

# LARGE SCALE METHODOLOGIES

Meth Panel 46 AND Meth Panel 47 outcome



AM0031 “Baseline Methodology for Bus Rapid Transit Projects” is applicable to project activities that reduce emissions through the construction and operation of a bus rapid transit system (BRT) for urban, road-based transportation of passengers. The methodology is also applicable for extensions or expansions of existing BRT systems (adding new routes and lines).

In order to keep the methodology simple, no provisions to calculate upstream emissions from the production of the fuels used in the baseline and project transport systems are provided.

For that reason the applicability of the methodology was limited to cases where the upstream emissions under the project activity are likely to be equal or lower than in the baseline scenario.

Hence, if gaseous fossil fuel is used in the project activity, the methodology requires that equal or more gaseous fossil fuel be used in the baseline scenario than in the project scenario.



The panel recommends a revision to AM0031, based on the request AM\_REV\_200:

- The revision expands the methodology by allowing that more gaseous fossil fuel is used in the project scenario than in the baseline scenario.
- The revision proposes that the corresponding upstream emissions should be accounted for as leakage. The procedure used for the estimation of upstream emissions is similar to that in other approved methodologies where upstream emissions from natural gas is included.
- For the sake of simplicity those upstream emissions should only be accounted for in the project scenario, not in the baseline scenario, which is conservative.



AM0070 “Manufacturing of energy efficient domestic refrigerators” is applicable to project activities undertaken by manufacturers of refrigerators that increase the energy efficiency of manufactured refrigerators.

In the existing version of the methodology:

- baseline emissions are calculated based on the specific energy consumption of the baseline refrigerators for each adjusted-volume storage class of refrigerators.
- this specific energy consumption is determined through a comprehensive survey of the market that should be undertaken by the project participants.



The panel recommends a revision to AM0070, based on the request AM\_REV\_190:

- The revision adds an alternative approach to calculate the market benchmark of the specific energy consumption of refrigerators.
- The new approach is based on data from a national labeling scheme where such scheme exists and the labeled refrigerators are the most efficient refrigerators in the host country.
- It also allows for the calculation of the adjusted storage volume of the refrigerators based also on the data from the labeling schemes.
- There are some editorial revisions also carried out.



The panel recommends an editorial revision to AM0086 containing:

- Correction of units,
- Improve clarity in description of variables.
- Change the name of a parameter.



ACM0006 “Consolidated methodology for electricity generation from biomass residues and biogas in power plant and heat plants” is applicable to biomass residue fired electricity generation in power and heat plants, including cogeneration plants.

The methodology excludes biomass residues use if significant energy quantities are required to prepare the biomass residues for fuel combustion.

Therefore, although implicitly, project activities that use biogas produced from biomass residues are excluded from the methodology.



## EB58 – Annotated agenda item 14(d) : Revision to ACM0006 based on AM\_REV\_199

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The panel recommends a revision to ACM0006, based on the request AM\_REV\_199:

- The request seeks to revise the methodology in order to expand its applicability to project activities that use biogas produced from wastewater treatment.

### Note:

In the published annex after MP46, the following footnote (footnote-2) that was supposed to be removed as a result of revision, is still there.

“Up to 10% of biogas may be co-fired in the project plant, provided that the same amount of biogas is co-fired in the baseline. For clarity in case the biogas is produced in a (proposed) CDM project activity the CDM biogas project activity shall be independent from the proposed CDM biomass cogen project activity and hence also be co-fired in the baseline. If any CERs are claimed for the biogas, this shall occur under the biogas CDM project activity.”

This leads to contradiction in the methodology, as the project activities eligible under revised methodology can use biogas upto 50%.

The Board is requested to allow the Secretariat to delete this foot-note from the final version.



ACM0014 “Mitigation of greenhouse gas emissions from treatment of industrial wastewater” is applicable to project activities that aim at reducing methane emissions from industrial wastewater treatment.

In scenario 1 of the methodology:

- In the baseline, the wastewater is treated in anaerobic open lagoons and the resulting biogas is vented to the atmosphere.
- In the project, the wastewater is treated in an anaerobic digester and the resulting biogas is collected and used as fuel or flared.



## EB58 – Annotated agenda item 14(e) : Revision to ACM0014 based on AM\_REV\_201

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The panel recommends a revision to ACM0014, based on the request AM\_REV\_201:

- The revision expands the applicability of the methodology by amending scenario 1 to include project activities where the wastewater is dewatered and directed to land application.
- In particular the request amends the description of the project activity of scenario 1 and include the corresponding project emissions.
- Some editorial corrections were also implemented.



ACM0018 “Consolidated methodology for electricity generation from biomass residues in power-only plants” is applicable to project activities that generate electricity in biomass residue (co-)fired power-only plants.

The project activity may include greenfield power projects, power capacity expansion projects, energy efficiency improvement projects, and fuel switch projects.

Currently, the methodology is only applicable if:

- no significant energy quantities, except from transportation or mechanical treatment of the biomass residues, are required to prepare the biomass residues for fuel combustion,

This means that the projects that process the biomass residues prior to combustion (e.g. esterification of waste oils, gasification, etc.) are not eligible under the methodology.



## EB58 – Annotated agenda item 14(f) : Revision to ACM0018 based on AM\_REV\_198

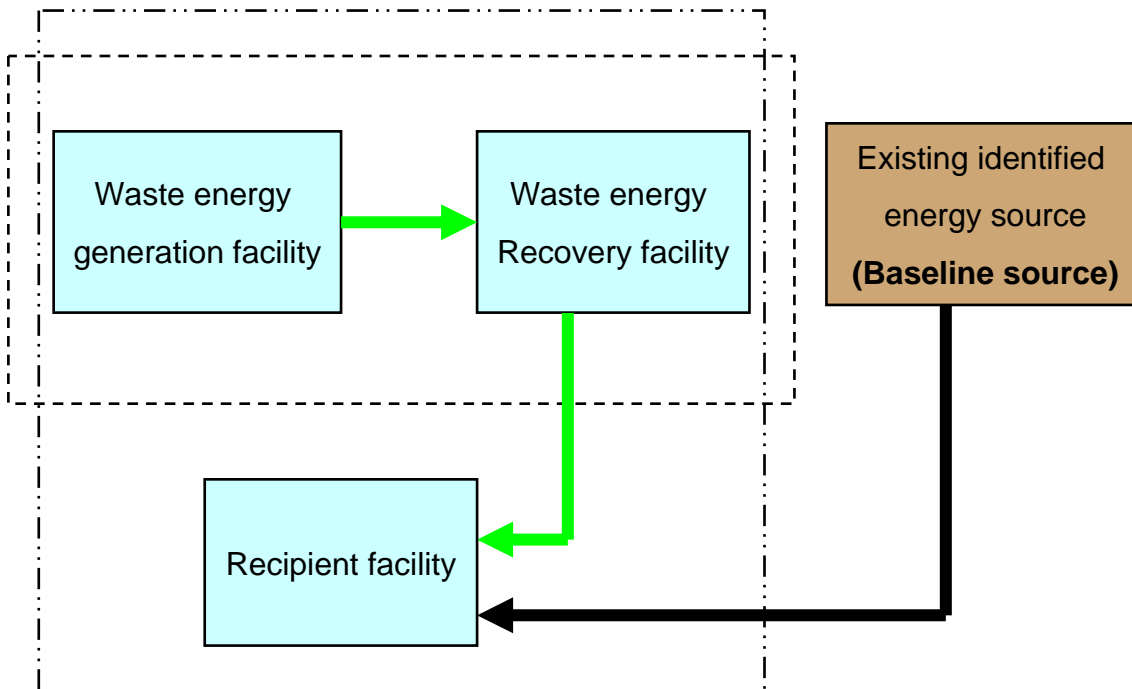
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The panel recommends a revision to ACM0018, based on the request AM\_REV\_198:

- The revision expands the applicability of the methodology to project activities that use biomass residues which undergo shredding, briquetting and pelletization prior to combustion.



Existing methodology ACM0012



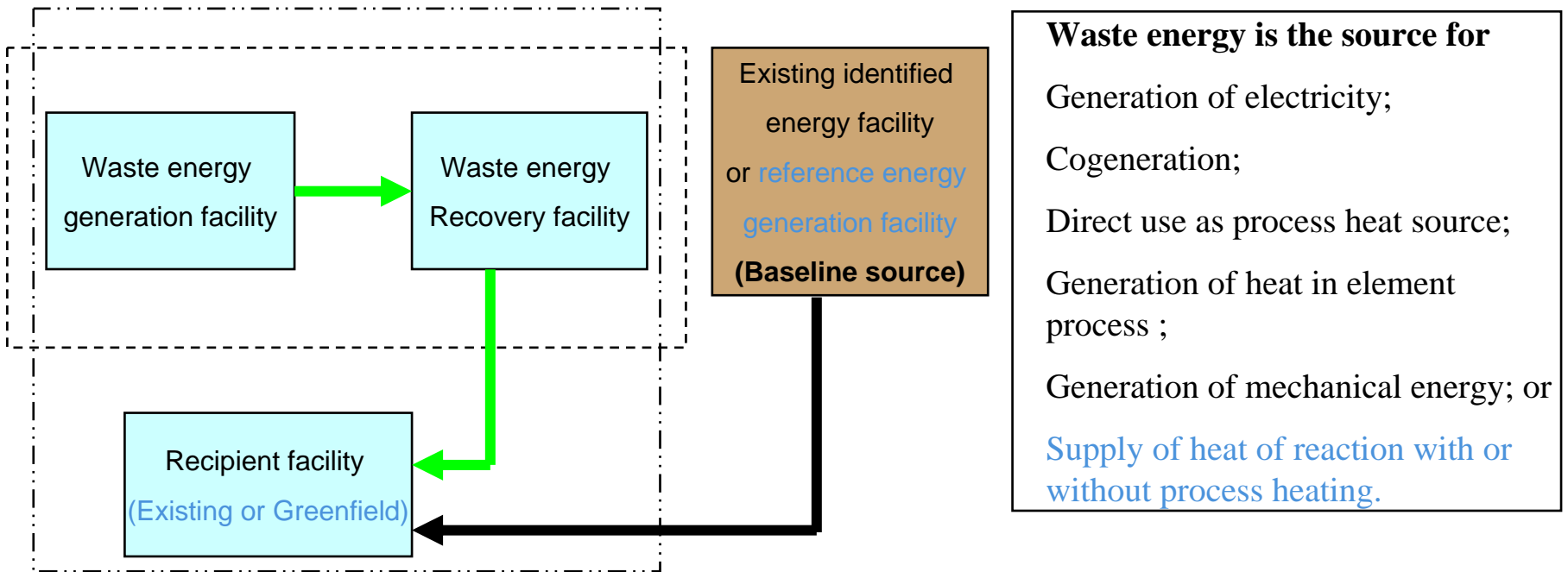
**Waste energy is the source for**  
Cogeneration; or  
Generation of electricity; or  
Direct use as process heat source; or  
For generation of heat in element process (e.g. steam, hot water, hot oil, hot air); or  
For generation of mechanical energy.

**P.A. type-1:** No energy recovery of waste stream in in absence of PA. Project activity recovers energy from waste energy stream.

**P.A type-2:** Part of waste gas recovered in the baseline, remaining wasted. Project activity increases the capture and utilization of waste gas for generation of electricity in existing facility.



Revised methodology ACM0012



**In case there is no energy recovery of waste stream in baseline**, the project activity can be implemented in existing or Greenfield facility, supplying energy to existing or Greenfield recipient facility, receiving energy in absence of PA from “existing identified energy source” or “reference energy source”.

**In case, the waste stream is (or would have been) recovered in baseline** in existing or Greenfield facility, the energy recovery in absence of PA is to be calculated either using three year historical data of project facility or using the extent of energy recovery of “reference waste energy generation facility”.



### **The revision broadens applicability by:**

- Opening the project activities of “improvement in partial recovery” to all areas of waste energy recovery (and not only waste gas).
- Expanding applicability if waste energy is recovered to supply “heat of reaction”.
- Making methodology more “clearly” applicable to Greenfield facilities with additional guidance.

### **The revision adds clarity and enhances consistency by:**

- Clearly linking “applicable baseline scenarios” to baseline calculations and adding flow chart.
- Improving section of “project emissions due to firing of auxiliary fuel” to avoid possibility of double counting of project emissions.
- Clearly defining the project boundary.
- Providing definitions of key terms, and clarifying some applicability conditions.
- Avoiding different “types” of project activities and consolidating approach of baseline calculation.
- Including some monitoring requirements to cover typical extraction turbine case.
- Referring three tools.



**3. The revision improves conservativeness by:**

- Stipulating the mandatory requirement of “investment analysis” for baseline scenario determination and additionality demonstration for:
  - (i) Project activities improving the energy recovery
  - (ii) Greenfield project activities
  - (iii) Greenfield recipient facility, which would have received energy from “reference energy generation facility” in absence of CDM project activity.
- Providing guidance to cover the gaming potential in complex industry scenarios where in case the waste gas already recovered in baseline is diverted to CDM project to enhance CERs.

The revision consolidates ACM0012 with AM0024 "Methodology for greenhouse gas reductions through waste heat recovery and utilization for power generation at cement plants" and applies the requests of revision and clarification: AM\_CLA\_0163, AM\_CLA\_0168, AM\_REV\_0157, AM\_REV\_0187 and AM\_REV\_0141 on AM0024;

As a result of consolidation, the approved methodology AM0024 is recommended to be withdrawn.

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## EB58 – Annotated agenda item 15(b) : Revision to AM0089 based on EB56, paragraph 21

AM0089 “Production of diesel using a mixed feedstock of gasoil and vegetable oil” is applicable to project activities that produce diesel by switching the feedstock of hydrodesulphurization process (HDS unit) from pure gasoil to a mixture of gasoil and vegetable oil.

The methodology is applicable under the following conditions (in addition to others):

- The diesel is supplied to consumers within the host country;
- The producer monitors the use of diesel and ensures there is no double counting;
- No modifications are necessary in the equipment using the project diesel;
- In case of vehicles, the consumer is a captive fleet of vehicles;

The methodology also states that:

- Consumers should be included in the project boundary.



While approving this PNM, the Board requested the panel to consider whether consumers could be excluded from project boundary and prepare a revised methodology for consideration by the Board.

In response to that request, the panel recommends a revision to the methodology:

- The revision deletes the requirement that consumers be included in the project boundary.
- It adds an applicability condition that the diesel produced in the project activity should not be exported to Annex I countries.
- As a consequence, the 4 applicability conditions mentioned above were deleted.



## EB58 – Annotated agenda item 15(c) : Revision to ACM0002 based on EB56, paragraph 25(a)

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ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” is applicable to grid-connected renewable power generation project activities that including hydro, wind, geothermal, solar, wave and tidal power plants.

During EB56, the Board approved a revision to ACM0002, as proposed by the Meth Panel, that included a definition for existing reservoirs to the methodology.

At the same time the board requested the panel to further revise the methodology in order to include a definition of reservoir for consideration by the Board.

***“Reservoir.*** *A reservoir is a water body created in valleys to store water generally made by the construction of a dam.”*



**Definition discussed during EB56.**

Abnormal campaign is an event when: **(a) The gauze does not achieve an ammonia conversion efficiency of 90% for at least 90% of the time duration of the design campaign;** or (b) The physical damage to the primary catalyst is observed, resulting in replacement of the catalyst.

**Proposed definition in the methodology.**

Abnormal campaign is an event when: **(a) The ammonia conversion efficiency of the gauze is lower than 90% for at least 90% of the time duration of the design campaign;** or (b) The physical damage to the primary catalyst is observed, resulting in replacement of the catalyst.

**Note:**

In the published annex after MP46, the old reference of “abnormal campaign” remained in the Meth Panel annex.

The Board is requested to allow the Secretariat to delete this reference from the final version.



- CMP5 requested the Board to further work on the development of guidelines for demonstration and assessment of barriers and of [standardized methods to calculate financial parameters](#)
- MP43 developed a draft “[Tool to calculate the weighted average cost of capital \(WACC\)](#)” and recommended the Board to launch a call for public inputs
- An update was reported from MP44 to EB55
- Taking into account the inputs from the public, MP46 recommended the Board to revise the “[Guidance on the assessment of investment analysis](#)” instead of developing a new tool, for two reasons:
  - This guidance contains already similar elements
  - Internal consistency of documents is ensured



- Financial benchmarks can be determined in many ways
  - Different models, time horizons, sector definitions => different results
  - CAPM model can be applied in different ways and markets outside US are too small for reliable application
- They aim to model investor decisions but there is no “best method” or “true” financial benchmark
- The [additionality tool](#) and [guidance on the assessment of investment analysis](#) distinguish two situations:
  - a) The project can also be implemented by others  
⇒ Analysis based on [parameters that are standard in the market](#)
  - b) The project can only be implemented by the PPs  
⇒ Analysis based on the [specific financial situation of the company of the PPs](#)



- New approach: **default values** per sector and country
- Introduced next to existing approaches, such as
  - government/official approved benchmark
  - company internal benchmarks
- Default values are
  - **mandatory** if the financial benchmark is determined based on parameters that are standard in the market (situation a)
  - **voluntary** if the financial benchmark is determined based on the subjective situation of the company of the PPs (situation b)



## Cost of equity =

Risk free rate	3.0%	US treasury bonds
+ Equity premium	6.5%	Arithmetic long-term mean of US equity return in relation to bond returns
+ Risk premium for the host country	0.6% - 7.5%	Moody's ratings as proxy + comparisons with countries with similar gross national product per capita
+ Adjustment factor to reflect the risk of projects in different sectoral scopes	-0.5% - +1.0%	Adjustment factors recommended based on typical risk profile of the sectors



**Group 1**

1. Energy Industries
2. Energy Distribution
3. Energy Demand.
13. Waste handling and disposal

**Group 2**

4. Manufacturing industries
5. Chemical Industries
6. Construction
7. Transport.
8. Mining/Mineral production.
9. Metal production
10. Fugitive Emissions from fuels
11. Fugitive emissions from production and consumption of halocarbon, and sulphur hexafluoride.
12. Solvent use.

**Group 3**

14. Afforestation and reforestation
15. Agriculture



## EB58 – Annotated agenda item 16: Guidelines on the assessment of investment analysis

### Table of default values

	<b>Group 1</b>	<b>Group 2</b>	<b>Group 3</b>
Afghanistan	14.5	15.5	14
Albania	13	14	12.5
Algeria	12.9	13.9	12.4
Angola	13	14	12.5
Antigua and Barbuda	10.5	11.5	10
Argentina	14.5	15.5	14
Armenia	12.5	13.5	12
Azerbaijan	11.2	12.2	10.7
Bahamas	10.9	11.9	10.4
Bahrain	10.8	11.8	10.3
Bangladesh	12.75	13.75	12.25
Barbados	11.75	12.75	11.25
Belize	14.5	15.5	14

• values in real terms (not nominal terms)



- Cost of debt
  - Company-specific situation (situation a): cost of debt of the company
  - Parameters that are standard in the market (situation b): market expectation on debt, e.g. commercial lending rates
- Equity / debt ratio
  - Company-specific situation (situation a): long-term debt/equity finance structure of the company of the PPs or 50%/50% if not yet available
  - Parameters that are standard in the market (situation b): typical debt/equity financing structure observed in the sector of the country or 50%/50% if not available



## EB58 – Annotated agenda item 17 : Public call on draft “Tool for baseline scenario identification and baseline emission calculations”

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Meth Panel at its 46<sup>th</sup> meeting recommended the Board to open a call for public comments on the draft “Tool for baseline scenario identification and baseline emission calculations”.

The call aims at:

- collecting opinions and ideas that might be used in further development of the tool
- The consideration of public opinion will ensure that the tool meets expectations of project developers before it is recommended to the Board.

Based on the issues raised from the call:

The panel also request the Board to consider organizing a technical workshop on this tool, with CDM stakeholders.



## EB58 – Annotated agenda item 18: Methodology improvement

### Background / Mandate

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- EB49 requested the Meth Panel to revise approved methodologies to further improve their
  - objectivity
  - applicability
  - usability
  - consistency
- EB56 took note of the progress made and requested an update at EB58
- EB54 adopted new procedures for meth revision
  - Initiation of revisions by PPs, EB, MP or Secretariat
  - Enhanced stakeholder consultation: Chair of Meth Panel decides whether consultancies and/or a call for public comments on the draft revised methodology are required



## EB58 – Annotated agenda item 18: Methodology improvement

### Priority areas decided at EB49

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- Order of priority of its work in methodological issues:
  - a) Development of tools and considerations of cross-cutting issues;
  - b) Requests for clarification;
  - c) Requests for revision;
  - d) New methodologies.
- Priority sectors:
  - Energy for households;
  - Transport;
  - Energy efficiency in construction;
  - Agriculture.



## EB58 – Annotated agenda item 18: Methodology improvement Update on work by the Meth Panel (2)














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- Assessment of 32 methodologies for improvement, with particular focus on ways for simplification
- Initiation of the revision of methodologies / tools
  - AM0031: Bus rapid transit projects
  - AM0055: Recovery and utilization of waste gas in refinery facilities
  - ACM0007: Conversion from single cycle to combined cycle power generation
  - Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site
  - Tool to determine project emissions from flaring gases containing methane
- Development of two new tools
  - Tool to determine project emissions from anaerobic digesters
  - Tool to determine project emissions from aerobic treatment of solid waste
- 16 further methodologies will be assessed for improvement



# EB58 – Annotated agenda item 18: Methodology improvement

## Web interface for methodology improvement

Approved Large Scale Methodologies ( 73 )			
Meth. Number	Methodology Title (including baseline and monitoring methodologies)	Sectoral Scope	Approval History
AM0001	<p> Incineration of HFC 23 Waste Streams — Version 5.0.2 (301 KB)</p> <p>Full view and history   View one page summary in CDM Methodology Booklet  Submit comments for improvement of this methodology</p>	11	NM0007-rev
AM0007	<p> Analysis of the least-cost fuel option for seasonally-operating biomass cogeneration plants — Version 1 (78 KB)</p> <p>Full view and history   View one page summary in CDM Methodology Booklet  Submit comments for improvement of this methodology</p>	1 , 4	NM0028
AM0009	<p> Recovery and utilization of gas from oil wells that would otherwise be flared or vented — Version 4 (264 KB)</p> <p>Tools referenced in this methodology:   Combined tool to identify the baseline scenario and demonstrate additionality (341 KB)   Tool to calculate baseline, project and/or leakage emissions from electricity consumption (537 KB)   Tool to calculate project or leakage CO2 emissions from fossil fuel combustion (260 KB)   Tool for the demonstration and assessment of additionality (318 KB)</p> <p>Full view and history   View one page summary in CDM Methodology Booklet  Submit comments for improvement of this methodology</p>	10	NM0227 NM0026
AM0014	<p> Natural gas-based package cogeneration — Version 4 (242 KB)</p> <p>Tools referenced in this methodology:   Tool for the demonstration and assessment of additionality (318 KB)</p> <p>Full view and history   View one page summary in CDM Methodology Booklet  Submit comments for improvement of this methodology</p>	1 , 4	NM0018-rev



## EB58 – Annotated agenda item 18: Methodology improvement Proposal for prioritization of work

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- Prioritization of action on methodology improvement:
  - Priority areas defined by EB49 (e.g. tools)
  - Methodologies with large scope for simplification
  - Methodologies for which environmental integrity issues are detected
  - Methodologies with large scope for improving objectivity, applicability, usability and consistency
- Balance between consideration of new methodologies and improvement of existing methodologies
  - Consider 28 new methodology submissions which were not considered over one year due to prioritisation
- Request by Meth Panel to initiate the revision of two waste sector methodologies (ACM0001 and AM0025)



## EB58 annotated agenda item 22: Meth Panel response to EB request on AM0024

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As per the Board's request Meth Panel considered the validity of following monitoring parameter in the methodology AM0024 "Baseline methodology for greenhouse gas reductions through waste heat recovery and utilization for power generation at cement plants".

“Waste heat use within the cement works and normal uses of waste heat in cement production commonly practiced in the region or host country.”

The panel agreed that the requirement to monitor this parameter is redundant, hence the parameter need not be monitored.



## Guidance from the Board on new request for revision on ACM0013

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### Request for Revision on ACM0013

- The request for revision on ACM0013 was received from DoE in September 2010. This is the pending request since then.
- The request is not necessarily submitted by the project participants but by an NGO.
- The request is not based on an actual project, but PDD is prepared for an “example project”.
- For the time being the request is not accepted by the secretariat, as it is awaiting further guidance from the Board.

**The Board is requested to advise on how to treat this request for revision and whether the request can be officially accepted for Meth Panel to analyze and respond.**



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**Thank you for your attention.**

