

CDM-SSCWG44-A06

Draft Small-scale Methodology

AMS-III.Z: Fuel Switch, process improvement and energy efficiency in brick manufacture

Version 05.0

Sectoral scope(s): 04



DRAFT



United Nations
Framework Convention on
Climate Change

COVER NOTE

1. Procedural background

1. The small-scale working group (SSC WG) at its 43rd meeting considered a request for clarification (SSC_699) related to debundling assessment for project activities using “AMS-III.Z: Fuel Switch, process improvement and energy efficiency in brick manufacture”. The SSC WG agreed to recommend to the Executive Board (hereinafter referred to as the Board) of the clean development mechanism (CDM), simplification of debundling criteria for CDM projects in the brick production sector.
2. The Board at its seventy-seventh meeting considered the request for guidance from the SSC WG on whether it can propose the simplification of debundling criteria for application to the brick sector through a provision in “AMS-III.Z: Fuel Switch, process improvement and energy efficiency in brick manufacture”, exempting projects that are an aggregation of brick production units not larger than five per cent of the type III small-scale CDM project activity thresholds. The Board agreed that the SSC WG may propose such modifications in a revision of AMS-III.Z, if necessary including additional options to define the thresholds for the units (e.g. cumulative emission reduction of each of the units in a period of three years shall not exceed the small-scale CDM project activity thresholds).

2. Purpose

3. To propose modifications in a revision of AMS-III.Z to exempt debundling check for the brick sector when certain predefined conditions are met.

3. Key issues and proposed solutions

4. The SSC WG noted that small-scale projects from brick manufacturing facilities using AMS-III.Z in the CDM pipeline include brick manufacturing facilities with capacities ranging from 2.25 million bricks per year to 30 million bricks per year equating approximately to 800 t CO₂e/year to 10600 t CO₂e/year emission reductions. The SSC threshold for subsystems/measures exempted from debundling check as per the “Guidelines on assessment of debundling for SSC project activities” is 1 per cent of the type III threshold which would amount to 600 t CO₂e/year.
5. The brick manufacturing facilities because of its nature of operation are located close to the source of raw materials for brick production such as areas where clay is available or areas where fly ash is available. This would lead to difficulty in demonstrating compliance with debundling requirements using criteria such as the distance between the facilities especially when the project or the CPA assembles a number of brick production units.

6. To address the request from the Board the SSC WG analysed the options described below.
- (a) **Option 1.** “The size of each independently owned brick production facility is not larger than five per cent of the type III small-scale threshold”. This option has been already accepted by the Board at its seventy seventh meeting;
 - (b) **Option 2.** “The cumulative emission reduction of each of the independently owned brick production facility in a period of three consecutive years shall not exceed the type III small-scale threshold”. The SSC WG would like to highlight that the guidelines on assessment of debundling for SSC project activities exempts the debundling check for the individual subsystems/measures if the size of each unit is not greater than 1 per cent of the small-scale threshold. The exemption in that case was based on the dispersed nature of units included in the project i.e. project would comprise of 100 or more units. If the proposed option is applied to brick manufacturing facilities then the facilities resulting in average annual emission reductions equivalent to 33 per cent of type III small-scale threshold will be exempted from performing debundling check i.e. projects comprising of even three units would qualify. The SSC WG is of the opinion that such an increase in the debundling threshold may weaken the argument that distributed nature of the project would justify the exemption. Nevertheless if the Board wishes to approve this approach the SSC WG recommends that the approach used in the “Guideline on demonstrating additionality of microscale project activities” may be considered by the Board i.e. in case project activities are located in a least developed countries/small island developing states (LDC)/(SIDS) or special underdeveloped zone (SUZ) and the ex ante estimation of emission reductions for each individual unit is less than type III micro scale project activity limits i.e 20kt/CO₂e/yr, then such a project activity is exempted from conducting de-bundling check.
7. Thus the SSC WG based on the above recommends that the following cases are exempted from ‘determining the occurrence of debundling’ as per the “Guidelines on assessment of debundling for SSC project activities”:
- (a) Project activities that aggregate brick units with holistic production cycles i.e. from raw material procurement to finished product not larger than five per cent of the type III small-scale CDM project activity thresholds (i.e. 3,000 tCO₂e); or
 - (b) Project activities that aggregate brick units, where each unit qualifies as Type III microscale CDM project activity and the geographic location of the project activity is a least developed country/small island developing state (LDC)/(SIDS) or special underdeveloped zone (SUZ) of the host country as identified by the government in accordance with the guideline on ‘Demonstrating additionality of microscale project activities’.

4. Impacts

8. The options provided within the methodology to exempt the debundling check will help project proponents in developing project activities and also simplify the subsequent validation conducted by designated operational entities (DOEs) and the assessment at secretariat.

5. Recommendations to the Board

9. The SSC WG recommends that the Board approve the attached draft version of the methodology.

6. References

- (a) Guidelines on assessment of debundling for SSC project activities (Version 03), available at https://cdm.unfccc.int/Reference/Guidclarif/ssc/methSSC_guid17.pdf;
- (b) Response to the request for clarification SSC_699, available at [http://cdm.unfccc.int/filestorage/Q/U/T/QUTHB46Y90DVKIM3LNEG2R8J1WSF OZ/Final response.pdf?t=M0d8bjNvNnp4fDCZkx9JwEAXzRBB4NBmlmGj](http://cdm.unfccc.int/filestorage/Q/U/T/QUTHB46Y90DVKIM3LNEG2R8J1WSF OZ/Final%20response.pdf?t=M0d8bjNvNnp4fDCZkx9JwEAXzRBB4NBmlmGj);
- (c) Meeting report to seventy-seventh meeting of the Board, available at <http://cdm.unfccc.int/EB/index.html>;
- (d) Information from following projects submitted for request for registration is used for conducting the analysis:
- (i) Project 6595: Fal G brick manufacturing by Magnum Concretes Pvt. Ltd, available at <https://cdm.unfccc.int/Projects/DB/RWTUV1341388693.65/view>;
- (ii) Project 8371: Autoclaved Aerated Concrete blocks/panel manufacturing unit based on an energy efficient brick manufacturing technology, available at https://cdm.unfccc.int/Projects/DB/KBS_Cert1353665827.55/view;
- (iii) Project 6557: Bundled Fly Ash Bricks Manufacturing Project, available at <https://cdm.unfccc.int/Projects/DB/DNV-CUK1340943476.66/view>;
- (iv) Project 5348: India-FaL-G Brick and Blocks Project No.4., available at <https://cdm.unfccc.int/Projects/DB/DNV-CUK1319098638.2/view>;
- (v) Project 6206: Fuel Switch, process improvement and energy efficiency initiatives at brick manufacturing plant in Golan, Gujarat, India, available at <https://cdm.unfccc.int/Projects/DB/SGS-UKL1336722992.46/view>;
- (vi) Project 4831: India-FaL-G Brick and Blocks Project No.3, available at <https://cdm.unfccc.int/Projects/DB/DNV-CUK1305866694.28/view>;
- (vii) Project 4585: India-FaL-G Brick and Blocks Project No.2., available at <https://cdm.unfccc.int/Projects/DB/DNV-CUK1300267994.99/view>.

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1. Introduction

1. The following table describes the key elements of the methodology:

Table 1. Methodology key elements

Typical project(s)	Switch to a more-energy-efficient brick production process and/or switch from fossil fuel to renewable biomass or less-carbon-intensive fossil fuel
Type of GHG emissions mitigation action	<ul style="list-style-type: none"> • Energy efficiency; • Renewable energy; • Fuel or feedstock switch. Reduction of emissions from decreased energy consumption per brick produced and from the use of fuels with lower carbon intensity, either at an existing brick kiln or at a new facility

2. Scope, applicability, and entry into force

2.1. Scope

2. The methodology comprises one or more technology/measures listed below in brick¹ production facilities:

- (a) Shift to an alternative brick production technology/process; or
- (b) Complete/partial substitution of fossil fuels with biomass² (including solid biomass residues such as sawdust and food industry organic liquid residues);³ or
- (c) Complete/partial substitution of high carbon fossil fuels with low carbon fossil fuels.⁴

2.2. Applicability

3. The measures may replace, modify, retrofit⁵ or add capacity to systems in existing facilities or be installed in a new facility.

¹ Brick in the context of this methodology includes solid bricks and blocks as well as hollow blocks used in building construction.

² As per annex 18, EB 23.

³ Fatty acids from oil extraction, waste oil and waste fat of biogenic origin (includes waste oil from restaurants, agro and food industry, slaughterhouses or related commercial sectors). The sources/origin of waste oil/fat and respective volumes must be identified and clearly documented in the PDD. No CERs from waste oil/fat can be claimed under this methodology if it is not produced from biogenic origin, biogenic shall mean the oils and/or fats originate from either vegetable or animal biomass, but not from mineral (fossil) sources.

⁴ For example from anthracite coal to natural gas.

⁵ For example to, replace and/or modify an existing heating and/or firing facility(/-ies) to enable the use of biomass residues.

4. Complete or partial fuel substitution and associated activities may also result in improved energy efficiency of existing facility; however project activities primarily aimed at emission reductions from energy efficiency measures shall apply “AMS-II.D: Energy efficiency and fuel switching measures for industrial facilities”. Thus, the methodology is applicable for the production of:
 - (a) Bricks that are the same in the project and baseline cases; or
 - (b) Bricks that are different in the project case versus the baseline case due to a change(s) in raw materials, use of different additives, and/or production process changes resulting in reduced use or avoidance of fossil fuels for forming, sintering (firing) or drying or other applications in the facility as long as it can be demonstrated that the service level of the project brick is comparable to that of the baseline brick (see paragraph 11). Examples include pressed mud blocks (soil blocks) with cement or lime stabilization⁶ and other ‘unburned’ bricks that attain strength due to fly ash, lime/cement and gypsum chemistry.
5. New facilities (Greenfield projects) and project activities involving capacity additions are only eligible if they comply with the requirements for Greenfield projects and capacity increase projects specified in the “General guidelines for SSC CDM methodologies”.
6. The requirements concerning demonstration of the remaining lifetime of the replaced equipment shall be met as described in the “General guidelines for SSC CDM methodologies”. If the remaining lifetime of the affected systems increases due to the project activity, the crediting period shall be limited to the estimated remaining lifetime, i.e. the time when the affected systems would have been replaced in the absence of the project activity.
7. For existing facilities, it shall be demonstrated, with historical data, that for at least three years immediately prior to the start date of the project implementation, only fossil fuels (no renewable biomass) were used in the brick production systems that are being modified or retrofitted. In cases where small quantities of biomass were used for experimental purposes this can be excluded.
8. The biomass utilized by the project activity shall not be chemically processed (e.g. esterification to produce biodiesel, degumming and/or neutralization by chemical reagents) prior to the combustion but it may be processed mechanically (e.g. pressing, filtering)/thermally (e.g. gasification to produce syngas).⁷

~~9. In cases where the project activity uses crops from renewable biomass origin as fuel, the crops should be cultivated at dedicated plantations and the following conditions shall be met:~~

- ~~(a) The project activity does not lead to a shift of pre-project activities outside the project boundary, i.e. the land under the proposed project activity can continue to~~

⁶ May involve mechanical and hydraulic systems for energy transmission to the soil block via a lever, toggle, cam, pivot, ball and socket joint, piston, etc.

⁷ The syngas shall be derived from gasification of renewable biomass only and no methane emissions are to be released to the atmosphere, thus demonstrating the complete use for combustion of the syngas in the project equipment.

~~provide at least the same amount of goods and services as it would in the absence of the project;~~

~~(b) The plantations are established on land that:~~

~~(i) Was classified as degraded or degrading at the start of the project implementation, as per the "Tool for the identification of degraded or degrading lands for consideration in implementing CDM A/R project activities"; or~~

~~(ii) Is included in the project boundary of one or several registered A/R CDM project activities;~~

~~(c) Plantations established on peatlands are not eligible even if qualifying under condition (i) or (ii) above.~~

9. In cases where the project activity utilizes charcoal produced from biomass as fuel, the methodology is applicable provided that:
- (a) Charcoal is produced in kilns equipped with a methane recovery and destruction facility; or
 - (b) If charcoal is produced in kilns not equipped with a methane recovery and destruction facility, methane emissions from the production of charcoal shall be considered.
10. In the case of project activities involving changes in raw materials (including additives), it shall be demonstrated that additive materials are abundant in the country/region, according to the following procedures:
- (a) **Step 1:** using relevant literature and/or interviews with experts, a list of raw materials to be utilized is prepared based on the historic and/or present consumption of such raw materials;
 - (b) **Step 2:** the current supply situation for each type of raw material to be utilized is assessed and their surplus availability is demonstrated using one of the approaches below:
 - (i) Approach 1: demonstrate that the raw materials to be utilized, in the region of the project activity, are not fully utilized. For this purpose, demonstrate that the quantity of material is at least 25 per cent greater than the demand for such materials or the availability of alternative materials for at least one year prior to the project implementation;
 - (ii) Approach 2: demonstrate that suppliers of the raw materials to be utilized, in the region of the project activity, are not able to sell all of their supply of these materials. For this purpose, project participants shall demonstrate that a representative sample of suppliers of the raw materials to be utilized, in the region, had a surplus of materials (e.g. at the end of the period during which the raw material is sold) that they could not sell and that is not utilized.

11. This methodology is applicable under the following conditions:
- (a) The service level of project brick shall be comparable to or better than the baseline brick, i.e. the bricks produced in the brick production facility during the crediting period shall meet or exceed the performance level of the baseline bricks (in terms of, for example dry compressive strength, wet compressive strength, density). An appropriate national standard shall be used to identify the strength class of the bricks; bricks that have compressive strengths lower than the lowest class bricks in the standard are not eligible under this methodology. Project bricks are tested in nationally approved laboratories at six-month intervals (at a minimum) and test certificates on compressive strength are made available for verification;
 - (b) The existing facilities involving modification and/or replacement shall not influence the production capacity beyond ± 10 per cent of the baseline capacity unless it is demonstrated that the baseline for the added capacity is the same as that for the existing capacity in accordance with paragraph 5 above;
 - (c) Measures are limited to those that result in emission reductions of less than or equal to 60 kt CO₂ equivalent annually.
12. This methodology is not applicable if local regulations require the use of the proposed technologies or raw materials for the manufacturing of bricks unless widespread non-compliance (i.e. less than 50 per cent of brick production activities in the country comply) of the local regulation evidenced.
13. In cases where the project activity utilizes biomass sourced from dedicated plantations, applicability conditions prescribed in the tool "Project emissions from cultivation of biomass" shall apply.
14. The following cases are exempted from 'determining the occurrence of debundling' as per the "Guidelines on assessment of debundling for SSC project activities":
- (a) Project activities that aggregate brick units with holistic production cycles i.e. from raw material procurement to finished product, where each unit is not larger than 5 per cent of the Type III small-scale CDM project activity thresholds i.e. 3,000 t CO₂e; or
 - (b) Project activities that aggregate brick units, where each unit qualifies as Type III microscale CDM project activity and the geographic location of the project activity is a least developed countries/small island developing states (LDC)/(SIDS) or special underdeveloped zone (SUZ) of the host country as identified by the government in accordance with the guideline on "Demonstrating additionality of microscale project activities".

2.3. Entry into force

15. The date of entry into force is the date of the publication of the EB 79 meeting report on 1 June 2014.

3. Normative references

16. Project participants shall apply the “General guidelines for SSC CDM methodologies”, “Guidelines on the demonstration of additionality of small-scale project activities” ~~information on additionality (attachment A to appendix B)~~ and “General guidance on leakage in biomass project activities” (attachment C to appendix B) provided at <<http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html>> mutatis mutandis.
17. This methodology also refers to the latest approved versions of the following approved methodologies and tools:
- ~~(a) AM0042 “Grid-connected electricity generation using biomass from newly developed dedicated plantations”;~~
 - (a) “Upstream leakage emissions associated with fossil fuel use” — “ACM0009: Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas”;
 - (b) “AMS-II.D: Energy efficiency and fuel switching measures for industrial facilities”;
 - (c) “AMS-II.H: Energy efficiency measures through centralization of utility provisions of an industrial facility”;
 - (d) “AMS-III.K: Avoidance of methane release from charcoal production by shifting from traditional open-ended methods to mechanized charcoaling process”;
 - (e) “AMS-III.AK: Biodiesel production and use for transport applications”;
 - (f) “Tool to calculate baseline, project and/or leakage emissions from electricity consumption”;
 - (g) “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion”
 - (h) Tool: “Project emissions from cultivation of biomass”.

4. Definitions

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

5. Baseline methodology

5.1. Project boundary

19. The project boundary is the physical, geographical site where the brick production takes place during both the baseline and crediting periods. It also includes all installations, processes or equipment affected by the switching. In cases where the renewable biomass is sourced from dedicated plantations it also includes the area of the plantations. In cases involving thermo-mechanical processing of the biomass (e.g. charcoal; briquettes; syngas) the sites where these processes are carried out shall be within the project boundary.

5.2. Baseline emissions

20. The baseline emissions are the fossil fuel consumption related emissions (fossil fuel consumed multiplied by an emissions factor) associated with the system(s), which were or would have otherwise been used, in the brick production facility(ies) in the absence of the project activity.

- (a) For projects that involve replacing, modifying or retrofitting systems in existing facilities, the average of the immediately prior three-year historical fossil fuel consumption data, for the existing facility, shall be used to determine an average annual baseline fossil fuel consumption value. Similarly, prior three-year historical production data (excluding abnormal years) for the existing facility, shall be used to determine an average annual historical baseline brick production rate in units of weight or volume. For calculating the emission factor for fossil fuel, reliable local or national data shall be used. IPCC default values shall be used only when country or project specific data are not available or demonstrably difficult to obtain;
- (b) For projects involving the installation of systems in a new facility or a capacity addition in an existing system, the average annual baseline fossil fuel consumption value and the baseline brick production rate shall be determined as that which would have been consumed and produced, respectively, under an appropriate baseline scenario. If the baseline scenario identification as per paragraph 5 above results in more than one alternative technologies with different levels of energy consumption, the alternative with the least emissions intensity should be chosen for determining the baseline emissions of the facility.

21. The emissions are calculated as below:

$$BE_y = EF_{BL} * P_{PJ,y} \quad \text{Equation (1)}$$

Where:

BE_y = The annual baseline emissions from fossil fuels displaced by the project activity in t CO₂e in year y (of the crediting period)

EF_{BL} = The annual production specific emission factor for year y, in t CO₂/kg or m³

$P_{PJ,y}$ = The annual net production of the facility in year y, in kg or m³

22. The annual production specific emission factor EF_{BL} shall be calculated ex ante for project activities that involve replacing, modifying or retrofitting systems in existing facilities as follows:

$$EF_{BL} = \sum_{j,i} (FC_{BL,i,j} * NCV_j * EF_{CO_2,j}) \div P_{Hy} \quad \text{Equation (2)}$$

Where:

$FC_{BL,i,j}$	=	Average annual baseline fossil fuel consumption value for fuel type j combusted in the process i , using volume or weight units ⁸
NCV_j	=	Average net calorific value of fuel type j combusted, TJ per unit volume or mass unit
$EF_{CO_2,j}$	=	CO ₂ emission factor of fuel type j combusted in the process i in t CO ₂ /TJ
P_{Hy}	=	Average annual historical baseline brick production rate in accordance with paragraph 19(a), in units of weight or volume, kg or m ³

23. Annual production specific emission factor (EF_{BL}) for installation of systems in a new facility or for capacity addition in an existing system shall be determined using one of the options below:

- Using manufacturers' specifications such as for brick production rate, energy consumption in the process;
- Using specifications of comparable units having similar techno-economic parameters;
- Using reference plant approach.⁹

5.3. Project emissions

24. The project emissions should be calculated as follows:

$$PE_y = PE_{elec,y} + PE_{fossilfuel,y} + PE_{transporty} + PE_{cultivation,y} + PE_{CH4,y} \quad \text{Equation (3)}$$

Where:

PE_y	=	Project emissions in year y (t CO ₂)
$PE_{elec,y}$	=	Project emissions due to electricity consumption in year y (t CO ₂)
$PE_{fossilfuel,y}$	=	Project emissions due to fossil fuel consumption in year y (t CO ₂)
$PE_{transporty}$	=	Project emissions from transportation of the renewable biomass from the places of their origin to the manufacturing facility site in year y (t CO ₂)

⁸ Volume or weight units will be used depending on which best defines the fuel consumption requirements of the brick making process(es).

⁹ This shall be consistent with the definition of "baseline reference plant approach" provided in the approved small-scale methodologies such as AMS-II.H.

$PE_{cultivation,y}$ = Project emissions from cultivation of biomass in a dedicated plantation in year y (t CO₂e) $PE_{CH_4,y}$ = Project emissions due to the production of charcoal in kilns not equipped with a methane recovery and destruction facility in year y (t CO₂e)

5.3.1. Calculation of $PE_{elec,y}$

25. The emissions include electricity consumption (including auxiliary use) $PE_{elec,y}$ associated with the biomass treatment and processing, calculated as per the “Tool to calculate baseline, project and/or leakage emissions from electricity consumption”.

5.3.2. Calculation of $PE_{fossilfuel,y}$

26. The emissions include fossil fuel consumption (including auxiliary use) $PE_{fossilfuel,y}$ associated with the operation of the manufacturing process and the biomass treatment and processing, calculated as per the “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion”.

5.3.3. Calculation of $PE_{transport,y}$

27. Project emissions from the transportation of the renewable biomass from its source to the manufacturing production site shall be accounted for following the procedures in “AMS-III.AK: Biodiesel production and use for transport applications” if the transportation distance is more than 200 km, otherwise they can be neglected.

5.3.4. Calculation of $PE_{cultivation,y}$

28. In cases where the project activity utilizes biomass sourced from dedicated plantations, the project emissions from renewable biomass cultivation shall be calculated according to the methodological tool “Project emissions from cultivation of biomass” as per the relevant provisions of AMS-III.AK “Biodiesel production and use for transport applications”.

5.3.5. Calculation of $PE_{CH_4,y}$

29. The project methane emissions from the charcoal produced in kilns not equipped with a methane recovery and destruction facility and methane emissions from the production of charcoal shall be accounted for as per the relevant procedures of “AMS-III.K: Avoidance of methane release from charcoal production by shifting from traditional open-ended methods to mechanized charcoaling process”. Alternatively, conservative emission factor values from peer reviewed literature or from a registered CDM project activity can be used, provided that it can be demonstrated that the parameters from these are comparable, e.g. the source of biomass, characteristics of biomass such as moisture, carbon content, type of kiln and operating conditions such as ambient temperature.

5.4. Leakage

30. Leakage emissions on account of the diversion of biomass residues from other uses (competing uses) shall be calculated as per the “General guidance on leakage in biomass project activities”.

31. In the case of project activities involving a change in the production process or a change in the type or quantity of raw and/or additive materials as compared to the baseline, the incremental emissions associated with the production/consumption and transport of those raw and/or additive materials consumed as compared to baseline, shall be calculated as leakage.
32. In cases where the collection, processing and transportation of biomass residues is outside the project boundary and due to the implementation of the project activity biomass residues are transported over a distance of 200 kilometres CO₂ emissions from the collection, processing and transportation of biomass residues to the project site shall be taken into account as leakage using with the latest version of tool to calculate “Project and leakage emissions from transportation of freight”.

5.5. Emission reductions

33. Emission reductions (ER_y) achieved by the project activity will be calculated as the difference between the baseline emissions and the sum of project emissions and leakage as follows:

$$ER_y = BE_y - PE_y - LE_y \quad \text{Equation (4)}$$

Where:

ER_y = Emission reductions in year y (t CO₂e/yr)

BE_y = Baseline emissions in year y (t CO₂e/yr)

PE_y = Project emissions in year y (t CO₂e/yr)

LE_y = Leakage emissions in year y (t CO₂e/yr)

6. Monitoring methodology

34. The applicable requirements specified in the “General guidelines for SSC CDM methodologies” and the “Standard on sampling and surveys for CDM project activities and PoAs” are also an integral part of the monitoring guidelines specified below and therefore shall be referred to by the project participant.
35. Monitoring during the crediting period shall include:
- Production output (kg or m³ per day);
 - Principal raw and additive material purchases on monthly basis;
 - Tests to validate that the project bricks meet the performance requirements and specifications at six-month intervals;
 - Project emissions associated with the electricity use shall be monitored as per the “Tool to calculate baseline, project and/or leakage emissions from electricity consumption”;

- (e) Project emissions due to the fossil fuels consumption shall be monitored as per the “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion”;
- (f) Daily consumption of biomass of the production facility. Each type of solid/liquid biomass shall be monitored separately. Cross-checking with purchase invoice, delivery notes and the stock is required;
- (g) In order to assess the compliance with the applicability conditions concerning organic liquid residues as defined in footnote 3, monitoring shall include data on the origin of organic residue liquids;
- (h) The calorific value of each fossil fuel type and the density, mass fraction and carbon content of each biomass fuel type used;
- (i) Parameters for determining project emissions from renewable biomass cultivation and from transportation of renewable biomass over distances of 200 km shall be monitored as per the relevant provisions of AMS-III.AK;
- (j) Parameters for determining methane emissions from the charcoal produced in kilns not equipped with a methane recovery and destruction facility shall be monitored as per the relevant procedures of AMS-III.K.

6.1. Project activity under a programme of activities

~~35. The following conditions apply for use of this methodology in a project activity under a programme of activities:~~

36. Leakage resulting from fuel extraction, processing, liquefaction, transportation, re-gasification and distribution of fossil fuels outside of the project boundary shall be considered, as per the guidance provided in the “Upstream leakage emissions associated with fossil fuel use” leakage section of “ACM0009: Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas”. If leakage emissions in the baseline scenario are higher than leakage emissions in the project scenario, leakage emissions may be set to zero.

~~(a) In the specific case of biomass project activities, the multiple types of biomass, i.e. biomass residues and biomass from dedicated plantations can be used for a PoA, provided all the other requirements in the methodology such as: (a) leakage emissions in case of biomass residues following the general guidance for leakage in small-scale biomass project activities (attachment C of appendix B;¹⁰ and (b) “Grid-connected electricity generation using biomass from newly developed dedicated plantations” are satisfied.~~

¹⁰ Available on <<http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html>>.

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
05.0	14 May 2014	SSC WG 44, Annex 6 To be considered by the Board at EB 79. To include the criteria for debundling check as per EB 77 mandate, and include a reference to tool "Project emissions from cultivation of biomass".
04.0	11 May 2012	EB 67, Annex 21 To expand its applicability for a complete switch from fossil fuel to renewable biomass and provide further guidelines to determine baseline emissions for Greenfield and capacity-addition project activity.
03.0	28 May 2010	EB 54, Annex 10 To include project activities involving complete/partial substitution of high carbon fossil fuels with low carbon fossil fuels.
02.0	28 May 2009	EB 47, Annex 25 To simplify the requirements to establish the comparability level of service (e.g. comparability of compressive strength) of baseline bricks and the project bricks.
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