

**Indicative simplified baseline and monitoring methodologies
for selected small-scale CDM project activity categories**

TYPE I - RENEWABLE ENERGY PROJECTS

Project participants shall apply the general guidelines to SSC CDM methodologies, 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*.

I.H. Biodiesel production and use for energy generation in stationary applications

Technology/measure

1. This methodology comprises activities involving the cultivation of oilseeds and the sourcing of waste oil/fat¹ for production of biodiesel² to generate thermal/mechanical/electrical energy including cogeneration to displace fossil fuel and/or fossil fuel based technologies.
2. The methodology is applicable under the following conditions:
 - (i) Pure biodiesel and blends above 10% with fossil fuel shall be used in equipment³ that is specially built or modified;
 - (ii) Biodiesel must comply with national quality regulations;
 - (iii) The retailers, final users and the producer of the biodiesel or its blend are bound by a contractual agreement allowing emission reductions to be claimed only by the project proponent;
 - (iv) The alcohol used for esterification is methanol from fossil fuel origin. Volumes of biodiesel produced with alcohols other than methanol (for example, ethanol) are not included in the quantity of biodiesel for which emission reductions are claimed;⁴

¹ Waste oil/fat is defined as a residue or waste stream of biogenic origin from restaurants, agro and food industry, slaughterhouses or related commercial sectors.

² Biodiesel is a diesel fuel consisting of long-chain alkyl (methyl, propyl or ethyl) esters which is produced by esterification of vegetable oils and/or waste oil/fat with alcohols from biogenic and/or fossil origin.

³ For internal combustion engines conversion measures include adaptations of fuel supply, combustion and injection mechanisms.

⁴ Only methanol from fossil fuel origin is included because the methodology does not provide procedures for estimating emissions associated with the use of other alcohols than methanol from fossil fuel origin. Project proponents are invited to propose procedures to estimate the emissions associated with the production of other alcohols that could be used for esterification, such as ethanol or methanol from renewable sources, as a revision to this methodology.

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- (v) 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 export of biodiesel produced under this category is not allowed.
- (vi) Co-firing with solid fuels is not allowed.

3. The biodiesel produced by the project activity may be used as a blend with pure petrodiesel or with petrodiesel that has already been blended with biofuel⁵. In the latter case baseline emissions only from the petrodiesel fraction shall be calculated, the biofuel content of the primary blend shall be considered as carbon neutral, however, in the calculation of the project emissions, the fuel used for blending (primary blend) shall be considered as pure petrodiesel i.e. 100% petrodiesel fraction. This conservative approach is used because it may not be feasible to determine the upstream emissions associated with the production of the biodiesel used for the primary blending.

4. The following conditions have to be met only if the feedstock for production of the biodiesel is vegetable oil produced from oil seeds cultivated in dedicated plantations:

- (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 provide at least the same amount of goods and services as in the absence of the project;
- (b) The plantations are established:
 - (i) On land which was at the start of the project implementation, classified as degraded or degrading as per the “Tool for the identification of degraded or degrading lands for consideration in implementing CDM A/R project activities”; or
 - (ii) On a land area that is included in the project boundary of one or several registered A/R CDM project activities.
- (c) Plantations established on the peatlands are not eligible even if qualifying under condition (b) above.

⁵ It is expected that biodiesel 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. Project eligibility limits (capacity limits) are in accordance with the guidelines in:
- (a) AMS-I.C for thermal energy and cogeneration applications;
 - (b) AMS-I.B for mechanical energy applications;
 - (c) AMS-I.D or AMS-I.F or AMS-I.A as the case may be for electricity applications.

Project Boundary

6. The project boundary is the geographical area of the cultivation, production and processing of oil-seeds, disposal of waste products, and the areas where biodiesel is processed/blended. The boundary also extends to the users where biodiesel is consumed in the project equipment to produce thermal/electrical/mechanical energy and the end users of the produced energy.

Baseline Emissions

7. The energy baseline and the corresponding baseline emissions for biodiesel based renewable energy sources and/or technologies shall be chosen as follows:
- (a) As per the procedures of AMS-I.A if the project activity is for standalone off-the-grid power systems supplying electricity to households/users included in the boundary;
 - (b) As per the procedures of AMS-I.F if the project activity displaces electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit;
 - (c) As per the procedures of AMS-I.D if the project activity supplies electricity to a regional or national grid;
 - (d) As per the procedures of AMS-I.C if the project activity produces thermal energy and/or cogenerates heat and electricity;
 - (e) As per the procedures of AMS-I.B if project activity is generating mechanical energy.
8. For project activities that involve retrofit of an existing facility and/or capacity addition at an existing facility, the baseline emissions shall be calculated following the applicable principles described in AMS-I.D.

Project Emissions

9. Project emissions include:
- (a) CO₂ emissions from on-site consumption of fossil fuels due to the project activity shall be calculated using the latest version of “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion”;

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- (b) CO₂ emissions from electricity consumption by the project activity using the latest version of “Tool to calculate baseline, project and/or leakage emissions from electricity consumption”;
- (c) Project methane emission from solid waste, wastewater are calculated as per provisions in AMS-III.G (landfill); AMS-III.F (composting), AMS-III.H. (waste water treatment in the cases where the waste are disposed in anaerobic conditions);
- (d) The project emissions related to the cultivation of oil seeds and processing/production of biodiesel are calculated as per the procedures defined in the latest version of SSC-III.AK;
- (e) Project emissions from transportation of oil seeds to the oil production plant have to be accounted following the procedures in SSC-III.AK if the transportation distance is more than 200 km, otherwise they can be neglected.

Leakage

10. 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.

11. In case biodiesel is produced in the baseline situation in the area of land where biodiesel is cultivated in the project situation, the guidance on competing uses for biomass in the “General guidance on leakage in biomass project activities” for small scale projects shall be taken into account. Leakage shall be estimated accordingly and deducted from the emission reductions.

Emission reductions

12. Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y \quad (1)$$

Where:

ER_y Emission reductions in year y (tCO₂e)

BE_y Baseline emissions in year y (tCO₂e)

PE_y Project emissions in year y (tCO₂)

LE_y Leakage emissions in year y (tCO₂)

Monitoring

13. Monitoring parameters shall be as prescribed by the applicable type I methodology chosen per paragraph 7 and 8. Project emissions are monitored as per paragraph 9. The applicable

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requirements specified in the “General Guidelines to SSC Methodologies” (e.g. calibration requirements, sampling requirements) are also an integral part of the monitoring guidelines.

- 14. The occurrence of shift of pre-project activities and the competing uses of biomass shall be monitored and verified.
- 15. The contracts between the producer of biodiesel and the final users and retailers specifying that only the project proponent can claim CERs.
- 16. If the paragraph 2 (ii) is applicable then the equipment modification or the installation of the new equipment shall be monitored.

Project activity under a programme of activities

17. 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.

History of the document

Version	Date	Nature of revision
01	EB 55, Annex # 30 July 2010	To be considered at EB 55.
Decision Class: Regulatory Document Type: Standard Business Function: Methodology		