

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

**TYPE II - ENERGY EFFICIENCY IMPROVEMENT PROJECTS**

Follow the link for [Full version of appendix B \(http://cdm.unfccc.int/Projects/pac/ssclistmeth.pdf\)](http://cdm.unfccc.int/Projects/pac/ssclistmeth.pdf) to find [General guidance](#) / [Abbreviations](#)

***II.F. Energy efficiency and fuel switching measures for agricultural facilities and activities***

**Technology/Measure**

1. This category comprises any energy efficiency and/or fuel switching measure implemented in agricultural activities of facilities or processes. This category covers project activities that encourage energy efficiency or involves fuel switching. Examples of energy-efficient practices include efficiency measures for specific agricultural processes (such as less irrigation, etc.), and measures leading to a reduced requirement of farm power per unit area of land, reflected in less and smaller tractors, longer lifetime of tractors and less farm equipment. Further energy efficient measures would be reducing fuel use in agriculture, such as reduced machinery use through, e.g. the elimination of tillage operations, reduction of irrigation, use of lighter machinery, etc. Examples of fuel switching measures include switching from diesel to ethanol or biodiesel.
2. The measures may be a replacement on existing equipment or equipment being installed in a new facility. The aggregate energy savings of a single project may not exceed the equivalent of 15 GWh per year.

**Boundary**

3. The physical, geographical location of the farming operations or measure (each agricultural practice) being implemented. Project activities might apply to single facilities (farms), or activities using similar processes on different farms may be bundled together, as long as the combined total energy savings do not exceed the equivalent of 15 GWh per year.

**Baseline**

4. The energy baseline consists of the energy use of:
  - (a) the existing activity that is reduced in the case of retrofit measures; or
  - (b) the facility that would otherwise be installed in the case of a new facility.
5. In both cases, the electricity component of the energy baseline is adjusted for technical transmission and distribution losses for the electrical grid serving the agricultural facility.
6. If the energy displaced is a fossil fuel, the energy baseline is the existing fuel consumption or the amount of fuel that would be used by the practice that would have been implemented otherwise, i.e. total fuel consumption in the project area per year for field operations and average fuel consumption per unit area (ha), crop yield and year.
7. Project participants are to demonstrate the baseline and project scenarios of fuel consumption against reference agricultural activities, including cultivated acreage and crop yield from the project land.

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*II.F. Energy efficiency and fuel switching measures for agricultural facilities and activities (Cont.)*

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8. The demonstration of additionality is necessary especially with respect to some financial indicators. Project participants shall demonstrate that reduced energy consumption is not prompted by financial constraints leading to downscaled operations, but rather CDM-driven.

9. Each energy form in the emission baseline is multiplied by an emission coefficient (in kg CO<sub>2</sub>equ/kWh). For the electricity displaced, the emission coefficient is calculated in accordance with provisions or paragraphs 28 and 29 for category I.D projects. For fossil fuels, the IPCC default values for emission coefficients may be used.

**Leakage**

10. If the energy-efficiency technology is equipment transferred to another activity or if the existing equipment is transferred to another activity, leakage calculation is required.

**Monitoring**

11. In the case of retrofit measures (includes fuel switch measures), monitoring shall consist of:

- (a) Documenting the specifications of the equipment replaced;
- (b) Metering the energy use of the agricultural facility, processes or the equipment affected by the project activity;
- (c) Calculating the energy savings using the metered energy obtained from subparagraph (b).

12. In the case of a new facility, monitoring shall consist of:

- (a) Metering the energy use of the equipment installed;
- (b) Calculating the energy savings due to the equipment installed.

13. Monitoring will also involve the scale (e.g. number of ha cultivated, crop yield) of agricultural activities, in order to ensure that reduced energy consumption is not due to downscaling of activities. Energy use must be for equivalent services.

14. Published values for technical transmission and distribution losses may be used. Alternatively, technical transmission and distribution losses for the grid that supplies the industrial facility may be monitored.