

Project baselines & additionality



Randall Spalding-Fecher, Econ

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Spalding-fecher@tiscali.co.za

ECON Analysis: CDM meth experience

Desk reviews of 20 baseline methodologies: including waste heat recovery, industrial energy efficiency, industrial manufacturing, and gas fired power

Revision and reformatting and consolidation of 17 approved baseline methodologies: water heat recovery, waste heat power generation, municipal waste, nitric acid production, industrial fuel switching, cement manufacturing and coal mine methane

Baseline **methodology expert for review** of 15 CDM projects applying for registration

Baseline methodology expert for 3 **Accreditation Team** witnessing exercises

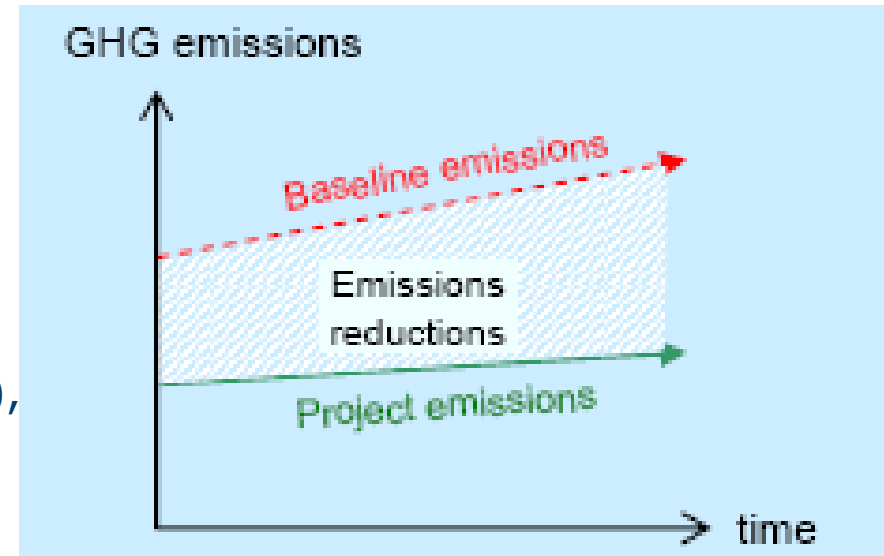
DOE Training on methodology issues

Consultant on UNFCCC **technical guidelines** for all approved baseline methodologies

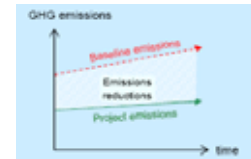
Project Design Documents (PDD) completed or under development in: Estonia, Russia, South Africa, Mozambique, Zambia, Nigeria, Malaysia, Thailand, Indonesia, Vietnam and China

Understanding the jargon

- **Baseline Scenario**
 - Narrative description of what would have happened in absence of the CDM project
- **Baseline Emissions**
 - Quantification of emissions in the baseline scenario
- **Baseline Emissions Factor**
 - Expressed as emission factor (EF), i.e. tCO₂/MWh
- **Baseline methodology**
 - Pre-approved protocol for calculating baseline, project and leakage emissions

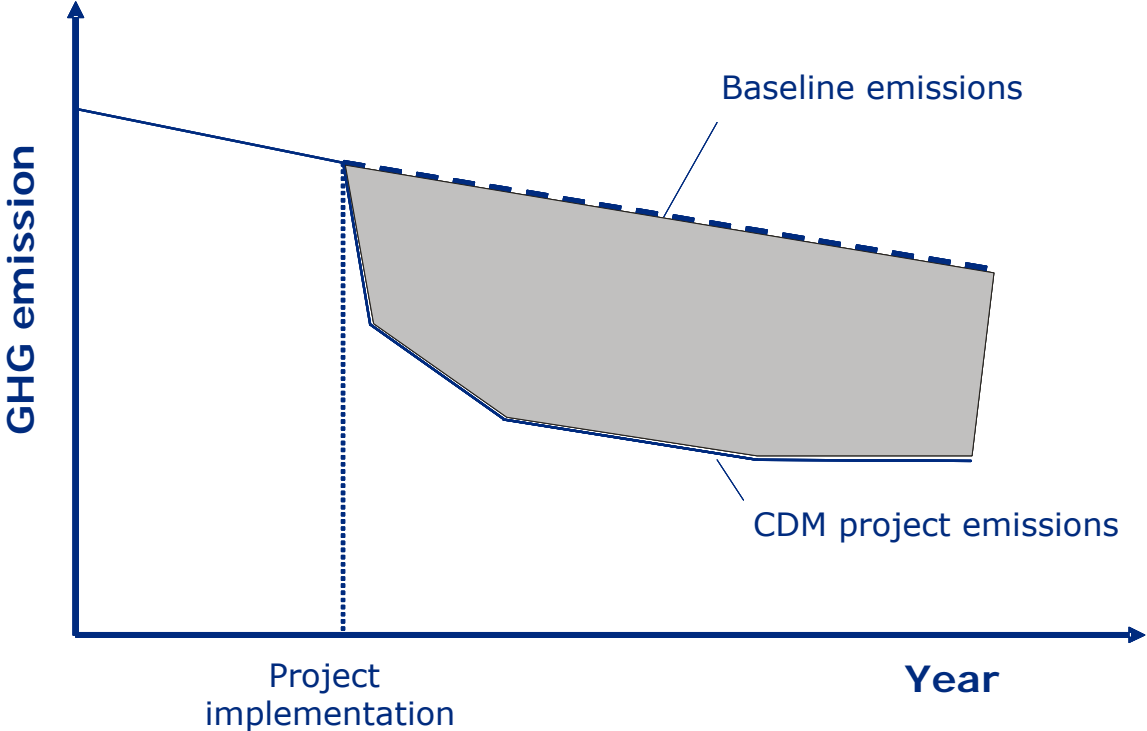
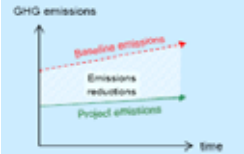


Baseline

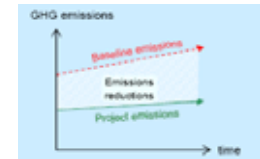


- Baseline should be set in a transparent manner (explicitly show all assumptions, data sources, key-factors etc.)
- Taking into account uncertainties and using conservative assumptions (e.g lowest values)
- Take into account national and/or sectorial policies and circumstances
 - Local fuel availability
 - Power sector expansion plans
 - Economic situation in the project sector

Project versus baseline emissions



Baselines and methodologies



- CDM guidelines require the use of methodologies
- Methodologies are a form of standardisation of baselines
- Methodologies contain:
 - “applicability conditions” project must meet in order to use that methodology;
 - necessary algorithms and formulas needed to assess additionality, estimate emissions in the baseline and proposed project, and calculate emissions reductions.
- Methodologies are generally applicable to a category of project, rather than an individual project
- Application of a methodology results in a baseline for that case, including both an identification of the baseline scenario and a quantification of baseline emissions.

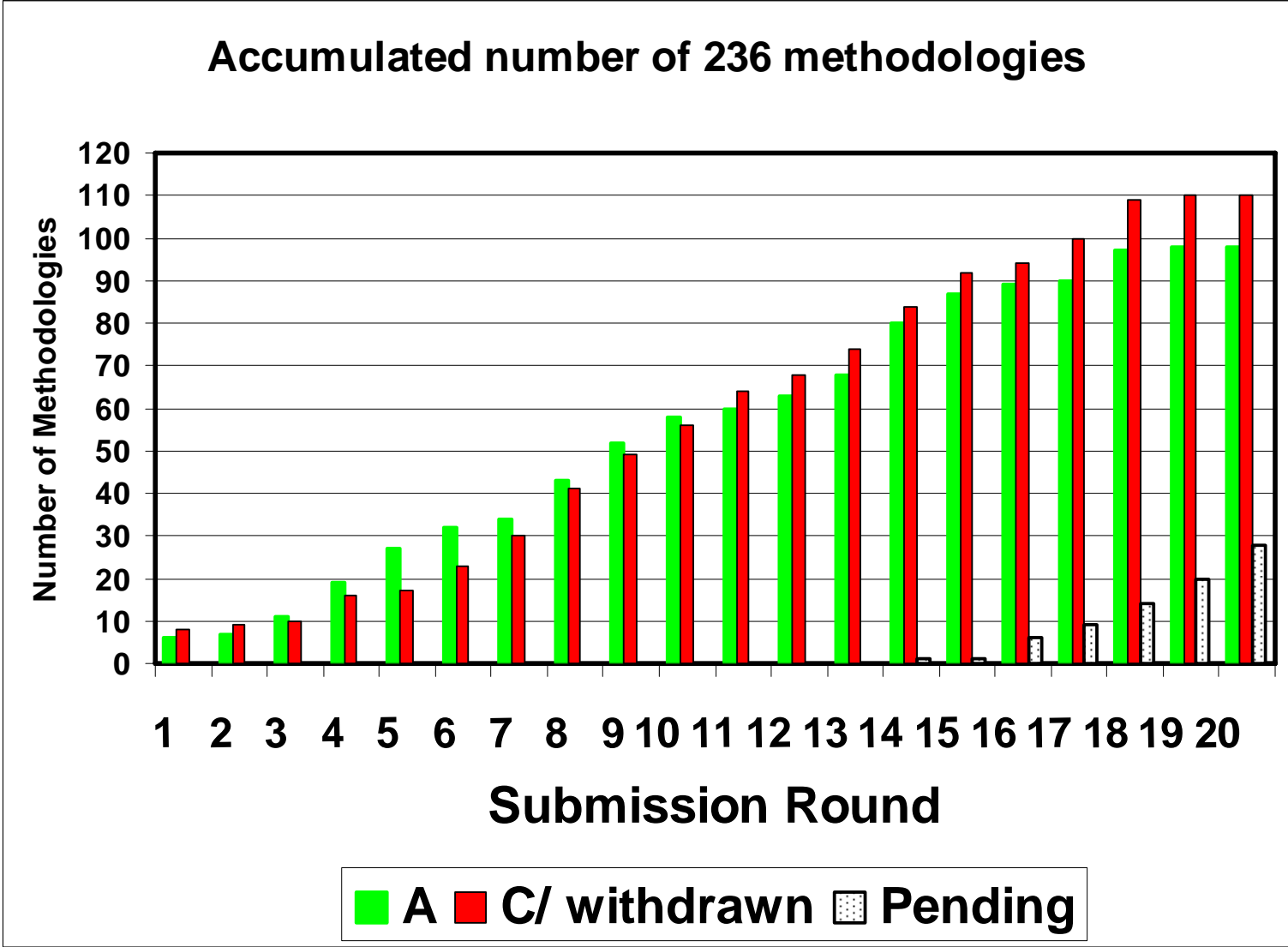
Sectoral scope of Methodologies

- Energy industries
- Energy distribution
- Energy demand
- Manufacturing industries
- Chemical industries
- Construction
- Transport
- Mining/mineral production
- Metal production
- Fugitive emissions from fuels
- Solvent use
- Waste handling & disposal
- Afforestation and reforestation
- Agriculture

>50 large scale methodologies
Ca. 15 consolidated methodologies
Ca. 24 small scale methodologies

www.cdm.unfccc.int/methodologies

More than 95 large scale meths have been approved



Sectoral coverage is improving

Sectoral Scope – Approved large scale meths		Nov 2004	Oct 2005	May 2006	Jan 2007
1	Energy industries (RE/NRE)	6	11	10	18
2	Energy distribution				
3	Energy demand		3	3	3
4	Manufacturing industries	3	6	7	11
5	Chemical industries		1	3	5
6	Construction				
7	Transport				
8	Mining/mineral production			1	1
9	Metal production				1
10	Fugitive emissions from fuels (solid, oil and gas)	1	3	3	5
11	Fugitive emissions from HFCs and SF6	1	1	1	2
12	Solvent use				
13	Waste handling and disposal	8	9	11	10
14	Afforestation and reforestation			1	6
15	Agriculture	2	2	2	1

What do you need to know about a methodology?

- A baseline methodology was originally developed for one specific project in mind;
- However, once approved, the methodology is applicable for all similar projects
 - E.g. a landfill gas capture methodology developed in one country can be applicable in another country
- Methodologies cover very specific measures for reducing GHG
- They operate in given sectoral conditions & characteristics, under a given set of policies/regulations
 - E.g. if the landfill gas capture meth does not include a parameter to represent the fraction of methane to be captured, then this meth is only applicable to countries with no regulation for capture/flaring of methane from landfills.
- Methodologies go through a number of reviews, therefore always check for the latest version on www.cdm.unfccc.int/methodologies

How do you know a methodology is applicable?

- Does your project apply the same specific measures for reducing GHG?
- Does your project meet the applicability conditions of the meth?
- Is the required data available for your project?
 - E.g. to estimate emissions, baseline, project or leakage
 - If you need to substitute data with different types of sources => deviation or revision of meth
- Does your project operate under similar regulatory rules?

Examples of meth applicability I

ACM0001:
Consolidated
baseline and
monitoring
methodology
for landfill gas
project
activities,
ver07

- This methodology is applicable to landfill gas capture project activities, where the baseline scenario is the partial or total atmospheric release of the gas and the project activities include situations such as:
 - a) The captured gas is flared; and/or
 - b) The captured gas is used to produce energy (e.g. electricity/thermal energy);
 - c) The captured gas is used to supply consumers through a natural gas distribution network. If emissions reduction are claimed for displacing natural gas, project activities may use approved methodology AM0053.

Examples of meth applicability II

ACM0006:

Consolidated
methodology
electricity
generation from
biomass
residues”

- No other biomass types than *biomass residues*, as defined above, are used in the project plant and these biomass residues are the predominant fuel used in the project plant (some fossil fuels may be co-fired);
- For projects that use biomass residues from a production process (e.g. production of sugar or wood panel boards), the implementation of the project shall not result in an increase of the processing capacity of raw input (e.g. sugar, rice, logs, etc.) or in other substantial changes (e.g. product change) in this process;
- The biomass residues used by the project facility should not be stored for more than one year;
- No significant energy quantities, except from transportation or mechanical treatment of the biomass residues, are required to prepare the biomass residues for fuel combustion, i.e. projects that process the biomass residues prior to combustion (e.g. esterification of waste oils) or that treat waste that results
- Further limitations to particular combinations of project activities and baseline scenarios

What if there is no available methodology?

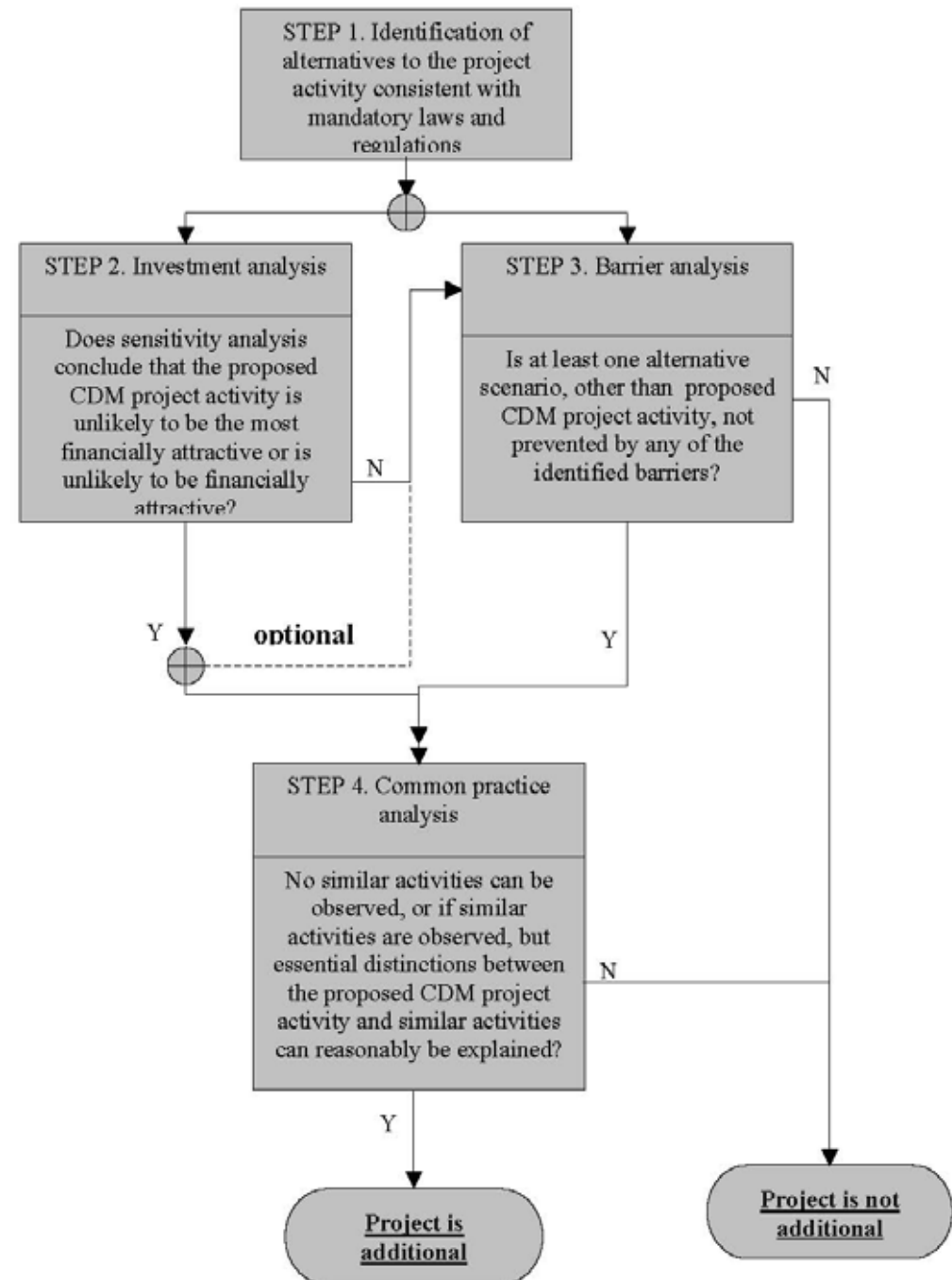
- The **project participant** can propose a new methodology, through a designated operational entity (DOE), submitting the CDM PDD
- The **DOE** shall determine whether the proposed project activity intends to use a new baseline or monitoring methodology.
- The **DOE** shall check whether documents are complete and forward the proposed new methodology to the Board
- The **secretariat** shall forward the documentation to the Executive Board and the Meth Panel after having checked that the [CDM: Proposed new methodology form \(F-CDM-PNM\)](#) has been duly filled by the DOE and documentation provided by the DOE is complete.
- The **secretariat** shall make the proposed new methodology publicly available on the UNFCCC CDM web site and invite public inputs for a period of 15 working days.

Additionality – *Key* element of baseline methodology

- Emission reductions have to be ADDITIONAL to any that would occur without the project
- Two conditions:
 1. The project emissions are less than the baseline emissions
 2. The proposed CDM project should not be a part of the baseline scenario
- Prove that the emission reductions would not occur if the project was not implemented as a CDM project
- Assess additionality by:
 - Analyzing alternatives to implementing the project
 - Prove that not only the project alternative is in compliance with the regulations
 - Prove that the implementation of the project is not the “Business as usual scenario”
 - Barrier analysis

Additionality Tool

- “Tool for Demonstration and Assessment of Additionality”, ver03
- EB tool referred to in most of the approved methodology



Additionality Tool – Step I

- Sub-step 1a – Define alternatives to the project activity
 - List of realistic and credible alternatives available to the project participants
 - These need to provide outputs or services comparable with the proposed CDM project
 - The proposed CDM project should be included
 - If relevant, the current situation can be included
- Sub-step 1b – Compliance with applicable laws and regulations
 - All alternatives must be in compliance with all applicable legal and regulatory requirements
 - Unless large spread non-compliance

Additionality Tool – Step 2 – Investment Analysis

- Sub-step 2a – Identification of the appropriate analysis method
 - Simple cost analysis (Option 1) – only CDM related benefits in proposed activity (e.g. landfill gas capture)
 - Investment comparison analysis (Option II) – alternatives have comparable scales to CDM project (e.g. gas fired power plant versus coal fired power plant)
 - Benchmark analysis (Option III) – if neither of above apply
- Sub-step 2b – Apply the appropriate investment analysis method
- Sub-step 2c – Compare financial indicators

Additionality Tool – Step 3 – Barrier Analysis

- Sub-step 3a – Identification of barriers
 - Investment barrier (lack of funding, real/perceived risk)
 - Technological barrier (e.g. unavailable skilled labour to operate or maintain technology)
 - Barriers due to prevailing practice (e.g. ‘first of a kind’; developer lacks experience)
 - Other barriers (e.g. management reluctant due to lack of experience using state of the art technology)
- Sub-step 3b – Analyse impacts of barriers on alternatives
 - Do these barriers prevent widespread implementation or at least one of the alternatives?



Additionality Tool – Step 4 – Common Practice

- Sub-step 4a – Analyse prevailing activities similar to the proposed CDM project
 - Is there a similar project in the same country?
 - Do these other projects apply similar scale or technology?
 - Are they implemented in a comparable regulatory environment?
- Sub-step 4b – Analyse already implemented similar activities
 - Are there any essential distinctions to the proposed CDM project activities?
 - E.g. if 20% of the sugar industry has implemented cogeneration using higher efficiency boilers, then the CDM project proposing the same will not be additional even if it was found to be financially non-viable.