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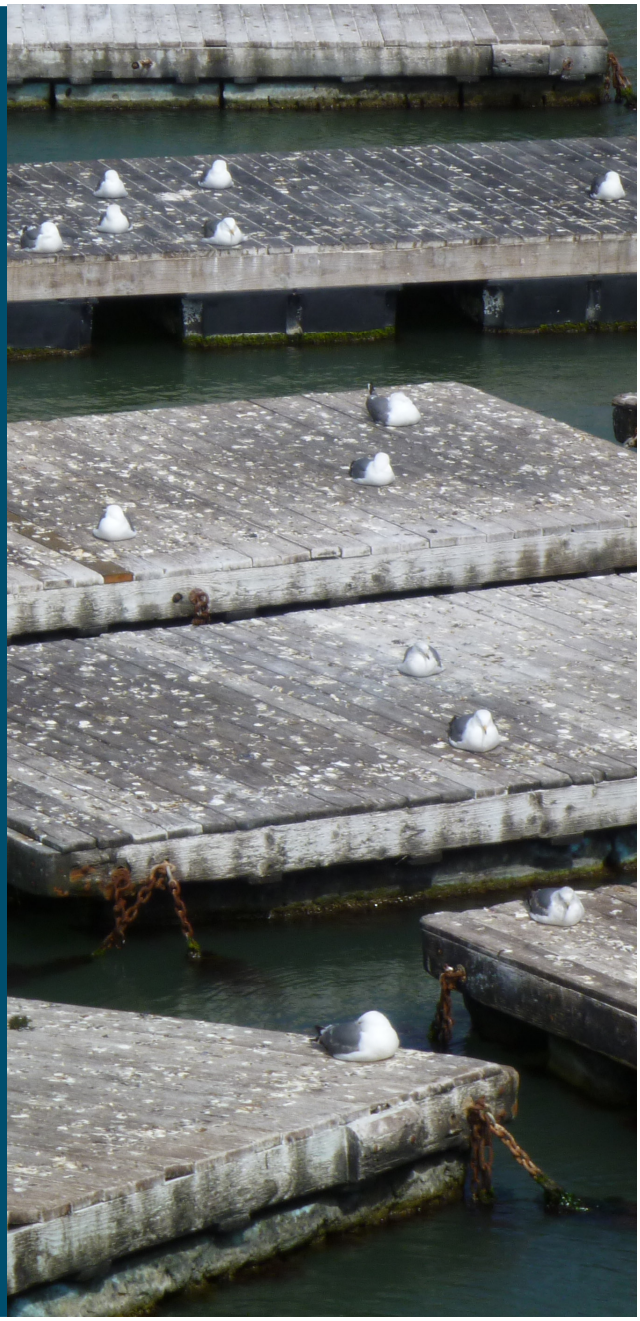
CME Starter Kit

A manual for management systems at coordinating/management entities (CMEs)



Title Photo:

Floating rafts that are bundled together. Each raft is managed independently by different individuals (seagulls), each of them following the same design instructions thereby ensuring an overall consistent appearance.

Photography: Bamshad Houshyani 2011

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Authors: Robert Dornau, Simon Dawes, Sandra Greiner, Bamshad Houshyani, Juan Pablo Castro, Adriaan Korthuis

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For: KfW, Germany

Carbonflow
Technoparkstr 1
8005 Zürich
Switzerland

Climate Focus
Sarphatikade 13
1017 WV Amsterdam
The Netherlands

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Content

Glossary of Terms

UNFCCC terminology	Quality Management System terminology	Explanation
CDM		Clean Development Mechanism
CER		Certified Emission Reduction
CME		Coordinating Managing Entity, company, government agency or other organisation in charge of managing a PoA
CME Manual	**Quality Management System Manual**	Document describing the management procedures of the CME
	Controlled document	There is one owner of the document who is responsible for changes and approval of every new version
CPA		Component Project Activity (earlier also CDM Programme Activity), individual projects or group of projects included in the PoA
CPA owner		Company investors in large individual projects that are included in the CPA
	Critical activities	Activities which must be completed exactly as required by the registered design or the CDM in order for the requirements of the registered design or the CDM to be met
DOE		Designated Operational Entity (validator or verifier)
End-user		Individuals or households of a small or micro-scale technology included in a CPA
Intermediaries		Technology suppliers, retailers or contractors that organize the distribution, maintenance and financing of a technology to the end-users.
	Internal audit	A systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are met. An internal audit is the examination of the CME's own activities conducted by qualified CME personnel against the criteria of the CME management system, the registered design under the CDM.
	ISO	International Organization for Standardization, responsible for the ISO 9000, ISO 14000, ISO 27000, ISO 22000 and other international management standards

	Management review	Management Review is a meeting of key managers and staff during which the suitability, adequacy and effectiveness of the CME management system to achieve the requirements of the registered design and the CDM is considered, and continuous improvement actions are decided upon.
MoC		Modalities of Communication
	Nonconformity (NC) or Nonconformance	Non-fulfillment of a requirement of the registered design or the CDM as described in the CME management system
	Corrective Action (CA)	Action taken to eliminate the cause of a detected nonconformity or other undesirable situation. Corrective actions lead to company improvement.
	Preventive Action (PA)	Action taken to eliminate the cause of a potential nonconformity or other undesirable situation. Preventive actions lead to company improvement
PDD		Project Design Document
PoA		Programme of Activities, the framework
PoA Manager	**Management Representative**	Individual or group charged with managing the PoA
	Procedure	A description of the process including forms, templates and records.
	Process	Set of activities that transform inputs into outputs.
	QMS	Quality Management System - the organizational structure, procedures, processes and resources needed to ensure that an organization consistently meets relevant requirements, including processes for ongoing improvement.
	SOP	Standard Operating Procedure
UNFCCC		United Nations Framework Convention on Climate Change

1. Introduction and purpose of this Starter Kit

1.1 Purpose and intended use

The United Nations Framework Convention on Climate Change (UNFCCC) has created the concept of Programme of Activities (PoAs) under the Clean Development Mechanism (CDM) in order to allow for bundling of many similar emission reduction activities under one umbrella structure with the purpose of reducing costs and bringing emission reductions to scale. Such projects can range from stand-alone yet highly replicable investment projects (e.g. wind turbines) to household level renewable energy and energy savings technologies (e.g. introduction of efficient light bulbs). Whatever the size, managing the PoA and ensuring that the programme as a whole as well as its individual components meet the CDM requirements is logistically complex and puts great demands on the programme manager's organizational capacity. The Coordinating Managing Entity (CME) is the programme manager of a PoA and is tasked with coordinating the one-time events as well as ongoing monitoring activities related to each participating activity (Component Project Activity (CPA) in the language of the UNFCCC). The CDM tasks come in addition to the normal activities of programme management related to the roll-out of the programme, sales and maintenance of the technology and financial and legal management.

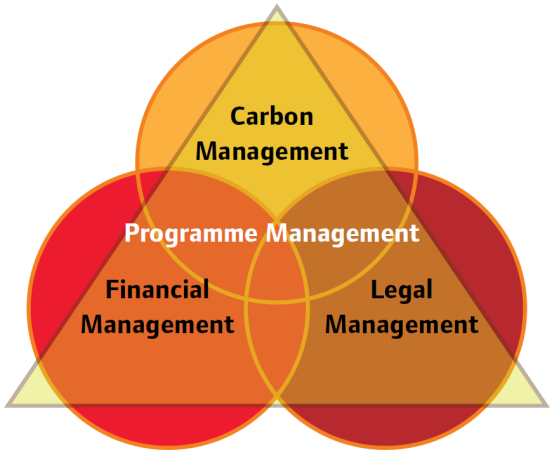

Figure 1. CME's different management areas

A PoA is a long-term venture that may run over up to 28 years and involve a plurality of actors, possibly even thousands. In order to ensure its long term success and performance, a CME needs to have clear procedures in place on how to deliver routine tasks and respond to new developments.

Realizing the need for sound organizational set-up, the CDM Executive Board has adopted specific management requirements pertaining to PoAs. The CDM mandates CMEs to develop and implement a management system and defines specific tasks that a management system has to fulfill. The management system shall be outlined in a so-called CME Manual. The CME Manual is subject to validation by the Designated Operational Entity (DOE) and thereby becomes a requirement towards CDM registration of the

programme.[1] It should be noted however, that CDM guidance does not require CMEs to adopt a fully-fledged Quality Management System (QMS) for their organization but so far remains restricted to clear procedures for a number of specified tasks. These are tasks at various steps of the CDM PoA project cycle (see Figure 5) relating to validation and registration of the programme, inclusion of CPAs and monitoring and verification of the emission reductions. While the CDM only prescribes a fragmented management system, it nevertheless constitutes a first step towards implementation of a comprehensive QMS along the lines of ISO 9000.

The purpose of this CME Starter Kit is to provide assistance to CMEs in how to comply with the specific CDM guidance on a management system. It is a guidance document that will help CMEs elaborate their own specific manual for the management of their PoA. Guidance in this Starter Kit can only be a starting point, however, as every organization is required to adapt the procedures to fit its own needs and structure.

The elaboration of the CME Starter Kit was financed by the KfW-managed 'PoA Support Centre', which contributes to the expanded use and implementation of the PoA approach and which has been initiated and funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

1.2 Target audience

The Starter Kit is primarily aimed at CMEs, entities that are responsible for PoA implementation. CMEs can be small or large companies or they can be governmental or non-profit organizations. Whatever the nature of the CME, guidance presented in this Starter Kit is equally applicable.

PoAs also differ widely in the number of actors that are involved, which in turn is dependent on technology. PoAs based on micro-scale technologies involve a large number of end-users (typically households) to whom climate-friendly technologies are distributed. Examples are cook stoves or efficient lamps. PoAs based on large technologies, such as wind or hydropower projects, on the other hand, may bundle together individual company investors. For these company investors in large technologies the term "CPA owner" is coined. Whereas in a micro-scale PoA a CPA is made up of many hundreds or even thousands of individual units and including as many end-users, a CPA can include only a handful of projects in a PoA based on large-scale technologies or in the extreme consist of only one project. Micro-scale technologies also tend to require more sophisticated distribution channels. Often, a third level of intermediaries, e.g. technology suppliers, retailers or contractors sit between the CME and the end-users and organize the dissemination, maintenance and financing of the technology vis-à-vis the end-user. The type of the technology therefore has implications on the organizational structure of the PoA and poses different demands on its management system. Figure 2, Figure 3 and Figure 4 illustrate three different types of PoAs for a small-scale technology where the CME deals directly with the end-users, a micro-scale technology with intermediaries in between the CME and the end-users and a large-scale technology.

While the main target audience of the Starter Kit is the CME, the principles of the management system are equally relevant to the intermediaries acting as the extended arm of the CME or individual CPA owners.

[1] The requirement pertains to any PoAs uploaded for registration after 25 July 2012, as these must apply the PoA Standard. The new PoA template (mandatory use after 30 September 2012) incorporates a section on the management system of the PoA. Even prior to these dates some DOEs are already asking to see the CME Manual during validation.

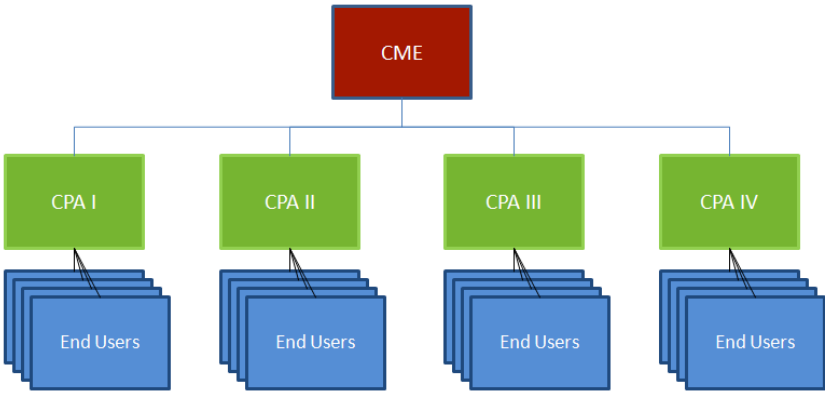

Figure 2: PoA structure where the CME deals directly with end-users of the technology

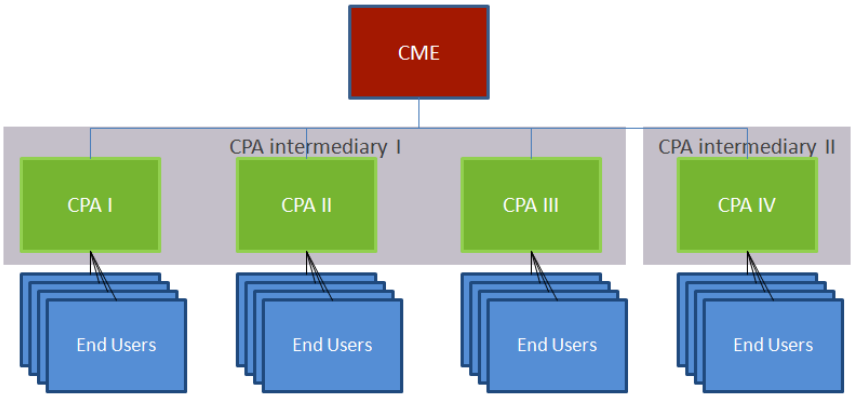

Figure 3: PoA structure with intermediaries between the CME and the end-users

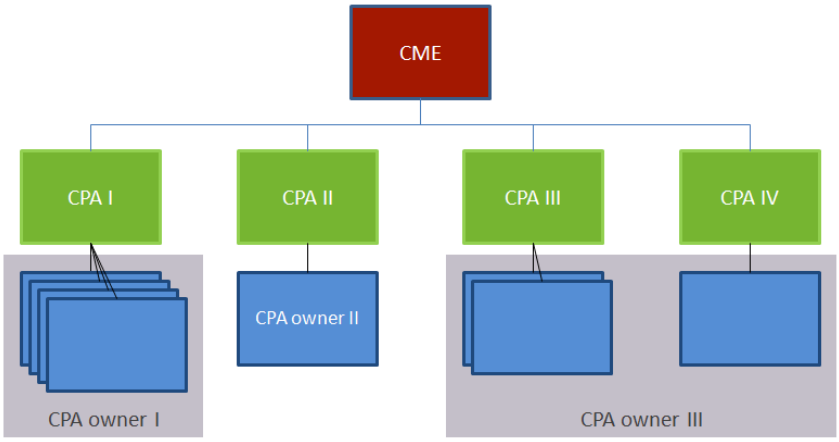

Figure 4: PoA structure for large size technologies where the CME deals with company investors (CPA owners)

Figure 5. CDM PoA Project cycle

1.3 Structure of the CME Starter Kit

The CDM rules require compliance with specific key elements of a management system. The CME Starter Kit is presented in a pragmatic manner and is aimed for the hands-on PoA team to grasp the essential elements of a management system. The Kit is structured following the order of CDM guidance and particularly highlights those elements of a management system that are relevant for passing the CDM milestones of validation, registration, inclusion and verification. Guidance specific to CDM requirements is presented in detail and wherever possible supported by examples derived from real world PoAs. Furthermore the Kit provides a template for a CME Manual that provides CMEs with a structure for developing their own CME Manual that fits their PoA set-up and purpose.

The Kit is composed of four main chapters:

- Introduction;
- Background on QMS and management system requirements under the CDM;
- Guidance on how to comply with key management system requirements arising from the PoA Standard and the CDM Project Standard;
- Template content structure of a CME Manual.

As an additional tool, relevant **Standard Operating Procedures (SOPs)** and **template forms** are provided together with this Kit and can be downloaded separately. The template for a CME Manual references in each of the chapters the SOPs and forms that are applicable.

1.4 References

List of standards used as reference in this document and recommendations for further reading:

- ISO 9001: 2008 - Quality management systems -- Requirements
- ISO 14066: 2011 - Greenhouse gases -- Competence requirements for greenhouse gas validation teams and verification teams
- CDM Accreditation Standard for DOEs (ACS),
- CDM Validation and Verification Standard (VVS),
- CDM Project Standard (PS)
- CDM Standard for the demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities (CDM POA standard)
- CDM Standard for sampling and surveys for CDM project activities and POAs

2. Management systems in PoAs: Fundamentals

2.1 Requirements arising from the PoA Standard and the CDM Project Standard

Benefits of PoAs include the ability to quickly replicate a CDM activity as part of a single programme across a region and to increase the efficiency of the validation and verification processes. The programme structure therefore reduces transaction costs. But in order to secure consistency when replicating activities under a programme, an effective management system for the development and implementation of new activities and for the operation of existing activities is essential. This fundamental requirement has been demonstrated across decades in product manufacturing, and has become recognized by the CDM Executive Board in the PoA Standard and the CDM Project Standard.

The key idea behind incorporating management systems into a PoA is to allocate responsibilities where they are best assumed: the CME assumes responsibility for checking individual activities for their compliance with the CDM requirements. The task of the DOE is to verify that the management system is well designed and well implemented. The CME has to consistently verify all activities of the PoA, with people qualified to do so and report the findings in a logical and auditable manner. As a consequence of checking the system at validation, the DOE can reduce its efforts at inclusion to a check of compliance with the system and if allowed by the methodology, apply a sampling approach to CPAs at verification. The better the CME's system is designed and documented the more trust a DOE will have in the capabilities of the CME in the inclusion process. This should result in an efficient and least cost inclusion process. A well established management system therefore reduces the costs of the CME during validation, inclusion and verification and will allow DOEs to assume liabilities arising from erroneous inclusions, placed on them by the CDM Executive Board.

While the purpose of the CME Starter Kit is to help CMEs navigate the requirements of the CDM, the advantages of a management system go far beyond compliance with CDM requirements as first and foremost, having clearly allocated roles and sound procedures will benefit the long-term success of the programme itself. Moreover, buyers seeking to purchase credits from a PoA will attach importance to suitable organizational structures and management procedures.

The key requirements on management systems are found in the PoA Standard complemented by further clauses in the CDM Project Standard. Text Box 1 provides the key section in the PoA standard that makes reference to a management system. It focuses mostly on the inclusion process and makes clear that the CME's management system is subject to the DOE's review and approval during validation. According to the CDM PoA Standard Paragraph 17 the CME "shall develop and implement a management system". It specifically lists a number of elements that have to be included in such a management system, but leaves the door open to "any other relevant elements".

Text Box 1: Key CDM guidance on management systems

The CME shall have the competencies to check the features of potential CPAs and ensure that each CPA meets all requirements and eligibility criteria before inclusion in the registered PoA. The CME shall develop and implement a management system that includes the following made available to the DOE at the time of validation of the PoA

a) A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies;
b) Records of arrangements for training and capacity development for personnel;
c) Procedures for technical review of inclusion of CPAs;
d) A procedure to avoid double counting (e.g. to avoid the case of including a new CPA that has already been registered either as a CDM project activity or as a CPA of another PoA);
e) Records and documentation control process for each CPA under the PoA;
f) Measures for continuous improvements of the PoA management system;
g) Any other relevant elements.

Source: Standard for the demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities (CDM POA standard), Paragraph 17

The PoA Standard lists a number of additional requirements (See Text Box 2) that should be covered in the management system. These requirements concern the update of eligibility criteria if a methodology is revised or replaced, or if the PoA boundary is changed or if a newer methodology version is available at the renewal of the PoA crediting period. As a minimum, the CME should have a clear understanding of who is responsible (roles and responsibilities) and how compliance is monitored by including this in the management review (continuous improvement).

Text Box 2: Additional guidance in the PoA Standard with relevance for a management system

Updating eligibility criteria following a change of methodology

21. If the version of methodologies applied by the PoA is revised or replaced, subsequent to being placed on hold, the CME shall update the eligibility criteria to the requirements of the revised or new methodologies with immediate effect. A new version of the PoA DD (e.g. version 1.1) and generic CDM- CPA-DD containing updated eligibility criteria validated by a DOE shall be submitted to the Board for approval.

a) Once changes have been approved by the Board, the inclusion of all new CPAs shall be based on the updated eligibility criteria applying the new generic CDM-CPA-DD;
b) CPAs that were included before the methodology was put on hold shall apply the revised version of the generic CDM-CPA-DD only at the time of the renewal of the crediting period.

Updating eligibility criteria following change of boundary

23. If the boundary of the PoA is amended post-registration to expand the geographic coverage or to include one or more additional host Parties, the CME shall update the eligibility criteria to reflect the consequent changes. A new version of the PoA DD (e.g. version 1.2) and generic CDM-CPA-DD containing updated eligibility criteria validated by a DOE shall be submitted to the Board for approval.

a) Once changes have been approved by the Board, the inclusion of all new CPAs shall be based on the updated eligibility criteria applying the new generic CDM-CPA-DD;
b) CPAs that were included before the boundary of the PoA was amended shall apply the revised eligibility criteria only at the time of the renewal of the crediting period.

Updating eligibility criteria at renewal of the crediting period

25. At the renewal of the crediting period of a PoA (at the renewal of the first CPA), the CME shall update the eligibility criteria as per the latest revised applicable methodologies. A new version of the PoA DD (e.g. version 1.4) and generic CDM-CPA-DD validated by a DOE shall be submitted to the Board for approval.

a) Once changes have been approved by the Board, the inclusion of all new CPAs shall be based on the revised eligibility criteria;
b) The subsequent CPAs requesting the renewal of the crediting period shall apply the revised version of the generic CDM-CPA-DD.

Source: Standard for the demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities (POA standard)

In addition there are some PoA specific requirements in the general CDM Project Standard that would benefit from direct inclusion in a management system (see Text Box 3). This starts with requirements on the CME to describe a framework for implementation of the PoA and CPA inclusion, and importantly includes the requirement to provide a description of the operational and management arrangements for the PoA implementation. The CDM Project Standard further lists a number of PoA specific requirements on additionality, sampling, monitoring, debundling, environmental impact and stakeholder consultation that need to be fulfilled and checked at PoA or CPA level. This has to be reflected accordingly in the management system. The CME has to ensure that all requirements related to validation and inclusion are met and complete assessment packs are submitted to the DOE. Finally, the CDM Project Standard makes reference to a record keeping system related to monitoring reports. This record keeping system needs to be documented in the management system.

Text Box 3: Additional guidance in the Project Standard with relevance for a management system

A. Description of programme of activities

138. The CME shall develop a framework for the implementation of the proposed CDM PoA and inclusion of CPAs under the PoA.

143. As part of the proposed CDM PoA, the CME shall describe a typical CPA with generic information applicable to all CPAs that will be included in the PoA.

145. The CME shall establish and implement, and provide a description of the operational and management arrangements for the implementation of the proposed CDM PoA. These arrangements may be integrated with the management system required in the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for PoAs.

D. Application of selected baseline and monitoring methodologies

2. Demonstration of additionality

153. (…) The CME shall demonstrate that the proposed CDM PoAis additional in accordance with the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for PoAs.

154. The CME shall consider that a full additionality assessment is not required in the context of CPA. Instead, the confirmation of additionality for CPAs should be conducted by means of the eligibility criteria.

3. Sampling

155. If the CME utilizes sampling for the determination of parameter values for calculating GHG emission reductions, the CME shall develop and describe the sampling plan in accordance with the Standard for sampling and surveys for CDM project activities and PoAs.

4. Monitoring plan

156. The CME shall develop and provide a description of the monitoring plan for a CPA and identify the monitoring provisions and data parameters that a CPA has to apply/monitor in accordance with the selected methodology.

E. Debundling of small-scale component project activities

157. The CME shall demonstrate that the proposed small-scale CPA is not a debundled component of a large-scale activity, in accordance with the applicable provisions of the Guidelines on assessment of debundling for SSC project activities.

G. Environmental impacts

165. The analysis of the environmental impacts and the environmental impact assessment, as per sections VII. D., VIII. G. and/or IX. G. above, may be carried out for the whole PoA or at the CPA level. The coordinating/managing entity shall reflect and describe the level applied.

H. Local stakeholder consultation

166. The local stakeholder consultation, as per section VII. E. above, may be carried out for the whole PoA or at the CPA level. The coordinating/managing entity shall specify the level of consultation applied.

167. For the actual CPA part of the proposed CDM PoA, the local stakeholder consultation shall be completed before submission of the PoA for validation. For CPAs to be included in the registered PoA, the local stakeholder consultation shall be completed before inclusion in the PoA.

K. Validation

178. When completing a PoA-DD and a CPA-DD, the coordinating/managing entity shall provide all necessary information and documentation to demonstrate the compliance of the proposed CDM PoA and CPA with all applicable requirements in this Standard and other CDM rules and requirements.

L. Inclusion of component project activities in programme of activities

182. To include a CPA in a registered CDM PoA, the coordinating/managing entity shall ensure that the proposed CPA meets all applicable requirements, including the eligibility criteria for inclusion of a CPA under the PoA.

183. The coordinating/managing entity shall then submit to a DOE a completed CPA-DD specific to the proposed CPA demonstrating compliance of the CPA with all applicable requirements.

J. Specific requirements for programme of activities

Monitoring reports

233. The coordinating/managing entity shall:

(a) Maintain all monitoring reports of all CPAs in accordance with the record keeping system identified in the registered PoA-DD;

(b) Make available all monitoring reports requested by a DOE for verification purposes.

Source: CDM Project Standard - XI. Specific design requirements for programme of activities

The requirements listed in the PoA Standard and the Project Standard vary from general and overarching requirements to individual, PoA specific tasks that a management system needs to pay attention to. This patchwork of requirements on different levels obstructs a systematic view on management systems, which this Starter Kit seeks to remedy by showing how they relate to a more comprehensive ISO QMS. By referring to the more comprehensive ISO guidance, it is not the intention of the Starter Kit, however, to introduce additional requirements to CMEs.

2.2 Purpose and structure of a Quality Management System (QMS)

An accepted definition of a QMS is *the organizational structure, procedures, processes and resources needed to ensure that an organization consistently meets relevant requirements, including processes for ongoing improvement*. There is no one size fits all approach to a QMS. The design and implementation of a QMS is influenced by the particular organizational set up, the regulatory environment and changes in that environment, and the resulting objectives.

The adoption of a QMS should be a strategic management decision to deliver the best product or service to its customers. The International Standards Organisation (ISO) suggests that this is best done by applying a process-based approach to "develop, implement and improve the effectiveness of a QMS, to enhance customer satisfaction by meeting customer requirements".[2] This essentially requires the documentation of all procedures used in any manufacturing process that could affect the quality of the product. The product in the context of a PoA is emission reductions that are real, permanent and verifiable. The product and the underlying processes are required to meet the expectations of the CDM Executive Board, the DOE as its extended arm, local and international stakeholders and the environment in general (in the ISO language: the "customers" of the CME).

In order to function effectively the CME will determine and manage a number of linked activities that transform inputs into outputs. Often the output of one activity or set of activities is the input of another. These activities or sets of activities are considered as process. A process is what is done and the procedure, including forms, templates and records, is the documented description of the process.

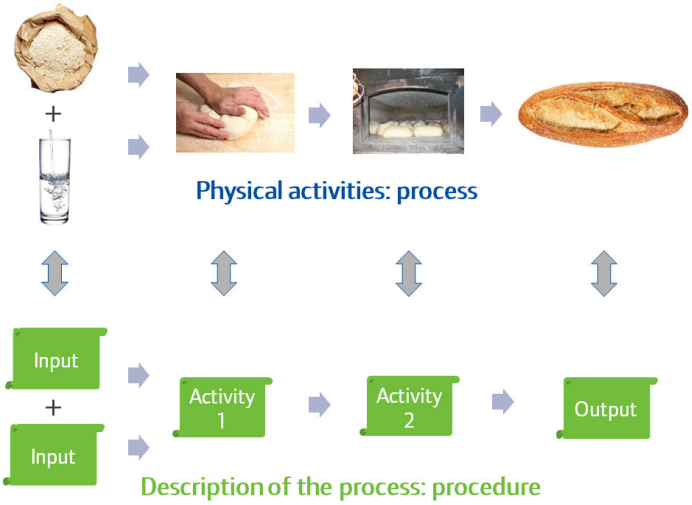

Figure 6: Process and procedure

[2] ISO 9001: 2008

A QMS helps to identify, develop, document, implement and improve the procedures. A well-developed QMS will cover all areas starting with the overall management responsibility, planning and purchasing, implementation, operation, monitoring (of the processes), resource management (incl. outsourcing) as well as measurement (of product quality and customer satisfaction) and improvement.

CDM guidance is not yet specific about the required CME management system; it just lists some key criteria that are to be included. It is up to the CME to propose and the DOE to evaluate whether the management system provides the tools and guidance for the CME to manage the PoA today and as it develops in the future.

Text Box 4: Key Principles

The CDM Project Standard defines a set of Principles that a CDM project developer must follow, hence, these should be reflected in the CME's management system. Principles are to be applied when guidance is lacking or ambiguous. Following the Principles ensures that the "spirit" of the regulatory requirements is followed. Those principles are:

- **Relevance**: Select the GHG sources, GHG sinks, GHG reservoirs, data and methodologies and all other information appropriate to the needs of the intended user.
- **Completeness**: Include all relevant GHG sources and sinks, and information to support compliance with all requirements.
- **Consistency**: Enable meaningful comparisons in project-related information.

3. Guidance on the definition of management systems for a PoA

This chapter provides specific guidance, background information and examples on how to tackle the relevant aspects of a management system. The information presented in this chapter should serve to support the completion of the CME Manual template in chapter 4. Information is organized around thematic blocks in five subchapters capturing the building blocks of a management system. How the subchapters relate to the specific guidance of the PoA Standard is shown in Figure 7.

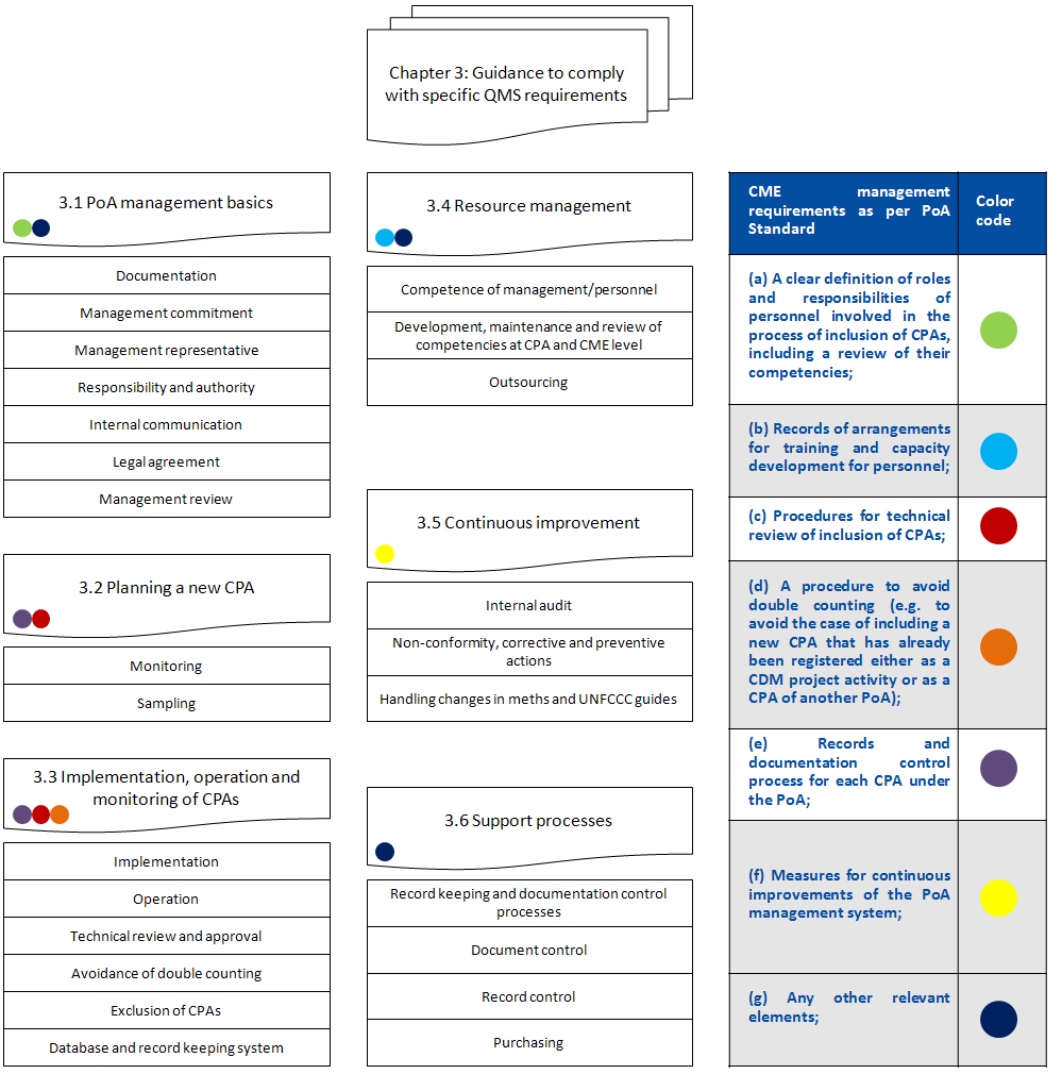

Figure 7: Chapter navigator

3.1 PoA management basics

Objective of this section: Define operational and management arrangements, related roles and responsibilities in a manner that ensures control over all critical activities, compliance with the requirements of the registered design and the CDM, and in a manner that demonstrates the CME's responsibility for the PoA at all levels.

The guidance in this section corresponds to section 3 "PoA Management" in the template for a CME Manual.

Introduction and References

Management system experience suggests these fundamental elements are required for an effective system:

- documentation of all procedures and their implementation;
- management commitment
- a clear structure of the organization and related roles and responsibilities;
- clear rules for internal communication
- a process for management review.

Specific to the PoA case is the requirement for a procedure for the necessary legal arrangements between CME and CPA. All of these are elaborated here.

The key CDM requirements this section refers to are:

- *CDM PoA Standard* : Paragraph 17 (a) A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies;
- *CDM Project Standard* : Description of Programme of Activities: 145. The CME shall establish and implement, and provide a description of the operational and management arrangements for the implementation of the proposed CDM PoA. These arrangements may be integrated with the management system required in the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities.

a) Documentation

Descriptions of how to comply with PoA requirements need to be documented using any permanent, transferable, understandable method.[3] They have to be contained in the CME Manual and in the SOPs, together with permanent records demonstrating that those requirements were met.

"If everybody in your office disappears and is replaced by a new team, they need to be able to run your POA the same way you would." Zsolt Lengyel, SQS

b) Management commitment

The CME management team sets the example how the PoA operates – that is, the personnel working on the PoA and CPAs will look to the CME management team to guide their own attitudes and approach to following the procedures needed to achieve compliance with the registered design and CDM requirements. It is absolutely critical that the CME management team demonstrates its commitment to quality

[3] This means a method that makes sure that no changes are made to the message and that the people it addresses understand it. For example, it is no use providing a written procedure to people that cannot read.

management of the PoA and ensures that all critical activities are conducted efficiently, effectively, and in compliance with the CDM requirements. This includes taking any actions necessary to rectify non-conformance, as well as a commitment to continuous improvement.

c) Management representative

The CME's top management takes ultimate responsibility for the PoA, and needs to create clear lines of responsibility and authority for critical activities. In the ISO world, the key person in charge of the proper functioning of the QMS is the management representative, who is the "eyes and ears" of management and overall responsible for proper implementation of the QMS, reporting to management on its performance and need for improvement and ensuring awareness among personnel. In the PoA world, the CME management needs to appoint a PoA manager who takes on similar functions. Relevant roles for the PoA manager are to ensure proper operation of day-to-day tasks (e.g. monitoring of emission reductions) as well as tasks related to the continuous expansion of the PoA and the inclusion of new CPAs (e.g. legal agreements, ensuring eligibility criteria are met, hiring of DOEs). The PoA manager should also be the single point of contact for PoA related issues inside the organization and vis-à-vis relevant actors (e.g. UNFCCC, CPAs, DOEs). While being responsible for the overall performance of the PoA, the PoA manager does not necessarily have to perform the associated duties him- or herself but may instruct different personnel inside or outside the CME to do so. Figure 8 shows some of the main responsibilities of the PoA manager or management representative.

Figure 8. Overall responsibilities of the PoA manager (CME management representative)

d) Responsibility and authority (structure of organization, management team, operational team)

Even the simplest CME will have an organizational structure with defined roles, authority and responsibilities. The complexity of the management structure will depend on the organization's size, complexity, its relationships with other stakeholders, CPA implementation tasks and CPA operational tasks. The degree to which the organizational structure needs to be defined and documented will therefore vary.

"The structure to manage the PoA and the related roles and responsibilities need to be set up in a way that gives the DOE reasonable assurance that the CME's management is in control and can accept responsibility over the PoA. It needs to convince the DOE that the system is able to function across the lifetime of the programme, with a growing number of CPAs and not just under the one CPA scenario at the validation stage." Edwin Aalders, DNV

The CME management structure needs to be defined so that the PoA can function effectively over its many years of operation. The CME needs to assume that throughout the lifetime of the PoA there will be changes in staff, hence the system needs to adjust to these changes while maintaining the integrity of the PoA.

The following schematic flowcharts illustrate examples of different organizational structures and possibilities for anchoring the PoA Manager. Note that position titles used in the charts are of exemplary nature and are likely to be different for every CME. While the charts and the subsequent table outline important functions that should be covered in order to successfully manage a PoA, these positions may be held by the same individual. Boxes that are colored blue represent those functions that are specific to managing a PoA whereas green boxes represent other important functions in the company.

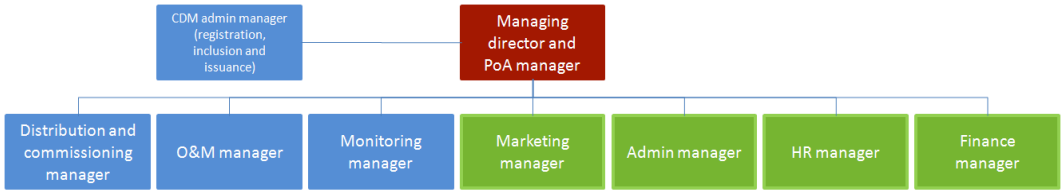

Figure 9. Scheme I: CME organizational structure within a small and medium enterprise as the CME.

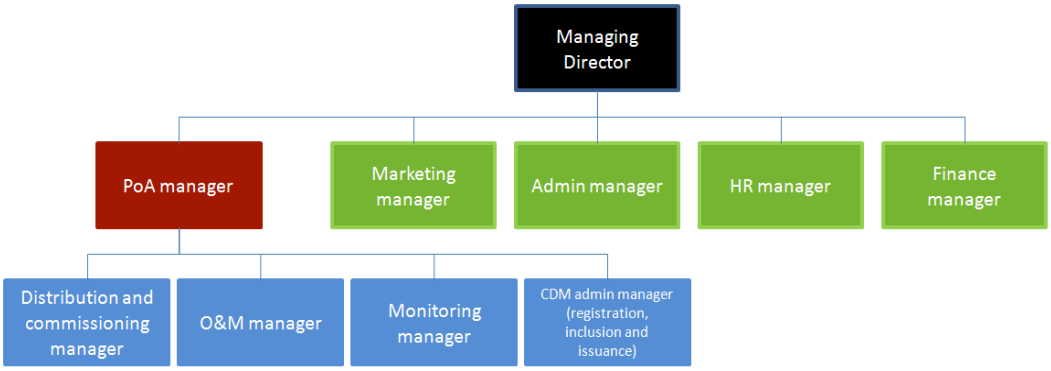

Figure 10. Scheme II: CME organizational structure of the CME in large enterprises

An example on the roles and responsibilities of the CME to manage the PoA, and associated CPAs, in relation to the CDM project is presented in Table 1. This table defines responsibilities where they fall under the specific requirements of the CDM and is not intended to cover all responsibilities of each department and personnel. The titles in the table can change.

Table 1: CDM roles and responsibilities of CME staff (exemplary and non-exhaustive)

Role	CDM responsibilities
PoA manager	- Inclusion of future CPAs and checks on their eligibility criteria during inclusion; - Proper commissioning and distribution of the system; - Ensuring compliance of the technology with the PoA requirements; - Checks on periodical and annual monitoring set up and reports per CPA.

CDM admin manager	- Follows up with registration, inclusion and issuance of CERs
Distribution and commissioning manager	- Organises installation and commissioning of new project units; - Product identification and maintenance of continuous record of the issued serial numbers along with distribution and commissioning; - Customer training and introduction to O&M during installation and commissioning; - Legal agreements with end-users.
O&M manager	- Ensures that innovations are considered in future CPA-DDs with a technical description of the new type of project units in compliance with the registered PoA-DD - Checks and keeps control of all issued serial numbers (recorded by the commissioning manager); - Authenticates any changes / replacements of serial nos. during the life span of the project units. - Periodically checks and confirms that the installed units confirm to the certified quality and standards;
Monitoring manager	- Ensures that all the CPAs and units within each CPA are following the monitoring steps in accordance with the registered monitoring plan as required by the UNFCCC guidelines and approved applied methodologies; - Ensures that the equipments and measurements in the field are in line with the measurement methods and recording frequency and storing approaches; - Ensures that all the monitoring data collected from project sites are consolidated and processed digitally in a central database centre; - Ensures that each CPA produces a coherent and standard monitoring report annually.

The CME's manual will contain a description of the structure of the CME and related teams. Management roles within each part of the structure need to be defined. Roles, authority and responsibilities for the managers and operation personnel involved need to be identified. Some critical issues to consider when deciding on an organizational structure and allocating roles and responsibilities are:

- Span of control – the number of people; their roles, training and responsibilities; and their level of activity while reporting to a single person. There is a natural limit to the number of people that can directly report to a supervisor and still be effectively managed.
- Separation of responsibilities – in financial terms this means that, for example, approval of a contract is separate from approval of payments, and in operational terms, for example, that approval of a monitoring report is separate from preparation of the report. This is important in order to reduce the risk of failing to detect an error in a document or report, and to reduce the risk of fraudulent activities.
- Competence – One of the principles of PoA management is to only appoint people to carry out tasks for which they are competent, or where at least there is competent supervision. It may be difficult to find staff that is covering a broad range of competencies. More people working part-time with different roles and responsibilities can be a solution, or providing sufficient training.

e) Internal communication

Effective internal communication is essential for the management and operation of the PoA. All CME personnel should have the individual responsibility of notifying their manager of any issues affecting the proper operation of the PoA. All staff members should be free to disclose performance information relating to any area of PoA management directly to the PoA manager at any time. CME management should keep all personnel up to date of information relevant to their respective tasks, including general information on

the progress of the PoA. Methods for internal communication should be readily available and generally accessible.

f) Legal agreements for PoAs

PoAs will typically involve a wide range of entities playing a variety of roles. Most of the interactions between the entities involved are governed by formal legal rights and obligations. It is crucial for the success of the PoA that these rights and obligations are clearly understood and explicitly agreed upon by all parties involved. This will generally involve the conclusion of a complete set of legal agreements covering all relevant relationships and clearly specifying the respective rights and obligations of each party. The responsibilities and procedures for the negotiation and approval of legal agreements related to critical activities need to be documented in the management system. Contract templates should be controlled documents in the management system and signed contracts should be centrally recorded.

The CME is party to many contracts. Agreements the CME will typically enter into include financial agreements with creditors, management agreements with individual CPA owners or end-user agreements, supply agreements with technology providers and validation agreements with DOEs. The specific agreements required and content of each agreement will of course depend on the project structure and other specifics of the PoA. In all cases, however, agreements should be unambiguous as to the role of each party in the PoA, the incentive structure (e.g. fixed fees, share of revenues etc.) relevant rights and responsibilities of each and the allocation of carbon rights between parties.

In many PoAs, the most crucial matter to clarify in each agreement will be the allocation of carbon rights (i.e. rights to carbon credits). In many project structures, the CME will be the entity selling and marketing the carbon credits. In this case, the CME must be sure to retain all carbon rights under the PoA. This involves including explicit provisions in each contract clearly assigning carbon rights to the CME. In project structures where the CME interacts directly with end-users, the end-user agreement will generally assign direct carbon rights directly to the CME. Where the CME acts through an intermediary, such as a retailer or a technology provider, end-user agreements may instead assign carbon rights to the intermediary. In this case, the CME should require a clear assignment of carbon rights to itself through an agreement with the intermediary. It may also wish to inspect the end-user agreement used to ensure that it does in fact clearly assign carbon rights to the intermediary. An exemplary clause for assigning carbon rights in end-user agreements is provided below. It should be noted that, even where end-user agreements assign carbon rights directly to the CME, all other agreements (e.g. with technology providers, retailers, financiers) should still contain clauses clarifying that the CME retains all carbon rights.

Exemplary clause for end-user agreement – Title to Emission Reductions

"The [name of the end-user] fully understands and agrees that, by accepting to participate in the [title or reference to the programme], he or she will transfer all rights associated with the climatic benefits arising from the [name or reference to the programme], including the full ownership rights in and to any [Verified/Certified etc] Emission Reductions, to [name of the CME or intermediary]."

While all agreements must be clear and unambiguous, end-user agreements in particular must be simple and straight-forward. End-users will only participate if integration into the programme is not cumbersome. Reading through long contracts and signing up to a detailed list of "do's and don'ts" may, at times, not be realistic. Hence, simplicity and ease of communication are a key aspect for the successful implementation of the PoA. As a general rule, any agreement should be written in local and self-explanatory language with an easily accessible structure, and should be as short as possible. Along with regular contractual provisions, the agreement (contract) will contain the following elements:

- a clear reference to the programme;
- an acknowledgement of voluntary participation;
- an unequivocal statement regarding the transfer of carbon rights;

- a provision to prevent the same household or unit from participating in different emission reductions programmes covering the same emissions (which could lead to double-counting of emission reductions)
- a provision requiring the end-user to use the relevant equipment correctly and not interfere with its operation
- a provision in which end users agree to facilitate any monitoring requirements in the PoA-DD, such as admitting DOEs for periodic inspections of equipment;
- a provision whereby CPAs can be removed from the PoA in case of non-compliance.

g) Management Review

It is recommended that the CME reviews the operations of the PoA management system at least once per year. The review can be in person or using any method that supports the free exchange of ideas in real time. Having an exchange by email only is usually not comparable to a real time exchange of ideas and discussion of issues. One member of the management team or the PoA manager should be responsible for coordination of the management review, preparation of information for consideration during the review, and documentation and implementation of the decisions reached by the review. Information to be considered during the review includes:

- Internal audits of the implementation of the CME management system
- Corrective and preventive action
- Nonconforming product (e.g. CPAs or units within the CPA)
- Supplier performance – equipment and verifier
- Results of external audits
- Results of CDM Executive Board reviews
- Changes to UNFCCC CDM and PoA requirements

Conclusions from the review are related to:

- Suitability of CME manual, SOPs, forms and templates
- New performance objectives
- Changes to the CME management system
- Resource requirements
- Resource plans
- Plans for new CPAs

3.2 Planning a new CPA

Objective of this section: to ensure that the implementation of new CPAs is planned effectively.

The guidance in this section corresponds to section 4 "Planning the implementation of new CPAs" in the template for a CME Manual.

Introduction and References

Planning includes the establishment of relevant procedures, templates and/or guidance documents that regulate how CPAs are designed (using the generic CPA DD), the monitoring plan and, where applicable, a sampling plan.

The key CDM requirements this section refers to are:

- CDM POA Standard: A. Description of programme of activities: 143. As part of the proposed CDM PoA, the CME shall describe a typical CPA with generic information applicable to all CPAs that will be included in the PoA.
- CDM Project Standard: D. Application of selected baseline and monitoring methodologies:
  - 3. Sampling: 155. If the CME utilizes sampling for the determination of parameter values for calculating GHG emission reductions, the CME shall develop and describe the sampling plan in accordance with the "Standard for sampling and surveys for CDM project activities and programme of activities".
  - 4. Monitoring plan 156. The CME shall develop and provide a description of the monitoring plan for a CPA and identify the monitoring provisions and data parameters that a CPA has to apply/monitor in accordance with the selected methodology.

a) Monitoring

The applied methodology sets the detailed requirements for the monitoring plan. Well documented procedures for monitoring requirements, including roles and responsibilities at CPA and where applicable CME level are essential. Monitoring personnel needs to have the right competence and the procedures describing the deliverable have to be written and accompanied by the right guidance, cognizant of the personnel's competence level.

b) Sampling

The CDM Executive Board provides a very detailed sampling guidance to be applied at project/CPA, POA and DOE level.[4]

It is important to understand that the sampling requirements at DOE level and at PoA level are different. If a DOE only checks a certain percentage of CPAs it expects that all other CPAs are monitored and documented in the exact same way. A DOE will sample in a way to achieve a good spatial and temporal representation in the sample. It is also likely that the DOE will want to see all past monitoring reports since the last verification of a CPA, and not just the one referring to the most recent monitoring period.

A characteristic of a good management system is that the DOE will not start doubting the integrity of the entire PoA when it finds an isolated error in a CPA. The DOE must find the confidence that it will not find similar errors across all other CPAs, because the internal procedure at CPA and CME level would have guaranteed that they are found and the source for the error had been eliminated.

[4] CDM Standard for sampling and surveys for CDM project activities and POAs

3.3 Implementation, operation and monitoring of CPAs

Objective of this section: Ensuring that each CPA is implemented and managed exactly as described in the design documents and the relevant sections of the CME quality manual are in compliance with the CDM requirements.

The guidance in this section corresponds to section 5 "Implementation of CPAs" in the template for a CME Manual.

Introduction and References

The generic CPA described in the design document and the monitoring and a sampling plan developed is the blueprint for all CPAs under the PoA. The described approach has to be followed exactly.

The key CDM requirements this section refers to are:

- CDM POA Standard : Paragraph 17:
  - (c) Procedures for technical review of inclusion of CPAs;
  - (d) A procedure to avoid double counting (e.g. to avoid the case of including a new CPA that has already been registered either as a CDM project activity or as a CPA of another PoA);

a) Implementation

The CME Manual must provide procedures for the implementation of each CPA. This requires a listing of the key elements. These include the completion of the CPA-DD for the specific CPA and demonstration of compliance with the CPA eligibility requirements. It also includes the preparation of a project plan for the implementation including allocation of implementation responsibilities, collection of commissioning and testing records, project implementation reporting and project based audits.

b) Operation

A typical CME Manual provides procedures for all parts of the PoA operation. It might have tasks for the CPA implementer as well as for the CME. This includes day to day procedures like finding and fixing broken equipment, buying consumables for the project, tracking serial numbers and identification/location of information. It also includes control of monitoring and measuring equipment in accordance with the requirements of the approved methodology and equipment in use as well as calibration. Procedures in this section will help ensure compliance with the monitoring plan.

c) Technical review and approval

Technical Review is the review of any report or other critical document by competent personnel different to the personnel who has prepared the report or document, usually prior to submission of the report or document to an external organisation for further action. Technical Review can also be undertaken before an internal approval process.

The most important documents that need to undergo technical review are:
1. New CPA-DDs: eligibility criteria, underlying evidence associated with a new CPA.
2. Updates of CPA-DDs to meet new CDM requirements.
3. Completed monitoring reports with underlying evidence.

The two critical elements of a technical review are:
- the reviewer is competent; and

- the reviewer is different from personnel that has prepared the material.

"Competent" means that the reviewer is also capable of preparing the material, and "different" means that the reviewer did not participate in the preparation and was not directly responsible for the person that has prepared the material.[5] Essentially, a reviewer is capable of identifying both errors in the material and information that should have been concluded but was not, and does not have any conflict in requiring that any changes considered necessary are identified and rectified before approval is granted.

The PoA standard only foresees a technical review at the inclusion stage. Including technical review also at the verification stage will help the CME to ensure the quality of the monitoring report and avoid costly reviews at DOE or UNFCCC level.

d) Avoidance of double counting

Double counting happens when the same activity is included in more than one programme and when two or more individuals or organisations claim ownership of CERs. In the context of a PoA, this may happen when (components of) a proposed CPA are already part of a registered CDM project or part of a different PoA or at least claimed to be part thereof. Double counting can have various causes. An obvious situation where double counting can occur is when different entities are involved in an activity and more than one can claim the ensuing emission reductions. The CME needs to pay particular attention to this. As described in section 3.1.f above, the key tool to avoid double counting is securing the legal title to the CERs by means of a contract between the CME and the organization managing the CPA or end user participants.

Other tools to avoid double counting include physically marking the equipment as belonging to the PoA and having a unique identification and registration of the equipment in the central database that the CME maintains.

The monitoring phase is another activity that needs particular attention. Incidents of double counting during this phase are recurrent and they are often caused by inadequate data management. The procedure to avoid double counting must be an integral part of the management of the PoA's database.

In programmes that implement a large amount of small activities such as cook stoves, double counting can be avoided by accurately recording the details of the activity in a central database. Each stove is uniquely identified and defined in an unambiguous manner by registering at least the address of the user (GPS coordinates, if possible) and the serial number of the installed device. The stove is uniquely identified this way. The data can be collected upon signing the sales agreement and issuing the invoice, and then entered into the centralized database. Data entry for serial numbers can be restricted so that repeated entries are not allowed, hence making sure that no double counting occurs. Data entry for serial numbers can easily be checked for repetition by ranking of serial numbers. To enable cross-checking, references to the hardcopy files are added to the database entry to make it easy to find them (e.g. such as serial or invoice numbers).

When the CPA implementer is a different entity from the CME, the CME must make sure that the CPA implementer employs a system of issuing serial numbers and registering individual devices that is compatible with the CME's data management system and that secures unique identification.

e) Exclusion of CPAs

Being able to exclude non-compliant CPAs at the monitoring stage is essential for the operation of the PoA. While not being directly mentioned in the PoA Standard, exclusion is an important concept as only correct monitoring reports are to be submitted by the CME. Apart from a legal agreement between the CME and the CPA intermediary or owner that regulates exclusion, the CME needs documented procedures

[5] This may be a difficult requirement for small and medium enterprises to fulfil where the boss would then not be able to review the work of his or her employees.

that describe how it ensures that the data of excluded CPAs do not become part of a monitoring report. This might require not just the exclusion of the actual CPA data, but also its exclusion from the derivation of sampled parameters at PoA level.

f) Database and record keeping system

A secure and auditable database and record keeping system provides the backbone of the emission reduction calculation. A database must be complete and accurate. Any information in the database that is false or ambiguous puts the carbon credits from the PoA at risk.

The database has five objectives:
1. Recording the number of systems and aggregated capacity of the systems in operation,
2. Keeping up-to-date information on the location and capacity in operation of each system,
3. Avoiding double-counting of systems
4. Collect and record monitoring data (at CPA or even more disaggregate level) in a secure audit trail
5. Track which CPAs were sampled in each monitoring period.

Wherever possible a database should provide pre-defined values (e.g. as drop-down menus) to avoid typos and errors. This is particularly relevant for unique numerical values such as product specifications. The system should automatically prevent the duplicate entry of the same reference number (serial numbers or invoices). A database should also allow for flexibility and have free text fields for "comments" where individual peculiarities or the reason for deviations/changes can be recorded. For example, if a system is replaced, it needs to be ensured that the serial number of the old system and the date in which it was replaced is recorded.

To enable cross-checking it is useful to add references to the hardcopy files or directly link them in an electronic format to make it easy to find them (e.g. such as serial or invoice numbers). Data entry should be restricted to prevent unauthorized changes.

3.4 Resource Management

Objective of this section: ensure that staff is enabled and well trained to fulfil their tasks.

The guidance in this section corresponds to section 6 "Resource Management" in the template for a CME Manual.

Introduction and Reference

The CME must have appropriate personnel with adequate skills to make the PoA work. Key staff of the CME must be well equipped to assume their assigned tasks varying from sourcing and financing to securing carbon standard compliance, promoting the programme and effective communication with the CDM Executive Board and with programme participants.

The key CDM requirement this section refers to is PoA Standard Paragraph 17, requiring the CME's management system to have:

(a) A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies

(b) records of arrangements for training and capacity development for personnel

a) Competence of management and personnel

Competence is the ability to apply knowledge and skills to achieve intended results. Critical activities should be carried out by personnel who have the skills to do so. Only then the CME can ensure compliance with the requirements of the registered design and the CDM requirements.

To manage the competence of personnel, the following aspects should be taken into account:
1. Identify the competence required for the critical activities.
2. Assess the knowledge and skills that people already have.
3. Plan, prepare and deliver training as to provide additional knowledge and skills so that personnel are competent in the critical activities required for individual work activities.

Managing the competence of personnel and being able to demonstrate this, is a key issue in managing critical processes such as inclusion of CPAs, sampling and monitoring. The CDM Accreditation Standard for Operational Entities can function as guidance to CMEs as to what competence levels are required for different technical areas.[6]

The CME must have an organizational structure with clearly defined roles. These roles can be assumed by one or more persons depending on the human resources available and their capabilities. The CME team must understand and demonstrate that the final responsibility for the implementation of the PoA and the successful generation of its output, the emission reductions, is in qualified hands.

The CME needs the competence to[7]:
- Evaluate and qualify personnel;
- Allocate personnel;
- Assess applications and conduct contract reviews;
- Select teams for internal audit and technical review and verify their competence;
- Supervise the implementation of critical processes;
- Manage all functions of the CME;
- Implement an overall management system.

Personnel involved in CPA inclusion, CPA/PoA level monitoring and CME level review and approval needs either to have, alone or collectively as a team, the necessary competence including[8]:
- Knowledge of specific CDM technical and methodological aspects, in particular:
    - The technical process, project design, methodology, baseline, project boundary, calculation of GHG, environmental impact and monitoring requirements, measurement techniques, calibration and uncertainty in the measurement of the applicable parameters, impact of failure of monitoring equipments on the measurement of emission reductions of a CPA, as relevant to technical areas within the sectoral scopes relevant to the project activity;
    - Assessment of additionality, including CDM related investment analysis as appropriate;
    - Quantification, monitoring and reporting of GHG emissions, including relevant technical and sector issues; and
    - Regulatory requirements relevant to CDM sectoral scopes and project activities including the technical process, project design, methodology, baseline, project boundary, calculations of GHG, environmental impact and monitoring requirements.
- Skills to apply relevant principles, procedures and techniques for CPA inclusion, verification and review and approval including the ability to:

[6] See CDM Accreditation Standard for Operational Entities Annex D.
[7] Adapted from requirements of DOE management competence as described in the CDM Accreditation Standard for Operational Entities clause 43.
[8] Adapted from requirements of DOE management competence as described in the CDM Accreditation Standard for Operational Entities clause 44.

  - Plan and organise the work effectively and in the agreed timeframe, to prioritze and focus on matters of significance;
  - Collect information through effective interviewing, listening, observing and reviewing documents, records and data;
  - Verify accuracy of collected information and confirm the sufficiency and appropriateness of gathered evidence to support audit findings and conclusions and prepare audit reports; and
  - Communicate effectively, either through personal knowledge of the language or through help of an interpreter.
- As a team leader to:
  - Plan and make effective use of resources;
  - Understand the different functions and lead the team to reach conclusion;
  - Prepare the relevant reports and handle all follow up actions.

A key aspect is training and education. The CME, and the CPA implementers are responsible for ensuring that the procedures are carried out properly. For example, a PoA that aims to install thousands of biogas digesters, needs to ensure that personnel is capable of accurately filling out an order form, recording the installation details and sending and filing an invoice correctly. Training should be provided on the PoA management system that has been established so roles, responsibilities and communication channels are clear. This, amongst others, should include:

- Training on how data are recorded in the central database;
- How to uniquely identify the equipment installed;
- Where to send hard copies of the installation records, order forms, copies of invoices and any associated relevant documentation;
- Procedure for dealing with a change in serial number, the address or modifications in the capacity of the technology;
- Monitoring procedures.

On completion of trainings, a record of attendance that includes the name and contact details of all attendees should be recorded and filed.

b) Development, maintenance and review of competencies at CPA and CME level

Training is planned, prepared and delivered to ensure that personnel are competent for the critical activities they are assigned to. Personnel carrying out critical activities are regularly reviewed to make sure that they remain competent.

The development, maintenance and review of competency is managed by conducting an initial assessment of the knowledge and skills of new (and where applicable existing) personnel, conducting training and refresher training. Intake, training and skills assessment should be recorded and reviewed during internal audits.

In small organisations the manager personnel is reporting to will carry out the skills assessment and arrange for trainings. In larger organisations these tasks can be split: a technical manager can be responsible for the identification of competence, whereas a human resources officer would be responsible for arranging training and assessment of all personnel. Meanwhile supervisors would be responsible for the periodic review and assessment of the personnel reporting to them.

c) Outsourcing

The CME may ask third parties to carry out critical activities. The level of autonomy of the third party's carrying out the activities can vary. The third party may work under direct supervision of the CME as a subcontractor, but may also be given high levels of autonomy. This is called outsourcing. Outsourcing is often relevant when the implementer of a CPA is an organization different from the CME. Another frequent

case of outsourcing is when specialised consultants are assisting with CDM processes. In all cases the CME should warrant that personnel carrying out critical activities is competent and qualified and follows the appropriate procedures of the CME quality manual.

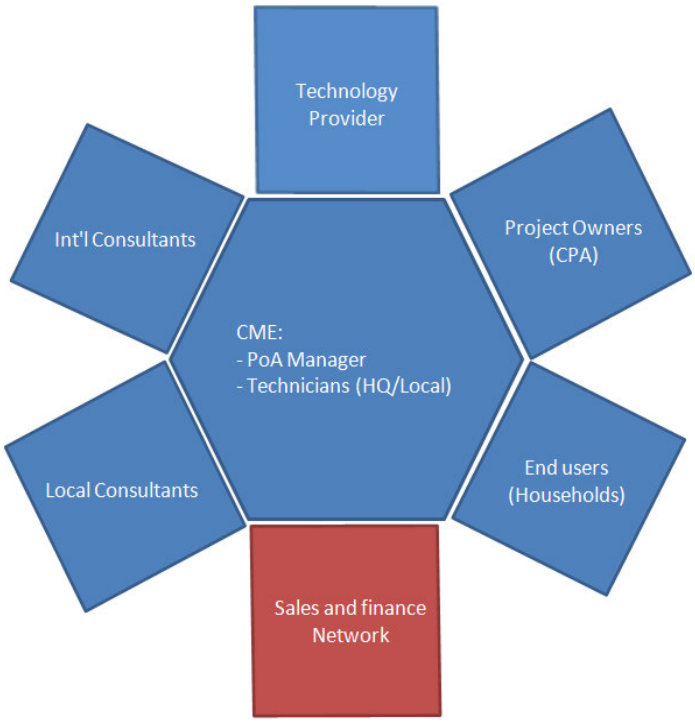

Figure 11. The CME and outside parties involved in the PoA

3.5 Continuous improvement

Objective of this section is twofold: (1) Put in place measures for continuous improvements of the PoA management system, (2) take care of monitoring of changes in the UNFCCC environment.

The guidance in this section corresponds to section 7 "Continuous Improvement" in the template for a CME Manual.

Introduction and Reference

Continuous improvement is an on-going process of always striving to improve the effectiveness and efficiency of management and operations. Continuous improvement is implemented through internal auditing and process monitoring to identify non-conformities, analysis of the root cause of non-conformity to guide corrective action, review of a range of indicators to guide preventive action, and internal auditing as the focal point of management planning.

In a typical set-up, the PoA manger is responsible for overall supervision and continuous improvement, while it can delegate responsibilities for the implementation of those continuous improvement actions. All the team is responsible for identifying potential improvements and implementing actions as they are approved.

The key requirements this section refers to are
- CDM PoA Standard: Paragraph 17: (f) Measures for continuous improvement of the POA management system;
- Requirements listed in text box 2.

a) Internal audit

The PoA has a lifetime of many years, and includes the implementation of new CPAs and the regular operation and monitoring of existing CPAs. It is essential that critical activities are completed in accordance with their approved and documented processes, and that those processes are continuously improved. The internal audit processes is used to measure and improve the performance of management and personnel.

Internal audits are a structured review by observation and interview of a critical activity. The internal audit process is managed by planning to audit critical activities at a frequency based on risk, using competent auditors independent of the area being audited, by providing timely and comprehensive audit reports, and by ensuring that corrective action is effective.

Activities have to be audited following a risk based approach. This means the higher the likelihood of an error with a high impact on the individual CPA and/or the total PoA, the more frequent audits are needed. Internal audits of critical activities should happen at least once per year. Auditors have to have competence in the area they are supposed to audit and be independent. That means they should not have been active in the work that is audited. Internal audits have to include audit reports that are recorded for future reference, management reviews and external audits. Any error identified needs to be followed up by corrective actions. If a potential for error is identified a preventive action should be raised.

b) Non-conformity (NC), corrective (CA) and preventive actions (PA)

It is critical that problems are identified and rectified quickly, and that processes are amended to reduce the risk of recurrence. It is especially important that there are systems in place to identify and correct problems that may affect how many CERs can be verified and issued. A non-conformity (NC) is when the outcome of an activity is unplanned or undesired. A NC can be detected by an internal audit, the monitoring of management processes and through the performance of CPAs.

The aim of managing a NC is to fix the immediate problem, and then to fix the system so that the problem does not happen again. A NC is managed by:

- Correction of what was found to be defective in accordance with the registered design and the CDM requirements;
- Analysis of the situation to identify the root cause of the NC; and
- Implementation of corrective action (CA) to prevent recurrence of this or any similar NC.

Periodically, at least as part of management review, all internal audit reports, NCs, CA and monitoring reports are reviewed to help in the identification of changes that can prevent future NCs, so-called preventive action (PA).

The management team is responsible for the overall CME management. The PoA manager is responsible for implementation of the processes for detecting NC, CA and PA. Managers responsible for individual activities are responsible for identifying root causes and implementing CA in areas under their control, and all personnel are responsible for supporting the NC, CA and PA process and for implementation of changed arrangements as they are approved.

Once an area for improvement is identified, the responsible staff from the CME should check any changes with the PoA-DD and/or CPA-DD. Any deviation from the procedures and requirements as described in the PoA-DD or CPA-DD puts the carbon credits from the project at risk and any improvements in the management system should therefore be checked against the PoA-DD and/or CPA-DD to ensure there is no conflict.

Changes in the PoA management system that are in line with the PoA-DD and/or CPA-DD can be implemented as amendments to the CME manual. Other changes might require review by a DOE and possibly also prior approval by the CDM Executive Board. No clear guidance by the CDM Executive Board was available at the time of writing of the Starter Kit. The latest guidance on post registration changes should be consulted.

c) Handling changes in methodology and UNFCCC guidance

During the lifetime of the PoA the UNFCCC may issue a new version of the applied methodology, may provide additional procedures on PoA management or may otherwise change the institutional framework under which the PoA was registered. The changes may affect the inclusion of new CPAs, the renewal of the crediting period or the monitoring of existing CPAs. The CME needs to provide a procedure to anticipate for such changes.

The CME should appoint a person responsible for reviewing updates in UNFCCC requirements for PoAs. The tasks of this functionary should be detailed in a procedure that ensures that all possible triggers[9] that result in a change to requirements for CPA implementation are observed and acted upon.

[9] See Text Box 2

3.6 Support processes

Objective of this paragraph: Ensuring that critical activities are conducted in a consistent manner.

The guidance in this section corresponds to Section 8 "Support Processes" in the template for a CME Manual.

Introduction and Reference

"A support process is an activity or function that supports the day-to-day operations of an organization". In the context of a CME's management system these relate to documents and records as well purchasing. A purchasing procedure should not be limited to the initial purchase of equipment at the implementation of a CPA but also deal with purchasing of replacement equipment or parts for maintenance purposes.

The key requirements this section refers to are

- CDM PoA Standard : Paragrapgh 17: (b) records of arrangements for training and capacity development for personnel; (e) Records and documentation control process for each CPA under the PoA;

a) Record keeping and documentation control processes

The CME management needs to put measures in place that ensure that the required procedures are understood, implemented and maintained at all levels in the CME and with CPA implementers. Each CPA implementer has to ensure that it can comply with the required tasks, know how to document CPA execution and keep records. There might also be specific procedures that need to be followed by CPA staff but are developed and controlled at CME level. The responsibilities and competence requirements at the CPA level should be clearly documented and communicated.

b) Document control

Critical activities (activities, which are essential if the PoA is to comply with the registered design and the CDM requirements) must be described in controlled documents. Documents are controlled by making sure they have a clearly specified owner, are clearly identified, that they are complete and up to date, and that they are properly approved.

Controlled documents include the CME manual, SOPs, and forms. It is the responsibility of personnel performing critical activities to obtain the current version of the controlled document and to follow the documented process.

The PoA personnel responsible for specific PoA critical activities are also responsible for preparing and approving the controlled documents they consider are needed to make sure the activities are completed properly each time they are done.

The PoA manager is usually responsible for the general document control policies and for all documents held centrally. Individual managers are responsible (that means preparing, updating, approving and controlling) for the controlled documents describing the critical activities under their control.

c) Record control

Records are the evidence of what was done to operate the PoA in accordance with the requirements of the registered project design and the CDM requirements. If essential records are missing or if their accuracy cannot be assured then CERs cannot be verified, certified and then issued.

The controlled document describing a critical activity should also define the records that need to be created for that activity. Records are controlled by making sure they are regularly collected, that it can be demonstrated they are complete, accurate and authorized, and that they are properly protected from harm.

The PoA manager is usually responsible for record control policies and for all records held centrally. Individual managers are responsible for the records of critical activities under their control.

d) Purchasing

The registered design for the PoA provides the technical specifications of the equipment that is to be used to deliver the intended emission reduction/avoidance outcomes. It is critical that equipment with identical performance is used in all CPAs and that all spare parts are designed for the specific equipment in use.

The procurement and provision of new equipment and spare parts is a critical activity. One way to implement this is to require that all purchases are made using official CME purchase documents that specify the item (by part number, formal specification or some other unambiguous description) and the quantity to be purchased. When equipment or parts are received they are checked to ensure that the type and quantity that was ordered has been delivered. All equipment and parts are to be protected (from loss or damage) until they are installed.

> "Change in technical specification is a change in project design. This has to be clear to everybody in charge of purchasing", Siddarth Yadav, SGS

A typical split of responsibilities in this activity is as follows: The technical manager is responsible for ensuring that equipment specifications are maintained up-to-date, the purchasing manager is responsible for all purchasing activities, (including the safe storage of equipment before it is used) and the financial controller is responsible for authorising all purchase orders.

It has to be communicated very clearly to all personnel involved in the sourcing and installation of products/technology that even the smallest deviation can result in not being able to issue any emission reductions for the activity.

4. Draft templates

This section provides draft templates for a CME Manual (4.1), key SOPs (4.2) and related forms (4.3). The completed CME Manual will refer to the SOPs as documents that are controlled separately. The SOPs will refer to forms that should be used during their execution.

The CME Manual and the SOPs relate roles and responsibilities to specific managerial positions (using terms such as "is responsible for"). The main organizational roles used in the templates are:

- CME top management – the group of individuals within the CME tasked with overall responsibility and authority (including financial authority) for the implementation and ongoing operation of the PoA, including the approval of new CPAs and monitoring reports. The individuals and entities from the project nominated in the MoC are part of the CME management team.
- CME Management Representative – the CME manager assigned the responsibility and authority of Management Representative (PoA manager)
- Purchasing Manager – acquisition of all materiel required for the PoA
- Training Manager – training of all personnel engaged in critical PoA activities
- Technical Manager – review and approval of all technical documents, monitoring reports and critical activities related to PoA equipment
- Operations Manager – management of day to day field operations
- Administration Manager – responsible for all aspects of administration of the PoA
- Financial Controller – responsible for all financial matters associated with the PoA
- Outsourcing Manager – responsible for control of all organisations undertaking critical activities on behalf of the CME
- Monitoring and Reporting Manager – responsible for all aspects of CER recording and reporting
- Internal Audit and Review Manager – responsible for all aspects of internal

Each organization might have different titles for certain roles and responsibilities. The role of a training manager for example could be a task of the HR Manager. The technical manager's role could be taken by the PoA manager.

CME top management needs to confirm how roles and responsibilities are to be allocated in their unique set up and make any changes to these draft templates considered necessary.

4.1 Template I: Draft structure for a CME Manual

NOTE: The Text in this template should assist a CME in writing their own CME Manual. It can only provide guidance and ideas but cannot be regarded as complete and useful for each and every CME set up. The template SOPs provided with the CME Starter Kit can be used by making reference to them in the relevant section of the CME Manual or by copying their content.

1. Scope and Purpose

NOTE: There are many activities that you have to do to successfully manage your PoA. This manual describes how you make sure that all of your project activities are working properly, that they are able to consistently create verifiable CERs. This section should elaborate the scope and purpose of your POA and provide an introduction to this manual.

2. References and Definitions

2.1. Normative references

NOTE: List all Standards you used as a basis for this document. This might include:

1. CDM Project Standard
2. CDM Standard for the demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities (CDM POA standard)
3. CDM Standard for sampling and surveys for CDM project activities and POAs

2.2. Terms and definitions

NOTE: If applicable list and explain/define any special terms or definitions used throughout the document

3. POA Management

3.1. Management Responsibility

a) Our commitment to managing this PoA

NOTE: Provide a statement of management's commitment that might included the following:

1. Communicating with our personnel and stakeholders
2. Maintaining the quality of what we do
3. Setting objectives to demonstrate that we have achieved what we set out to do (quality objectives)
4. Reviewing our performance
5. Providing all necessary resources to maintain performance and quality

b) Our PoA policy

NOTE: Describe your companies policy for the implementation and management of the POA that might include your commitment to

- Implementing each CPA in accordance with the registered POA
- Monitoring all CERs in accordance with the registered POA and CDM requirements
- Treating all of our personnel and stakeholders fairly and equitably
- Reviewing and continually improving our performance

3.2. How our CME is structured

NOTE: Describe the structure of your organization. This will benefit from an organogram.

3.3. Our management team

NOTE: list and describe responsibilities, lines of authority, key tasks. This is best done in a table format.

Title	Reporting to	Responsibilities
(NOTE: Add lines as needed)		

3.4. Our operational team

NOTE: List and describe responsibilities, lines of authority, key tasks. This is best done in a table format.

Title	Reporting to	Responsibilities
(NOTE: Add lines as needed)		

3.5. Management representative

NOTE: Especially for large and dispersed organisations, a management system operates most effectively when one individual is a central point of contact, information and overall control for the system as a whole. Nominate the roles and responsibilities for this position.

3.6. Internal Communication

NOTE: Efficient communication within the organisation is critical. Here is where you can define your main communication channels from management to all personnel and from any of your personnel to management.

3.7. Legal Agreements

NOTE: Most CMEs will have arrangements with other organisations to do work on their behalf. It is essential that these arrangements are formalised with legally enforceable agreements.

3.8. Management review

NOTE: Periodically (at least annually), the top management team of the CME should review their operations and decide what they are going to monitor and measure, and what they need to do to improve the efficiency of their operations. A template SOP is provided with the CME Starter kit.

SOP: Management review

4. Planning the Implementation of new CPAs

4.1. Planning the Implementation of a new CPA

NOTE: This section is relevant to anybody (CME or other parties) planning a new CPA. The rationale of PoA is that new CPAs are implemented for a period of time, and then operated for the duration of the PoA crediting period. All CPAs need to comply with the arrangements set up in the registered design document, and so planning how you will go about implementing a new CPA is critical. It is important that the eligibility criteria are included in the planning process, to ensure that eligibility and the documentation of evidence supporting eligibility are clearly in place. One output of the plan is a completed CPA-DD for the new CPA.

4.2. Generic CPA DD requirements

NOTE: POA DD, default CPA-DD, monitoring and sampling plans form the basis for the planning of new CPAs. Key requirements including the eligibility criteria should be described in the CME manual with reference to the underlying controlled documents.

5. Implementation of CPAs

5.1. Avoidance of double counting

NOTE: This is a critical CPA planning requirement. Essentially, you must have processes in place to ensure that a CPA has not been implemented previously and is claiming emission reductions for the same activity twice. A template SOP is provided with the CME Starter kit.

5.2. Implementation of a new CPA

NOTE: This is the where you can describe the process for creating a CPA implementation project plan from the new CPA plan, and then to implement the new CPA.

5.3. Implementation of a changed CPA

NOTE: This is the where you can describe the process for creating a CPA implementation project plan from the updated CPA plan, and then to implement the updated CPA.

5.4. Operation

NOTE: A CPA will most likely need ongoing action to ensure that it remains in operation and creating CERs. This could require detailed processes for maintenance activities and also for operation. For example, maintenance could include regular action to ensure that consumer installations of CFLs or efficient stoves remain in operation, or that regular maintenance of small generating plant is regularly undertaken. Operations could include the normal tasks associated with operation of generation plant. Without these procedures the project could quite easily fail and not create the planned CERs.

5.5. Monitoring at CPA level

NOTE: The registered PoA-DD and each CPA-DD includes specific monitoring requirements. Monitoring requires procedures in two areas. One area is the regular, routine activities that take place during a monitoring period to ensure that measurement apparatus is maintained and that monitoring data is collected according to the registered design. The second area is the collation of monitoring data into a report for verification.

5.6. Sampling at POA level

NOTE: Sampling can be used in two ways. The PoA standard allows DOEs to validate and verify CPAs using a sampling regime. Methodologies used in the registered design may allow sampling within the monitoring process. However, there is no approved sampling regime that can be used by the CME in its review of CPAs – for either the inclusion of new CPAs or for the review of monitoring reports. That is, the CME needs to review 100% of all new CPAs and of all monitoring reports.

5.7. CME Review and approval

NOTE: The CME needs a structured process for the review and approval of new CPAs and for the review and approval of monitoring reports before they are presented to the DOE. The procedure should also describe what documents and supporting evidence are to be submitted to the DOE at inclusion and verification stage.

5.8. Exclusion of a CPA

NOTE: The CME needs a structured process for ensuring that CPAs which do not meet the eligibility requirements or where the monitoring report from a CPA does not meet the requirements of the registered design are quarantined and not presented to the DOE for validation or verification.

6. Resources Management

6.1. Our people

a) Management and personnel

NOTE: The CME should clearly define the structure of the organisation and its relationship with the different intermediaries or CPAs owners, and clearly define the roles and responsibilities of management and operational personnel. List Required Competencies for each role. Provide procedures for deployment of personnel, use of contracted personnel and personnel records. This should be provided at CME and at intermediary or CPA owner level.

b) Development, maintenance and review of competencies

NOTE: Competence is the ability to apply knowledge and skills to achieve intended results. It is fundamental to effective operation of the CME and the associated CPAs that the CME has

1. analysed the competence requirements of the different tasks required for all critical activities
2. identified the knowledge and skills required for that competence

3. determined how it will assess the knowledge and skills of personnel undertaking critical activities and completed the assessment
4. developed suitable training plans

6.2. Outsourcing

NOTE: provide a procedure how outsourcing decisions are made and how the CME keeps control and final responsibility over outsourced activities. In the context of a PoA, outsourcing is when the CME works with partner organisations to develop and operate CPAs or to provide other critical services rather than for the CME to directly manage those activities using their own directly employed personnel. Outsourced arrangements need to be based on legally enforceable agreements, ensure that the outsourced organisations use the processes developed by the CME, and ensure that the outsourced organisations are reviewed and audited as if they were part of the CME. The CME must not outsource the decision on inclusion of a new CPA or approval of a monitoring reporting prior to submission to a DOE.

6.3. Our infrastructure

NOTE: If there are critical activities that require infrastructure, then the processes required to ensure that the infrastructure continues to operate effectively should be described here. Describe software (if applicable), equipment storage, file storage to work with your system.

7. Continuous improvement

7.1. General

NOTE: Tracking what happens in your POA is critical to being able to effectively improve and provide consistent performance. This section describes a general commitment or guidance to continual improvement.

7.2. Customer satisfaction

NOTE: This would be a procedure to monitor

1. Feedback from local stakeholders, intermediaries, CPA owners and end-users of the technology
2. Feedback from Government stakeholders
3. Results of validation/inclusion/verification activities
4. Results of UN review and approval for issuance

7.3. Internal audit

NOTE: The internal audit processes are used to measure and improve the performance of management and personnel. Internal audits are a structured review by observation and interview of a critical activity. The internal audit process is managed by planning the audit of critical activities

- at a frequency based on risk (the higher the potential for error and the higher the impact on the integrity of the PoA, the more frequent the audit),
- using competent auditors independent of the area being audited,
- by providing timely and comprehensive audit reports, and
- by ensuring that any corrective action that result from the audit is effective and actually implemented.

SOP: Internal Audit
Forms: Internal Audit Program, Internal Audit Report, System Improvement Request

7.4. Corrective action

NOTE: A Non-conformity can be raised as result of an internal audit or detected at any time by CME or intermediary/CPA owner personnel in the course of their daily work. Depending on the gravity of the

found Non-Conformity staff can be authorized to correct them immediately or to follow an escalation process.

SOP: Error Correction and System Improvement

7.5. Preventive action

NOTE: The need for preventive actions can be identified during a structured review or at any time by CME or intermediary/CPA owner personnel reviewing their daily work.

SOP: Error correction and System Improvement
Forms: System Improvement Request

7.6. Planning the Implementation of Changed UNFCCC Requirements

NOTE: At times, the CDM Executive Board changes the requirements with which existing CPAs need to comply. In the same way that is important to plan for the implementation of a new CPA, it is important to plan for the implementation of an updated CPA. Note that the planning requirements for an updated CPA are going to be a lot less than for a new CPA. One output of the plan is a completed CPA-DD for the updated CPA.

8. Support Processes

8.1. Document control

NOTE: Documents are controlled by making sure they are clearly identified, complete and up to date, properly approved, and that they are available where they need to be used. Controlled documents include the CME Manual, SOPs, forms, and templates.

SOP: Document Control
Forms: Document Master List

8.2. Record control

NOTE: Records are the evidence of what was done to operate the PoA in accordance with the requirements of the registered project design and the CDM requirements. If essential records are missing or if their accuracy cannot be assured then CERs cannot be verified, certified and then issued.

SOP: Record Control
Forms: Record Master List

8.3. Purchasing

NOTE: The registered design for the PoA specifies the equipment that is to be used to deliver the intended emission reduction/avoidance outcomes through operation of the project. It is critical that the originally specified equipment is used in new CPAs and that all spare parts are designed for the specific equipment in use.

SOP: Puchasing
Forms: Purchase Order

8.4. Technical Review

NOTE: All new CPAs proposed for inclusion in the PoA and monitoring reports proposed for verification shall be reviewed by the CME using a technically competent, independent reviewer to ensure that the new CPA or monitoring report fully complies with the registered design requirements and the CDM. This process can also be used by the intermediaries or CPA owners on new CPAs and monitoring reports before they are

sent to the CME for approval. The review can be completed by either a fully competent individual reviewer or by a team of reviewers formed to include all necessary competencies.

SOP: Technical Review
Forms: Technical Review Inclusion, Technical Review Monitoring

8.5. Training and Competence

NOTE: Competence is the ability to apply knowledge and skills to achieve intended results. Training is the structured provision of instruction in the skills and knowledge required to demonstrate competence. This requirement applies to all CME and intermediary or CPA owner personnel who undertake critical tasks, and to all procedures that include critical tasks.

SOP: Competence and Training
Forms: Competency Statement and Checklist, Training and Development Record

4.2 Template II: Standard Operating Procedures (SOPs)

The CME should draft an SOP for all relevant chapters of the CME Manual. Some SOPs that are suitable for standardization are provided with this Starter Kit. Others have to be drafted corresponding to the special circumstances of the CME and following the guidance in the Starter Kit. As a starting point, CMEs can use the below structure of a Master SOP.

All templates are accessible under:

http://www.kfw.de/kfw/en/KfW_Group/Sustainability_and_Climate_Protection/KfW-Carbon_Fund/index.jsp

Figure 12: Master SOP

Controlled Document

This template can be used for all SOPs that need to be developed as part of the CME Manual. All text in italics (including this one) is explanatory and should be replaced by SOP specific text or deleted in the final SOP.

SOP – *NAME*

Scope

Describe the specific purpose of this SOP.

Reference

Provide references to any specific regulatory requirements this SOP addresses.

Responsibility

Describe who is responsible for implementation/application of the SOP. This could be one or more persons. Responsibility should be assigned to a role (e.g. technical manager) rather than a named person.

Process

Describe the process to be applied. This may include different subheadings for sub-processes.

Records

List all records to be taken.

Forms

List all forms to be used in this SOP.

Document History

Any change to this document should be tracked, including the name of the person making the change, the new version number, the date of the change and a brief description of what has been changed.

Name of Author	Version	Date	Description

The footer section contains a unique document identifier that could be simply the filename used for the electronic version of the document, or a reference number that is tracked in a document master list. The footer section is available on each page of the SOP, so that key data like version number and issue date also appear on printed versions of the SOP .

Document Identifier:
Version:
Issue Date:
Name of Document Owner:
Function of Document Owner:

Page **1** of **1**

4.3 Template III: Forms

All templates are accessible under:

http://www.kfw.de/kfw/en/KfW_Group/Sustainability_and_Climate_Protection/KfW-Carbon_Fund/index.jsp