

CDM Methodologies and their Application

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Outline

- What is a CDM methodology
- The main contents
- One examples
- Where they come from?
- Existing CDM methodologies and their application

An approved CDM Methodology

Definition: Methodologies are standardised procedures how to measure and calculate emission reductions in a CDM projects. Each CDM methodology consists of two parts:

- **A baseline methodology, which is** the emissions that would have been created in the most plausible alternative scenario to the implementation of the project activity (called the baseline scenario)
- **A monitoring methodology, which** refers to the method used by project participants for the collection and archiving of all relevant data necessary for the implementation of the monitoring plan

What is a CDM methodology

- Extensive elaborations on
 - Formulas
 - Definition of project boundaries
 - Monitoring requirements
 - Leakage
- Compulsory to use
- Project type specific
- Approval by the Executive Board needed
- Different sets for large scale and small scale projects

Main contents

An approved methodology contains information on:

- Source, Approach
- Applicability
- Summary
- Identification of baseline scenario
- Additionality
- Project boundary
- Emission reduction formulas
- Leakage
- Monitoring methodology

The application of a baseline methodology

During CDM project development, five steps are identified for the definition of an emissions baseline:

1. Set project boundary,
2. Define project conditions,
3. Discuss project barriers,
4. Select the most appropriate baseline methodology,
5. Calculate baseline emissions.

Baseline Methodology

- The baseline methodology is key to the proof of additionality
- The baseline represents the reference scenario and must be defined as follows:
 - In accordance with the provisions for the use of approved or new methodologies,
 - In a transparent and conservative manner regarding the choice of approaches, assumptions, methodologies, parameters, data sources, key factors and additionality, taking into account uncertainty;
 - On a project-specific basis; and
 - Taking into account relevant national and/or sectoral policies and circumstances.

Monitoring methodology

A monitoring methodology

- is the means to calculate the actual emission reductions from the project, taking into account any emissions from sources within the project boundary.
- sets out how project proponents should develop and implement a monitoring plan for a particular project type, in order to gather the data required to calculate emission reductions from the project.

CDM Methodology – an example

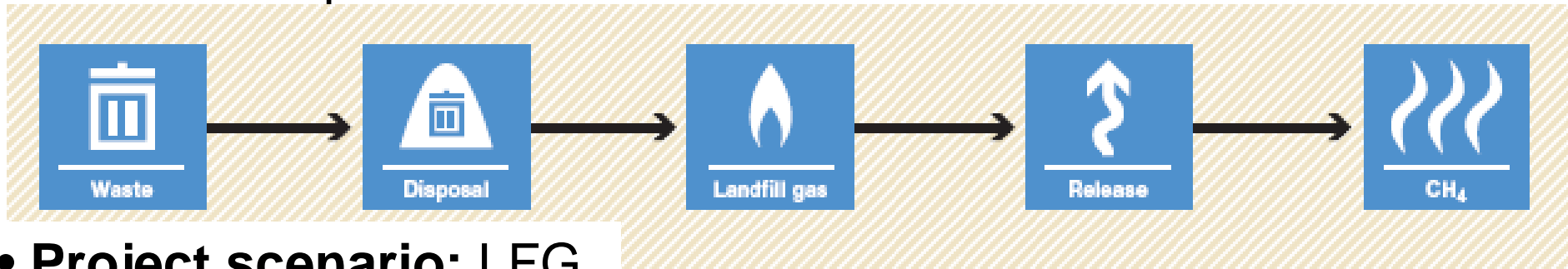
ACM 0001 – Consolidated Methodology for landfill gas project activities

Typical project(s)	Capture of landfill gas (LFG) and its flaring and/or use to produce energy and/or use to supply consumers through natural gas distribution network.
GHG emissions mitigation	<ul style="list-style-type: none"> • GHG destruction. Destruction of methane emissions and displacement of a more-GHG-intensive service.
Applicability conditions	<ul style="list-style-type: none"> • Captured landfill gas is flared, and/or; • Captured landfill gas is used to produce energy, and or; • Captured gas is used to supply consumers through natural gas distribution network.
Important parameters	To be monitored: <ul style="list-style-type: none"> • Amount of landfill gas captured; • Methane fraction in the landfill gas; • If applicable: electricity generation using landfill gas.

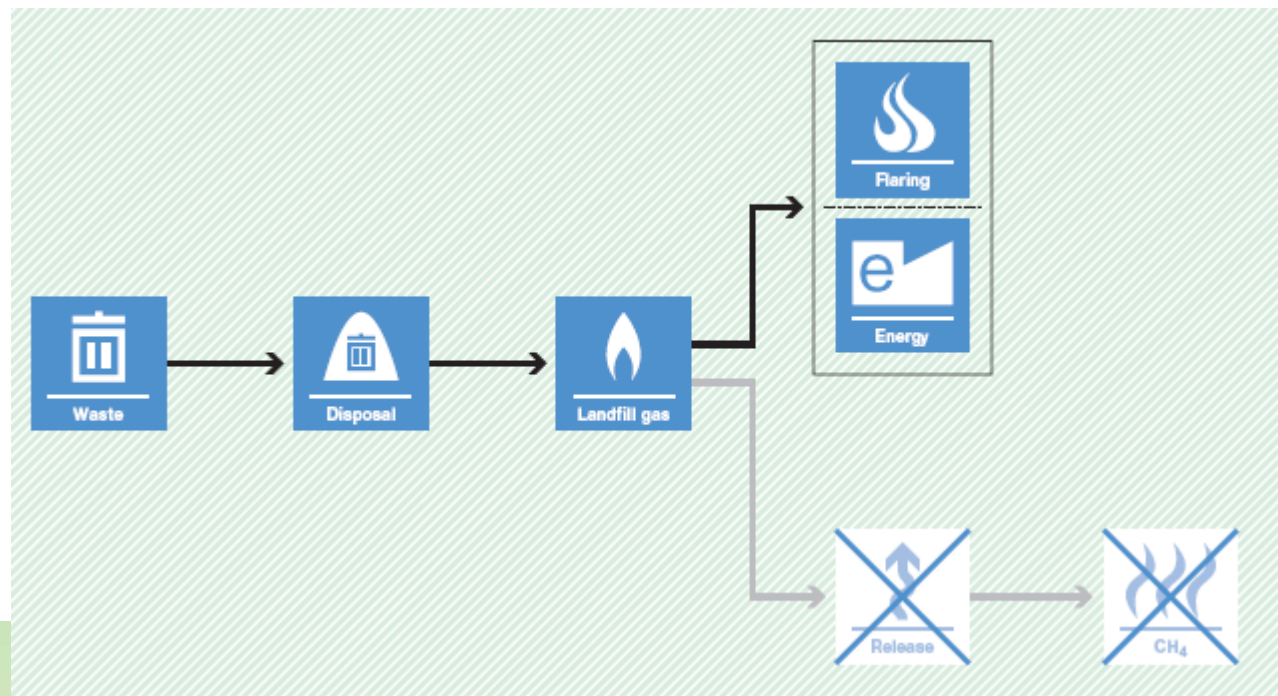
CDM Methodology – an example

ACM 0001 –for landfill gas project activities

- **Baseline Scenario:** LFG from the landfill site is released to the atmosphere



- **Project scenario:** LFG from the landfill site is captured and flared; and/or used to produce energy (e.g. electricity /thermal energy); and/or supplied to consumers through natural gas distribution network



Where does an CDM methodology comes from?

- It is submitted by a CDM project developer using an approved new methodology template and approved by the CDM EB
- To have a methodology approved, a project developer must present a PDD (PDD) that defines the baseline technology, shows how emissions reductions will result from the project, and how these reductions will be measured.

New methodology submission and approval

- New methodology development and approval is time-consuming, requests lot of expertise, and paying a non-refundable submission fee of 1000 USD to the CDM EB
- New methodology proposal needs to be based on a real case project and submitted through a DOE together with a PDD applying the proposed methodology
- Getting a new methodology approved, does not necessarily guarantee the underlining project's successful registration
- Once approved, the methodology is available to be used by all

Methodology approval process

- The CDM EB approves a new methodology based on expert review, public inputs, and recommendations from the Methodology (Meth) Panel
- The methodology is assessed against the basic requirements for a CDM project in the Marrakech Accords, focusing particularly on baseline definition, additionality, and monitoring protocol.
- Each baseline methodology must use one of three approaches:
 - (a) Existing actual or historical emissions;
 - (b) Emissions from a technology that represents an economically attractive course of action, taking into account barriers to investment; or
 - (c) The average emissions of similar project activities undertaken in the previous 5 years in similar economic, environmental and technological circumstances, and whose performance is among the top 20% of their category.

Methodology vs project development

- A PDD must be written based on an approved methodology or if there is no approved methodology, the project developer can propose a new methodology
- The availability of an applicable approved methodology can significantly influence the time taken and costs of developing a CDM projects
- New comers are often advised to limit their project development types with existing approved methodologies
- Some donors or organisations offer support to the development of methodologies of high relevance to them

Revision to an approved methodology

The CDM EB may approve revisions to an approved methodology for the following reasons

- To address over- or under estimated of emission reductions, so as to ensure emission reductions real, measurable and verifiable;
- To broaden the applicability conditions to include more potential project types or conditions for use;
- To address inconsistencies, errors and/or ambiguities in the language and/or formulae used within or between methodologies
- To simplify and clarify the methodology for higher user-friendliness

Methodology consolidation

- Consolidation is combining two or more proposed and/or approved methodologies into one single methodology in order to:
 - (a) making the set of available methodologies more concise and user friendly
 - (b) avoiding possible inconsistencies between methodologies.
- If the CDM EB approves the consolidation of an approved methodology, the consolidated methodology shall replace the previously approved methodology

Existing approved CDM methodologies exist?

- 74 large-scale approved methodologies exist (AM's)
- 15 large-scale consolidated methodologies exist (ACM's)
- 40 small-scale approved methodologies exist (AMS's)
- 10 large-scale afforestation methodologies exist (AR-AM)
- 5 small-scale afforestation methodologies exist (AR-AMS)

Active CDM Methodologies and their application

Type	No. of meth.	No. of projects submitted	No. of PoAs
Forestry	17	57	1
Agriculture	1	4	0
Biofule	6	11	0
Biomass	10	383	12
Cement	3	66	0
CO2 capture	2	2	0
Coal bed/mine methane (including other mines)	3	93	0
Energy distribution	4	22	3
Energy efficiency - households	8	101	14
Energy efficiency - industry	19	240	11
Energy efficiency – own generation of electricity	5	460	1
Energy efficiency – service	6	98	13
Energy efficiency – supply side	14	103	0

Active CDM Methodologies and their application

Type	No. of meth.	No. of projects submitted	No. of PoAs
Fossil fuel switch	10	176	2
Fugitive emissions from fuels	9	55	0
HFCs	3	25	0
Landfill	4	274	4
Methane avoidance from waste	20	853	14
N ₂ O	4	80	0
PFCs	2	7	0
SF ₆	4	14	0
Transport	9	29	1
Zero emission renewables	9	4345	21
Total	172	5760	71

Source: UNEP Risoe CDM/JI Pipeline Analysis and Database, 1-Jan-2011

Thanks!

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