuss the future of crediting mechanisms under the Paris Agreement, the integration in the NDC context as well as upscaling of the mechanisms. However, it states that "in terms of its standards, procedures and institutional arrangements, the CDM forms certainly an important base for the elaboration and design of future mechanisms for international carbon markets" p. 20). The main reform suggestion (pages 163-164) of the authors is to opt for emission trading systems and carbon taxes and move away from international crediting mechanisms. Crediting is seen to play only a limited role after 2020, though the authors admit that the CDM is to a large extent relevant for other international carbon offset or crediting programs, such as the Japanese Joint Crediting Mechanism (JCM), the Climate Action Reserve (CAR), the Verified Carbon Standard (VCS) or the Gold Standard (GS), and that several elements of the CDM could be used when implementing the mechanism established under Article 6.4 of the Paris Agreement or when implementing (bilateral) crediting mechanisms under Article 6.2. It should be noted that in principal that mechanisms like JCM or voluntary standards have the potential to be used in the context of Article 6 as well as the Carbon Offset and Reduction Scheme for International Aviation (CORSIA) developed by the International Civil Aviation Organization (ICAO). Restricting the development of new and the use of existing crediting mechanisms (like JCM) after 2020 might be problematic given the fact that the establishment of emissions trading systems is known to be a long-term highly complicated process and many developing countries do not dispose of the necessary domestic capacities to realise that. The study illustrates an important implication of the change from the Kyoto framework to the Paris Agreement and the NDC context. In particular, in the Paris context, additionality and over-crediting will mainly be a problem when host countries have weak mitigation pledges above BAU emissions, because host countries with ambitious NDCs would have to reduce other GHG emissions to compensate for the adjustments to its reported GHG emissions made after the international transfers of the credits. The study also fairly raises the question of a potential lack of demand for international credits. It should also be noted that the recommendations made by the authors with regard to possible improvements to the CDM can only be limitedly discussed in the context of the Paris Agreement in the absence of a rulebook for the new mechanisms under Article 6.
CF	---
PP	It is argued relatively superficially. For example, it is argued that instead of the creation of emission credits, results-based funding would achieve the same results. This does not take into account the fact that the private sector will react much less to results-based financing, since this involves very bureaucratic procedures and the volume of such funding is highly uncertain.

22 To what extent did the authors take the CDM issue of governance into account?

How closely do the suggestions for reform relate to these problems?

A	This field is left out of the scope of the study and the recommendations made

	by the authors are not related to governance issues.
CF	---
PP	This question is not discussed at all.

23 Does the study consider the various options for governance in future (rules vs. board)?

A	The study does not cover governance issues.
CF	---
PP	No.

24 How do the authors assess the degree of political influence on bodies and the Kyoto Protocol?

Do they have any recommendations for the future?

A	The study does not cover governance issues.
CF	---
PP	This is not discussed at all.

25 Are the ideas for reform previously put forward by the EU and the AGN considered?

Have the authors explained and substantiated their proposals with a view to the previous suggestions of the protagonists of the CDM reform?

A	The study does not deal with concrete reform proposals made by single countries or negotiation groupings. However, the recommendations made by the authors are generally in line with the EU position, and some recommendations directly reflect it, in particular, with regard to standardised baselines and "positive lists". The position of the authors is, however, more critical, e.g. the use of standardized baselines is recommended to be made mandatory (otherwise the environmental integrity is considered to be lowered) and several concrete suggestions are made to improve standardised baselines as well as "positive lists" (pages 76-83, see also question 27). Some of the recommendations of the authors contradict those made by the AGN. For example, while the AGN represents the position that common practice analysis need not be addressed in the revised CDM Modalities and Procedures, the authors stress that they should play a more important role in additionality assessment. Moreover, while the AGN represents the position that additionality should only be assessed at the point of registration and not at the renewal of the crediting period, the authors recommend to assess not merely the validity of the baseline but the validity of the baseline scenario for CDM projects that are potentially problematic in this regard at the renewal of the crediting period (page 156).
CF	---
PP	The study does generally not address the negotiating position of countries. Even if it did, it would be obsolete in view of its one year publication delay by the EU Commission.

26 How realistic are the authors' suggestions for reform?

A	Given the difference of the negotiation positions and the far-reaching nature of some of the recommendations, it might be assumed that the reform proposals are not really realistic.
CF	---
PP	A significant part of the reform proposals is not enforceable in today's negotiating situation.

27 Do the authors think the CDM tool set should be continued?

What do they think about standardisation processes?

A	Yes, they do. The use of Standardised baselines is generally considered positive provided that they are made mandatory and better quality assurance and quality control is guaranteed. The authors also recommend that the practice of using the same methodological approach for the establishment of standardized baselines for all sectors, project types and locations should be abolished (page 157). With regard to "positive lists", the authors recommend that the review of validity of "positive lists", which is already conducted for some of them, should be extended to other project types, in particular those covered by the microscale additionality tool or approaches used in relevant methodologies; that positive lists must address the impact of national policies and measures to support low emissions technologies (so-called E- policies) and be accompanied by negative lists.
CF	---
PP	Many methods are judged by the authors as moderately robust and conservative. Standardization is cautiously assessed positively as far as method parameters are concerned. Positive lists are generally critically evaluated.

Professionality, reflection and institutional setting

28 Where applicable, have the authors dealt with their own role in the CDM executive board, reviewed it critically or given reasons why they agreed to projects that they no longer consider additional?

A	This aspect is not covered. However, the study points out the approval of the "Guidelines on objective demonstration and assessment of barriers" by the EB as positive example of how the CDM regulator can react to identified weaknesses in the rule setting (p 59).
CF	---
PP	No.

29 Do the authors criticise the existence of such bodies?

Do they advocate making such bodies more professional?

A	No, there is no reflection on that. The study mentions positive (see questions 28) and more negative results of the work of the EB. Regarding the latter the arguing is first, that some of the simplifications promoted undermined the integrity of some project categories. This refers one the one hand to the role of some of the positive lists that have been introduced for technologies where the additionality is questionable (e.g. efficient lighting is mentioned). On the other hand, the authors argue that the CDM EB did not exclude certain project types with have a low likelihood of additionality. So the critique is that the EB should have addressed the false positives instead of only focusing on the false negatives. It can be interesting to further analysis or discuss what this means with respect to the overall institutional performance but that was apparently not the main question of the study.
CF	---
PP	No, there is no analysis of the decision-making processes in the CDM committees. Also relevant literature (e.g. Flues, Florens; Michaelowa, Axel; Michaelowa, Katharina (2010): What determines UN approval of greenhouse gas emission reduction projects in developing countries? An analysis of decision making on the CDM Executive Board, in: Public Choice, 145, p. 1-24) is not taken into account.

30 The study was carried out in a phase in which the CDM has seen a downward trend over several years.

Do the authors take the many pointers into account which suggest that the CDM has had financial problems from the start due to a lack of investments and implementation or the cancellation of projects and the abrupt stop of new developments?

A	This trend is mentioned but is not at the heart of the argument.
CF	---
PP	The difficult market situation is only a marginal issue. It is only argued that in the current market situation, all projects with revenues beyond CERs are not additional.

Comments given by:

A: Adelphi, Dennis Tänzler

CF: Climate Focus, Sandra Greiner

PP: Perspectives, Axel Michaelowa