

CDM SUSTAINABLE ENERGY PROJECT – LUSAKA, ZAMBIA

Objective: Reducing CO₂ emissions by avoiding charcoal consumption in households through use of high quality cooking systems

The purpose of the project is to replace the charcoal consumption of 30,000 households in Lusaka City with renewable biomass. This will be accomplished through the provision of high quality cooking systems that use renewable biomass, thereby reducing the consumption of charcoal. Avoiding charcoal consumption reduces CO₂ and carbon monoxide emissions and improves the living conditions of people in Lusaka, Zambia.

Background:

The consumption of charcoal in urban households is the main cause of deforestation in Lusaka. An average household in Lusaka, which uses charcoal as the primary energy source for heating water and cooking, consumes approximately 1.3 tonnes of charcoal per year. This is produced from approximately 8 tonnes of non-renewable biomass, mostly trunks and thick branches. Charcoal is transported over hundreds of kilometres and the radius of deforestation is enlarging due to the increasing demand from the rising number of urban households. Without alternative cooking options, non-renewable biomass for charcoal production will continue to be used.

Project description:

- > RWE is carrying out this renewable biomass project together with Climate Interchange AG (CIC).
- > The project reduces greenhouse gas emissions through the switch from non-renewably logged trees for the production of charcoal to the use of renewable biomass (twigs). Highly efficient „Save80 Cooking Systems“ consume around 80% less wood than the traditional charcoal cooking stoves through the use of renewably harvested fuel wood. Due to the low consumption, renewable sources of fuel wood can meet the demand necessary for operating the new cooking systems.

- > This new equipment consists of a metal cooking stove and the heating container. The cooking stove enables families to cook meals around 3 times faster than before using only small quantities of renewably harvested biomass from forestry maintenance and plantations, reducing emissions of CO, CO₂ and other gases. For a typical family this reduces biomass demand from approximately 8 tonnes of wood (needed for charcoal production), to approximately 0.8 tonnes of twigs per year. The combined thermal output of the 30,000 cooking systems is 43.5 MW.
- > The cooking stoves are to be used in households and small-scale enterprises. The technology will be transferred from Germany through the provision of the Save80 Cooking System components and know how for assembling and operating devices. The cooking stoves will be assembled locally under the supervision of local specialists. The whole project implementation will be coordinated by the German Climate Protection experts from CIC and RWE.



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Benefits: The switch from non-renewable biomass to renewable biomass, improving living conditions and reducing the emission of 140,000 tonnes of CO₂e per year

- > 30,000 low income households of Lusaka City will be equipped with highly efficient cooking systems. In total the project, which will run from 2009 until 2019 will reduce CO₂ emissions of approximately 1,400,000 tonnes of CO₂e.
- > Social and economic sustainability is supported in various ways. The project improves the livelihood of 300,000 people by reducing fuel costs and avoids unhealthy cooking conditions.
- > Further positive impacts are:
 - Avoiding the logging of trees and the resulting negative consequences of deforestation, particularly: land degradation, erosion, less precipitation, dwindling water retention and loss of biodiversity;
 - Enabling sustainable forest management;
 - Avoiding, almost completely, the emission of the toxic carbon monoxide gas which is emitted when charcoal is produced and burnt;
 - Reducing transportation over long distances;

- Avoiding greenhouse gas emissions from production and use of charcoal;
- > One of the main positive environmental impacts of the project will be raising awareness and knowledge about the environmental challenges faced by the region. This will be achieved through transfer of sustainable technology and an accompanying educational programme. Among other things, this educational programme will address health issues of the local community.



Project title	CDM Lusaka Sustainable Energy Project
Project type:	Renewable energy; renewable Biomass
Host country:	Zambia
Project status:	Registered as CDM project activity at the UNFCCC since January 9th, 2010
Crediting period:	10 years Start: January 9th, 2010
Emission reduction start:	May 2009
Average Emissions reductions p.a.:	140,000 t CO ₂ e