SSC CDM Project Activities

Types, Modalities, Procedure and Potentials

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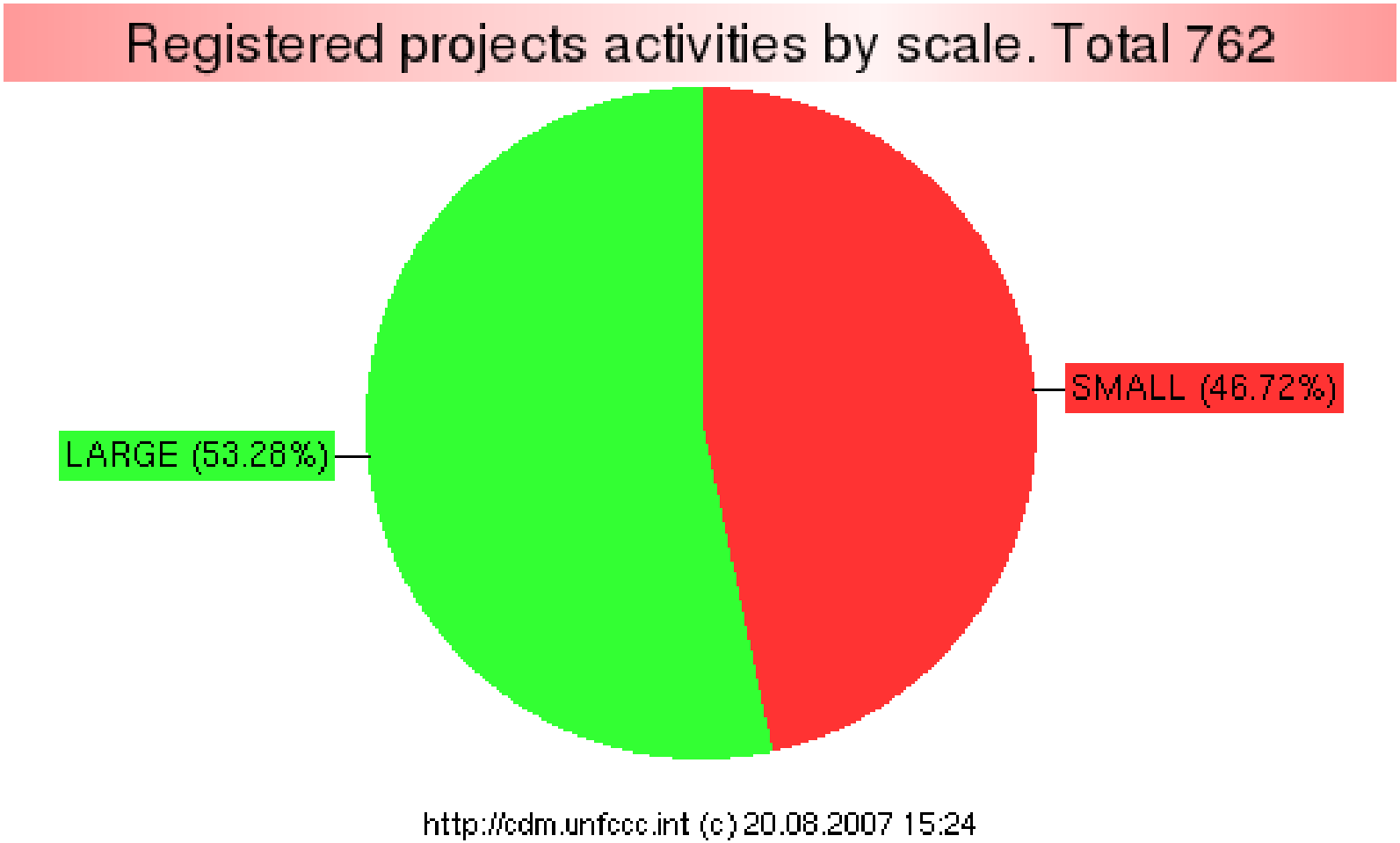
SSC CDM Projects

- What defines SSC
- Types and categories
- How to prepare and register SSC CDM Projects
- Examples of Projects in Africa and LDCs

SSC Project Globally



What defines a SSC Project: Types and Procedures

Small-scale CDM project actives are defined as follows:

Type (i)I: Renewable energy project activities with a maximum output capacity equivalent to up to 15

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megawatts (or an appropriate equivalent);

Type (ii) II: Energy efficiency improvement project activities which reduce energy consumption, on the supply and/or demand side, limited to those with a maximum output of 60 GWh per year (or an appropriate equivalent);

Type (iii) III: Other project activities limited to those that result in emission reductions of less than or equal to 60 kt CO2 equivalent annually;

SSC Projects

Small-scale project activities are supposed to remain under the limits for small-scale CDM project activities in each type.

(a) For type I: project participants shall demonstrate that the installed capacity of the proposed project activity will not increase beyond 15 MW;

(b) For type II: project participants shall demonstrate that the efficiency improvements are below the equivalent of 60 GWh per year every year throughout the crediting period;

(c) For type III: project participants shall provide an estimation of emission reductions of the project activity over the crediting period and demonstrate that the emission reductions every year will not go beyond the limits of 60 ktCO2e over the entire crediting period.

TYPE I: Renewable energy project activities -15MW Max. Output (or an appropriate equivalent)

- Maximum “output” is defined as installed/rated capacity, as indicated by the manufacturer of the equipment or plant, disregarding the actual load factor of the plant.
- “Appropriate equivalent” of 15 megawatts: whereas decision 17/CP.7, paragraph 6 (c) (i), refers to megawatts (MW), project proposals may refer to MW(e) or MW(th).
- As MW(e) is the most common denomination, and MW(th) only refers to the production of heat which can also be derived from MW(e), the Board agreed to define MW as MW(e) and otherwise to apply an appropriate conversion factor.

Type II: Energy efficiency improvement

Such Energy efficiency project activities should reduce energy consumption, on the supply and/or demand side, limited to those with a maximum output of 60 GWh per year (or an appropriate equivalent) whereby:

Demand side, as well as supply side, projects shall be taken into consideration, provided that a project activity results in a reduction of maximum 60 gigawatt hours (GWh). A total saving of 60 GWh is equivalent to 4000 hours of operation of a 15 MW plant or 60*3.6 TJ = 216 TJ (terajoules)

Type III: Other project activities

- Are other project activities limited to those that result in emission reductions of less than or equal to 60 kt CO2 equivalent annually.
- Such project activities could include: agricultural projects, fuel switching, industrial processes and waste management. Possible examples in the agricultural sector include improved manure management, reduction of enteric fermentation, improved fertilizer usage or improved water management in rice cultivation.

Categories under Type I

1.A – **Electricity generation by the user.**

Applicability is limited to households and users that do not have grid connection. Examples are solar power, wind power, hydropower- for home systems and battery chargers.

1.B – **Mechanical energy for the user**

Supply Mechanical energy for individual households e.g. wind powered pumps, solar pumps, water mills, and windmills

1.C – **Thermal Energy for the User, with or without electricity**

Supply users with thermal energy that displaces fossil fuel. E.g. solar cooker, solar thermal heaters and driers, energy from biomass for water heating, and biogas plants displacing fossil fuel. Biomass based cogen systems producing heat and electricity are under this category.

Type I

1.D- Grid Connected renewable electricity generation

- Comprise renewable energy, e.g.. Wind, geothermal and renewable biomass that are connected to the grid

I.E. Switch from Non-Renewable Biomass for Thermal Applications by the User

1. This category comprises small appliances involving the switch from non-renewable biomass to renewable sources of energy. These technologies include **biogas stoves**, use of solar cookers and measures that involve the switch to renewable biomass.

3. Project participants shall show that there was no switch to non-renewable biomass during a period of time (e.g. 3 years) prior to the start of the proposed project activity.

Categories under Type II

II.A Supply side energy efficiency improvement- Transmission and distribution.

Comprise of any measure to improve an electricity transmission system, e.g. **upgrading a voltage on a transmission line, replacing a transformer,** and increased insulation of the pipe in a heating system. The technology measure could be added to the existing system or be part of an expansion or distribution system

II.B. Supply side energy efficiency improvements - generation

This category comprises technologies or measures to improve the efficiency of fossil fuel generating units that supply an electricity or thermal system by reducing energy or fuel consumption by up to the equivalent of 60 GWhe per year.

Examples include efficiency improvements at power stations, heating plants and co-generation. The technologies or measures may be applied to existing stations or be part of a new facility. A total saving of 60 GWhe is equivalent to maximal saving of 180 GWhe in the fuel input to the generation unit.

Type II categories

- **II. D. Energy efficiency and fuel switching measures for industrial facilities**

This category comprises any energy efficiency and fuel switching measure implemented at a single industrial or mining and mineral production facility. This category covers project activities aimed primarily at energy efficiency; a project activity that involves primarily fuel switching falls into category III.B.

Examples include energy efficiency measures (such as switching from stem or compressed air to electricity) and efficiency measures for specific industrial or mining and mineral production processes (such as steel furnaces, paper drying, tobacco curing, etc.)

Type II categories

- **II.E. Energy efficiency and fuel switching measures for buildings**

- This category comprises any energy efficiency and fuel switching measure implemented at a single building, such as a commercial, institutional or residential building, or group of similar buildings, such as a school, or university. This category covers project activities aimed primarily at energy efficiency; a project activity that involves primarily fuel switching falls into category III. B.
- Examples include technical energy efficiency measures (such as efficient appliances, better insulation and optimal arrangement of equipment) and fuel switching measures (such as switching from oil to gas.) The technologies may replace existing equipment or be installed in new facilities.

Examples of Type III Projects

- **III.D. Methane recovery in agricultural and agro industrial activities**
- **Technology/measure**
- This project category comprises methane recovery and destruction from manure and wastes from agricultural or agro-industrial activities that would be decaying anaerobically in the absence of the project activity by:
  - Installing methane recovery and combustion system to an existing source of methane emissions, or
  - Changing the management practice of a biogenic waste or raw material in order to achieve the controlled anaerobic digestion equipped with methane recovery and combustion system.
- The project activity shall satisfy the following conditions:
  - The sludge must be handled aerobically. In case of soil application of the final sludge the proper conditions and procedures (not resulting in methane emissions) must be ensured.
  - Technical measures shall be used (eg. Flared, combusted) to ensure that all biogas produced by the digester is used or flared.
- Projects that recover methane from landfills shall use category III-G and projects for wastewater treatment shall use category III-H
- Measures are limited to those that result in emission reductions of less than or equal to 60 kt CO2 equivalent annually.

Type III

III.E. Avoidance of methane production from decay of biomass through controlled combustion

- This project category comprises measures that avoid the production of methane from biomass or other organic matter that:
  - Would have otherwise been left to decay under clearly anaerobic conditions throughout the crediting period in a solid waste disposal site without methane recovery, or
  - Is already deposited in a waste disposal site without methane recovery.
- By the project activity, decay is prevented through controlled combustion of the wastes of type referred to above.
- For the case of stockpile of wastes where in the baseline usually there is a reduction in the amount of waste through regular open burning the use of the FOD model will have to be adjusted to take account of this burning in order to estimate correctly the baseline emission.

Type III

- **III.F. Avoidance of methane production from decay of biomass through composting**

- This project category comprises measures to avoid the production of methane from biomass or other organic matter that would have otherwise been left to decay anaerobically in a solid waste disposal site without methane recovery.
- Due to the project activity, decay is prevented through aerobic treatment by composting and proper soil application of the compost.
- This project category includes construction and expansion of compost production facilities as well as activities that increase capacity utilization at an existing composting production facility.
- This category is also applicable for co-composting wastewater and solid biomass waste, where wastewater would otherwise have been treated in an anaerobic wastewater treatment system without methane recovery.

Type III. Popularly

- **III.G. Landfill Methane Recovery**

This project category comprises measures to capture and combust methane from landfills (i.e, solid waste disposal sites) used for disposal of residues from human activities including municipal, industrial, and other solid wastes containing biodegradable organic matter.

- If the recovered methane is used for heat or electricity generation the project can use a corresponding methodology under type I (I.C) project activities.
- Measures are limited to those that result in emission reductions of less than or equal to 60 kt CO2 equivalent annually.

Type III

- **III.H Methane Recovery in Waste Water Treatment**

- This project category comprises measures that recover methane from biogenic organic matter in wastewaters by means of one of the following options.
  - Substitution of aerobic wastewater or sludge treatment systems with anaerobic systems with methane recovery and combustion.
  - Introduction of anaerobic sludge treatment system with methane recovery and combustion to an existing wastewater treatment plant without sludge treatment.
  - Introduction of methane recovery and combustion to an existing sludge treatment system.
  - Introduction of methane recovery and combustion to an existing anaerobic wastewater treatment system such as anaerobic reactor, lagoon, septic tank or an on site industrial plant.
  - Introduction of anaerobic wastewater treatment with methane recovery and combustion, with or without anaerobic sludge treatment, to an untreated wastewater stream.
  - Introduction of a sequential stage of wastewater treatment with methane recovery and combustion, with or without sludge treatment, to an existing wastewater treatment system without methane recovery (eg. Introduction of treatment in an anaerobic reactor with methane recovery as a sequential treatment step for the wastewater that is presently being treated in an anaerobic lagoon without methane recovery).

Simplified Procedure for Registration

A project which is eligible to be considered as a small scale CDM project activity can benefit from the simplified modalities and procedures, which were adopted by the COP/MOP at its first session

In order to reduce transaction costs associated with preparing and implementing a CDM project activity, the simplified modalities and procedures provide for the following:

A simplified project design document

Simplified methodologies for baseline determination and monitoring plans

Simplified provisions for environmental impact analysis

A shorter review period for the registration of SSC CDM project activities

The same DOE can validate as well as verify and certify emission reductions for a specific SSC CDM project activity

Non Contribution to the administration fee and adaptation fund (for projects in LDCs) for activities reducing less than 15,000 co2eq annually.

Conclusion: Relevant examples for Tanzania

For relevant approved projects, Please see the table (to be distributed). Also the website: www.unfccc.int/cdm

Most of the Approved SSC methodologies (AMS) are relevant to a cross-section of possible PP in Tanzania.

Projects that have already been approved, particularly in Africa could be a good basis for Dsigning, preparing and implementing projects