Annex 9

DRAFT OPTIONAL BASELINE SCENARIO SELECTION TOOL

1. This document provides for a step-wise approach to select the baseline scenario. These steps include:

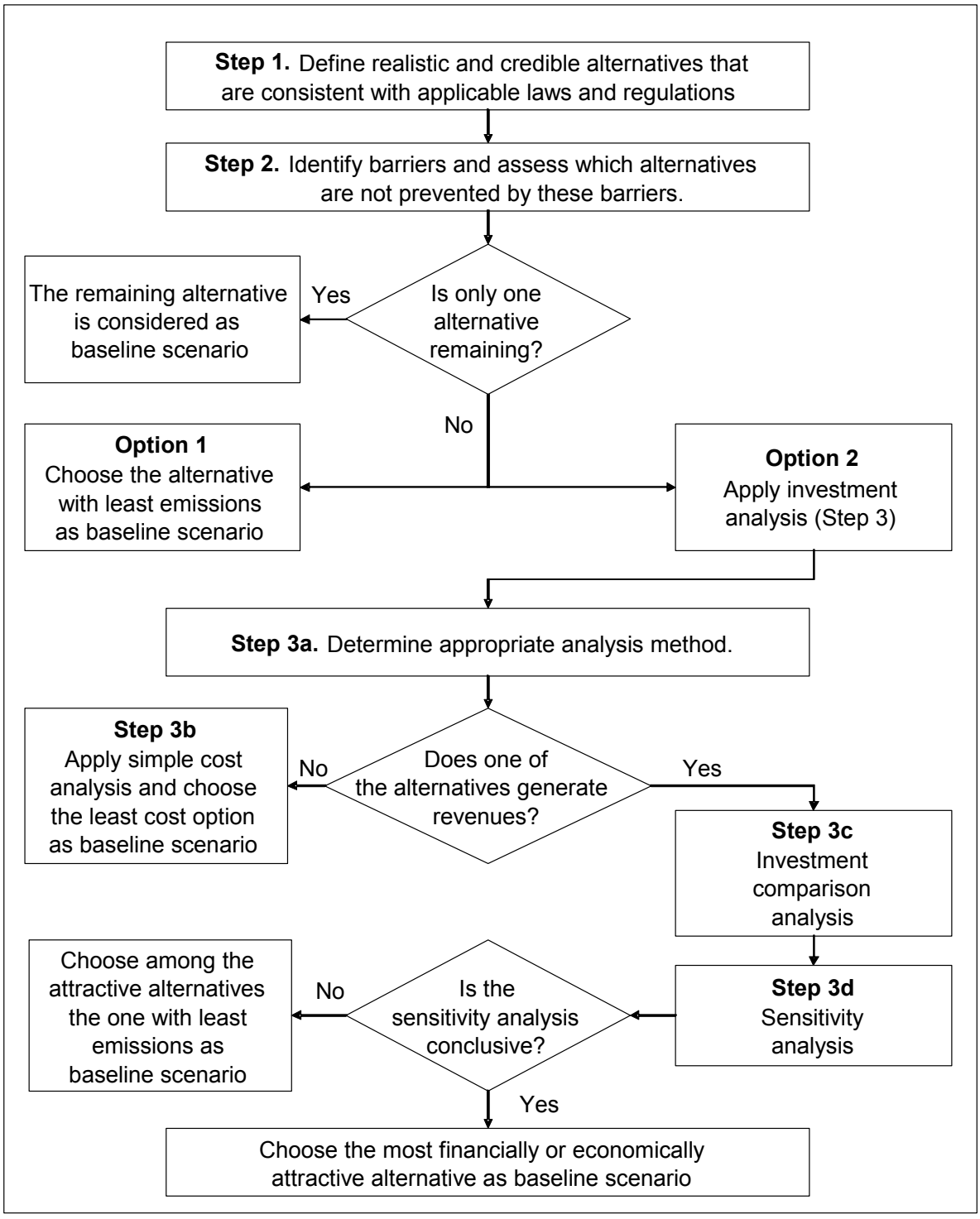
- Identification of alternative scenarios to the proposed CDM project activity, consistent with current laws and regulations, taking into account relevant Executive Board decisions on national policies and regulations;
- Barriers analysis, to eliminate baseline scenario alternatives that face prohibitive barriers;
- Investment analysis to determine which of the remaining alternative scenarios is the most economically or financially attractive (this step is not mandatory).

2. The steps are summarized in the flow-chart below.

3. The document provides a general framework for selecting the baseline scenario and is to be applicable to a wide range of project types. Particular project types may require adjustments or additional explanations to this framework.

4. The use of this tool to select the baseline scenario does not replace the need for the baseline methodology to provide for a stepwise approach to demonstrate the additionality of the proposed CDM project. Project participants proposing new baseline methodologies shall ensure consistency between the demonstration of additionality of the proposed CDM project activity and the determination of the baseline scenario.

5. Project participants proposing new baseline methodologies may use this tool to select the baseline scenario in their proposal. Project participants may also propose other procedures or tools for the selection of the baseline scenario to the Executive Board for its consideration.


Step 1. Define realistic and credible alternatives that are consistent with applicable laws and regulations
Step 2. Identify barriers and assess which alternatives are not prevented by these barriers.
Is only one alternative remaining?
Yes
The remaining alternative is considered as baseline scenario
No
Option 1
Choose the alternative with least emissions as baseline scenario
Option 2
Apply investment analysis (Step 3)
Step 3a. Determine appropriate analysis method.
Does one of the alternatives generate revenues?
No
Step 3b
Apply simple cost analysis and choose the least cost option as baseline scenario
Yes
Step 3c
Investment comparison analysis
Step 3d
Sensitivity analysis
Is the sensitivity analysis conclusive?
No
Choose among the attractive alternatives the one with least emissions as baseline scenario
Yes
Choose the most financially or economically attractive alternative as baseline scenario

STEP 1. IDENTIFICATION OF ALTERNATIVE SCENARIOS TO THE PROPOSED CDM PROJECT ACTIVITY CONSISTENT WITH CURRENT LAWS AND REGULATIONS

Define realistic and credible alternative scenarios to the project activity(s) that can be (part of) the baseline scenario through the following sub-steps:

Sub-step 1a. Define alternative scenarios to the proposed CDM project activity:

1. Identify realistic and credible alternative scenarios that are available either to the project participants or to other potential project developers[1] that provide outputs or services comparable with the proposed CDM project activity[2]. These alternative scenarios are to include:

- The proposed project activity not being registered as a CDM project activity;
- All other plausible and credible alternatives to the project activity scenario, including the common practices in the relevant sector, that deliver outputs and services (e.g. electricity, heat or cement) with comparable quality, properties and application areas;
- If applicable, continuation of the current situation (no project activity or other alternatives undertaken).

For the purpose of identifying alternative scenarios that are common practice, provide an analysis of other activities implemented previously or currently underway that are similar to the proposed project activity. Projects are considered similar if they are in the same country/region and/or rely on a broadly similar technology, are of a similar scale, and take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing, etc. Other CDM project activities are not to be included in this analysis. Provide documented evidence. On the basis of that analysis, identify and include all alternative scenarios that are common practice.

When the proposed activity or alternative scenarios to it include several different sub-activities, alternative scenarios for each of them should be identified and realistic combinations should be considered as possible alternative scenarios to the proposed project activity.

Outcome of Step 1.a: List of realistic and credible baseline scenario alternative

Sub-step 1b. Enforcement of applicable laws and regulations:

The baseline scenario alternatives shall be in compliance with all applicable legal and regulatory requirements - taking into account EB decisions with respect to national and/or sectoral policies and regulations in determining a baseline scenario[3] - even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution.[4] If this cannot be shown for an alternative, then eliminate the alternative from further consideration.

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[1] For example, a coal-fired power station or hydropower may not be an alternative for an independent power producer investing in wind energy or for a sugar factory owner investing in a co-generation, but may be an alternative for a public utility. As a result, the proposed project may be able to avoid emissions that would have occurred from the coal-fired power station that would have been built (or built earlier) by the utility in the absence of the CDM. Therefore, there may be cases where the baseline scenario includes an alternative that is not accessible to the project participant. However, there are also cases where all the alternatives are accessible to the project participant: for instance, this may be the case for projects flaring landfill gas, improving boilers, etc.

[2] For example, the outputs of a cogeneration project could include heat for on-site use, electricity for on-site use, and excess electricity for export to the grid. In the case of a proposed landfill gas capture project, the service provided by the projects includes operation of a capped landfill.

[3] Annex 3 of the 16th EB meeting report: "Clarifications on the treatment of national and/or sectoral policies and regulations (paragraph 45(e)) of the CDM Modalities and Procedures) in determining a baseline scenario

[4] For example, an alternative consisting of an open, uncapped landfill would be non-complying in a country where this scenario would imply violations of safety or environmental regulations pertaining to landfills.

Outcome of Step 1b: List of realistic and credible baseline scenario alternatives that are in compliance with laws and regulations taking into account EB decisions on national and/or sectoral policies and regulations.

→ ***Proceed to Step 2 (Barrier analysis).***

STEP 2. BARRIER ANALYSIS TO ELIMINATE BASELINE SCENARIO ALTERNATIVES THAT FACE PROHIBITIVE BARRIERS

Sub-step 2a. Identify barriers that would prevent the implementation of alternatives:

2. Establish a complete list of barriers that would prevent alternative scenarios to occur in the absence of the CDM. Such barriers may include:

Investment barriers, *inter alia*:
- Debt funding is not available for this type of innovative activities.
- Neither access to international capital markets due to real or perceived risks associated with domestic or foreign direct investment in the country where the project activity is to be implemented, nor sufficient ODA can be allocated to finance the considered project alternatives.

Technological barriers, *inter alia:*
- Skilled and/or properly trained labour to operate and maintain the technology is not available and no education/training institution in the host country provides the needed skill, leading to equipment disrepair and malfunctioning;
- Lack of infrastructure for implementation of the technology.

Barriers due to prevailing practice, *inter alia*:
- The alternative is the "first of its kind": No alternative of this type is currently operational in the host country or region.

Since the proposed project activity not being registered as a CDM project activity shall be one of the considered alternatives, any barrier that may prevent the project activity to occur shall be included in that list.

Provide transparent and documented evidence, and offer conservative interpretations of this documented evidence, as to how it demonstrates the existence and significance of the identified barriers. Anecdotal evidence can be included, but alone is not sufficient proof of barriers. The type of evidence to be provided may include:

(a) Relevant legislation, regulatory information or industry norms;

(b) Relevant (sectoral) studies or surveys (e.g. market surveys, technology studies, etc) undertaken by universities, research institutions, industry associations, companies, bilateral/multilateral institutions, etc;

(c) Relevant statistical data from national or international statistics;

(d) Documentation of relevant market data (e.g. market prices, tariffs, rules);

(e) Written documentation from the company or institution developing or implementing the CDM project activity or the CDM project developer, such as minutes from Board meetings, correspondence, feasibility studies, financial or budgetary information, etc;

(f) Documents prepared by the project developer, contractors or project partners in the context of the proposed project activity or similar previous project implementations;

(g) Written documentation of independent expert judgements from industry, educational institutions (e.g. universities, technical schools, training centres), industry associations and others.

Outcome of Step 2a: List of barriers that may prevent one or more alternative scenarios to occur.

Sub-step 2b. Show which alternatives are prevented by the identified barriers:

Assess for all barriers identified in Step 2a, which scenario alternatives would be prohibited from being implemented by the barrier and eliminate those alternatives from further consideration.

Outcome of Step 2.b: Short list of baseline scenario alternatives that are not prevented by any barrier.

If there is only one scenario alternative that is not prevented by any barrier, and if this alternative is not the proposed project activity not being registered as a CDM project activity, then this scenario alternative is the most plausible baseline scenario. If this alternative is the proposed project activity not being registered as a CDM project activity, then the project activity is the most plausible baseline scenario.

If there are still several baseline scenario alternatives remaining, either go to step 3 (investment analysis) or choose the alternative with the lowest emissions (i.e. the most conservative) as the most plausible baseline scenario.

STEP 3. INVESTMENT ANALYSIS TO DETERMINE WHICH OF THE REMAINING BASELINE SCENARIO ALTERNATIVES IS THE MOST ECONOMICALLY OR FINANCIALLY ATTRACTIVE

This step is used to determine which of the scenario alternatives in the short list remaining after step 2 is the most economically or financially attractive.

To conduct the investment analysis, use the following sub-steps:

Sub-step 3a. Determine appropriate analysis method

Determine whether to apply simple cost analysis or investment comparison analysis. If all remaining alternatives after step 2 do not generate any financial or economic benefits other than CDM related income, then apply the simple cost analysis (Option I). Otherwise, use the investment comparison analysis (Option II).

Sub-step 3b. – Option I. Apply simple cost analysis

Document the costs associated with all remaining alternatives after step 2 and demonstrate that the corresponding activities do not produce any financial or economic benefits.

→ If one or more alternatives generate financial or economic benefits, then the simple cost analysis cannot be used to select the baseline scenario.

→ If all alternatives do not generate any financial or economic benefits, then select the least costly alternative among these alternatives as the most plausible baseline scenario.

Outcome of sub-step 3b: The least cost baseline scenario alternative among the short list of alternatives remaining after Step 2.

Sub-step3.c. – Option II. ***Apply investment comparison analysis***

Identify the financial indicator, such as IRR[5], NPV, cost benefit ratio, or unit cost of service (e.g., levelized cost of electricity production in $/kWh or levelized cost of delivered heat in $/GJ) most suitable for the project type and decision-making context.
Calculate the suitable financial indicator for all alternatives remaining after step 2. Include all relevant costs (including, for example, the investment cost, the operations and maintenance costs), and revenues (including subsidies/fiscal incentives[6], ODA, etc. where applicable), and, as appropriate, non-market cost and benefits in the case of public investors.

Present the investment analysis in a transparent manner and provide all the relevant assumptions in the CDM-PDD, so that a reader can reproduce the analysis and obtain the same results. Clearly present critical techno-economic parameters and assumptions (such as capital costs, fuel prices, lifetimes, and discount rate or cost of capital). Justify and/or cite assumptions in a manner that can be validated by the DOE. In calculating the financial indicator, the risks of the alternatives can be included through the cash flow pattern, subject to project-specific expectations and assumptions (e.g. insurance premiums can be used in the calculation to reflect specific risk equivalents).

Assumptions and input data for the investment analysis shall not differ across the project activity and its alternatives, unless differences can be well substantiated.

Present in the CDM-PDD submitted for validation a clear comparison of the financial indicator for all scenario alternatives.

The baseline scenario alternative that has the best indicator (e.g. highest IRR) can be pre-selected as the most plausible baseline scenario; then the sensitivity analysis (step 3d) shall be performed for all alternatives.

Outcome of sub-step 3c: Ranking of the short list of baseline scenario alternatives according to the most suitable financial indicator.

Sub-step 3d. Sensitivity analysis (only applicable to option II):

Include a sensitivity analysis that shows whether the conclusion regarding the financial attractiveness is robust to reasonable variations in the critical assumptions. The investment analysis provides a valid argument in selecting the baseline scenario only if it consistently supports (for a realistic range of assumptions) the conclusion that the pre-selected baseline scenario is likely to remain the most economically and/or financially attractive.

Then:

→ If sensitivity analysis confirms the result of Sub-step 3c, then select the most attractive alternative as the most plausible baseline scenario.

→ In case the sensitivity analysis is not fully conclusive, <u>select the baseline scenario alternative with least emissions</u> among the alternatives that are the most financially and/or economically attractive according to both steps 3c and 3d.

Outcome of sub-step 3d: Either (i) the financially or economically most attractive scenario alternative or (ii) the most conservative scenario alternative among the most financially or economic attractive alternatives is selected as the most plausible baseline scenario.

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[5] For the investment comparison analysis, IRRs can be calculated either as project IRRs or as equity IRRs. Project IRRs calculate a return based on project cash outflows and cash inflows only, irrespective the source of financing. Equity IRRs calculate a return to equity investors and therefore also consider amount and costs of available debt financing. The decision to proceed with an investment is based on returns to the investors, so equity IRR will be more appropriate in many cases. However, there will also be cases where a project IRR may be appropriate.

[6] This provision may be further elaborated depending on deliberations by the Board on national and sectoral policies.