

**Subject: IETA Submission to SBSTA on the Incorporation of Materiality into the CDM**

28 March 2011

UNFCCC Secretariat  
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Dear Mr. Kumarsingh,

I am writing to you in response to the call for input in *Further Guidance Relating to the Clean Development Mechanisms* requesting views on the incorporation of the concept of materiality into the CDM. As this issue has been on the agenda of the CDM Executive Board and the COP several times now without resolution, IETA would like to take this opportunity to thoroughly discuss the issue of materiality in the CDM. We will explain what the concept of materiality means, describe how other emissions systems deal with materiality, and provide some examples of materiality in the CDM concept. We will then provide IETA's views on the specifics of how materiality should be incorporated into the CDM.

## The Basic Idea and its Rationale

### What is the concept of Materiality?

An audit entails an investigation of the veracity of the data provided to the auditor. The concept of materiality embodies the idea that there is a threshold beyond which the pursuit of further potential errors is no longer worth the financial cost, time, and effort required because, at some point, any errors discovered are likely to be *immaterial*, and therefore a materiality *threshold* has been reached. Incorporating the concept of materiality into auditing guidelines drives audit findings to provide confirmation, based on sampling and other audit activities, that the outcome is reliable for its intended use.

*Example of materiality when auditing compliance: The DOE could allow the use of a monitoring technique that is not identical to that prescribed in the project's monitoring plan, but provides equivalent accuracy, based on the DOE's expert judgment.*

*Greenhouse gas emissions reports audited under the CDM include the project design documents (PDDs) and monitoring reports provided to DOEs by project participants when they are in the process of submitting requests for registration or issuance of CDM projects. DOEs submit validation (registration) and verification (issuance) reports to the CDM EB to certify, with reasonable assurance, that the information in PDDs and monitoring reports is correct.*

The concept of materiality was first used within financial auditing to help determine when there are significant (or, *material*) misstatements, errors, or omissions in financial statements. Materiality is now also commonly incorporated in the guidelines for the auditing of greenhouse gas emissions reports. Several examples of the use of materiality are covered later in this document.

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When auditing GHG data, the concept of materiality can apply to any part of the reported data, including quantification (for example, where data errors or omissions have been identified), uncertainty (for example, where calibration of meters has not been properly undertaken), or compliance (for example, where there has not been exact adherence to a monitoring and reporting plan- see box to the left).

### Why is materiality so important?

The failure to formally incorporate an understanding of materiality into the CDM leads to unnecessary delays in the system and carries substantial additional costs in terms of money, time, and (not to be taken lightly) the sanity of DOEs and secretariat reviewers.

DOEs are already applying materiality as they complete their validation and verification reports for CDM projects. It is impossible to conduct a reasonable verification without the concept of materiality and the acceptance of a reasonable level of assurance.<sup>1</sup> A DOE cannot check every data element in a monitoring report, and so must make a professional judgment about where to place more and less emphasis in its assessment. In many cases, the CDM secretariat is also applying some conception of materiality when it checks project submissions.

The problem lies with the fact that the conceptions of materiality being used by the different DOEs and by the secretariat are not harmonized. Having clear materiality guidelines for DOE analysis and secretariat reviews will lead to more consistent audit results across DOEs and less discrepancies between the findings of the DOEs and the secretariat. Because they are working on the basis of different ideas of what is and is not material—with the idea of what is material changing from person-to-person in some cases—the secretariat routinely asks DOEs today to provide proof that they have checked information that the DOE has deemed to be immaterial. This causes unnecessary strain on the Secretariat and

*Materiality will not necessarily reduce the auditing costs of every project— If an error or omission is detected, work must still be done by the DOE to demonstrate that it is immaterial. In the CDM context, however, materiality will bring an invaluable benefit by reducing the amount of project reviews and costly and frustrating delays that come with them because if an issue arises during an audit, auditors will be able to explain the issue, confirm that it has no material impact (using the guidelines on materiality provided by the CDM EB), and request registration or issuance without needing, for example, to request approval of a deviation from the monitoring plan.*

delays in the process of project registration and issuance. It also leads to the unnecessary questioning of the integrity of the DOEs and has an impact on the ability of DOEs to take on new work because they get tangled up in a back-and-forth game of question-and-answer with the secretariat.

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<sup>1</sup> The section “What is meant by ‘level of assurance’?” can be found below.

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**The Technical Details.****When is a potential error deemed immaterial?**

Professional experts are needed to judge the materiality of a potential discrepancy because there is a level of subjectivity involved in determining what is material and what is not. In judging if a potential discrepancy would be material, these experts must keep in mind the needs of the intended user of the information. Indeed, the International Standards Organization (ISO) recognizes that a potential discrepancy should be considered *material* when it is probable that the decision of the intended user of the information would be influenced by that discrepancy.<sup>2</sup>

In the case of the CDM, the intended user is the CDM Executive Board, and the Board is using the information to determine if a project is additional and/or how many emission reductions will be (in the case of registration) or have been (in the case of issuance) achieved by the project.

The determination of additionality and emission reductions requires the consideration of many different types of information and pieces of data. This information comes in both quantitative (non-numerical) and qualitative forms. During the process of validation, the amount of qualitative information being checked is greater and, during the process of verification, the amount of quantitative information being checked is greater. Materiality needs to be applied to both qualitative and quantitative judgments, however, in order to ensure that time and energy is not being spent unnecessarily. See the box above for examples of how materiality would be applied in practice to quantitative and qualitative judgments.

*Materiality for Qualitative Judgments*

Annex 1 of the PDD provides contact details for the project participants involved. Few DOEs would spend time checking to see if the phone numbers work, since this is considered immaterial and would not change the decision to register a project. If the secretariat discovers an incorrect phone number during the completeness check phase and is not incorporating a similar judgment of materiality in their reviews, then they would not only spend time requiring the DOE and project participant to correct the mistake but that project may also be kicked back to the end of the registration queue, causing a significant delay in their project registration and a reduction in the CERs earned by the project, simply for an incorrect phone number.

*Materiality for Quantitative Judgments*

Materiality can be a useful concept when determining additionality using an investment analysis during the validation process. Imagine that a methodology sets a benchmark stipulating that the Internal Rate of Return (IRR) of a project must be lower than 10% in order to be deemed “additional”. For this particular project, however, there is some data that is very cumbersome to assess. With the materiality threshold in mind, the DOE can simply run the calculation with the least conservative possible number for that data. If, even with the least conservative value the IRR still does not rise above the benchmark, then not checking this data will not affect the additionality of the project.

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<sup>2</sup> ISO 14064-3, Annex 2.3.8

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**What is level of assurance?**

Assurance is the degree of certainty by which a GHG assertion can claim to be accurate. An absolute level of assurance is not possible to achieve, as it would require constant monitoring by experts and the testing of every parameter and data entry. In GHG auditing there are generally only two levels of assurance that an auditor aims to achieve: *reasonable* or *limited*. A reasonable level of assurance takes the form of a positive statement by the DOE that a GHG assertion is materially correct and is in accordance with the relevant standard. A limited level of assurance, on the other hand, would indicate that there is no evidence that it is *not* materially correct or *not* in accordance with any standards.

**What is a materiality “threshold”?**

For some judgments about the materiality of quantitative data, materiality “thresholds” are commonly used. When looking at statistics, the definition of a materiality threshold sets the parameters within which it is appropriate practice to analyze quantitative data for error. For example, the European Union Emissions Trading Scheme (EU ETS), sets a materiality threshold of 5% for installations with annual emissions lower than 500kt. In this situation, auditors must still report on omissions or discrepancies that they find regardless of size, but they are directed to *focus* on finding errors that can cause a change in the overall emissions by 5% or greater. In particular, verification processes are focused on the parameters that can influence emissions reductions by the greatest amount, and the parameters that are most likely to be inaccurate. This allows the greatest discrepancies to be identified and minimizes the allocation of scarce time and resources towards parameters with insubstantial, *immaterial* impacts on emission reductions, as well as parameters unlikely to be inaccurate. The box below provides an example of a materiality threshold in practice in the CDM.

*The application of materiality should be applied by the auditor on the results of their overall evaluation, since the auditor is ‘certifying’ the final data set. For example, one hundred small errors of 10 tons, may be material, whereas a single error of 100 tons may not be.*

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*Materiality Thresholds for Quantitative Judgments during Verification*

Imagine a project applying ACM1 (Ver: 11): *Consolidated baseline and monitoring methodology for landfill gas project activities*. The project uses the majority of the landfill methane to generate electricity; only a small amount of excess gas is diverted to a flare. It uses a closed flare where the flare efficiency is determined on an hourly basis in default steps of 0%, 50% and 90% based on the time the flare temperature was above 500 degrees C.

When auditing the project, the auditor finds an indication that there *might* be an error in the device that measures the flare temperature, which *could* have led the project participants to wrongly apply a 90% efficiency rate for a period of 12 days during the 12-month monitoring period. Depending on the project-specific data, this could have a material or an immaterial impact when applying a 2% materiality threshold.

To determine whether or not this potential mistake is material, the auditor performs a calculation on the case-specific data to estimate the extent to which emissions would have been affected if the flare had operated for 12 days at 0% efficiency instead of 90% efficiency. The auditor finds that while this error has a large effect on the flare emissions, the potential effect on the total project emissions is below 2% since the majority of the gas is used for electricity generation. The auditor would not further investigate this potential error, as the effect would be deemed non-material.

*The auditor would, however, continue to take note of other potential errors.* If the summation of all of the potential errors identified crossed the 2% threshold, then the verifier would need to adjust, for example, the number of CERs issued to the project. In other words, since the auditor is ‘certifying’ the final data set, the auditor applies the concept of materiality to the results of the *overall* evaluation.

CarbonFlow, Sensitivity of total emission reductions towards changes in individual parameters – a real case study, [www.carbonflow.com](http://www.carbonflow.com)

## Materiality in Other GHG Systems

It is important to convey that all other major GHG systems and offset protocols incorporate a standard of materiality into their rules and requirements for auditors. These materiality standards allow auditors to declare a GHG assertion to be valid without requiring absolute assurance of all data. The definitions of “materiality” used in the different systems are all relatively similar, but not identical, as described below.

**International Standard (ISO)** – When designing a verification and validation regime, materiality is relevant in the quantifying of emissions reductions data. Materiality applies when there is an error or omission substantial enough that it would significantly alter a greenhouse gas (GHG) assertion made. The acceptable level that is agreed upon by all the parties would be determined based on the level of assurance required to be confident in the emissions reductions presented. If there were limited assurance in a GHG assertion, this would suggest a high materiality threshold, as it means less data has been verified. A *reasonable* level of assurance indicates a more stringent verification process and therefore a lower materiality threshold.

**Verified Carbon Standard (VCS)** – Incorporates the definition given by ISO, whereby there is a materiality threshold established that allows verification to focus on reaching a reasonable level of assurance of the accuracy of their validation with respect to material errors, omissions and

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misrepresentations. VCS also approves methodologies, which contain further criteria for projects of given types.

**Joint Implementation (JI)** – All accredited independent entities (AIEs) are required to investigate the monitoring report and verify the emission reduction assertions made by the project participants. The JI Supervisory Committee (JISC) requires that all errors be reported by AIEs when found, regardless of whether they are below the materiality threshold. Errors or potential errors below the threshold (detailed below) are omitted in determining the verification opinion by the AIEs in their report to the JISC.

**Materiality Thresholds used in different GHG systems or protocols:**

Scheme	Thresholds
<b>European Union Emissions Trading Scheme (ETS):</b>	5% for verification at installations with annual emissions lower than 500kt; 2% for installations with annual emissions above 500kt
<b>Canadian Offset System:</b>	5% of total reported emissions reductions or 1000 tons of carbon dioxide equivalent, whichever is less.
<b>Verified Carbon Standard (VCS)</b>	5% for all projects, except for mega-projects, where a 1% threshold applies
<b>Joint Implementation (JI):</b>	5% for projects with annual emissions lower than 100kt and 2% for installations with greater annual emissions
<b>Clean Development Mechanism (Draft Standard proposed by the Secretariat):</b>	0.5% for projects with annual emissions above 500kt, 2% for large scale projects less than 500kt, and 5% for small scale projects

**IETA Recommendations:**

The CDM verification guidelines already state, in Para 77, that validation reports include all information on emissions that are greater than 1%. This is effectively applying a materiality threshold, as it indicates that information with an impact on expected average annual emissions reductions that is less than 1% should be ignored by DOEs, because it is regarded as insubstantial. IETA is, therefore, encouraging the CMP and the EB to broaden these guidelines on materiality, as well as make them more explicit – as is the case in other GHG systems.

IETA believes that it is imperative that a clearly defined conception of materiality is introduced into the whole CDM framework as soon as possible. It should meet the following criteria:

- It should require that DOEs provide a *reasonable* level of assurance in their assessment opinions.
- It should apply during validation and verification, to qualitative and quantitative information, and to prescriptive and non-prescriptive requirements.
- It should be utilized not only by DOEs but also by the CDM secretariat and EB during the review process.

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- It should be thoroughly incorporated into the Validation and Verification Manual and all methodologies and other guidance.

IETA also recommends that the incorporation of materiality into the CDM should be accompanied by a series of training sessions and workshops for DOEs; CDM EB, Panel and Working Group members; and secretariat staff. We believe such training will be necessary to ensure a common understanding of the concept and its applications in practice.

Finally, IETA suggests that the CMP and CDM EB aim to harmonize as much as possible the materiality approach taken under the CDM with existing approaches in the EU ETS, ISO, VCS and JI. IETA believes that it is in the interest of the Parties to consider and adopt a level of materiality that reflects those currently implemented within the other carbon offset systems. This would help prevent the development of a double standard for materiality across systems.

### **Closing:**

IETA would like to reiterate that ensuring that the concept of materiality is not only applied by the DOEs but also by the secretariat and the EB in the review process is critical. It would likely reduce the number of reviews at issuance and registration. Before requesting a review an evaluation would have to be made with regards to the potential impact of an error on the additionality and/or total emission reductions of the project.

Preventing insubstantial omissions or errors from disrupting the validation and verification of CDM projects is essential to making further progress toward scaling up the amount of emission reductions generated through the CDM, and the consideration of materiality will only continue to increase in importance if the UNFCCC moves to scale-up emissions reductions even further under new market-based mechanisms. Materiality is a critical issue and its incorporation into the CDM is long overdue.

IETA would like to thank the Parties for giving us this opportunity to express our views. We remain available for further comment as the discussion moves forward.

Sincerely,

A handwritten signature in black ink, appearing to read 'H. Derwent', with a long, sweeping flourish extending to the right.

Henry Derwent  
President and CEO, IETA