

CDM-EB82-AA-A11

Concept note

Development of new methodologies to broaden the applicability of the CDM

Version 01.0



United Nations
Framework Convention on
Climate Change

TABLE OF CONTENTS	Page
1. PROCEDURAL BACKGROUND	3
2. PROJECT AIMS	3
3. KEY ISSUES AND PROPOSED SOLUTIONS.....	4
3.1. Cities.....	6
3.2. Aviation	7
3.3. Biofuels	8
3.4. Transport	9
3.5. Agriculture.....	9
3.6. Renewable energy, Electrification and Household energy supply	10
4. DESIRED OUTCOMES AND IMPACTS	12
5. PRODUCT/MILESTONES AND TIMELINES	12
6. RECOMMENDATIONS TO THE BOARD	14
7. REFERENCES	15

1. Procedural background

1. The Executive Board of the clean development mechanism (CDM) (the Board) at its eighty-first meeting (EB81) agreed under the 2015 management plan (MAP 2015)¹ to include the “Top down development of Methodologies/Standardized baselines and tools (including initial concept note covering, inter alia: cities and rural electrification, aviation, agriculture and international financing institutions)”.
2. Also, at EB81, the Board requested the Methodologies Panel to conduct a gap analysis with a view to identifying methodologies needed for the aviation and other transport sectors that are currently not available and to develop top-down methodologies based on the outcome of this gap analysis. The Board further requested the Methodologies Panel to review methodologies related to biofuels, with a view to identifying room for broadening their applicability and further simplification.

2. Project aims

3. This project aims to develop the following methodologies for delivery in 2015 and 2016:
 - (a) **Cities:**
 - (i) Methodology for integrated mitigation action at the city level (covering for example energy supply, waste management, transport and buildings)
 - (b) **Aviation:**
 - (i) Renewable energy methodologies applicable to the aviation sector (covering for example use of solar power for at-gate aircraft);
 - (ii) Energy efficiency methodologies applicable to the aviation sector (covering for example enhanced efficiency in aircraft taxiing, engine washing for fuels savings);
 - (c) **Biofuels:**
 - (i) Broadly applicable highly useable methodology for biofuel applications;
 - (d) **Transport:**
 - (i) Broadly applicable highly useable methodology for transport applications (covering for example efficiency improvements in fleets and vehicles, modal switch);
 - (e) **Agriculture:**
 - (i) Methodology for integrated mitigation actions in agriculture combining efficient water pumps, more efficient use of fertilizers, efficient animal husbandry.

¹ See Table 4. Under Objective ‘1(c): Develop simplified and user-friendly standards and procedures that increase efficiency and ensure environmental integrity’ of MAP 2015.

(f) Renewable energy, Electrification and Household energy supply:

- (i) Develop grid emission factors in association with designated national authorities (DNAs) where such factors are currently not published by the DNA of the country due to capacity constraints;
- (ii) Integrated methodology for rural electrification combining grid-connected and captive generation including grid extension to users;
- (iii) Integrated methodology for household thermal energy efficiency measures (cook stoves, solar water heater, water purification and heating).

3. Key issues and proposed solutions

4. The collaborative approach to methodology development (the so-called top-down development of methodologies) is recognized as a key tool to: (i) broaden the scope of the CDM; (ii) address the under-representation of regions and sectors in the CDM; and (iii) reduce transaction costs of undertaking CDM projects. Stakeholder surveys portray CDM methodologies as the greatest assets of the mechanism and call for increased collaboration for methodology development to enhance their usability and broaden their applicability to cover more interrelated measures.
5. **Process for the development of the methodologies:** To ensure that the level of resources as well as the required competence for the development of the identified methodologies will be available, the support structure (i.e. secretariat, panels/working group) will work with institutions that have the experience, grass-roots level information/data and sector-specific insights to facilitate the conclusion of the sector specific methodological issues. Collaborations with institutions with a proven track record and expertise will be an integral part of the development plan for the products under the project. For example, the development of methodologies in sectors such as aviation, transport, agriculture and cities would be done in partnership with other institutions with international repute and regional/local presence thus bridging any information/data gaps. Several institutions have already evinced interest in collaborating (World Bank, Global Environment Facility (GEF), Green Climate Fund (GCF) and other international financial institutions, International Civil Aviation Organization (ICAO), International Organization for Standardization (ISO), United Nations Environment Programme (UNEP), and Food and Agriculture Organization (FAO)) and communicated their inclination to develop GHG mitigation methodologies in their respective sector through the CDM-EB.
6. Furthermore there are examples within the CDM where such collaborative efforts have yielded tangible results for a win-win situation for all. Methodologies in sectors such as efficient lighting, household energy and safe drinking water supply were successfully developed in collaboration with multilateral/international agencies such as World Bank, UNEP, Lighting Africa and the World Health Organization (WHO). Partner agencies complemented with valuable sector expertise in this case. CDM pipeline data shows that

the approval of methodologies leads to rapid development of projects and programmes in these new areas.²

7. **Rationale for selecting the sectors/areas:** While methodologies for cities and rural electrification, aviation, agriculture and international financing institutions were specifically mentioned in the MAP 2015 document as potential areas for methodological work, further rationale for selecting methodologies cited under the section 'project aims' is discussed here.
8. Agriculture, biofuel, transport, energy distribution (i.e. rural electrification) and energy efficiency (i.e. buildings) are seen to have low share of projects in the CDM pipeline, i.e. 0.04 per cent, 0.12 per cent, 0.41 per cent, 0.26 per cent and 1.13 per cent respectively and are therefore clearly underrepresented under the CDM.
9. The Board at its 51st meeting identified Energy for households, Transport, Energy efficiency in construction, and Agriculture as priority sectors for methodological work. The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP) has consistently requested methodological work aimed at broadening the CDM coverage to underrepresented sectors. More specifically CMP.4 (decision 2/CMP.4, para. 33(b), 34(c), 43, 44 and 47) and CMP.6 (decision 3/CMP.6 in para. 46) mentioned the following sectors for further development of methodologies: energy generation in isolated systems, transport and agriculture, energy efficiency improvements in supply-side domestic appliances and mass transport, and off-grid electricity generation. More specific opportunities in each area are discussed in the sections below.
10. **Case for integrated methodologies:** The majority of areas for work under this project typically share similar characteristics, i.e. mitigation of a large number of dispersed small emission sources through the application of multiple technologies. For these types of projects, the focus on specific and limited number of technologies within the CDM methodologies has been reported to be a constraint. UNEP (2014) notes that considerable reforms are needed to make the CDM suitable for the multi-source, multi-sector urban context, allowing for a large number of dispersed emission sources and multiple technologies. Resource requirements for undertaking CDM projects (transaction costs and technical capacity) can be prohibitive for smaller projects on a relative basis. While the programme of activities (PoA) approach resolves some of these issues, the lack of appropriate CDM methodologies that are applicable to a wide range of mitigation activities to cope with the large scope of city-wide mitigation measures or agricultural activities and the related potential complexity (e.g. variety of the mitigation measures in one project, limited baseline data, constraints for accurate measurement of emissions and other indicators, lack of consistency in approaches hindering comparisons) is perceived as a key barrier. Furthermore it is noted that policy or support-based activities (as opposed to technology-based ones) would be an important part of these types of programmes but are not yet provided for among CDM methodologies.

² For example efficient lighting projects (e.g. CFLs) were expected to have a significant share in the CDM pipeline since the onset. However, that was not to be until around 2009 although there were attempts through the bottom-up route to resolve the monitoring-related barriers preventing project development. However, guidance from the Board resulted in top-down work to introduce stepwise simplifications, i.e. default values and additionality simplifications were introduced first in small-scale which was later on applied in PoAs and eventually in large-scale CDM leading to the development of a large number of projects/programmes.

11. Although combinations of methodologies are allowed in a PoA under some conditions, many times, applying combinations leads to additional CDM transaction costs for project proponents including those related to documentation requirements (e.g. separate generic and specific component project activity design documents (CPA-DDs) may be required for a PoA; a separate monitoring plan will also be required for each of the CPAs in that case). Furthermore, at times the emission reductions from some components (e.g. off-grid components in an electrification project) may be so small that it may not be justifiable to develop a separate CPA for such activities, thereby depriving some remote regions from CDM project benefits. Revision of any of the methodologies involved will also have implications for the documentation requirements and hence the related transaction costs.
12. Developing broadly applicable integrated and simplified methodologies is proposed under this project to provide flexibility to project developers and it will also allow the development of a more robust methodological approaches for example to address cross effects when the applied measures will have overlaps for baseline or project emissions and also combined additionality.
13. Where applicable this project adopts a two-step approach, whereby in the first step, the Board's guidance is sought on policy issues identified through an information note recommended by a panel/working group including pragmatic options for solutions. For example preliminary analysis reveals that potential methodological barriers for biofuel projects could include: (a) restricted applicability (e.g. limited to waste oil/fats and oil from dedicated plantations on degraded land); (b) the need to identify degraded land through strict conditions of the afforestation/reforestation tool, i.e. no land use shifts due to the project; (c) requirements to include both the producer and consumer in the project boundaries; (d) consumer restricted only to captive fleets; (e) consumption of bio-diesel within the host country to ensure adequate monitoring and tracking emission reductions. Not all concerns related to land use change that may have prompted inclusion of these conditions may be relevant today and nor would all potential biofuel projects have equal impacts on land use. Based on literature review and consultations with stakeholders options for solutions will be proposed for the consideration of the Board. Once guidance is provided by the Board, new/revised methodologies will be proposed for the consideration of the Board addressing the technical issues.

3.1. Cities

14. The CDM has achieved only limited reach for mitigation in the context of urban environments, while the potential for mitigation remains high. For example cities house more than 50 per cent of the global population and contribute more than 70 percent of global greenhouse gas (GHG) emissions. Accordingly, they have vast potential to reduce the volume of carbon dioxide (CO₂), methane and other gases that they release.
15. The proposed solution would be to explore developing a broadly applicable methodology in the context of cities, for example covering: (a) buildings (green infrastructure, energy efficiency, renewable energy integrating codes and incentives where possible); (b) efficient street lighting, district heating and cooling systems; (c) transport including planning to increase efficiency and reduce distances, replacing GHG-intensive modes of transport, regulations such as congestion charges, incentives for car-pooling and other alternatives to individual motorized transport; (d) efficiency and conservation in water

supply; (e) waste and wastewater management; and (f) exploring integration of planning, policy, and training of facility managers.

16. The effort involves building on the existing CDM methodologies in the area and work done by others. There are opportunities to collaborate with ISO, UNEP Sustainable Buildings and Climate Initiative and partners who have indicated interest in joint work.³
17. Not every measure described above would be eligible to be implemented under the current modalities and procedures of the CDM. As a first step this project aims to recommend an information note to EB85, through panel/working group reports describing technologies/measures that would be desirable to include in a city-wide project/programme. Once guidance is received from the Board a draft methodology will be prepared for the consideration of the Board in 2016. Measures deemed ineligible will be further pursued under the work stream relating to the revision of the modalities and procedures of the CDM.

3.2. Aviation

18. Emissions from aviation activities represent approximately 2 per cent of global anthropogenic CO₂ emissions. The magnitude of forecasted traffic growth, however, suggests that the future contribution of aviation activities to climate change will be significantly higher in the coming decades.
19. Emissions from international aviation activities (i.e. flights between countries) are being addressed by the ICAO, which has established an aspirational goal of carbon-neutral growth beyond 2020 and is pursuing a basket of measures, including aircraft-related technology development, alternative fuels, improved air traffic management and infrastructure, more efficient operations, and market-based measures.
20. In contrast, emissions from domestic aviation activities (i.e. flights within a country), are a matter for each Party to address. Significant growth in emissions from domestic aviation activities in non-Annex I Parties is expected as these markets mature, and measures to mitigate these emissions are eligible to be credited under the CDM. Input from ICAO suggests that three measures, for which there is limited evidence of widespread implementation in non-Annex I Parties, hold immediate potential for CDM projects if relevant methodologies can be developed. These are:
 - (a) The installation of solar photovoltaic panels and transmission capacity in order to power aircraft at gates. At-gate aircraft require power to operate electrical systems as well as heating, ventilation, and air conditioning systems. Current practice involves the generation of power from on-board auxiliary power units (APUs) that consume between 85 and 190 litres of jet fuel per hour. The proposed methodology would involve the installation of solar photovoltaic panels

³ Common Carbon Metric sets emissions baselines for buildings per capita or per square <Error! Hyperlink reference not valid.http://www.unep.org/sbci/activities/ccm_Pilot.asp>, Korea Environment Institute (KEI) (2014) assessed 28 CDM methodologies and proposed improvements (e.g. simplified additionality, system level monitoring) to address key obstacles for city-based projects such as data management, demonstrating additionality and establishing a baseline. World Resources Institute (WRI) in conjunction with C40 Cities Climate Leadership Group and ICLEI – Local Governments for Sustainability (ICLEI) have published the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC) to measure emissions conforming to IPCC guidelines

at airports in non-Annex I countries in order to generate energy for ground power units (GPUs), as well as the installation of transmission capacity between the GPUs and the aircraft;

- (b) The installation in aircraft of new electronic technology to power aircraft while taxiing. The prevailing practice for taxiing aircraft, particularly in non-Annex I countries is through the use of an aircraft's main engines, which run on jet fuel and are not optimized for ground performance. The proposed methodology would involve installing a system on board the aircraft to power it while taxiing. New equipment would include a cockpit interface unit, a controller, power electronics, and wheel actuators. This system would be powered by jet fuel but in a significantly smaller quantity than the jet fuel used under current practices;
 - (c) Optimized aircraft maintenance, including jet engine cleaning/washing. This practice can be adopted as part of regular aircraft maintenance and can reduce the fuel burn penalty associated with main engine performance reductions over the life of an aircraft. Engine washing can result in up to a 1 per cent improvement in aircraft fuel burn.
21. The main benefit to the CDM from developing the above methodologies would include its expansion into a fast-growing sector that remains largely untapped by crediting mechanisms. The effort involves building on work done by others, and in particular ICAO has indicated its interest in joint work and is in a position to collaborate in this activity.
22. The secretariat will work closely with the ICAO expert who will bring the sector knowledge to develop drafts of the above methodologies, i.e. a renewable energy methodology applicable to the aviation sector (e.g. use of solar power for at-gate aircraft), energy efficiency methodologies applicable to the aviation sector (e.g. enhanced efficiency in aircraft taxiing, fuel efficiency through engine cleaning/washing). Following consideration at the MP and/or SSC WG, the draft methodologies will be recommended for the consideration of EB 87 and based on any further guidance received from the Board the methodology will be finalized in 2016.

3.3. Biofuels

23. With regard to biofuels, global biofuel production grew from 16 billion liters in 2000 to more than 100 billion litres in 2010 (International Energy Agency (IEA), 2011). National interests to promote biofuels remain significant both in developed and developing countries with more than 50 countries having blending targets or mandates and biofuel quotas for future years supported by various incentives (IEA, 2011; United States Agency for International Development, 2009). A fourth of the nationally appropriate mitigation actions (NAMAs) are proposed for biofuel activities. However there are only a couple of CDM biofuel projects registered to date and nearly no PoA has entered the pipeline for biofuel activities although more than seven methodologies were approved for biofuels (e.g. ACM0017, AM0089, AMS-I.G, AMS-I.H, AMS-III.T, AMS-III.AK).
24. The proposed solution will involve a comprehensive analysis of the experience gained with biofuel initiatives worldwide through a literature review to identify solutions to enhance the usability of biofuel methodologies including the creation of new methodologies. An information note will be prepared in consultation with the panels/working group to identify the root causes of barriers to biofuel projects building on the preliminary analysis indicated in paragraph 23. An information note will be presented

to EB 85 through panel/working group reports for the consideration of Board to receive policy guidance from the Board on the way forward. It is proposed that at least one broadly applicable draft methodology be revised/developed and recommended for the consideration of EB 87 with a view to finalizing one or more methodologies by early 2016 with the aim of enhancing the viability of biofuel projects under the CDM.

3.4. Transport

25. EB 81 requested the Methodologies Panel to conduct a gap analysis for the transport sector in addition to the biofuels referred above with a view to identifying methodologies needed that are currently not available and to develop top-down methodologies based on the outcome of this gap analysis. A comprehensive analysis of the transport sector methodologies will be undertaken under this work stream to identify bottlenecks with a view to proposing solutions. Preliminary analysis reveals the following:
- (a) Climate/carbon finance for mass transit and bus systems in particular are badly needed to change the current lack of a transport sector contribution to the reduction of GHG emissions;
 - (b) The vast differences between parameters across bus rapid transport (BRT) projects in different countries due to factors such as fuel used, engine technologies, age of the buses used, speeds of the buses and seating capacity suggest the need for a case specific analysis for each project as standardized conservative global factors may be difficult to apply;
 - (c) Standardized estimation methods rather than factors integrating dynamic baseline reflecting the current share across modes and accounting for levels of development in the country (i.e. income levels) and considering the effects of individual motorization may hold potential.
26. The international financial institutions working group (IFI WG) has communicated its interest to collaborate on the development of methodologies.
27. An information note will be recommended for the consideration of EB 85 through panel/working group reports. Once guidance is received from the Board at least one draft simplified methodology will be prepared for the consideration of the Board in 2016 through panel/working group reports.

3.5. Agriculture

28. Agriculture accounted for 10-12 per cent of total global anthropogenic emissions of GHGs in 2005, about 60 per cent of anthropogenic nitrous oxide emissions and about 50 per cent of anthropogenic methane emissions. About 60 per cent increase in food production to feed a population of 9 billion by 2050 is projected. In spite of the large potential, the contribution of mitigation activities in agriculture sector under the CDM is negligibly small for several reasons including the following:
- (a) Countries whose economies are largely agriculture-based also tend to have lower capacity for participation in the CDM. In agriculture, emission sources are typically multiple (e.g. fertilizers, irrigation, energy use, enteric fermentation, biomass burning, etc.) and are spread across large geographical areas and large numbers of land holders;

- (b) Methodologies with limited scope (e.g. applicable to specific narrow mitigation activities) may not be cost-effective on the one hand, and the agricultural development/ modernization projects/programmes are often integrated sector-wide programmes covering multiple-activities on the other;
 - (c) Agricultural GHG mitigation options often have higher abatement and transaction costs than mitigation options in other sectors where GHG emissions from point sources are less diluted, can be easily identified, quantified, measured and monitored;
 - (d) Stringent measurement requirements have been cited in the literature as a main reason for limited development of agricultural carbon finance projects in developing countries (Larson et al., 2011 from World Bank's policy research working paper). Other stakeholders also pointed out restrictive CDM monitoring requirements against farmers' monitoring capabilities (e.g. South Pole, 2012).
29. The development of new standardized methodologies, the reduction of transaction costs and further scale-up with the use of PoAs has been proposed in the literature (e.g. South Pole, 2012) as a solution to the above issues. Building on existing methodologies, a multi-activity methodology with sector-wide application will be developed in consultation with the practitioner.
30. An information note will be recommended for the consideration of EB 87 through panel/working group reports to receive policy guidance from the Board. Based on the guidance from the Board, methodologies will be developed in 2016.

3.6. Renewable energy, electrification and household energy supply

31. **Grid emission factors:** Standardization of grid emission factors at the country or regional level is a key success story under the CDM leading to the development of a large number of grid-connected CDM projects. DNAs are playing a critical role in many countries to publish these factors, whereas they are not available in some countries. The effort under this component aims to support the development of grid emission factors in countries where the DNA has not been in a position to publish the grid factors due to capacity constraints.
32. International financial institutions (IFIs) such as World Bank, International Finance Corporation (IFC), Asian Development Bank (ADB), GEF, GCF and their donors are increasingly intent on undertaking more stringent measurement, reporting and verification (MRV) of mitigation activities they support through climate finance, to ensure reliable and transparent tracking of the financial flows and reporting of the contributions to mitigation. A working group of IFIs considered several options for baseline emission factors for renewable projects including the CDM Grid Tool and the IEA average emission factors. Although the CDM approach is preferred by them, the lack of availability of the factors for some countries is perceived to be a shortcoming by them. It is proposed to partner with the IFI WG to enable reliable data collection for developing grid emission factors for countries where such factors are not currently published. It is perceived that GHG accounting by IFIs and other mitigation stakeholders will be significantly facilitated if factors are developed for a large number of countries.
33. It is proposed that work is undertaken and grid emission factors are recommended for the consideration of the Board at EB 85, EB 86 and EB 87 in consultation with DNAs.

34. **Electrification:** Electrification is pursued in many countries by agencies in the public or private sector with the aim of increasing energy access, reducing emissions and achieving sustainable development. These efforts focus on electrification of an entire identified region and do not usually resort to segregating grid connected electrification from off-grid solutions in a geographic location. The relative cost of grid extension at times determines the choice of off grid solutions such as solar home systems or power packs over extending the grid. Furthermore many times grid connection represents progress over off-grid solutions which may have inherently included some elements of suppressed demand. However, CDM methodologies (e.g., AMS-I.A/I.L/I.F, AMS-III.AW/III.BB) for electrification distinguish technology/measures for grid connected, captive and off grid electrification, i.e. separate methodologies are provided for grid connection and off-grid generation, for example.
35. Developing an integrated electrification methodology will provide flexibility to project developers and it will also allow the development of more robust methodological approaches, for example to address cross effects when the applied measures will have overlaps for baseline or project emissions. Such a methodology would essentially:
- (a) Accommodate all technologies/measures that target increased electricity access (grid, off-grid, etc.);
 - (b) Include options to accommodate households/other consumers that switch from off-grid to grid based solutions during the crediting period;
 - (c) Include options to account for emission reductions that might result from a grid extension (i.e. adding new connections) as a result of a new capacity addition in the grid in addition to addressing the situation of suppressed demand with already connected consumers;
 - (d) Explore innovative alternative ways of quantifying emission reductions at the aggregated level that avoids multiple CPA development (for example, standardizing emission reductions based on percentage increase in electrification rate using different options/technologies).
36. Similarly thermal energy needs of a typical household include those for cooking, boiled water for drinking and hot water for bathing besides space heating requirements. Several methodologies will be required to cover all of these activities even when they are undertaken at the same residential locations resulting in additional transaction costs as discussed above besides uncertainties related to cross effects. An integrated methodology for household thermal energy supply will provide more options for project proponents to develop CDM projects besides allowing a sound approach to address cross effects leading to conservative estimation of emission reductions.
37. It is proposed that a draft integrated rural electrification methodology combining grid connected and captive generation including grid extension to residential users and an integrated methodology for household thermal energy efficiency measures (cook stoves, solar water heater, water purification and heating) be recommended for the consideration of EB 87. Based on any further guidance received from the Board the methodologies will be finalized in 2016.

4. Desired outcomes and impacts

38. The desired outcomes of the project are:

Ref.	Expected benefits	Situation prior to the project
BEN-01	Greater participation of the countries/sectors in the CDM particularly underrepresented countries and sectors	Lack of methodologies, lost opportunities Limited projects and PoAs from the targeted areas
BEN-02	Reduced CDM transaction costs for DOEs and project proponents	Application of methodologies to project activities sometimes resulted in increased transaction costs due to cumbersome methodological requirements

Ref.	Expected dis-benefits	Situation prior to the project
DISBEN-01	More costs for and efforts by the regulators	Higher costs to the implementers of projects and PoAs due to lack of standardisation of requirements

5. Products/milestones and timelines

Product	EB82	EB83	EB84	EB85	EB86	EB87	2016
Initial concept note	Concept note						
Cities: Methodology for integrated mitigation action at the city level (covering for example energy supply, waste management, transport and buildings)				Info note (through panel/WG report)			Draft (through panel/WG report) Final (through panel/WG report, preceded by call)
Aviation: Renewable energy methodologies applicable to the aviation sector (e.g. use of solar power for at-gate aircraft)						Draft (through panel/WG report)	Final (through panel/WG report)

Product	EB82	EB83	EB84	EB85	EB86	EB87	2016
Aviation: Energy efficiency methodologies applicable to the aviation sector (e.g. enhanced efficiency in aircraft taxiing, engine washing for fuels savings);						Draft (through panel/WG report)	Final (through panel/WG report)
Biofuels: Broadly applicable highly useable methodology for biofuel applications				Info note (through panel/WG report)		Draft (through panel/WG report)	Final (through panel/WG report, preceded by call)
Transport: Broadly applicable highly useable methodology for transport applications				Info note (through panel/WG report)			Draft (through panel/WG report) Final (through panel/WG report, preceded by call)
Agriculture: Methodology for integrated mitigation actions in agriculture combining efficient water pumps, more efficient use of fertilizers, efficient animal husbandry						Info note (through panel/WG report)	Draft (through panel/WG report)
Renewable energy, Electrification and Household energy supply: Develop grid emission factors in				Final (inputs through panel/WG)	Final (inputs through panel/WG)	Final (inputs through panel/WG)	

Product	EB82	EB83	EB84	EB85	EB86	EB87	2016
association with DNAs where such factors are currently not published by the DNA of the country due to capacity constraints;							
Renewable energy, Electrification and Household energy supply: Integrated methodology for rural electrification combining grid connected and captive generation including grid extension to users						Draft (through panel/WG report)	Final (through panel/WG report, preceded by call)
Renewable energy, Electrification and Household energy supply: Integrated methodology for household thermal energy efficiency measures (cook stoves, solar water heater, water purification and heating)						Draft (through panel/WG report)	Final (through panel/WG report, preceded by call)

6. Recommendations to the Board

39. The secretariat recommends that the Board approves the work proposed under this project and provide guidance as required.

7. References

40. UNEP (2014). Climate Finance for Cities and Buildings - A Handbook for Local Governments. UNEP Division of Technology, Industry and Economics (DTIE), Paris. Available at: <www.unep.org/publications>.
41. Bhaskar Padigala, Sunil Kraleti (2014). Financing low carbon urban development through clean development mechanism International Journal of Environmental Sciences Volume 5 No 1, 2014.
42. KEI (Korea Environment Institute). Development of Urban Environment Evaluation Index and Urban CDM Technology, Korea Environment Institute, 2014.
43. South Pole (2012). Agriculture and the carbon market (presentation). Available at <http://www.fibl.org/fileadmin/documents/de/news/2012/calas/8_CaLas2011_Horka.pdf>.
44. Larson, D., Dinar, A. & Frisbie, J. (2011). Agriculture and the Clean Development Mechanism. Policy Research Working Paper 5621. Washington, DC, World Bank. Available at <<http://elibrary.worldbank.org/doi/pdf/10.1596/1813-9450-5621>>.

- - - - -

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
01.0	09 February 2015	Initial publication as an annex to the annotated agenda of EB 82.
Decision Class: Regulatory Document Type: Information note Business Function: Methodology Keywords: Cooperation between organizations, new methodology, standardized baselines, top down methodology, work organization		
