CLEAN DEVELOPMENT MECHANISM

CDM-MP87-A03

Draft Methodological tool

TOOLXX: Repository of default values

Version 01.0

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), at its 111th meeting (EB 111), considered the concept note "Improving clarity and consistency of methodological products".

2. At EB 111, the Board requested the secretariat and the Methodologies Panel (MP) to:

(a) Recommend a new methodological tool (hereinafter referred to as tool) containing a repository of data/parameters that are common among different methodologies; and

(b) Update the default factors in methodologies that are found to be not conservative in accordance with the latest science.

3. At its 86th meeting (MP 86), the MP agreed on the potential scope of the new tool and agreed to conduct a road test with

(a) Methodologies that apply the concentration of methane in biogas or in landfill gas;

(b) Methodologies that apply the diesel generator emission factor for off-grid applications and the kerosene emission factor for lighting for off-grid applications.

2. Purpose

4. The purpose of this draft tool is to respond to the mandate in paragraph 3 (b) above to provide default values of carbon dioxide (CO_2) emission factors for diesel generating systems used for off-grid power generation purposes and for kerosene that is used in lighting applications at household level. The mandate in paragraph 3 (a) above is being addressed in separate stream of work.

3. Key issues and proposed solutions

5. The CO_2 emission factor for diesel generating systems used for off-grid applications and the kerosene emission factor for lighting applications at household level are referred to in multiple methodologies. The default values used in the methodologies need to be reviewed as the current values are from literature that are dated; for example, the default value CO_2 emission factor for diesel generating systems was derived from figures reported in RETScreen International's PV 2000 Model.

3.1. Default value for the carbon dioxide emission factor of diesel generator systems

6. The CO_2 emission factors for diesel generating sets vary significantly according to the size of the diesel generating sets (kW), load factor and efficiency of the system involving generators and alternators.

7. The small-scale methodology "AMS-I.F: Renewable electricity generation for captive use and mini-grid" provides a baseline emission factor that corresponds to the value indicated

under “TOOL 07: Tool to calculate the emission factor for an electricity system” (hereinafter referred to as TOOL07) for off-grid systems (i.e. 0.8 t CO_2/MWh). The methodology also provides default values for the emission factor depending on the size of the generator and load factor as seen in table 1.

Table 1. Emission factors for diesel generator systems (in kg CO_2e/kWh[(a)]) for three different levels of load factors[(b)]

Cases	Mini-grid with 24 hour service	(a) Mini-grid with temporary service (4–6 hours/day); (b) Productive applications; (c) Water pumps	Mini-grid with storage
Load factors [%]	**25%**	**50%**	**100%**
<15 kW	2.4	1.4	1.2
>=15 <35 kW	1.9	1.3	1.1
>=35 <135 kW	1.3	1.0	1.0
>=135<200 kW	0.9	0.8	0.8
> 200 kW[(c)]	0.8	0.8	0.8

(a) A conversion factor of 3.2 kg CO_2 per kg of diesel has been used (following the revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories);

(b) Values derived from figures reported in RETScreen International’s PV 2000 Model retrieved from: <http://retscreen.net/>;

(c) Default values.

8. The above values are sourced from manuals of RETScreen International’s PV 2000 Model sizing software that was in use prior to 2005.

9. Table 2 lists all the methodologies that refer to the CO_2 emission factor of diesel generating systems, sometimes via a reference to AMS-I.F.

Table 2. List of small-scale methodologies that refer to the carbon dioxide emission factor of diesel generator systems

Small-scale methodologies
AMS-I.A: Electricity generation by the user
AMS-I.B.: Mechanical energy for the user with or without electrical energy
AMS-I.F: Renewable electricity generation for captive use and mini-grid
AMS-I.L.: Electrification of rural communities using renewable energy
AMS-III.AR.: Substituting fossil fuel based lighting with LED/CFL lighting systems
AMS-III.AW.: Electrification of rural communities by grid extension
AMS-III.BB.: Electrification of communities through grid extension or construction of new mini-grids
AMS-III.BL.: Integrated methodology for electrification of communities

10. Under this work, a literature review was conducted, including the information from the manufacturers. Default values used in the methodologies by other mechanisms such as the Joint Crediting Mechanism (JCM) were also reviewed.

11. The JCM methodology[1] "Displacement of Grid and Captive Genset Electricity by a Small-scale Solar PV System, version 01.0" for a project in Palau estimated that the current CO_2 emission factor for diesel generating systems ranges from 0.631 t CO_2/MWh to 0.805 t CO_2/MWh in the region based on an efficiency range of 33 per cent to 41 per cent.

12. The JCM methodology proposed 0.533 t CO_2/MWh as the baseline emission factor[2] for an efficiency rate of 49[3] per cent.[4] Nevertheless, diesel engines in use are reported to have efficiencies that range from 30 per cent to 45 per cent,[5] and the power generation efficiency of diesel engine systems ranges from 30 per cent to 48 per cent[6].

13. ICF, in its study titled "Diesel Generators: Improving Efficiency and Emission Performance in India",[7] noted that typically, the combined efficiency of diesel generating sets varies between 30 per cent to 55 per cent, while the stand-alone efficiency of diesel engines and alternators ranges between 35–60 per cent and 85–95 per cent, respectively.[8] The study considered efficiency information from 82 diesel generator models of five major manufacturers in India.[9] Typically, the catalogue from manufacturers included information about the specific fuel consumption (i.e. litre of diesel consumed per hour if operating at 75 per cent of the rated capacity). Using this information and assuming an alternator efficiency of 90 per cent, the design value of the diesel generator efficiency was estimated by that study as shown in figure 1.

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1 https://www.jcm.go.jp/pw-jp/methodologies/18.

2 Calculated as [t CO_2/MWh] (CO_2 emission factor of diesel oil [kg-CO_2/GJ]/1,000*3.6) / (power generation efficiency (lower heating value basis) [%]/100), applying the default value of the CO_2 emission factor of diesel oil (72.6 kg CO_2/GJ) from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

3 which is yet to be achieved by the world's leading diesel generator manufacturers but is expected to be achieved in the near future

4 Paul Breeze, 2014. Power generation technologies, 2nd Edition. Furthermore in 'Approach on High Efficiency Diesel and Gas Engine, 2008, Mitsubishi Heavy Industries Technical Review Vol. 45 No. 1.', it is indicated that the SU3 and MARK-30B engines have attained generation efficiencies of 44.1 per cent and 46.8 per cent, respectively, which were better than any other diesel engine in the world in that class at the time of publication of the technical review

5 Handbook of Energy Efficiency and Renewable Energy, 2007, Edited by D. Yogi Goswami.

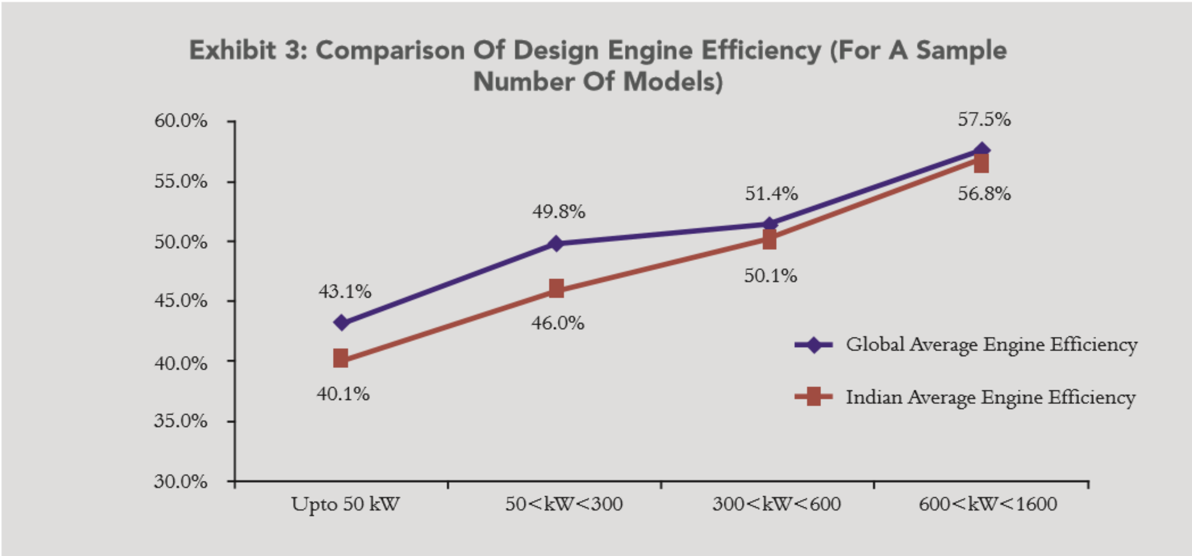
6 Cogeneration Plan and Design Manual, 6th edition, 2008, Japan Institute of Energy.

7 Available at https://shaktifoundation.in/wp-content/uploads/2017/06/ICF-2014-Diesel-Generators-Improving-Efficiency-and-Emission-Performance-in-India.pdf.

8 ICF analysis based on the typical fuel consumption of diesel generators. Available at https://shaktifoundation.in/wp-content/uploads/2017/06/ICF-2014-Diesel-Generators-Improving-Efficiency-and-Emission-Performance-in-India.pdf.

9 Data was derived from the product catalogues of Ashok Leyland, Caterpillar, Cummins, Kirloskar and Powerica; available on respective manufacturer's websites.

Figure 1. Efficiency of diesel generators as reported in the ICF study



14. Further, tables 3 and 4 below provide values from a United States of America-based and an Australia-based diesel generator supplier/manufacturer respectively. A conversion factor of 2.69 kg CO_2 per litre of diesel has been used based on the density of diesel as 0.85 kg/litre[10],[11].

Table 3. Emission factors for diesel generator systems (in kg CO_2/kWh[12])

Size	Load factors [%]		
	25%	50%	100%
>=15<35 kW	1.5	1.1	0.9
>=35 <135 kW	1.1	0.9	0.8
>=135<200 kW	1.0	0.8	0.7
> 200 kW	0.9	0.8	0.7

[10] Part I, Chapter 2 - Production, properties and environmental impact of hydrocarbon fuel conversion, Advances in Clean Hydrocarbon Fuel Processing, Science and Technology, A volume in Woodhead Publishing Series in Energy, (2011).

[11] A litre of diesel contains 86.32 per cent carbon as per the CO2 Emission Factors for Fossil Fuels by the German Environment Agency, available at https://www.umweltbundesamt.de/sites/default/files/medien/1968/publikationen/co2_emission_factors_for_fossil_fuels_correction.pdf. The molecular weight of CO_2 is 44 and the molecular weight of carbon is 12.

[12] Based on fuel consumption values as reported at https://www.generatorsource.com/Diesel_Fuel_Consumption.aspx.

Table 4. Emission factors for diesel generator systems (in kg CO_2/kWh[13])

Size	Load factors [%]		
	25%	**50%**	**100%**
<15 kW	1.0	0.9	0.8
>=15 <35 kW	1.0	0.8	0.8
>=35 <135 kW	1.0	0.8	0.8
>=135<200 kW	0.9	0.8	0.8
> 200 kW	0.9	0.8	0.8

15. While the ICF study cited above assumed a 75 per cent loading of generators, the study by Access to Energy GmbH [14] in Nigeria found that the generators were about 5 times larger than needed i.e. because of low power needs, the average load of generator was under 20%.

3.2. Default carbon dioxide emission factor value for kerosene usage

16. Table 5 lists the small-scale methodologies that use the CO_2 emission factor for kerosene usage for lighting application at household level.

Table 5. List of small-scale methodologies that use the carbon dioxide emission factor for kerosene usage for lighting applications at household level

Small-scale methodologies
AMS-I.A: Electricity generation by the user
AMS-I.L.: Electrification of rural communities using renewable energy
AMS-III.BB.: Electrification of communities through grid extension or construction of new mini-grids
AMS-III.BL.: Integrated methodology for electrification of communities

17. The methodologies listed in table 5 above consider the suppressed demand for energy services of users in using default baseline emission factors for renewable energy supplies to households. In these methodologies, the basic level of service for lighting (55 kWh/year/household) and electricity (250 kWh/year/household) were assumed based on a study by the International Energy Agency, the United Nations Development Programme and United Nations Industrial Development Organization in 2010 (IEA, 2010),[15] titled “Energy Poverty: How to make modern energy access universal?”. Currently, the methodologies listed in table 5 use three tranches of emissions factors based on the amount of electricity consumption by end users as follows:

(a) For the first 55 kWh, 6.8 kg CO_2/kWh (i.e. 374 kg CO_2e) per household per year;

(b) For 55 kWh–250 kWh, 1.3 tCO_2/MWh; and

[13] Based on fuel consumption values as reported in https://www.ablesales.com.au/blog/diesel-generator-fuel-consumption-chart-in-litres.html.

[14] WWW.A2EI.ORG/DATA.

[15] Access the full report at WEO-2010 Special Report: How to Make Modern Energy Access Universal? – Analysis - IEA.

(c) For above 250 kWh, 1.0 tCO_2/MWh based on the diesel generator consumption specified under AMS-I.F.

18. The baseline emission factor for lighting was based on the report cited in paragraph 17 (i.e. two 15 W compact florescent lights (CFLs) run for 5 hours/day for 365 days consuming 55 kWh was considered as the minimum service for lighting). For the second tranche, in addition to CFL lighting, appliances such as the 100 W fan run for 5 hours/day for 365 days, consuming 183 kWh, and a 10 W radio run for 5 hours/day for 365 days, consuming 18 kWh were considered to determine the amount of electricity needed for the basic services. For the third tranche, in addition to the second tranche, appliances such as a 100 W television run for 5 hours/day for 365 days, consuming 183 kWh, and an efficient refrigerator of a capacity range of 100 to 200 W, consuming approximately 150 to 200 kWh over a year, were considered.

19. Further, it was seen that a pressure kerosene lamp (superior in efficiency as compared to a wick kerosene lamp typically used in the household, and hence more expensive) would provide similar lighting service (if not equivalent) as the two CFLs consuming 55 kWh. Kerosene consumption of one high pressure kerosene lamp and the corresponding emissions were thus determined under a suppressed demand scenario, assuming that if income situations improved, the household would move to a better technology available in the market. Kerosene pressure lamps consume 0.08 litres of kerosene per hour (Mills, 2005).[16] At standard density, using the net calorific value and Intergovernmental Panel on Climate Change emissions factors at 5 hours of lighting per day, this amounted to 146 litres/year, or 0.375 t CO_2/year/user. 55 kWh/year of energy supplied to the user for lighting as stated above translates to 6.8 kg CO_2/kWh.[17]

20. The literature compiled under table 6 below showed a wide range of consumption patterns ranging from 3–30 litres per month of kerosene, amounting to 90–900 kg CO_2/household/year.

21. The study by Lighting Africa (2010)[18] which was more comprehensive than other studies cited, estimated 150 kg of CO_2 emissions per household per year based on a usage rate of 5 litre/month (i.e. kerosene consumption in a household per year results in 2.5 kg CO_2/litre/household/year) per bottom-of-pyramid household consumption of kerosene. The report stated that “our estimate draws on Lighting Africa market research on off-grid populations in five African countries and equates to the use of one kerosene wick lamp, or two relatively more efficient kerosene hurricane lamps for 3–4 hours daily”.

[16] The Specter of Fuel-Based Lighting. Science 308:1263-1264, Mills, Evan, 2005.

[17] Refer to https://cdm.unfccc.int/Panels/ssc_wg/meetings/035/ssc_035_an05.pdf.

[18] Available at https://www.lightingafrica.org/wp-content/uploads/2016/07/Solar-Lighting-for-the-BOP-overview-of-an-emerging-mkt.pdf.

Table 6. Household kerosene consumption as reviewed from various literature sources

Source	Coverage	Litres/year	kg CO_2/year
Mills (2005)	All developing countries	132	339
Lighting Africa (2010)	Review of 28 surveys from across the globe	60 (range: 36 to 360)	154 (92 to 920)
CDM project 2279: Rural Education for Development Society (REDS) CDM Photovoltaic Lighting Project	Rural India	131	336
CDM Project 2699: D.light Rural Lighting Project	Rural India	83.8	215
Cambodia (UNDP 2008)	Rural households in Kampong Speu and Svay Rieng	15–23	38–59
CDM project from United Republic of Tanzania	Sumbawanga Region	36–60	92–154
Uganda (Harsdorff and Bamanyaki 2009)	Unelectrified rural households	38	97

22. A report by GOGLA titled “Standardised Impact Metrics”[19] estimated that the average amount of greenhouse gases, including black carbon, emitted annually by a kerosene lantern was 431 kg per year.

3.3. Proposed solutions

23. Based on the above it is recommended to revise the default CO_2 emission factors for diesel generating systems and kerosene usage as follows.

24. The emission factor for diesel generating systems should be dependent on the capacity and load of the system. However, it is seen from the above analysis they vary within a narrow range 0.8 to 1.0 kg CO_2e/kWh for a conservative estimate of baseline emissions taking into account the load factor. 0.8 kg CO_2e/kWh which is the lower end of the default value is consistent with the value indicated under TOOL07 for off-grid systems. The range of default values for the CO_2 emission factor for diesel are proposed in table 7 below.

[19] Refer to page 37 and 50 of the report available at https://www.gogla.org/sites/default/files/resource_docs/gogla_impact_metricsv4.pdf.pdf.

Table 7. Emission factors for diesel generator systems (in kg CO_2/kWh)

Cases	Mini-grid with 24 hour service	(a) Mini-grid with temporary service (4–6 hr/day); (b) Productive applications; (c) Water pumps	Mini-grid with storage
	Load factors [%]		
Size	**25%**	**50%**	**100%**
<15 kilowatts (kW)	1.0	0.9	0.8
>=15 <35 kW	1.0	0.8	0.8
>=35 <135 kW	1.0	0.8	0.8
>=135<200 kW	0.9	0.8	0.8
> 200 kW	0.8	0.8	0.8

25. Similarly, the analysis with up to date information showed that the default factors for kerosene usage for lighting should be revised downwards even when accounting for a suppressed demand situation. With reference to table 6, 150 kg CO2/year of emissions per household from kerosene usage for lighting may be a reasonable estimate for the average emissions. Therefore, for renewable energy supplied to households, typically in off-grid settings, for the first 55 kWh, instead of 6.8 kg CO_2/kWh (i.e. 374 kg CO_2e per household per year), 2.72 kg CO_2/kWh (i.e. 150 kg CO_2e per household per year) is recommended.

26. Further, for consumption above 55 kWh, the emission factor for the diesel generating system should be based on its capacity and load factor as shown in table 7, considering that diesel generating system is most likely the alternative that would supply the electricity in the baseline case.

4. Impacts

27. The proposed default values will enhance the reliability of emission reductions estimates as they are based on recent studies and literature and are conservative when compared to the current values.

5. Subsequent work and timelines

28. Based on the guidance from the Board, the MP will revise the methodologies listed under table 2 and table 5 above to include a reference to the draft tool.

29. The MP will submit these revised methodologies for the consideration of the Board at a future meeting.

30. The MP, at its 87th meeting, agreed to seek public inputs on the draft tool. If inputs are received, they will be taken into account when preparing the recommendation to the Board. If no inputs are received, the MP recommends that the Board approve the new tool. No further work is envisaged.

6. Recommendations to the Board

31. If no inputs are received during the call for public input, the MP recommends that the Board adopt this new tool, to be made effective at the time of the Board’s approval. If inputs are received, this section is not applicable.

7. References

32. The following references were used to analyse the CO_2 emission factor for diesel generating systems:

(a) ICF, 2014. Diesel Generators: Improving Efficiency and Emission Performance in India.

(b) JCM methodology, 2015. Displacement of Grid and Captive Genset Electricity by a Small-scale Solar PV System, version 01.0, for a project in Palau.

(c) Paul Breeze, 2014. Power generation technologies, 2nd Edition.

(d) Handbook of Energy Efficiency and Renewable Energy, 2007, Edited by D. Yogi Goswami.

(e) Japan Institute of Energy, 2008. Cogeneration Plan and Design Manual, 6th edition.

(f) Mitsubishi Heavy Industries, 2008. Approach on High Efficiency Diesel and Gas Engine, Technical Review Vol. 45 No. 1.

33. The following references were used to analyse the CO_2 emission factor for kerosene usage in lighting applications at household level:

(a) Harsdorff, Marek, and Patricia Bamanyaki. 2009. Impact assessment of the solar electrification of micro enterprises, households and the development of the rural solar market. GIZ Promotion of Renewable Energy and Energy Efficiency Programme (PREEEP). Kampala, Uganda: FRIENDS’ Consult Limited.

(b) International Energy Agency, United Nations Development Programme and United Nations Industrial Development Organization). 2010. Energy Poverty: How to make modern energy access universal? Special early excerpt of the World Energy Outlook 2010 for the United Nations General Assembly on the Millennium Development Goals. Paris: Organisation for Economic Co-operation and Development/International Energy Agency. <http://www.worldenergyoutlook.org/docs/weo2010/weo2010_poverty.pdf>.

(c) Independent Evaluation Group (IEG). 2008. The welfare impacts of rural electrification: a reassessment of the costs and benefits. An IEG impact evaluation. Washington, D. C.: World Bank.

(d) Lighting Africa, 2010. Solar Lighting for the Base of the Pyramid – Overview of an Emerging Market.

(e) Mills, Evan, 2005. The Specter of Fuel-Based Lighting. Science 308:1263–1264.

(f) Government of Cambodia: Ministry of Industry, Mines and Energy, GERES and UNDP. 2008. Rural energy demand in Cambodia: An empirical study for Kampong Speu and Svay Rieng.

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1. Introduction

1. This tool serves as a repository of default values of parameters which are applied in methodologies that refer to this tool. It includes background information on the rationale for the default values.[1]

2. Scope, applicability, and entry into force

2.1. Scope

2. This tool includes values of (a) carbon dioxide (CO_2) emission factors for diesel generator systems used for off-grid power generation purposes and (b) CO_2 emission factor for kerosene usage by households and communities for lighting purposes.

3. The appendix of this tool specifies the validity, process for update and timelines for the update of the default values.

2.2. Applicability

4. This tool shall be applied together with the methodologies that cite this tool to estimate the baseline emissions (e.g. from the use of diesel generating systems in off-grid power generation purpose or the baseline kerosene usage).

5. The default values as contained in section 5 of this tool are valid up to # Month 20##. Notwithstanding the provisions on the validity of new, revised and previous versions of methodologies and methodological tools in the “Procedure: Development, revision and clarification of baseline and monitoring methodologies and methodological tools”, there will be no grace period for the application of this tool and the validity of the default values after this date, including in cases where further default values are added to this tool through revisions of this tool before this date.

2.3. Entry into force

6. The date of entry into force is the date of the publication of the EB XX meeting report on DD Month 2022.

3. Normative references

7. The tool refers to the latest approved version of “TOOL07: Tool to calculate the emission factor for an electricity system”.

4. Definitions

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

[1] Currently this information is included in the cover note of this document.

9. For the purpose of this tool, the following definitions shall apply:

(a) **Mini-grid system** – An integrated energy system consisting of interconnected loads and one or more energy resources with a total capacity not exceeding 15 MW (i.e. the sum of installed capacities of all electricity generating units connected to the mini-grid is equal to or less than 15 MW), which is not connected to a national or a regional grid.

5. Parameters

10. This tool provides default values to following parameters:

(a) CO_2 emission factor for diesel generating system used for off-grid power generation purposes; and

(b) CO_2 emission factor for kerosene used for lighting applications.

5.1. Carbon dioxide emission factor for diesel generating system

11. For a baseline electricity generating system including the mini-grid system where all generators use exclusively fuel oil and/or diesel fuel, the emission factor for a diesel generating system of the relevant capacity operating at optimal load as given in Table 1 shall be considered.

Table 1. Emission factors for diesel generator systems (in kg CO_2/kWh[(a)])

Cases	Mini-grid with 24 hour service	(a) Mini-grid with temporary service (4 – 6 hr/day); (b) Productive applications; (c) Water pumps	Mini-grid with storage
	Load factors [%]		
Size	**25%**	**50%**	**100%**
<15 kilowatts (kW)	1.0	0.9	0.8
>=15 <35 kW	1.0	0.8	0.8
>=35 <135 kW	1.0	0.8	0.8
>=135<200 kW	0.9	0.8	0.8
> 200 kW	0.8	0.8	0.8

(a) A conversion factor of 3.2 kg CO_2 per kg of diesel has been used (following 2006 IPCC Guidelines for National Greenhouse Gas Inventories)

5.2. Carbon dioxide emission factor for kerosene usage by households and communities

12. In methodologies where in the baseline, kerosene usage for lighting purposes and usage of diesel generating system for meeting electricity demand is envisaged, the default emission factor is proposed as follows:

(a) For the first 55 kWh of electricity supplied to the user by the project electricity generating system in a given year, an emission factor of 2.72 kg CO_2/kWh (i.e. 2.72 t CO_2/MWh) may be used;

(b) For the electricity supplied to the user by the project electricity generating system in a given year that is above 55 kWh, an emission factor as specified in table 1 above based on the diesel generator capacity and the load may be used.

6. Parameters

Data / Parameter table 1.

Data / Parameter:	$EF_{CO2,y}$
Data unit:	t CO_2/MWh
Description:	CO_2 emission factor for the diesel generating system in year y
Source of data:	An emission factor as specified in table 1 above based on the diesel generator capacity and the load
Measurement procedures (if any):	-
Any comment:	.

Data / Parameter table 2.

Data / Parameter:	$EF_{CO2,k}$
Data unit:	t CO_2/MWh
Description:	CO_2 emission factor for baseline kerosene usage in year y
Source of data:	2.72 t CO_2/MWh as per paragraph 12 above
Measurement procedures (if any):	-
Any comment:	Eligible only for the first 55 kWh of electricity supplied to the user by the project electricity generating system in a given year unless otherwise specified in the methodology

Appendix. Process, criteria and timeline for the update of the default values

1. The validity of the default values included in this tool shall be re-assessed by the Methodologies Panel (MP) every three years.

2. The MP shall initiate the analysis of the default values at least 365 days prior to the expiry date of the default values as referred to in paragraph 5 of this tool.

3. The MP shall review relevant information pertaining to the default values and prepare a recommendation on the continuation or update to the default values for consideration by the Board.

4. The Board shall decide on the continuation or update to the default values.

5. The Board may include additional default values in this tool at any point in time. In such cases, the validity of the default values added is limited to the remaining valid period of the default values as indicated in paragraph 5 of this tool and those default values are subject to review as indicated in paragraphs 1–3 above.

6. Stakeholders may propose addition of default values in this tool following the process in section 6 'Revision of approved methodology or methodological tool' of the "Procedure: Development, revision and clarification of baseline and monitoring methodologies and methodological tools".

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Document information

Version	*Date*	*Description*
01.0	21 February 2022	MP 87, Annex 3 To be considered by the Board at EB 113. A call for public input will be issued for this draft document. Any input will be discussed with the MP and forwarded to the Board for consideration.

Decision Class: Regulatory
Document Type: Tool
Business Function: Methodology
Keywords: calculations, grid emission factors