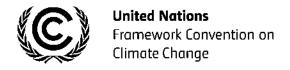**CDM-MP59-A08**

# Draft Large-scale Consolidated Methodology

# ACM0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources

Version 14.0 – Draft

Sectoral scope(s): 01

DRAFT

**United Nations**
Framework Convention on
Climate Change

# COVER NOTE

## 1. Procedural background

1. The Executive Board of the clean development mechanism (CDM) (hereinafter referred to as the Board) considered regulatory documents relating to the introduction of new provisions or changes to existing ones related to PoAs and adopted amendments to the revised Project standard (PS), Validation and Verification Standard (VVS), Project Cycle Procedure (PCP), "Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities", "Guidelines for completing the programme design document form for CDM programmes of activities", and "Glossary of CDM terms". The amendments include:

   (a) A revised definition of the start date of a PoA and the start date of a component project activity (CPA), including an option for the coordinating/managing entity to notify the designated national authorities (DNA) and the secretariat of their intention to seek the CDM status to signify the start date of the PoA;

   (b) Clarification that for PoAs applying more than one technology/measure or more than one methodology, specific case CPA-DDs for each technology/measure and each methodology or combinations thereof would be required and that these specific case CPA-DDs shall be registered before any inclusion of CPA-DD of same type, however, the registration can take place either at the time of registration of the PoA or at any time during the crediting period. In this regard the Board agreed that the requirements specified in the PS have precedence over any requirement for specific case CPA-DDs (also referred to as real case or actual case CPA-DDs) indicated in an approved methodology. The Board requested the Methodologies Panel (Meth Panel) to propose, as a matter of urgency, revisions to methodologies, where relevant, to ensure that the requirements specified in the methodologies are consistent with the requirements specified in the PS;

   (c) Clarification that a PoA shall be updated every seven years (every 20 years for an A/R PoA), counting from the date of its registration, and a fixed or renewable crediting period may be chosen for each CPA. In the case of a CPA with a renewable crediting period, the first renewal of the CPA shall be conducted seven years after the start date of the crediting period of the CPA.

2. The Meth Panel agreed at its 59th meeting to revise this methodology (as well as another five large-scale methodologies ACM0001, ACM0014, ACM0022, AM0009 and ACM0010) that contain requirements for specific case CPA-DDs and frequency of updating of eligibility criteria by deleting these requirements as these requirements are specified in the standards mentioned above. In addition, the number of editorial changes has been applied to the methodology to improve its consistency and readability.

## 2.        Purpose

3.        The revision aims to improve the consistency in existing regulations related to PoAs. The purpose of the call for public input aims to facilitate the work of the Meth Panel on the revision of the methodology taking into account feedback/comments received through wider consultation process.

## 3.        Key issues and proposed solutions

4.        The draft revision removes requirements for specific case CPA-DDs and frequency of updating of eligibility criteria as these requirements are specified in the relevant standards.

## 4.        Impacts

5.        The revision of the methodology, if approved, will improve the consistency in existing regulations related to PoAs.

## 5.        Proposed work and timelines

6.        A call for public inputs on the proposed draft revision of the methodology will be launched. The received public inputs, if any submitted, will be considered to inform the revision of the methodology. If no inputs will be received, the Meth Panel will recommend the draft revised methodology to the Board for approval.

## 6.        Recommendations to the Board

7.        Not applicable (call for public input).

**TABLE OF CONTENTS** **Page**

# 1. Introduction

1. The following table describes the key elements of the methodology:

**Table 1. Methodology key elements**

| Typical projects | Retrofit, replacement or capacity addition of an existing power plant or construction and operation of a power plant that uses renewable energy sources and supplies electricity to the grid (Greenfield power plant) |
|---|---|
| Type of GHG emissions mitigation action | Renewable energy: Displacement of electricity that would be provided to the grid by more-GHG-intensive means |

# 2. Scope, applicability, and entry into force

## 2.1. Scope

2. This methodology applies to project activities that include retrofitting, replacement or capacity addition of an existing power plant or construction and operation of a power plant that uses renewable energy sources and supplies electricity to the grid (Greenfield power plant)

## 2.2. Applicability

3. This methodology is applicable to grid-connected renewable power generation project activities that: (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (Greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).

4. The methodology is applicable under the following conditions:

   (a) The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit;

   (b) In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 10 17 to calculate the parameter $EG_{PJ,y}$): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.

5. In case of hydro power plants:

   (a) One of the following conditions must apply:

(i)     The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of reservoirs; or

(ii)    The project activity is implemented in an existing single or multiple reservoirs, where the volume of any of reservoirs is increased and the power density of each reservoir, as per the definitions given in the project emissions section, is greater than 4 $W/m^2$; or

(iii)   The project activity results in new single or multiple reservoirs and the power density of each reservoir, as per the definitions given in the project emissions section, is greater than 4 $W/m^2$.

6.      In case of hydro power plants using multiple reservoirs where the power density of any of the reservoirs is lower than 4 $W/m^2$ all the following conditions must apply:

(a)     The power density calculated for the entire project activity using equation (5) is greater than 4 $W/m^2$;

(b)     Multiple reservoirs and hydro power plants located at the same river and where are designed together to function as an integrated project[1] that collectively constitute the generation capacity of the combined power plant;

(c)     Water flow between multiple reservoirs is not used by any other hydropower unit which is not a part of the project activity;

(d)     Total installed capacity of the power units, which are driven using water from the reservoirs with power density lower than 4 $W/m^2$, is lower than 15 MW;

(e)     Total installed capacity of the power units, which are driven using water from reservoirs with power density lower than 4 $W/m^2$, is less than 10% per cent of the total installed capacity of the project activity from multiple reservoirs.

7.      The methodology is not applicable to the following:

(a)     Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site;

(b)     Biomass fired power plants;

(c)     A hydro power plant[2] that results in the creation of a new single reservoir or in the increase in an existing single reservoir where the power density of the power plant is less than 4 $W/m^2$.

---

[1]  This requirement can be demonstrated, for example: (i) by the fact that water flow from upstream power units spilling directly to the downstream reservoir; or (ii) through the analysis of the water balance. Water balance is the mass balance of water fed to power units, with all possible combinations of multiple reservoirs and without the construction of reservoirs. The purpose of such water balance is to demonstrate the requirement of specific combination of multiple reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum three years prior to implementation of CDM project activity.

8. In the case of retrofits, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, i.e. that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance".

9. In addition, the applicability conditions included in the tools referred to above apply.[3]

## 2.3. Entry into force

10. Not applicable.

# 3. Normative references

11. This consolidated baseline and monitoring methodology is based on elements from the following proposed new methodologies:

   (a) "NM0001-rev: Vale do Rosario Bagasse Cogeneration (VRBC)" project in Brazil whose Baseline study, Monitoring and Verification Plan and Project Design Document were prepared by Econergy International Corporation;

   (b) "NM0012-rev: Wigton Wind Farm" project in Jamaica whose Baseline study, Monitoring and Verification Plan and Project Design Document were prepared by Ecosecurities ltd;

   (c) "NM0023: El Gallo Hydroelectric" project, Mexico whose Baseline study, Monitoring and Verification Plan and Project Design Document were prepared by Prototype Carbon Fund (approved by the CDM Executive Board on 14 April 2004);

   (d) "NM0024-rev: Colombia: Jepirachi Windpower" project whose Baseline study, Monitoring and Verification Plan and Project Design Document were prepared by Prototype Carbon Fund";

   (e) "NM0030-rev: Haidergarh Bagasse Based Co-generation Power" project in India whose Baseline study, Monitoring and Verification Plan and Project Design Document was submitted by Haidergarh Chini Mills, a unit of Balrampur Chini Mills Limited;

   (f) "NM0036: Zafarana Wind Power Plant" project in the Arab Republic of Egypt whose Baseline study, Monitoring and Verification Plan and Project Design Document were prepared by Mitsubishi Securities;

---

[2] Project participants wishing to undertake a hydroelectric project activity that result in a new reservoir or an increase in the existing reservoir, in particular where reservoirs have no significant vegetative biomass in the catchments area, may request a revision to the approved consolidated methodology.

[3] The condition in the "Combined tool to identify the baseline scenario and demonstrate additionality" that all potential alternative scenarios to the proposed project activity must be available options to project participants does not apply to this methodology, as this methodology only refers to some steps of this tool.

(g)    "NM0043: Bayano Hydroelectric Expansion and Upgrade" project in Panama whose Baseline study, Monitoring and Verification Plan and Project Design Document were prepared by Econergy International Corporation;

(h)    "NM0055: Darajat Unit III Geothermal" project in Indonesia whose Baseline study, Monitoring and Verification Plan and Project Design Document were prepared by URS Corporation and Amoseas Indonesia Inc.

12.    This methodology also refers to the latest approved versions of the following tools:

(a)    "Tool to calculate the emission factor for an electricity system";

(b)    "Tool for the demonstration and assessment of additionality";

(c)    "Combined tool to identify the baseline scenario and demonstrate additionality";

(d)    "Tool to calculate project or leakage $CO_2$ emissions from fossil fuel combustion".

13.    For more information regarding the proposed new methodologies and the tools as well as their consideration by the CDM Executive Board (hereinafter referred to as the Board) of clean development mechanism (CDM) the please refer to <http://cdm.unfccc.int/goto/MPappmeth>.

## 3.1.  Selected approach from paragraph 48 of the CDM modalities and procedures

14.    "Existing actual or historical emissions, as applicable";

or

15.    "Emissions from a technology that represents an economically attractive course of action, taking into account barriers to investment".

# 4.   Definitions

16.    The definitions contained in the Glossary of CDM terms shall apply.

17.    For the purpose of this methodology, the following definitions apply:

(a)    **Installed power generation capacity (or installed capacity or nameplate capacity)** - The installed power generation capacity of a power unit is the capacity, expressed in Watts or one of its multiples, for which the power unit has been designed to operate at nominal conditions. The installed power generation capacity of a power plant is the sum of the installed power generation capacities of its power units;

(b)    **Capacity addition** - A capacity addition is an increase in the installed power generation capacity of an existing power plant through: (i) the installation of a new power plant beside the existing power plant/units; or (ii) the installation of new power units, additional to the existing power plant/units. The existing power plant/units continue to operate after the implementation of the project activity;

(c)    **Retrofit** (or Rehabilitation or Refurbishment) - A retrofit is an investment to repair or modify an existing power plant/unit, with the purpose to increase the efficiency,

performance or power generation capacity of the plant, without adding new power plants or units, or to resume the operation of closed (mothballed) power plants. A retrofit restores the installed power generation capacity to or above its original level. Retrofits shall only include measures that involve capital investments and not regular maintenance or housekeeping measures;

(d) **Replacement** - Investment in a new power plant or unit that replaces one or several existing unit(s) at the existing power plant. The new power plant or unit has the same or a higher power generation capacity than the plant or unit that was replaced;

(e) **Reservoir** - A reservoir is a water body created in valleys to store water generally made by the construction of a dam;

(f) **Existing reservoir** - A reservoir is to be considered as an "existing reservoir" if it has been in operation for at least three years before the implementation of the project activity.

18. In addition, the definitions in the latest approved version of the "Tool to calculate the emission factor for an electricity system" apply.

# 5. Baseline methodology

## 5.1. Identification of the baseline scenario

19. If the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following:

(a) Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".

20. If the project activity is a capacity addition to existing grid-connected renewable power plant/unit, the baseline scenario is the following:

(a) In the absence of the CDM project activity, the existing facility would continue to supply electricity to the grid at historical levels, until the time at which the generation facility would likely be replaced or retrofitted ($DATE_{BaselineRetrofit}$). From that point of time onwards, the baseline scenario is assumed to correspond to the project activity, and no emission reductions are assumed to occur.

21. If the project activity is the retrofit or replacement of existing grid-connected renewable power plant/unit(s) at the project site, the following step-wise procedure to identify the baseline scenario shall be applied:

### 5.1.1. Step 1: Identify realistic and credible alternative baseline scenarios for power generation

22. Apply Step 1 of the "Combined tool to identify the baseline scenario and demonstrate additionality". The options considered should include:

(a) P1: The project activity not implemented as a CDM project;

      (b)     P2: The continuation of the current situation, ~~i.e. that is~~ to use all power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance. The additional power generated under the project would be generated in existing and new grid-connected power plants in the electricity system; and

      (c)     P3: All other plausible and credible alternatives to the project activity that provide an increase in the power generated at the site, which are technically feasible to implement. This includes, inter alia, different levels of replacement and/or retrofit at the power plant/unit(s). Only alternatives available to project participants should be taken into account.

### 5.1.2. Step 2: Barrier analysis

23.     Apply Step 2 of the "Combined tool to identify the baseline scenario and demonstrate additionality".

### 5.1.3. Step 3: Investment analysis

24.     If this option is used, apply the following:

      (a)     Apply an investment comparison analysis, as per Step 3 of the "Combined tool to identify the baseline scenario and demonstrate additionality", if more than one alternative is remaining after Step 2 and if the remaining alternatives include scenarios P1 and P3;

      (b)     Apply a benchmark analysis, as per Step 2b of the "Tool for the demonstration and assessment of additionality", if more than one alternative is remaining after Step 2 and if the remaining alternatives include scenarios P1 and P2.

## 5.2. Additionality

25.     The additionality of the project activity shall be demonstrated and assessed using the latest version of the "Tool for the demonstration and assessment of additionality" agreed by the Board, which is available on the UNFCCC CDM website.

## 5.3. Project boundary

26.     The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system[4] that the CDM project power plant is connected to.

27.     The greenhouse gases and emission sources included in or excluded from the project boundary are shown in Table 2.

---

[4] Refer to the latest approved version of the "Tool to calculate the emission factor for an electricity system" for definition of an electricity system.

**Table 2.      Emission sources included in or excluded from the project boundary**

| Source | | Gas | Included | Justification/Explanation |
|---|---|---|---|---|
| **Baseline** | $CO_2$ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity | $CO_2$ | Yes | Main emission source |
| | | $CH_4$ | No | Minor emission source |
| | | $N_2O$ | No | Minor emission source |
| **Project activity** | For geothermal power plants, fugitive emissions of $CH_4$ and $CO_2$ from non-condensable gases contained in geothermal steam | $CO_2$ | Yes | Main emission source |
| | | $CH_4$ | Yes | Main emission source |
| | | $N_2O$ | No | Minor emission source |
| | $CO_2$ emissions from combustion of fossil fuels for electricity generation in solar thermal power plants and geothermal power plants | $CO_2$ | Yes | Main emission source |
| | | $CH_4$ | No | Minor emission source |
| | | $N_2O$ | No | Minor emission source |
| | For hydro power plants, emissions of $CH_4$ from the reservoir | $CO_2$ | No | Minor emission source |
| | | $CH_4$ | Yes | Main emission source |
| | | $N_2O$ | No | Minor emission source |

## 5.4.  Project emissions

28.   For most renewable power generation project activities, $PE_y = 0$. However, some project activities may involve project emissions that can be significant. These emissions shall be accounted for as project emissions by using the following equation:

$$PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y}$$                               Equation (1)

Where:

$PE_y$                    =   Project emissions in year $y$ (t $CO_2$e/yr)

$PE_{FF,y}$                =   Project emissions from fossil fuel consumption in year $y$ (t $CO_2$/yr)

$PE_{GP,y}$                =   Project emissions from the operation of geothermal power plants due to the release of non-condensable gases in year $y$ (t $CO_2$e/yr)

$PE_{HP,y}$                =   Project emissions from water reservoirs of hydro power plants in year $y$ (t $CO_2$e/yr)

29.   The procedure to calculate the project emissions from each of these sources is presented next.

### 5.4.1. Fossil fuel combustion ($PE_{FF,y}$)

30.     For geothermal and solar thermal projects, which also use fossil fuels for electricity generation, $CO_2$ emissions from the combustion of fossil fuels shall be accounted for as project emissions ($PE_{FF,y}$). The use of fossil fuels for the back up or emergency purposes (e.g. diesel generators) can be neglected.

31.     $PE_{FF,y}$ shall be calculated as per the latest version of the "Tool to calculate project or leakage $CO_2$ emissions from fossil fuel combustion".

### 5.4.2. Emissions of non-condensable gases from the operation of geothermal power plants ($PE_{GP,y}$)

32.     For geothermal project activities, project participants shall account fugitive emissions of carbon dioxide and methane due to release of non-condensable gases from produced steam.[5] Non-condensable gases in geothermal reservoirs usually consist mainly of $CO_2$ and $H_2S$. They also contain a small quantity of hydrocarbons, including predominantly $CH_4$. In geothermal power projects, non-condensable gases flow with the steam into the power plant. A small proportion of the $CO_2$ is converted to carbonate/bicarbonate in the cooling water circuit. In addition, parts of the non-condensable gases are reinjected into the geothermal reservoir. However, as a conservative approach, this methodology assumes that all non-condensable gases entering the power plant are discharged to atmosphere via the cooling tower. Fugitive carbon dioxide and methane emissions due to well testing and well bleeding are not considered, as they are negligible.

33.     $PE_{GP,y}$ is calculated as follows:

$$PE_{GP,y} = \left(w_{steam,CO2,y} + w_{steam,CH4,y} \times GWP_{CH4}\right) \times M_{steam,y} \qquad \text{Equation (2)}$$

Where:

| | | |
|---|---|---|
| $PE_{GP,y}$ | = | Project emissions from the operation of geothermal power plants due to the release of non-condensable gases in year $y$ (t $CO_2$e/yr) |
| $w_{steam,CO2,y}$ | = | Average mass fraction of carbon dioxide in the produced steam in year $y$ (t $CO_2$/t steam) |
| $w_{steam,CH4,y}$ | = | Average mass fraction of methane in the produced steam in year $y$ (t $CH_4$/t steam) |
| $GWP_{CH4}$ | = | Global warming potential of methane valid for the relevant commitment period (t $CO_2$e/t $CH_4$) |
| $M_{steam,y}$ | = | Quantity of steam produced in year $y$ (t steam/yr) |

### 5.4.3. Emissions from water reservoirs of hydro power plants ($PE_{HP,y}$)

34.     For hydro power project activities that result in new single or multiple reservoirs and hydro power project activities that result in the increase of single or multiple existing

---

[5]   In the case of retrofit or replacement projects at geothermal plants, this methodology does not account for baseline emissions from release of non-condensable gases from produced steam or fossil fuel combustion. Project proponents are welcome to propose revisions to this methodology to account for these baseline emissions.

reservoirs, project proponents shall account for $CH_4$ and $CO_2$ emissions from the reservoirs, estimated as follows:

**5.4.3.1.** (a) **If the power density of the single or multiple reservoirs (*PD*) is greater than 4 W/m$^2$ and less than or equal to 10 W/m$^2$**

$$PE_{HP,y} = \frac{EF_{Res} \times TEG_y}{1000}$$

Equation (3)

Where:

| | | |
|---|---|---|
| $PE_{HP,y}$ | = | Project emissions from water reservoirs (t $CO_2$e/yr) |
| $EF_{Res}$ | = | Default emission factor for emissions from reservoirs of hydro power plants in year *y* (kg $CO_2$e/MWh) |
| $TEG_y$ | = | Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year *y* (MWh) |

**5.4.3.2.** (b) **If the power density of the project activity (*PD*) is greater than 10 W/m$^2$**

$$PE_{HP,y} = 0$$

Equation (4)

35. The power density of the project activity (*PD*) is calculated as follows:

$$PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}}$$

Equation (5)

Where:

| | | |
|---|---|---|
| $PD$ | = | Power density of the project activity (W/m$^2$) |
| $Cap_{PJ}$ | = | Installed capacity of the hydro power plant after the implementation of the project activity (W) |
| $Cap_{BL}$ | = | Installed capacity of the hydro power plant before the implementation of the project activity (W). For new hydro power plants, this value is zero |
| $A_{PJ}$ | = | Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m$^2$) |
| $A_{BL}$ | = | Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m$^2$). For new reservoirs, this value is zero |

## 5.5. Baseline emissions

36. Baseline emissions include only $CO_2$ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology

assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$$

Equation (6)

Where:

| | | |
|---|---|---|
| $BE_y$ | = | Baseline emissions in year $y$ (t $CO_2$/yr) |
| $EG_{PJ,y}$ | = | Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year $y$ (MWh/yr) |
| $EF_{grid,CM,y}$ | = | Combined margin $CO_2$ emission factor for grid connected power generation in year $y$ calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (t $CO_2$/MWh) |

### 5.5.1. Calculation of $EG_{PJ,y}$

37.     The calculation of $EG_{PJ,y}$ is different for: (a) Greenfield plants, (b) retrofits and replacements; and (c) capacity additions. These cases are described as follows:next.

#### 5.5.1.1.     (a)Greenfield renewable energy power plants

38.     If the project activity is the installation of a new grid-connected renewable power plant/unit at a site where no renewable power plant was operated prior to the implementation of the project activity, then:

$$EG_{PJ,y} = EG_{facility,y}$$

Equation (7)

Where:

| | | |
|---|---|---|
| $EG_{PJ,y}$ | = | Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year $y$ (MWh/yr) |
| $EG_{facility,y}$ | = | Quantity of net electricity generation supplied by the project plant/unit to the grid in year $y$ (MWh/yr) |

#### 5.5.1.2.     (b) Retrofit or replacement of an existing renewable energy power plant

39.     If the project activity is the retrofit or replacement of an existing grid-connected renewable power plant, the baseline scenario is the continuation of the operation of the existing plant. The methodology uses historical electricity generation data to determine the electricity generation by the existing plant in the baseline scenario, assuming that the historical situation observed prior to the implementation of the project activity would continue.

40.     The power generation of renewable energy projects can vary significantly from year to year, due to natural variations in the availability of the renewable source (e.g. varying rainfall, wind speed or solar radiation). The use of few historical years to establish the

baseline electricity generation can therefore involve a significant uncertainty. The methodology addresses this uncertainty by adjusting the historical electricity generation by its standard deviation. This ensures that the baseline electricity generation is established in a conservative manner and that the calculated emission reductions are attributable to the project activity. Without this adjustment, the calculated emission reductions could mainly depend on the natural variability observed during the historical period rather than the effects of the project activity.[6]

41.　$EG_{PJ,y}$ is calculated as follows:

$$EG_{PJ,y} = EG_{facility,y}$$
$$- (EG_{historical} + \sigma_{historical}); until\ DATE_{BaselineRetrofit}$$

<div align="right">Equation (8)</div>

and

$$EG_{PJ,y} = 0; on/after\ DATE_{BaselineRetrofit}$$

<div align="right">Equation (9)</div>

Where:

| | | |
|---|---|---|
| $EG_{PJ,y}$ | = | Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year $y$ (MWh/yr) |
| $EG_{facility,y}$ | = | Quantity of net electricity generation supplied by the project plant/unit to the grid in year $y$ (MWh/yr) |
| $EG_{historical}$ | = | Annual average historical net electricity generation delivered to the grid by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity (MWh/yr) |
| $\sigma_{historical}$ | = | Standard deviation of the annual average historical net electricity generation delivered to the grid by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity (MWh/yr) |
| $DATE_{BaselineRetrofit}$ | = | Point in time when the existing equipment would need to be replaced in the absence of the project activity (date) |

42.　$EG_{facility,y}$ is the quantity of net electricity generation supplied by the project plant/unit to the grid. It shall be determined as a difference between (i) quantity of electricity supplied by the project plant/unit to the grid and quantity of electricity delivered to the project plant/unit from the grid.

---

[6] As an alternative approach for hydropower plants, the baseline electricity generation could be established as a function of the water availability. In this case, the baseline electricity generation would be established ex post based on the water availability monitored during the crediting period. Project participants are encouraged to consider such approaches and submit the related request for a revision to this methodology.

43. $EG_{historical}$ is the annual average of historical net electricity generation, delivered to the grid by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity. To determine $EG_{historical}$, project participants may choose between two historical periods. This allows some flexibility: the use of the longer time period may result in a lower standard deviation and the use of the shorter period may allow a better reflection of the (technical) circumstances observed during the more recent years.

44. Project participants may choose among the following two time spans of historical data to determine $EG_{historical}$:

    (a)    The five last calendar years prior to the implementation of the project activity; or

    (b)    The time period from the calendar year following $DATE_{hist}$, up to the last calendar year prior to the implementation of the project, as long as this time span includes at least five calendar years, where $DATE_{hist}$ is latest point in time between:

        (i)    The commercial commissioning of the plant/unit;

        (ii)   If applicable: the last capacity addition to the plant/unit; or

        (iii)  If applicable: the last retrofit of the plant/unit.

### 5.5.1.3.    (c) Capacity addition to an existing renewable energy power plant

45. In the case of hydro or geothermal power plants, the addition of a new power plant or unit may significantly affect the electricity generated by the existing plant(s) or unit(s). For example, a new hydro turbine installed at an existing dam may affect the power generation by the existing turbines. Therefore, the same approach as for retrofits and replacements is used for hydro power plants and geothermal power plants.

46. In the case of wind, solar, wave or tidal power plants, it is assumed that the addition of new capacity does not significantly affect the electricity generated by existing plant(s) or unit(s).[7] In this case, the electricity fed into the grid by the added power plant(s) or unit(s) could be directly metered and used to determine $EG_{PJ,y}$.

47. If the project activity is a capacity addition, project participants may use one of the following two options to determine $EG_{PJ,y}$:

    (a)    **Option 1:** Use the approach applied to retrofits and replacements above. $EG_{facility,y}$ corresponds to the total electricity generation of the existing plant(s) or unit(s) and the added plant(s) or unit(s). A separate metering of electricity fed into the grid by the added plant(s) or unit(s) is not necessary under this option. This option may be applied to all renewable power projects;

    (b)    **Option 2:** For wind, solar, wave or tidal power plant(s) or unit(s), the following approach can be used provided that the electricity fed into the grid by the added power plant(s) or unit(s) addition is separately metered.

---

[7]   In this case of wind power capacity additions, some shadow effects can occur, but are not accounted under this methodology.

$$EG_{PJ,y} = EG_{PJ\_Add,y}$$    Equation (10)

Where:

| | | |
|---|---|---|
| $EG_{PJ,y}$ | = | Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year *y* (MWh/yr) |
| $EG_{PJ\_Add,y}$ | = | Quantity of net electricity generation supplied to the grid in year *y* by the project plant/unit that has been added under the project activity (MWh/yr) |

48. Project participants should document in the CDM-PDD which option is applied.

### 5.5.2. Calculation of $DATE_{BaselineRetrofit}$

49. In order to estimate the point in time when the existing equipment would need to be replaced/retrofitted in the absence of the project activity ($DATE_{BaselineRetrofit}$), project participants may take the following approaches into account:

    (a) The typical average technical lifetime of the type equipment may be determined and documented, taking into account common practices in the sector and country, ~~e.g.~~ for example based on industry surveys, statistics, technical literature, etc.;

    (b) The common practices of the responsible company regarding replacement/retrofitting schedules may be evaluated and documented, for example ~~e.g.~~ based on historical replacement/retrofitting records for similar equipment.

50. The point in time when the existing equipment would need to be replaced/retrofitted in the absence of the project activity should be chosen in a conservative manner, ~~i.e.~~ that is if a range is identified, the earliest date should be chosen.

## 5.6. Leakage

51. No leakage emissions are considered. The main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, transport). These emissions sources are neglected.

## 5.7. Emission reductions

52. Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y$$    Equation (11)

Where:

| | | |
|---|---|---|
| $ER_y$ | = | Emission reductions in year $y$ (t $CO_2$e/yr) |
| $BE_y$ | = | Baseline emissions in year $y$ (t $CO_2$/yr) |
| $PE_y$ | = | Project emissions in year $y$ (t $CO_2$e/yr) |

### 5.7.1. Estimation of emissions reductions prior to validation

53.     Project participants should prepare as part of the CDM-PDD an estimate of likely emission reductions for the proposed crediting period. This estimate should, in principle, employ the same methodology as selected above. Where the grid emission factor ($EF_{CM,grid,y}$) is determined ex post during monitoring, project participants may use models or other tools to estimate the emission reductions prior to validation.

### 5.8. Changes required for methodology implementation in 2$^{nd}$ and 3$^{rd}$ crediting periods

54.     At the start of the second and third crediting period project proponents have to address two issues:

(a)     Assess the continued validity of the baseline; and

(b)     Update the baseline.

55.     In assessing the continued validity of the baseline, a change in the relevant national and/or sectoral regulations between two crediting periods has to be examined at the start of the new crediting period. If at the start of the project activity, the project activity was not mandated by regulations, but at the start of the second or third crediting period regulations are in place that enforce the practice or norms or technologies that are used by the project activity, the new regulation (formulated after the registration of the project activity) has to be examined to determine if it applies to existing plants or not. If the new regulation applies to existing CDM project activities, the baseline has to be reviewed and, if the regulation is binding, the baseline for the project activity should take this into account. This assessment will be undertaken by the verifying DOE.

56.     For updating the baseline at the start of the second and third crediting period, new data available will be used to revise the baseline scenario and emissions. Project participants shall assess and incorporate the impact of new regulations on baseline emissions.

### 5.9. Project activity under a programme of activities

57.     In addition to the requirements set out in the latest approved version of the "Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities", the following shall be applied for the use of this methodology in a project activity under a programme of activities (PoAs).

58.     The PoA may consist of one or several types of CPAs. CPAs are regarded to be of the same type if they are similar with regard to the demonstration of additionality, emission reduction calculations and monitoring. The CME shall describe in the CDM-PoA-DD for each type of CPAs separately:

(a)     Eligibility criteria for CPA inclusion used for each type of CPAs. In case of combinations of renewable technologies in one CPA, the eligibility criteria shall be defined for each technology separately;

(b)     Emission reduction calculations for each type of CPAs;

(c)     Monitoring provisions for each type of CPAs.

59.     The CME shall describe transparently and justify in the CDM-PoA-DD which CPAs are regarded to be of the same type. CPAs shall not be regarded to be of the same type if one of the following conditions is different:

  (a)     The project activity with regard to any of the following aspects:

    (i)     Renewable power generation technology;

        a.     Hydro-power plant/unit;

            i.     Run-of-river reservoir;

            ii.     Accumulation reservoir;

        b.     Wind power plant/unit;

        c.     Geothermal power plant/unit;

        d.     Solar power plant/unit;

            i.     Photovoltaic;

            ii.     Heat concentration;

        e.     Wave power plant/unit;

        f.     Tidal power plant/unit;

        g.     Combination of any of the above;

    (ii)     Project activity type:

        a.     Greenfield;

        b.     Capacity addition;

        c.     Retrofit of existing plants;

        d.     Replacement of existing plants;

  (b)     The legal and regulatory framework;

    (i)     Legal regulations;

    (ii)     Promotional policies.

60.     When defining eligibility criteria for CPA inclusion for a distinct type of CPAs, the CME shall consider relevant technical and economic parameters, such as:

  (a)     Technical and economic parameters that are technology specific (e.g. ranges of load factors, sizes of installation, wind speed);

  (b)     Parameters reflecting the investment climate:

(i)     Subsidies or other financial flows;

(ii)    Tariffs;

(iii)   Depreciation;

(iv)    Power purchase agreements;

(v)     Other parameters determining market circumstances;

(c)     Ranges of costs (capital investment, operating and maintenance costs, etc.) and revenues (income from electricity sale, subsidies/fiscal incentives, ODA).

61.    The eligibility criteria related to costs, revenues and investment climate shall be updated every two years in order to correctly reflect the technical and market circumstances of a CPA implementation.

62.    In case the PoA contains several types of CPAs, the actual CPA-DD submitted for the purpose of registration of the PoA shall contain all information required as per the latest approved version of the "Guidelines for completing the component project activity design document form" for each type of actual CPA, to be validated by a DOE and submitted for the registration to the Board.

## 5.10.  Data and parameters not monitored

63.    In addition to the parameters listed in the tables below, the provisions on data and parameters not monitored in the tools referred to in this methodology apply.

**Data / Parameter table 1.**

| Data / Parameter: | $GWP_{CH4}$ |
|---|---|
| Data unit: | t $CO_2$e/t$CH_4$ |
| Description: | Global warming potential of methane valid for the relevant commitment period |
| Source of data: | IPCC |
| Value to be applied: | For the first commitment period: 21 t $CO_2$e/t$CH_4$ |
| Any comment: | - |

**Data / Parameter table 2.**

| Data / Parameter: | $EG_{historical}$ |
|---|---|
| Data unit: | MWh/yr |
| Description: | Annual average historical net electricity generation delivered to the grid by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity |
| Source of data: | Project activity site |
| Value to be applied: | Electricity meters |
| Any comment: | - |

**Data / Parameter table 3.**

| Data / Parameter: | $\sigma_{historical}$ |
|---|---|
| Data unit: | MWh/yr |
| Description: | Standard deviation of the annual average historical net electricity generation delivered to the grid by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity |
| Source of data: | Calculated from data used to establish $EG_{historical}$ |
| Value to be applied: | Parameter to be calculated as the standard deviation of the annual generation data used to calculate $EG_{historical}$ for retrofit or replacement project activities |
| Any comment: | - |

**Data / Parameter table 4.**

| Data / Parameter: | $DATE_{BaselineRetrofit}$ |
|---|---|
| Data unit: | date |
| Description: | Point in time when the existing equipment would need to be replaced in the absence of the project activity |
| Source of data: | Project activity site |
| Value to be applied: | As per provisions in the methodology above |
| Any comment: | - |

**Data / Parameter table 5.**

| Data / Parameter: | $DATE_{hist}$ |
|---|---|
| Data unit: | date |
| Description: | Point in time from which the time span of historical data for retrofit or replacement project activities may start |
| Source of data: | Project activity site |
| Value to be applied: | $DATE_{hist}$ is the latest point in time between: <br><br>(a) The commercial commissioning of the plant/unit; <br>(b) If applicable: the last capacity addition to the plant/unit; or <br>(c) If applicable: the last retrofit of the plant |
| Any comment: | - |

**Data / Parameter table 6.**

| Data / Parameter: | $EF_{Res}$ |
|---|---|
| Data unit: | $kgCO_2e/MWh$ |
| Description: | Default emission factor for emissions from reservoirs |
| Source of data: | Decision by EB 23 |
| Value to be applied: | 90 $kgCO_2e/MWh$ |
| Any comment: | - |

**Data / Parameter table 7.**

| Data / Parameter: | $Cap_{BL}$ |
|---|---|
| Data unit: | W |
| Description: | Installed capacity of the hydro power plant before the implementation of the project activity. For new hydro power plants, this value is zero |
| Source of data: | Project site |
| Value to be applied: | Determine the installed capacity based on recognized standards |
| Any comment: | - |

**Data / Parameter table 8.**

| Data / Parameter: | $A_{BL}$ |
|---|---|
| Data unit: | $m^2$ |
| Description: | Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full ($m^2$). For new reservoirs, this value is zero |
| Source of data: | Project site |
| Value to be applied: | Measured from topographical surveys, maps, satellite pictures, etc. |
| Any comment: | - |

# 6. Monitoring methodology

64. All data collected as part of monitoring should be archived electronically and be kept at least for two years after the end of the last crediting period. One hundred per cent of the data should be monitored if not indicated otherwise in the tables below. All measurements should be conducted with calibrated measurement equipment according to relevant industry standards.

65. In addition, the monitoring provisions in the tools referred to in this methodology apply.

## 6.1. Data and parameters monitored

**Data / Parameter table 9.**

| Data / Parameter: | $w_{steam,CO2,y}$ |
|---|---|
| Data unit: | t $CO_2$/t steam |
| Description: | Average mass fraction of carbon dioxide in the produced steam in year $y$ |
| Source of data: | Project activity site |

| Measurement procedures (if any): | Non-condensable gases sampling should be carried out in production wells and at the steam field-power plant interface using ASTM Standard Practice E1675 for Sampling 2-Phase Geothermal Fluid for Purposes of Chemical Analysis (as applicable to sampling single phase steam only). The $CO_2$ and $CH_4$ sampling and analysis procedure consists of collecting non-condensable gases samples from the main steam line with glass flasks, filled with sodium hydroxide solution and additional chemicals to prevent oxidation. Hydrogen sulphide ($H_2S$) and carbon dioxide ($CO_2$) dissolve in the solvent while the residual compounds remain in their gaseous phase. The gas portion is then analyzed using gas chromatography to determine the content of the residuals including $CH_4$. All alkanes concentrations are reported in terms of methane |
|---|---|
| Monitoring frequency: | At least every three months and more frequently, if necessary |
| QA/QC procedures: | - |
| Any comment: | Applicable to geothermal power projects |

**Data / Parameter table 10.**

| Data / Parameter: | $w_{steam,CH4,y}$ |
|---|---|
| Data unit: | t $CH_4$/t steam |
| Description: | Average mass fraction of methane in the produced steam in year $y$ |
| Source of data: | Project activity site |
| Measurement procedures (if any): | As per the procedures outlined for $w_{steam,CO2,y}$ |
| Monitoring frequency: | As per the procedures outlined for $w_{steam,CO2,y}$ |
| QA/QC procedures: | - |
| Any comment: | Applicable to geothermal power projects |

**Data / Parameter table 11.**

| Data / Parameter: | $M_{steam,y}$ |
|---|---|
| Data unit: | t steam/yr |
| Description: | Quantity of steam produced in year $y$ |
| Source of data: | Project activity site |
| Measurement procedures (if any): | The steam quantity discharged from the geothermal wells should be measured with a venture flow meter (or other equipment with at least the same accuracy). Measurement of temperature and pressure upstream of the venture meter is required to define the steam properties. The calculation of steam quantities should be conducted on a continuous basis and should be based on international standards. The measurement results should be summarized transparently in regular production reports |
| Monitoring frequency: | Daily |
| QA/QC procedures: | - |
| Any comment: | Applicable to geothermal power projects |

**Data / Parameter table 12.**

| Data / Parameter: | $EG_{facility,y}$ |
|---|---|
| Data unit: | MWh/yr |
| Description: | Quantity of net electricity generation supplied by the project plant/unit to the grid in year *y* |
| Source of data: | Electricity meter(s) |
| Measurement procedures (if any): | The following parameters shall be measured: <br> (a) The quantity of electricity supplied by the project plant/unit to the grid; and <br> (b) The quantity of electricity delivered to the project plant/unit from the grid |
| Monitoring frequency: | Continuous measurement and at least monthly recording |
| QA/QC procedures: | Cross check measurement results with records for sold electricity |
| Any comment: | - |

**Data / Parameter table 13.**

| Data / Parameter: | $EG_{PJ\_Add,y}$ |
|---|---|
| Data unit: | MWh/yr |
| Description: | Quantity of net electricity generation supplied to the grid in year *y* by the project plant/unit that has been added under the project activity |
| Source of data: | Project activity site |
| Measurement procedures (if any): | - |
| Monitoring frequency: | Continuous measurement and at least monthly recording |
| QA/QC procedures: | - |
| Any comment: | Applicable to wind, solar, wave or tidal power plant(s) or unit(s), provided that Option 2 in the baseline methodology is applied |

**Data / Parameter table 14.**

| Data / Parameter: | $TEG_y$ |
|---|---|
| Data unit: | MWh/yr |
| Description: | Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year *y* |
| Source of data: | Project activity site |
| Measurement procedures (if any): | Electricity meters |
| Monitoring frequency: | Continuous measurement and at least monthly recording |
| QA/QC procedures: | - |
| Any comment: | Applicable to hydro power project activities with a power density of the project activity (PD) greater than 4 W/m$^2$ and less than or equal to 10 W/m$^2$ |

**Data / Parameter table 15.**

| Data / Parameter: | $EF_{grid,CM,y}$ |
|---|---|
| Data unit: | t $CO_2$/MWh |
| Description: | Combined margin $CO_2$ emission factor for grid connected power generation in year $y$ calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" |
| Source of data: | As per the "Tool to calculate the emission factor for an electricity system" |
| Measurement procedures (if any): | As per the "Tool to calculate the emission factor for an electricity system" |
| Monitoring frequency: | As per the "Tool to calculate the emission factor for an electricity system" |
| QA/QC procedures: | As per the "Tool to calculate the emission factor for an electricity system" |
| Any comment: | - |

**Data / Parameter table 16.**

| Data / Parameter: | $PE_{FF,y}$ |
|---|---|
| Data unit: | t $CO_2$/yr |
| Description: | Project emissions from fossil fuel consumption in year $y$ |
| Source of data: | As per the "Tool to calculate project or leakage $CO_2$ emissions from fossil fuel combustion" |
| Measurement procedures (if any): | As per the "Tool to calculate project or leakage $CO_2$ emissions from fossil fuel combustion" |
| Monitoring frequency: | As per the "Tool to calculate project or leakage $CO_2$ emissions from fossil fuel combustion" |
| QA/QC procedures: | As per the "Tool to calculate project or leakage $CO_2$ emissions from fossil fuel combustion" |
| Any comment: | Applicable to geothermal and solar thermal projects, which also use fossil fuels for electricity generation |

**Data / Parameter table 17.**

| Data / Parameter: | $Cap_{PJ}$ |
|---|---|
| Data unit: | W |
| Description: | Installed capacity of the hydro power plant after the implementation of the project activity |
| Source of data: | Project site |
| Measurement procedures (if any): | Determine the installed capacity based on recognized standards |
| Monitoring frequency: | Yearly |
| QA/QC procedures: | - |
| Any comment: | - |

**Data / Parameter table 18.**

| Data / Parameter: | $A_{PJ}$ |
|---|---|
| Data unit: | $m^2$ |
| Description: | Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full |
| Source of data: | Project site |
| Measurement procedures (if any): | Measured from topographical surveys, maps, satellite pictures, etc. |
| Monitoring frequency: | Yearly |
| QA/QC procedures: | - |
| Any comment: | - |

- - - - -

## Document information

| Version | Date | Description |
|---|---|---|
| Draft 14.0 | 9 May 2013 | MP 59, Annex 8<br><br>A call for public input will be issued on this draft revised methodology.<br><br>The revision removes requirements for specific case CPA-DDs and frequency of updating of eligibility criteria as these requirements are specified in the relevant standards. |
| 13.0.0 | 11 May 2012 | EB 67, Annex 13<br><br>Revision to:<br><br>• Provide more clarity on how the quantity of net electricity generation supplied by the project plant/unit to the grid shall be monitored;<br><br>• Introduce provisions for the use of this methodology in a project activity under a PoA. |
| 12.2.0 | 25 November 2011 | EB 65, Annex 16<br><br>The amendment incorporates applicability conditions on how the methodology shall be applied in cases where the project activity includes hydropower plant(s) with multiple reservoirs. |
| 12.1.0 | 26 November 2010 | EB 58, Annex 7<br><br>The revision includes a definition for reservoir. |
| 12.0.0 | 17 September 2010 | EB 56, Annex 5<br><br>The revision includes a definition for existing reservoir. |
| 11 | 12 February 2010 | EB 52, Annex 7<br><br>The revision clarifies the applicability condition requesting availability of five years of historical data for capacity addition, retrofit and rehabilitation projects is not required for wind, solar, wave or tidal power capacity addition projects which directly meter |

| Version | Date | Description |
|---|---|---|
| | | the electricity generated by the added capacities. |
| 10 | 28 May 2009 | EB 47, Annex 7 |
| | | The revision expands the applicability of the methodology to project activities that retrofit or replace renewable energy power generation units, to restore the installed power generation capacity to or above its original level. This revision includes the required provisions in the (i) definitions, (ii) baseline identification, and (iii) baseline emissions sections, in order to allow these types of project activities, as well as (iv) editorial changes in order to improve the overall clarity of the approved methodology. |
| 09 | 13 February 2009 | EB 45, Annex 10 |
| | | Inclusion of project emissions for operation of solar power plant and backup power generation of all the renewable energy plants. |
| 08 | 28 November 2008 | EB 44, Annex 12 |
| | | Incorporate changes in equation 9 of baseline emissions to account for the cases where the expansion of existing capacity of plant takes place as an additional energy generation unit is installed under CDM project activity. |
| 07 | 30 November 2007 | EB 36, Annex 11 |

For version 07:

- General editorial revision of the methodology to put it in the new format;
- Inclusion of the "Tool to calculate the emission factor for an electricity system";
- Inclusion of the "Tool to calculate project or leakage $CO_2$ emissions from fossil fuel combustion";
- Inclusion of the definitions for power plant/unit, installed power generation capacity, electricity capacity addition, modification and retrofit, net electricity generation and grid/project electricity system;

Editorial revisions of the applicability conditions to clarify:

(a) That the methodology is applicable only to electricity capacity additions;

(b) The requirements for hydro power plants in terms of reservoir and power density;

(c) The minimum vintage of baseline data that has to be available;

(d) That the methodology is not applicable to biomass power plants and to hydro power plants with power density less than $4W/m^2$;

- Inclusion of an equation to calculate the power density of hydro power plants;
- Deletion of the parameters related to emissions associated with well testing in case of geothermal power plants, as those parameters were not necessary in the methodology.

| Version | Date | Description |
|---|---|---|
| 06 | 12 May 2006 | EB 24, Annex 7 |
| | | • Revision of the applicability conditions to include hydro power plants with new reservoirs that have power density greater than 4 W/m$^2$ and inclusion of the equation to calculate the emissions from the reservoir in the emissions reductions section; |
| | | • Revision of the baseline section to allow ex-ante calculation of the simple OM, simple-adjusted OM and average OM emission factors; |
| | | • Inclusion of the clarification that the choice between ex-ante and ex-post vintage for calculation of the build margin and the operating margin should be specified in the PDD and cannot be changed during the crediting period; |
| | | • Inclusion of guidance and clarifications on the selection of alternative weights for the calculation of the combined margin. |
| 05 | 24 February 2006 | EB 23, Annex 9 |
| | | Inclusion of guidances in the baseline section stating that power plant capacity additions registered as CDM project activities should be excluded from the calculation of emission factors and that if 20 per cent falls on partial capacity of a plant in the determination of the group of power plants used for the calculation of the build margin, that plant should be fully included in the calculation. |
| 04 | 25 November 2005 | EB 22, Annex 6 |
| | | Inclusion of a procedure in the project boundary section on how to deal with cases where the application of the methodology does not result in a clear grid boundary. |
| 03 | 30 September 2005 | EB 21, Annex 8 |
| | | Revision of the baseline section in order to include project activities that modify or retrofit an existing electricity generation facility and the corresponding procedure to determine the baseline scenario in this case ($EG_{baseline}$). |
| 02 | 03 December 2004 | EB 17, Meeting Report |
| | | Inclusion of the following paragraph in the Baseline section as per request by the Board: |
| | | "Which of the plausible alternatives scenarios, as listed in step 1 of the additionality text, is the most likely baseline scenario? Please provide thorough explanation to justify your choice, based on the factors (investment or other barriers) described in the additionality methodology. This methodology is applicable only if the most likely baseline scenario is electricity production from other sources feeding into the grid". |
| 01 | 03 September 2004 | EB 15, Annex 2 |
| | | Initial adoption. |

Decision Class: Regulatory
Document Type: Standard

| Version | Date | Description |
|---------|------|-------------|

Business Function: Methodology
Keywords: electricity generation