



Data Sheet

co2balance African Energy Efficient Stoves Program

The African Energy Efficient Stove Project works with poor communities to replace open fires cooking with efficient enclosed stoves that save wood, reduce carbon emissions. In addition they produce significant environmental, social, health and welfare benefits for the communities in which we work

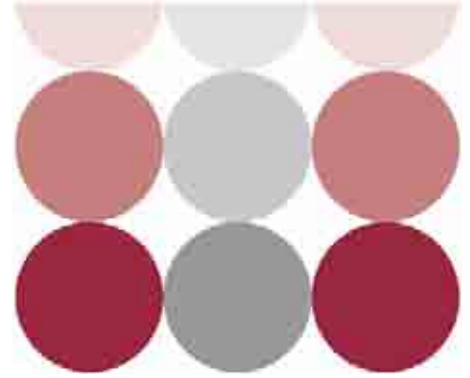
These projects are wholly additional, financed by carbon investments in either CER or VER carbon credits. The stoves are supplied to the household free of charge in return for the carbon rights. The households we work with are amongst the world's poorest peoples and as such are not in a position to purchase such a stove. As many people gather their fuel wood for free there would be little financial incentive for them to reduce their consumption without such a program as this.

The co2balance projects are run under both Gold Standard and CDM standards across Sub Saharan Africa



About co2balance UK Ltd

Established in 2003, co2balance UK Ltd is a leading, UK based, carbon management provider offering carbon calculation, management and reduction services to leading blue chip companies including, BskyB, Toshiba Europe, Gaz De France, Fiat and Flybe. As a project developer co2balance UK Ltd creates African Gold Standard and CDM projects that focus on social, health and community benefits to the families within the project area, in addition to carbon savings.



A Simple Idea Brilliantly Implemented

The premise of these projects is simple. Across the developing world and specifically in Sub Saharan Africa many people still cook in a traditional way on what is called a three stone fire. This is exactly as it sounds, three rocks with a pan sat on top of an open fire. This method is very inefficient as much of the heat is wasted as it escapes around the pan. It also produces a great deal of smoke from the wood being burnt, as the majority of people cook indoors this enclosed smoke is a major cause of health issues.

The World Health Organisation cited in a study that "1.9 million African people die each year from the effects of smoke from an unregulated (no chimney) three stone fire". Also that "living in a house with such a fire is the equivalent of smoking 2 packets of cigarettes per day", which is obviously not a good thing for anyone, especially the women and children who are more at risk from this exposure.

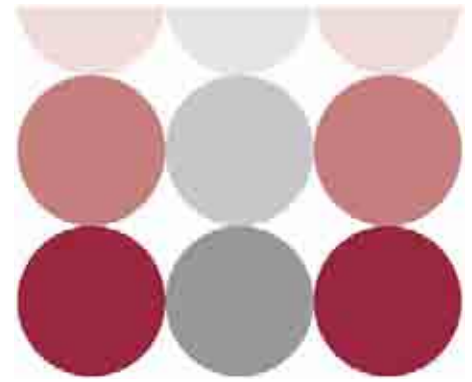
The African Energy Efficient Stove Project works with communities to replace these open fires with efficient enclosed stoves that reduce the amount of firewood consumed by between 50 and 70%. It's this reduction in wood fuel consumption that is measured to create the VER or CER Carbon Credits.

Each of the stove projects takes place under one of two internationally recognised standards for carbon reduction. The CDM standard (Clean Development Mechanism) was first proposed by Brazil following the Kyoto agreement and whilst slow to take off has already contributed significantly to both carbon reduction and to the communities in which the projects take place. The overriding principle of the CDM is that of additionality, which means that the projects could not take place without the funding from a carbon reduction program. A CDM project creates CER or certified emission reduction credits.

The second standard is the Gold Standard for premium carbon credits. Originally designed by the World Wildlife Fund and other environmental organisations and NGO's, the Gold Standard was set up to promote projects with a significant emphasis on achieving the "Millennium Development Goals". The Gold Standard requires a significantly higher standard of operation from the project developers in terms of local consultation with the communities on the ground, together with long term monitoring and evaluation of both the carbon savings and ongoing social and welfare conditions, than a standard CDM project.

Once a region has been identified as suitable for a project to take place co2balance set up stake holder meetings with key community groups to explain the process to the local people and get their approval to begin. The community groups can include local government representatives or village elders, women's community groups, local or national NGO's already in place in the region. These groups help to identify households that may benefit from the program and that also meet the criteria of the project. These selection criteria will include a number of factors; the number of people in the dwelling, the type of fuel being used, ownership of the home etc, more specifically to ensure the very poorest households benefit.

To find out more about our CarbonZero stove projects or other products and services please visit our website: www.co2balance.com



The next part of the process is data collection. Local people are hired and trained to measure the amount of fuel being used each day in a representative selection of the areas households. This is to establish a baseline for fuel consumption for the district and is required for every new project as there can be significant regional variations in the data. For instance the wood used may have a higher moisture content level or calorific value depending on the dominant species it came from, and the local climate, meaning more or less is required to cook each meal. The cooking styles and type of food each area consumes can vary from fast pan baked breads, to slow cooked beans or cabbage. This data collection process is repeated after the installation of the stoves and subsequently periodically over the lifetime of the project to calculate and confirm the actual carbon reduction achieved.

Burning less wood has obvious environmental advantages, in terms of greenhouse gas emission reductions, but there are other less obvious environmental side benefits as well. Gathering less wood leaves more mature trees in place and these trees remove CO₂ from the atmosphere by photosynthesis. Saving the tree cover slows up the natural run off of rain water allowing more water to be held in local reserve and prevents soil erosion and provides shade for crops to grow and leaf litter to enhance soil conditions. This in turn improves the habitat for soil invertebrates and all other organisms in the food chain that rely upon them.

The reduction in fuel also produces substantial community benefits. In remote areas the collection of firewood is usually a role for the children and young women. This exposes them to risk and exploitation away from their villages. Time spent gathering fuel is also time that cannot be given to either their studies or to simple play activities. In more urban but still poor areas the amount of household income that has to be spent on wood is halved enabling people to save or spend on other vital resources. With the average pay for poor people at around \$1 dollar a day this saving can make a huge contribution to improvements in living standards for the whole family.

In addition to the reduction in fuel there are many other benefits from the installation of the energy efficient stoves. There are significant health benefits from a dramatic reduction in smoke and as the fuel burns more efficiently at a higher temperature approximately 80% less smoke is produced. This gives significant benefits to the households including the children who show a marked reduction in smoke related illness, running noses and secondary infections. Reduced smoke also means a saving in water required for cleaning, which in some locations is a scarce or distant resource. The faster burning stoves take less time to cook and so free up time for the family for other activities. In many of our project areas new economic enterprise and social activities have come about directly as a result of the time saved from both collecting fuel and the faster cooking methods.

When a stove is installed in one of our projects its GPS coordinates are captured and become our monitoring link with the household. This information is used both by co2balance and by the third party verification bodies to maintain our standards and verify the carbon savings from the project each year. The co2balance team locally recruit and train community education and support workers to operate within the project area. These teams help households to get the maximum benefit from their new stove, improve cooking techniques and monitor the stoves for any issues that need to be rectified for the entire life of the project into the future.