

**CDM-EB85-AA-A07**

## Concept note

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Development of standards with  
methodological framework for two specific  
project types for development of  
standardized baselines

Version 01.0



**United Nations**  
Framework Convention on  
Climate Change

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## 1. Procedural background

1. At the sixth session of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP), Parties requested the Executive Board of the clean development mechanism (CDM) (hereinafter referred to as the Board) to develop standardized baselines (SBs), as appropriate, in consultation with relevant designated national authorities (DNAs).
2. In this context, the Board, at its sixty-second meeting (EB 62), adopted the “Guidelines for the establishment of sector specific standardized baselines” (hereinafter referred as the SB guidelines) (EB 62 report, annex 8) with the aim of reducing transaction costs, enhancing transparency and regional distribution of CDM project activities as well as facilitating objectivity and predictability of CDM regulations.
3. The development of the SB framework is an ongoing activity and the Board has approved plans to develop complementary regulations besides improving the existing ones based on the lessons learned. Thus the Board at EB 65 updated the SB guidelines and at EB 72 agreed to work further to improve the SB guidelines based on the road-testing and lessons learned from their implementation. Along the same lines, the Board at EB 82 agreed on the “further development of the standardized baselines framework” including the products listed below:
  - (a) Product 5: Concept note for the development of two standards with a methodological framework for two specific project types/sectors:
    - (i) Facilitate the selection of two project types/sectors for which a methodological framework is required to be developed;
    - (ii) Develop a concept note jointly with the Methodologies Panel (MP) at its 67<sup>th</sup> meeting and small-scale working group (SSC WG) at its 48<sup>th</sup> meeting and present it to the Board at EB 85;
  - (b) Product 6: Two standards with a methodological framework for two specific project types/sectors:
    - (i) Develop the methodological framework applicable for the two selected project types/sectors jointly with MP 68 and SSC WG 49;
    - (ii) Launch a call for public input, consult with relevant experts, incorporate the feedback in the document and submit it to MP/SSC WG in 2016;
    - (iii) Prepare a joint recommendation with the MP and SSC WG for adoption by the Board in 2016.
4. This work relates to the activity ‘Simplification of the process for developing standardized baselines, including developing country-specific thresholds and development of methodological standards for standardized baselines relating to two specific project types’<sup>1</sup> under objective 1(c): Develop simplified and user-friendly standards and

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<sup>1</sup> The title of this activity changed to “Further development of the standardized baselines framework” as per CDM EB workplan 2015, adopted at EB82.

procedures that increase efficiency and ensure environmental integrity with a resource allocation as referred to in table 4 of the Management plan 2015 (EB81, annex 1).

## 2. Purpose

5. The purpose of the work covered by this concept note is to deliver the products referred to in paragraph 4 (a) above, that is, to identify two project types/sectors and potential approaches that will be used for developing standards that may be used for the the development of SBs.

## 3. Key issues and proposed solutions

6. A 2013 study<sup>2</sup> that also interviewed DNAs and experts involved in SB development identified significant scope for SB development for grid emission factors (GEFs) for the power sector, cement, iron and steel, and waste sectors besides in small and traditional, often underdeveloped industrial sectors. Equally respondents mentioned sectors that have a large number of small-sized projects such as energy efficiency measures in households and small and medium enterprises as particularly promising (e.g. distribution of efficient cookstoves, efficient lighting and efficient electric appliances). However, respondents perceived that while for many sectors the performance-penetration-cost (PPC) approach in the SB guidelines might be suitable, the SB framework may not fully correspond to the structure and the circumstances of some of the sectors that have a large number of small-sized projects (e.g. residential energy efficiency). It is reported that it is very difficult to obtain the necessary data for costs, especially for sectors where operating costs, which are typically considered confidential, make up a substantial share of the levelized cost of the respective technology. Especially in least developed countries, small-scale industries often rely on second-hand or recycled and/or repurposed technologies. Furthermore for some sectors, such as charcoal production, the informal sectors make up a large proportion of the overall production in some countries which makes it very challenging to get accurate data on cost and production volumes.
7. Experience shows that a deviation from the SB guidelines is necessary in order to use the methodological approaches included in some approved methodologies to develop SBs in the above areas. This concept note aims to take stock of the knowledge gained in developing SBs for distributed equipment, findings reported in literature reviews, and to propose specific sectors and generic approaches to develop standards that may be used for the development of SBs.
8. It is suggested in the literature that the indicators for comparison of greenhouse gas (GHG) emissions performance against peers may be defined using one of the following types:
  - (a) **Emission or energy standard:** It is expressed as a threshold value of specific emissions, or specific energy consumption for baseline setting and/or additionality demonstration. Such a threshold value can be determined by the

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<sup>2</sup> DEHSt (2013).

performance of peers and/or GHG emissions or energy efficiency standards implemented in the host Party or region;<sup>3</sup>

- (b) **Technology standard:** Normative specifications on technology are used to determine baseline emissions or assess additionality.<sup>4</sup> For example, specifications based on the best technology in the host Party or region (e.g. use of long-life light-emitting diode (LED) lights) may be used for such purposes;
  - (c) **Market penetration rate:** A certain threshold on market penetration of a mitigation measure is used for additionality demonstration.<sup>5</sup> The rationale for this approach is that emerging technologies (i.e. those for which the penetration rate is lower than a threshold) are likely to require some type of support in order to compete with other technologies available in the market. For instance, CDM project activities for the distribution of compact fluorescent lamps (CFLs) may be deemed additional until a market penetration rate of the technology exceeds 5 per cent.
9. Further, a more process-oriented approach such as a detailed and transparent process of expert consultations to determine performance benchmarks for a sector or technology is also suggested while paying attention to conservativeness, full transparency and consensus of the participating stakeholders. Some emission reduction programmes have employed such an approach based on public/expert consultation. Furthermore, barrier analysis on a sectoral/technology level has also been proposed.
10. Keeping in mind the above issues, the MP and the SSC WG during the first two meetings of 2015 identified a long list of project types/sectors as potential candidates as follows:
- (a) Emission reduction with personal transport such as two-, three- or four-wheeled vehicles with low emission intensities (gCO<sub>2</sub>/km);
  - (b) Energy-efficient appliances for residential application such as air conditioners, refrigerators, washing machines;
  - (c) Efficiency in transmission and distribution of electricity such as efficient transformers;
  - (d) Building energy efficiency;
  - (e) Agricultural pumping;
  - (f) Water purification.
11. Based on further discussion on GHG reduction potential and consideration of availability of data, items referred to in paragraphs 10 (b) and 10 (d) above were proposed for shortlisting by the MP and the SSC WG for them to commence the work.

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<sup>3</sup> Hayashi, D., Mueller, N., Feige, S., & Michaelowa, A. (2010); IETA, 2009; Lazarus, M., Kartha, S., Ruth, M., Bernow, S., 1999; Lazarus, M., Kartha, S., Bernow, S., 2000.

<sup>4</sup> Hayashi, D., Mueller, N., Feige, S., & Michaelowa, A. (2010); IETA, 2009; Lazarus, M., Kartha, S., Ruth, M., Bernow, S., 1999; Lazarus, M., Kartha, S., Bernow, S., 2000.

<sup>5</sup> Hayashi et al., 2010; Kartha, S., Lazarus, M., LeFranc, M., 2005.

### **3.1. Potential approaches for energy-efficient appliances for residential application**

12. With regard to approaches to standardization, the MP and SSC WG noted that it may still be necessary to employ approaches indicated in paragraph 8 above, albeit not in strict combinations as mandatory requirements, that is, to use only the criteria based on performance (as per para. 8 (a) or 8 (b) above) in some cases. The MP noted that some CDM methodologies have included guidance on how such standardization could be done. For example methodology “AM0070: Manufacturing of energy efficient domestic refrigerators” (AM0070) uses an approach based on market benchmark and/or manufacturer benchmark. The specific electricity consumption of the top 20 per cent best performing domestic appliances in the market of the host country is defined as the market benchmark and average historical specific electricity consumption of the domestic appliances produced by the manufacturer involved in the project activity is considered as the manufacturer benchmark in this methodology. AM0070 provides detailed stepwise guidance on how to determine these benchmarks and could be a useful source to consider. Small-scale methodology “AMS II.O: Dissemination of energy efficient household appliances” (AMS-II.O) uses the performance specifications of a highly energy-efficient refrigerator as set by standard-setting bodies as the default baselines. Methodology “AM0113: Distribution of compact fluorescent lamps (CFL) and light-emitting diode (LED) lamps to households” (AM0113) uses progress with policy adoption for energy-efficient lighting as a proxy to indicate additionality for CFL/LED projects.
13. The MP and SSC WG recommended focusing on energy-efficient air conditioners using a practical approach where feasible and subject to availability of data, that is, actual field data are obtained in collaboration with the DNA of the host country to propose a SB together with the development of a generic approach (where such an interest is expressed by the DNA).
14. In this regard, the MP also noted that it may be necessary to revisit the guidance on consideration of chlorofluorocarbon (CFC)/hydrochlorofluorocarbon (HCFC) refrigerants contained in the baseline air conditioners. The current guidance may have proved to be restrictive in requiring consideration of all CFCs and HCFCs as project emissions even in cases where equivalent emissions happen during the project period, thereby significantly penalizing the project activity.

### **3.2. Potential approaches for building energy efficiency**

15. The methodology “AM0091: Energy efficiency technologies and fuel switching in new and existing buildings” (AM0091) has included some approaches to standardize the parameters to define the performance of building stock ( $\text{tCO}_2/\text{m}^2$ ) including modelling approaches. The MP also noted that the work done under the common carbon metric (CCM) of the United Nations Environment Programme: Sustainable Buildings and Climate Initiative (UNEP-SBCI) could be useful to consider.
16. The CCM aims to provide globally applicable common metrics for measuring and monitoring energy use and GHG emissions from existing building operations. The CCM is applied to the specific inventory of the buildings under study, which can be developed using a top-down or bottom-up approach.

17. The CCM provides a methodology to define buildings' climate impact and allows for bottom-up, and top-down data compilation. A top-down approach is required when the monitoring of carbon mitigation measures is at the national or regional scale, whereas a bottom-up approach is required when assessing individual building projects.
18. A top-down approach is characterized by a coarse level of accuracy using estimated data on fuel and electricity consumption of the building stock. The methodology requires that consumption data are first provided for the building stock itself and then allocated among different building types on a percentage basis.
19. A bottom-up approach is characterized a fine level of accuracy using measured electricity and fuel consumption data specific to those buildings. The bottom-up approach is intended to help assess the accuracy of the performance metrics computed through the top-down approach.
20. Other possible approaches to consider are those proposed under the United States Energy Independence and Security Act of 2007 (EISA) that have useful elements. EISA takes into account building characteristics (according to occupancy purpose, such as office, hospital, courthouse, warehouse, etc.), building location, total floor area (gross square feet) in the building to arrive at a standardized value.

## **4. Impacts**

21. The proposed work does not foresee any cost implications for third-parties/stakeholders.

## **5. Proposed work and timelines**

22. Based on the guidance provided by the Board, the MP and SSC WG will work further to develop the draft standards in consultation with practitioners at their next respective meetings and will recommend the draft standards for consideration by the Board in 2016.

## **6. Recommendations to the Board**

23. The Secretariat, MP and SSC WG recommend that the Board consider the concept note prepared jointly and provide guidance as necessary. In particular:
  - (a) The Board may wish to consider and approve the two areas of focus for development of standards for SBs; and
  - (b) Provide a mandate to the MP and SSC WG to analyse and propose revisions to the requirements on consideration of baseline and/or project emissions from the refrigerants used in cooling equipment.

## **7. References**

24. Reference documents:
  - (a) DEHst 2013: Recommendations on the Advancement of the CDM Standardized Baselines Framework, published by German Emissions Trading Authority (DEHSt) at the Federal Environment Agency;

- (b) EIA 2000: *Analysis of the Climate Change Technology Initiative; Fiscal Year 2001*, Energy Information Administration, U.S. Department of Energy, Washington;
- (c) Kim, H.C., Keoleian, G.A., Horie, Y.A., 2006: *Optimal household refrigerator replacement policy for life cycle energy, greenhouse gas emissions, and cost*, Energy Policy 34, 2310-2323;
- (d) AHAM 2003: *AHAM Fact Book*, Association of Home Appliance Manufacturers, Alexandria (US);
- (e) Hayashi, D., Mueller, N., Feige, S., & Michaelowa, A. (2010). Towards a more standardized approach to baselines and additionality under the CDM. Zurich: Perspectives;
- (f) IETA, 2009, *Multi-project, standardized baselines: Explaining a key issue in the reform of the Clean Development Mechanism*, International Emissions Trading Association, Geneva, available at <[www.ieta.org/assets/Reports/ieta-%20standardized%20baselines%20explained.pdf](http://www.ieta.org/assets/Reports/ieta-%20standardized%20baselines%20explained.pdf)>;
- (g) Lazarus, M., Kartha, S., Ruth, M., Bernow, S., 1999, *Evaluation of benchmarking as an approach for establishing Clean Development Mechanism baselines*, Tellus Institute/Stockholm Environment Institute, Boston, MA;
- (h) Lazarus, M., Kartha, S., Bernow, S., 2000, *Key issues in benchmark baselines for the CDM: Aggregation, stringency, cohorts, and updating*, Tellus Institute/Stockholm Environment Institute, Boston, MA;
- (i) Kartha, S., Lazarus, M., LeFranc, M., 2005, 'Market penetration metrics: Tools for additionality assessment?', *Climate Policy* 5, 147-165;
- (j) Building Energy Use Benchmarking Guidance, available at <[http://www1.eere.energy.gov/femp/pdfs/eisa432\\_guidance.pdf](http://www1.eere.energy.gov/femp/pdfs/eisa432_guidance.pdf)>.

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### Document information

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01.0	6 July 2015	Initial publication as an annex to the annotated agenda of EB85.
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