ENERGY EFFICIENCY AND RENEWABLE ENERGY PROJECT: CAPACITY BUILDING AND TRAINING PROGRAMME

CARBON MARKETS

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Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

PROGRAMMATIC CDM (pCDM) or PROGRAMME OF ACTIVITIES (PoA)

Scope

- Definition and Rationale for PoA Development
- Characteristics and Applicability of a PoA
- Differences between bundle of CDM projects and PoA
- Eligible PoA types
- PoA Project Cycle
- Structure of a PoA
- PoA pipeline
- Benefits of a PoA
- PoA Costs

Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

PROGRAMMATIC CDM (pCDM) or PROGRAMME OF ACTIVITIES (PoA)

Definition and Rationale for PoA Development

Definition and Rationale for PoA Development

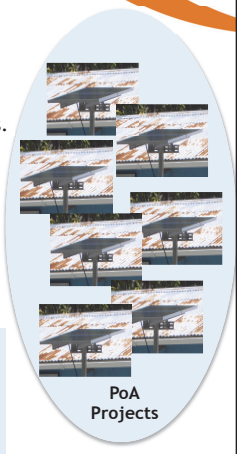
Programme of Activities (PoA) Definition

A Program of Activities (PoA) is a **voluntary coordinated action by a private or public entity** which coordinates and implements any policy/measure or stated goal (i.e. incentive schemes and voluntary programs), which leads to GHG emission reductions or increase net greenhouse gas removals by sinks that are additional to any that would occur in the absence of the **PoA, via an unlimited number of CDM Project Activities (CPAs)**

Objective is to broaden the CDM field to replicable projects, (called CPAs) that provide physically spread GHG emissions reductions activities that would have been difficult, costly and time-consuming to develop on a project-by project basis.

Definition and Rationale for PoA Development

- The PoA approach aims to :
  - Achieve economies of scale
  - Aggregate emission reductions by actors, sector and regions.
  - Reach wider groups of actors
  - Support types of activities that are too small to be developed as stand-alone CDM projects
  - Open sectors that have so far been not been addressed by the CDM
  - Foster the promotion of environmentally friendly activities



How can scaling up of mitigation measures be achieved?
"Unless the impact of the CDM can go beyond stand-alone project activities and be used to spur broad climate-friendly policies and measures, the CDM will not promote the much needed transformation in the energy trends of developing countries" (Figueres et al., 2005). Successful approaches are expected to include a combination of policy- based and technological interventions to be defined by country- specific circumstances and capacities.

Definition and Rationale for PoA Development

- The regulatory Process of PoA development

2005

- pCDM (or PoA) was introduced at the 1st Meeting of the parties to the KP (CMP)
- Broaden the CDM field to replicable projects that provide physically spreaded GHG ER activities

2007

- The EB agreed on the basic rules for pCDM
- Approved templates for PPD
- Issued procedures to register PoAs and issue CERs

2009

- The EB improved regulations to provide more flexibility in applying methodologies and allowing PoA project activities to start earlier

2010

- The procedures for registration of PoA were updated

Definition and Rationale for PoA Development

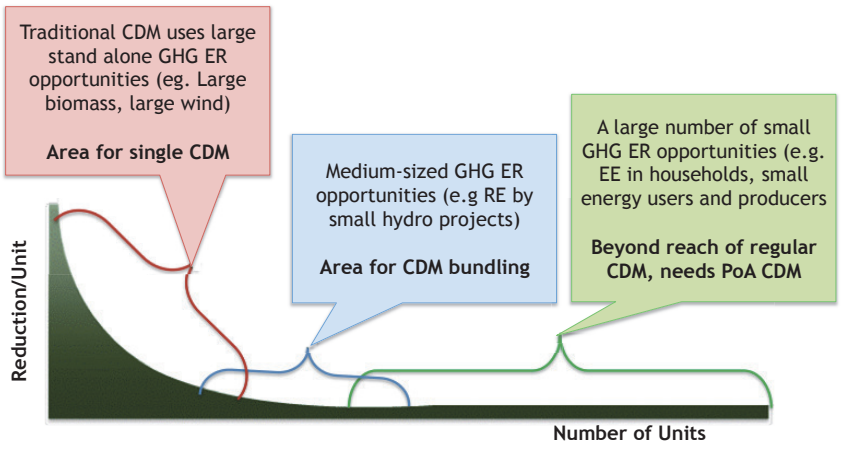
A typical CDM project is a single large scale initiative to reduce anthropogenic GHG emissions or remove CO2 from the atmosphere

CDM is seen as one of the most successful and effective elements of the global climate regime and has mobilized billions of dollars of investment into thousands of projects

The climate change community recognized the need for developing a modality to support new approaches that involve a large number of smaller emission reduction activities, which when added together, can generate enormous reductions in greenhouse gas emissions.

Examples: programmes to install solar water heaters in residences, when widely implemented, have the potential in aggregate to generate enormous greenhouse gas emissions reductions.

Definition and Rationale for PoA Development



Definition and Rationale for PoA Development

- The project-based structure of the traditional CDM was effective, but discourages small project activities, due to:
  - Low volume of emissions reductions vs. high and upfront transaction costs (often more than 100,000 USD for each project)
  - Long project approval cycle (on average 31 months)
  - Complicated process, high entrance threshold in terms of knowledge and investment requirements

Definition and Rationale for PoA Development

- Why PoA?

Asymmetries in participation

Some regions and countries thus far not benefiting at all from CDM – e.g. SIDS

Small projects and some types of projects not benefiting

Limited number of "typical" projects/country

Smaller sectors and projects

Low CER volume per activity

High transaction costs

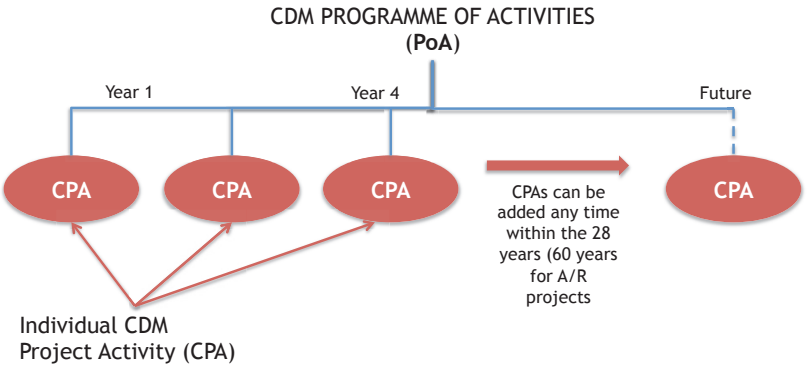
PCDM aims at facilitating smaller/varied projects in smaller markets

Definition and Rationale for PoA Development

pCDM has the potential to:

- Facilitate long-term investment in mitigation programmes
- Achieve GHG ER with market transformation effects in developing countries
- Embark developing countries into a transition to a low carbon economy and promote the market introduction of climate-friendly technologies
- Transform the CDM into a more cost-effective mechanism
- Bring together different actors to develop new creative PoAs that go hand in hand with their core business strategy and the goal of reducing GHG emission
- Open up new clients bases and penetrate different market segments, creating an incentive to banks and microfinance institutions in low carbon development

Definition and Rationale for PoA Development



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Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

PROGRAMMATIC CDM (pCDM) or PROGRAMME OF ACTIVITIES (PoA)

Differences between Bundled of CDM Project and PoA

Differences between Bundled of CDM Project and PoA

- Bundling is defined as bringing together several CDM project activities to form a single CDM project activity.
- The advantage of bundling is that bundled projects can obtain a single validation report and a single certification report for the entire bundle, which streamlines these processes for project participants. Furthermore, depending on the underlying CDM methodology, a bundle can use sampling procedures for monitoring. Bundling therefore reduces transaction costs.
- Limits of a bundle are that
  i. it is a pre-defined, fixed structure (no activities can be added to the pre-defined bundle),
  ii. each participant in a bundle is a CDM project participant,
  iii. thresholds for simplified methodologies for small scale CDM projects (*e.g. 15 MW installed capacity for renewable energy projects*) apply on the level of the bundle and not only on the level of an individual activity.

Differences between Bundled of CDM Project and PoA

- Key differences between PoA and bundle:
  - Number of CPAs that can be included
  - Timing of projects developed under the PoA are more flexible.

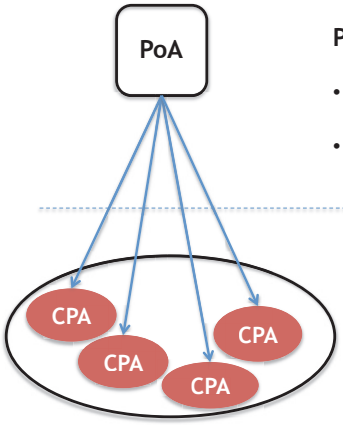
Bundling was designed for individual project sponsors that deal with a limited number of similar and already known activities (e.g. retrofitting of 10 boilers within one company)	***whereas***	**PoAs** were made for programmes that give incentives to a large number of different entities to undertake a certain type of emission reduction activity (e.g. a country-wide boiler modernisation programme run by a public agency).

Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

PROGRAMMATIC CDM (pCDM) or PROGRAMME OF ACTIVITIES (PoA)

Characteristics & Applicability of a PoA

Characteristics & Applicability of a PoA



Programme level – pCDM (PoA)

- One coordinating/Managing Entity (CME) who coordinates/manages PoA
- PoA provides the framework to implement the CPAs

Activity Level – individual CDM Programme Activity (CPA)

- Achieves GHG ER or removals by sinks using CDM methodologies
- Implementing Partners carry on individual CPAs

Characteristics & Applicability of a PoA

PoA Level

Characteristics:

1. Coordinating/Managing Entity (CME):

- is the project participant which provides the framework and incentives for others to achieve the emission reductions

- Can be either a public or private company

- Responsibilities:
  - Communicate with the EB – including submission of PoA and making arrangements for the distribution of CERs;
  - Ensure double counting does not occur by verifying that ER achieve under the CPAs are not registered as a separate CDM project, or as part of another registered PoA
  - Responsible for getting the LoAs of authorization of its coordination of the PoA from each host Party's DNA

Characteristics & Applicability of a PoA

PoA Level

Characteristics:

2. Duration:

- GHG-ER do not necessarily occur at the same time;
- The PoA can have the duration of up to 28 years or 60 years in the case of A/R programmes

- The CME can add a CPA at any time throughout the duration of the PoA
- CPAs can have different crediting periods

Characteristics & Applicability of a PoA

PoA Level

Characteristics:

3. Starting date of a PoA:

- Starts with the beginning of the public comment period at validation.

4. Monitoring and Verification

- Total volume of emission reductions to be achieved by the PoA may not be known at the time of registration
- Each CPA could be monitored according to the methodology(ies) used in the PoA. For small GHG reductions, statistically sound sampling can be used.
- For Verification the DOE may use statistically sound sampling methods, as long as they assure the accuracy of the ERs

Characteristics & Applicability of a PoA

PoA Level

Characteristics:

5. Boundary:

- Physical boundary of a PoA can extend beyond the boundary of a single host country, provided that each participating country submits a letter of approval from the respective DNAs

- PoAs can be national (within the boundary of the host country) or regional (various countries)
- Boundary of the PoA can also be defined in terms of which gases are includes or excluded (similarly to CDM project activities)

Characteristics & Applicability of a PoA

PoA Level

Characteristics:

6. Methodology:

- Methodologies can involve one type of technology or a set of interrelated measures, as long as they are all applied to the same type of facility (e.g. all are households). The combination must be applied to all CPAs in a consistent manner

- The PoA can apply a combination of approved methodologies and monitoring methodologies to the respective CPAs under it
- In case it uses more than one approved methodology, a case-by-case decision needs to be made by the EB before submitting a request for registration of the PoA in question ("*Procedures for Approval of the Application of Multiple Methodologies to a PoA*")
- The choice of the methodological approach has important implications for the PoA design, especially for the monitoring requirements

Characteristics & Applicability of a PoA

PoA Level

Characteristics:

7. Additionality:

- Needs to be demonstrated: at the PoA level or at the CPA level

PoA Level

Needs to demonstrate:

1) the proposed voluntary measure would not be implemented in the absence of the PoA
2) The mandatory policy/regulation would not be enforced as envisaged but rather depends on the CDM to enforce it
3) PoA will lead to greater level of enforcement of the existing mandatory policy/regulation

- The PoA must define and include eligibility criteria:
  - for demonstration of additionality of CPAs;
  - for inclusion of a CPA under a PoA

Characteristics & Applicability of a PoA

CPA Level

CPA is a project activity under the PoA. The CPA is a *single*, or a *set of interrelated measure(s)*, to reduce GHG emissions or result in net anthropogenic GHG removals by sinks, applied in either a *single* or *many locations* of the same type, within an area that is defined in the baseline methodology(ies).

Each CDM Programme Activity

- Must comply with all the procedures and modalities of the CDM
- Must follow in principle the CDM project cycle
- Must comply with inclusion criteria of the PoA
- Must include activity that has direct, real, and measurable impact on emission reductions

Characteristics & Applicability of a PoA

CPA Level

Each CPA is a specific measure where emission reductions are actually achieved by those that participate in the programme.

The CPA is identical to a regular stand-alone CDM project activity in the sense that it must lead to direct, real, and measurable emission reductions, and that it must comply with the procedures and modalities of the CDM.

Characteristics & Applicability of a PoA

CPA Level

Characteristics:

1) Inclusion Criteria

- The decision of what constitutes a CPA is one or the most important decision in the design of the programme (PoA)

- All CPAs must be similar to each other.
  - The PP must define what constitutes a CPA;
  - Typical key features of the CPA and the eligibility criteria of each further CPA must be clearly (unambiguously) defines in the PoA Design Document (PoA-DD) at the time of request for registration
- Once a CPA has been defined in the baseline in the baseline and monitoring methodology in the same type of facility/installation/ land, and must meet the eligibility criteria established for CPAs under that program.

Characteristics & Applicability of a PoA

CPA Level

Characteristics:

2) Additionality

- The additionality at CPA level is currently being discussed and defined by the EB

Additionality could be demonstrated:

1. Through the eligibility criteria for the inclusion of the CPAs
2. At the CPA level: demosntration that each CPA cannot be implemented without the CDM. In this case, it is the additionality of each CPA that is tested individually

Characteristics & Applicability of a PoA

CPA Level

Characteristics:

3) Crediting period of the CPA

- Either 7 years (renewable twice) or 10 years (no renewal)

- The managing entity can add to a registered PoA at any time through the submission of a completed CPA design document (CDM CPA-DD)
- All CPAs end when the PoA ends, regardless of when they have been added to the PoA. No CPA can extend beyond the maximum duration of the PoA as a whole
- When submitting the PoA, the PP must be careful about establishing the duration of the PoA, so as to avoid cutting off CPAs before they are completed.
- Although different crediting periods can be chosen for the CPAs under a PoA - choosing the same crediting period for all CPAs make the issue simpler.

Characteristics & Applicability of a PoA

CPA Level

Characteristics:

4) Starting date of the CPA

- Is the date of its inclusion in the registered PoA or any date thereafter.

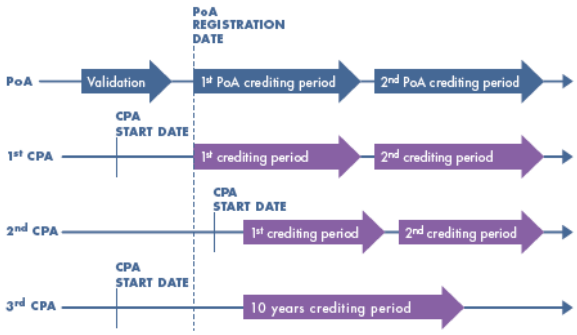
- However the starting date of any CPA cannot be prior to the commencement of validation of the PoA (i.e. the date in which the CDM-PoA-DD is first published for global stakeholder consultation)
- CPAs can start simultaneously or they can be included on an individual basis at any time during the duration of the PoA
- The 1st CPA must be submitted with the PoA for validation - thus has its starting date during validation and can start its crediting period just after PoA registration

Characteristics & Applicability of a PoA

CPA Level

Characteristics:

Crediting period of the CPA & Starting date of the CPA



Source: Southpole, Developing CDM PoA: A Guidebook 11/2010

Characteristics & Applicability of a PoA

CPA Level

Characteristics:

5) Methodology

- All CPAs under a PoA must apply one or a combination of approved baseline and monitoring methodology

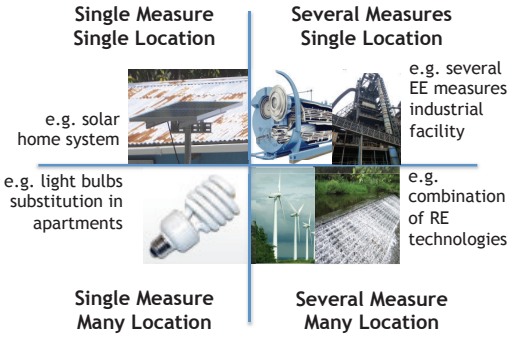
- It is necessary to ensure the combination of methodologies have been approves by the EB
- It is not possible to combine any methodologies that the PP would like. Some combinations have not yet been approved and then a request for approval of a combination for a PoA must be submitted to the EB prior registration

- UNFCCC procedures (UNFCCC website):
  - Procedures for Registration of a PoA as a single CDM project activity
  - Procedures for Approval of the Application of Multiple Methodologies to a PoA
  - Procedures for review of erroneous inclusion of a CPA

Characteristics & Applicability of a PoA

The PoA is characterised by the CPAs

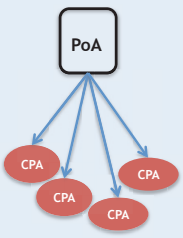
The CPA is a ***single***, or a ***set of interrelated measure(s)***, to reduce GHG emissions or result in net anthropogenic GHG removals by sinks, applied in either **a *single*** or ***many locations*** of the same type, within an area that is defined in the baseline methodology(ies).



Characteristics & Applicability of a PoA

Single Measure, Single Location

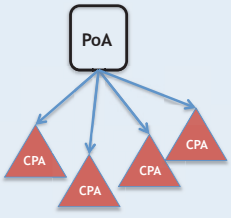
E.g. solar water heaters in buildings, where each building is a CPA in which EE measure is applied



Several Measures, Single Location

E.g. set of EE measures applied to a multiple boilers in the same industrial facility.

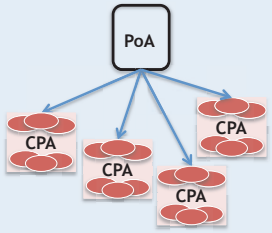
Each boiler is a CPA applying a set o EE to one industrial facility - as long as the set of EE measures are covered by one approved CDM methodology



Characteristics & Applicability of a PoA

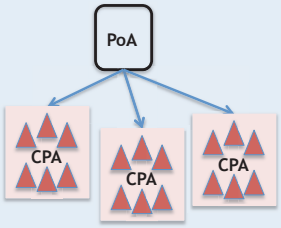
Single Measure, Many Locations

Apply one measure (replacement of inefficient light bulbs) to many location within a single CPA defined area.
The single measure is replacement of inefficient light bulbs in each location. Each CPA will cover many locations.



Several Measures, Several Locations

Apply a set of interrelated measures (several EE in homes) to many locations within a single CPA defines area
The CPA could be a city, or a section of the city, in which EE measures are applied to many homes in one area



Characteristics & Applicability of a PoA

Applicability

Main opportunities are centered on micro-activities for which only small-scale methodologies exist and that can (thanks to PoAs) be developed on a larger scale.

Characteristics & Applicability of a PoA

Attractiveness and feasibility of PoA Opportunities

	CER POTENTIAL	IMPACT OF CARBON FINANCE	SUSTAINABLE DEVELOPMENT BENEFITS	EASE OF IMPLEMENTATION
1. Electricity's generation from renewable power				
HYDRO	High, but depends on countries' grid factors	Potentially high, but depends on countries' grid factors	High	Straight forward
BIOMASS	High, but depends on countries' grid factors	Potentially high, but depends on the availability of «biomass baselines» and on countries' grid factors	High, but biomass needs to be sourced sustainably and nutrients must be returned to the soils	Sustainable source of renewable biomass needed & monitoring is complex
WIND	High, but depends on countries' grid factors	Modest and depends on countries' grid factors	High	Straight forward
GEOTHERMAL	High, but depends on countrie's grid factors	Moderate	High	Exploration leads to long timeframes
SOLAR PV	High, but depends on countries' grid factors & commercial viability of solar PV	Low, but will increase as price of solar comes down	High	Straight forward
CONCENTRATED SOLAR POWER (SOLAR THERMAL)	High, but depends on countries' grid factors	Low, but will increase as cost of technology comes down	High	Straight forward

Source: Southpole, Developing CDM PoA: A Guidebook 11/2010

Characteristics & Applicability of a PoA

Attractiveness and feasibility of PoA Opportunities (Cont.)

	CER POTENTIAL	IMPACT OF CARBON FINANCE	SUSTAINABLE DEVELOPMENT BENEFITS	EASE OF IMPLEMENTATION
2. Household applications				
HOUSEHOLD BIOGAS	High, but depends on baseline use of biomass	Potentially very high, but depends on size of reactors and biomass availability	High	Complex baseline and monitoring issues
SOLAR WATER HEATERS	High	Modest	High	Installation, maintenance and monitoring of large numbers of SWH is complex
IMPROVED COOKSTOVES	High	High	High	Complex distribution and monitoring challenges
COMPACT FLUORESCENT LIGHT BULBS (CFLs)	High	High	High	Complex distribution, assignment of CER ownership and monitoring
HOUSEHOLD SOLAR PV DEVICES	High	Modest if high-emission fuels are displaced, low if baseline is grid emission factor	High	Relatively complex distribution and monitoring

Source: Southpole, Developing CDM PoA: A Guidebook 11/2010

Characteristics & Applicability of a PoA

Attractiveness and feasibility of PoA Opportunities (Cont.)

	CER POTENTIAL	IMPACT OF CARBON FINANCE	SUSTAINABLE DEVELOPMENT BENEFITS	EASE OF IMPLEMENTATION
3. Other PoA Opportunities				
IMPROVED CHARCOAL PRODUCTION	High	High	High	Complex monitoring
JATROPHA BIOFUELS	Moderate	Moderate	High if planted on marginal land, low if in competition with food production	Complicated; requires captive fleet

Source: Southpole, Developing CDM PoA: A Guidebook 11/2010

Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

PROGRAMMATIC CDM (pCDM) or PROGRAMME OF ACTIVITIES (PoA)

Eligible PoA types

Eligible PoA Types

Small Scale PoAs (SSC-PoAs)

Requirements:

- Similar to standard CDM, SSC PoAs are also a possibility. The entire PoA does not have to be small, but its constituent parts (CPAs) should comply with the Small Scale definition of CDM.
- In this case, the PoA must use an approved CDM Small Scale baseline methodology.
- Using more than one SSC approved baseline and monitoring methodology must be approved by the EB prior to submission for registration.
- The EB at its 56th meeting agreed that several standard combinations of small scale methodologies related to methane generation (Type III) and energy production (Type I) do not require the process of previous approval.

Eligible PoA Types

Small Scale PoAs (SSC-PoAs): Practical Consideration for SSC-PoAs

(1) De-bundling determination applying small scale methodology:

- No de-bundling check has to be conducted for small-scale CPAs in which each independent subsystem/measures (e.g. biogas digester) included in the CPA of a PoA does not exceed 1% of the small-scale threshold, *i.e. . Less than 15 kW installed capacity or 0.6 GWh annual energy savings or 0.6 ktCO2e annual emission reductions*.
- If the individual measures included in a CPA go beyond the 1% threshold (i.e. 15 kW installed capacity or 0.6 GWh annual energy savings or 0.6 ktCO2e annual emission reductions) then the CPAs should pass the de-bundling test.
- This requires that there should not be any other activity (registered or to be registered CPA or a registered CDM project) with:
  a) The same activity implemented as the proposed small-scale CPA or with the same CME, which also manages a large- scale PoA of the same technology/measure, AND;
  b) Its boundary is within 1 km of the boundary of the proposed small scale CPA, at the closest point.

Eligible PoA Types

Small Scale PoAs (SSC-PoAs)

Requirements (Cont.):

- At COP 8 the Parties adopted the Simplified Modalities and Procedures for Small-Scale CDM Project Activities in order to reduce the proportionally higher transaction costs associated with the development and implementation of small scale CDM project activities:
  - simplified PDD;
  - baseline methodologies by project category,
  - the possibility of bundling small scale project activities,
  - a shortened period of time for registration; and
  - the same DOE is allowed to undertake validation, verification and certification.

Eligible PoA Types

Small Scale PoAs (SSC-PoAs)

Requirements (Cont.):

3 types of project activities:

Type I - renewable energy project activities that have a maximum output capacity of 15 MW (or an appropriate equivalent). *E.g. micro hydro, small wind turbines and all solar equipment.*

Type II -project activities which reduce energy consumption, on the supply and/or demand side, limited to a maximum output of 60 GWh per year (or an appropriate equivalent). *E.g. improved cooking stoves or higher efficiency boilers in small enterprises.*

Type III -other project activities, limited to those that result in emission reductions of less than or equal to 60 kt CO2 equivalent annually. *E.g. installation of biogas digesters in households or small farms*

Eligible PoA Types

Small Scale PoAs (SSC-PoAs)

Requirements (Cont.):

- The 60 GWh threshold for SSC CDM projects applies to each CPA in a PoA, not to the PoA as a whole, independently of how many times the CPA is repeated.
- In Sept 2010 the EB agreed that several standard combinations of SSC methodologies related to methane generation (Type III) and energy production (Type I) do not require process of previous approval. Prior to that the combination of biogas methodology and thermal energy was already approves (AMS-III.R/AMS-I.C)

Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

PROGRAMMATIC CDM (pCDM) or PROGRAMME OF ACTIVITIES (PoA)

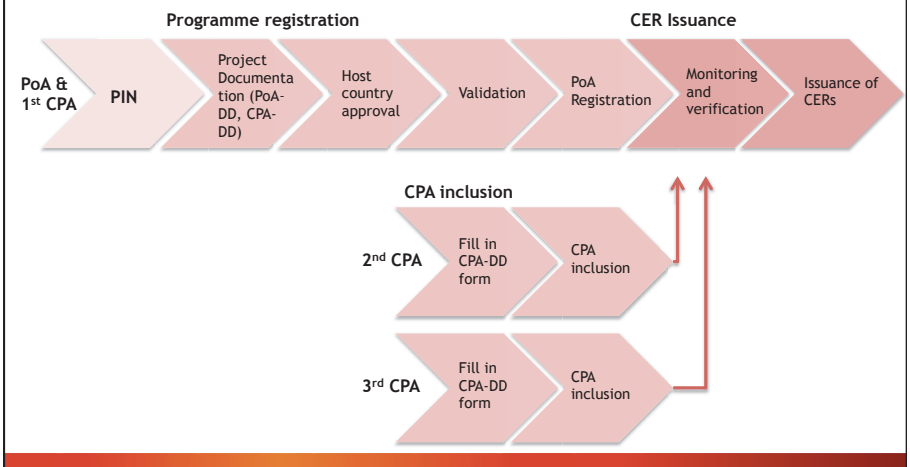
PoA Project Cycle

PoA Project Cycle

Steps in PoA Development and Implementation

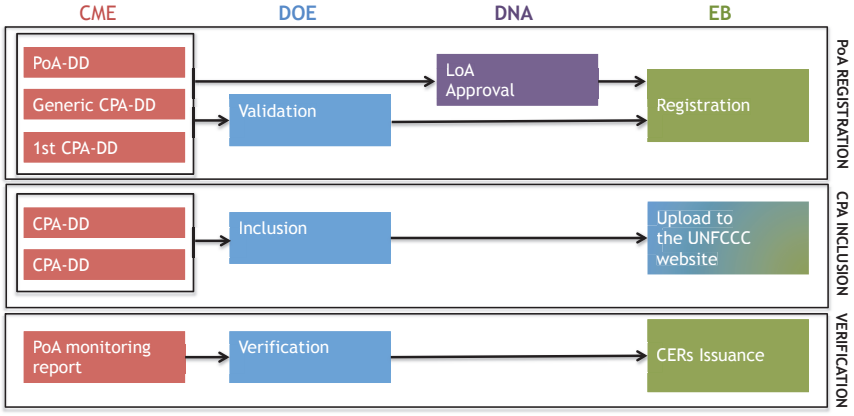
Preparation Phase	• 1) Development of the PoA idea PIN • 2) Development of a PoA Designe Document and CPA Design Document including monitoring plan • 3) Approval and authorisation by the DNA • 4) Validation of the CDM-PoA-DD through DOE • 5) Registration with the EB
Implementation Phase	• 6) DOE Checks whether the submitted CPAs fulfill the eligibility criteria. Submission of CPA-DDs to DOE • 7) Operation and record keeping system for each CPA • 8) Implementation of each CPA. Implementation of the monitoring plan for each CPA, as per monitoring methodology • 9) Verification of Ers achieved by CPAs, performed by DOEs • 10) Issuance of CERs, based on verification reports. Distribution of CERs to CME, CPA implementing partners and/or other PoA participants

PoA Project Cycle



PoA Project Cycle

Role of the different stakeholders



PoA Project Cycle

Key Documents

Programme of Activities Design Document **CDM-PoA-DD**	• Used for submitting and registering the programme of activities (PoA)
Programme Activity Design Document **CDM-CPA-DD**	• Real case CPA-DD • Generic CPA-DD that is used for the addition of further CPAs under the registered PoA

PoA Project Cycle

The Project Idea Note (PIN) and its Importance

- Presents early-on information on a potential CDM or PoA (not more than 5-10 pages)
- Not part of the official CDM/PoA cycle
- Most DNAs, funders and brokers operate with a PIN PoA template

Purpose

- Communication tool used by programme participants early in the process
- Assists in the conceptualization, marketing, financing and screening
- Basis for more serious negotiations
- Many DNAs issue a Letter of No-Objection (LoA) based on the PIN

PoA Project Cycle

Information on a PoA PIN

a) General programme description: PoA level, CPA level, technology, location of the activities
b) Stakeholders of the programme: managing entity, activity implementers, service providers
c) Organisational set-up of the programme: organisation and programme, expected schedule,
d) ER and CDM specific information: GHG abated, definition of CDM CPAs, methodology, additionality
e) Finance: costs and revenues, sources of finance to be sought or already identified, carbon revenues
f) Expected environmental and social benefits
g) Risk assessment: technological risks, financial risks, CDM risks

PoA Project Cycle

What to look for in a PoA PIN?

- Should clearly present the PoA (easy to read, logic, consistent)
- Attractive to buyers
- Fulfillment of the basic requirements: additionality and tentative estimations
- Compatibility with sustainable development of the Host Party
- Clear interests identified for success
- CME capacble of delivering value added and articulate affiliation of the CPAs
- Identification of the facilitation needed for the success of the PoA

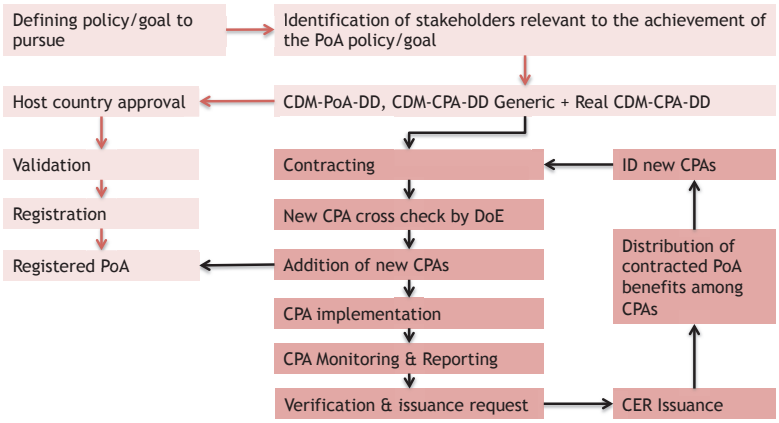
Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

PROGRAMMATIC CDM (pCDM) or PROGRAMME OF ACTIVITIES (PoA)

Structure of the PoA

Structure of the PoA

Main generic steps o develop a PoA:



Structure of the PoA

- **Defining Policy or Goal to Pursue**
  - A clear policy/measure or goal to pursue with the through a replicable GHG mitigation activity (CPA)
  - Around this, stakeholders who are instrumental should be identified: financial institutions, PP, government agencies etc
  - CME must define clearly what is the scope of the programme
  - Inputs for defining the policy/goal are: technology assessments, national, regional or sectoral GHG inventories, business association reports, technology sales plans for specific business sectors and public or private promotion programs for activities leading to GHG reductions (e.g. energy efficiency, fuel switch, forestry, clean production, etc.)
  - This information will also help to identify: PoA potential boundaries and give an idea of the universe of potential interventions of the PoA

Structure of the PoA

- **Defining Policy or Goal to Pursue: Examples**

Real PoA Case	Targeted Goal/Policy
CUIDEMOS México (Campaña de uso Inteligente De Energia Mexico) - Smart Use of Energy Mexico - Programme of Activities	The goal: The PoA has been able to set a specific goal which is to transform the energy efficiency of Mexico's residential lighting stock by distributing up to 30 million compact fluorescent lamps (CFLs) to households. This PoA will also include a significant public education component promoting the importance of energy efficiency in Mexico. The policy: This PoA is developed under the national strategy of climate change and additionally strengthens efficiency campaigns developed by some major institutions in Mexico. Demand-side energy efficiency has been identified by the Mexican government as one of the key areas to address in order to reduce greenhouse gas emissions and energy consumption (National Energy Savings Commission).
Uganda Municipal Waste Compost Programme	The goal: The PoA seeks to avoid methane emissions from municipal waste landfills by undertaking composting of the wastes and using the organic matter in the waste as humus for soil conditioning and plant growth. The policy: The Government of Uganda has taken a loan from The World Bank under the "Environment Management and Capacity Building Project-II" and intends to use part of this loan to improve municipal solid waste management in cities and municipalities through the proposed municipal waste compost program.

Structure of the PoA

- **Identification of stakeholders relevant to the achievement of the PoA policy/goal**
  - Most important stakeholders:
    - CME,
    - DNA,
    - DOE,
    - EB,
    - CER off taker,
    - project owners,
    - investors, lenders,
    - central and local governments,
    - consultants,
    - technology/services providers,
    - project off takers,
    - project workers and employees

Structure of the PoA

- **Identification of stakeholders relevant to the achievement of the PoA policy/goal**

Real PoA Case	Targeted Goal/Policy
CUIDEMOS México (Campaña de uso Inteligente De Energia Mexico) - Smart Use of Energy Mexico - Programme of Activities	In this case, by the generality of the programme and the lack of knowledge of future locations of CPAs, the stakeholders consultation and environmental analysis was developed, initially at the programme level. However, as a consequence of the validation of the PoA, the PP changed the approach and will carry out local stakeholder consultations for each CPA. To comply with the requirements of the Gold Standard, a comprehensive environmental analysis was developed for the programme.
Uganda Municipal Waste Compost Programme	Stakeholders' consulting was undertaken on two levels: • Local stakeholder consultation is done at PoA level • Local stakeholder consultation is done at CPA level Stakeholder consultations have been undertaken at the PoA level. The details of the consultation at the PoA level included stakeholder consultation at Kampala and at multiple town and municipalities which have shown interest in participation in PoA. The CPAs are for towns and municipalities, so it was required to include their views into the program formulation. As the program also addresses multiple towns and municipalities, country level stakeholders consultations were also undertaken.

Structure of the PoA

CDM-PoA-DD shall be developed by the CME and should include the following:

- Identification of the CME, Host Party(ies) and Parties involved
- Definition of the boundary of the PoA
- Description of the policy/measure or stated goal that the PoA promotes
- Confirmation that the PoA is a voluntary action by the CME
- Demonstration of additionality: demonstration that in the absence of the CDM either:
  i. The proposed voluntary measure would not be implemented, or
  ii. The mandatory policy/regulation would be systematically not enforced, or
  iii. That the PoA will lead to greater level of enforcement of the existing mandatory policy/regulation
- Description of a typical CPA that will be included in the PoA, and justification of an approved baseline and monitoring methodology

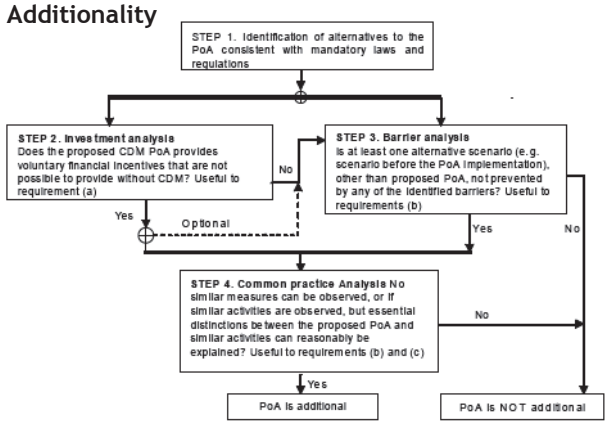
Structure of the PoA

CDM-PoA-DD shall be developed by the CME and should include the following (cont.):

- Eligibility criteria, including criteria for demonstration of additionality of CPAs and for inclusion of CPA under the PoA
- Starting date and length
- Description of the operational and management arrangements
- Monitoring plan for a CPA and monitoring provisions and data parameters a CPA has to apply/monitor
- If the CME decides not to have all CPAs verified, then the description of the proposed statistically sound sampling method
- Environmental analysis of the PoA
- Summary of stakeholders comments
- Confirmation that official development assistance is not being diverted to the implementation of the PoA

Structure of the PoA

- **CDM-PoA-DD : Additionality PoA Level**



Structure of the PoA

- **CDM-PoA-DD : Additionality PoA Level Examples**

Real PoA Case	Targeted Goal/Policy
CUIDEMOS México (Campaña de uso Inteligente De Energia Mexico) - Smart Use of Energy Mexico - Programme of Activities	This programme demonstrates additionality at the PoA level through the discussion of the following barriers: **Investment barrier**: The high costs of the proposed technology make this programme not the most economically viable, compared to other existing technologies, both for lighting and for other energy efficiency projects in the assessed country. **Technology barrier**: The programme offers a more efficient technology than the common practice. **Institutional & Regulatory barriers**: There are no regulations for developing such technologies. However, there are incentives that allow the development of other lighting technologies. Based on existing national legislation, three baseline options are proposed a) the PoA measures without CDM, b) the measures implemented without the PoA (as a consequence of natural trends), and c) the current reality.

Structure of the PoA

Real PoA Case	Targeted Goal/Policy
Uganda Municipal Waste Compost Programme	Additionality is not defined for PoA, but it is explained for typical CPA. **Investment barrier**: Options considered in this analysis are: continuation of current practice, project without the CDM and project with CDM. The Net Present Value (NPV) of the investments is chosen as the relevant financial indicator for comparing the two options. This is done, as the present practice of landfilling operations, has only costs, while the composting operations have both costs and revenues. The financial analysis (carried out for a typical operation involving 70 tons of waste per day) shows that the current practice of disposing wastes in the landfills is the least costly alternative. The sensitivity analysis carried out for different scenarios with variations in capital costs, compost sales, and compost price, also concludes that the compost plant is not viable without carbon revenues in any of the scenarios. **Technology barrier**: The proposed CDM program would introduce a new technology for the processing of solid wastes in Uganda. The fact that there are no plants in Uganda that process municipal solid waste into compost, makes the technological risks associated with composting operations by the municipalities high. Technology appropriate for Uganda is available in other developing countries but needs to be localized and adapted to Uganda. There is a need for demonstration of the technology at multiple locations, in order to assess the appropriateness and acceptability. **Institutional & Regulatory barriers**: There is no explanation about institutional and regulatory barriers. **Other barriers**: Other barriers are considered as such due to prevailing practice (i.e. municipal solid wastes are disposed of in landfills, gas without recovery and/or utilization methane process).

Structure of a PoA

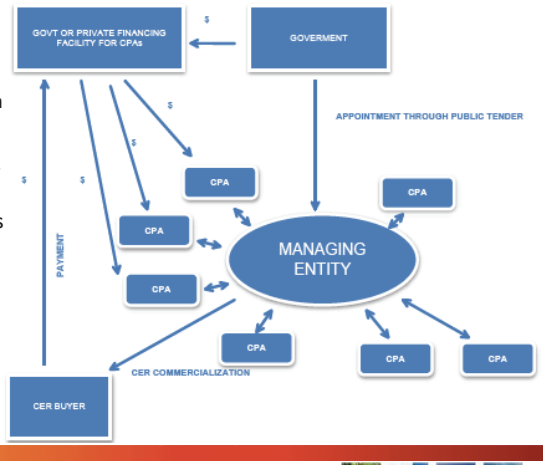
- **Contracting**
  - One of the challenges in implementing a PoA is defining workable agreements among the parties involved
  - three basic contracting schemes and their provisions under which PoA may be built upon:
    - Public and Private Partnership Programme
    - Top-down Programme
    - Bottom-up Programme

Structure of a PoA

Contracting: Public and Private Partnership

- most complex scenario
- governmental desire to push for the achievement of a specific goal, or to enhance the enforcement of a law or policy
- Government act primarily as a promoter

Governments eager to implement lighting efficiency policies or goals may use this scenario



Structure of a PoA

Contracting: Top-Down Programme

- "voluntary" command and control approach and may be found in situations in which the CPA is executed in a subsidiary company (or entity) of the commanding or Managing Entity
- State acts as a PP

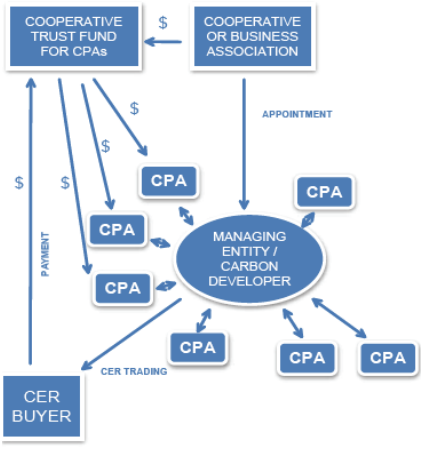
a voluntary governmental initiative to upgrade all the boilers operating in public companies and entities, such as state owned companies, hospitals and district heat facilities

Structure of a PoA

Contracting: Bottom-up Programme

- The contractual arrangements may be based on a trust fund fed by the cooperative membership fees, or a service contract with a company or entity that may be selected through a tender chosen to appoint a CME

initiative of many agricultural cooperative members who organize a broad program to introduce standardized biomass fueled boilers nationwide for members currently using fossil fuels



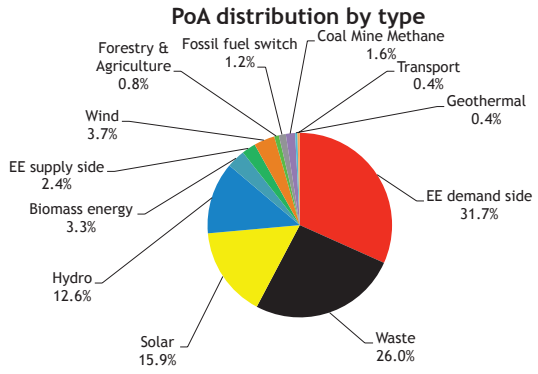
Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

PROGRAMMATIC CDM (pCDM) or PROGRAMME OF ACTIVITIES (PoA)

PoA Pipeline

PoA Pipeline

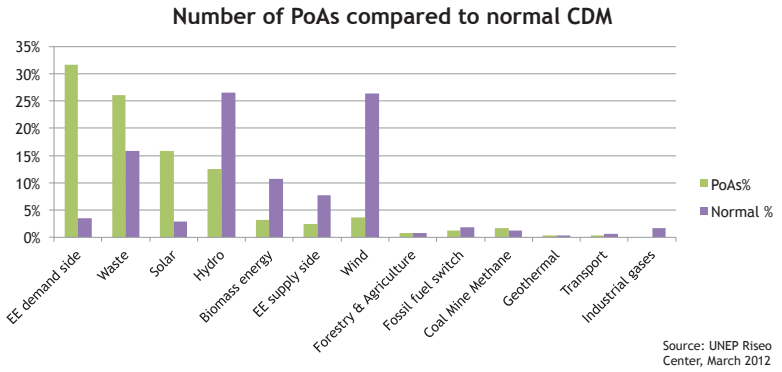
- **PoA distribution by type**



Source: UNEP Riseo Center, March 2012

PoA Pipeline

- PoA vs CDM



Source: UNEP Riseo Center, March 2012

Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

PROGRAMMATIC CDM (pCDM) or PROGRAMME OF ACTIVITIES (PoA)

Benefits of PoA

Benefits of PoA

- **Develop large programmes of micro activities**
  - it is possible to develop large programmes that can overcome the smallscale threshold
  - Opens the door to new types of project activities that have mostly been untapped in the past
  - most important technologies that can benefit from this improvement include improved cookstoves, solar PV, solar water heaters, household biogas and compact fluorescent light bulbs (CFLs).

Benefits of PoA

- **Makes carbon revenues bankable:**
  - By reducing the risk of non-registration and drastically shortening the time to market, PoAs present an opportunity to make carbon revenues bankable at the moment of financial closureTop-down Programme
    - Once registered, a well-designed PoA can include several new CPAs
    - CPA owners can complete the inclusion process prior to achieving financial closure, which will then allow the projects to generate carbon credits during the first year of operation
    - Provided that adequate provisions are made for ensuring sound monitoring and effective verification, the residual delivery risks associated with CERs are not much higher than the risks attached to obtaining power revenues under a power purchasing agreement (PPA)
- **Extend CDM to underserved countries**

Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

PROGRAMMATIC CDM (pCDM) or PROGRAMME OF ACTIVITIES (PoA)

PoA Costs

PoA Costs

Activity	Estimated Costs[13]	Comments
Preparation phase		
Development of PoA idea and a PIN.	Between EUR 8,000 and EUR 15,000 plus travel expenses Up to 15 days	Without feasibility studies / field visits / baseline surveys etc. Upfront
Development of PoA Design Document and CPA Design Document, including the monitoring plan.	Between EUR 30,000 and EUR 80,000, including the monitoring plan	Using a small-scale methodology which is likely in the case of PoAs Upfront
Initial Validation of the CDM-PoA-DD /CDM-CPA-DD through a DOE	Between EUR 30,000 and EUR 50,000 upfront.	Costs for subsequent CPA inclusions by DOEs are not included and mainly depend on number and complexity of eligibility criteria of the CPAs.
Implementation concept.	Up to EUR 100,000	Incl. record keeping system for each CPA, adaptation of internal procedures, documentation etc.
Registration fee, UNFCCC[14].	Registration costs of a PoA are determined by the first CPA.	Calculation of the amount to be paid and the procedures for payment will follow the existing rules for the payment of a registration fee (annex 35 to EB 23 Report).

Source: KfW, PoA Blueprint Book

PoA Costs

Activity	Estimated Costs[13]	Comments
Operational phase		
Monitoring reports. Installation of monitoring equipment and establishment of a monitoring database.	EUR 30,000 – EUR 100,000	Upfront and yearly expenses depending on the project type and applied methodology
Ongoing verification	Approx. EUR 15,000 – EUR 40,000	Depending on number of CPAs for which monitoring needs to be verified
Issuance fee, UNFCCC.	USD 0.10 for the first 15,000 t CO_2e; USD 0.20 for any amount in excess of 15,000 t CO_2e in a given calendar year	No share of proceeds for LDC

Source: KfW, PoA Blueprint Book

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Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

APPLICABILITY OF CDM AND pCDM TO THE CARIBBEAN REGION

Scope

- Experience on CDM and pCDM projects in the Caribbean region;
- Barriers for CDM and PCDM development from:
- Advantage of pCDM in the Caribbean Region
- Opportunities for pCDM in the Caribbean Region

Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

APPLICABILITY OF CDM AND PCDM TO THE CARIBBEAN REGION

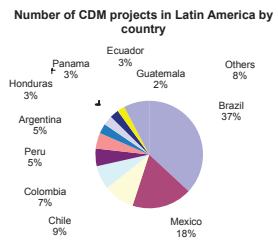
Experience of CDM and pCDM in the Region

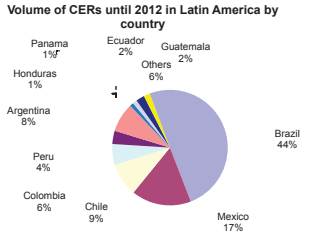
Experience of CDM and PCDM in the Region (LAC)

- Most CDM projects in the region are renewable energy projects connected to the grid;
- First funds to the regions came form the WB and CAF
- 2004 – the first project being registered in LAC
  - 18/11/2004: Brazil NovaGerar Landfill Gas to Energy Project
- 2005 – First CERs issued:
  - Honduras: Rio Blanco project

Experience of CDM and PCDM in the Region (LAC)

- CDM in LAC





Source: UNEP Riso Center, March 2012

Experience of CDM and PCDM in the Region (LAC)

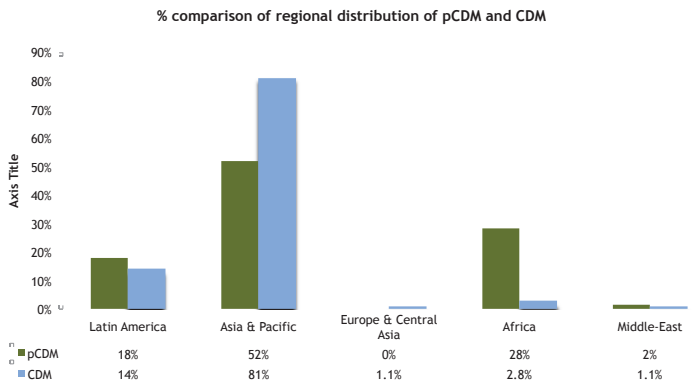
- CDM in the Caribbean

	At validation	Requesting Registration	Registered	Total kCERs
Jamaica		1	1	93
Cuba	1		2	1073
Dominican Republic	11		3	1285
Bahamas	1			23

The majority of this projects is RE projects

Experience of CDM and PCDM in the Region (LAC)

- PCDM Vs CDM



Experience of CDM and PCDM in the Region (LAC)

- pCDM in LAC
  - 40 projects at validation:
    - most of the Projects came from Brazil, Mexico and Peru
    - Methane recovery, EE households; EE stoves
  - 4 PoAs registered:
    - Brazil, El Salvador, Honduras and Mexico
  - Total: 3831kCERs
  - **None of this projects is from the Caribbean Region!!!!**

Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

APPLICABILITY OF CDM AND PCDM TO THE CARIBBEAN REGION

Barriers for CDM and PCDM development

Barriers to CDM and PCDM Development in the Region

Financial and market barriers

- Low economies of scale for renewable energy projects due to CDM high transaction costs associated with developing a Project Development Design (PDD) ranging from USD40,000 to USD60,000.
- High costs for travelling between the islands (monitoring and verification of projects) and the absence of local accredited verifiers.
- Carbon funds are not readily available for small projects but focuses on large projects
- Most small island developing states have limited financial resources to pay Designated Operating Entities (DOE) or consultants to write up PDD, an initial requirement for registration of a CDM or a pCDM project.

Barriers to CDM and PCDM Development in the Region

Information and Resource Barriers

- Lack of capability available in the Caribbean region to prepare CDM and pCDM project documentation and other project documents required for accessing international finance;
- Lack of information on CDM and pCDM assistance available;
- Lack of understanding of CDMand pCDM procedures remains a challenge for energy developers and this could be attributed to the number of reasons:
  - lack of participation of energy project developers at the appropriate forums such as COP/MOPs.
  - No specific training on CDM and pCDM developed by UN agencies in the Caribbean region. For example, the project developed under the United Nation Environmental Programme (UNEP) called CDM4CDM6 is only for the Africa and the Asian countries.
  - No specific CDM Framework developed for the Caribbean region similar to the Nairobi Framework7 – "Catalysing CDM in the African countries"

Barriers to CDM and PCDM Development in the Region

Other Challenges/Barriers

- Geographical remoteness in the Caribbeans thus the implementation and operational costs is high due to isolated and remote locations.
- Investors and/or potential buyer's criteria on location, type or size of a prospect CDM project.
  Complexity of CDM management system, that is Designated Operating Entities only writes PDD and registers the project.
- Absence of Designated National Authorities in some Caribbean Island.

Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

APPLICABILITY OF CDM AND PCDM TO THE CARIBBEAN REGION

Advantages of pCDM for the Caribben Region

Advantages of pCDM for the Caribbean's

- PoAs are applicable to small scale projects
- Simplified additionally procedures and simplified process
- drastically shorter »time to market« for project operators who wish to secure CER revenues since the inclusion of CPAs in a registered PoA no longer require approval from the CDM Executive Board.
- Substantially lower transaction costs because the registration and verification processes for CPAs are streamlined.
- Full scalability since, in contrast to a standard CDM project, a PoA does not need to define beforehand the scale and location of each project activity. Thus, they can serve as the first step towards establishing sectoral approaches for reducing GHG emissions and can be seen as the CDM tool for implementing government policies.

Advantages of pCDM for the Caribbean's

- Diversity in applications and regional development
- PoAs are the concrete stepping towards the implementation of NAMAS (National Appropriate Mitigation Actions). PoAs are already operational. This allows for the opportunity to gain valuable experience on the path towards a world of NAMAs and sectoral approaches.
- Opportunities to convert future carbon revenues into upfront carbon finance by reducing the risk of non- registration and shortening the lag before CDM income is realized.

Advantages of pCDM for the Caribbean's

- There is a relation between PoAs and NAMAS
  - Existing PoAs bear resemblance to what NAMAs may require
  - Potential PoAs can be tailored to satisfy NAMA requirements
  - Makes sense to streamline PoA development along lines of NAMAs (or vice versa) in order to maximise mitigation potential as well as reduce costs
  - Cancun Agreements (NAMAs) provide legitmacy and leverage for streamlined approach
  - Opportunity now exists pursuant to the Cancun Agreements on NAMAs for such development and coordination towards a common objective
  - it is clear that PoAs and NAMAs both have mitigation at the core of their philosophy and PoAs are arguably subsets of NAMAs

Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

APPLICABILITY OF CDM AND PCDM TO THE CARIBBEAN REGION

Opportunities of pCDM for the Caribben Region

Opportunities of pCDM for the Caribbean's

Sectors/Type of projects	Examples
Rural Electrification	Belize, Bahamas, Guyana and Suriname Communities have no access to power grid - no electricity in the households PV and small hydro could be used
Demand side Management	All countries in the Caribbean could apply EE technologies (replacement of incandescent light bulbs with compact fluorescent bulbs
Municipal Electrification	Promote municipal electrification for the tourism sector
Sanitary landfills	Few in the Caribbean's - mainly dumpsites
Afforestation/ reforestation projects	Some countries in the Caribbean could benefit from this type of projects (e.g. Haiti, severe deforestation because biomass is harvested for energy)

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Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

CASE STUDIES OF CDM AND pCDM PROJECTS IN THE CARIBBEAN REGION

Scope

- Registered CDM project: Wigton Wind Farm
- pCDM Project: 2 project ideas that can be developed in the Caribbean

Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

CASE STUDIES OF CDM AND PCDM PROJECTS IN THE CARIBBEAN REGION

CDM Project: Wigton Wind Farm

Source: http://cdm.unfccc.int/filestorage/U/M/N/UMNAHD7XC9EJ7DFOLM61O94WAH5J3V/Wigton%20CDM_PDD_ver02%20_final_%20Jan.pdf?t=cWF8bTB0bHMwfDDG5ZcFY7mMnpuSY9i-zi3q

Wigton Wind Farm

Project Description

- First commercial grid connected wind power plant in Jamaica and the first of the English Caribbean (2006)
- Will lead to reduced GHG emissions by displacing a largely fossil fuel based electricity generating system.
- Project will also support the Governments objectives: new renewable sources and reduce reliance on imported fossil fuels

Wigton Wind Farm

Project Description

- Capacity: 20.7 MW
- Location: Wigton Manchester Plateau area (18.05°N and 77.48°W)

- Technology employed: 23 NEG MICON turbines of 900kV each
- Crediting period: 10 years (not renewable)

- Methodology: ACM0002. - "Consolidated baseline methodology for grid-connected electricity generation from renewable sources."
- GHG emission reductions: 52,540 tCO2e/year and 525,400 tCO2e/10 years time.

Wigton Wind Farm

Public Funding

- The Dutch Development and Environment Related Export Transactions Programme (ORET/MILIEV) awarded a subsidy to the Wigton Wind Farm project: to enable developing countries to purchase capital goods, services and works. The subsidy equates to approximately 20% of the total turnkey price for the Project .

- *There could be a question regarding the use of* Official Development Assistance (*ODA) funding?*

RET/MILIEV subsidy is related and linked to the transfer of a technology and not strict ODA – thus ORET/MILIEV subsidy does not constitute a diversion of official assistance and is not counted towards any financial obligation from The Netherlands.

Wigton Wind Farm

Additionality

- Alternatives for the project:
  1. project without CDM
  2. Diesel or bunker oil fired power plant
  3. Continuation of the current situation

- Investment analysis : Benchmark analysis
  - the government bond rate in Jamaica at the time was 10-12%: thus the benchmark IRR considered in the PDD was of 10.79%
  - In the calculation of the IRR for scenarios, several assumptions were made at the time:
    - the project will generate 63,000 MWh per year;
    - a decreased electricity price (US$/KWh) after 5 years of operation, in line with the PPA;
    - the electricity generated and sold will be paid 3 months in arrears;
    - total construction costs paid before the start of the project;
    - CDM consultancy fees, validation and verification have not been included as costs in the cash flow analysis.

Wigton Wind Farm

Additionality

- Investment analysis : Benchmark analysis

Alternative	Description	Project IRR
1	Wigton project without the MILIEV subsidy and without CDM	6.13%
3	Wigton project, including the MILIEV subsidy but no CDM	10.22%
	Benchmark	10.79 %

Wigton Wind Farm

Additionality

- Sensitivity analysis:
  - The amount of energy generation (plus and minus 10%);
  - The energy price (plus and minus 10%);
  - A change in project operation costs (plus and minus 10%)

Scenario	Parameter change	Project IRR %	Change in IRR %
Base case		10.22	
Energy prices	plus 10%	12.64	2.42
Energy prices	minus 10%	7.66	-2.56
Energy generation	plus 10%	12.64	2.42
Energy generation	minus 10%	7.66	-2.56
Project operation costs	minus 10%	10.61	0.39
Project operation costs	plus 10%	9.82	-0.40

Benchmark: 10.79%

Wigton Wind Farm

Additionality

- Impact of CDM registration:
  - If the project developer was able to sell certified emission reduction (CERs) from the project activity, the additional revenue generated by carbon sales would make the project more attractive. The financial analysis indicated that the IRR can be increased to 12.04% if the credits will be sold at a price of 6 US$/CER. CDM thus makes the project financially more attractive.

Wigton Wind Farm

Emission Reductions Calculation

- Follow the ACM0002 methodology to calculate the BM and the OM factors. As this project is a wind power project:

$$EF = 0.5 * EF_{BM} + 0.5 * EF_{OM}$$

EF: 0.841397tCO2e/MWh

ER: 52,540tCO2e/year

Wigton Wind Farm

Issued CERs

- Project was registered in the UNFCCC on:
- Several CERs have been requested and issues:

Verification period	ER's
29 April 2004 - 28 April 2006	80,916
29 April 2007 - 28 April 2007	46,664
29 April 2007 - 28 April 2008	44,626
29 April 2008 - 28 April 2009	39,017
29 April 2009 - 28 April 2011	42,231

Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

CASE STUDIES OF CDM AND PCDM PROJECTS IN THE CARIBBEAN REGION

pCDM Project: 2 project ideas that can be developed in the Caribbean

2 Potential PoAs Ideas that can be developed in the Caribbean

- Energy Efficiency Programme: Lighting and Solar Water Heating in Tourism Facilities
- Municipal Waste Composting Programme

2 Potential PoAs Ideas that can be developed in the Caribbean

Energy Efficiency Programme: Lighting and Solar Water Heating in Tourism Facilities

- Goal: reduce electricity demand in Tourism Industry by encouraging the early adoption of energy efficient lighting and solar water heating systems by tourism facilities
- Players:
  - CME: be responsible to raise and manage a fund which will be used to fund CE activities and provide soft loans to cover the purchase of equipment. Loan repayments and revenues from CERs will feed the fund.
  - Implementing Organisations: non-profit organisations connected with the tourism sector
  - Tourism facilities

2 Potential PoAs Ideas that can be developed in the Caribbean

Energy Efficiency Programme: Lighting and Solar Water Heating in Tourism Facilities

- CPA: each CPA is a bundle of 1952 tourism facilities, the maximum number of CPAs considered under this PoA was 15
- Applicable methodologies:
  - AMS- I.C Thermal energy production with or without electricity
  - AMS-II.C Demand-side energy-efficiency activities for specific technologies
- Estimated Emission Reduction Potential
  - **CPA Level**
    - Total of each CPA (10 years)
    - 2,690 tCO2/year
  - **PoA level** (15 CPAs) Total in 10 years Total in 28 years
    - 147,939 tCO2 403,468 tCO2

2 Potential PoAs Ideas that can be developed in the Caribbean

Energy Efficiency Programme: Lighting and Solar Water Heating in Tourism Facilities

Eligibility Criteria:

- The CPA should be located within the geographical boundary of Tanzania
- Each CPA will consist of a group of tourism facilities that want to implement one or both EE measures
- Each CPA must use one or both baseline and monitoring methodologies AMS I.C and AMS II.C
- The coordinating entity will ensure that the CPA under this PoA are neither registered as an individual CDM project activity nor included in another registered PoA
- The CPA is in accordance with Tanzania legislation and there is no additional legislation involved
- Each CPA must satisfy de-bundling rules for PoA
- Commitment towards collection and destruction of non-energy efficient equipment following sound environmental management practices

2 Potential PoAs Ideas that can be developed in the Caribbean

Energy Efficiency Programme: Lighting and Solar Water Heating in Tourism Facilities

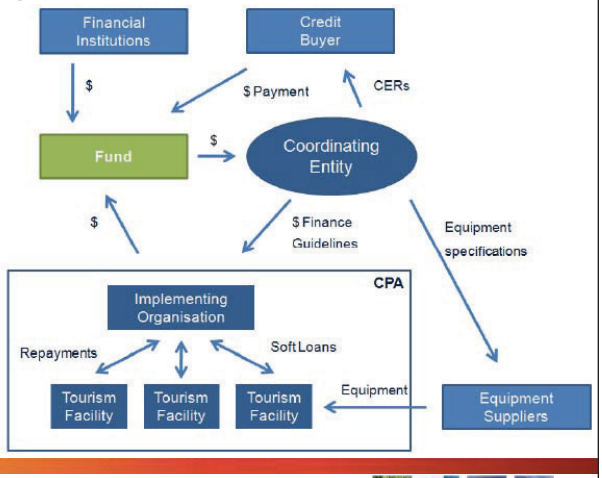
Proposed Financial Mechanism:

- The development of this PoA is based on the creation of a fund to assist all the programme actors in obtaining finance. The fund would provide soft loans to cover:
  - PoA and CPA development costs
  - PoA and CPA running costs during the first years of operation
  - acquisition of the proposed equipment - the fund will provide soft loans to tourism facilities
- The Fund is expected to be financed by Financial Institutions with guarantees from the Government of Tanzania.
- In order to increase the size of the fund and to cover any finance costs, 25% of the CER revenue will be granted to the fund.

2 Potential PoAs Ideas that can be developed in the Caribbean

Energy Efficiency Programme: Lighting and Solar Water Heating in Tourism Facilities

Organisational Structure:



2 Potential PoAs Ideas that can be developed in the Caribbean

Energy Efficiency Programme: Lighting and Solar Water Heating in Tourism Facilities

- Financial Analysis

	Project IRR	Equity IRR low interest rate (8%)	Equity IRR current interest rate (16%)
PoA	9.2%	10.6%	1.7%
Tourism facility	8.9%	10.6%	-6.4%

2 Potential PoAs Ideas that can be developed in the Caribbean

Municipal Waste Composting Programme

- Goal: adopt better waste management practices in Mozambique through the adoption of composting plants that will convert organic mater in the MSW, avoiding methane release from the decay of the organic matter
- CPA: Each CPA is assumed to manage a total of 70tonnes of MSW per day. The treatment of this quantity of waste would achieve emission reductions of approximately 11,000tCO2/year.
- PoA: Assuming the addition of 2 CPAs each year to the programme during the first 19 years, the **total number of CPAs would be 38**. This number of CPAs would be able to manage approximately 980,000 tonnes of MSW per year

2 Potential PoAs Ideas that can be developed in the Caribbean

Municipal Waste Composting Programme

- Applicable Methodologies:
  - AMSIII.F - "*Avoidance of Methane emissions through controlled biological treatment of biomass*" will be used together with the "*Tools to determine methane emissions avoided from disposal of waste at a solid waste disposal site*".
- Estimated Emission Reduction Potential
  - **CPA Level** (1 composting facility 70tMSW/day)
    Total of the CPA (10years) 101,299 tCO2/year
  - **PoA level** (2 CPAs entering from year 1 to year 19)
    Total in 10 years 890,951 tCO2 Total in 28 years 3,849,365 tCO2

2 Potential PoAs Ideas that can be developed in the Caribbean

Municipal Waste Composting Programme

Eligibility Criteria

- The CPA should be located within the geographical boundary of Mozambique.
- The CPA will be from a town council, municipal council/or city council (herein called Municipality) or a group of municipalities that want to install and manage a composting plant as part of its/their municipal waste
- management.
- The municipality will have land designated for the compost plant as close as possible from the current destination of the MSW (landfill and or controlled dumpsite).
- The coordinating entity will ensure that the CPAs under this PoA are neither registered as an individual CDM project activity nor included in another registered PoA.

2 Potential PoAs Ideas that can be developed in the Caribbean

Municipal Waste Composting Programme

Eligibility Criteria

- The municipality will have signed a cooperation agreement with ANAMM to participate in the program,
- and to transfer the emission reduction rights to CME
- The municipality shall take responsibility for operating and monitor the compost facility, as per the guidelines and training provided in the programme.
- Each CPA must use the baseline and monitoring methodology AMSIII.F
- Each CPA is in accordance with Mozambique law and is not subject to any additional laws or regulations.
- Each CPA must satisfy de-bundling rules for PoA

2 Potential PoAs Ideas that can be developed in the Caribbean

Municipal Waste Composting Programme

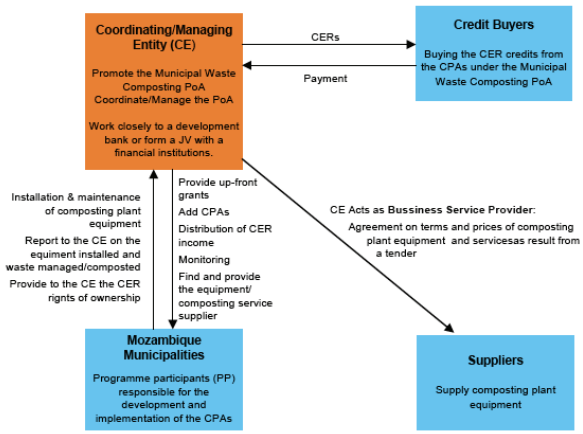
Proposed Financial Mechanism

- is based on the creation of a Fund to assist all the actors in obtaining finance. The Fund will be used to support:
  - the PoA and CPA development costs
  - the PoA and CPA running costs during the first years of operation
  - the municipalities in implementing the MSW composting plant, through the attribution of a soft loan by the PoA that corresponds to 60% of the necessary facility debt investment.
- The Fund is expected to be financed by Bilateral Finance Institutions and international commercial banks.

2 Potential PoAs Ideas that can be developed in the Caribbean

Municipal Waste Composting Programme

Organizational Structure



2 Potential PoAs Ideas that can be developed in the Caribbean

Municipal Waste Composting Programme

- Financial Analysis
  - PoA

Financial Indicators	CPA	PoA
Project NPV	12,871 €	970,290 €
Project IRR	11%	29%

Financial Indicators	CPA	PoA
Equity NPV	61,605 €	170,038 €
Equity IRR	16%	MIRR*: 10%

  - No PoA

	Facility without CDM	Facility with CDM
Project NPV	€-100,290	€171,393
Project IRR	4%	16%
Equity NPV	€-162,452	€109,323
Equity IRR	-	16%

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ENERGY EFFICIENCY AND RENEWABLE ENERGY PROJECT: CAPACITY BUILDING AND TRAINING PROGRAMME

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Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

LESSONS LEARNT WHEN DEVELOPING CDM AND pCDM PROJECTS

Lessons Learnt When Developing CDM and pCDM project

- It is important to have access to all documentation of the project: project design, feasibility study, EIA, financial analysis of the project
- It is important to conduct a site visit to confirm and validate: project implementation stage, technologies being used, monitoring equipment check, verification of monitoring procedures
- It is important to involve all stakeholders in the development of the PDD
- It is important to understands what sources of financing is the project using and what type of financial mechanism and structure
- Clearly identify the sustainable development benefits of the project to the country/region
- It is important to select the appropriate methodology for the baseline and emission reduction calculation

Lessons Learnt When Developing CDM and pCDM project

In pCDM:

- It is difficult to identify Coordinating Entities and the commitment of persons within organisations/institutions potentially involved is critical for the success of these projects
- programmatic CDM projects are potentially the first step towards the development of national policies for a specific sector (eg. end user energy efficiency)
- When identifying opportunities for developing this type of project it is important to understand:
  - the degree of knowledge on CDM and pCDM;
  - Institutional capacity
  - What can be the key project participants and understand they motivation willingness to participate
  - Important to talk with different people inside the same institution

Lessons Learnt When Developing CDM and pCDM project

- It is clear that pCDM and Development Cooperation have several possible synergies: the goals of the programmes are often the same or overlap
- Annex I countries can play an important role in the support of the development of programmatic CDM in Least Developed Countries:
  - Financethefeasibilitystudies
  - secure (upfront) finance (eg by means of setting up a fund)
  - Safeguarding social aspects of sustainable development,etc.

Lessons Learnt When Developing CDM and pCDM project

- The CME in a PoA is ponsible for the development and implementation of the PoA which can include:
  - Identification of Project Participants and activities to be developed in the PoA (CPAs)
  - Identification /relation with financing institutions
  - Identification /relation with equipment suppliers
  - Manage the income from the CER
  - Take care of CDM procedures

Lessons Learnt When Developing CDM and pCDM project

- One of the major advantages of the PoA is the ability to set up a financial mechanism that can help:
  - PP obtain finance at lower interest rates
  - Provide part of the investment for the implementation of a certain Technology
  - Negotiate with equipment suppliers to reduce capital costs of a technology (e.g. Bulk purchase of equipment)
  - Provide income to the PP: share the CERs

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Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

BEST PRACTICES WHEN DEVELOPING CDM AND pCDM PROJECTS

Scope

- Best practices when developing CDM and pCDM projects
- Common pitfalls when developing CDM-PDD
- Common pitfalls when developing PoA-PDD

Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

BEST PRACTICES WHEN DEVELOPING CDM AND pCDM PROJECTS

Best Practices when Developing CDM and pCDM project

Best Practices When Developing CDM and pCDM project

Do's

- Identifying CDM, pCDM project idea
- Conduct a typical eligibility check (check elementary requirements that project has to meet to be qualified as a CDM project)
- Check if there are nay admission requirements by the Government
- Develop the Project Idea Note (which will develop the idea forward, identify the main stakeholders of the project and financial sources needed, possible financial mechanism inherent to the project, identify the baseline methodology to use, provide an estimate of the emission reductions)
- Engage all stakeholders in the development of the PIN
- Submit the PIN to the DNA for Letter of Approval

Best Practices When Developing CDM and pCDM project

Do's

- Submit Prior Consideration of CDM
- Develop or gather all project information (project design documents, feasibility studies, environmental impact reports, local stakeholders meeting minutes;
- Contracts
- Engage a CDM buyer or a consultant to prepare the PDD or the PoA-DD, CPA-DD
- After the PDD has been developed, check for essential elements of the PDD
- Contract a DOE for project validation and submission to the UNFCCC

Best Practices When Developing CDM and pCDM project

Do's

- Implement the project
- Carefully monitor emission reductions according to monitoring plan;
- Engage a CDM buyer or a consultant to prepare the PDD or the PoA-DD, CPA-DD
- After the PDD has been developed, check for essential elements of the PDD
- Contract a DOE for project validation and submission to the UNFCCC

Teaching Segment 1: CDM and Its Applicability for the Caribbean Region

BEST PRACTICES WHEN DEVELOPING CDM AND pCDM PROJECTS

Common Pitfalls when Developing CDM and pCDM project

Common Pitfalls When Developing CDM project

Pitfalls	Good Practice
1) Small scale methodology selected for large scale project	1) Small scale PA needs to fulfill the applicability criteria. Information must be compiled to show eligibility as a SSC
2) Project participants not clearly identified	2) Identify all public and private PPs, private agreements for CER generation,
3) Evidence of EIA and/or required construction permits/approvals not provided	3) Compile and keep all permits or/and approvals
4) LoA insufficient or delayed (80% of the PDDs)	4) The request for LoA should be made earlier in the process.
5) No written confirmation that funding will not result from diversion of official development assistance (ODA)	5) Such a statement is needed when public funding from Annex I party is used in the project.
6) Lack of clarity in the modalities to communicate with the EB for CER issuance	6) Communication statement needs to be in place prior to request registration

Common Pitfalls When Developing CDM project

Pitfalls	Good Practice
7) Insufficient description of the technology	7) Description should reflect the engineering design, technology elements in the boundary in terms of GHG emissions, clear process flow sheet, follow the PDD guidelines
8) Non-compliance with the applicability conditions of the applied baseline and monitoring methodology or methodology compliance not sufficiently explained	8) All the applicability criteria indicated for a particular method- ology should be specifically addressed and supported with a verifiable source of information.
9) Insufficient explanation of baseline scenarios (scenarios not always in line with methodology)	9) Closely follow the requirements given in the approved baseline methodology
10) Insufficient demonstration of additionally	10) Follow the additionally tool (identification of alternatives, investment analysis, barriers analysis, common practice analysis

Common Pitfalls When Developing CDM project

Pitfalls	Good Practice
11) Availability of financial parameters used for additionality	11) parameters applied to the financial assessment should be the latest values available when the investment decision was made, which is usually the project start date
12) Baseline information not sufficiently supported by evidence and/or referenced sufficiently	12) Substantiate all claims and assumptions presented in the PDD with references to recognised information sources. Discuss sources and assumptions in a transparent way. If the baseline calculation uses default factors, their use must be justified. Explicitly state how conservative your sources and assumptions are.
13) Major risks to the baseline and project activity not identified/described	13) Identify and evaluate these risks transparently and completely in the PDD.

Common Pitfalls When Developing CDM project

Pitfalls	Good Practice
14) Lack of logic and consistency in the PDD	14) Ensure same arguments and assumptions are used within each section and between the sections in the PDD. Cite the sources that actually back up the argument made in the PDD.
15) Poor quality of the PDD	15) Ensure right template of the PDD is used; that each section includes information as per the guidelines; the monitoring plan not only has to comply with the methodology requirements but is designed according to the specific project requirements.
16) Project boundaries are not drawn appropriately of emission sources are missing	16) Include a map or schematic of the physical project boundary and the system boundary, accompanied by a table defining material GHGs and their emission sources.

Common Pitfalls When Developing CDM project

Pitfalls	Good Practice
17) Project and/or crediting date unclear. Lack of evidence indicating prior CDM consideration	17) start date is the date on which the PP has committed to expenditures related to the implementation or construction of the project activity. Project activities starting on/after 2 August 2008, fill out the prior consideration of the CDM form, and submit to the host country DNA and the UNFCCC Secretariat
18) Insufficient information on the measurement methods and source of data as part of data/parameter description in monitoring plan	18) Clearly state: the source of data; the measurement methods and the recording frequency.
19) Deviation form the monitoring methodology not justified sufficiently	19) The project proponents should clearly identify the deviation in the PDD and discuss with the DOE performing the validation at the beginning of the validation process

Common Pitfalls When Developing CDM project

Pitfalls	Good Practice
20) Compliance with local legal requirements not covered sufficiently	20) State: relevant legal requirements in the host country; project's compliance with the requirements; environmental impacts of the project; mitigation measures to be taken for the project. Include the monitoring of sustainable development indicators as part of the monitoring plan if required.
21) Insufficient information on the stakeholder consultation process	21) State: requirements on how to contact Stakeholders (e.g., through letters, newspapers, meetings); how the project complies with the requirements. Provide a list of stakeholders contacted and why they are relevant. Include a summary of the stakeholder comments and a summary of how these comments have been taken into account

Common Pitfalls When Developing CDM project

Pitfalls	Good Practice
22) Insufficient information on physical location of the PA	22) State: exact latitude and longitude of the project location; the exact address of the plant location; and the proximity to some important landmarks, if any.
23) Long delays in the validation process	23) unnecessary delays can be considerably reduced if all the ad- ditional documents, such as the financial calculation sheets, emission reduction calculations and evidence (e.g., legal permits, and stakeholder consultation documents) are provided along with the PDD at the start of the validation.

Common Pitfalls When Developing pCDM project

Pitfalls	Good Practice
24) Inconsistency among CPAs	24) important to plan in detail all of the project activities to be included in the PoA by weighing the advantages and disadvantages of utilizing broad inclusion criteria; ensure all CPAs are in accordance with the requirements in the PoA, and that of all the CPAs are consistent.
25) Physical location of CPAs not specified	25) For each CPA ensure to provide information on its location
26) Crediting period starts before inclusion	26) When defining the start date of the crediting period in CPA-DDs, account for the time to complete the validation process and define the start date of the crediting period. Plan the implementation of the CPAs to begin after the PoA-DD is published on the Internet.

Common Pitfalls When Developing pCDM project

Pitfalls	Good Practice
27) No update licenses or permits	27) Ensure that all the licenses and permits are in place before including the CPA into the PoA in order to avoid delays in the validation process
28) Baseline of the PoA not appropriate	28) Establish baseline scenarios for all regions or countries at the time of the PoA registration. This will allow the project developer to avoid conducting an assessment at the time of CPA inclusion.

Common Pitfalls When Developing pCDM project

Avoiding the pitfalls will speed up verification!!!!

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