

# Capacity Development for CDM

Hammamet, 18-20 March 2004

## PDD Preparation

D. Monitoring Methodology and Plan


E. Calculation GHG emissions by sources

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Capacity Development for CDM - Regional Workshop on Baselines  
Hammamet, 18-20 March 2004

# PDD Format

<b>A.</b>	General description of project activity
<b>B.</b>	Baseline methodology
<b>C.</b>	Duration of the project activity/crediting period
<b>D.</b>	Monitoring methodology and plan 
<b>E.</b>	Calculation of GHG emission by sources
<b>F.</b>	Environmental impacts
<b>G.</b>	Stakeholder comments
Annex 1.	Contact information on project participants
Annex 2.	Information regarding public funding
Annex 3.	New baseline methodology
Annex 4.	New monitoring methodology
Annex 5.	Table of baseline data

## **D. Monitoring Metodology and Plan**

# Monitoring Meth.

- Same modalities as for Baseline:
  - ✓ To be prepared in parallel with the BL methodology
  - ✓ To be submitted to the EB for Approval

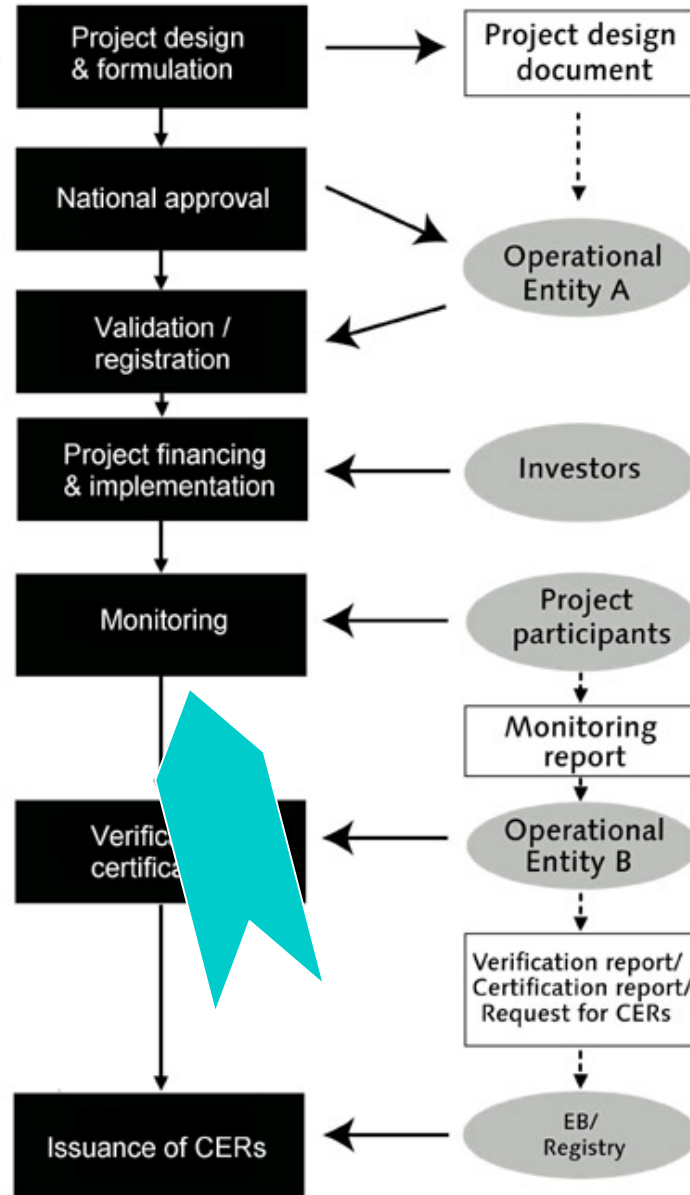
# Monitoring Meth. Why ?

- To confirm that the project objectives are being achieved
- To provide for quantified evidence that emissions are being reduced → project Activity VS Baseline
- To provide evidence of the stability of the project impacts
- To serve as the basis for the verification process → Effectiveness and quality of the Monitoring meth. And Plan is also to be verified ex-post by DOE

# Project cycle for the CDM

Project description; Baseline methodology; Monitoring methods/plan; GHG emissions; Statement of env. impact; Stakeholder comments

National CDM Authority: Government consent; Government confirmation that the project assist in sustainable development



Legends:

Activity

Report

Institution

# Monitoring Meth. Modalities ?

- Project participants
- Continuous Monitoring of the project activities and impacts
- Good monitoring practice → appropriate to the project activity

# Monitoring Meth.

## Activities to be involved

- Collection and archiving data procedures and activities
- Annual Reporting

**NB:** Monitored data are to be kept up to 2 years after the end of the crediting period or the last issuance of CERs (whatever occurs later)



## D. Monitoring Meth. & Plan

- The D section should contain the Plan for:
  - ✓ Collection and archiving of all data necessary for estimating or measuring GHG emissions of the project activity occurring within the project boundary during the crediting period
  - ✓ The collection and archiving of all relevant data necessary for determining the baseline of GHG emissions within the project boundary during the crediting period
  - ✓ Identify any increase in emissions out of the project boundaries

## D. Monitoring Meth. & Plan

### ■ Should :

- ✓ Identify the data to be monitored within the project boundaries
- ✓ Identify all potential sources of, and the collection and archiving of data for, increased emissions outside the project boundary that are significant and reasonably attributable to the project activity

## D. Monitoring Meth. & Plan

### ■ Should :

- ✓ State the quality of the data to be monitored: accuracy, comparability, completeness, validity, etc.,
- ✓ Identify the quality assurance and control procedures for the Monitoring activities
- ✓ Identify responsibility for the measurements and the registration and reporting of the monitoring activities

# D. Monitoring Meth. & Plan

## ■ Outline of the section D:

- ✓D1: Name and Reference of approved Meth. Applied to the Project Activity
- ✓D2: Justification of the choice of the Methodology and why it is applicable to the project activity
- ✓D3: Data to be collected in order to monitor emissions from the project and how this data will be archived

# D. Monitoring Meth. & Plan

**D.3. Data to be collected in order to monitor emissions from the project activity, and how this data will be archived:  
(Please add rows to the table below, as needed)**

ID number (Please use numbers to ease cross-referencing to table D.6)	Data type	Data variable	Data unit	Measured (m), calculated (c) or estimated (e)	Recording frequency	Proportion of data to be monitored	How will the data be archived? (electronic/paper)	For how long is archived data to be kept?	Comment
Data a									
Data b									
Data c									
Etc.									

## D. Monitoring Meth. & Plan

- Outline of the section D:
  - ✓ D4: Data to be collected in order to monitor emissions from the project and how this data will be archived

# D. Monitoring Meth. & Plan

**D.4. Potential sources of emissions which are significant and reasonably attributable to the project activity, but which are not included in the project boundary, and identification if and how data will be collected and archived on these emission sources.**

ID number (Please use numbers to ease cross-referencing to table D.6)	Data type	Data variable	Data unit	Measured (m), calculated (c) or estimated (e)	Recording frequency	Proportion of data to be monitored	How will the data be archived? (electronic/paper)	For how long is archived data to be kept?	Comment
Data a									
Data b									
Data c									
Etc.									

## D. Monitoring Meth. & Plan

- Outline of the section D:
  - ✓ D5: Relevant data necessary for determining the baseline of GHG emissions within the project boundary and identification if and how such data will be collected and archived



# D. Monitoring Meth. & Plan

**D.5. Relevant data necessary for determining the baseline of anthropogenic emissions by sources of GHG within the project boundary and identification if and how such data will be collected and archived.**

ID number (Please use numbers to ease cross-referencing to table D.6)	Data type	Data variable	Data unit	Will data be collected on this item ? (if no explain )	How is data archived? (electronic/ paper)	For how long is archived data to be kept?	Comment
Data a							
Data b							
Data c							
Etc.							

## D. Monitoring Meth. & Plan

- Outline of the section D:
  - ✓ D6: Quality control (QC) and quality assurance (QA) procedures that are being undertaken for data monitored.

# D. Monitoring Meth. & Plan

## D.6. Quality control (QC) and quality assurance (QA) procedures that are being undertaken for data monitored.

Data (Indicate table and ID number e.g. D4.1, D.4.2 etc.	Data type	Data variable	Data unit	Will data be collected on this item ? (if no explain )	How is data archived? (electronic/ paper)	For how long is archived data to be kept?	Comment
Data D.3.1.							
Data D.3.2.							
Etc.							
Data D.4.1.							
Data D.4.2.							
Data D.4.2.							
Etc.							

## D. Monitoring Meth. & Plan


- Outline of the section D:
  - ✓ D7: **Name of person/entity determining the monitoring methodology**

# D. Monitoring Meth. & Plan for Ss Project

## ■ Simplified:

- ✓D1: Name and Reference of approved Meth. Applied to the Project Activity
- ✓D2: Justification of the choice of the Methodology and why it is applicable to the project activity
- ✓D3: Data to be monitored
- ✓D4: Name of person/entity determining the monitoring methodology

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## E. Calculation of GHG Emissions by Sources

# E . Calculation of GHG Emissions by Sources

- ✓PA=The GHG emissions achieved by the project activity
- ✓BL=The GHG emissions associated with the baseline
- ✓L=Adjustment for emissions leakage (net change in anthropogenic GHG emissions which occurs outside the project boundary and which is measurable and attributable to the CDM project activity)
- ✓Net emissions reductions achieved by the CDM project=  $BL - PA - L$



# E . Calculation of GHG Emissions by Sources

- ✓E1: Description of formulae used to estimate anthropogenic emissions by sources of greenhouse gases of the project activity within the project boundary: *(for each gas, source, formulae/algorithm, emissions in units of CO<sub>2</sub> equivalent)*
  - ✓ Direct on-site emissions: eg. Due to fuel used by the project
  - ✓ Direct off-site emissions: eg. Due to electricity generation used to delivered and which is being displaced
  - ✓ Indirect on-site emissions: e.g. construbtion of a hydropower dam
  - ✓ Indirect off-site emissions: e.g.for the production of the raw materials

# E . Calculation of GHG Emissions by Sources

- ✓E1: State which of these emissions are to be considered as to be within the project boundaries (emissions that are under the control of the project participants)
- ✓Try to draw a graph on the main component of the project, the flow of energy and its boundary and outside connections

# E . Calculation of GHG Emissions by Sources

## ✓E1: Use:

- ✓ 1996 IPCC emission factors unless better EF available
- ✓ CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, PFCs, HFCs, SF<sub>6</sub>
- ✓ GWP: CO<sub>2</sub>=1, CH<sub>4</sub>=21, N<sub>2</sub>O=310, CF<sub>4</sub>=6,500, HFC-23=11,700, SF<sub>6</sub>=23,900, etc.

# E . Calculation of GHG Emissions by Sources

✓E2: Description of formulae used to estimate **Leakage**: measurable emission increase (or decrease) that is attributable to the project, but which is outside of the CDM project boundary or timeframe.

# E . Calculation of GHG Emissions by Sources

$$\checkmark E3 = E1 + E2$$

→ *the project Activity*

# E . Calculation of GHG Emissions by Sources

✓E4: Description of formulae used to estimate GHG for the Baseline

$$✓E5 = E4 - E3$$

✓E6 : table providing values obtained when applying formulae above

# ADD for CDM projects

*Thanks*