ASSURING THE INTEGRITY OF EMISSION REDUCTIONS FOR THE CLEAN DEVELOPMENT MECHANISM

NOVEMBER 9, 2000

Prepared for
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, D.C. 2060

Under EPA Contract
GC0032 QT-DC-00-003290

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ASSURING THE INTEGRITY OF EMISSION REDUCTIONS FOR THE CLEAN DEVELOPMENT MECHANISM

The Kyoto Protocol provides the international community the opportunity to cooperate to achieve reductions in greenhouse gas emissions quickly and efficiently through flexibility mechanisms: Joint Fulfillment (Article 4), Joint Implementation (Article 6), the Clean Development Mechanism (CDM, Article 12), and International Emissions Trading (Article 17). This paper focuses on the CDM, which allows industrialized countries to obtain credits (certified emission reductions - CERs) for funding greenhouse gas reduction and removal projects in developing countries. Options for the modalities and procedures for the CDM have been outlined for consideration by the sixth session of the Conference of the Parties (COP 6 - November 13-24, 2000).[1] Most of the decisions that must be made regarding the CDM can be grouped into three basic categories:

- ***The conformity assessment framework*** for CDM which includes elements such as validation, registration, verification and certification, and encompasses the institutions, responsibilities, and procedures needed to implement the framework;

- ***The implementation framework*** for CDM encompassing considerations such as registry/reporting, participation in CDM, the relationship between participants, project financing, equity goals, issuance of CERs, and the distribution of project benefits; and

- ***The usage framework*** for CDM encompassing considerations such as limitations on the use of CERs, and the relationships between the three different flexibility mechanisms.

This paper summarizes how the integrity of the CDM can be achieved and maintained through *the conformity assessment framework* for the CDM.[2] This paper also provides context for some of the key choices regarding institutions and processes for the conformity assessment framework that are posed in the Chairmen's Text.

The main points presented in this paper include:

- While standards are the bedrock of all conformity assessment systems, sole reliance on established standards can pose barriers to innovation. In cases where appropriate standards have not yet been developed for projects, processes should be provided (such as those in the Chairmen's Text) that allow these projects to be evaluated and registered.

- In the initial stage of the CDM, we believe that a single accreditor would best ensure a competent and credible accreditation system. Initially, the Executive Board might best be able to perform this function. Later, another body(ies) could undertake this function.

- Ongoing surveillance (i.e. spot checks) of Operational Entities (OEs) is typically performed by accreditors in many existing conformity assessment systems, and we think

[1] "Mechanisms Pursuant to Articles 6, 12, and 17 of the Kyoto Protocol. Text by the Chairmen. Addendum." FCCC/SB/2000/10/Add.2. 26 October 2000. (Hereafter: "Chairmen's Text").

[2] For more detail regarding all of these topics and related topics, see Environomics Incorporated, *Options for Process and Institutional Arrangements for Conformity Assessment for the Clean Development Mechanism*, Prepared for the U.S. Environmental Protection Agency, Contract 68-W4-0022. November, 1999.

that accreditors are in the best position to perform this important function for the CDM.

- In some conformity assessment systems, accreditation is required for both the organization and for key employees. For the CDM, we think that consideration should be given to requiring some employees to be accredited in addition to OEs.

- Due to the very different types of expertise needed, separate accreditation should be required for OEs performing validation/registration services from those performing verification/certification services. Separate accreditation for validation/registration may also be needed by project type (e.g., source projects versus sink projects).

- To minimize the potential for conflict of interest for a given project, different OEs should perform the validation/registration than perform the validation/certification.

- While the conformity assessment system provides reasonable assurance that CERs are valid, it does not guarantee it. Appropriate liability further enhances integrity. Other measures minimize the impact of the rare incidence when CERs are found to be invalid.

I. INTRODUCTION

Key to the success of the CDM will be the establishment of effective, credible and efficient institutions, processes and requirements for assuring the validity of CERs. There is already substantial experience in international commerce regarding how institutions, processes and requirements can be successfully combined to ensure that products and processes are acceptable. These systems are generally referred to as "conformity assessment" systems, and arose out of the need to assure buyers that products will suit their needs.

The details of the different existing conformity assessment schemes vary widely, reflecting the specifics of the purpose of the systems, the nature of the products, previous historical arrangements, and the countries involved. However, regardless of the details, one way or another, each system has the same core functions. Defining, designing and creating the necessary institutions and processes need not reinvent the wheel. Surely, some aspects of CDM are unique[3], and this must be reflected in a conformity assessment system for CDM. Nevertheless, the basics of conformity assessment still apply.

The essential and well-established process stages used in existing international conformity assessment programs that apply to CDM include:

1. Standard Setting. Standards are set by an appropriate authority establishing the requirements for accreditation, projects and project proposals, validation, verification, and certification.

2. Recognition. An appropriate authority recognizes that an organization (the "accreditation body") has the qualifications and authority to accredit Operational Entities.

3. Accreditation. Operational Entities (OEs) are accredited by a recognized accreditation body (ies) upon determining that they are qualified in accordance with standards. In some conformity

[3]Not the least of which is the fact that the "product" in CDM is in fact the absence of a product - i.e., the absence of greenhouse gas emissions that would otherwise have occurred.

assessment systems, the individuals working for the OEs are also accredited.[4]

4. Validation & Registration. ***Validation*** is performed by an accredited OE to i) determine whether a proposed project will likely meet standards and ii) establish or formalize project-specific requirements, including monitoring requirements, for subsequently verifying the project's emissions reductions. A successful validation leads to registration.[5] A project is ***Registered*** if it meets all of the requirements of the validation and any other registration requirements. Validation and registration may be two-step process involving different institutions or may be performed by one institution.

5. Verification & Certification. ***Verification*** is performed by an accredited OE to determine whether the project actually meets standards in accordance with the requirements of the validation and registration, and to establish the actual emissions reductions and removals accordingly. A successful verification leads to certification.[6] The emissions reductions and removals are ***Certified*** by an authorized body if the project passes the requirements of the verification. Verification and certification may be a two-step process involving different institutions or may be performed by a single institution.

We note that much of the discussion regarding institutional roles, responsibilities and processes for CDM has used language that can have imprecise meanings. We have attempted to be clear about the terminology we use, and throughout this paper we adhere to the above definitions of the key aspects of conformity assessment as they apply to the CDM.

The Chairmen's Text poses a number of choices regarding how these stages would be implemented and which institutions would be involved, including their composition and responsibilities. Figure 1 and it's accompanying notes show how these process stages can be implemented within the context of Article 12 of the Kyoto Protocol, as described in the Chairmen's Text. The remainder of this paper provides context for some of the key choices that are posed in the Chairmen's Text:

II. Standard Setting briefly emphasizes the importance of standards, as well as the need to provide flexibility to accommodate innovation.

III. Accreditors and Recognition/Accreditation describes the role of accreditors, the critical characteristics that accreditors must possess, the resulting implications for who can perform accreditation, how many there should be, and the appropriate institutional arrangements.

IV. Operational Entities and Validation/Registration & Verification/Certification summarizes ways to assure that OEs are qualified and free from potential conflicts of interest.

V. CDM System Integrity and the Role of Liability summarizes how integrity in CDM is maintained and the role of liability for project participants, OEs and others.

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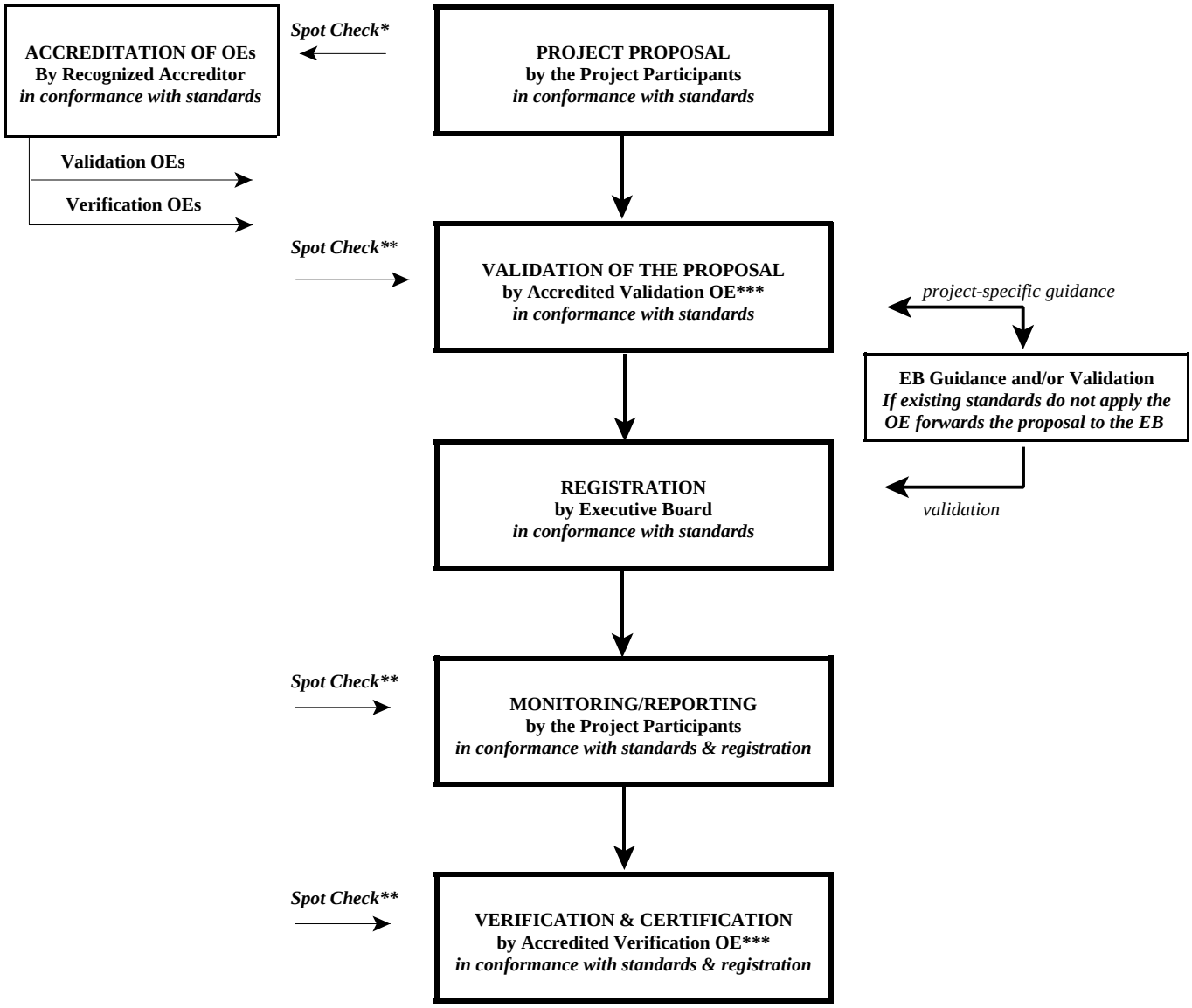
[4]In conformity assessment parlance, the OEs would be called "auditing organizations," "certification bodies," or "registrars." In conformity assessment parlance, when the individual auditors working for the OE are also accredited, they are "certified."

[5]In conformity assessment parlance, the validation would be called an "initial inspection."

[6]In conformity assessment parlance, verification would be called an "audit."

FIGURE 1
APPLICATION OF CONFORMITY ASSESSMENT PROCESSES TO CDM



** Spot check of the Accreditor is performed by the Executive Board (if the EB is not the Accreditor).*

*** All other spot checks are performed by the Accreditor.*

**** To minimize the potential for conflict of interest, each project would involve two different OE organizations: the Validation OE and the Verification OE.*

EXHIBIT 1
NOTES FOR FIGURE 1

PROCESS	APPLICABILITY TO THE CDM AS REFLECTED IN THE CHAIRMEN'S TEXT	
Standard Setting	***Subject***	***Standards/Requirements for:***
	Recognition	accreditation bodies
	*Accreditation**	OE organizations and potentially also for individuals
	*Validation**	validation processes and project proposals, including: content (including proposed monitoring and verification plans), methodologies to be used (e.g., for baselines, additionality, required studies, etc), processes (including public participation and appeals), approvals needed (e.g., host country), and other requirements that are pre-requisite for registration
	*Registration**	the registration process upon successful validation
	*Verification**	the verification process in addition to the project-specific requirements established during registration to determine the actual CERs that can be credited to the project.
	*Certification**	certifying the emissions reductions upon a successful verification.
Recognition	The COP/MOP may recognize the Executive Board as the accreditation body or may authorize the EB to establish or select a separate accreditation body (or bodies).	
Accreditation	The accreditation body (ies) will serve under the guidance of the EB. That body will either designate accredited OE organizations or submit recommendations to the COP/MOP. The accreditation body will also periodically review accredited OEs as well as perform spot checks to ensure the OEs are in still in good standing. In the Chairmen's Text, individuals are not required to be accredited.	
Validation	Performed by OEs in accordance with the UNFCCC CDM Reference Manual, the registration requirements, and perhaps other requirements. *If the project is novel (i.e., not adequately covered by the UNFCCC CDM Reference Manual),* the OE must forward the validation to the EB who will provide new guidance appropriate for the project and possibly also perform the validation. Once validated, participants submit their projects to the designated national authority of each Party involved for their approval prior to Registration.	
Registration	The EB registers projects meeting all validation requirements (an additional option in the Chairmen's Text is to combine validation and registration as one step). An appeals process is provided.	
Verification & Certification	*Verification*	Much of the basis for verification are the monitoring results which are specified in the validated project proposal and the registration requirements. To minimize the potential for conflict of interest, a different OE than performed the validation should perform the verification, in accordance with the registration requirements as well as the requirements specified by the UNFCCC CDM Reference Manual.
	Certification	Based on the verification, the OE will issue a written finding (i.e., a certification) of the emissions reductions that have been achieved during a specific time period. This step could be part of the verification step or could be a separate step.
Spot Check	The Accreditor from time to time as deemed appropriate will check the performance of any OE during any validation or verification to ensure these are being done properly. Monitoring/Reporting and Certification could also be spot checked, as could the Accreditor (if not the EB).	

**In the Chairmen's Text, the Executive Board is charged with developing and maintaining the UNFCCC CDM Reference Manual, which specifies all standards and requirements.*

II. STANDARDS

Standards are the bedrock of all conformity assessment systems. For conformity assessment systems to ensure that products are equivalent, strict standards are essential for the products, the product assurance processes, and for the institutions carrying out the processes. Through standards, conformity assessment activities ensure the validity and equivalence of CERs. Thus, all project proposals are validated according to standards; all accredited OEs must have certain qualifications and be free from real or perceived conflict of interest according to standard; all OEs performing validation or verification must use equivalently stringent and thorough procedures according to standard; CERs must be quantified according to standard; etc..

According to the Chairmen's Text, the fundamental standards are established by the COP/MOP, while more detailed and technical standards are to be established by the EB in the UNFCCC CDM Reference Manual (perhaps to be approved by the COP/MOP). Importantly, specific and clear processes provide for cases where standards do not yet apply – for example, in cases where the UNFCCC CDM Reference Manual does not cover the methodologies used in a project proposal, the Chairmen's Text requires OEs to forward such project proposals to the EB, who will determine the acceptability of the new methodology and perform the validation. Thus, strict standards can ensure conformity while also allowing for processes that provide for flexibility that avoids barriers to innovation in a program whose success is bound to be enhanced by encouraging innovation.

Many standards from existing conformity assessment systems could and should be adapted for use in the CDM, but these must be carefully revised to apply to the specific requirements and circumstances of the CDM. Many technical standards (relating to sujects such as baselines, monitoring, project types etc) will be specific to the CDM only.

III. ACCREDITORS AND RECOGNITION/ACCREDITATION

There are numerous international conformity assessment systems. The frameworks and details of the different conformity assessment systems vary widely, especially with regard to accreditation. Some of these systems are based on a single accreditor that operates worldwide, others are based on the mutual recognition of accreditors of participating nations, and others substitute other processes to achieve the accreditation function. In the summary below, we draw upon the experience of existing conformity assessment systems to:

- list some important considerations and requirements for accreditation bodies,
- identify the implications for an appropriate accreditation system for the CDM,
- emphasize the need to recognize the special needs associated with the startup of the CDM and plan for its transition to a more mature program, and
- point out that OE organizations and <u>also</u> certain individuals working for these OEs could be required to receive accreditation.

1. Important considerations regarding the accreditation function for any conformity assessment system, whether for the CDM or any other purpose.

There are several key considerations regarding accreditation that are especially important to keep in mind when considering alternatives for the CDM:

- *Accreditors must maintain a critical mass of competence.* Regardless of how many accreditors there are, each must have and be able to maintain the necessary staff expertise to perform this function. If accreditors cannot achieve and maintain adequate expertise, the integrity of the CDM will be jeopardized. At least in the initial stages of the CDM, it does not seem likely that many host countries will have the necessary expertise to staff their own accreditation bodies. Moreover, as discussed next, it does not seem likely that many individual host countries would have sufficient CDM activity to allow national accreditors to be independent or to maintain their critical mass of competence.

- *Accreditors must be financially independent of Operational Entities.* For accreditors whose financial health is dependent on the revenues they generate from providing accreditation services, each must have a sufficient "business base" so that decisions regarding accreditation for a specific OE are not influenced by financial concerns. At least in the initial stages of the CDM, and perhaps even in later stages of the CDM, it does not seem likely that there would be a sufficient number of projects in most host countries or a sufficient number of OEs in most host countries for this type of independence.

- *Accreditors should have enough accreditation activity to maintain/enhance competence.* The more experience that an accreditor can obtain, the better job the accreditor is likely to perform. The more accreditors there are, the less experience any one accreditor can obtain.

- *Accreditors perform ongoing surveillance (e.g., spot checks) in addition to initial accreditation.* Ongoing oversight of OEs is a critical function in any conformity assessment system, and this function is typically provided by accreditors. This would in include, for example, periodically accompanying and shadowing Operational Entities on selected validation or verification jobs. In most conformity assessment systems, the accreditation body is not only responsible for the initial accreditation (and periodic reaccreditation), but also for this ongoing oversight. In some conformity assessment schemes, the accreditation body relies upon other processes to provide the ongoing oversight, such as by requiring periodic pear review among the OEs. When designing a conformity assessment system for the CDM, it is important to ensure that the important responsibility for ongoing oversight and the approach used to achieve it is explicit and clear.

2. Implications for Accreditation within the CDM

The above factors lead us to the following conclusions regarding the most appropriate approach for accreditation within a CDM conformity assessment framework:

- *One accreditor initially and perhaps a small number of accreditors eventually, would work best for the CDM.* We conclude that most effective and reliable accreditation system for a CDM conformity assessment framework would be either:

    i) a single accreditor that serves on a worldwide basis, or

    ii) several accreditors (perhaps as few as three but probably no more than four or five) that serve on a regional basis.

This would assure that accreditors have a critical mass of competent staff that is financially independent of OEs and project developers.

In the initial stage of the CDM, it is likely that a single accreditor approach would better ensure both competence and financial independence. If desired, after the CDM matures and if the amount of CDM activity can justify more accreditors, this could readily be expanded to several accreditors with each serving on a regional basis.

- *The EB could perform the accreditation function initially.* Initially, regardless of whether a single or regional accreditor approach is chosen, the EB (or an arm of the EB) could perform the accreditation function. This may be the most practical approach in an initial, transitional stage of the CDM.

  As a general matter, any conformity assessment system for the CDM (and the CDM program itself, for that matter) may require a transition period before the "final" system can realistically be established. For the CDM to be operational and effective during this transition, the EB (and others) may have a greater role or a different role than envisioned for the longer term. A key to assuring effectiveness during the transition period and to minimizing the transition period is to explicitly recognize and plan for it. Thus, for example, during the transition period, the EB may serve as the accreditor, even if it is anticipated that at some point the EB will recognize a separate body to undertake the accreditation function; or perhaps a single accreditor may initially perform this function, even though it is anticipated that at some appropriate point in the future there will be several accreditors. Further, while the accreditation function may be expected to eventually be self-financing, during the transition period it may be necessary to provide financial support to i) cover start-up expenses and ii) ensure the independence and competence of the accreditor until CDM activity is adequate to generate sufficient revenues for the accreditor. Finally, it should be recognized that transition periods may sometimes be longer than hoped or expected, and it may not be appropriate to establish firm deadlines (as opposed to criteria) for ending interim measures.

- *Eventually, the EB could supervise, but not perform the accreditation function.* Once past the transition stage, it may become more effective for the EB to recognize another body to perform that function. First, even if the single-accreditor approach is chosen, we believe that this improves the integrity of the system because the EB can then supervise the accreditor in the same way that accreditor supervises OEs. Second, this addresses the concern that some Parties have regarding the potential bureaucratic expansion of the EB itself. Third, recognizing additional accreditors would be necessary anyway if the regional accreditor approach is chosen.

- *The accreditor(s) should perform the ongoing surveillance function.* In existing conformity assessment systems, the ongoing surveillance (e.g., spot checks) is traditionally performed by the accreditor, and we think this is the best approach for the CDM as well. In some systems, ongoing surveillance occurs through peer review by the auditors (e.g., the OEs in the CDM). We believe that there is greater system integrity if the accreditors perform the ongoing surveillance function, especially since some potential OEs have indicated skepticism regarding the extent that peer review could be relied upon for this purpose for the CDM. However, peer reviews by OEs could be considered as a possible <u>supplement</u> to surveillance by the accreditor rather than as a replacement for it.

- *Accreditation could be required for both OE organizations and for key employees.* Currently the Chairmen's Text requires that only OE organizations be accredited. The Chairmen's Text places the full responsibility on the OEs for assuring that the qualifications of the OE's staff are appropriate. It should be noted that in some conformity assessment systems, the individuals working in auditing organizations must also be accredited. Perhaps the simplest, best known example is the system for accounting services in the United States: every accounting firm must be accredited as an organization, but the employees wishing to perform certain services must also have received a separate accreditation (the "CPA") to ensure their competence. Requiring both organizations and individuals to be accredited provides an additional measure of integrity to the conformity assessment system, although it does increase the workload of the accreditor.

- *In the initial stage of the CDM, the accreditor(s) may require some funding.* In drawing the above conclusions, we have in part assumed that accreditors will eventually need to be financially self-sufficient, relying on fees from OEs and project developers to pay for accreditation services (including ongoing surveillance). Note, however, that this does not mean that an accreditor will necessarily be self-sufficient at the start. For new conformity assessment programs, accreditors have sometimes been quasi-governmental in the sense that they have received start-up funding from governmental sources in the initial stage of a program. Such start-up funding may be necessary to initiate the CDM in a timely manner, and may avoid in the early years some of the concerns regarding potential conflicts of interest that might arise when accreditors i) are financially dependent on OEs or ii) don't have the financial ability to maintain a critical mass of expertise. The strategy and means for initial funding for the accreditor and the transition to long-term self sufficiency should be clear and established at the outset.

IV. OPERATIONAL ENTITIES AND VALIDATION/REGISTRATION & VERIFICATION/CERTIFICATION

The following summarizes ways to assure that the qualifications of OEs are adequate and that they are free from potential conflicts of interest:

1. To minimize the potential for conflict of interest for a given project, different OEs should perform validation & verification.

As reflected in the Chairmen's Text, for any given project, different OEs should perform the validation/registration function than perform the validation/certification function. There would be a potential conflict of interest created if the same OE is responsible for performing the validation function is also allowed to perform the verification function. The potential exists for the promise of later work (i.e., the verification) to influence an OE to be more lax on the validation. This may just be an "appearance" problem for established OEs who have other established lines of business. However, this is likely to be of more significant real concern for relatively new OEs who have few initial prospects for providing OE services. For a given project, requiring separate OEs to perform these two functions

eliminates even the appearance of this potential conflict of interest.[7]

Other important measures, as specified in the Chairmen's Text, further assure against other ways in which conflicts of interest may arise.

2. Different types of accreditation will be needed.

Different types of accreditation will likely be needed for OEs (and individuals) that perform the validation function versus OEs (and individuals) that perform the verification function, because the skills and expertise needed for these functions are so different. Further, separate accreditation may be needed for different types of projects, since, for example, the expertise needed to validate (and perhaps also to verify) a source-based project may be sufficiently different than for a sink-based project.

- *Validation vs Verification.* The skills and expertise required for validation and verification are very different, and therefore separate accreditation should be required This difference is analogous to the difference between financial analysts (who determine whether an investment is worth making based on projections in a business plan) and accountants (who state past financial performance according to past records).

  - The OE performing validation services must be able to apply standards for the project (such as baseline, leakage, additionality, etc) to determine whether it can be validated; if the OE determines that existing standards don't really apply, the OE routes the project to the EB for validation. The project-specific requirements for the verification are then established by the project-specific requirements in the registration (in addition to general standards for verification).

  - The OE performing verification services follows the registration requirements to check and interpret project records, check or perform calculations specified in the registration, determine whether there is evidence of fraud or error, etc.

- *Different Project Types.* The ability to adequately evaluate and validate project proposals will likely require different expertise of the individual/OE regarding the specific project type. This may be less of an issue for verification, since technical judgements are less likely to be needed for verification as compared to validation. To the extent that expertise for project types is likely to be important, then separate accreditation should be required for different classes of projects, especially for validation.

V. CDM SYSTEM INTEGRITY AND THE ROLE OF LIABILITY

The conformity assessment system as a whole (standards, accreditation and processes) provides for system integrity and should result in valid CERs. An important element for further ensuring system integrity is the risk of liability which provides disincentives for negligence and cheating.

Within the scheme described in this paper, each entity is held liable for their specific actions and those aspects that are under their control. Clear assignment of appropriate liability is important for the

[7]There are other alternatives for addressing this, although they may not be as effective. For example, measures such as using different divisions within an OE firm with a "firewall" (or other measures to ensure independence and objectivity) could be responsible for performing the validation and verification functions.

integrity of the CDM, as is specification of what constitutes appropriate action. For example, the OE's duty of care and the extent of reasonable assurance they must provide, both of which determine their liability for fraud or negligence in the validation or verification, should clearly be defined by contracts and engagement letters – such contracts and engagement letters should probably be standardized. Importantly, OEs should not be solely liable for deficiencies in a validation or verification report since this can create the perverse incentive for project developers to mislead or to fail to fully or proactively cooperate with OEs – OE's should only be responsible for that which is under their control. For example, in the U.S., if an accountant makes a mistake on a tax return, the accountant is only liable for penalties, while the tax payer is still liable for the tax due plus any accrued interest (since the tax payer benefitted by the delay in paying the tax).

It should be stressed that conformity assessment does not act as a *guarantee* of the CERs. Validations attest to a project's capability to produce CERs, given that everything the OEs evaluate is true and accurate. Similarly, certifications (CERs) attest to the fact that the OEs have performed due diligence in verifying the project reports. The certifications provide confidence (or "reasonable assurance") - not a guarantee - that the reports are true and accurate. OEs provide reasonable assurance that the project's claims are free of fraud and error, but it would be virtually impossible for OEs to do more than review the data provided to them and sample the evidence. The requirements and processes for validation and verification would be expected to result in valid CERs, but there may be rare instances where CERs are found to be invalid.

In this paper we do not address measures for minimizing the impact of the rare occurrence when CERs are found to be invalid or reduced in value. Options for minimizing the impact of this occurrence might include: requiring developers to post a bond that would allow the purchase of CERs to replace those that were decertified; requiring that a percentage of CERs be placed in escrow until the end of the project (or for some period of time) to minimize the impact of decertification (these escrowed CERs could be used at the end of the project); and other measures. Measures for minimizing the occurrence and impact of invalid CERs and the liabilities assigned to the various actors should be established at the outset of the CDM program, and must reflect the control that each actor has and their respective roles.