**CDM-SSCWG44-A09**

# Draft Small-scale Methodology

# AMS-III.T: Plant oil production and use for transport applications

Version 03.0 - Draft

Sectoral scope(s): 07

DRAFT

**United Nations**
Framework Convention on
Climate Change

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# COVER NOTE

## 1. Procedural background

1. Following the approval of the methodological tool "Project emissions from cultivation of biomass" at the seventy-fifth meeting of the Executive Board (hereinafter referred to as the Board) of the clean development mechanism (CDM), the Small-Scale Working Group (SSC WG) requested a mandate from the Board to integrate this tool into SSC methodologies. Consequently, the Board mandated this task at its seventy-sixth meeting (EB 76, para 53).

## 2. Purpose

2. The draft revision:

   (a) Introduces the methodological tool "Project emissions from cultivation of biomass", taking advantage of its procedures and applicability criteria, and removing obsolete procedure;

   (b) Streamlines biomass cultivation procedures;

   (c) Streamlines transport related project emissions procedures;

   (d) Introduces project and leakage emissions equations instead of cross-reference to another methodology;

   (e) Removes restrictions for application in a PoA;

   (f) Removes provisions for scrapping of equipment in a PoA.

## 3. Key issues and proposed solutions

3. None.

## 4. Impacts

   (a) Introduces the methodological tool "Project emissions from cultivation of biomass", taking advantage of its procedures and applicability criteria, and removing obsolete procedure;

   (b) Streamlines biomass cultivation procedures;

   (c) Streamlines transport and energy consumption related project emissions procedures;

   (d) Improves the emission reduction calculations;

   (e) Removes restrictions for application in a PoA.

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## 5.    Subsequent work and timelines

4.    The SSC WG, at its 44th meeting, agreed on the draft revised methodology. After receiving public inputs on the document, the SSC WG will continue working on the methodology, at its 45th meeting, for recommendation to the Board at a future meeting of the Board.

## 6.    Recommendations to the Board

5.    Not applicable (call for public input)..

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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) | Plant oil production that is used for transportation applications, where the plant oil is produced from pressed and filtered oilseeds from plants that are cultivated on dedicated plantations |
|---|---|
| Type of GHG emissions mitigation action | Fuel switch. Displacement of more-GHG-intensive petrodiesel for transport. |

# 2. Scope, applicability, and entry into force

## 2.1. Scope

2. This methodology covers project activities involving the cultivation of oilseeds, the production of plant oil[1] and the use of plant oil for transportation applications. Plant oil in contrast to bio-diesel is not trans-esterified but only pressed and filtered from oilseeds.

## 2.2. Applicability

3. This methodology is only applicable to plant oil that:

(a) Is used in blends of up to 10 per cent by volume of plant oil in unconverted vehicles;[2] or

(b) Is used as pure or in blends above 10 per cent by volume of plant oil.[3]

4. This methodology is applicable under the following conditions:

(a) In the baseline situation the vehicles use diesel;

(b) Plant oil must comply with national quality regulations or in absence of the latter with the quality standards stipulated in Table 2;

(c) The retailers, final users and the producer of the plant oil or its blend are bound by a contract that states that the retailers and final consumers shall not claim emission reductions resulting from its consumption. The contract also enables the producer to monitor the consumption of plant oil or its blend. Only the producer of the plant oil can claim emission reductions under this methodology;

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[1] Plant oil, or vegetable oil, is oil of plant origin composing of triglycerides. Although many different parts of the plants may yield oil, most often oil is extracted from the seeds or fruits of the plant. Examples of plant oil are sunflower oil, rapeseed oil and jatropha oil.

[2] The term 'vehicles' used throughout this document also includes other transportation applications such as domestic water borne transport. Domestic water borne transport as defined by IPCC 2006, vol.2, chapter 3 can be considered as eligible.

[3] Conversion measures include adaptations of fuel supply, fuel injection and combustion.

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(d) Under this methodology only the $CO_2$ emissions from diesel displaced by plant oil is considered;[4]

(e) In accordance with the approved "General guidance on leakage in biomass project activities" for small scale projects, the project participants should demonstrate that the area where the biomass is grown is not a forest (as per DNA forest definition) and has not been deforested, according to the forest definition by the national DNA, during the last 10 years prior to the implementation of the project activity. In the absence of forest definition from the DNA, definitions provided by relevant international organizations (e.g. FAO) shall be used. The plantations established on peatlands are not eligible under this methodology;

(f) If the project activity utilizes oil seeds sourced from dedicated plantations, the applicability conditions prescribed in the methodological tool "Project emissions from cultivation of biomass" shall apply;

(g) The export of the plant oil produced to Annex I countries is not allowed under this methodology.

**Table 2.     Proposed quality control parameters for plant oil**

| Properties | Unit | Proposed Limiting Value | | Possible Testing Method |
|---|---|---|---|---|
| | | Min. | Max. | |
| Acid Value | mg KOH/g | - | 2.0 | DIN EN ISO 660 |
| Oxidation Stability (110°C) | h | 5.0 | - | ISO 6886 |
| Ash Content | Mass-% | - | 0.01 | DIN EN ISO 6245 |
| Contamination | mg/kg | - | 25 | DIN EN 12662 |
| Phosphorus Content | mg/kg | - | 15 | ASTM D3231-99 |
| Water Content | Mass-% | - | 0.075 | Pr EN ISO 12937 |
| Kinematic Viscosity (40°C) | mm²/s | - | Variable | DIN EN ISO 3104 |

5.     Measures are limited to those that result in emission reductions of less than or equal to 60 kt $CO_2$ equivalent annually.

## 2.3.  Entry into force

6.     Not applicable (call for public input).

# 3.     Normative references

7.     Project participants shall apply the "General guidelines to for SSC CDM methodologies" and the "Guidelines on the demonstration of additionality of small-scale project activities" information on additionality (attachment A to Appendix B) provided at

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4   Project participants are encouraged to submit procedures to calculate upstream emissions related to the production and use of fossil fuel in the baseline for consideration and approval by the CDM Executive Board.

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<http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html> mutatis mutandis.

8. This methodology also refers to the latest approved versions of the following approved methodologies, guidelines[5] and tools:

(a) "General guidance on leakage in biomass project activities";

(b) "AMS-III.F: Avoidance of methane emissions through composting";

(c) "AMS-III.G: Landfill methane recovery";

(d) "AMS-III.H: Methane recovery in wastewater treatment";

(e) ~~AMS-III.AK "Biodiesel production and use for transport applications";~~

(f) "Tool to calculate project or leakage $CO_2$ emissions from fossil fuel combustion";

(g) "Project emissions from cultivation of biomass";

(h) "Project and leakage emissions from transportation of freight";

(i) "Tool to calculate baseline, project and/or leakage emissions from electricity consumption".

# 4. Definitions

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

# 5. Baseline methodology

## 5.1. Project boundary

10. The project boundary is the geographical area of the cultivation, production and processing of oil-seeds and the areas where plant oil is blended and sold to the final users. The vehicles of the final users where the plant oil or blend is consumed are also included in the project boundary.

## 5.2. Baseline emissions

11. Baseline emissions ($BE_y$) are calculated based on the amount of plant oil consumed by the project. For this purpose the amount of diesel fuel that would have been consumed in absence of using plant oil is calculated. Calculations are based on the relative net calorific values of the fuels used.

$$FC_{D,y} = \sum_{k=1..n} \frac{NCV_k}{NCV_D} \times \min(FC_{k,y}, FP_{k,y}) \quad \text{~~} FC_{D,y} = \sum_{k=1..n} \frac{NCV_k}{NCV_D} \times FC_{k,y} \text{~~}$$

Equation (1)

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[5] Please refer to: <https://cdm.unfccc.int/Reference/index.html>.

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Where:

$FC_{D,y}$ = Diesel fuel which would have been consumed in the absence of the project activity in the year $y$ (~~tonnes~~$m^3$)

$NCV_k$ = Net calorific value of plant oil $k$ (GJ/m3)

$NCV_D$ = Net calorific value of diesel (GJ/m3)

$FC_{k,y}$ = Plant oil type $k$ consumed in the year $y$ (~~tonnes~~ $m^3$))

$k$ = Types of plant oil used (dependent on oil-seed source)

12. Under the condition of:

$$FC_{k,y} \leq FP_{k,y}$$ Equation (2)

Where:

$FP_{k,y}$ = Plant oil type $k$ produced in the year $y$ (~~tonnes~~ $m^3$)

13. The net calorific values (in GJ/$m^3$) of diesel and of plant oil used are determined based on direct measurements of a representative sample.

14. Only plant oil which is consumed in non-annex 1 countries by captive fleets and which is sold to the end users at filling stations and recorded by calibrated metering systems is included. Captive fleets, retailers and final consumers are bound by a contract that allows the producer to monitor the consumption of plant oil and states that the captive fleet, the retailer or end user shall not claim emission reductions resulting from its consumption.

15. Total baseline emissions are determined as follows:

$$BE_y = FC_{D,y} \times NCV_D \times EF_{CO2,D} \times f_{PD,y}$$ Equation (3)

Where:

$BE_y$ = Baseline emissions in year $y$ (t $CO_2$e)

$NCV_D$ = Net calorific value of diesel (GJ/~~tonne~~$m^3$)

$EF_{CO2,D}$ = $CO_2$ emission factor diesel (t $CO_2$e/GJ)

$f_{PD,y}$ = 1.0 if pure petro diesel is used for blending otherwise use the fraction of petrodiesel in the fuel used for blending[6] (blending fraction based on volume basis)

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[6] It is expected that plant oil is blended with pure petrodiesel, however where the project proponent has no access to pure petrodiesel (e.g. due to local regulations requiring sale of blended petrodiesel in the region/country) blended fuel may be used.

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## 5.3. Project ==Activity== emissions

16. Project ==activity== emissions (==$PE_y$==) are the emissions related to the cultivation of oil seeds and production of plant oil ("field-to-wheel" emissions). These emissions will be attributed to the plant oil produced, and not shared over the different co-products.[7]

17. ==The project emissions related to the cultivation of oil seeds are calculated using the latest version of the tool "Project emissions from cultivation of biomass".==

18. ~~Project emissions from the cultivation of oil crops and production of oil seeds, shall be calculated in accordance with the "General guidance on leakage in biomass project activities" for small scale CDM project. Specific details are provided in this methodology for N₂O emissions resulting from fertilizer application and/or from nitrogen in crop residues (above-ground and below-ground).~~

18. In addition==,== ~~to the emission sources included in paragraph 1711~~ the following sources shall be considered:

    (a) Emissions from energy use for processing (e.g. pressing and filtering) of plant oil;

    (b) Where applicable methane emissions due to stockpiling, land filling, waste water generated in the plant oil production facility.

19. For each oilseed/plant oil type $k$ the project emissions shall be calculated separately.

$$PE_y = \sum_k PE_{PO,k,y} \times FP_{k,y}$$ 

Equation (4)

Where:

$PE_y$ = Total project emissions from plant oil production (t $CO_2$e) in year $y$

$PE_{PO,k,y}$ = Project emissions from plant oil production of crop $k$ (t $CO_2$e/==tonne m³==) plant oil $k$ produced) in year $y$

==$FP_{k,y}$== = ==Plant oil type $k$ produced in the year $y$ (tonne)==

$$PE_{PO,k,y} = \frac{PE_{FA,k,y} + PE_{OFP,k,y} + PE_{CH4,k,y}}{H_{k,y} \times OY_{k,y}}$$

Equation (5)

Where:

$PE_{FA,k,y}$ = Project emissions ~~of N₂O in~~ ==from== cultivation of crop $k$ in year $y$ (t $CO_2$e)

$PE_{OFP,k,y}$ = Project emissions from energy use for oil-seed processing (e.g. pressing and filtering) of crop $k$ in year $y$ (t $CO_2$)

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[7] Project proponents are encouraged to submit procedures to allocate emissions associated with the cultivation of oil seeds and production of plant oil among by-products for consideration and approval by the Board.

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| | | |
|---|---|---|
| $PE_{CH4,k,y}$ | = | Project emissions of $CH_4$ from solid waste and/or waste water treatment associated with crop $k$ in year $y$ (t $CO_2$) |
| $H_{k,y}$ | = | Harvest of crop $k$ in year $y$ (tonne crop) |
| $OY_{k,y}$ | = | Oil yield of crop $k$ in year $y$ (~~tonne~~ $m^3$ oil/t crop) |

21. The project emissions of $N_2O$ from oil crop cultivation ($PE_{FA,k,y}$) are determined as per the following options:

(a) Option 1: Use of default emission factor, where before the project activity the land is a degraded grassland or long-term cultivated land with low soil organic content

$$PE_{FA,k,y} = \sum_k A_{k,y} * EF_{,k,y}$$ 

Equation 6

Where:

| | | |
|---|---|---|
| $A_{k,y}$ | = | Area in which oil seed type $k$ is cultivated for use in the project plant in year $y$ (ha) |
| $EF_{k,y}$ | = | Project emissions of $N_2O$ from land management at the plantation where the oil seed type $k$ is cultivated in year $y$ (t$CO_2$e/ha) |

Table 3       Default factors for the $N_2O$ emissions (t$CO_2$e/ ha) associated with the cultivation of oil seeds[8]

| Crop | Climate Zone | EF k,y (t$CO_2$e/ha) |
|---|---|---|
| Palm | Tropical Moist | 0.53 |
| Palm | Tropical Wet | 0.53 |
| Jatropha | Tropical Moist | 0.60 |
| Jatropha | Tropical Dry | 0.9 |

(b) Option 2: Calculation as per the equation below:

$$PE_{FA,k,y} = \left[\left(F_{ON,k,y} + F_{SN,k,y} + F_{CR,k,y}\right) \times EF_{N2O\_direct}\right] \times \frac{44}{28} \times GWP_{N2O}$$

Equation 7

Where:

| | | |
|---|---|---|
| $F_{ON,k,y}$ | = | Amount of organic fertilizer nitrogen applied in crop $k$ in year $y$ (tonne N) |
| $F_{SN,k,y}$ | = | Amount of synthetic fertilizer nitrogen applied in crop $k$ in year $y$ (tonne N) |

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[8] The default emission factor accounts for $N_2O$ emissions from land management, however the project emissions from fossil fuel consumption for agriculture operations and upstream emissions related to the production of synthetic fertilizers used at plantation are neglected in this simplified SSC CDM methodology.

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| | | |
|---|---|---|
| *FCR,k,y* | = | Amount of N in residues of crop *k* in year *y* (tonne N). For N-fixing crops like soybean FCR shall be taken into account. For other types of crops FCR can be ignored. FCR shall be calculated in accordance with 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol 4, chapter 11 |
| *EFN2O_direct* | = | $N_2O$ emission factor for emissions from N inputs (tonne $N_2O$-N/tonne N input). A default value of 0.01 can be taken in accordance with 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol 4, Table 11.1 p.11 |
| *GWPN2O* | = | Global warming potential of $N_2O$ ($tCO_2e/tN2O$) (value of 310) |

20. Project emissions cultivation of oil crop *k* ($PE_{FA,k,y}$) are calculated using the latest version of the tool "Project emissions from cultivation of biomass".

21. Project emissions from energy use for processing (e.g. pressing and filtering) of plant oil ($PE_{OFP,k,y}$) are calculated using the "Tool to calculate project or leakage $CO_2$ emissions from fossil fuel combustion" (if fossil fuels are used) and/or "Tool to calculate baseline, project and/or leakage emissions from electricity consumption" (if electricity is used).

22. determined as follows:

$$PE_{OFP,k,y} = EC_{OFP,k,y} \times EF_{CO2,ELEC} + \sum_i \left( FC_{OFP,i,k,y} \times NCV_i \times EF_{CO2,i} \right)$$

Equation 8

Where:

| | | |
|---|---|---|
| $EC_{OFP,k,y}$ | = | Electricity consumption in processing (e.g. pressing and filtering) for crop *k* in year *y* (MWh) |
| $EF_{CO2,ELEC}$ | = | Emissions factor for grid electricity supplied to the project plant using the calculation methods of AMS-I.D ($tCO_2e/MWh$) |
| $FC_{OFP,i,k,y}$ | = | Consumption of fossil fuel *i* for filtering and pressing for crop *k* in year *y* (tonnes) |
| $NCV_i$ | = | Net calorific value of fossil fuel *i* (GJ/tonne) |
| $EF_{CO2,i}$ | = | Emissions factor of fossil fuel *i* ($tCO_2$/GJ fuel) |

22. Project emission of $CH_4$ from solid waste disposal and/or waste water treatment ($PE_{CH4,k,y}$ $PE_{CH4,k,y}$) are calculated as per provisions in AMS-III.G (landfill); AMS-III.F (composting); and/or AMS-III.H (waste water treatment).

23. Project emissions from transportation of oil seeds to the oil production plant are estimated using the latest version of the tool "Project and leakage emissions from transportation of freight". have to be accounted following the procedures in AMS-III.AK if the transportation distance is of more than 200 km; otherwise they can be neglected.

## 5.4. Leakage

24. Leakage emissions due to a shift of pre-project activities shall be accounted for as per the approved "General guidance on leakage in biomass project activities" for small-scale project activities.

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24. If~~In case~~ the oil is produced from the project activity utilizes waste oil/fat~~oil seeds are cultivated in the baseline situation in the area of land where oil seeds are cultivated in the project situation~~, the guidance on competing uses for biomass residue in the "General guidance on leakage in biomass project activities" for small-scale projects shall be taken into account. Leakage emissions ($LE_y$) shall be estimated accordingly and deducted from the emission reductions.

## 5.5. Emission reduction

25. The emission reduction achieved by the project activity shall be calculated as the difference between the baseline emissions and the sum of the project emissions and leakage.

$$ER_y = BE_y - PE_y - LE_y$$

Equation (6)

Where:

$ER_y$ = Emission reductions in the year $y$ (t $CO_2$e)

$BE_y$ = Baseline emissions in year $y$ (t $CO_2$e)

$PE_y$ = Project emissions from plant oil production ~~(tCO₂e)~~ in year $y$ (t $CO_2$e)

$LE_y$ = Leakage emissions in year $y$ (t $CO_2$e)

# 6. Monitoring methodology

26. The following parameters shall be monitored as per the ~~T~~tables~~ III.T.3 below~~. The applicable requirements specified in the "General guidelines ~~to~~ for SSC CDM methodologies" (e.g. calibration requirements, sampling requirements) are also an integral part of the monitoring guidelines specified below and therefore shall be referred by the project participants.

## 6.1. Data and parameters monitored

27. The following parameters shall be monitored and recorded during the crediting period:

**Data / Parameter table 1.**

| Data / Parameter: | $H_{k,y}$ |
|---|---|
| Data unit: | Tonnes |
| Description: | Harvest of crop $k$ in year $y$ |
| Measurement procedures (if any): | Measurements are undertaken using calibrated meters |
| Monitoring frequency: | Annually |
| Any comment: | - |

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**Data / Parameter table 2.**

| Data / Parameter: | $OY_{k,y}$ |
|---|---|
| Data unit: | ~~Tonnes~~ $m^3$ oil/ t crop |
| Description: | Oil yield of crop *k* in year *y* |
| Measurement procedures (if any): | Measured and calculated value. The plant oil extraction data shall be cross-checked with the amount of plant oil consumed by end-users |
| Monitoring frequency: | Annually |
| Any comment: | - |

**Data / Parameter table 3**

| Data / Parameter: | $A_{k,y}$ |
|---|---|
| Data unit: | Ha |
| Description: | Area in which oil seed type *k* is cultivated for use in the project plant in year *y* |
| Measurement procedures (if any): | Metered and calculated plantation area (e.g. using maps). Measurements results shall be consistent with yield of the plantation |
| Monitoring frequency: | Annually |
| QA/QC procedures: | - |
| Any comment: | - |

**Data / Parameter table 3.**

| Data / Parameter: | |
|---|---|
| Data unit: | % |
| Description: | Oil content of oil seeds |
| Measurement procedures (if any): | Laboratory analysis to be carried out. The value is to be established on representative samples |
| Monitoring frequency: | Annually |
| Any comment: | - |

**Data / Parameter table 5.**

| Data / Parameter: | $EF_{CO2,ELEC}$ |
|---|---|
| Data unit: | $tCO_2e/kWh$ |
| Description: | $CO_2$ emission factor for grid electricity supplied to the project plant in year *y* |
| Measurement procedures (if any): | Grid emission factor shall be determined as per AMS-I.D |
| Monitoring frequency: | Annually |
| Any comment: | - |

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**Data / Parameter table 6**

| Data / Parameter: | $EF_{CO2,i}$ |
|---|---|
| Data unit: | $tCO_2e/GJ$ |
| Description: | $CO_2$ emission factor of fossil fuel type *i* |
| Measurement procedures (if any): | As per the "Tool to calculate project or leakage $CO_2$ emissions from fossil fuel combustion" |
| Monitoring frequency: | Annually |
| Any comment: | - |

**Data / Parameter table 7.**

| Data / Parameter: | $EC_{OFP,k,y}$ |
|---|---|
| Data unit: | MWh |
| Description: | Quantity of electricity consumption in processing (e.g. pressing and filtering) for crop *k* in year *y* |
| Measurement procedures (if any): | As per the "Tool to calculate baseline, project and/or leakage emissions from electricity consumption" |
| Monitoring frequency: | As per the "Tool to calculate baseline, project and/or leakage emissions from electricity consumption" |
| Any comment: | |

**Data / Parameter table 8**

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| Data / Parameter: | $NCV_i$ |
|---|---|
| Data unit: | GJ/mass or volume unit |
| Description: | Net calorific value of fossil fuel type *i* |
| Measurement procedures (if any): | As per the "Tool to calculate project or leakage $CO_2$ emissions from fossil fuel combustion" |
| Monitoring frequency: | Annually |
| Any comment: | |

**Data / Parameter table 4.**

| Data / Parameter: | $FC_{OFP,i,k,y}$ |
|---|---|
| Data unit: | Mass or volume unit |
| Description: | Quantity of fossil fuel consumption *i* for filtering and pressing for crop *k* in year *y* |
| Measurement procedures (if any): | As per the "Tool to calculate project or leakage $CO_2$ emissions from fossil fuel combustion" |
| Monitoring frequency: | As per the "Tool to calculate project or leakage $CO_2$ emissions from fossil fuel combustion" |
| Any comment: | - |

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**Data / Parameter table 10.**

| Data / Parameter: | $F_{ON,k,y}$; $F_{SN,k,y}$ |
|---|---|
| Data unit: | Tonnes |
| Description: | Amount of organic fertilizer nitrogen applied in crop *k* in year *y* |
| | Amount of synthetic fertilizer nitrogen applied in crop *k* in year *y* |
| Measurement procedures (if any): | Measurements are undertaken using calibrated meters. Measurements results shall be cross-checked with records for purchased amount (e.g. invoices/receipts) |
| Monitoring frequency: | Continuously or in batches |
| Any comment: | - |

**Data / Parameter table 4.**

| Data / Parameter: | $NCV_k$ |
|---|---|
| Data unit: | GJ/m$^3$ |
| Description: | Net calorific value of plant oil *k* |
| Measurement procedures (if any): | Measured according to relevant national/international standards. |
| | Analysis has to be carried out by accredited laboratory |
| Monitoring frequency: | Annually |
| Any comment: | - |

**Data / Parameter table 5.**

| Data / Parameter: | $NCV_D$ |
|---|---|
| Data unit: | GJ/m$^3$ |
| Description: | Net calorific value of petrodiesel |
| Measurement procedures (if any): | Measured according to relevant national/international standards. |
| | Analysis has to be carried out by accredited laboratory |
| Monitoring frequency: | Annually |
| Any comment: | - |

**Data / Parameter table 6.**

| Data / Parameter: | $FP_{k,y}$ |
|---|---|
| Data unit: | Tonnes/m$^3$ |
| Description: | Plant oil type *k* produced in the year *y* |
| Measurement procedures (if any): | Measurement through direct weighting or volume and density |
| Monitoring frequency: | Continuously or in batches |
| Any comment: | - |

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**Data / Parameter table 7.**

| Data / Parameter: | $FC_{k,y}$ |
|---|---|
| Data unit: | ~~Tonnes/~~m$^3$ |
| Description: | Plant oil type $k$ consumed in the year $y$ |
| Measurement procedures (if any): | Measurements of the amount of plant oil sold to retailers and filled into vehicles of the final end users and captive fleets are undertaken using calibrated meters for volume ~~and multiplied by the density which is determined through sampling~~.<br><br>Measurements results shall be cross-checked with production and consumption data |
| Monitoring frequency: | Continuously or in batches |
| Any comment: | - |

**Data / Parameter table 15**

| ~~Data~~ Wenxin Li: Where is this parameter used? And the 2 parameters below?/ ~~Parameter:~~ | ~~$FB_{PO,y}$~~ |
|---|---|
| ~~Data unit:~~ | ~~Tonnes/m3~~ |
| ~~Description:~~ | ~~Amount of plant oil bought in case the plant oil is sold and/or used as blend~~ |
| ~~Measurement procedures (if any):~~ | ~~Measurements of the amount of plant oil bought by the retailers and owners of captive fleets are undertaken using calibrated meters.~~<br><br>~~Measurements results shall be cross-checked with sales records~~ |
| ~~Monitoring frequency:~~ | ~~Continuously or in batches~~ |
| ~~Any comment:~~ | |

**Data / Parameter table 16.**

| ~~Data / Parameter:~~ | ~~$FB_{D,y}$~~ |
|---|---|
| ~~Data unit:~~ | ~~Tonnes/m3~~ |
| ~~Description:~~ | ~~Amount of diesel bought in the case the plant oil is sold and/or used as blend~~ |
| ~~Measurement procedures (if any):~~ | ~~Measurements of the amount of diesel bought by the retailers and owners of captive fleets are undertaken using calibrated meters.~~<br><br>~~Measurements results shall be cross-checked with sales records~~ |
| ~~Monitoring frequency:~~ | ~~Continuously or in batches~~ |
| ~~Any comment:~~ | ~~-~~ |

**Data / Parameter table 17**

| ~~Data / Parameter:~~ | ~~$FC_{PO,y}$~~ |
|---|---|
| ~~Data unit:~~ | ~~Tonnes/m3~~ |

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| Description: | Amount of blended plant oil used |
|---|---|
| Source of data: | - |
| Measurement procedures (if any): | Measurements of the amount of blended plant oil sold final end users and captive fleets are undertaken using calibrated meters. Measurements results shall be cross checked with production and consumption data |
| Monitoring frequency: | Continuously or in batches |
| Any comment: | - |

**Data / Parameter table 8.**

| Data / Parameter: | $f_{PD,y}$ |
|---|---|
| Data unit: | % |
| Description: | Fraction of petrodiesel in the fuel used for blending |
| Measurement procedures (if any): | Data from the supplier of the fuel used for blending |
| Monitoring frequency: | Continuously or in batches |
| Any comment: | - |

27.     The occurrence of shift of pre-project activities and the competing uses of biomass shall be monitored and verified.

28.     The compliance of pure plant oil and plant oil blends with national regulations or in absence of latter compliance with the parameters identified in Table III.T.1 2 shall be ensured through monitoring.

29.     All the parameters for determination of the methane project emissions are to be estimated as per paragraph 22 and the procedures of the relevant methodologies.

29.     If paragraph 3(b) is applicable, the engine conversion of the vehicles shall be monitored and verified by sampling.

30.     It shall be monitored and verified that no plant oil is exported to Annex I countries.

# 7.     Project activity under a programme of activities

31.     The methodology is applicable to a programme of activities, no additional leakage estimations are necessary other than that indicated under leakage section above.

32.     As currently constructed this methodology does not apply to a programme of activities. In order for this methodology to be used under a programme of activities further analyses are required, for instance further analysis concerning issues related to the shift of the pre-project activities in the lands where the oil crops are grown and the competing use of biomass is required. Project proponents are encouraged to submit procedures to address these issues as revisions to make this methodology applicable to a programme of activities for approval by the Board.

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## Document information

| Version | Date | Description |
|---|---|---|
| Draft 03.0 | 14 May 2014 | SSC WG 44, Annex 9 |
| | | A call for public input will be issued on this draft revised methodology. |
| | | Revision to remove the applicability conditions related to land eligibility and project emission calculations related to the cultivation of biomass, to remove the restriction for application of methodology in PoAs in methodologies and to include reference to the approved tools. |
| 02.0 | 30 July 2010 | EB 55, Annex 33<br>To include default factors for project emissions associated with the oil seed cultivation and procedures for accounting methane project emissions. |
| 01.0 | 30 November 2007 | EB 36, Annex 22<br>Initial adoption. |

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