

CDM-MP70-A01

Concept note

Development of standards with a
methodological framework for specific
project types and sectors

Version 01.0



United Nations
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1. Procedural background

1. The Board at its eighty-eight meeting (EB 88) considered the concept note on a “Package on further development of a standardized baseline framework” and agreed not to pursue further work in relation to the "Guidelines for the establishment of sector specific standardized baseline" (hereafter referred to as SB guideline). The Board agreed to focus instead on the development of standards with a methodological framework for specific project types and sectors. As a result, the Board requested the Meth Panel to, in consultation with the SSC WG, identify potential project types and sectors for further work, for consideration by the Board at a future meeting.
2. In response to the above mandate, this concept note is prepared in consultation with the Methodologies Panel (MP 69 and 70) and the small scale working group (SSC WG 50 and 51) to present the Board the proposed project types and sectors for developing the standards with methodological frameworks to identify the baseline, baseline emission factors and additionality (standardization hereafter).

2. Purpose

3. The objective of the concept note is to present the Board the identified project types and sectors to further work on the development of standards with the methodological frameworks for standardization.

3. Key issues and proposed solutions

4. The similar mandate had been provided by the Board in the past regarding the development of standard with a methodological framework for the specific project type. That is, the Board at its 85th meeting agreed to develop a methodological framework for two specific project types to facilitate the development of country-specific standardized baselines, i.e. energy-efficient appliances for residential/household application (e.g. air conditioners, refrigerators) and energy efficiency in buildings.
5. Also, the Board at its 89th meeting considered the concept note on “Proposal on top-down methodological work for the transport sector” and the “Concept note: Exploration of methodological options for developing ‘agriculture CDM” and provided guidance on the development of new standards in the transport and agriculture sector. Under this work stream, different approaches including possible standardization will be explored while developing the new standards.
6. This concept note will focus on the sectors which are not covered in the mandate mentioned in the paragraphs 4-5 above in order to avoid any possible overlaps. Bearing a demand-driven approach, the following sources of information are collected with an aim to identify the potential project types/sectors to be included in the underlying mandate:
 - (a) Methodological submissions received in the past;
 - (b) Stakeholder Survey/Interview;
 - (c) Areas identified by MP/SSC WG;

- (d) Projects in the nationally appropriate mitigation actions (NAMA) Registry.
- (e) Mitigation measures proposed in the submitted INDCs.
7. A number of methodological submissions (including both the bottom up submitted CDM methodologies and the proposed standardised baselines) have been received in the past by the Board. One of them is a methodology submitted in the year 2009 by the Cement Sustainability Initiative (CSI)¹ for the cement sector with sectoral wide benchmark(s) for baseline and/or additionality settings. It may be worthwhile to look into it again since significant experience has been gained at the Panel and the Board level in the recent few years in the course of considering the standardised baselines.
8. A study² that interviewed DNAs and experts was conducted in 2013 to identify the potential demand in the context of standardized baseline development. The following sectors were found to be promising for which the standardized baseline could play a potential role to scale up mitigating actions. Apart from sector (e) which has been included in one of the on-going work streams mentioned in paragraph 4 above, and sector (a) which have been developed for a number of Parties, sector (b)-(d) may be potential sectors for the Board's consideration under this mandate of development of methodological framework.
- (a) Grid emission factors (GEFs) for the power sector;
- (b) Cement;
- (c) Iron and steel;
- (d) Waste sector; and
- (e) Sectors that have a large number of small-sized projects such as energy efficiency measures in households and small and medium enterprises.
9. While providing a mandate to identify potential areas at its eighty-eight meeting (EB 88), the Board also requested the Meth Panel to draw on the experience and lessons learned with the SB guidelines in the past. Bearing this in mind, the Meth Panel and the SSC WG agreed to provide a list of sectors with the underlying justification for the Board's consideration (see Table 1 below).

Table 1. Wish-list from the Meth Panel and the Working Group

Sectors or Project types	Remark/Justification
Cement	<ul style="list-style-type: none"> • Good experience accumulated from the intensive discussion in the past improving the SB guideline covering the sector. • There is one pending bottom-up submission from a country, which may provide data for tasks under this mandate and also another Latin American country is in the process of data collection.

¹ NM0302, "Emission reductions in the cement production facilities of Holcim Ecuador S.A."

² DEHst 2013: Recommendations on the Advancement of the CDM Standardized Baselines Framework, published by German Emissions Trading Authority (DEHSt) at the Federal Environment Agency;

Sectors or Project types	Remark/Justification
Brick	<ul style="list-style-type: none"> It is one of the informal sectors with high mitigation potential with significant co-benefit; One standardized baseline proposed top-down is in the pipeline, pending further input from the DNA. It may provide data for tasks under this mandate.
Waste treatment (focusing on other treatment alternative than LFG recovery)	<ul style="list-style-type: none"> Good experience accumulated from the intensive discussion in the past while trying to improve the SB guideline. More submissions in this sector, other than landfill gas recovery and utilization have been received, which may provide data for the task under this mandate. The focus will be on solid waste treatment including waste reuse/recycling; animal manure treatment and wastewater treatment.
Emission reduction from Fluorinated greenhouse gases	<ul style="list-style-type: none"> These are the potent GHGs gases with very high GWP; So far, there are 4 large scale methodologies abating or displacing SF₆, with applications in areas like SF₆ emission reductions from power grid or its abatement in LCD Manufacturing Operations. However, there are only 10 registered projects in the pipeline³, which is incommensurable to its mitigation potential and its potential negative impact on climate change. As for other fluorinated greenhouse gases (F-GHGs) - CF₄, C₂F₆, CHF₃, CH₃F, CH₂F₂, C₃F₈, c-C₄F₈, which are used as precursors for etching processes in the semiconductor industry, there is one approved methodology⁴, but without any registered project.
N₂O destruction in the adipic acid production	<ul style="list-style-type: none"> N₂O is one of the potent GHGs gases with very high GWP; Without national regulation in place and incentive from the CDM, atmospheric venting of N₂O from adipic production plant becomes very likely; Carbon leakage can be addressed by providing a dynamic baseline based on the global production from different markets.

10. The NAMA Registry was also considered since it is a kind of platform for emission reduction projects in search of climate finance. In some cases, for example, some projects in the NAMA Registry, the projects may even be seeking results-based finance,

³ Two projects registered under AM0035 SF₆ emission reductions in electrical grids; 3 projects under AM0065 Replacement of SF₆ with alternate cover gas in the magnesium industry; 4 projects under AM0078 Point of Use Abatement Device to Reduce SF₆ emissions in LCD Manufacturing Operations, and 1 project under 1 AM0079 Recovery of SF₆ from Gas insulated electrical equipment in testing facilities.

⁴ AM0111 Abatement of fluorinated greenhouse gases in semiconductor manufacturing

which is quite similar to the CDM approach. The detailed list of relevant NAMAs⁵ is included in Appendix 2 and its overview is presented in Table 3 below. It can be clearly seen that NAMAs in the waste sector (including animal manure, wastewater, and MSW incineration) takes the biggest share in the list, then followed by energy efficiency pumping system in the water sector, fugitive emission avoidance from the natural gas pipeline, clinker replacement, and finally heating network expansion.

Table 2. Overview of NAMAs resulting from NAMAs registry review

Sectors	No. of NAMAs	Technology/measure
Energy distribution	1	Heating network expansion
Energy efficiency	1	Efficient street lighting
Cement	2	Clinker replacement
Fugitive	2	Fugitive emission reduction from Natural gas pipelines
Water	2	Energy efficient water pumping
Waste	9	Animal manure, wastewater treatment, MSW incineration; E-waste

11. Lastly, mitigation measures proposed in the submitted INDCs (see Appendix 1) were also considered to understand the sectors of interests to the parties, and also to confirm against the sectors already identified above. It was found that sectors referred in INDCs are mostly in broader terms. For example, it only mentions renewable energy or industrial process. It was, however, found that the following sectors are explicitly mentioned in some INDCs
- (a) building material (cement, clinker) found in 37 INDCs;
 - (b) metal (including iron and steel, and aluminium) found in 7 INDCs;
 - (c) chemical/petrochemical found in 3 INDCs; and
 - (d) energy efficiency for street lighting found in 1 INDC.
12. Also, it was noticed that the waste sector had been identified in 75% INDCs as a mitigation source; regarding GHGs coverage, fluorinated greenhouse gases SF₆ and NF₃ have been included in 37% and 29% of the received INDCs, respectively.

⁵ Sectors already covered in other on-going work streams as well as those sector which are clearly not eligible under the CDM like providing trainings have been excluded from consideration. Also, areas/sectors for which a relatively high degree of standardization has already been incorporated into the existing methodologies, e.g., rural electrification, solar water heater, are also not the focus of this review.

13. Taking into all the information above, the following sectors/project types are proposed for the Board's consideration under the mandate for the development of standard with a methodological framework for standardization:
- (a) Cement/clinker production;
 - (b) Brick production;
 - (c) Waste treatment (with a focus on other alternatives than LFG recovery⁶);
 - (d) Aluminium;
 - (e) Iron and steel;
 - (f) N₂O destruction from adipic acid production
 - (g) Mitigation of fluorinated greenhouse gases (i.e., SF₆, CF₄, C2F₆);
 - (h) Energy efficient water pumping;
 - (i) Fugitive emission reduction from natural gas pipelines;
 - (j) District Heating/Cooling;
 - (k) Efficient street lighting.
14. In the meantime, the Meth Panel also agreed to emphasize that an early engagement with stakeholders like DNAs, sectoral associations in delivering this mandate is necessary. Taking this into account,
- (a) item (a)-(f) are recommended to the Board as priorities to initiate the work, considering the fact that some interactions had occurred in the past with the relevant DNAs and the sectoral associations in these sectors such as the CSI, World Steel Association, and the Aluminium Association;
 - (b) The initiation of item (g)-(k) will be recommended to the Board at future meetings, following the progress made in the first batch (i.e., delivery of the item (a) – (f)) and also when interested stakeholders with the sectoral data are identified.
15. Table 4 below also showed some preliminary thoughts by the Meth Panel and SSC WG on the possible approaches that may be considered for initiating the work for the sector (a)-(f), which will be assessed thoroughly upon the guidance received by the Board on the selection of sectors.

⁶ Solid waste treatment including recycling, animal manure treatment and wastewater treatment

Table 3. Possible approaches for developing standard with methodological framework for sector (a)-(f)

Sectors	Preliminary thought on possible approaches
Cement/Clinker production	<p>With the provision of data from the potential sectoral association and/or the interested DNAs, emission benchmarks in tCO₂/tone-clinker, and/or tCO₂/t-cement can be developed.</p> <p>In doing so, existing methodologies in this sector can give good MRV basis and starting point, i.e., ACM0015 only for the clinker stage and ACM0005 provides MRV tool for both cement stage and clinker stage. If only emission benchmark for clinker is needed, then ACM 0015 can be fully standardized in its baseline. If emission benchmark for cement stage is needed; the benchmark for clinker in ACM 0015 can be carried over to the respective baseline section in ACM 005 (Eq2) which will give one emissions factor for cement production.</p>
Brick production	<p>To standardize the specific energy consumption of brick production; or to develop the correlation between the specific energy consumption and the operating temperature of the brick kiln or the quality of the brick (e.g., compressive strength)</p>
Waste treatment	<p>For anaerobic treatment of animal manure and waste water, to standardize part of or all the key parameters determining the methane generation potential (e.g., methane conversion factor, pollutant removal efficiency of key treatment system/unit)</p>
Aluminium	<p>The current methodology focuses mainly on the PFC emission reductions from aluminium smelting facilities⁷, in which an international emission benchmark was introduced. However, there are still great potential for GHGs emission reductions in other areas along the aluminium production chain (e.g., energy efficiency measures). A holistic emission benchmark representing the overall production chain is proposed. Once developed, it will also potentially help project aiming for aluminium recycling or material substitution by using aluminium.</p>
Iron and steel	<p>To disaggregate the production process covered by this sector namely the Electric arc furnace technology/LADDLE technology and Basic oxygen furnace process and also iron reduction process (Melt Iron and DRI) covered in this sector, and explore to introduce standardization for different product, respectively. As a general approach, looking in equations in methodologies with the primary parameters used for baseline emissions and approaches to arrive at emission factors per unit product could be useful to explore the possibility of standardization and tiered approach.</p>

⁷ AM0030 PFC emission reductions from anode effect mitigation at primary aluminium smelting facilities

Sectors	Preliminary thought on possible approaches
N₂O destruction in the adipic acid production	<p>The intent is not to change the N₂O emissions factor for adipic acid production (tN₂O/t adipic acid), provided by the IPCC Good Practice Guidance.</p> <p>Instead, a conservative, dynamic baseline with a function of global production in this sector, with a view to addressing the potential carbon leakage due to the shift of production can be introduced to AM0021. In this way, the restriction that “the methodology is applicable only for existing production capacity of adipic acid where the commercial production had begun by 31 December 2004” may be removed.</p>

4. Impacts

16. Development of standard with a methodological framework for specific project types/sectors will potentially facilitate the development of more CDM projects and programmes of activities in a cost-effective manner and facilitate the development of standardized baselines in specific sectors.

5. Subsequent work and timelines

17. Based on the guidance from 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 the consideration of the Board in 2017.

6. Recommendations to the Board

18. The Secretariat, MP and SSC WG recommend that the Board consider the concept note prepared jointly and provided guidance as necessary. In particular:
- (a) The Board may wish to consider and approve the six areas above, i.e., (a)-(f) as contained in paragraph 12, to initiate its work for developing the standards with methodological framework for standardization.

Appendix 1. Sectors and gases covered by the INDCs

Figure 1. Sectors covered by the communicated intended nationally determined contributions

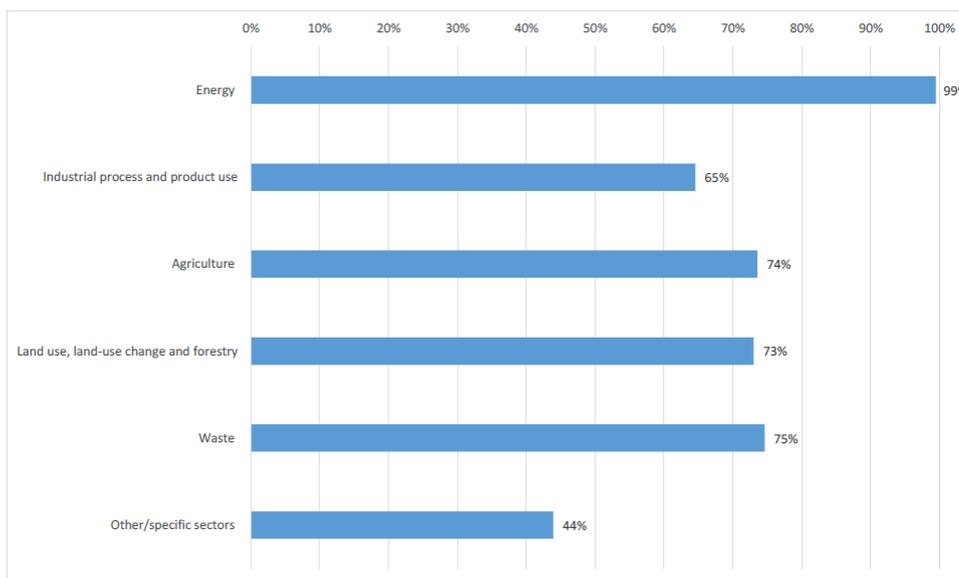
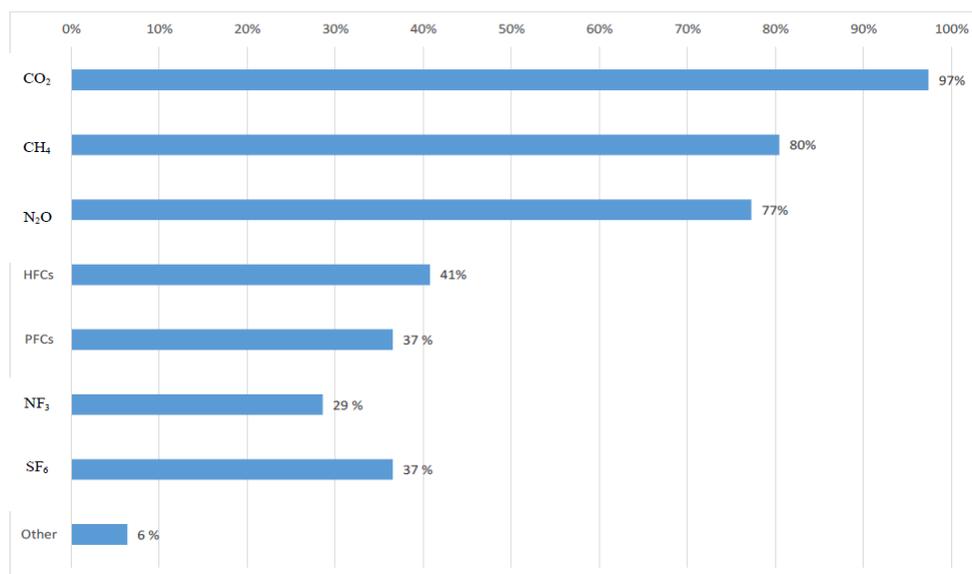


Figure 2. Gases covered by the communicated intended nationally determined contributions



Note: Percentages shown are percentages of the Parties that have submitted intended nationally determined contributions by 4 April 2016.

Appendix 2. Review of NAMA registry

Table of Detailed list of NAMAs resulting from NAMAs registry review

ID	Title	Country	Sector	Type	Sub-type
NAMA0064	Transforming construction in Mongolia using Supplementary Cementitious Materials	Mongolia	Cement	Clinker replacement	Clinker replacement
NAMA0020	Expansion of existing heating network in Valjevo	Serbia	Energy distribution	Energy distribution	heating network expansion
NAMA0041	Emission Reduction Actions Program (NAMA) in Natural Gas Processing, Transport and Distribution System, through fugitive emission reduction	Mexico	Energy supply/fugitive	Fugitive	Natural gas pipelines
NAMA0042	Cogeneration in the mexican Oil and Gas sector	Mexico		Fugitive	
NAMA0120	Public Lighting Energy Efficiency	Colombia	EE-service	EE-service	Efficient street lighting
NAMA0015	National Program for Catalyzing Industrial and Commercial Organic Waste Management in Chile	Chile	Waste	Waste	Wine, fruits, crops, salmon, poultry, pigs, pruning, food markets.
NAMA0016	Tourism and Waste in the Dominican Republic	Dominican Republic	Waste	Biomass energy	Shrub clippings & separated waste
NAMA0039	The Zarqa River Basin Industrial Waste Water Treatment Plant and Energy Plant (ZIWWTEP)	Jordan	Waste	Methane avoidance	Waste water
NAMA0040	NAMAs in Cement/Co-Processing and Waste Sector	Dominican Republic	Waste/cement	Cement	Clinker replacement

ID	Title	Country	Sector	Type	Sub-type
NAMA0065	Bio-energy generation and greenhouse-gases mitigation through organic-waste utilization	Pakistan	Waste	Manure	Biogas
NAMA0067	Reducing Greenhouse Gases (GHG) Emissions in Pig Farms in the Dominican Republic	Dominican Republic	waste	manure	Biogas
NAMA0071	Developing appropriate strategies and techniques to reduce methane emissions from livestock production in Uganda	Uganda	Waste	Livestock farms	Reduced enteric fermentation
NAMA0072	Integrated Wastewater Treatment for Agro-process Water in Uganda	Uganda	Waste	Waste water	Waste water
NAMA0111	Waste-to-Energy (WtE) and improved waste management practices in Kigali	Rwanda	Waste	MSW	Incineration plant
NAMA0113	Support to Integrated E-Waste Management System for State of Sabah, Malaysia	Malaysia	Waste	E-waste	Household Electrical and Electronic Waste
NAMA0034	Improvement of Energy Efficiency in the Jordanian Water Sector (IEE)	Jordan	Water	EE service	Water pumping
NAMA0037	Improvement of Energy Efficiency in the Jordanian Water Sector (IEE)	Jordan	Water	EE service	Water pumping

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