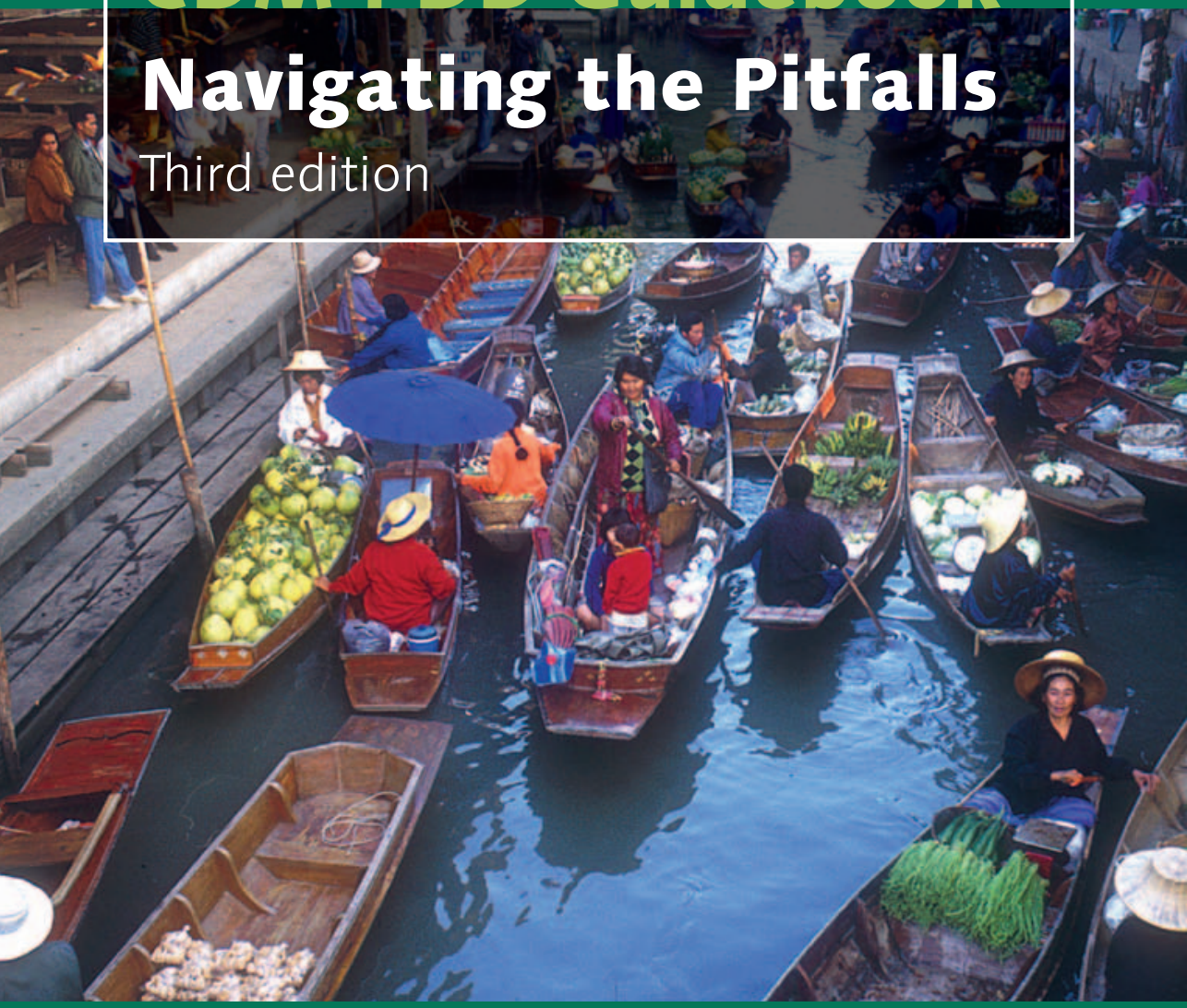
The ACP MEAs CDM Programme

CDM PDD Guidebook

Navigating the Pitfalls

Third edition



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CDM PDD Guidebook
Navigating the Pitfalls

Third edition
Developed for the UNEP project 'CD4CDM'
Updated for the EU ACP MEA/CDM Programme

Miriam Hinostroza
May 2011

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CONTENTS

Preface

Over 7,000 Clean Development Mechanism (CDM) projects have been submitted for validation since 2003. In 2007 and 2008, on average, approximately 200 new projects entered into the CDM pipeline each month. Although the number of new CDM projects has declined since 2009, on average, over 100 are still being submitted for validation each month. The number of approved methodologies has grown as well, to around 200 approved methodologies, including both large-scale and small-scale.

In the operational side, substantial experience and knowledge has been gained by different actors and stakeholders, especially by the different Designated Operational Entities (DOEs), through the process of validating the submitted projects and the verification of emission reductions, specifically with regard to common mistakes and pitfalls that the CDM project proponents fall into when preparing CDM Project Design Documents (PDDs)[1]; during the implementation of the project and when reporting emission reductions. While project proponents, too, have gained intensive experience and knowledge in CDM projects, as the CDM rules are changing and new guidelines are being issued, PDDs still include a number of errors that could have been avoided.

The Capacity Development for CDM (CD4CDM) Programme, now funded by the European Commission and implemented in ACP countries by the UNEP Risoe Centre, in support of the CD4CDM Programme implementation, is capitalizing on the lessons learned by the validation and verification process and has collaborated with Det Norske Veritas (DNV), an accredited DOE, to produce this guidebook. It draws upon the extensive knowledge of DNV, which has validated about 30% of all CDM projects coming through to the validation stage and verified 26% of all projects with Certified Emission Reductions (CERs) issued.

[1] *It should be noted that this guidebook does not give a detailed description of how to design a CDM project or how to prepare monitoring reports. For guidance on this topic, please refer to other CDM guidebooks downloadable from http://cd4cdm.org/ and http://acp-cd4cdm.org*

In this third edition of the guidebook, DNV identifies 50 common pitfalls; based on the systematic analysis of all projects it has validated and verified up to September 2010, and provides detailed guidance on how to avoid these pitfalls. This third edition includes a revised version of the pitfalls that can be encountered during the validation and verification process, and also includes a new section dedicated to the pitfalls faced by Programme of Activities (PoAs). By producing this guidebook, CD4CDM aims to indirectly contribute to the reduction of transaction time associated with CDM project validation and verification through improving the quality of the PDDs, Monitoring and Verification Reports produced.

The CD4CDM Programme would like to express appreciation to the primary contributors to this third edition of the Navigating the Pitfall Guidebook, including Miguel Rescalvo as Project Manager from DNV, Gabriel Baines, Shruthi Poonacha Bachamanda, Agnes Dudek, Marlene Fischer, Ole Andreas Flagstad, Wu Lin, Luis López Martinelli, Yuri Poudayel, Ramesh Ramachandran, and Weidong Yang.

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Introduction

This guidebook is designed to help readers navigate the pitfalls of preparing a Project Design Document (PDD) and a Monitoring Report (MR) for Clean Development Mechanism (CDM) projects. This third edition also aims at helping project developers navigate the pitfalls of preparing documentation required for CDM Programme of Activities (PoAs).

The purpose of the validation is to assess the project against the requirements of the CDM. The PDD, together with the validation report and the approval letter of the Designated National Authority (DNA), is the basis for the registration of the project and its recognition as a credible CDM project.

The PDD is about the project's design – that is, how the project intends to reduce greenhouse gas (GHG) emissions below those levels that would otherwise have been emitted[2]. The project developers also demonstrate that the projects meet various CDM requirements in the PDD. Each and every CDM project is unique, from the project design to the application of even the simplest baseline methodology. Some of the projects submitted for validation may be very efficient in reducing emissions and score well in terms of economic, social and environmental benefits, but may still not be qualified as CDM projects.

Experience has shown that the information needed to judge the suitability of a project for the CDM is vast and can take months to assemble. Additionally, the time required to assemble relevant information increases with the number and diversity of parties involved and the complexity of the information itself.

The objective of the verification of emission reductions is the review and *ex-post* determination of the monitored emission reductions that have occurred during a specified period. The verification is about the project's reality – that is, whether the project has been implemented as described in the registered PDD and is generating emissions reductions that are real and measurable and that are being monitored in line with the monitoring plan.

This timeframe difference (project design phase vs. project operational phase) is one of the main causes of the difference between the estimated emission reductions in the PDDs and the actual emissions reductions achieved by the project.

The Monitoring Report (MR) is the document that contains project information relevant to the collection and archiving of all relevant data necessary for determining the emissions reductions for a specific monitoring period. This document should also address the quality assurance and control procedures adopted during the monitoring period together with the documentation on the calculations of the anthropogenic emissions. The monitoring report form was released in 2010[3].

As a rule of thumb, CDM projects are to be implemented exactly as designed and described in the PDD, including the monitoring plan developed in the PDD in line with the applicable methodology. Implementing the project exactly in the way described in the PDD in a continuously changing business environment is not always easy and the project developers may have to navigate through several pitfalls at a later stage during the verification process.

This guidebook is based on the review of the PDDs submitted to DNV for validation and MRs assessed by DNV for verification. The advice given, and the pitfalls described in this guidebook are therefore based on day-to-day, hands-on experience and real examples of findings identified during the validation and verification processes.

Since the second edition of this publication the Executive Board, at its 44th meeting in November 2008, approved the first Validation and Verification Manual (VVM). To some extent this manual has helped with navigating some of the pitfalls in the sense that there is more transparency as to what criteria are used in evaluations by DOEs. However, the VVM, as with all other documents administered by the CDM Secretariat, is subject to continuous updating based on experience. Although a number of updates of the VVM have improved the document, it has not eliminated the pitfalls – hence the need for this 3rd edition of "Navigating the Pitfalls."

In summary, this guidebook takes a practical stance; it is concerned with the practical issues of how to get projects through the validation and verification process and the key aspects that need to be taken into

[2] *Dec. 17/COP7, Article 43, Marrakech accords*
[3] *http://cdm.unfccc.int/Reference/PDDs_Forms/Issuance/index.html*

account for ensuring successful validation/verification of emissions reductions.

This guidebook will help those submitting a PDD and MR by:

- Describing the most common mistakes made in the process of preparing a PDD.
- Providing guidance for completing a PDD.
- Explaining the validation process and making it easier to understand when and how to interact with the DOE validating the project.
- Describing the most common and costly mistakes made in the process of preparing an MR.
- Explaining the verification process and making it easier to understand when and how to interact with the DOE verifying the project activity.

Additionally, this edition will help project developers prepare documentation required for a PoA by describing the common mistakes made in documents and providing guidance for completing them.

PART 1: VALIDATION

CDM Project Development

Sources of information for developing your project

When the Clean Development Mechanism was created in 1997, no one knew exactly what the new market mechanism was going to look like in detail. The *Modalities and Procedures for a Clean Development Mechanism* were agreed upon as part of the so-called Marrakech Accords in 2001. This is the key reference on all requirements surrounding a CDM project, and can be found under the official reference *Decision 3/CMP.1*.

For example, the Modalities and Procedures document states that CDM project activities need to demonstrate their additionality, to present an analysis of environmental impacts, and to make the project plans subject to a stakeholder comment period. They also define the roles of Project Participants (PPs), Designated Operational Entities (DOEs) and the different entities of the UNFCCC.

New issues constantly arise as projects are planned and implemented. Therefore, the Executive Board and the various Working Groups and Panels of the CDM continue to issue a number of clarifications, guidance notes and tools.

When developing a CDM project, it is worthwhile to become acquainted with the UNFCCC-CDM website, where all rules and decisions governing the CDM can be found. Note particularly the "EB Documentation" under the "Rules and References" section.

An overview of the most relevant links is given in Appendix 1 of this guidebook.

Choice of methodology

Different technologies require different ways of calculating and monitoring emission reductions, and therefore the CDM Executive Board has approved close to 200 baseline and monitoring methodologies. Each of the methodologies has precise criteria defining the technologies and situations to which it applies.

One of the first items to check when developing a CDM project is whether it fits with an approved methodology. If not, you may need to propose a new methodology or a revision to an existing approved methodology. This process takes anywhere from a few months to more than a year, increasing the costs and delaying the potential CDM-based return on your project. But if it enables you to claim emission reductions that under existing methodologies would have been invalid, it may be worth the effort. Note that it is a DOE that officially submits the proposed new methodology on behalf of the project developers.

You will find a list of all approved methodologies and procedures for proposing new methodologies in the "Standards" under the "Rules and References" section of the UNFCCC-CDM website. In November 2010, the UNFCCC published a CDM Methodology Booklet that summarizes the approved methodologies to assist project developers in identifying methodologies that apply to their projects. The Booklet is available at http://cdm.unfccc.int/methodologies.

Additionally, in November 2010, the UNEP Risoe Centre launched a *CDM Methodologies and Technologies Selection Tool*, a user-driven website that allows project developers and other interested CDM practitioners to search and easily identify CDM methodology options for main technologies and project types by economic sectors. The tool also provides easy access to overviews of general economic sectors, as well as the technologies applied in a relevant sector for carbon emission reductions. It also facilitates a discussion forum that allows practitioners to exchange experience on the practical application of methodologies for specific technologies. This tool is in fact an on-line user-driven expansion of the UNFCCC CDM Methodology Booklet. The *CDM Methodology and Technology Selection Tool* is available at http://cdm-meth.org.

The Validation Process

Validation of a CDM project is an independent assessment of the project plans by a DOE, and it is a requirement for registration of a CDM project. This section describes in general terms the validation process and the timeline for CDM project development. Its objective is to help those submitting a potential CDM project for validation to:

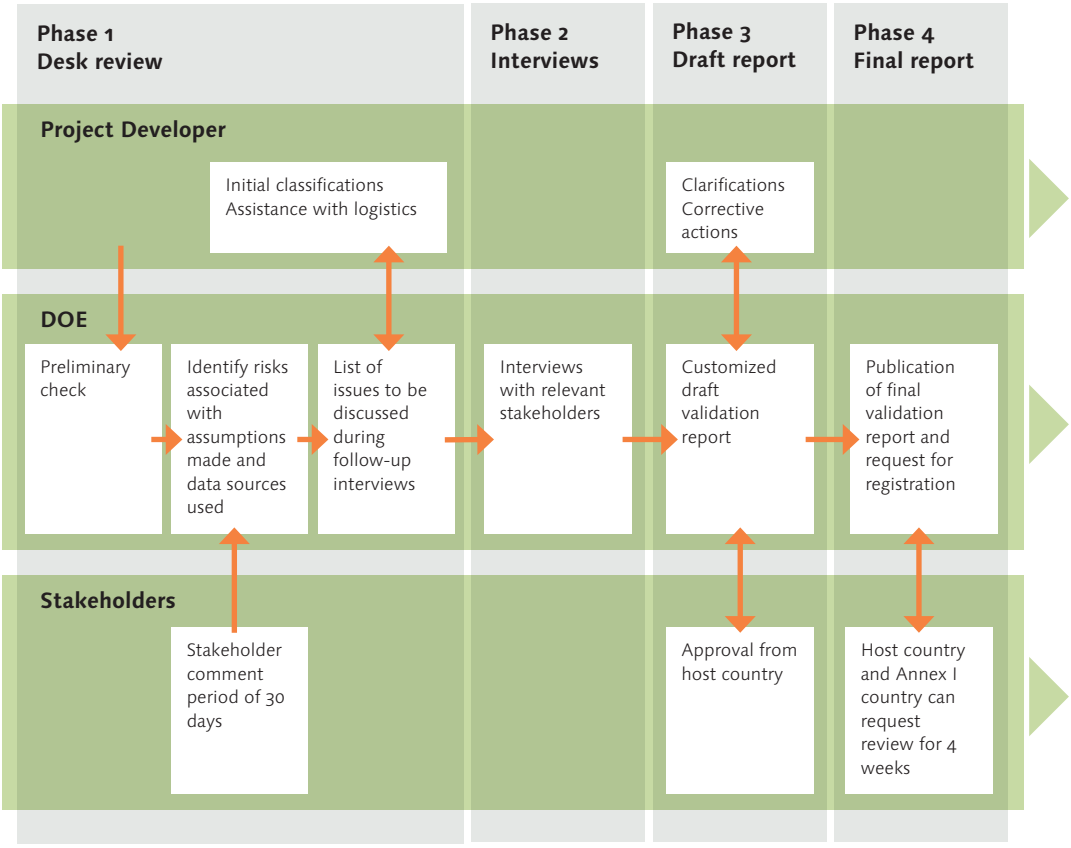
- Better understand the validation process and the different stakeholders involved in this process.
- Better understand what information is required by the DOE for validation of projects.
- Better plan for a realistic timeline.

Figure 1 shows the interaction between the project developer, the DOE, the DNA of the host country, the CDM Executive Board (EB) and other stakeholders affected by the project activity, such as the local population.

Figure 1 shows that although the project developer is responsible for the project design process, the DOE is the central player driving the validation process as a whole. The EB may be involved if there are deviations from the methodology that cause the DOE to request guidance from the EB.

It is also important to note the complexity of the process. During the first two validation phases, the project developer is mostly not involved. The DOE is busy assessing the project in its totality and assembling facts and background information to construct as realistic and, most importantly, as independent a picture of the project activity as possible. Many activities are being carried out in parallel during the validation process, especially in Phase 3. It is therefore crucial that the different parties maintain communication with each other and that each of the parties involved dedicates a project manager, acting as a central point of contact, who is responsible for moving the process along and coordinating with the other parties involved. From past experience, it is clear

Figure 1 | Steps of the Validation Process

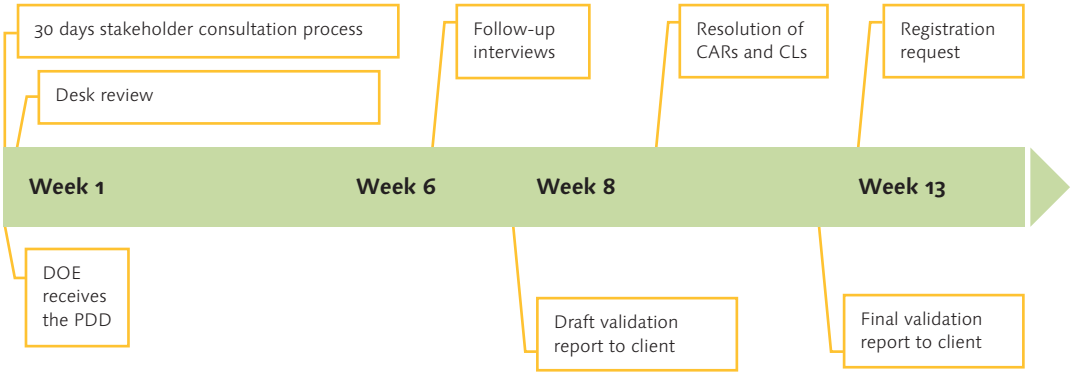


that delays often occur in the validation process due to communication problems. For example, major delays can occur in Phase 3 if project operators or DNA representatives cannot respond quickly to a DOE's request for clarification. Delays are also often the result of the time needed by project developers to resolve issues that prevent the registration of the project, or delays in the issuance of the Letter of Approval (LoA). Since rules and interpretations are continuously changing, delays in the process may result in modifications of documentation to account for new rules and requirements.

Figure 1 does not describe the timeline for passing through all of these phases. Figure 2 indicates the approximate time needed to perform each stage.

The desk review and the public stakeholder comment stages will typically be performed in parallel. Ideally, the validation process should

Figure 2 | Steps of the Validation Process



take no more than 100 days (including the 30 calendar day stakeholder consultation process). In practice, the average timeframe for a validation is well above that figure, with more than 300 days on average from the commencement of the public comments period to the submission of the request for registration[4]. Experience shows that there is not any significant difference in the time needed for the validation of a small-scale project and a large-scale project. Delays commonly occur when the project participant has to resolve outstanding issues such as Corrective Actions Requests (CARs) and Clarification Requests (CLs). In conclusion, the timeline of the validation will depend on the complexity of the project and the type and number of outstanding issues that need to be resolved by the project participants.

At the 44th Executive Board meeting (EB44) in Poznan, Poland in November 2008, the Validation and Verification Manual (VVM) was adopted. The manual was developed to provide guidance for DOEs on validation and verification to ensure quality and consistency in validation/verification reports. The latest version, 1.2, was adopted at the EB55 in 2010. The paragraphs below explain in more detail what happens in each of the validation phases.

[4] *Based on UNEP Risoe Center CDM Pipeline Overview, updated March 1, 2011, available at http://www.cd4cdm.org/*

Desk review

In reviewing the project information received from the project developer, the DOE validation team will first perform a risk analysis. Particular emphasis will be put on the identification of key risks to the validity of potential CERs. An expert from the relevant sector is involved at this stage to ensure the quality required by the UNFCCC for validation. The EB at the 52nd meeting requested the CDM Accreditation Panel to conduct an analysis on competence requirements for different functions within validations and verifications, defining technical areas and appropriate deployment of technical expertise. A "Complex technical area" requires the validation/verification team to apply multi-disciplinary knowledge and skills.

As per the VVM, the following areas are described in the protocol and reviewed during validation:

- Project design.
- Baseline assessment (including additionality).
- Emission reduction calculations.
- Monitoring plan.
- Environmental and social impacts, including the local stakeholder process.

The desk review is normally completed around the time when the 30-day public stakeholder period ends, and during this time the DOE works on its own, rarely contacting the project developer. This has often caused frustration and uncertainty to the project developers because of a sudden change from intense work on the PDD for weeks to little involvement in the desk review process.

It is critical that in addition to the PDD, the DOE has enough supportive documentation to assess the project during the desk review process. This will speed up the validation process and will ensure that the site visit/interviews are focused on specific issues. It is recommended that together with the PDD, the project developers send to the DOE:

- An Excel file with detailed emissions reduction calculations in a reproducible format (i.e., indicating the formulae applied and not only the final figures).

- An Excel file with detailed calculations of investment analysis indicators used for the demonstration of additionality (if applied) and evidence of the sources used for the analysis.

- Evidence of the project start date in line with the Glossary of CDM Terms[5].

- Evidence of the consideration of the CDM benefits before the final decision to go ahead with the project (if applicable).

- Other evidence and references that may be needed in the validation process (feasibility study reports, EIA, etc.).

Stakeholder consultation process

In parallel with the desk review, a stakeholder consultation process as required by the CDM modalities and procedures is carried out. The PDDs are published on the UNFCCC CDM site, and parties, stakeholders and observers are invited to comment on the PDDs within 30 days[6]. Any issues raised by stakeholders are subsequently addressed in the final validation report.

Follow-up interviews and site visits

The DOE will use Phase 2 to review any additional information necessary to allow it to conclude on issues raised during the desk review. This information will typically also be sourced via interviews with project stakeholders in the host country (e.g., project operators, DNA, local community) who can provide evidence of the fulfilment of requirements in cases where this has not been fully established in the desk review.

For many projects, information provided in the project documentation, such as information on the baseline scenario, can only be verified by visiting the activity in operation. DOEs perform site visits for all of the proposed projects unless it is justified that such visits are not necessary. Site visits are particularly important for the projects where baseline emissions are established *ex-ante* for the entire crediting period and are based on historical performance data. In such a case, the DOE will visit the plant to verify that the data reported in the PDD is accurate and reflects the reality of the situation at the plant.

The project developer is then contacted in order to review the list of issues raised during the desk review and to decide how these issues can be resolved. Resolution can be done via email, phone calls, or direct meetings between the DOE and involved stakeholders, such as representatives from the operating company and the DNA.

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[5] *http://cdm.unfccc.int/Reference/glossary.html*

[6] *All the projects that are open for public comments can be viewed at http://cdm.unfccc.int/Projects/Validation/index.html*

Past experience has shown that good communication between the DOE and the contact persons of the individual organizations and government agencies is crucial to keeping the process moving smoothly and quickly.

Draft validation report and resolution of outstanding issues

In the third phase, the DOE issues a draft validation report, which includes the initial findings for the client to review. The draft validation report should also include issues raised by stakeholders during their 30-day consultation period that have not already been resolved by the DOE in the desk review. Any outstanding issues that may impact the final validation opinion are presented as either:

- CARs (Corrective Action Requests) – these describe the actions required for successful project validation.

- CLs (Clarification Requests) – these describe the elaboration or supplementary evidence necessary for successful project validation.

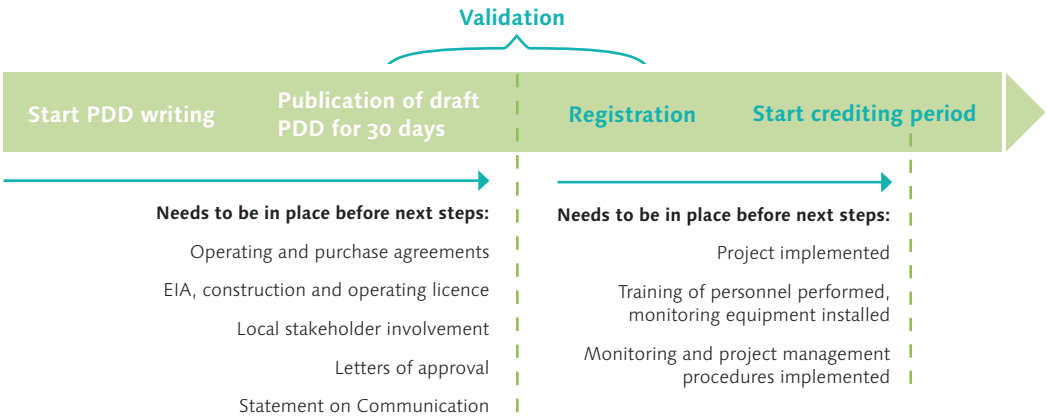
- FARs (Forward Action Requests) – these describe issues that require review during the future verification of the project activity.

This is the phase in which delays are most likely to occur, since the issues raised can take time to resolve. For example, missing LoAs from host country DNAs can take 2-5 months or more to obtain, depending on the countries involved. There is also the possibility of submitting enquires to the CDM EB, and waiting for their feedback can also require additional time.

Figure 3 shows that most of the activities that must be carried out in order to create verifiable project emission reductions need to be completed before registration. There are also some issues to be resolved at any time up to the start of the crediting period. Activities to be completed before registration are more likely to define the critical path of the project's development.

It should be noted that the validation timeframe also varies depending on host countries. For instance, some DNAs require the draft or final validation report before starting the approval process and issuing the LoA. The average time taken by DNAs to issue LoAs can vary considerably. Also, the DNA may revise their requirements, so what might be optional one year could be mandatory the next. Project developers submitting PDDs must make sure that they are up to date on the latest national requirements.

Figure 3 | Generic CDM Timeline



Final validation report and opinion and request for registration

In this final phase, a validation report and opinion are submitted to the client for review. The report will indicate whether the project, as designed and documented, meets the Kyoto Protocol criteria and CDM modalities and procedures, as well as the criteria for consistent project operations, monitoring and reporting.

Following successful validation and approval of the project by the DOE and the relevant DNAs, the DOE finalises the validation report and the project will be presented to the CDM EB for registration. The validation report is then made publicly available on the UNFCCC CDM-website. The registration is deemed final if no request for review is presented by either three EB members or one of the Parties involved within four weeks. Registration is the formal acceptance by the EB of a validated project activity as a CDM project activity and is the prerequisite for verification, certification and issuance of CERs related to the project.

Validation of Programme of Activities

In June 2007, the CDM EB adopted the procedures for Programme of Activities (PoAs) under the CDM. In a PoA, a group of similar activities to reduce GHG emissions can be bundled together and registered as a single CDM project activity. After successful validation and registra-

tion of the programme, actual project activities, referred to as CDM programme activities (CPAs), can be included in the programme in a simplified process. A UNEP Risoe Centre publication *A Primer on CDM Programme of Activities* provides the basic information on designing, developing and implementing GHG emissions reductions under a PoA[7]. Project proponents who are interested in learning more about how to develop PoAs should review this report.

As the rules regarding PoAs were developed relatively recently, the number of PoAs in the current project pipeline is still fairly small. Thus, the DOE's experience with PoAs is limited, and particularly limited to validation. As of 1 March, 2011, 15 PoAs have been registered, and 150 PoAs are at the validation stage.

[7] *http://cd4cdm.org/Publications/PrimerCMDPoA.pdf*

Validation Pitfalls

Overview of key validation pitfalls

This section provides a review of 34 key validation pitfalls in terms of commonality, frequency and tendency to cause the longest delays. The term "pitfall" is used broadly to mean "issues that need to be managed" during a validation and registration process. These pitfalls were identified in an analysis of DNV's findings from the majority of projects validated by DNV up to September 2010. This analysis identified more than 100 issues, which were consolidated into 34 key validation pitfalls. In Table 1, these pitfalls are classified by frequency of occurrence and approximate time delay caused based on lessons learned from DNV's validation of CDM projects.

Sometimes entities choose to submit PDDs before all of the documentation necessary for the validation is ready. Jump starting the validation process may shorten the time to get the project validated, but it also involves the risk that documentation and evidence required for project validation may not be available. For instance, the project developers may wish to start the validation process while awaiting the written confirmation from the DNA that the project is in line with sustainability criteria. However, if such confirmation cannot be issued, the project will not be validated and time and human resources will have been wasted.

Tabel 1 | Key Validation Pitfalls

	Delay of more than 1 week	Delay of more than 1 month
Frequency more than 20%	• Lack of logic and consistency in PDD. • Deviations from selected calculation methodology not justified sufficiently and not brought to the attention of DOEs at the initial stages of validation. • Compliance with local legal requirements not covered sufficiently. • Insufficient information on the stakeholder consultation process. • Absence of baseline data. • Poor quality of the PDD.	• Start date of the project not correct. Lack of evidence of CDM consideration. • Evidence of EIA and/or required construction/operating permits/approvals not provided. • Letter of Approval insufficient or delayed. • Extended delay by project developers to respond to CLs and CARs.
Frequency less than 20%	• Project participants not clearly identified. • The modalities of communication (MOC) with the Executive Board in terms of issuing CERs and allocation instructions are not stated clearly, or not signed by all project participants. • Insufficient description of the technology. • Insufficient explanation of baseline scenarios. • Insufficient demonstration of project additionality. • Baseline information not sufficiently supported by evidence and/or not sufficiently referenced. • Major risks to the baseline not identified/described. • Project boundaries not clearly defined. • Project and/or crediting period starting date unclear. • Deviations from monitoring methodology not sufficiently justified. • Monitoring and project management procedures not defined. • Claims in the PDD do not match the actual situation on project site. • Insufficient information on the measurement methods and source of data as part of data/parameter description in monitoring plan. • Insufficient information on physical location allowing unique identification of the project activity. • Inconsistency among CPAs. • Physical location of CPA not specific. • Crediting period of CPA starts before its inclusion.	• Small-scale methodology selected for a large-scale project. • No written confirmation that funding will not result in a diversion of official development assistance. • Non-compliance with the applicability conditions of the applied baseline methodology or compliance not sufficiently explained. • Incorrect start date for projects involving capacity expansions of operational non-CDM. • Assigning inappropriate economic values to biomass residue and reference plant. • No updated licenses and permits. • Baseline for PoA not appropriate.

Description of Validation Pitfalls

In this section, the 34 validation pitfalls listed in Table 1 are explained in more detail. Good practice and examples are presented as appropriate.

Pitfall 1: Small-scale methodology selected for a large-scale project

This mistake could arise if a large-scale project is incorrectly defined as a small-scale project.

The revised definition of small-scale projects is provided in paragraph 28 of Decision 1/CMP.2:

- Type I: Renewable energy project activities with a maximum output capacity equivalent to up to 15 megawatts (or an appropriate equivalent).

- Type II: Energy efficiency improvement project activities that reduce energy consumption on the supply and/or demand side, limited to those with a maximum output of 60 GWh per year (or an appropriate equivalent).

- Type III: Other project activities limited to those that result in emission reductions of less than or equal to 60 kt CO_2 equivalent annually.

Examples:

- The thresholds provided for each type must be met for the entire crediting period of a project. For example, if a swine manure project's emission reductions are estimated to be 65 kt CO_2e in year five, the project does not qualify as a small-scale project and a large-scale methodology has to be applied even though during the rest of the crediting period, the annual reductions are below 60 kt CO_2e.

- When a project has more than one component, for example renewable energy generation and thermal generation (Type I + Type I) or a project that avoids methane emissions from biomass and generates electricity (Type III + Type I), each component must comply with the small-scale thresholds. Project proponents might wrongly believe that a project needs to fulfill only one of the small-scale applicability criteria to be eligible as a small-scale project. For instance, a project activity with power generation capacity of 8 MW_{el} and thermal generation capacity of 60 MW_{th} was proposed as a small-scale project activity. This is not correct, because although the electricity genera-

tion capacity is less than the threshold limit of 15 MW_{el}, the thermal generation capacity is higher than the limit of 45 MW_{th}. Hence the project does not qualify as a small-scale activity.

- For several biomass co-generation systems and/or co-firing systems such as boilers, if the energy output exceeds 45 MW_{th} in total, the project is not eligible as a small-scale project.

- Once a project is registered as a small-scale project, it could go beyond the limit of its type for one specific year of the crediting period. In that case, the emission reductions that can be claimed by the project during that particular year will be capped at the limit. As an example, a project developer develops a small-scale methane recovery project. The project is qualified as a small-scale project because emission reduction estimates for each year of the 10-year crediting period are below the threshold of 60 kt CO_2e for Type III projects. For years 3 and 4, the estimated emission reductions were 40 kt CO_2e and 45kt CO_2e. During the first periodic verification, it is confirmed that the actual emission reductions for years 3 and 4 were 55 kt CO_2e and 70 kt CO_2e, respectively. In this situation, the project proponent would be able to claim 55 kt CO_2e for year 3 and 60 kt CO_2e for year 4.

Good practice:
A small-scale project activity needs to fulfil all of the applicability criteria listed in the modalities and procedures for small-scale CDM project activities for each component of the project.

Information from reliable and conservative data sources must be supplied to justify the submission of a project as small-scale. A full description is required to show that the project is eligible as a small-scale project and is below the relevant small-scale project threshold, although for projects that are not yet implemented, this cannot be completely certain until the project is operational. However, there should be a reasonable correlation between the stated project capacity (e.g., below 15 MW) and data on, for example, forecasted generation levels, turbine capacity, and other parameters. Where the justification of the small-scale eligibility is based on calculations, the input data and the calculations should be transparently and conservatively described.

- Bundle of several small-scale projects that in total exceed the eligible limits.

A related example is the submission of small-scale PDDs from a debundled large-scale project. Guidelines on Assessment of Debundling

for SSC Project Activities[8] specifies that a proposed small-scale project is considered to be a debundled component of a large-scale project if there is a registered (or in a process of registration) small-scale CDM project that is:

(a) Developed by the same project participant.

(b) In the same project category and technology/measure.

(c) Registered within the previous two years.

(d) Project boundary is within 1 km of the project boundary of the proposed small-scale project at the closest point.

A small-scale project that is part of a large-scale project is not qualified to use the simplified modalities and procedures for a small-scale CDM project. However, in cases where the total size of the proposed small-scale project combined with the registered small-scale project does not exceed the limits for a small-scale project, the proposed small-scale project can use the simplified modalities and procedures for a small-scale project.

In practice, it is not often that large-scale projects try to debundle into several small-scale projects, but sometimes project developers bundle several projects into one large-scale PDD. Four categories of bundling have been defined and each must be handled differently[9]:

- Bundling of project activities of the same type and the same category and technology/measures.

- Bundling of project activities of the same type, same category and different technologies/measures.

- Bundling of project activities of the same type, different categories and technologies/measures.

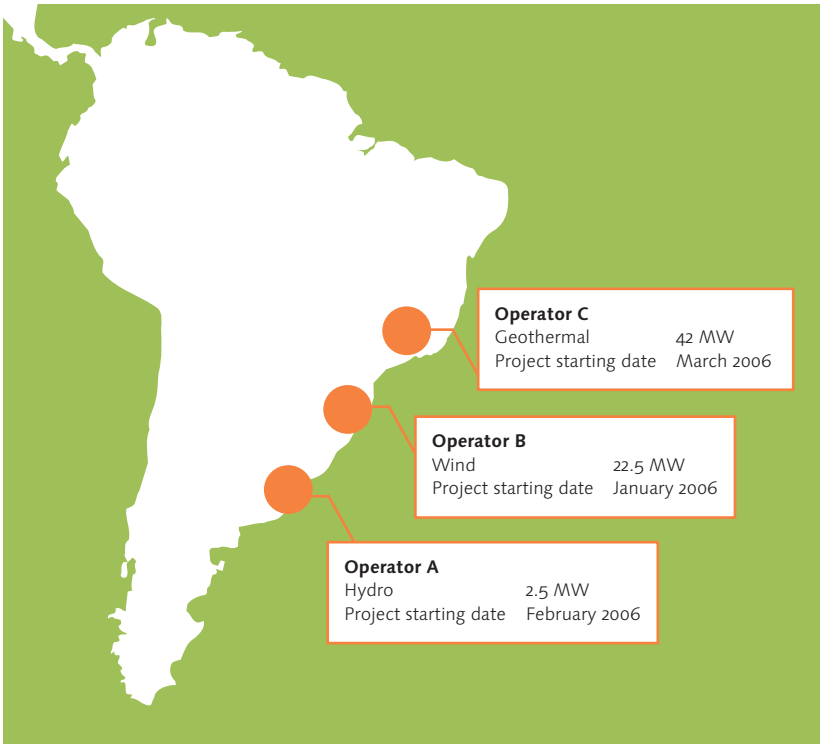
- Bundling of project activities of different types.

It is also possible to bundle large-scale projects together. For example, a project to capture and combust methane from swine manure treatment

[8] *All guidance on the determination of the occurrence of debundling is consolidated into one document, Guidelines on the Assessment of Debundling for SCC Project Activities (EB 54, Annex 13).*

[9] *Guidelines for completing the form for submission of bundled small-scale CDM project activities (EB 34, Annex 10)*

Figure 4 | To bundle or not to bundle… that is the question



was registered for two projects sites in Chile[10], one in Pocillas and the other in La Estrella.

For all of the above categories, the crediting period should be the same and the composition of bundles must not change over time. Practically, the bundling of several projects into one can be a problem if a delay in one project causes a delay to the rest of the bundle. For example, any requests for review relating to even one part of a bundled project, lack of operating licence in one project part, or the definition of how credits are distributed within the bundle may also affect the other parts of a bundled project.

As an example, a suggestion to bundle a hydro, wind and geothermal project into one large-scale PDD by applying ACM0002 was presented. The projects in question were located in South America (see Figure 4). To do this, the same crediting period needed to be chosen for all three projects. In this example a number of risks needed to be managed. For instance, if the projects were bundled and the geothermal project did not receive an operating licence in time, the crediting period would

[10] *The rules for bundling of full-scale projects are still being discussed by EB.*

start running with a reduced credit generation potential. Also, if the CDM EB requested a review because of problems with one project, the other two projects would be delayed as well.

Pitfall 2: Project participants not clearly identified

Sometimes there is confusion on the definition of a project participant, and it is not clear whether the project participants are, or will be, authorized by the respective Party[11] involved.

In the Glossary of CDM terms , a project participant is defined as follows:

"In accordance with the use of the term project participant in the CDM modalities and procedures, a project participant is:

- A Party involved, which has indicated to be a project participants, or
- A private and/or public entity authorized by a Party involved to participate in a CDM project activity."

In accordance with Appendix D of the CDM modalities and procedures, the decision on the distribution of CERs from a CDM project activity shall exclusively be taken by project participants. Typically, consultants, DNAs and local municipalities do not have a share in the distribution of CERs.

Good practice:

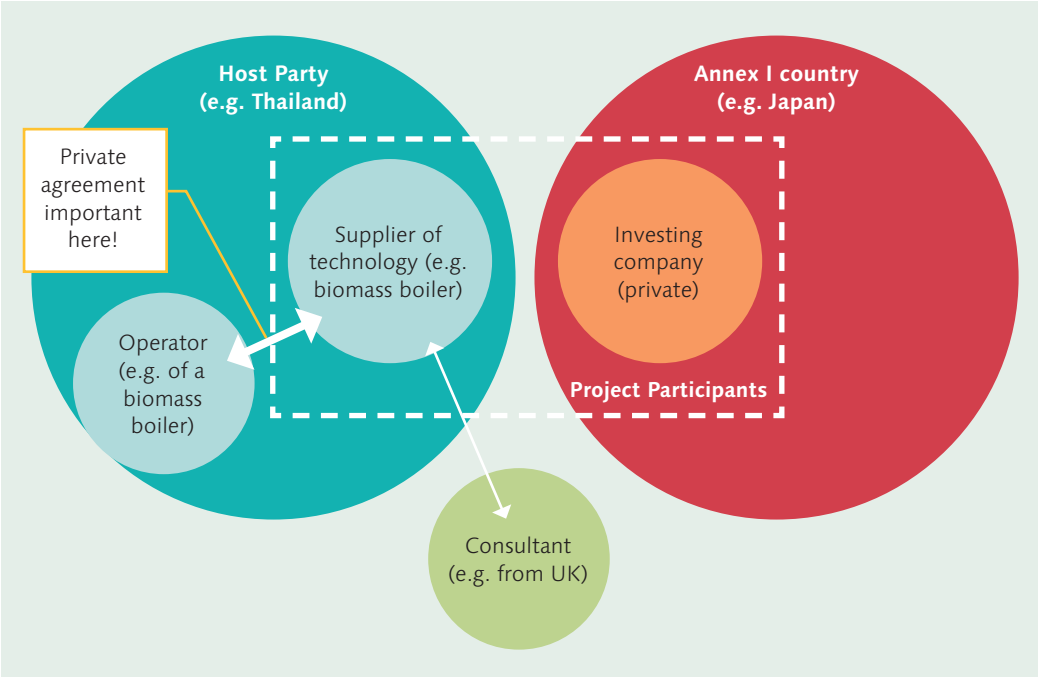
The question of who is a project participant needs thorough consideration. There have been examples where the project operator has not been included as a project participant or even informed about the project being proposed as a CDM project. For instance, for a landfill gas project in Mexico, the project operator was not informed of the project being proposed as a CDM activity. Although the operator was not officially a project participant, the objection raised by the operator had an impact on the validation process and implementation of the project activity, as the operator then threatened to stop the operation and, hence, generation of CERs unless they were included as a project participant. The lesson to be learned is that although it is not mandatory to include the operator as a project participant, it is wise to ensure that private agreements are in place to guarantee the generation of CERs. This is also illustrated in Figure 5.

Often it is not clearly described whether all organizations mentioned in Section A.3 of the PDD are project participants. Only actual project participants should be listed in Section A.3 and Annex 1 of the PDD. Ad-

[11] *"Party" is used as defined in the Kyoto Protocol and means a Party to the Kyoto Protocol. Annex I Party means a Party as listed in Annex I to the Convention,*

[12] *http://cdm.unfccc.int/Reference/Guidclarif/glos_CDM.pdf*

Figure 5 | Project participants:
Who has a say in CER distribution?



ditionally, the statement of modalities of communication must include all project participants and their signatures.

All private or public entity project participants will need to be authorized by a Party, i.e., a country that is a signatory to the Kyoto Protocol. Authorization does not necessarily need to be provided by the country where the private or public entity is located, but can be provided by the DNA of another country participating in the project. Good practice is to explicitly mention the project participant in the Letter of Approval, or to address the LoA to the project participant.

The registration of a project activity can take place without an Annex I Party being involved at the registration stage. However, before an Annex I Party acquires CERs for such a project activity from an account within the CDM registry, the DNA from the Annex I Party shall submit a LoA to the EB in order to ensure that the CDM Registry administrator forwards CERs from the CDM registry to the Annex I national registry.

It should be taken into account that the name of the project participants and the project title itself be included in all of the documents submitted for registration, such as the CDM-PDD, Letters of Approval and Mo-

dalities of Communication. Experience also shows that more attention should be paid when those documents are translated into English from their original language. Differences in project titles and project participant's names might lead to a project activity being deemed incomplete, and hence leading to project delays that could easily be avoided.

As per the EB 30th meeting report, the EB decided that in case a project participant listed in the PDD published at validation is not included in the PDD submitted for registration, the DOE shall provide a letter from the withdrawn project participant confirming its voluntary withdrawal from the proposed project activity, and address this issue in its validation report.

Pitfall 3: Evidence of EIA and/or required construction/ operating permits/approvals not provided

Projects are sometimes submitted for validation without evidence that they have all of the required operating permits/approvals necessary to proceed. These permits/approvals are country-specific. For example, if required, the DOE will ask to see a copy (a scanned, signed document is sufficient) of a valid construction permit, an operational licence and sometimes an Environmental Impact Assessment (EIA). Also, approvals, such as Environment Licences need to be presented if required by legislation.

These documents should not be included in the PDD, as they are often in the local language and can be too comprehensive. Attachments in a language other than English should not be included, as the CDM-EB has defined that the working language for the CDM is English only.

Pitfall 4: Letter of approval insufficient or delayed

Over 80% of all PDDs submitted for validation are not accompanied by a LoA from all relevant DNAs. The reasons for this can include:

- The process of receiving a LoA started too late and/or the DNAs have not yet established procedures for the approval of CDM projects.

- Some DNAs request the validation report before issuing the LoA (e.g., Brazil, Spain, Korea, Germany).

- Parties and/or project participants change during the validation process because of changing private investor or operator relations. For example, if a company in Japan wants to become a project par-

ticipant in a unilateral project in Thailand and receive CERs, this will add a new Party and a new project participant to the project (see Pitfall 2).

- It has also been observed that in some cases the names of the project participants and the title of the project activity are not consistent in the PDD, LoA and MoC.

- If the LoA provides additional information, e.g., PDD, version or date and validation report version and date, then at the time of submission for registration, the project registration package needs to be submitted with the PDD or validation report version that is mentioned in the LoA. It is often observed that the PDD and validation report go through many rounds of revisions and the version of the PDD submitted for registration is not the same version as stated in the LoA. This will lead to reapplication of the LoA and can cause a significant delay in the validation process.

Good practice:

The process of receiving an LoA should be initiated at an early stage, as this often takes time. Good examples of LoAs can be found on the UNFCCC website (http://cdm.unfccc.int/Projects/registered.html). As stated in the EB clarification[13], three points need to be included in a LoA:

- The Party has ratified the Kyoto Protocol,

- The approval of voluntary participation in the proposed CDM project activity, and

- In the case of Host Party(ies): statement that the proposed CDM project activity contributes to sustainable development of the host Party(ies).

The project title and project participant names mentioned in the LoA and MoC must completely match those given in the PDD. Further, all private or public entity project participants need to be authorized by one Party.

Pitfall 5: No written confirmation that funding will not result in a diversion of official development assistance

Written confirmation that funding will not result in a diversion of official development assistance must ideally be obtained from the relevant Annex I country DNA. This means that Annex I countries shall not divert

[13] *http://cdm.unfccc.int/Reference/Guidclarif/reg/val_guid01_v01.pdf*

official development assistance funds that previously have been directed to other purposes (e.g., for school buildings) in the respective host country to the purchase of CERs from a CDM project. Such evidence should be given by the Annex I country. A key word in this context is therefore "diversion"[14].

Such a statement is only needed when public funding from an Annex I Party is used by the project.

Pitfall 6: The modalities of communication with the Executive Board in terms of CERs issuance and allocation instructions are not stated clearly, or not signed by all project participants

The modalities of communication[15] with the Executive Board are sometimes not clearly stated, or if stated, have not been signed by all project participants and focal point entities. The Modalities of Communication form (F-CDM-MOC) has been adopted by the EB in order to facilitate the standardization of the format for the presentation of modalities of communication. The following information must be provided in the form:

- Title of the CDM project activity.
- Date of submission.
- List of all project participants.
- Clear designation of focal point for each scope of authority.
- Contact details and specimen signature of each focal point and signing authority.
- Signatures of all project participants confirming their agreement to the terms of the statement of modalities of communication.

The communication statement needs to be in place prior to submitting the request for registration, as this is often a cause of delay.

Modifications to the nomination of focal point, changes in authorized signatories (details and/or specimen), change of name of a project participant, as well as addition or withdrawal of project participants will require a change of the modalities of communication.

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[14] *As of the Marrakech Accords (Dec17/COP7); "Emphasizing that public funding for clean development mechanism projects from Parties in Annex I is not to result in the diversion of official development assistance and is to be separate from and not counted towards the financial obligations of Parties included in Annex I"*

[15] *The modalities of communication between project participants and the Executive Board are indicated at the time of registration by submitting a statement signed by all project participants. All official communication from and to project participants, after a request for registration is submitted by a DOE, shall be handled in accordance with these modalities of communication. If these modalities have to be modified, the new statement shall be signed by all project participants and submitted in accordance with the modalities that are to be replaced. The procedure and the form are adopted at the EB 45.*

Further information can be found in the procedures for modalities of communication between project participants and the Executive Board (http://cdm.unfccc.int/Reference/Procedures).

Pitfall 7: Insufficient description of the technology

Unnecessary or insufficient information is sometimes supplied on substantial aspects of a project, resulting in ambiguity on core aspects of the project technology or implementation. Excessive and irrelevant information may obscure the important information to the validator. However, it is important to provide the details of any advanced/novel technology used, including electricity generation technologies. The level of detail needs to be considered on a case-by-case basis, ensuring that all relevant information impacting emission reductions and CDM eligibility is presented.

Examples:
For wind projects which normally use standard technology, the technical details and details about selected subcontractors are not required, as long as the details are provided in, for example, a feasibility study that is made available to the DOE. However, the type of turbine and its possible type certification, load factor, total installed capacity and important factors summarized from the feasibility study, such as wind conditions, should be described. There is no need to talk extensively about grid connection, voltage, or other similar issues.

Small run-of-river hydro power projects will also normally use standard technology. In this case, the type of turbine, capacity, load factor and river flow conditions should be described.

For projects that are less standard, such as combined heat and power (CHP), fuel switching, cement and other manufacturing industry projects and large hydro projects, design/engineering details are required. For boilers, a description of the theoretical efficiency and technical characteristics are required.

For biofuel projects, the mixture of the biomass burned, boiler or turbine capacity, and how much biomass needs to be transported from other sites, and by what means, must be made clear.

For landfill gas capture projects, detailed components, such as flare efficiency and combustion engines should be described, but there is no need to go into detail about, for example, component material of the pipes.

Good practice:
From the technology description in the PDD, the DOE needs to receive a clear picture of:

- Whether the project design engineering reflects current good practice, as per the Marrakech Accords.

- The technology elements that are included in the project boundary in terms of GHG emissions.

- Proper sequencing and appropriate use of clear process flow sheets will improve clarity, especially in industry-specific projects. The description should be adapted to sector specifics and can be included as an Appendix to the PDD.

- Project developers should carefully review the guidelines for completing the project design document. In PDD Template Version 7.0, the CDM EB has expanded the instruction on completing the section A.4.3. "Technology to be employed by the project activity."

Pitfall 8: Non-compliance with the applicability conditions of the applied baseline and monitoring methodology or methodology compliance not sufficiently explained

Experience shows that the applicability criteria in the methodologies are sometimes not specifically addressed in the PDDs. In other cases, projects do not meet one or more of the applicability criteria. It is important that sufficient information is provided in the PDD to ensure that the project conforms with the applicability criteria. If project proponents are not certain whether a particular methodology applies to their projects, it may be wise to contact the DOE for a discussion.

As an example, a project was applying approved methodology ACM0009 on fuel switching, which calls for capping of the crediting period by the remaining lifetime of the existing equipment. The remaining lifetime of the equipment used in the baseline was confirmed to be more than 20 years, however, no proof was provided. The plant had been operating since 1979, which is more than 30 years of operation, assuming no replacement had been made thus far. In this case, a replacement would have been necessary anyway. This not only questions the applicability of ACM0009, but also project additionality.

Good practice:
In the above example, during the discussion of the baseline in the PDD and the validation report, evidence should have been provided for the lifetime of the equipment in question.

In general, all the applicability criteria indicated for a particular methodology should be specifically addressed and supported with a verifiable source of information.

Follow the structure and the wording of the methodology and, when justifying the applicability of the methodology to the specific project, substantiate this with as much evidence as possible. Contact the DOE if you are not sure which methodology to apply for a specific project. If it is unclear whether a particular methodology applies to a project, it is better to raise a clarification or revision to the EB prior to the commencement of validation.

Pitfall 9: Insufficient explanation of baseline scenarios

The identification of the *relevant* and realistic baseline scenarios is not always in line with the methodology.

In the analysis of possible baseline scenarios, *relevant* alternative baseline scenarios are defined as those scenarios that are either:

- Business as usual
- The project scenario and/or
- Other likely technology alternatives (for example, landfill gas collection, waste incineration and utilization for power generation could be a likely alternative to a project scenario of landfill gas collection and flaring only).

Examples:

1. Relevant and valid baseline scenarios are often not addressed. For example, in landfill gas projects, the possibility of selling off the gas to nearby industry facilities needs to be considered.

2. Too much irrelevant detail about the whole industry context is often provided in PDDs. For example, for co-generation projects using bagasse as fuel, the economic situation of the sugarcane industry is only relevant in so far as it influences the sugarcane producer's choice of saving electricity costs by investing in a biofuel boiler.

In some cases it is observed that the baseline scenario, i.e., what would have actually happened in the absence of the project, is quite different from what is selected as the baseline. This might happen due to a variety of reasons, such as:

i. The project proponents do not have sufficient historical data to establish the actual baseline.

ii. The baseline if established as per the options in the methodology results in more CERs.

iii. The methodology does not allow the particular baseline, i.e., the methodology is not applicable.

iv. Change in output after project implementation.

Good practice:
Closely follow the requirements given in the approved baseline methodology. Identification of baseline scenarios can be broadly categorized into three types:

1. For many approved methodologies, there is only one relevant baseline scenario other than the project and this is already identified (e.g., AM0018). The importance for projects applying these methodologies lies in proving that this business as usual (BAU) scenario identified is the only relevant and valid baseline.

2. In other approved methodologies, the choice of baseline scenarios is given in the methodology, e.g., ACM0006, ACM0012, AM0009 and AM0014. The importance for projects that apply these methodologies lies in identifying only the plausible scenarios. For example, for biomass projects applying ACM0006 (version 11.10), there are seven alternative scenarios for power generation, seven scenarios for heat generation, and eight possible scenarios for the use of biomass residues. Any combination of these could be the project baseline scenario, and the rest must be eliminated.

3. Other methodologies either refer directly to the additionality tool[16] (e.g., AM0019, AM0020, AM0023), or they require the identification of relevant BAU scenarios with regard to a set of specific conditions, for example taking into account national regulations or prevailing practice. Examples of these are AM0007, AM0017, and AM0021.

Pitfall 10: Insufficient demonstration of project additionality

Please also refer to Pitfall 19: Project and/or crediting start date unclear.
Lack of evidence indicating prior CDM consideration

[16] *http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-02-v2.2.pdf/history_view*

The additionality of the project often needs further elaboration or needs to be made more project-specific.

Most of the large-scale approved methodologies refer to the "Tool for the demonstration and assessment of additionality." Version 5.2 of this tool proposes the demonstration of the additionality in four steps, as shown below:

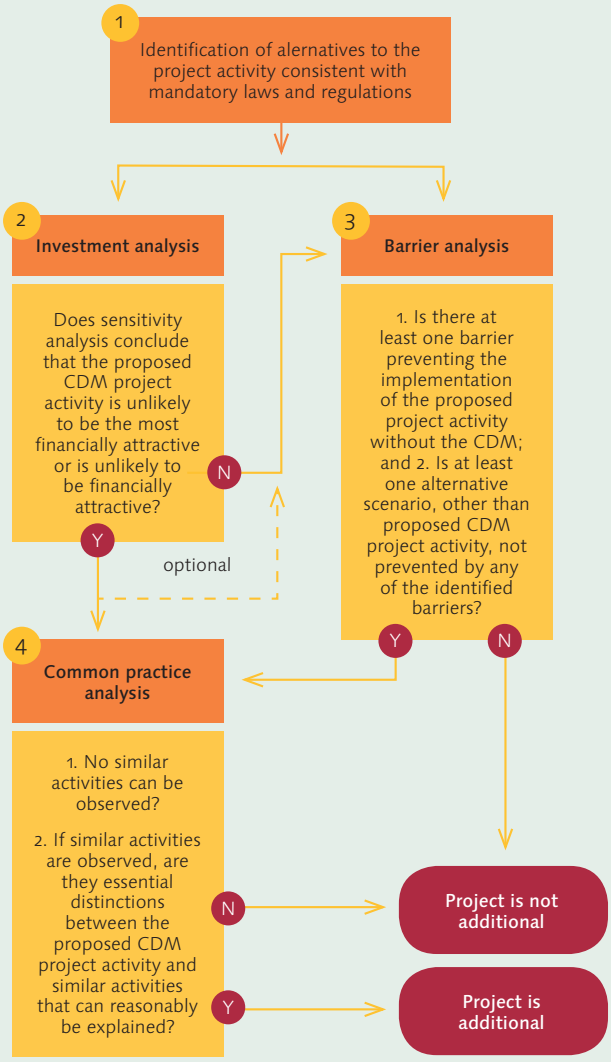
Good practice:
As per the CDM Modalities and Procedures, all information regarding the additionality demonstration is considered public information. This should be taken into account when the additionality argumentation is developed, as all of the claims used should be substantiated on evidence that will have to be made public. This includes things such as contracts with suppliers and loan agreements with banks.

Identification of alternatives to the project activity consistent with current laws and regulations:
Refer to Pitfall 9: Insufficient explanation of baseline scenarios.

Barriers analysis:
In many cases, project additionality is not based on convincing and/or actual facts. All of the claims stated in the barriers analysis discussion should be substantiated with documented evidences from third parties. The concept of an independent third party is important, as some questions may be raised, such as: is a local supplier for which the project represents 60% of its annual sales an "independent third party" who should provide a statement to prove one of the barriers claimed?

Some of the barriers have a direct impact on the project's financial viability and thus the barrier description is not enough to prove that the barrier prevents the implementation of the project. If this is the case, the real impact of this barrier will be shown in a financial analysis of the project and thus an investment analysis complying with Step 3 of the Tool must be provided. For example, some biomass-based power generation projects claim barriers for the "high price of the biomass." If this is an actual issue, an internal rate of return (IRR) or other financial indicator will show that the project is not financially attractive. In contrast, a high biomass price could be accompanied by a good electricity price, and then that barrier is non-existent. This also applies in the case of projects that claim a barrier due to the lack of skilled labor. In this case, the conclusion will be different if there is a total lack of skilled people in the country and it is not an option for people from other countries to work there. If the company staff is not skilled at running such a project, this issue can be overcome by training and hiring new staff available in the

Figure 6 | The Additionality Tool



country without involving any risk of technology failure. In the former case, a barrier may exist. In the latter, the impact of that situation will be reflected in the investment analysis of the project and thus cannot be claimed as a barrier.

The barriers should be analyzed in the correct geographical area. Some industries are regarded as global industries, and in those cases, the existence of a barrier (e.g., first of its kind; technology barriers) should be analyzed in a global context and not only at the country level. In other cases, the country level or even smaller regions may be accepted to prove the existence of the barrier.

Investment analysis[17]*:*
It is common to find that the investment analyses provided to the DOE are not complete, do not allow the DOE to reproduce the calculations or do not disclose the sources for all the inputs. The project proponent should provide the DOE with:

- An Excel file with the detailed calculations in a reproducible format (the formulae should be included and not only the final figures).

- Justification of all sources used for the analysis for the investment, discount rate, annual costs and revenues. These sources should have been available at the time of decision making and evidence should be provided to the DOE.

- Justification that the timeframe used for the analysis, taxes applied, depreciation/amortization methods and timeframe, and residual values are in line with the applicable regulations.

- Costs savings should be included in the calculations. This is the case in, for example, a coal fuel switch project where the coal saving should be included in the analysis or a waste gas power generation project when before the project implementation the electricity was imported from the grid.

- Sensitivity analysis calculation.

The appropriate analysis method should be identified for each project. In the case of a benchmark analysis, it is common to find that the selection of a company internal benchmark is problematic, as the information around it is sensitive for most companies and they are not willing to make it public. If a company-specific benchmark is applied, the com-

[17] *The guidance provided by the Executive Board on investment analysis (EB 51, Annex 58) supplements the "Tool for the demonstration and assessment of additionality", "Combined tool to identify the baseline scenario and demonstrate additionality" and "Non-binding best practice example to demonstrate additionality for SSC project activities".*

pany has to demonstrate that it has used this benchmark in the past for the evaluation of similar projects under similar conditions. Evidence of this should be made available to the DOE and will always be considered as public information as per the CDM Modalities and Procedures. As an example, a European conglomerate may establish internal procedures for investing in renewable projects in Central America. These procedures state that a weighted average cost of capital (WACC) of 17% is sought for all those investments. If this internal benchmark is part of the additionality discussion, the company will have to make public the internal procedures as well as evidence of all projects evaluated in the past, including the location, project characteristics, investment analysis, and final decisions.

The Executive Board provided guidance at its 38th meeting on how to validate investment analyses where project participants rely on values from feasibility study reports that are approved by national authorities. In these cases, the project proponent shall demonstrate that

i) The feasibility study report has been the basis of the decision to proceed with the investment in the project, i.e., that the period of time between the finalization of the feasibility study report and the investment decision is sufficiently short that it is unlikely in the context of the project activity that the input values have materially changed.

ii) The values used in the PDD and associated annexes are fully consistent with the feasibility study report, and where the values are different, the appropriate justification is provided.

A sensitivity analysis is required for critical parameters to show whether the conclusion regarding the financial attractiveness is robust enough to accommodate reasonable variations in the critical assumptions. The sensitivity analysis in several PDDs could be considered incomplete for the following reasons:

- Some of the critical parameters are not analyzed. For example, for a biomass-based power generation project in an installation where the power was previously imported from the grid, the critical parameters should include: investment cost, running costs, operating hours, biomass prices, and electricity prices (both for selling and importing, as the project brings about cost savings if the electricity generated is also used to satisfy the installation's own demand).

- It is common to see PDDs where only a ±x% is analyzed (normally ±5% or 10%). This raises the question of whether the range ana-

lyzed can be considered a "reasonable variation" of the parameter. It is advisable to complement such an analysis with the calculation of the variation required in the parameter for the financial indicator chosen to reach the benchmark selected. For example, a hydro power plant project applies an IRR benchmark analysis and justifies that an IRR of 10% is the appropriate benchmark. The sensitivity analysis shows that the project's IRR reaches the benchmark of the electricity price increases by 16% and the investment decreases by 7%. The project proponent should then justify how unlikely it is that these variations would happen in the future and provide supporting evidence to substantiate the justification.

Common practice analysis:
The common practice analysis is frequently done at a regional or national level without any justification. It is not always appropriate to select the region or country where a project is located for the common practice analysis. Project proponents must select the geographical scope carefully, taking various factors into consideration. The region should be chosen such that all projects benefit from similar conditions and should take into account the technology/industry type. For certain technologies, the relevant region for common practice assessment will be very local and for others may be global. As an example, a hydro power project in China may use the Province level to analyze similar projects if the conditions of all projects in the Province are similar (the regulations are set at the Province level including the electricity price rules, all hydro power plants in the city supply electricity to the same grid, etc.). In contrast, for some projects in the cement industry, the common practice analysis may be done at a global level.

The common practice analysis shall be based on public, official and recent data, available at the time of the final decision to proceed with the project. This should be thoroughly referenced in the PDD. The common practice analysis (Step 4) needs to be examined in conjunction with the barrier analysis (Step 3). As an example, if 60% of sugar cane mills use biomass to produce power, and this is therefore defined as common practice, the project can still be additional provided that these 60% do not have to overcome the same barriers. It is important to know that other ongoing CDM project activities should not be included in the analysis of common practice (i.e., in the 60%). The EB is mandated to finalize the guidance on the use of first-of-its-kind barriers and the assessment of common practice (Decision 3/CMP.6 paragraph 37).

Pitfall 11: Availability of financial parameters used for additionality

According to the CDM additionality tool and guidance of financial assessment[18], the parameters applied to the financial assessment should be the latest values available when the investment decision was made, which is usually the project start date. If the project is already operational, and actual data and values are accessible, these *ex-post* values should be used to cross-check appropriateness and rationality of the parameters used in the financial assessment. However, often times such *ex-post* values are not made readily available to the DOE.

Pitfall 12: Baseline information not sufficiently supported by evidence and/or referenced sufficiently

The majority of the PDDs submitted for validation do not contain sufficient evidence for the determination of the baseline scenario. Some of the PDDs and calculation sheets include data and information that are based on unreliable sources. The data used in the calculations are not always actual numbers, but are sometimes estimates or sample measurements. Furthermore, it is often observed that there is a difference in the actual scenario at the project plant in terms of the project details presented in the PDD, resulting in establishing the baseline incorrectly.

Good practice:
Substantiate all claims and assumptions presented in the PDD with references to recognised information sources.

Discuss sources and assumptions in a transparent way. If the baseline calculation uses default factors, their use must be justified.

Explicitly state how conservative your sources and assumptions are.

Pitfall 13: Major risks to the baseline and project activity not identified/described

The significant risks related to the viability of the baseline during the crediting period need to be identified.

Examples of such risks include:

- With regard to grid-connected power generation projects, more renewable electricity is added to the grid than expected at the validation stage.

[18] *http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-02-v2.2.pdf/history_view*

- Changes to laws and regulations, for example, new regulations to capture a certain amount of landfill gas may affect the baseline of a landfill gas capture and flaring project. The importance of this will depend on the practical implementation of the CDM EB Decision[19] that "National and/or sectoral policies or regulations that give positive comparative advantages to less emissions-intensive technologies over more emissions-intensive technologies… that have been implemented since …11 November, 2001 may not be taken into account in developing a baseline scenario."

- The project becomes common practice.

- The baseline technology becomes obsolete earlier than expected.

It should be noted that the risks to the baseline and the risks to the project should be considered separately.

Examples of project risk:

- Utilization of the project activity is not ensured for the whole crediting period, e.g., operating licences are only granted on a renewable basis, poor project financing prevents the project from happening, or the operating company is bankrupt.

- The operating lifetime of project technology is shorter than the crediting period, e.g., a boiler in a fuel switching project.

- The forecasted amount of methane from waste that is landfilled does not materialize.

Good practice:
Identify and evaluate these risks transparently and completely in the PDD.

Pitfall 14: Absence of baseline data

There are some cases where the project does not have sufficient data for the baseline. This problem is largely seen in the projects that become operational before they are registered as CDM. The main reason for this is the lack of clarity or accuracy of the monitoring equipment used in the baseline. Particularly for project types whose emission calculations are determined *ex-ante*, appropriate data sources must be used (see Box 1).

[19] *http://cdm.unfccc.int/EB/Meetings/016/eb16repan3.pdf*

In some cases, it is claimed that the baseline will be "simulated" after the project implementation. This leads to several problems that include, but are not limited to:

- How to validate the simulation that involves several data variables.
- How much of the baseline calculation can be relied on simulation?
- How logical is it to "simulate" the baseline conditions under the project scenario? How accurately does it represent the baseline situation?
- How long should the simulation period be to represent a credible dataset for baseline determination?

Pitfall 15: Lack of logic and consistency in the PDD

There are some cases where the information provided in one section of the PDD is not consistent with the other sections.

Examples of such inconsistencies include:

- Arguments to support the additionality of the project are inconsistent, e.g., with regard to trends in the energy sector of the country.
- The emission factors used in the baseline emission calculations are not consistent with the emission factors in the project emission calculations.
- GHG sources included in the baseline emission calculations are excluded or are not consistent with GHG sources in the project emission calculations without proper justification.
- The references and links do not provide the relevant information to justify assumptions in the PDD.

Good practice:
Ensure that the same arguments and assumptions are used within each section and between the sections in the PDD. Cite the sources that actually back up the argument made in the PDD.

Pitfall 16: Poor quality of the PDD

The PDDs received for validation are often full of typographical errors and misinformation, and use incorrect or outdated forms and versions of the methodology. The most common mistakes include:

Box 1 | Ex-post vs. ex-ante calculation

With regard to emissions calculations, these can be broadly divided into two categories:

Type 1: Emission calculations that will be monitored and recalculated *ex-post*, i.e., after the actual emission reductions have taken place and therefore will be verified during periodic verification.

Type 2: Emission calculations that are determined *ex-ante* (i.e., before the emission reductions take place), and remain fixed during the crediting period of the project. These are therefore verified during validation.

For Type 1, the PDD only contains an estimate, which will not be the basis for the final CERs (as these will be recalculated *ex-post*). The data and assumptions used should be reasonable, conservative and realistic. A key concern in this case is whether relevant data is available and can be monitored *ex-post* (e.g., generation data for a grid on an annual basis).

Example: Baseline emissions are forecasted *ex-ante* in landfill gas capture projects, e.g., through use of the IPCC or Environmental Protection Agency First Order Decay model. It is important in this case to provide enough data, such as regional climatic conditions, methane content of waste and methane generation potential, and waste composition to make it possible to judge whether the forecasted emissions are realistic and conservative. The actual methane captured and emission reductions will be monitored *ex-post*.

With regard to data that is determined *ex-ante* and will not change during the crediting period (Type 2), the appropriateness of the data sources and calculations applied are more critical as these will be the basis for the final emissions reductions and will not be updated *ex-post*.

For example, for the *ex-ante* determination of a grid emission factor (which is determined based on historic data and fixed for the crediting period), the source for the data on electricity generation, fuel consumption, and carbon content of fuel needs to be accurate. Moreover, all data has to be obtained from a recognized source (e.g., grid operator, Ministry of Energy, etc.). It is also critical to use the most recent data available (i.e., the data that is available at the time the PDD is submitted for validation). Moreover, it is critical that the grid emission factor is calculated according to the relevant baseline methodology (e.g., that the build margin reflects the *greater* of *MWh* of the most recent *20%* of generation added to a grid *or five* most recent plants for type I.D).

- Incorrect/no version number of methodology used in PDD.
- Incorrect version of the PDD template.
- Monitoring plan directly copied from the methodology and not project-specific.
- Detailed worksheet of emission reduction calculations not provided for validation.
- Use of IPCC default values when local values are available.
- Insufficient discussion of technology used and details of equipment installed as part of the project not included in the PDD.
- Discussion on common practice barriers is too generic. No survey or study is conducted to substantiate the common practice claims.
- Inconsistency among data used in the calculation and given in the PDD.

Good practice:
Ensure that the right template of the PDD is used and that each section includes information as per the guidelines provided for completing the PDD form. In addition, the monitoring plan not only has to comply with the methodology requirements but also has to be designed according to the specific project requirements.

Pitfall 17: Claims in the PDD do not match the actual situation at project site

There are many cases where, during the site visits in the validation process, the DOE finds that the claims made in the PDD regarding the implementation of the project activity do not correspond to the actual situation at the project site. Some examples include:

- The baseline data provided in the PDD cannot be tracked on site or the final figures are different. This is especially critical when the baseline emissions are based on the historical performance of the plant.

- The characteristics of the project site are different from the description in the PDD. For example, the PDD for a waste gas utilization project claimed that it was impossible to sell the waste gas to other industries given the location of the project. During the site visit, the auditor found that the plant was located in an industrial complex with a chemical plant and a cement plant nearby. It turned out that the waste gas was not going to be consumed by these nearby factories as they already had their own supply, and it was not attractive in the context of the project to provide the gas to them. The PDD, however, stated a different reason for not being able to sell the waste gas.

- The project includes features that are not described in the PDD, e.g., the project uses a fluidized bed boiler at the site while the PDD describes the boiler to be a travelling grate type.

- A PDD for a hydro project claimed that the monitoring of the electricity supplied to the grid was going to be done at the substation by the producer directly checking the supply data. During the site visit, however, it was found that the electricity producer had no access to the revenue meter at the substation, and the grid company would not allow them to check the meter in the future.

- While the PDD specified the meters for monitoring, there are no meters installed at the project site or the proposed monitoring equipment cannot be installed due to technical issues.

- While the PDD specifies the quality control procedures, in practice no such measures are followed.

- While the PDD specifies the training procedures, no training has been provided to the staff.

These situations would call into question the credibility of the information provided in the PDD, and could also pose problems during actual verification of the emissions reductions generated.

Pitfall 18: The project boundaries are not drawn appropriately or are missing some emission sources

The project boundaries can sometimes be poorly described in words. Sometimes all direct and indirect, on-site or off-site emissions are not clearly identified or estimated, or some of these are excluded without proper justification.

Typical exclusions include fuel transportation, emissions outside the project boundary and fugitive emissions within the project boundary. Another example of exclusions are project emissions from running landfill gas capture and flaring equipment as required in ACM0001, and exclusion of some GHGs that should be included, for example, N_2O from combustion activities. The omissions of non-material[20] sources are often not justified clearly.

About leakage: Leakage is defined as an indirect off-site emission not included in the project boundary. Regardless of the size of the project, leakage emissions must be discussed in the PDD. The following are

[20] *http://cdm.unfccc.int/Reference/Guidclarif/pdd/PDD_guid04.pdf*

examples of leakage that often occur but are not sufficiently taken into account by the project developers:

- Biomass projects: For activities using biomass, leakage shall be considered, including potential effects on biomass availability for other users. The size of this leakage can be estimated with a simplified approach: assume that an equivalent amount of fossil fuels, on an energy basis, would be used if biomass residues are diverted from other users, regardless of how biomass residues would have been used in a baseline scenario. For projects that utilize biomass from sources outside the project site, such as transportation emissions from trucks, their capacity and the number of trips need to be stated clearly.

- Co-generation projects using bagasse as fuel: For projects that utilize the bagasse from sugar mills as fuel, the only potential source of leakage is related to organizations that used bagasse from the sugar mill prior to the cogeneration project's implementation. Without the bagasse supply, these organizations may have to use fossil fuels.

- Landfill projects: If the project does not generate electricity, emissions due to the use of electricity from the grid to run the capture equipment must be considered as leakage.

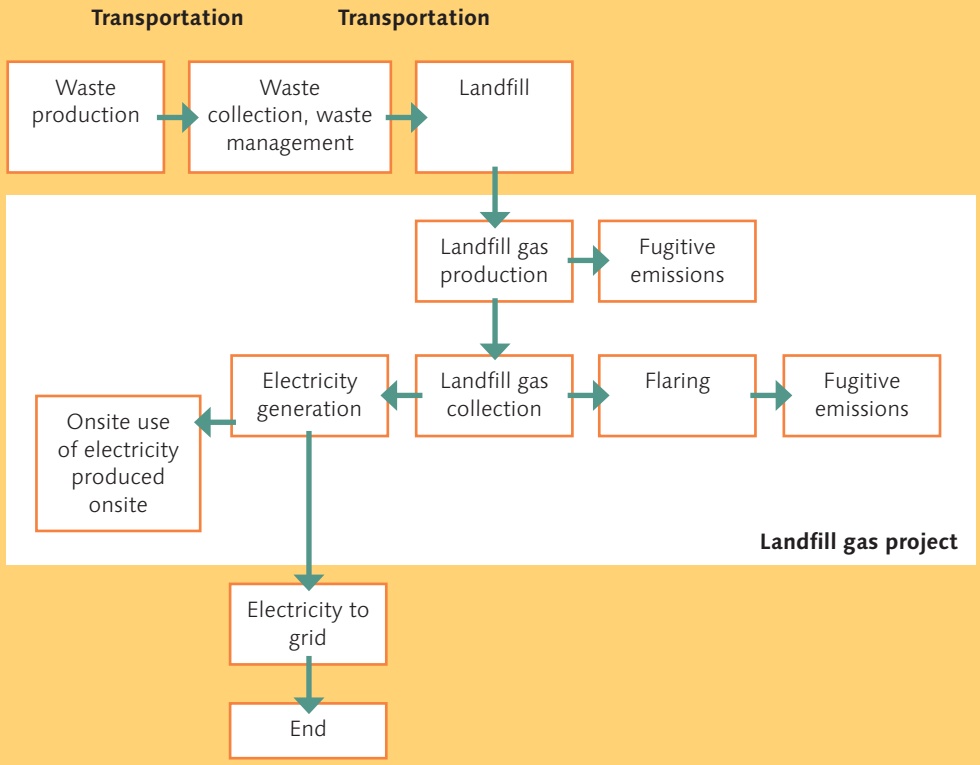
Negative leakage can also occur. For instance, if a project in a remote location switches from diesel use to a local renewable energy source, this would also eliminate the need to transport diesel, thereby resulting in negative leakage by reducing vehicle emissions associated with diesel transportation.

Good practice:
Include in the PDD a map or schematic of the physical project boundary and the system boundary, accompanied by a table defining all material GHGs and their emission sources.

The approved methodologies should be followed in detail to ensure that all sources of direct and indirect, on-site or off-site emissions are included as required.

For an example of project boundary, refer to Box 2.

Box 2 | Example of Project Boundary for Landfill Gas Project



Emissions	Project Scenario	Baseline Scenario
Direct on-site	Emissions associated with fugitive landfill gas emissions. A capture efficiency of 50-60% of open landfills is normal.	Uncontrolled release of landfill gas generated.
Direct off-site	Transportation of equipment to project site – excluded. Use of electricity generated from landfill gas, reducing CO_2 emissions in the electricity grid Project emissions from the combustion of the residual gas.	None identified. Emissions associated with use of grid electricity – in the interests of conservatism emission reductions arising from the displacement of more carbon intensive electricity will not be included in the project's volume of CERs.
Indirect on-site	Emissions from electricity use for operation of lights and fans of on-site workshop – excluded, since it is carbon neutral. Emissions from construction of the project – excluded as it would occur even if an alternative project were to be constructed.	None identified.
Indirect off-site	Transport of waste to the landfill site(s) – excluded.	Transport of waste to the landfill site(s) – excluded.

Pitfall 19: Project and/or crediting start date unclear. Lack of evidence indicating prior CDM consideration

Experience shows that many projects:

- Lack proof of the actual start date of the project activity or the chosen start date is not correct.

- Have several parts of the project being commissioned at different dates.

- Fail to demonstrate that the CDM incentives were taken into account before the final decision was made to proceed with the project activity.

i) Starting date of the project activity

As per the Glossary of CDM Terms[21] the starting date of a CDM project activity is the earliest date at which either the implementation or construction or real action of a project activity begins. In addition, per EB41 paragraph 67, if an investment decision is made and the project activity implementation is subsequently ceased, and then the project activities are restarted due to consideration of the benefits of the CDM, the cessation of project implementation must be demonstrated by means of credible evidence such as cancellation of contracts or revocation of government permits.

Good practice:

The start date is considered to be the date on which the project participant has committed to expenditures related to the implementation or construction of the project activity, e.g., the date on which contracts have been signed for equipment required for the project activity. However, minor pre-project expenses, e.g., payment for feasibility studies, should not be considered to be the start date. For project types that do not require construction or significant pre-project implementation, e.g., replacing light bulbs, the start date is the date on which actual replacement takes place[22].

Specifying the start date of the project activity is extremely important, as it has a direct impact on project additionality:

- Evidence used to demonstrate additionality (either the inputs to an investment analysis and/or the evidence to demonstrate how the barriers identified impact the project) has to be valid at the time

[21] *http://cdm.unfccc.int/Reference/Guidclarif/glos_CDM.pdf*
[22] *Glossary of CDM terms, Version 05. http://cdm.unfccc.int/Reference/Guidclarif/glos_CDM.pdf*

when the decision to move forward with the CDM project was made. For example, a hydro power plant secured the electricity generation and supply permit in November 2007, and consequently the company made the final decision on investing in the project[23]. The project proponent included this project in a national CDM carbon fund portfolio in July 2007. The project owner agreed on the terms of a power purchase agreement (PPA) with the grid company in December 2007, just after the project obtained the electricity generation and supply permit. In this example, the electricity price agreed on in the PPA cannot be used in the IRR analysis of the project to demonstrate additionality, as the final decision to go ahead with the project in November 2007 was made without that information.

- If there is a significant gap between the start date of the project activity and the commencement of validation, the DOE will question how it was possible for the project participant to go ahead with the project before receiving a positive validation opinion.

ii) Different parts of a project with different commissioning dates

If different parts of the project become operational at different times, this should be clearly stated. This is relevant, for example, for a PDD that contains four wind power plants with different commissioning dates. In this case, all commissioning dates should be clearly defined. As for the crediting period, it can start at any time from the commissioning of the first plant until the commissioning of the last one. It is up to the project developer to evaluate the impact this has on CER generation.

Good practice:

The commissioning of the project at different times should be reflected in the emissions reduction estimation for the years of the crediting period. For example, for a PDD that contains four wind power plants with different commissioning dates, if the crediting period starts with the commissioning of the first plant, the emissions reduction estimation cannot be constant during the entire crediting period. Though this may sound obvious, a number of projects have received CARs in the past for this reason

iii) CDM benefits in the decision process

For projects with a start date on/after 2 August 2008, "prior" CDM consideration needs to be confirmed within six months after the starting date. The project participant must write to a host country DNA and the UNFCCC Secretariat to inform them of the commencement of the project activity and of their intention to develop the project as a CDM project. Furthermore, it is also required that they demonstrate their

[23] *We would like to reiterate that the acceptance of this date as the starting date of the project has to be analyzed in a project specific basis by the DOE.*

continued interest in CDM if the PDD has not been web-hosted within two years (except in the case where a new methodology or a request for revision of an approved methodology has been submitted)[24].

Good practice:
For project activities starting on/after 2 August 2008, fill out the prior consideration of the CDM form, and submit it to the host country DNA and the UNFCCC Secretariat.

Taking into account the three points above, the project proponent should include in the PDD:

- A description of how and when the decision to proceed with the project activity was made. This date should be consistent with other available evidence (e.g., dates of construction, purchase orders for equipment) and it should be demonstrated that the person/body making the decision regarding the project had the authority to do so. Appropriate evidence has to be submitted to the DOE.

- A description of how the CDM was considered by this person/entity in making such a decision. Appropriate evidence has to be submitted to the DOE.

Pitfall 20: Starting date for projects involving capacity expansions of operational non-CDM project activity

The starting date is defined as the first financial commitment to the project, and this also applies to the projects that expand the capacity of the existing (non-CDM) projects. If the capacity expansion involves investments, the first commitment of this investment that makes the expansion possible becomes the starting date. The following example of a waste management project illustrates issues specific to CDM consideration for expansion projects.

Example:
A composting plant with an intended waste treatment capacity of 600 tonnes per day was built, but the actual production did not reach this amount. A CDM project was developed to maximize the capacity. In order to evaluate prior consideration of CDM, determination of the starting date is important. The starting date is also used to determine the waste treatment capacity under the baseline scenario and the emission reduction calculations.

[24] *The revised guidelines on the demonstration and assessment of prior consideration of the CDM (version 03) was adopted at the EB 49.*

The following factors should be considered:

- What was the observed historic production?
- What would have been needed to increase the capacity? Was an investment made?
- If so, when was the commitment for an investment made?

Good practice:

Physical limitations for achieving the intended capacity need to be adequately demonstrated, as well as underlying reasons for not meeting the capacity (e.g., given the current market it is not possible to sell products at a price that would justify any investment made to the existing facility). In order to increase the actual production capacity, additional investment would be needed. The date of the first financial commitment for an expansion needs to be verified with evidence. The project participant has to provide evidence to prove that CDM consideration was an important incentive behind its decision to make the financial commitment.

Pitfall 21: Insufficient information on the measurement methods and source of data as part of data/parameter description in monitoring plan

There is a tendency to copy and paste the monitoring plan included in the approved methodology into the PDD without making it project-specific. The project proponents often explain that because the project is in a very early design stage, it is not possible to specify the characteristics of the monitoring plan. Even though this can be to some extent legitimate, project developers should try to specify the monitoring equipment and practices in detail, including QA/QC procedures complying at least with ISO 9000 practices. The lack of a specific monitoring plan increases the risk of failure at the project implementation stage, which can directly impact the project activity and the expected emissions reductions. Furthermore, the EB at its 23rd meeting reinforced the need for specifying the monitoring practices at validation. The EB 23 report states, "the EB … agreed that the specific uncertainty levels, methods and associated accuracy level of measurement instruments and calibration procedures to be used for various parameters and variables should be identified in the PDD, along with *detailed* quality assurance and quality control procedures. In addition standards recommended shall either be national or international standards."

In most cases, it has been observed that the project proponent or operator is not aware of the requirements of the monitoring plan or even if aware, they are not equipped to meet the requirements. In some cases,

although the project proponent is aware of the future uncertainties related to external data required for the project, no specific arrangements are made to obtain the data. This poses a problem after project implementation and when the emissions reductions are verified. Additionally, a lack of management system for the recording, archiving and review of data as required by the PDD becomes an issue during verification.

Another related problem occurs when project operators install monitoring equipment that is not appropriate for the project. Sometimes after installing the proper monitoring equipment, they fail to check the operation of the monitoring equipment and the recorded data. For example, a company installed a thermal dispersion flow meter at the gas train at a landfill site. Later the company found that the meter became unreliable, as the moisture content varied and the temperature range also changed dramatically. Because they did not check the data for an entire year, they found that they had no valid data to verify emissions reductions after the project had operated for a year.

We have also come across a number of PDDs that are missing the following information: data/parameter pertaining to source of data and recording frequencies and measurement methods used. Such negligence also leads to difficulties at the time of verification.

Good practice:

- Clearly state the source of data.
- Clearly state the measurement methods.
- Clearly state the recording frequency.

Pitfall 22: Monitoring and project management procedures not defined

Detailed monitoring and project management procedures need to be in place and followed, at the latest, prior to the commencement of the crediting period to ensure subsequent verifiability of generated emission reductions. If these procedures are not adequate for the project or not fully operational, the verifying DOE performing verification may not be able to track evidence of the emission reductions that have actually occurred. The consequence will be a reduced amount of CERs. This does not mean, however, that assessing the adequacy and completeness of these procedures is not part of the validation process. As already discussed, the EB at its 23rd meeting concluded that *detailed* quality assurance and quality control procedures should be included in the PDD and assessed by the DOE at the validation stage. The validation DOE has to conclude on the ability of the project participant to implement the monitoring plan in the context of the project activity.

Good practice:
Give detailed accounts for all of the following:

- The authority and responsibility for project management.
- The authority and responsibility for registration, monitoring, measurement and reporting.
- Procedures for training of monitoring personnel.
- Procedures for emergency preparedness for cases in which emergencies can cause unintended emissions.
- Procedures for calibration of monitoring equipment.
- Procedures for maintenance of monitoring equipment and installations.
- Procedures for monitoring, measurements and reporting.
- Procedures for day-to-day records handling (including what records are to be kept, the storage area for records and how to process performance documentation).
- Procedures for internal review of reported results/data, including a system for corrective actions as needed, in order to provide for more accurate future monitoring and reporting.

The level of detail needed for monitoring and project management is project-specific and depends on the project technology. For example, a wind farm does not need emergency preparedness procedures because there are no factors that could create unintended GHG emissions. For a biogasifier, however, this is a crucial issue. Procedures should, as far as possible, be based on existing procedures for project management and operation.

Pitfall 23: Deviations from monitoring methodology not justified sufficiently

All deviations from monitoring methodology must be justified fully and the DOE shall seek guidance from the EB on the acceptance of the deviation before submitting the project for registration[25]. A request for deviation is suitable for situations where a change in the procedures for the estimation of emissions or monitoring procedures is required due to a change in the conditions, circumstances or nature of a project activity. The deviation shall be project-specific and shall not deviate from the methodology such that a revision would be required.

Good practice:
The project proponents should clearly identify the deviation in the PDD and discuss it with the DOE performing the validation at the beginning

[25] *Refer to the "Clarification for project participants on when to request a revision, clarification to an approved methodology or deviation (Version 02)". http://cdm.unfccc.int/Reference/Guidclarif/meth/index_clarif.html*

of the validation process. Otherwise, if the validator finds the need for a deviation/revision request later in the process of validation, a significant amount of time can be wasted between the time of finding the need for such a request and the time to actually submitting the request. This may lead to losing months in the validation process.

A common deviation is to omit variables in the monitoring plan that are not applicable to the project without providing any justification. That is the case of the parameters ET_{LFG} and $\varepsilon_{gen,BL}$ in a landfill gas project with only a flaring component, applying the methodology ACM0001.

Sometimes the frequency and proportion of data that will be monitored is not specified or not in line with the approved methodology. For example, AMS-III.D (version 17) specifies that "*the fraction of methane in the biogas should be measured with a continuous analyser or, with periodical measurements at a 90/10 confidence/precision level, or alternatively a default value of 60% methane content ca be used*." The PDD should indicate which of the three options is being selected and, in the case where the periodical measurement is chosen, how the statistical valid number of samples is going to be estimated.

Pitfall 24: Deviations from selected calculations in the methodology not justified sufficiently or incorrect formulas applied

Some PDDs use formulas, values or units that are different from the ones in the approved methodology. Project developers often do not inform the DOE that the PDD contains deviations from the methodology prior to the validation process.

Examples from PDDs:

- Animal manure projects: If projects involve animal manure, sometimes deviation from recommended default emissions factors are not justified or assessed for conservativeness.

- Default values in general: It is not clear whether default or project-specific factors will be used. For example a value for methane content of biogas is referenced as being derived from measurements (i.e., bespoke value) while it is actually a default value from a reference source that is not given in the PDD. In cases where country-specific values are available, the use of default IPCC values is sometimes not adequately justified.

- Efficiency factors: Efficiency factors used are not conservative, or not backed up by sufficient evidence such as:

- Thermal efficiency of boilers in energy efficiency projects.
- Load factors for hydro power plants.
- Methane capture efficiency for landfills.

Good practice:

- Follow the methodology as closely as possible.

- Make sure you use the correct equation from the methodology and indicate how this is intended to be applied to the specific project.

- Provide detailed applications of equations in an Excel file, including the formulae applied to enable tracking the calculations.

Any deviation from the methodology should be communicated to the DOE at the beginning of the validation process. As already pointed out in Pitfall 22: Monitoring and project management procedures not defined, any deviation from the methodology must be fully justified and the DOE shall seek guidance from the EB on the acceptance of the deviation before submitting the project for registration[26]. A request for deviation is suitable for situations where a change in the procedures for the estimation of emissions or monitoring procedures is required due to a change in the conditions, circumstances or nature of a registered project activity. The deviation shall be project-specific and shall not deviate from the methodology, such that a revision would be required.

A thorough justification of any deviations from the requirements in the methodology should be based on:

- Conservativeness.

- Availability of data/information.

- Completeness of information.

- Applicability in the calculations.

Pitfall 25: Compliance with local legal requirements not covered sufficiently

Sometimes it is not clearly indicated whether the environmental impacts of the project have been assessed formally and managed as required by the host country laws and regulations. In general, CDM project technologies do not have much negative impact on the environment. While

[26] *Refer to the "Clarification for project participants on when to request a revision, clarification to an approved methodology or deviation (Version 02)". http://cdm.unfccc.int/Reference/Guidclarif/meth/index_clarif.html*

an EIA is required by law for landfill operations in most countries, the construction and operation of the landfill gas capture and flaring equipment does not normally require an EIA. It is also required by the DNAs of some countries (e.g., the Philippines[27]) that sustainable development indicators be monitored periodically.

Good practice:

- State the relevant legal requirements in the host country.
- State the project's compliance with the requirements.
- State the environmental impacts of the project.
- State the mitigation measures to be taken for the project. The evidence for the project's compliance with legal requirements needs be submitted to the DOE through documents such as the construction and operating license, environmental license and in some cases the EIA.
- Include the monitoring of sustainable development indicators as part of the monitoring plan if this is required.

Pitfall 26: Insufficient information on the stakeholder consultation process

It is sometimes not made clear whether the local stakeholder involvement process is in line with the host country requirements and whether all relevant stakeholders have been contacted.

Good practice:

- State the relevant legal requirements, if any, in the host country with regard to which stakeholders to contact and by what means (e.g., through letters, newspapers, meetings).
- State how the project complies with these requirements.
- Provide a list of all the stakeholders contacted and justify why they are relevant.
- Include a summary of the stakeholder comments and a summary of how these comments have been taken into account. The contact details of the stakeholders should be provided to the DOE so that a sample stakeholder can be contacted by the DOE for verification.

[27] *This may change over time.*

- Have at least one or several meetings with a broad range of stakeholders and invite a DNA representative to these meetings.

Pitfall 27: Long delays in the validation process

This is a common problem encountered especially after the draft validation findings are issued, and the project proponents do not respond to the findings in a timely manner. If the project proponent delays in responding to the DOE's findings, the CDM requirements and/or methodologies might be changed. As a result, the project proponent needs to revise the PDD and/or prepare additional documentation.

Good practice:
These unnecessary delays can be considerably reduced if all the additional documents, such as the financial calculation sheets, emission reduction calculations and evidence (e.g., legal permits, and stakeholder consultation documents) are provided along with the PDD at the start of the validation.

Pitfall 28: Insufficient information on physical location allowing unique identification of the project activity

The PDDs sometimes only include a map showing the physical location without providing any additional details on the location of the project activity.

Good practice:
- State the exact latitude and longitude of the project location.
- State the exact address of the plant location.
- State the proximity to some important landmarks, if any.

Pitfall 29: Assigning inappropriate economic values to biomass residue and reference plant

Biomass projects often fail to discuss cost of biomass and reference plant determination adequately, resulting in delays in validation and possible rejection. The two issues are further discussed in greater detail below:

Cost of Biomass:
In the PDDs, the project proponents often argue that in the absence of the project activity, the biomass residues would have been disposed of via incineration or landfilling. This typically occurs at sugar mills or palm oil mills where the biomass is owned by the plants. However, at the same time, while doing the investment analysis as part of demonstrat-

ing the additionality, the project proponents claim that there is demand from the nearby industry for the biomass waste for heating application without appropriate justification, and the biomass residue has monetary value. The use of inappropriate values for biomass in the investment analysis could result in delays and the possible rejection of the project activity.

Good practice:

- Demonstrate transparently that this biomass residue has economic value in the market.

- Substantiate the demand and price trend for biomass residue in the market from an independent source.

- If in the baseline scenario the biomass residue is waste and would be incinerated or landfilled, do not assign economic values to this waste while conducting the investment analysis.

Reference Plant:

The biomass (cogeneration) projects applying ACM0006/ACM0018 may have to specify a reference plant in the baseline, depending upon the scenario selected as per the methodology. The reference plant is a hypothetical plant that would be installed in the situation when there is no CDM activity. The most important goal of this exercise is to determine the efficiency of this hypothetical plant for the emission reduction calculation, but the efficiency may also become the integral part of the investment comparison analysis to determine baseline/additionality. The reference plant relates to the common practice in the region, but older, prevalent practices are less important than the current practice. The methodology does not define what it means by historic data that can be used as a basis for common practice analysis to prove that the project activity is not the baseline scenario and the reference plant is the prevailing common practice.

Good practice:

- Focus on the last three years as the basis for defining the common practice and reference plant efficiency.

- Avoid using the data from the old equipment operating at the existing cogeneration facilities, e.g., sugar mills, for determining the efficiency of the reference plant. Such data may not be acceptable.

- The data from market surveys is acceptable, e.g., recent data published by industry associations.

- For sugar mills that have expanded without CDM funding in the last three years, the efficiency can be checked from the pressure rating and measured historical efficiency of the boilers. In addition, the project proponents should provide technical specifications of new boilers with the same pressure rating from at least three suppliers. The highest efficiency of these approaches should be used as the baseline efficiency.

PoA Validation Pitfalls

Pitfall 30: Inconsistency among CPAs

An advantage of using PoAs is that multiple sites with similar characteristics can be consolidated into one program, which makes the registration easier. On the other hand, because of the large number of CPAs included in the PoA, consistency can be a challenge. In general, the higher the similarity among CPAs, the easier it is to include a new CPA. This is particularly true if key inclusion criteria and additionally are validated at once with the registration of the PoA-DD.

Good practice:
It is important to plan in detail all of the project activities to be included in the PoA by weighing the advantages and disadvantages of utilizing broad inclusion criteria. The current liability provisions for the DOEs should be taken into consideration when designing the breath of inclusion criteria. It will be difficult to find the DOE that is willing to undertake the validation if the inclusion criteria are too broad or ambiguous.

Once the programme is implemented, it is important that all CPAs are in accordance with the requirements in the PoA, and that of all the CPAs are consistent. Pay special attention when adjustments are made in parameters that are common to all of the CPAs. This could mean making changes in hundreds of CPAs.

As of March 2011, there are no procedures in place for revisions/deviations of monitoring plans, or changes to registered project activities for PoAs. The UNFCCC Secretariat has begun analyzing the possibility of developing such procedures. Meanwhile, when there are some changes in the actual programme and/or programme activities from the registered/included Programme of Activities Design Document (PoA-DD) and CPAs, it is likely that there will be delays in the validation/verification process, and the project proponents might even receive negative opinions or rejections.

Pitfall 31: Physical location of CPAs not specific

For CDM projects in general and also for CPAs in PoAs, it is essential to provide the exact location of each project activity to avoid double counting. This is especially important for PoAs as numerous CPAs that are similar are included under the same program. The PP is required to implement a system/procedure to avoid including a new CPA that has already been registered either as a CDM project activity or as a CPA in another PoA. This is especially challenging when the projects are micro-scale projects and not uniquely identifiable using a GPS coordinate, e.g., improved cook stove distribution projects.

See Pitfall 28: Insufficient information on physical location allowing unique identification of the project activity.

Pitfall 32: Crediting period starts before inclusion

There are cases where the crediting start date specified in the CDM Programme Activity Design Document (CPA-DD) is prior to the date when the CPA is included into a PoA. This happens particularly when the validation takes longer than expected, and by the time the validation is completed, it is past the crediting start date originally planned in the CPA-DD. In this case, project developers must update the start date of the crediting period in the documentation. Additionally, the start date of CPAs cannot be prior to the date when the PoA-DD is published on the UNFCCC website for the global stakeholder consultation.

Good practice:
When defining the start date of the crediting period in the CPA-DDs, account for the time to complete the validation process and define the start date of the crediting period. Plan the implementation of the CPAs to begin after the PoA-DD is published on the Internet.

Pitfall 33: No updated licenses and permits

It is easy to lose track of the status of all the required licenses and permits when the project coordinating entity/project proponents have to handle a number of CPAs.

Good practice:
Ensure that all the licenses and permits are in place before including the CPA into the PoA in order to avoid delays in the validation process.

See Pitfall 3: Evidence of EIA and/or required construction/operating permits/approvals not provided.

Pitfall 34: Baseline for PoA not appropriate

When establishing a baseline, the project developer should ascertain the boundary to which the baseline is applicable. Since PoAs often have a large project boundary covering one or more countries, the baseline scenario or many parameters in the baseline might vary from region to region. The project developers should develop CPA inclusion criteria that specify whether the baseline scenario and fixed parameters are applicable to the CPA from a certain region.

Good practice:
Establish baseline scenarios for all regions or countries at the time of the PoA registration. This will allow the project developer to avoid conducting an assessment at the time of CPA inclusion.

PART 2: VERIFICATION

The verification process

A verification by a DOE is the periodic independent review and ex-post determination of monitored emission reductions that have occurred as a result of a registered CDM project activity during a verification period.

A registration of a CDM project after a validation by a DOE should not be considered as the final step of developing a CDM project. It has to be demonstrated that the estimated emission reductions claimed in the PDD have been achieved after the crediting period started. If a project is not implemented as described in a PDD, or emissions are not correctly monitored, the whole process of developing a CDM project can be wasted. The project may therefore end up generating fewer credits than was expected.

This section describes the verification process and the main pitfalls project developers face after the registration of the CDM project and PoAs. It aims at helping those who are implementing a CDM project and PoA after registration with:

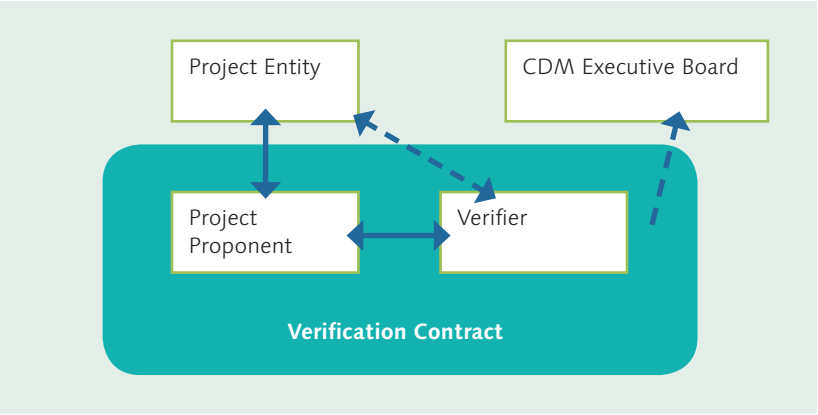
- Understanding key issues that arise when implementing projects in line with registered CDM and PoA project design documents.

- Better understanding the verification process.

The key players in a verification process are the project proponents and/or the project entity, the verifier (the DOE) and the CDM EB. The relationship between these players is shown in Figure 7.

The verification activity essentially involves reviewing project activities to confirm that the project is implemented *as described* in the monitoring plans or reporting protocols. In other words, it is to confirm that real, measurable and long-term emission reductions *have been achieved*, in accordance with pre-determined criteria. The objectives of verification are to:

Figure 7 | The key players in a verification process



Solid lines indicate contractual relationships. Dashed lines indicate possible communication channels during validation. Note: Other relationships are possible.

- Verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.

- Evaluate GHG emission reduction data and conclude with a high, but not absolute, level of assurance that the reported GHG emission reduction data are "free" of material misstatements and that the reported GHG emission data are sufficiently supported by evidence, i.e., monitoring records.

- Evaluate the relevance and reliability of reported emissions (and calculated reductions) based upon accuracy, completeness and consistency of the information.

The project proponent should send the following documents to the DOE:

- Monitoring Report (MR)[28].
- Registered PDD including the monitoring plan.
- Final registered validation report.
- Monitoring records (project emissions, baseline emissions and leakage, as applicable).
- Excel files with GHG emissions reduction calculations in a reproducible format (i.e., indicating the formulae applied and not only the final values) and indicating the source for each input.

[28] *The monitoring report form, version 01 was adopted at EB 54. http://cdm.unfccc.int/Reference/PDDs_Forms/Issuance/index.html*

Verification is conducted based upon the CDM VVM, which provides guidance on validation and verification[29].

Initial verification and periodical verification

The verification approach developed by most DOEs differentiates between initial and periodic verification:

- Initial verification: The objective of an initial verification is to verify that the project is implemented as planned, to confirm that the monitoring system is in place and fully functional and to assure that the project will generate verifiable emission reductions. Such verification is conducted for a registered CDM project before or shortly after it starts operations.

- Periodic verification: The objective of subsequent periodic verifications is the review and *ex-post* determination of the monitored emission reductions that have occurred during a specified verification period.

Verification period

The project proponent can, based on a cost-benefit analysis, choose whether the initial verification is carried out as a separate activity prior to the project commencing its regular operations, or as an integrated part of the first periodic verification. Carrying out an initial verification when the implementation of the project has finalized and the project proponent is ready to start operations is beneficial, since corrections can be made before the crediting period starts, avoiding risks of not getting emission reductions certified due to an issue in the implementation or the monitoring system.

There is no prescribed length of the verification period (periodic verification). It will, however, not be longer than the crediting period. Normally the length of the verification period depends on project risks, emission reductions claimed, experience of the project proponent with the project's performance, experience of the project proponent implementing similar projects and the result of previous verifications. The verification intervals range from one month to one year, with one year being the most common. For micro-projects, verification might be done just once during the entire crediting period. Regardless of how frequently verification is conducted, emission reductions are presented on an annual

[29] *http://cdm.unfccc.int/Reference/Manuals/accr_man01.pdf*

basis to allow comparison of verified emission reductions to estimated numbers in PDDs.

A shorter verification period allows the project developers to improve the monitoring practices and QA/QC procedures if they were the cause for material mistakes in reported emissions and for fewer emission reductions than expected. The longer the verification period, the higher the amount of emissions reduction lost if the DOE finds material mistakes.

Initial verification

The initial verification process is illustrated in Figure 8. The green boxes are actions taken by the project developers, and the orange boxes are responsibilities of the DOEs:

The verification tasks that the DOEs take once the verification team members are selected are described below:

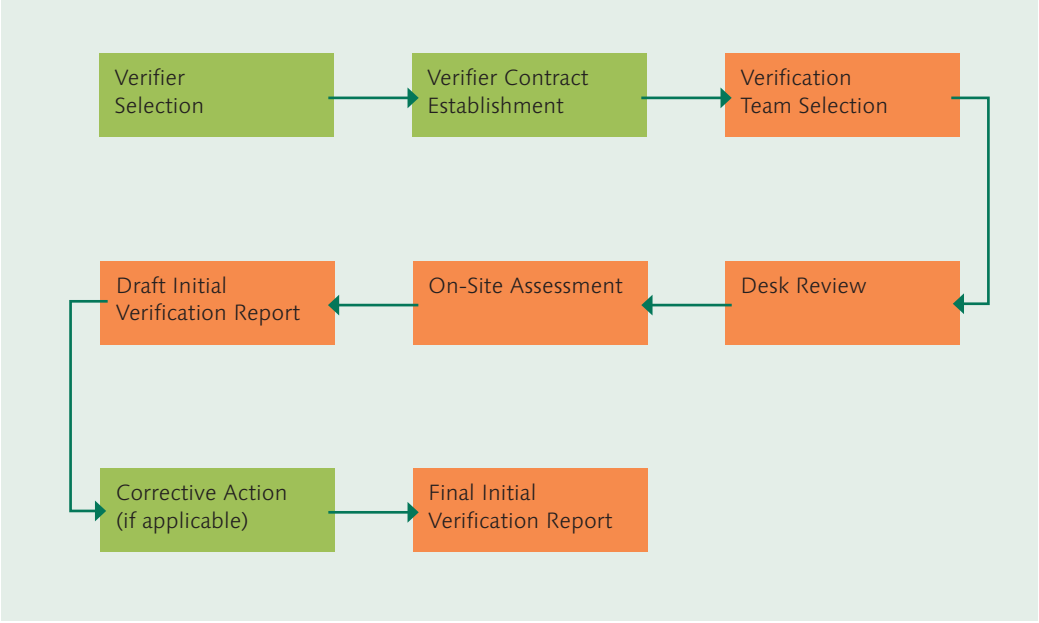
Desk Review

The DOE familiarize themselves with the project's validation report and opinion in order to identify areas of risks related to generation of emission reductions. Any outstanding issues in the validation opinion will be followed up during the initial verification to ensure that they are rectified prior to project operation commencement.

The DOE then reviews the baseline and monitoring methodologies applied to the project. This enables identification of the project and baseline indicators that are necessary for both initial verification and the subsequent periodic verification audits. Additionally, it is important to confirm that individual factors applied for emission reductions calculations are established in a reliable manner and that if fixed factors are used, they have been validated.

The DOE also reviews the monitoring plan and its provisions for complete and reliable monitoring and reporting of project and baseline indicators. In the monitoring plan, the DOE reviews the GHG data management, control and reporting systems (e.g., instructions, procedures, record keeping systems, data sources, assumptions, technical equations, and models) that will be necessary to support accurate and conservative CER claims for verification. This will enable the DOE to identify the key project quality control procedures and operations practices that provide internal verification of GHG emission reduction data. The assessment of

Figure 8 | The initial verification process



the internal quality control system is necessary to identify key reporting risks related to claimed emission reductions. It also provides inputs to the development of an initial verification protocol /checklist to be used during the initial verification.

Subsequently, an audit trail is defined to enable reliable monitoring and reporting of the project emission reductions. Emphasis is put on the GHG information management systems and their reliability, monitoring equipment and its accuracy, and the control of data from sources that are outside of the project operator's control, e.g., data sources and factors used for baseline emissions. In addition, identification of key areas where procedures must be in place to ensure consistent reporting of emission reductions is prioritized.

In order to ensure transparency, an initial verification checklist is also customized for the project activity by the DOE. The verification checklist is generally in line with the requirements stipulated in the VVM.

Initial Verification Audit

Having prepared for the initial verification through a desk review of the validation report, baseline study and monitoring plan of the project, the DOE team assigned to the project verification activity follow up with

the identified key issues through a site visit/audit. The initial verification checklist can also be submitted to the client for review and necessary audit preparations.

The objectives of the audit are to seek confirmation that:

- The project has been implemented as planned.
- All necessary provisions for monitoring and reporting of project operations related to emissions reductions are fully established.
- All adjustments and amendments to the monitoring plan that may have become necessary during the detailed design and construction of the project are identified.
- Spreadsheets and workbooks for reporting are put in place, implemented and operator staff is trained to use these correctly.
- The necessary control mechanisms are put in place for management review and approval of project data.
- Necessary monitoring equipment is installed and calibrated and a sufficient calibration protocol is developed.
- All indicators and control mechanisms identified in the monitoring plan are put in place and correctly understood and implemented.

Potential findings identified during the audit are communicated on site and project parties are asked to acknowledge potential findings before these are included in the report.

Draft initial verification report and resolution of outstanding issues

Shortly after the initial verification audit, the DOE develops a draft initial verification report, including the initial verification checklist. The draft initial verification report in particular indicates the implications of any remaining issues related to the implementation or operation that need to be further elaborated on, researched or added to meet the requirements and ensure the delivery of credible emission reductions. Depending on the nature of the findings, if any, these are presented in the form of either Corrective Action Requests (CARs) or Forward Action Requests (FARs) and are brought to the project proponent's attention.

Findings from the initial verification can either be acknowledged as a non-fulfilment of criteria ensuring the proper implementation of a project or a risk of delivering low quality emission reductions. CARs are issued when:

- There is a clear deviation concerning the implementation of the project as defined by the PDD.
- Requirements set by the monitoring plan or qualifications in a validation opinion have not been met.
- There is a risk that the project would not be able to deliver high quality CERs.

FARs are issued when:

- A special focus on a particular item for the consecutive verification is required or
- An adjustment of the MP is recommended.

The verification team may also use the term clarification request (CL), which would generally be in the form of additional information that is needed to fully clarify an issue.

After the presentation of the draft initial verification report, the project developer is given sufficient time to respond to the CARs and FARs, so that these can be resolved as much as possible before the final initial verification report and statement is issued. Should it be necessary, another site visit can be carried out by the DOE to verify the resolution of issues that have been initiated by the project proponent.

Final initial verification report

After the completion of the initial verification, an initial verification report and statement are provided to the project proponent by the DOE. The initial verification report provides an overview of the verification approach and reflects the results from the dialogue and any adjustments made to the project after the draft initial verification report was submitted. It provides the final conclusions regarding the project's readiness to start operations and generate emission reductions. Before issuing a positive (unqualified) initial verification statement, all CARs in the draft initial verification report must be resolved. FARs need to be addressed prior to the commencement of the first periodic verification. At this

point, if necessary, the DOE identifies the need for submitting a request for deviation or a request for revision of the monitoring plan to the EB.

Periodic verification

The aim of the periodic verification of emission reductions is to verify that emissions reductions quantified and reported for the project are free from material misstatement and represent an accurate and conservative number, considering associated monitoring uncertainties. Hence, the DOE seeks to verify that methods used for quantification represent accurate and agreed methodologies and that the emission reductions are reported in accordance with the validated monitoring plan and the applied baseline and monitoring methodologies (the verification is done against the version of the methodologies applied in the registered PDD).

During the verification, the DOE identifies, collects and verifies all information that supports the emission reductions claimed in order to ensure that the provided data are complete, accurate and verifiable. Additionally, it is verified that data gathered for baseline emission quantification are complete, accurate and correctly applied. The verification results will be documented in a verification report.

Audit preparations

Once the monitoring report is submitted to the DOE for verification, the DOE makes the monitoring report publicly available on the DOE's climate change website, in line with the CDM Modalities and Procedures.

The DOE reviews the monitoring records and GHG emission reduction calculations submitted by the project proponent and determines whether the provided monitoring records are in accordance with the monitoring plan. It is expected that the key records from project operations will be made available to the DOE prior to the site visit in order to prepare for the audit. The underlying detailed information does not need to be submitted to the DOE, but such documentation should be made available during the site visit.

A periodic verification checklist is prepared according to the VVM. This checklist mirrors a complete project audit trail and the project monitoring plan, and it is used to identify the key risk areas where material misstatement of emission reductions may occur. Initially, material misstatements can be caused by at least the following key sources:

- Incorrect transfer of data between reporting forms.
- Use of monitoring equipment that is not calibrated.
- Incorrect application of emission factors used to calculate emission reductions.

Other factors may be identified through a more detailed risk assessment carried out as part of the audit preparations.

On-site audit

The DOE conducts on-site audits to confirm the project's operational performance. The on-site audit involves a review of on-site performance records not submitted prior to the visit, interviews with project participants and local stakeholders, collection of measurements, observation of established practices and testing the accuracy of the monitoring equipment. It also includes a review of the monitoring results, and the DOE verifies that the monitoring methodologies for estimating emission reductions are applied correctly, and their documentation is complete and transparent. Any concerns related to the conformity of the actual project activity and its operation with the monitoring plan will be identified and communicated to the project proponent. It is expected that the comprehensiveness of such audits will be reduced over time due to knowledge and improvement of the project's GHG reporting system.

Draft verification report and resolution of outstanding issues

A draft verification report, which includes verification findings, is issued to the project proponent for its review. The draft verification report also includes potential issues that need to be resolved before the verification of emission reductions can be finalized. Any outstanding issues that may impact the final verification statement are fully disclosed at this time. In dialogue with the project proponent, these issues are handled according to established certification practices in order to complete the verification of emission reductions. Findings that should be resolved before the next periodic verification are also included and elaborated in this report.

Findings established during the verification may include:

- The verification has not been able to substantiate sufficient evidence for the reported emission reductions or part of the reported emission reductions. In this case these emission reductions will not be verified and certified or

- The verification has identified material misstatements in the reported emission reductions. In this case emission reductions with material misstatements are discounted based on our *ex-post* determination of the achieved emission reductions.

Before the finalization of the verification, the DOE may identify the need of a request for deviation[30] from the provisions made at the registration stage or a request for revision[31] of the registered monitoring plan.

Request for Deviation and Request for Revision

During the verification process, the DOE may determine that project participants deviated from the provisions contained in the documentation related to the registered CDM project activity. In this case, the DOE seeks guidance from the EB on the acceptability of the deviation prior to making its verification/certification decision. An example would be a situation where some technical aspects of the project are not exactly as proposed in the registered PDD, such as in the case of a different installed capacity, project components, or project boundaries. It is important to mention that some of these deviations could question the additionality argumentation presented in the registered PDD and raise the question of whether the project as finally implemented would be considered additional at the time of decision making. A request for deviation of the monitoring plan can be proposed when a change in the procedures for estimating emissions or monitoring procedures is required due to a change in the conditions, circumstances or nature of a registered project activity.

In other cases, it may be proposed that the monitoring plan as contained in the registered PDD be revised. This is the case when:

- The monitoring plan in the registered CDM project activity document is not consistent with the approved monitoring methodology applied to the registered project activity.

- The project proponent proposes a revision of the monitoring plan. Paragraph 57 of the Modalities and Procedures for the CDM allows project participants to revise monitoring plans in order to improve accuracy and/or completeness of information and thus, this revision will be accepted by the EB if it ensures that the level of accuracy or completeness in the monitoring and verification process is not reduced as a result of the revision.

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[30] *Procedures For Requests For Deviation To The Executive Board. http://cdm.unfccc.int/Reference/Procedures.*

[31] *Procedures For Revising Monitoring Plans. http://cdm.unfccc.int/Reference/Procedures*

- The project developer needs to develop an alternative methodology to monitor parameters for calculating emission reductions in the monitoring plan in cases where the monitoring of parameters in the original methodology does not work.

Final verification report and certification

Eventually, a final verification report and verification statement are submitted to the project proponent. The final verification report briefly documents the verification process, methodology and results, including the completed verification checklist. The verification statement clearly specifies the DOE's *ex-post* determination of the monitored emission reductions that have occurred during a specified verification period and serves as a basis for requesting the CDM EB to issue an equivalent amount of CERs. After the project proponent's final approval of the verification report and statement, the verification report is submitted to the UNFCCC for issuance of CERs in accordance with the Modalities and Procedures for the CDM.

In cases where the project proponent disagrees with the DOE's final verification findings, the procedure for handling disputes in accordance with the modalities and procedures of the Marrakech Accords is applied.

Verification Statement

The verification statement is the final outcome of the verification activity. This verification statement includes:

- The scope of the verification.
- The period of the verification.
- Conclusions of the verification, including the verified amount of emission reductions for a given period.
- Liability statement with regards to the accuracy of the verification statement.

The verification statement is the basis for issuing CERs and should represent a high level of assurance.

Certification Statement

Certification is the written assurance by a designated operational entity that, during a specific period in time, a project activity achieved the emission reductions as verified. The DOE informs the project participants, the Parties involved and the EB of its certification decision in

writing. The certification report is made publicly available. The certification report constitutes a request for issuance to the EB of CERs equal to the verified amount of emission reductions.

Certification and Issuance process

In accordance with paragraph 64 of the CDM Modalities and Procedures, the certification report shall constitute a request for issuance to the EB of CERs equal to the verified amount of reductions of anthropogenic greenhouse gases. The DOE submits its verification report and certification report/request for issuance of CERs.

The date of receipt of a request for issuance is the date when the Secretariat has determined that the request is complete. Unless there is a request for review, a request for issuance shall be considered final 15 days after its receipt. After this period, or upon conclusion of the review process, the EB instructs the CDM Registry administrator to issue the specified amount of CERs for the specified time period.

Verification of PoAs

Procedures for PoA verification and monitoring are still being developed. For example, the EB requested at EB 54 that a standardized monitoring report template for PoAs be developed[32]. As of March 2011, no registered PoA has generated CERs, and the DOE's experience with PoAs is still limited to validation. The pitfalls associated with verification of PoAs included in this edition are not based upon DNV's experience. Rather, they are expected to be the errors that are most likely to be made by project developers.

[32] *EB 54, paragraph 72*

Verification Pitfalls

This section provides a review of key verification pitfalls, in terms of commonality and frequency. These pitfalls were identified from DNV's verification activities up to September 2010. One of DNV's customers that has gone through several verifications participated in the process of identifying the main pitfalls during the implementation of the project and the verification process.

Pitfall 35: Project Implemented Differently

The actual project is not always implemented in exactly the same way as it was described in the PDD. These changes may or may not affect the calculations of emission reductions, but they can be the reasons for a clarification or corrective action request during the verification process. It is frequently found that the installed capacity is different from the one in the PDD, and a different type of equipment is installed.

As a rule of thumb, the projects have to be implemented exactly as proposed in the design stage, as described in the registered PDD. In cases where there are changes in the implementation of the project compared to the registered PDD, the DOE performing the verification should seek guidance from the EB or notify the EB of the changes. In cases where changes are permanent, e.g., using a different type of biomass residue, a notification for change assessed by a DOE must be submitted to the EB for approval prior to submitting a request for issuance[33].

The procedures for requests for deviation prior to submitting a request for issuance specify the process for submitting these requests to the EB when a DOE finds deviations from approved methodologies and/or provisions from the registered PDD[34]. The procedures for notifying and requesting approval of changes from the project activity as described in the registered project design document specify the processes for: a) submitting a notification of the changes with relevant documentation in cases where a DOE identifies that a project activity does not conform

[33] *The guidelines on assessment of different types of changes from the project activity as described in the registered PDD (EB 48, Annex 67) guidance on how the changes should be assessed by the DOE.*

[34] *EB 49, Annex 26*

to the description in the registered PDD, but it determines that the changes do not affect project additionality, scale, and methodology, and b) submitting a request for approval of changes with relevant documentation in cases where the DOE identifies that the changes in the project activity are of concern[35].

Examples:

- There is equipment in place that was not included in the drawings in the PDD, or the equipment is installed at a location different from what is shown in the PDD.

- There is equipment in the project that was not initially considered in the PDD (such as back-up equipment).

- In cases where several similar facilities are involved in a project, there are errors in the documents caused by copying and pasting the texts, for example, using the same name for two different facilities.

- Equipment serial numbers are not consistent with as-built drawings, which may indicate a change in equipment without documentation being updated to reflect the change.

Good practice:

Any changes during the project implementation stage should be recorded, and any related documentation should be updated, in particular if the change has an impact on the emission reductions. This impact should be identified and also be reflected in the calculations and the monitoring report. Depending upon the nature of the changes to project activities, guidance should be sought from the EB.

Pitfall 36: Project implemented differently in case of biomass project

Some biomass projects end up using biomass/fossil fuels that are different from the ones that are specified in the registered PDD. These deviations are typically due to changes in fuel type, cofiring of fossil fuel and use of non-renewable biomass, and can have the following consequences:

- Such deviations from the monitoring plan will be considered as a change in design.

[35] *EB 48, Annex 66*

- Impact on additionality due to change in design may need to be assessed.

- This can lead to a situation where the project activity will represent the baseline scenario.

- This may result in a delay as changes in design require the DOE's validation and an approval from UNFCCC will take at least three to six months.

These deviations are explained below:

Change in fuel type:
In the registered PDD, the project developers generally commit to use a specific type of biomass in the project activity. However, once the project is implemented, the project proponents use a different type of biomass or consume some other types of biomass in addition to the biomass type committed to in the registered PDD. This results in a deviation from the registered PDD of the project. In these cases, a notification/approval of change of project design needs to be submitted to the EB, and the impact of this change on the additionality of the project needs to be assessed.

Co-firing of fossil fuels:
A number of biomass (cogeneration) projects actually co-fire fossil fuels along with biomass to ensure the plant availability throughout the year or for better operating conditions of the plants. However, co-firing allowances vary depending on the host country (or sometimes even differ by location within a country). In India, for example, the nodal agencies for renewable energy projects allow using coal as support fuel for up to 15% of the total fuel on an energy basis, whereas some of the state pollution control boards do not allow any coal usage for the same projects. Compliance with host-country regulation in respect to co-firing allowances can be ensured by checking the allotment of coal controlled by government agencies. Generally, online information on issuance of coal is available for these types of projects. If the project uses imported coal, coal purchase invoices become part of monitoring. During the verification period, compliance with host-country regulations in respect to co-firing allowances needs to be checked, and it should be ensured that the fraction of fossil fuel used in the project does not exceed the limit. In a few cases it was during verification that this co-firing allowance had been increased by host-country regulation, resulting in more fossil fuel co-firing in comparison to the allowance considered in the registered PDD. In such cases a notification/approval of change of project design

needs to be submitted to the EB and the impact of this change on the additionality of the project also needs to be assessed.

Use of non-renewable biomass as fuel:

Non-renewable biomass, as defined in the Glossary of CDM Terms, is biomass that cannot be demonstrated to be renewable biomass by the forest/cropland/grassland remaining intact, the carbon stocks do not systematically decrease over time and national/regional regulations are complied with. Non-fossil fractions of waste are renewable. Biomass residues are renewable as long as the carbon stocks are not systematically decreased, e.g., collecting dead wood from a forest is considered non-renewable.

Each country has declared which non-permitted biomass types cannot be used in any boiler. The challenge lies in identifying the source of biomass that is already used. In some states/provinces in India, the consent from state pollution control boards clearly indicates the types of biomass allowed. Otherwise the Forest Act of the country typically specifies the types of wood that are prohibited for usage as fuel, due to its non-renewable nature.

Whenever the source of fuel (especially for woody biomass) is not clearly demonstrated to be in line with the definition of renewable biomass provided by the CDM EB, project emissions have to be included in one of the following ways:

- Treat the non-renewable component of biomass as the most carbon intensive fossil fuel in the region on an energy basis (as per the procedure defined in ACM0006).

- Use the IPCC2006 emission factor for solid biomass on an energy basis.

Good practice:

- It's important for the PP to clearly assess the availability and sustainability of the type of biomass supply that is expected to be consumed during the lifetime of the project. This can be accomplished by devoting time and resources on an assessment at the conceptualization stage of the project.

- Provide information in a transparent manner on the use of fossil fuels during the validation stage itself and make sure it is in line with country requirements.

Pitfall 37: Impractical Monitoring Plan Adopted

The monitoring plan is often taken directly from the applicable approved methodology. As a result, when the project is implemented, a project developer finds that the plan does not work well or even does not apply to the project, and changes to the monitoring plan have to be made.

Examples:

- Net calorific value of the waste gas is to be a measured value in the monitoring plan but in the actual project implementation, gross calorific value per the records is used. Additionally, while the PDD requires a measured value, IPCC default values are used.

- The steam production parameter is to be measured according to the monitoring plan, but in the actual project implementation it is estimated.

- While fuel quantities are supposed to be recorded on a daily basis through direct flow measurement, they are actually recorded on a monthly basis, based on fuel receipts.

- Leakage needs to be monitored every year during the entire crediting period, but there is no evidence of monitoring leakage emissions.

- The steam enthalpy used to calculate energy is a constant value of 0.682 while the monitoring plan in the registered PDD specifies that the monthly actual enthalpy based on steam parameters is to be used.

- The baseline steam requirement for power generation was estimated to be 6.3 tonnes/MWh by XYZ Corporation during the validation, and the project proponent requested that they be able to use the same value for calculating the emission reductions.

Good practice:

Follow the monitoring plan in the registered PDD, and show evidence that the plan is being implemented. Keep in mind the following:

- Ensure that the monitoring plan is practicable for implementation by the project developer, and initiate appropriate steps to facilitate implementation of the plan. At validation, the DOE should also ensure that systems are in place for such implementation.

- An initial verification of the project activity is a way of identifying such discrepancies.

- The process also requires that periodic internal audits be conducted by the project proponent and that corrective actions are taken.

The monitoring report must include all of the parameters that are specified in the monitoring plan, and the data source and frequency of data measurement must be consistent with the plan.

Pitfall 38: Errors in transferring and archiving data

Data is sometimes recorded in logbooks or other hard copy records and subsequently transcribed to an electronic format, such as databases or data sheets. During this process there can be an error transferring data, and the final numbers are not the same as the actual measurements.

Examples:

- The data filled out at the project site is not the same as in the electronic database.

- Sums in worksheets are incorrect or data is missing.

- The change in the numbers is not reflected in the database.

- A change in the staff managing the information can cause inconsistencies because no formal training is in place.

Good practice:

- In cases where a manual process is in place for entering data, or even where the records are generated automatically, a quality control-assurance process should be put in place, e.g., by always having another person cross-check manually recorded and transferred data.

- Internal audits can be a good tool for reviewing the quality of the data.

Pitfall 39: Monitoring equipment not adequate, causing data to be lost for a period of time

In some cases the monitoring equipment turns out to be unsuitable for the purpose of monitoring project performance. In this case, changing the monitoring device may be necessary. If different monitoring equipment needs to be installed, until the new equipment is put in place, the

project performance cannot be monitored. As a result, there will be no evidence to demonstrate that the project resulted in emission reductions for that period.

Examples:

- Units or scale in the measurement device are not suitable or the equipment has not been calibrated for the entire range used[36].
- Equipment is not suitable under local climate or operational conditions.
- Equipment cannot measure all variables required by the monitoring plan.

Pitfall 40: Project equipment is different from that described at project registration

Sometimes projects are validated before or at the very early stage of implementation, and at such an early stage, it may not be possible to obtain accurate data on monitoring and operational equipment, such as nominal capacities or nominal outputs. Therefore, when the project is implemented, equipment nameplates are different from the specifications established in the PDD.

Examples:

- Turbine capacity output is different from the data in the PDD.
- Measurement devices are not the same as the ones described in the PDD.
- Measurement devices are not able to reflect monitoring requirements in the approved methodology.

Good practice:
Verify technical and commercial specifications of equipment and measurement devices with the technology suppliers.

[36] *Note that the guidelines for assessing compliance with the calibration frequency requirements (EB 52, Annex 60) provides guidance to DOEs on addressing the non-compliance with the calibration frequency requirements.*

Pitfall 41: Vast difference in the estimated emission reductions and actual reductions

Typically the following discrepancies are observed:

- Differences between the estimated emission reductions in the registered PDD and the emission reductions in the final monitoring plan.

- Differences between the estimated emission reductions in the initial monitoring report that is made public by the DOE and the final monitoring report submitted along with the request for issuance.

The estimated emission reductions in the PDD and the emission reductions in the monitoring reports may diverge significantly only if the project activity involves an *ex-post* monitoring of the baseline emissions. While this is considered acceptable, any other variation is not.

Examples:

The differences in the emission reductions between the PDD and the monitoring report can be further attributed to the following instances:

- Increased production levels realized beyond the rated capacities. For example, in a hydro project, the gross electricity generation for the months of March 2005 and April 2005 were 10.7% and 8.7%, respectively. Since these numbers are higher than the rated installed capacity, the result is a higher CER estimate, which is, generally speaking, not possible.

- Transportation emissions are either not being accounted for or are lower than what was estimated.

- The accounting periods indicated in the registered PDD and the period considered in the monitoring period could be different.

- Leakage emissions considered in the monitoring report have been incorrectly estimated. The project emissions may not account for the usage of coal in the project for the monitoring period.

Good practice:
A critical analysis of the discrepancy between *ex-ante* estimated CERs detailed in the PDD and the actual CERs claimed in the monitoring report should be provided in the monitoring report by the project participants. In cases where higher CERs are being claimed due to increased production levels beyond rated capacities, this should be justified by

technical specifications that support increased loads beyond the rated capacities. Similarly, in cases where the actual emission reductions are far below the estimated amount in the PDD, justification should be provided in the monitoring report as well as in the verification report.

Pitfall 42: Crediting period in the monitoring report is not the crediting period of the project registered

The actual crediting period of the project should correspond to the one specified in the registered PDD and determined at the validation stage. However, sometimes the project implementation is delayed or the project becomes operational earlier than planned, and the initial recording of data starts after or before the date specified in the PDD. Changes in the project start date should not be the reason for changing the crediting period.

Good practice:
The crediting period should be the same as what was specified in the registered PDD. In cases where a change in the crediting period is needed, the procedure of Annex 31 to the EB 24 report should be followed. If the differences in crediting start date are less than one year between the one stated in the registered PDD and the actual date, a request can be sent to the UNFCCC Secretariat at *cdmregistration@unfccc.int*.

Pitfall 43: Inefficient document control and data archive

Taking into account the long-time horizons of CDM projects, which can have crediting periods of 10 years if a fixed period is chosen, or 7 years in the case of a renewable period (renewable up to two times, for a maximum total of 21 years), an efficient document control and data archive system should be in place.

There is no requirement for the frequency of verifications. It depends on the cost-benefit calculations for the project and it is up to the project developer to decide when to have the verification. As a result, it is possible that the first verification takes place one year or more after the start of the crediting period. In this case, the data for more than one year will have to be included in the monitoring reports and needs to be reviewed and verified by the DOE. However, experience shows that sometimes these records are not readily retrievable or even not available, especially when only a hard copy is kept.

Good Practice:
Document control and data archiving should be based on a quality standard such an ISO 9001.

Pitfall 44: Incorrect parameters presented or required parameters are missing in the monitoring report

The data values presented in the monitoring reports are sometimes obviously incorrect. For example, the values in the monitoring report far exceed any possible value that would occur from operation of a plant with capacities as given in the registered PDD. There are also cases where the monitoring report specifies that the emission factors are determined *ex-ante*, while these are in fact calculated *ex-post* based on monitored data. In some cases, the monitoring report fails to include the data parameters that are required by the applied methodology. For example, ACM0008 requires monitoring the amount of electricity generated by the project and consumed by auxiliary equipment, while these parameters are not used at all to calculate emissions reductions. Instead, the amount of power delivered to the grid, which can be monitored by the meter installed between the project site and the power grid, is used for calculating emissions reductions. All the required parameters must be monitored per the methodology regardless of whether these are necessary for calculating the project's CO_2 benefit.

These examples demonstrate an insufficient understanding of the monitoring requirements and the need for quality assurance and internal review process on the project proponents' side.

Good practice:
When a monitoring report is prepared, the project proponent should:

- Review the monitoring report against the requirements in the approved monitoring methodology and PDD.
- Perform a quality check of all data and calculations in the monitoring report.
- Ensure that there is evidence to back up all aggregated data in the monitoring report.
- Identify any deviations with the approved monitoring methodology and PDD, and provide justification.
- Establish a formal internal review process.

Pitfall 45: Deviations from the monitoring plan in the registered PDD

The monitoring reports submitted sometimes include changes in the method of calculating the baseline emissions, the project emissions and/or the leakage from the registered PDD, which means that the calculations in the monitoring report will deviate from the monitoring plan in the registered PDD. The Modalities and Procedures for the CDM allow

project participants to revise monitoring plans to improve accuracy and/or completeness of information. It is important for the project proponent to decide on any required changes as soon as possible to avoid any delays, since this will require submitting a request for revision of the monitoring plan to the EB.

It should be noted that the revision must ensure that the level of accuracy or the completeness of the monitoring is not reduced. Additionally, the proposed revision needs to be in accordance with the approved methodology. Procedures for revising monitoring plans, Version 2 were adopted at the EB 49[37].

Pitfall 46: Monitoring not according to registered PDD in case of biogas projects

The projects involving biogas utilization at industrial/agricultural wastewater facilities are generally of small/medium scale but use rather complex methodologies (e.g., AM0022, AM0013, ACM0014, AMS-III.H). The *ex-post* monitoring of these types of projects often do not comply with the monitoring plan in the registered PDD. This could be due to many factors, including a delay in installing the required monitoring equipment, lack of awareness from the project management team on *ex-post* monitoring requirements and lack of quality assurance and control procedures.

Examples:

- Lack or delay in the installation of monitoring equipment to monitor parameters that are directly used to calculate the emission reductions achieved from the project activity, e.g., delay in installing a waste water flow meter or biogas flow meter.

- Inconsistency in the required monitoring parameters with regard to the monitoring method, i.e., between direct measurement of electricity consumption and calculation of the electricity consumption based on rated capacity and operating hours.

- Monitoring equipment is not adequate, which causes loss of data for a certain period, i.e., breakdown of monitoring equipment or continuous measurement vs. periodical measurement.

- Poorly installed and tagged monitoring equipment, for instance when there is a switch or change in the monitoring equipment location.

[37] *http://cdm.unfccc.int/Reference/Procedures/iss_proc05.pdf*

- Missing or delayed calibration.

- The project equipment is different from what was described in the registered project design document, e.g., installation of monitoring equipment with a lower accuracy limit as compared with the accuracy defined in the registered monitoring plan;

Situations such as these often result in:

- Deviations from the monitoring plan in the registered PDD, resulting in a need for getting a deviation approval from the CDM EB prior to the request of issuance of CERs.

- Revising the monitoring plan to be submitted and approved by the CDM EB prior to the request of issuance of CERs.

- Non-compliance, which results in total or partial loss in emission reductions achieved.

Good practice:
Ensure the following:

- The requirements for the monitoring equipment are correctly specified without ambiguities at the time of the validation, and the equipment is installed as planned.

- The requirements for calibration are clearly stated, and they are not only in line with industry/international/local standards but also meet the latest guidelines of the EB methodology.

- The implementation exactly follows the requirements in the registered monitoring plan.

Pitfall 47: Monitoring of parameters not according to the monitoring plan in case of bundled projects

In most of the bundled energy projects, including renewable energy and energy efficiency projects, some of the project equipment is installed at the time of validation, and the remaining equipment is installed at the early stage of the implementation. When the project activity is implemented, therefore, the monitoring of the parameters might not be consistent with what was described in the registered PDD.

Examples:

- For a bundle of two mini-hydro projects, it was indicated in the registered PDD that net electricity generated from the individual mini-hydro projects would be measured using the dedicated individual meters. However, during the implementation, the state utility company decided to carry out the monitoring of the generated electricity from the two hydro projects using a single meter instead of installing the individual meters.

- For a bundle of Wind Electric Generator (WEG) installation, it was indicated in the PDD that the net electricity exported from the bundle of WEGs was measured using the dedicated meters at the grid interconnection point. However, during implementation, other WEGs which were not part of the CDM bundle were also connected to the same meter.

Good practice:
The monitoring plan in the registered PDD must be followed when the project is implemented. Ensure that the monitoring requirements are practical.

Pitfall 48: Poorly installed and tagged monitoring equipment

During the verification activities, it has been observed that monitoring equipment is poorly installed and tagged, making it difficult for the maintenance personnel to perform the required quality control and checks as described in the registered PDD. This may result in low-quality data. In some cases, monitoring equipment is installed at a place where it is impossible to reach once scaffolding is removed, making it difficult for the verifier to check the equipment.

Good practice:
Make sure the installation of monitoring equipment is well planned for easy access, to facilitate quality control and checks of local displays.

PoA Verification Pitfalls

Pitfall 49: Practicality of monitoring

The PoAs can often have widely dispersed project activities. Sampling provisions can be used for monitoring, both for validation and verification. The proposed statistically sound sampling method/procedure to be used by DOEs should be described in the PoA-DD. In case the coordinating/managing entity opts for a verification method that does

not use sampling but verifies each CPA, there should be a transparent system defined and described that ensures that no double accounting occurs and that the status of verification can be determined at anytime for each CPA. The practicalities, accounting for reliability, maintenance, ease of use, and cost, should be considered by the project proponents when designing the monitoring plan. For certain PoA types, the cost of monitoring can be a significant operating expense.

Pitfall 50: Duration of PoA and CPA

Duration of the PoA should not exceed 28 years and 60 years for forestry projects. The duration of the CPA is limited to 7 years with an option to renew twice or 10 years fixed (20 years for renewable or 30 years fixed for forestry CPAs) and is defined when the project developer submits a request for registration. It is important to note that the crediting period of a CPA is terminated when the PoA ends. For example, for a CPA that is included in a PoA that has five years remaining, the CPA can generate credits for only five years even though a 10-year fixed crediting period is selected for this activity.

PART 3: GUIDANCE ON HOW TO PREPARE THE CDM PROJECT AND POA DESIGN DOCUMENTS

In this section, the emphasis is on helping to streamline the writing of the PDD by focusing on those items that project participants have a tendency to forget. The approach is therefore to list "WHAT TO DO" instead of "WHAT NOT TO DO," following the relevant document forms. Instructions to complete the following forms are provided in this section:

- CDM Project Design Document Form (CDM-PDD).
- CDM Programme of Activities Design Document Form (CDM-PoA-DD).
- CDM Programme Activities Design Document Form (CDM-CPA-DD).

How to complete the CDM-PDD

The text from the UNFCCC CDM Guidelines Version 7.0 is printed in green text boxes for each section, and DNV comments are added in yellow text boxes with a "!" in the corner.

Texts from UNFCCC CDM Guidelines Version 7.0 are included in green text boxes like this.

!

DNV Comments and examples related to "What to do" are included in yellow text boxes like this.

CLEAN DEVELOPMENT MECHANISM
PROJECT DESIGN DOCUMENT FORM (CDM PDD)
Version 03 – in effect as of: 28 July 2006

!

- Make sure you use the correct template for either large-scale (as referred to here) or small-scale projects.
- Always download the latest template of the PDD on the UNFCCC Website (http://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/index.html).
- Do not alter the template.
- Format, font, headers and logos must not be added or deleted or altered in any way.
- Make sure to provide answers under all headings and give only what the heading asks for in as concise a manner as pos-

sible. This also includes Annex 1-4. If you believe a heading is not applicable for this project, state this in a sentence, e.g., "not applicable."

- Where it is optional to use a table, and you do not want to use it, leave the spaces blank instead of deleting it.

- Additional appendices, such as copies of permits or environmental impact assessments, may be included if appropriate. It is important that all information provided in the PDD, including any appendices, is in the English language.

- PDDs are designed to be accessible through the Internet, and it is therefore good practice to keep the size below 1 MB. Avoid unnecessary graphs and pictures, and downsize pictures where necessary.

- Avoid calculation errors, unintended omissions, language errors and typographical errors through appropriate quality assurance before submission to the DOE.

SECTION A. General description of project activity

A.1. Title of the project activity

Please indicate:

- The title of the project activity.
- The version number of the document.
- The date of the document.

See Pitfall 1: Small-scale methodology selected for a large-scale project

!

- Title of the project used in the PDD should be unique enough to identify the project.
- Version number and date should be included in Section A.1 after the title of the project, and should be updated for each new revision of the PDD.
- Most projects submit several revisions of the PDD to the DOE, so during each revision, the date and version of the PDD need to be revised.

See Pitfall 16: Poor quality of the PDD

See Pitfall 17: Claims in the PDD do not match the actual situation at project site

A.2. Description of the project activity:

The description of the project activity to be presented in this section is a brief summary of the detailed description given in the sections "A.4. Technical description of the project activity" (in particular section "A.4.3. Technology to be employed by the project activity") and "B.3. Description of the sources and gases included in the project boundary".

Please include in the description:

- The purpose of the project activity with a concise description (a couple of paragraphs) of:

  (a) The scenario existing prior to the start of the implementation of the project activity;

(b) The project scenario, including a summary of the scope of activities/measures that are being implemented within the proposed project activity;

(c) The baseline scenario, as identified in section "B.4 Description of how the baseline scenario is identified and description of the identified baseline scenario".

- If the baseline scenario is the same as the scenario existing prior to the start of implementation of the project activity, there is no need to repeat the description of the scenarios, but only to state that both are the same.

- Explain how the proposed project activity reduces greenhouse gas emissions (i.e. what type of technology is being employed, what exact measures are undertaken as part of the project activity, etc).

- The view of the project participants on the contribution of the project activity to sustainable development (Max. one page).

! This section should not exceed one page. The purpose of the project activity with regard to emission reductions and the project's contribution to sustainable development should be described.

If the baseline scenario is the same as the scenario that existed prior to the start of implementation of the project activity, there is no need to repeat the description of the scenarios, but only to state that they are the same.

A.3. Project participants:

See Pitfall 2: Project participants not clearly identified

Please list project participants and Party (ies) involved and provide contact information in Annex 1. Information shall be in indicated using the following tabular format.

Name of Party involved * ((host) indicates a host Party)	**Private and/or public entity(ies) project participants * (as applicable)**	Kindly indicate if the Party involved wishes to be considered as project participant (Yes/ No)
Name A (host)	• Private entity A • Public entity A …	No
Name B	• None	Yes
Name C	• None	No
…….		

See Pitfall 6: The modalities of communication with the Executive Board in terms of CERs issuance and allocation instructions are not stated clearly, or not signed by all project participants

* In accordance with the CDM modalities and procedures, at the time of making the PDD public at the stage of validation, a Party involved may or may not have provided its approval. At the time of requesting registration, the approval by the Party (ies) involved is required.

Note: When the PDD is filled in support of a proposed new methodology (forms CDM-NM), at least the host Party (ies) and any known project participant (e.g. those proposing a new methodology) shall be identified.

See Pitfall 4: Letter of approval insufficient or delayedinstructions are not stated clearly, or not signed by all project participants

!

The table in section A.3 should be completed as follows (ref. example in the box):

- Name of Party involved: Here the Parties (i.e., countries) involved must be listed. This is either the countries that participate directly in a project or that participate indirectly through the authorization of a private/public entity.

- Private and/or public entities project participants: Here the private and/or public entities (e.g., companies) that participate in the project (i.e., project participants) need to be listed for each country. Only entities that make decisions on the allocation of CERs should be listed here. Consultants who only assisted in the development of the PDD and/or the baseline and monitoring plan should not be listed as project participants.

- Indicate if the Party involved wishes to be considered as the project participant: Here it shall be indicated with 'Yes' or 'No' whether the Parties (i.e., countries) want to be considered as DIRECT project participants vs. only indirectly participating through the private and/or public entity that the country authorizes to participate in the project. For most projects, the answer here will be 'No' as the countries usually do not want to be considered a project participant.

- Annex 1 should be filled in after completion of the table in A.3 and the description of the project participants should be consistent (i.e., identical name).

- The DNA approval process should start early as this can be time-consuming. Written approval is needed from all relevant Parties prior to submission for registration.

A.4. Technical description of the project activity:

A.4.1. Location of the project activity:

See Pitfall 28: Insufficient information on physical location allowing unique identification of the project activity

- It is important that project locations should be given so that no submitted project could potentially be confused with another.

- The level of detail required depends on whether there are existing or potential projects in the same area. Include geographical coordinates of the project activity.

- When there is a potential for confusion, it is important that the precise location of the project be clearly identified in the PDD, for example by using map co-ordinates. For example,

when landfill gas projects are submitted, the exact coordinates of the landfill may be required.

- If a project is developed in an urban/semi-urban region, only stating the municipality is rarely adequate.
- All of the plants/major equipment to be used must be listed and locations made clear.

A.4.1.1. Host Party (ies):

A.4.1.2. Region/State/Province/etc.:

A.4.1.3. City/Town/Community etc.:

A.4.1.4. Details of the physical location, including information allowing the unique identification of this project activity (maximum one page):

!

- Fill in the field and do not exceed one page.

A.4.2. Category (ies) of project activity:

Please use the list of categories of project activities and of registered CDM project activities by category available on the UNFCCC CDM website; please specify the category (ies) of project activities into which this project activity falls. If no suitable category (ies) of project activities can be identified, please suggest a new category (ies) descriptor and its definition, being guided by relevant information on the UNFCCC CDM website.

!

The "category of project activity" must be linked to the scope and project categories defined by UNFCCC. The list can be found at http://cdm.unfccc.int/DOE/scopes.html. The categories are:

1. Energy industries (renewable / non-renewable sources).
2. Energy distribution.
3. Energy demand.
4. Manufacturing industries.
5. Chemical industries.
6. Construction.
7. Transport.
8. Mining/mineral production.
9. Metal production.
10. Fugitive emissions from fuels (solid, oil and gas).
11. Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride.
12. Solvent use.
13. Waste handling and disposal.
14. Afforestation and reforestation.
15. Agriculture.

See Pitfall 7: Insufficient description of the technology

A.4.3. Technology to be employed by the project activity:

This section should include a description of how environmentally safe and sound technology, and know-how to be used, is transferred to the Host Party (ies).

It should also further explain the purpose of the project activity, as described in section "A.2.

Description of the project activity", taking the information provided in that section as a basis and including a detailed description of:

(a) The scenario existing prior to the start of the implementation of the project activity, with a list of the equipment(s) and systems in operation at that time;

(b) The scope of activities/measures that are being implemented within the project activity, with a list of the equipment(s)

and systems that will be installed and/or modified within the project activity;

(c) The baseline scenario, as identified in section "B.4 Description of how the baseline scenario is identified and description of the identified baseline scenario", with an indicative list of the equipment (s) and systems that would have been in place in the absence of the project activity.

If the baseline scenario is the same as the scenario existing prior to the start of implementation of the project activity, there is no need to repeat the description of the scenarios, but only to state that both are the same.

The description of the scenarios should include, inter alia:

(a) A list and the arrangement of the main manufacturing/production technologies, systems and equipments involved. Include in the description information about the age and average lifetime of the equipments based on manufacturer's specifications and industry standards, and existing and forecast installed capacities, load factors and efficiencies. The monitoring equipments and their location in the systems is of particular interest;

(b) The emissions sources and the greenhouse gases involved in the project activity, according to the methodology used; and existing and forecast energy and mass flows and balances of the systems and equipments included in the project activity;

(c) The types and levels of services (normally in terms of mass or energy flows) provided by the systems and equipments that are being modified and/or installed under the project activity and their relation, if any, to other manufacturing/production equipments and systems outside the project boundary. The types and levels of services provided by those manufacturing/production systems and equipments outside the project boundary may also constitute important parameters of the description. The description should clearly explain how the same types and levels of services provided by the project activity would have been provided in the baseline scenario.

The baseline scenario can be described with a lower level of detail in case it is not an existing facility, i.e. in case it is derived from a

hypothetical facility that would have been built in the absence of the proposed project activity and for which no historical data is available.

Finally, avoid adding information, which is not essential to understanding the purpose of the project activity and how it reduces greenhouse gases emissions. Information related to equipments, systems and activities that are auxiliary to the main scope of the project activity and do not interfere directly or indirectly with emissions of greenhouse gases and/or with mass and energy balances in the project activity should not be included.

!

- Information under technical description should be concise but comprehensive.
- Proper sequencing and appropriate use of clear process flow sheets will bring more clarity, especially in industry -specific projects.
- The description should be adapted to sector specifics.
- Systems, plans and responsibilities with regard to initial training (capacity building) and maintenance efforts during the project period should be outlined in this section. This is relevant when new technology is implemented, such as a new boiler type or a new wastewater treatment system.
- Training should be provided prior to the crediting period start date to ensure effective operation of the project.

A.4.4. Estimated amount of emission reductions over the chosen crediting period:

Please indicate the chosen crediting period and provide the total estimation of emission reductions as well as annual estimates for the chosen crediting period. Information on the emission reductions shall be indicated using the following tabular format. Please use internationally accepted standard format for values where 1,000 represents one thousand and 1.0 represents one.

Years	Annual estimation of emission reductions in tonnes of CO_2e
Year A (2011)	
Year B	
Year C	
Year…	
Total estimated reductions (tonnes of CO_2e)	
Total number of crediting years	
Annual average over the crediting period of estimated reductions (tonnes of CO_2e)	

!

- State the estimated total reductions in tonnes of CO_2e as determined in Section B.6.3 and B.6.4 over the project's crediting period.
- Make sure the table in A.4.4 is correctly filled in and that the estimated emission reductions in A.4.4, B.6.3 and B.6.4 are identical.

The table should be filled in as follows (ref. example in Box 3):

- Use DD/MM/YYYY format of years from the start of the crediting period to the end of the crediting period.

- Make sure that the start dates of the crediting period in A.4.4, 6.4 and C.2.1.1 are identical.
- Make sure the total number of crediting periods in A.4.4. and C.2. are identical.
- Number of years from the start of the crediting period to the end of the crediting period should be included in the first column (years), with the corresponding annual estimation of emission reductions in the next column.
- When this is filled in, total estimated emission reductions should be added up.
- The last row, "Annual average over the crediting period of estimated reductions (tonnes of CO_2e)" is then the "Total estimated reductions" divided by the "Total number of crediting years"

Box 3 | Example of a completed Table A.4

Years	Annual estimation of emission reductions in tonnes of CO_2e
01/01/2011 to 31/12/2011	150,000
01/01/2012 to 31/12/2012	150,000
01/01/2013 to 31/12/2013	150,000
01/01/2014 to 31/12/2014	150,000
01/01/2015 to 31/12/2015	150,000
01/01/2016 to 31/12/2016	150,000
01/01/2017 to 31/12/2017	150,000
01/01/2018 to 31/12/2018	150,000
01/01/2019 to 31/12/2019	150,000
01/01/2020 to 31/12/2020	150,000
Total estimated reductions (tonnes of CO_2e)	1,500,000
Total number of crediting years	10 Years (fixed crediting period)
Annual average over the crediting period of estimated reductions (tonnes of CO_2e)	150,000

A.4.5. Public funding of the project activity:

See Pitfall 5: No written confirmation that funding will not result in a diversion of official development assistance

In case public funding from Parties included in Annex I is involved, please provide in Annex 2 information on sources of public funding for the project activity from Parties included in Annex I, which shall provide an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of those Parties.

!

- This is important only if public money is used for the project. Ideally the relevant Ministry of the Annex I country dealing with the Official Development Assistance (ODA) needs to confirm that this is not a diversion of any official development assistance.
- Make sure to allocate enough time to get this confirmation.
- If there is no diversion of ODA funding, this should be explicitly stated in the approval letter from the Annex I Party in question and clearly stated in this section (for example, "this project does not include a diversion of ODA funding.")
- If public funding is included, details of why this is not a diversion should be included in Annex 2 of the PDD.

SECTION B. Application of a baseline and monitoring methodology:

Where project participants wish to propose a new baseline methodology, please complete the form for "Proposed New Methodology: Baseline and Monitoring Methodologies" (CDM-NM) in accordance with procedures for submission and consideration of proposed new methodologies (see Part III of these Guidelines).

B.1. Title and reference of the approved baseline and monitoring methodology applied to the project activity:

Refer to the UNFCCC CDM web site for the title and the details of approved baseline and monitoring methodologies (http://cdm.unfccc.int/methodologies/index.html). Indicate:

- The approved methodology and the version of the methodology that is used (e.g., Approved consolidated baseline and monitoring methodology ACM0002 (Consolidated baseline methodology for grid-connected electricity generation from renewable sources) Version 12.1.
- Other tools referenced in the applied version of the methodology (e.g., "Version 02 of the 'Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion'" and "Version 02 of "Tool to calculate the emission factor for an electricity system."

!

- Before choosing the methodology for the project, refer to the CDM Methodology Booklet available at (http://cdm.unfccc.int/methodologies/documentation/meth_booklet.pdf).
- If you are not certain about which methodology to apply for your specific project, you may want to contact the DOE to discuss whether an approved methodology (or a proposed methodology that is expected to be approved in the near future) can be applied, or whether a new methodology needs to be submitted.

- A reference to the latest version of the approved baseline methodology should be included, as this is important information. When a methodology is revised, you are still allowed to register the projects and apply the earlier version of that methodology up to eight months after the new one has entered into force.

- However, the applicability criteria may have been altered, and therefore it is important to state the exact version that has been used.

See Pitfall 8: Non-compliance with the applicability conditions of the applied baseline and monitoring methodology or methodology compliance not sufficiently explained development assistance

B.2. Justification of the choice of the methodology and why it is applicable to the project activity:

Please justify the choice of methodology by showing that the proposed project activity meets the applicability conditions of the methodology. Explain documentation has been used and provide the references to the document or include the documentation in Annex 3.

!

- Make sure to discuss all applicability conditions required by the methodology and how these are fulfilled for this specific project.

- Add clear references on how particular applicability criteria are fulfilled.

- Especially for small-scale projects, there may be some misunderstanding of how to apply methodologies of different categories for different projects.

- If any of the applicability criteria provided in the methodology are not applicable to the project activity, discuss and document your conclusions.

- If in doubt, contact the DOE to discuss the applicability of the methodology to the specific project.

See Pitfall 9: Insufficient explanation of baseline scenarios

See Pitfall 18: The project boundaries are not drawn appropriately or are missing some emission sources

B.3. Description of the sources and gases included in the project boundary:

Describe which emission sources and gases are included in the project boundary for the purpose of calculating project emissions and baseline emissions, using the table below. In cases where the methodology allows project participants to choose whether a source or gas is to be included in the project boundary, explain and, where necessary, justify the choice.

In addition to the table, present a flow diagram of the project boundary, physically delineating the project activity, based on the descriptions provided in section "A.4.3. Technology to be employed by the project activity".

Include in the flow diagram all the equipments, systems and flows of mass and energy described in that section. Particularly, represent in the diagram the emissions sources and gases included in the project boundary and the monitoring variables.

See Pitfall 12: Baseline information not sufficiently supported by evidence and/ or referenced sufficiently

See Pitfall 13: Major risks to the baseline and project activity not identified/ describedsufficiently

See Pitfall 15: Lack of logic and consistency in the PDDsufficiently

B.4 Description of how the baseline scenario is identified and description of the identified baseline scenario:

Please explain how the most plausible baseline scenario is identified in accordance with the selected baseline methodology. Where the procedure involves several steps, describe how each step is applied and transparently document the outcome of each step. Explain and justify key assumptions and rationales. Provide relevant documentation or references. Illustrate in a transparent manner all data used to determine the baseline scenario (variables, parameters, data sources etc.).

Provide a transparent and detailed description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed project activity.

Please note that this section and Section B.5 are complementary. Some of the steps undertaken here may overlap with the steps undertaken in Section B.5 depending on the procedures used to

Box 4 | Project Boundary Example – large-scale hydroelectric project

Project boundary: The spatial extent of the project boundary includes the hydro power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to.

The greenhouse gases and emission sources included in or excluded from the project boundary are shown in the table below.

	Source	Gas	Included?	Excluded
Baseline	CO_2 emissions from electricity generation in fossil fuel-fired power plants that are displaced due to the project activity.	CO_2	Yes	Main emission source
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
Project Activity	For hydro power plants, emissions of CH_4 from the reservoir.	CO_2	No	Minor emission source
		CH_4	Yes	Main emission source
		N_2O	No	Minor emission source
	CO_2 emissions from fossil fuel-fired auxiliary power consumption.	CO_2	Yes	Main emission source
		CH_4	No	Minor emission source
			No	Minor emission source

select the baseline scenario and demonstrate additionality. If the "Combined tool to identify the baseline scenario and demonstrate additionality" is used, the same information need not be replicated in both sections.

!

- Explain how the most plausible baseline scenario is identified. Where the procedure involves several steps, describe how each step is applied and transparently document the outcome of each step. Explain and justify key assumptions and rationales.

See Pitfall 10: Insufficient demonstration of project additionality

- Provide relevant documentation or references. Illustrate in a transparent manner all data used to determine the baseline scenario (variables, parameters, data sources, etc.), preferably in a table format. Provide a transparent and detailed description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed project activity.

B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality):

See Pitfall 11: Availability of financial parameters used for additionality

See Pitfall 12: Baseline information not sufficiently supported by evidence and/ or referenced sufficiently

See Pitfall 20: Starting date for projects involving capacity expansions of operational non-CDM project activity

Explanation of how and why this project activity is additional and therefore not the baseline scenario in accordance with the selected baseline methodology.

Where the procedure involves several steps, describe how each step is applied and transparently document the outcome of each step.

Where the barriers are involved in demonstrating additionality, only select the (most) relevant barriers. Explain and justify key assumptions and rationales. Provide relevant documentation or references.

Illustrate in a transparent manner all data used to assess the additionality of the project activity (variables, parameters, data sources etc.).

CDM Consideration: For CDM consideration follows "Guidance on the demonstration and assessment of prior consideration of the CDM".

Please note that this section and Section B.4 are complementary. Some of the steps undertaken here may overlap with steps undertaken in Section B.4 depending on the procedures used to select the baseline scenario and demonstrate additionality. If the "Combined tool to identify the baseline scenario and demonstrate additionality" is used, the same information need not be replicated in both sections.

!

- Clearly define the tool used to demonstrate additionality (e.g. "Tool for the demonstration and assessment of additionality" (Version 05.2, 26th August 2008). Explain how and why this project activity is additional and therefore not the baseline scenario in accordance with the selected baseline methodology. Arguments to justify the additionality of the project need to be supported by evidence and/or referenced sufficiently.

- Where the procedure involves several steps, describe how each step is applied and transparently document the outcome of each step.

- While conducting investment analyses, follow "Guidelines on the assessment of investment analysis."

- Many approved baseline methodologies advocate financial analysis such as a Net Present Value (NPV) or Internal Rate of Return (IRR) to demonstrate project additionality. If NPV/IRR calculations are used, these should be made available to the DOE, including the assumptions made (such as discount rate, expected revenue, maintenance costs, etc). Key assumptions of the NPV and IRR analysis must be included in the PDD, such as all relevant costs (including, for example, the investment cost, the operations and maintenance costs), and revenues (excluding CER revenues, but including subsidies/fiscal incentives where applicable).

- In the PDD, show the input values, benchmark (if applicable) and results of the investment analysis.

- If a barrier analysis has been used to demonstrate the additionality of the proposed CDM project activity, the PDD should demonstrate that the proposed CDM project activity faces barriers that:

  (a) Prevent the implementation of this type of proposed CDM project activity.

  (b) Do not prevent the implementation of at least one of the alternatives.

In doing so, project proponent should follow the "guidelines for objective demonstration and assessment of barriers."

See Pitfall 29: Assigning inappropriate economic values to biomass residue and reference plant

- Barriers discussed in the PDD should be substantiated by independent sources of data such as relevant national legislation, surveys of local conditions and national or international statistics.

- Iillustrate in a transparent manner all data used to assess the additionality of the project activity (variables, parameters, data sources, etc.), preferably in a table format.

- For common practice analysis, justify that the suitability of the selected geographical scope (e.g., the defined region) is appropriate for the assessment of common practice related to the project activity's technology or industry type.

- Use official sources to determine to what extent similar and operational projects (e.g., using similar technology or practice), other than CDM project activities have been undertaken in the defined region.

- CDM Consideration:

  a) Demonstrate with documented evidence that the CDM was a decisive factor to go ahead with the project and without CDM the revenue project activity would have not been implemented.

  b) Demonstrate with documented evidence that continuous and real action was taken to achieve CDM registration.

B.6. Emission reductions:

B.6.1. Explanation of methodological choices:

Explain how the procedures, in the approved methodology to calculate project emissions, baseline emissions, leakage emissions and emission reductions are applied to the proposed project activity.

Clearly state which equations will be used in calculating emission reductions.

Explain and justify all relevant methodological choices, including:

(a) Where the methodology includes different scenarios or cases, explain and justify which scenario or case applies to the project activity (e.g. which scenario in ACM0006 is applicable);

(b) Where the methodology provides different options to choose from (e.g. which methodological approach is used to calculate the "operating margin" in ACM0002), explain and justify which option is chosen for the project activity;

(c) Where the methodology provides for different default values, explain and justify which of the default values have been chosen for the project activity.

!

- Excess information such as i) all arguments for additionality (which should be discussed in section B.5), and ii) all the detailed calculations (which are required, for example, under section B.6.3) should not be included here.

- It is important that all variables, parameters, and data sources are consistent with those applied in Section B and that these are fully justified. Assumptions made should be stated. For example:

  – With grid connected electricity projects, it should be clearly stated whether national, regional or the local/state grid data are used to determine the baseline emissions.

  – For fuel switch or energy efficiency projects, the remaining lifetime of existing equipment must be discussed to demonstrate that new and more efficient equipment is unlikely to be implemented in the absence of the CDM project activity.

B.6.2 Data and parameters that are available at validation:

This section shall include a compilation of information on the data and parameters that are not monitored throughout the crediting period but that are determined only once and thus remain fixed throughout the crediting period AND that are available when validation is undertaken. Data that becomes available only after validation of the project activity (e.g. measurements after the implementation of the project activity) should not need to be included here but in the table in section B.7.1.

This may includes data that is measured or sampled, and data that is collected from other sources (e.g. official statistics, expert judgment, proprietary data, IPCC, commercial and scientific literature, etc.). Data that is calculated with equations provided in the methodology or default values specified in the methodology should not be included in the compilation.

Provide for each data or parameter the chosen value or, where relevant, the qualitative information, using the table provided below. Particularly:

(a) Provide the actual value applied. Where time series of data is used, where several measurements are undertaken or where surveys have been conducted, provide detailed information in Annex 3;

(b) Explain and justify the choice for the source of data. Provide clear and transparent references or additional documentation in Annex 3;

(c) Where values have been measured, include a description of the measurement methods and procedures (e.g. which standards have been used), indicate the responsible person/entity having undertaken the measurement, the date of measurement(s) and the measurement results. More detailed information can be provided in Annex 3.

!

- Where values have been measured, include a description of the measurement methods and procedures (e.g., which standards have been used) and indicate the responsible person / entity that performed the measurement, the date of the measurement(s) and the measurement results. More detailed information can be provided in Annex 3.

- The values provided in this section are fixed *ex-ante* for the entire crediting period, hence the values used in this section need to be justified and clear reference and choice of value need to be justified in this section.

- In line with the requirement of the applied methodology, all parameters required to be fixed *an-ante* need to be covered in this section.

- Notations, units and descriptions used in this section should be in line with the requirement of the applied version of the methodology.

(Copy this table for each data and parameter)

Data / Parameter:	
Data unit:	
Description:	
Source of data used:	
Value applied:	
Justification of the choice of data or description of measurement methods and procedures actually applied :	
Any comment:	

B.6.3 *Ex-ante* calculation of emission reductions:

See Pitfall 15: Lack of logic and consistency in the PDD

See Pitfall 24: Deviations from selected calculations in the methodology not justified sufficiently or incorrect formulas applied

Provide a transparent *ex-ante* calculation of project emissions, baseline emissions (or, where applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations provided in the approved methodology. Use estimations for parameters that are not available when validation is undertaken or that are monitored during the crediting period.

Document how each equation is applied, in a manner that enables the reader to reproduce the calculation. Where relevant, provide additional background information and or data in Annex 3, including relevant electronic files (i.e. spreadsheets).

!

- Make sure that baseline emissions, project emissions and leakage emissions are calculated in line with the requirements of the applied methodology.
- Make sure notations, units and procedures used for calculation of emission reductions are calculated in line with the applied version of the methodology.
- Make sure there are no discrepancies between data used for calculations in any enclosed Excel sheet and those indicated in the PDD.
- Never include a data value without referencing the data source, which should be an official and recognised source, and/or the formula and assumptions used to come up with the specific data value. Always use the most updated source available.
- Always justify assumptions by providing details with regard to project specifics.
- Include the units for all variables and double check their consistency.
- All details of the calculations and assumptions made should be available and be provided to the DOE together with the PDD. Examples of common mistakes are:

- Indirect or direct, on-site or off-site emission sources are omitted, (e.g., leakage is not calculated).
- Wrong unit and/or conversion factors are used without justification, resulting in deviations from the applied methodology.
- References are missing and there is lack of transparency in calculations.
- Calculation assumptions are not justified.
- The categories of greenhouse gases covered in the project emissions calculations differ from those included in the baseline emissions calculations.
- There is a lack of evidence that the methodology has been applied conservatively.
- Conversion factors are applied in calculations without showing how they were produced and without providing references.
- A default conversion factor has been applied without sufficient justification and referencing.

- Sometimes leakage is described as not applicable, even though it is applicable. For example, for activities using biomass, leakage should be considered, including potential effects on biomass availability for other users. For the amount of biomass collected from sources outside the project boundary, the transportation emissions from trucks, their trucks' capacity and the number of trips all need to be monitored.

Box 5 | Example of filling the table in B.6.4

Year	Estimation of project activity emissions (tonnes of CO_2e)	Estimation of baseline emissions (tonnes of CO_2e)	Estimation of leakage (tonnes of CO_2e)	Estimation of overall emission reductions (tonnes of CO_2e)
01/01/2011 to 31/12/2011	0	35,000	0	35,000
01/01/2012 to 31/12/2012	0	35,000	0	35,000
01/01/2013 to 31/12/2013	0	35,000	0	35,000
01/01/2014 to 31/12/2014	0	35,000	0	35,000
01/01/2015 to 31/12/2015	0	35,000	0	35,000
01/01/2016 to 31/12/2016	0	35,000	0	35,000
01/01/2017 to 31/12/2017	0	35,000	0	35,000
Total (tonnes of CO_2e)	**0**	**245,000**	**0**	**245,000**

B.6.4 Summary of *ex-ante* estimation of emission reductions:

Summarize the results of the *ex-ante* estimation of emission reductions for all years of the crediting period, using the table in Box 5.

B.7 Application of the monitoring methodology and description of the monitoring plan:

The following two sections (B.7.1 and B.7.2) shall provide a detailed description of the application of the monitoring methodology and a description of the monitoring plan, including an identification of the data to be monitored and the procedures that will be applied during monitoring.

Please note that data monitored and required for verification and issuance are to be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.

B.7.1 Application of the monitoring methodology and description of the monitoring plan:

This section shall include specific information on how the data and parameters that need to be monitored would actually be collected during monitoring for the project activity. Data that is determined only once for the crediting period but that becomes available only after validation of the project activity (e.g. measurements after the implementation of the project activity) should be included here.

Provide for each parameter the following information, using the table provided below:

- The source(s) of data that will be actually used for the proposed project activity (e.g. which exact national statistics). Where several sources may be used, explain and justify which data sources should be preferred.

- Where data or parameters are supposed to be measured, specify the measurement methods and procedures, including a specification which accepted industry standards or national or international standards will be applied, which measurement equipment is used, how the measurement is undertaken, which calibration procedures are applied, what is the accuracy of the measurement method, who is the responsible person / entity that should undertake the measurements and what is the measurement interval.

- A description of the QA/QC procedures (if any) that should be applied.

- Where relevant: any further comment. Provide any relevant further background documentation in Annex 4.

See Pitfall 21: Insufficient information on the measurement methods and source of data as part of data/parameter description in monitoring planformulas applied

(Copy this table for each data and parameter)

Data / Parameter:	
Data unit:	
Description:	
Source of data to be used:	
Value of data applied for the purpose of calculating expected emission reductions in section B.5	
Description of measurement methods and procedures to be applied:	
QA/QC procedures to be applied:	
Any comment:	

!

- The table above is not the same as the table included in the methodologies to describe the monitoring requirements for each parameter.
- Make sure to follow *all* requirements of the approved methodology, including:
  - All applicable data variables that are listed. In some cases, other data variables may be added or some data variables may be deleted because they are not applicable for this specific project. These choices should be made transparent.
  - The units must be the same as those required by the methodology.
  - Indicators that are required to be measured *ex-post* should not be calculated or estimated.
- Recording frequency should be identical with or of greater frequency than the methodology requires.

See Pitfall 23: Deviations from monitoring methodology not justified sufficiently

- Any deviations from the methodology (e.g., lower recording frequency, another unit, calculated instead of measured), need to be thoroughly justified, and should be seen as a contribution to conservativeness. A request for deviation will have to be requested of the EB by the DOE.

- The uncertainty level of data is normally defined in the approved methodology. An outline of QA/QC procedures should be described in the tables in this section.

- It should be specified whether the DNA of the respective host country requires monitoring of Sustainable Development Indicators specified. If required, these Sustainable Development indicators must be listed in the Monitoring Plan.

- The uncertainty level of data is normally defined in the approved methodology. An outline of QA/QC procedures should be described here.

B.7.2 Description of the monitoring plan:

See Pitfall 22: Monitoring and project management procedures not defined

Please provide a detailed description of the monitoring plan. Describe the operational and management structure that the project operator will implement in order to monitor emission reductions and any leakage effects generated by the project activity. Clearly indicate the responsibilities for and institutional arrangements for data collection and archiving. The monitoring plan should reflect good monitoring practice appropriate to the type of project activity. Provide any relevant further background information in Annex 4.

!

- Regarding the operational and management structure that will be implemented to monitor project emissions and any leakage effects, the following should be outlined as applicable for the specific project:
  - The authority and responsibility for project management.
  - The authority and responsibility for registration, monitoring, measurement and reporting.
  - Procedures for training of monitoring personnel.
  - Procedures for emergency preparedness in cases where emergencies can cause unintended emissions.
  - Procedures for calibration of monitoring equipment.
  - Procedures for maintenance of monitoring equipment and installations.
  - Procedures for monitoring, taking measurements and reporting.
  - Procedures for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation).
  - Procedures for internal review of reported results/data, including a system for corrective actions as needed, in order to provide for more accurate future monitoring and reporting.
- The level of detail needed for monitoring and project management is project-specific and depends on the project technology.

B.8 Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/ entity (ies)

Please provide date of completion of the application of the methodology to the project activity Study in DD/MM/YYYY.

Please provide contact information of the persons(s)/entity(ies) responsible for the application of the baseline and monitoring methodology to the project activity and indicate if the person/entity is also a project participant listed in Annex 1.

If the CDM-PDD is being submitted by project participants when proposing a new methodology, note that the Board reiterated (EB 26, Para 27.d) that the 'Source' section of the approved methodology is to be based on information included in this section of the draft CDM-PDD. Only the information provided in this section shall be included in the 'Source' section of the approved methodology.

SECTION C. Duration of the project activity / Crediting period

C.1 Duration of the project activity:

C.1.1. Starting date of the project activity:

The starting date of a CDM project activity is the date on which the implementation or construction or real action of a project activity begins.

Refer definition of start date of the project activity provided in Glossary of CDM Terms.

The CDM-PDD should contain not only the date, but also a description of how this start date has been determined, and a description of the evidence available to support this start date. Further, it should be noted that if this starting date is earlier than the date of publication of the CDM-PDD for global stakeholder consultation by a DOE, Section B.5 above should contain a description of how the benefits of the CDM were seriously considered prior to the starting date (Guidance on the demonstration and assessment of prior consideration of the CDM)

! The date should be as specific as possible, e.g., DD/MM/YYYY. Proof of the actual start date should be available to the DOE upon request. As per the Glossary of CDM Terms, the start date of a CDM project activity is the earliest date at which either the implementation or construction or real action of a project activity begins.

C.1.2. Expected operational lifetime of the project activity:

Please state the expected operational lifetime of the project activity in years and month.

!

The operational lifetime of the project activity should always be identical to or exceed the crediting period. Justification or evidence of the operational lifetime of the project activity should be available to the DOE upon request.

C.2 Choice of the crediting period and related information:

Please state whether the project activity will use a renewable or a fixed crediting period and complete C.2.1 or C.2.2 accordingly.

Note that the crediting period may only start after the date of registration of the proposed activity as a CDM project activity.

!

- The starting date of the crediting period shall be after the registration date.
- One of the two credit-period options must be selected, either fixed or renewable.
- The total anticipated crediting period (e.g., 3 x 7 years or 10 years) must not be longer than the expected lifetime of the project activity.

C.2.1. Renewable crediting period

Each crediting period shall be at most 7 years and may be renewed at most two times, provided that, for each renewal, a designated operational entity determines and informs the Executive Board that the original project baseline is still valid or has been updated taking account of new data where applicable.

!

Only one of either section C2.1 or C2.2 should be filled in, leaving the other blank.

C.2.1.1. Starting date of the first crediting period:

Please state the dates in the following format: (DD/MM/YYY).

C.2.1.2. Length of the first crediting period:

Please state the length of the first crediting period in years and months.

C.2.2. Fixed crediting period:

Fixed crediting period shall be at most ten (10) years.

C.2.2.1. Starting date:

Please state the dates in the following format: (DD/MM/YYY)

C.2.2.2. Length:

Please state the length of the crediting period in years and months.

SECTION D. Environmental impacts

See Pitfall 25: Compliance with local legal requirements not covered sufficiently

D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts:

Please attach the documentation to the PDD.

! If an Environmental Impact Assessment (EIA) is required by law and/or if an EIA has been completed, details of the EIA should either be provided in a separate document as an attachment to the PDD if the language is English, or be available for the DOE to validate upon request if the documents are in the local language.

See Pitfall 3: Evidence of EIA and/or required construction/ operating permits/ approvals not provided

D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party:

! Evidence of EIA and/or required construction/ operating permits/ approvals should be provided to the DOE.

See Pitfall 26: Insufficient information on the stakeholder consultation process

SECTION E. Stakeholders' comments

!

- In this section, any existing legal requirements for stakeholder involvement should be described, including how the project is in compliance with these requirements. Key stakeholders should be listed, including contact information.

- Stakeholder contact information can be included as an appendix to the PDD or be provided to the DOE when requested. A summary of all comments received should be included in this section, together with an elaboration on how these comments have been, or will be, taken into account. It is important to always keep detailed minutes of meetings and records of any local stakeholder processes to be able to justify the process at a later stage.

E.1. Brief description how comments by local stakeholders have been invited and compiled:

!

- Describe the process by which comments by local stakeholders have been invited and compiled.

- An invitation for comments by local stakeholders should be made in an open and transparent manner, in a way that facilitates comments being received and allows a reasonable time for comments to be submitted.

- Project participants should describe a project activity in a manner which allows the local stakeholders to understand the project activity, taking into account confidentiality provisions of the CDM Modalities and Procedures.

- The local stakeholder process must be completed before submitting the proposed project activity to a DOE for validation.

E.2. Summary of the comments received:

Please identify stakeholders that have made comments and provide a summary of these comments.

E.3. Report on how due account was taken of any comments received:

Please explain how due account has been taken of comments received.

Annex 1

CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

Please copy and paste table as needed. Please fill for each organization listed in section A.3 the following mandatory fields: Organization, Name of contact person, Street, City, Postfix/ZIP, Country, Telephone and Fax or e-mail.

! Make sure you include all project participants listed in column 2 of Table A.3 and check that the information is consistent with Table A.3.

Organization:	
Street/P.O.Box:	
Building:	
City:	
State/Region:	
Postcode/ZIP:	
Country:	
Telephone:	
FAX:	
E-Mail:	
URL:	
Represented by:	
Title:	
Salutation:	
Last name:	
Middle name:	
First name:	
Department:	
Mobile:	
Direct FAX:	
Direct tel:	
Personal e-mail:	

Annex 2

INFORMATION REGARDING PUBLIC FUNDING

Please provide information from Parties included in Annex I on sources of public funding for the project activity which shall provide an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of those parties.

!

- List all sources of public funding.
- Give a confirmation that this is not diverted ODA from an Annex I country.
- Provide contact details of relevant persons so that the DOE can further investigate the source of public funding.

Annex 3

BASELINE INFORMATION

Please provide any further background information used in the application of the baseline methodology. This may include tables with time series data, documentation of measurement results and data sources, etc.

! This section tends to be either too brief or too elaborate. Examples of information that can be provided in Annex 3 are listed in Box 6.

Box 6 | Examples of information provided for electricity to grid or landfill gas capture projects

Projects delivering electricity to the grid

A table of all power plants used to calculate the operating and build margin for the grid carbon emission factor should be provided.

Name of power plant	Fuel type	Generation in 2005 (MWh)	Generation in 2004 (GWh)	Generation in 2003 (GWh)	Year of commissioning

Landfill gas capture and flaring projects

Assumptions for estimating emission reductions by using a First Order Decay model should be included here. Such information would be:

- assumptions for the theoretical potential methane generation rate, Lo , including information on waste composition.
- assumptions for the methane generation constant, k.
- a table including estimated amount of waste disposed per year.
- information on waste composition.

Annex 4

MONITORING INFORMATION

Please provide any further background information used in the application of the monitoring methodology. This may include tables with time series data, additional documentation of measurement equipment, procedures, etc.

! Examples of information to include here are a copy of worksheets that should be filled out by the operators, with an explanation of how these are to be completed and used to aggregate data and calculate annual emission reductions.

Box 7 | Example of Annual Worksheet for a landfill gas project

	Project characteristics			Project GHG reductions		
Data	kWh Generated from LFG project	Methane input to generator	Methane input to flare	Tonne CO_2e destroyed from generator	Tonne CO_2e destroyed from flare	Tonne CO_2e destroyed from generator and flare
Month/ data units	kWh	Tonne CH_4	Tonne CH_4	Tonne CO_2e	Tonne CO_2e	Tonne CO_2e
January						
February						
March						
Etc.						

How to Complete the PoA-DD

Most of the comments made in "Completing CDM-PDD" are applicable to completing the PoA-DD form. Using the PoA-DD template, DNV comments are added in yellow text boxes with a "!" in the corner.

Instructions from the PoA-DD form are included in green text boxes like this.

! DNV comments and examples related to "What to do" are included in yellow text boxes like this.

CLEAN DEVELOPMENT MECHANISM
PROGRAMME OF ACTIVITIES DESIGN DOCUMENT FORM
(CDM PoA-DD) Version 01

SECTION A. General description of programme of activities (PoA)

A.1 Title of the programme of activities:

! See the comments under A.1 in "Completing the CDM-PDD."

A.2. Description of the programme of activities:

Include the following information:

1. General operating and implementing framework of PoA.
2. Policy/measure or stated goal of the PoA.
3. Confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity.

! See the comments under A.2 in "Completing the CDM-PDD."

The key activity is to provide an overview of the program describing how the program is implemented.

A.3. Coordinating/managing entity and participants of POA:

Include the following information:

1. Coordinating or managing entity of PoA. This should be the entity that communicates with the Board.
2. Project participants being registered in relation to the PoA. Project participants may or may not be involved in one of the CPAs related to the PoA.

! See the comments under A.3 in "Completing the CDM-PDD."

A.4. Technical description of the programme of activities:

A.4.1. Location of the programme of activities:

! See the comments under A.4.1 in "Completing the CDM-PDD."

A.4.1.1. Host Party(ies):

A.4.1.2. Physical/ Geographical boundary:

Definition of the boundary for the PoA in terms of a geographical area (e.g., municipality, region within a country, country or several countries) within which all CDM programme activities (CPAs) included in the PoA will be implemented, taking into consideration the requirement that all applicable national and/or sectoral policies and regulations of each host country within that chosen boundary

! See the comments under A.4.1 in "Completing the CDM-PDD."

A.4.2. Description of a typical CDM programme activity (CPA):

A.4.2.1. Technology or measures to be employed by the CPA:

! See the comments under A.4.3 in "Completing the CDM-PDD."

A.4.2.2. Eligibility criteria for inclusion of a CPA in the PoA:

Here only a description of the criteria for enrolling the CPA should be described; the criteria for demonstrating additionality of CPA will be described in section E.5.

! Briefly explain the characteristics of CPAs that are compatible with the PoA.

A.4.3. Description of how the anthropogenic emissions of GHG by sources are reduced by a CPA below those that would have occurred in the absence of the registered PoA (assessment and demonstration of additionality):

The following should be demonstrated:

(i) The proposed PoA is a voluntary coordinated action.

(ii) If the PoA is implementing a voluntary coordinated action, it would not be implemented in the absence of the PoA.

(iii) If the PoA is implementing a mandatory policy/regulation, this would/is not enforced.

(iv) If a mandatory policy/regulation is enforced, the PoA will lead to a greater level of enforcement of the existing mandatory policy/regulation.

The information presented here should constitute the demonstration of additionality of the PoA as a whole.

! See the comments under B.5 in "Completing the CDM-PDD."

A.4.4. Operational, management and monitoring plan for the programme of activities:

A.4.4.1. Operational and management plan:

Description of the operational and management arrangements established by the coordinating/managing entity for the implementation of the PoA, including:

(i) A record keeping system for each CPA under the PoA.

(ii) A system/procedure to avoid double accounting, e.g., to avoid the case of including a new CPA that has been already registered either as a CDM project activity or as a CPA of another PoA,

(iii) Provisions to ensure that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA.

! See the comments under B.7.2 in "Completing the CDM-PDD".

A.4.4.2. Monitoring plan:

Provide the following information:

(i) Description of the proposed statistically sound sampling method/procedure to be used by DOEs in order to verify the amount of reductions of anthropogenic emissions by sources or removals by sinks of greenhouse gases achieved by CPAs under the PoA.

(ii) In case the coordinating/managing entity opts for a verification method that does not use sampling but verifies each CPA (whether in groups or not, with different or identical verification periods) a transparent system is to be defined and described that ensures that no double accounting occurs and that the status of verification can be determined anytime for each CPA.

! See the comments under B.7.2 in "Completing the CDM-PDD."

A.4.5. Public funding of the programme of activities:

! See the comments under A.4.5 in "Completing the CDM-PDD."

SECTION B. Duration of the programme of activities

B.1. Starting date of the programme of activities:

See Pitfall 32: Crediting period starts before inclusion

! See the comments under C.1.1 in "Completing the CDM-PDD."

B.2. Length of the programme of activities:

SECTION C. Environmental Analysis

C.1. Please indicate the level at which environmental analysis as per requirements of the CDM modalities and procedures is undertaken. Justify the choice of level at which the environmental analysis is undertaken:

1. Environmental Analysis is done at PoA level ☐
2. Environmental Analysis is done at CPA level ☐

C.2. Documentation on the analysis of the environmental impacts, including transboundary impacts:

! See the comments under C.1.1 in "Completing the CDM-PDD."

See Pitfall 33: No updated licenses and permits

C.3. Please state whether in accordance with the host Party laws/ regulations, an environmental impact assessment is required for a typical CPA, included in the programme of activities (PoA),:

SECTION D. Stakeholders' comments

D.1. Please indicate the level at which local stakeholder comments are invited. Justify the choice:

1. Local stakeholder consultation is done at PoA level ☐
2. Local stakeholder consultation is done at CPA level ☐

Note: If local stakeholder comments are invited at the PoA level, include information on how comments by local stakeholders were invited, a summary of the comments received and how due account was taken of any comments received, as applicable.

D.2. Brief description how comments by local stakeholders have been invited and compiled:

! See the comments under E.1 in "Completing the CDM-PDD."

D.3. Summary of the comments received:

! See the comments under E.2 in "Completing the CDM-PDD."

D.4. Report on how due account was taken of any comments received:

! See the comments under E.3 in "Completing the CDM-PDD."

SECTION E. Application of a baseline and monitoring methodology

This section should demonstrate the application of the baseline and monitoring methodology to a typical -CPA. The information defines the PoA-specific elements that should be included in preparing the PoA specific form used to define and include a CPA in this PoA (PoA specific CDM-CPA-DD).

E.1. Title and reference of the approved baseline and monitoring methodology applied to each CPA included in the PoA:

! See the comments under B.1 in "Completing the CDM-PDD."

E.2. Justification of the choice of the methodology and why it is applicable to each CPA:

! See the comments under B.2 in "Completing the CDM-PDD."

E.3. Description of the sources and gases included in the CPA boundary

! See the comments under B.3 in "Completing the CDM-PDD."

See Pitfall 34: Baseline for PoA not appropriate

E.4. Description of how the baseline scenario is identified and description of the identified baseline scenario:

! See the comments under B.4 in "Completing the CDM-PDD."

E.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the CPA being included as registered PoA (assessment and demonstration of additionality of CPA): >>

E.5.1. Assessment and demonstration of additionality for a typical CPA:

Here the PP should demonstrate the additionality of a typical CPA, using the procedure provided in the applied baseline and monitoring methodology applied.

! See the comments under B.5 in "Completing the CDM-PDD."

E.5.2. Key criteria and data for assessing additionality of a CPA:

Here the PPs shall provide the key criteria for assessing the additionality of a CPA when they propose including in the registered PoA. The criteria should be based on the additionality assessment undertaken in E.5.1 above. The project participants should justify the choice of criteria based on the analysis in the above section.

Demonstrate how these criteria would be applied to the additionality of a typical CPA at the time of inclusion.

NOTE: Information provided here should be incorporated into the CDM-CPA-DD that has been specified for this PoA and should be included in documentation submitted by project participants when registering the PoA.

E.6. Estimation of Emission reductions of a CPA:

E.6.1. Explanation of methodological choices, provided in the approved baseline and monitoring methodology applied, selected for a typical CPA:

! See the comments under B.6.1 in "Completing the CDM-PDD."

E.6.2. Equations, including fixed parametric values, to be used for calculation of emission reductions of a CPA:

E.6.3. Data and parameters that are to be reported in CDM-CPA-DD form:

! See the comments under B.6.2 in "Completing the CDM-PDD."

(Copy this table for each data and parameter)

Data / Parameter:	
Data unit:	
Description:	
Source of data used:	
Value applied:	
Justification of the choice of data or description of measurement methods and procedures actually applied:	
Any comment:	

E.7. Application of the monitoring methodology and description of the monitoring plan:

! See the comments under B.7.1 in "Completing the CDM-PDD."

E.7.1. Data and parameters to be monitored by each CPA:

(Copy this table for each data and parameter)

Data / Parameter:	
Data unit:	
Description:	
Source of data to be used:	
Value of data applied for the purpose of calculating expected emission reductions in section B.5	
Description of measurement methods and procedures to be applied:	In this section, provide a description of the equipment used for measurement, if applicable, and its accuracy class.
QA/QC procedures to be applied:	
Any comment:	

E.7.2. Description of the monitoring plan for a CPA:

! See the comments under B.7.2 in "Completing the CDM-PDD."

E.8. Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/ entity(ies)

! See the comments under B.8 in "Completing the CDM-PDD."

Annex 1

CONTACT INFORMATION ON COORDINATING/MANAGING ENTITY and PARTICIPANTS IN THE PROGRAMME of ACTIVITIES

See the comments under Annex I in "Completing the CDM-PDD."

Organization:	
Street/P.O.Box:	
Building:	
City:	
State/Region:	
Postfix/ZIP:	
Country:	
Telephone:	
FAX:	
E-Mail:	
URL:	
Represented by:	
Title:	
Salutation:	
Last Name:	
Middle Name:	
First Name:	
Department:	
Mobile:	
Direct FAX:	
Direct tel:	
Personal E-Mail:	

Annex 2

INFORMATION REGARDING PUBLIC FUNDING

! See the comments under Annex 2 in "Completing the CDM-PDD."

Annex 3

BASELINE INFORMATION

! See the comments under Annex 3 in "Completing the CDM-PDD."

Annex 4

MONITORING INFORMATION

! See the comments under Annex 4 in "Completing the CDM-PDD."

How to Complete the CDM-CPA-DD

Most of the comments made in "Completing CDM-PDD" are also applicable to completing the CPA-DD form. Using the CPA-DD template, DNV comments are added in yellow text boxes with a "!" in the corner.

Instructions from the CPA-DD form are included in green text boxes like this.

! DNV comments and examples related to "What to do" are included in yellow text boxes like this.

CLEAN DEVELOPMENT MECHANISM
PROGRAM ACTIVITY DESIGN DOCUMENT FORM
(CDM CPA-DD) Version 01

SECTION A. General description of CDM programme activity (CPA)

See Pitfall 30: Inconsistency among CPAs

A.1. Title of the CPA:

A.2. Description of the CPA:

A.3. Entity/individual responsible for CPA:

This is where the information on the entity/individual responsible of the CPA should be included, henceforth referred to as CPA implementer(s). CPA implementers can be project participants of the PoA, under which the CPA is submitted, provided the name of the entity/individual is included in the registered PoA.

A.4. Technical description of the CPA:

A.4.1. Identification of the CPA:

A.4.1.1. Host Party:

A.4.1.2. Geographic reference of other means of identification allowing the unique identification of the CPA (maximum one page):

Include a geographic reference or other means of identification and the name/contact details of the CPA implementer. For instance, the CPA implementer to contact in the case of a stationary CPA geographic reference or in the case of mobile CPAs such as registration number and/or GPS devices.

A.4.2. Duration of the CPA:

A.4.2.1. Starting date of the CPA:

! The CPA cannot be added to the PoA with a start of crediting period date that is prior to the date of the addition.

A.4.2.2. Expected operational lifetime of the CPA:

A.4.3. Choice of the crediting period and related information:

Renewable crediting period; or Fixed Crediting period

A.4.3.1. Starting date of the crediting period:

See Pitfall 32: Crediting period starts before inclusion

A.4.3.2. Length of the crediting period, first crediting period if the choice is renewable CP:

NOTE: The duration of crediting period of any CPA shall be limited to the end date of the PoA regardless of when the CPA was added.

!

The duration of the CPA is limited to 7 years renewable twice or 10 years fixed (20 years renewable or 30 years fixed for forestry CPAs) and is defined at request for registration. However, no matter when a given CPA is added, the duration of its crediting period CPA will be limited to the end date of the PoA.

A.4.4. Estimated amount of emission reductions over the chosen crediting period:

A.4.5. Public funding of the CPA:

A.4.6. Confirmation that CPA is neither registered as an individual CDM project activity nor is part of another Registered PoA:

!

Confirm that each CPA is unique and identifiable.

SECTION B. Eligibility of CPA and Estimation of emissions reductions

B.1. Title and reference of the Registered PoA to which CPA is added:

B.2. Justification of the why the CPA is eligible to be included in the Registered PoA :

B.3. Assessment and demonstration of additionality of the CPA, as per eligibility criteria listed in the Registered PoA:

B.4. Description of the sources and gases included in the project boundary and proof that the CPA is located within the geographical boundary of the registered PoA.

B.5. Emission reductions:

B.5.1. Data and parameters that are available at validation:

B.5.2. Ex-ante calculation of emission reductions:

B.5.3. Summary of the ex-ante estimation of emission reductions:

Year	Estimation of project activity emissions (tonnes of CO_2e)	Estimation of baseline emissions (tonnes of CO_2e)	Estimation of leakage (tonnes of CO_2e)	Estimation of overall emission reductions (tonnes of CO_2e)
Year A				
Year B				
Year C				
Year …				
Total (tonnes of CO_2e)				

B.6. Application of the monitoring methodology and description of the monitoring plan:

B.6.1. Description of the monitoring plan:

SECTION C. Environmental analysis

C.1. Please indicate the level at which environmental analysis as per requirements of the CDM modalities and procedures is undertaken. Justify the choice of level at which the environmental analysis is undertaken:

☐ Please tick if this information is provided at the PoA level. In this case, Sections C.2. and C.3. do not need to be completed in this form.

C.2. Documentation on the analysis of the environmental impacts, including transboundary impacts:

See Pitfall 33: No updated licenses and permits

C.3. Please state whether in accordance with the host Party laws/ regulations, an environmental impact assessment is required for a typical CPA, included in the programme of activities (PoA),:

SECTION D. Stakeholders' comments

D.1. Please indicate the level at which local stakeholder comments are invited. Justify the choice:

☐ Please tick if this information is provided at the PoA level. In this case, Sections D.2. to D.4. do not need to be completed in this form.

D.2. Brief description how comments by local stakeholders have been invited and compiled:

D.3. Summary of the comments received:

D.4. Report on how due account was taken of any comments received:

Annex 1

CONTACT INFORMATION ON ENTITY/INDIVIDUAL RESPONSIBLE FOR THE CPA

Organization:	
Street/P.O. Box:	
Building:	
City:	
State/Region:	
Postfix/ZIP:	
Country:	
Telephone:	
FAX:	
E-Mail:	
URL:	
Represented by:	
Title:	
Salutation:	
Last Name:	
Middle Name:	
First Name:	
Department:	
Mobile:	
Direct FAX:	
Direct tel:	
Personal E-Mail:	

Annex 2

INFORMATION REGARDING PUBLIC FUNDING

Annex 3

BASELINE INFORMATION

Annex 4

MONITORING INFORMATION

APPENDICES

APPENDIX 1

Sources for further assistance

cdm.unfccc.int

UNFCCC CDM website

cdm.unfccc.int/Reference/COPMOP/decisions_17_CP.7.pdf

Decision17/COP7: Marrakech Accords (full document)

cdm.unfccc.int/Reference/COPMOP/08a01.pdf#page=6

Decision 3/CMP.1: Modalities and procedures for a clean development mechanism

cdm.unfccc.int/Reference/COPMOP/08a01.pdf#page=43

Decision 4/CMP.2 (Annex II): Simplified modalities and procedures for small-scale clean development mechanism project activities

cdm.unfccc.int/Reference/catalogue/search

CDM Catalogue of Decisions

http://cdm.unfccc.int/Reference/Documents

Most recent versions of:

- Guidelines for completing PDDs
- PDD templates
- CDM procedures
- Guidance, clarifications and tools
- Decisions from EB meetings
- Decisions from COP/MOPs

http://cdm.unfccc.int/methodologies

Baseline and monitoring methodologies

http://cdm.unfccc.int/methodologies

CDM Baseline Methodologies Booklet

http://www.cdm-meth.org

CDM Methodology and Technology Selection

http://cdm.unfccc.int/Reference/Guidclarif/glos_CDM.pdf

Glossary of CDM terms

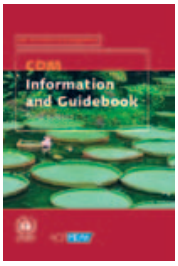
http://www.cdmpipeline.org/

The UNEP Risoe Centre CDM Pipeline, a monthly updating database of the CDM project submission to the UNFCCC worldwide

APPENDIX 2

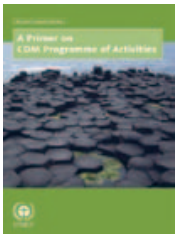
CD4CDM Project Publications

URC publication can be downloaded from *www.cd4cdm.org* and from *www.acp-cd4cdm.org*



CDM Information and Guidebook (3rd edition)

The CDM Information and Guidebook attempts to provide a comprehensive overview of the CDM, its project cycle, and related issues such as linkage with sustainable development goals, financing and market intelligence. The appendices present frequently asked questions and answers, a short overview of existing guidelines, and a list of project categories which may be eligible for the CDM in the future. The third edition was published in March 2011.



A Primer on CDM Programme of Activities

The purpose of this Primer is to shed light on the basic aspects of designing, developing and implementing GHG emissions reductions under the concept of Programme of Activities (PoAs). In close resemblance to what happened during the early days of standard and small-scale CDM, this modality requires considerable efforts on capacity building to trigger a critical mass of programs that can gather enough learning points to positively feedback all stakeholders involved. An updated version of this publication will be available, late 2011 down from www.acp-cd4cdm.org

Implementing CDM Projects: Guidebook to Host Country Legal Issues

This Guidebook addresses a wide range of legal and regulatory issues arising from the domestic laws, regulations and policies of CDM Host Countries that can affect the development and implementation of CDM projects.

Legal Issues Guidebook to the Clean Development Mechanism

The Guidebook aims at providing an in-depth analysis of the various types of risks associated with the different stages of the CDM project cycle and possible legal and contractual approaches that could be adopted to minimize these risks.

CDM Sustainable Development Impacts

This guideline presents an operational approach to sustainable development in the context of CDM projects.

Institutional Strategy to Promote the Clean Development Mechanism in Peru

This booklet aims to show how Peru has designed an institutional strategy to promote the CDM under a "national project cycle" inspired by and complying with the international rules for the CDM.

Clean Development Mechanism

Vietnamese version
Japanese version
Spanish version
French version
Cambodian (Khmer) version
Chinese version
Korean version

Language versions coming shortly: Arabic (hard copy available on request), Portuguese

Guidebook to Financing CDM Projects

This guidebook addresses the financial barriers by providing relevant information aimed at both developing country financial institutions and at CDM project proponents. It guides project developers on obtaining financing for the implementation of activities eligible under the CDM and demonstrate to developing country financial institutions typical approaches and methods for appraising the viability of CDM projects and for optimally integrating carbon revenue into overall project financing. An updated version of the publication will be available late 2011 from www.acp-cd4cdm.org

Baseline Methodologies

The guidebook takes the reader through basic concepts, the processes of developing baseline and baseline methodology, and approval of new baseline methodologies. It presents indicative methodologies for small scale CDM projects and examples of approved methodologies for project specific baselines. Furthermore, it describes the process of developing baseline for land use and land use change (LULUCF) CDM projects

Wind power and the CDM

This guidebook provides guidance on how project developers can combine CDM and wind power.

APPENDIX 3

Abbreviations

ACM	Approved Consolidated Methodology
AMS	Approved Methodology for Small-Scale CDM project activities
BAU	Business as Usual
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction
CH4	Methane
CL	Clarification request
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CPA	CDM Programme Activities
CPA-DD	CDM Programme Activities Design Document
DNV	Det Norske Veritas
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board (of the CDM)
EB20 *or similar*	The 20th Executive Board Meeting
EIA	Environmental Impact Assessment
FAR	Forward Action Requested
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
ISO	International Organization for Standardization

IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
LoA	Letter of Approval
MoC	Modalities of Communication
MP	Monitoring Plan
MR	Monitoring Report
N_2O	Nitrous oxide
NGO	Non-governmental Organisation
NPV	Net Present Value
ODA	Official Development Assistance
PDD	Project Design Document
PoA	Programme of Activities
PoA-DD	Programme of Activities Design Document
PP	Project Participant
PPA	Power purchase agreement
QA/QC	Quality assurance/quality control
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual
WACC	Weighted average cost of capital
WEG	Wind electric generator

Risø DTU
National Laboratory
for Sustainable Energy

Risø National Laboratory
Roskilde
Denmark

CDM PDD Guidebook
Navigating the Pittfalls

In this third edition of the guidebook, DNV identifies 50 common pitfalls; based on the systematic analysis of all projects it has validated and verified up to September 2010, and provides detailed guidance on how to avoid these pitfalls. This third edition includes a revised version of the pitfalls that can be encountered during the validation and verification process, and also includes a new section dedicated to the pitfalls faced by Programme of Activities (PoAs). By producing this guidebook, the "Capacity Development for the Clean Development Mechanism, CD4CDM Programme aims to indirectly contribute to the reduction of transaction time associated with CDM project validation and verification through improving the quality of the PDDs, Monitoring and Verification Reports produced.

This guidebook is produced to support the UNEP CD4CDM Programme, now implemented in ACP countries by the UNEP Risø Centre on Energy, Climate and Sustainable Development in Denmark. The overall objective of the Program is to develop the institutional capability and human capacity for implementation of the CDM in developing countries.

The ACP-CD4CDM is a sub-component of UNEP and the EU's initiative on Capacity Building related to Multilateral Environmental Agreements (MEAs) in African, Caribbean and Pacific (ACP) Countries and it is funded by the European Commission.

UNEP

ACP MEAs

UNEP RISØ CENTRE CD4CDM