

Titel: Energy saving stove – the mud stove for cooking and heating

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Heat from biomass and combustion engineering, Furnaces and small-scale biomass furnaces
energy³savingstove, saves time, money and labour

This sustainable mud stove was implemented in Zimbabwe in 2002 and further developed and adopted in Uganda, Tansania, Kenia, Mali, Niger, in South America in Peru and in Ecuador, in Asia moreover this technology was used in the Kingdom of Bhutan.

This smart technology fulfils the five R:

Reconditioning
Repair
Reuse
Recycling
Renewable energy

and additionally makes all the people

Self sufficient
Self administrated
Self realized

This know-how enables creativity, widens the sense of art and living and shows how to manage sustainable recycling economy even in non monetary sensitive territories of our planet. This project is a non profit project and aims to enable the participants engaged with sensible tasks and activities all over the world to diminish the smoke from solid fuels in huts, houses and rooms, to enable cleaner kitchen environment, to protect especially women and children from getting sick caused by waste gas emitted by 3 stone fire places.
It is 100 % appropriate technology.

The motivation for implementation can be both a reduction of fuel expenses and an improvement in the quality of living conditions in the kitchen.

<http://www.nachhaltigwirtschaften.at/publikationen/forschungsforum/002/teil2.de.html>
http://www.nachhaltigwirtschaften.at/nw_pdf/fofo/fofo2_00_en.pdf

How to build the energy³saving stove is an open source technology that can be downloaded in English, Spanish and German as complete workshop at www.feuermacher.com
It is licensed by Creative Common License.

Short description

The energy saving stove is able to heat the kitchen and provide enough heat to cook meals for a large family. It caters to the daily household demand for hot water, while using a minimum amount of wood. The design of this stove is a basis for further development, meeting all the needs of the people using energy saving stoves; it can be adopted to all cooking habits and household demands, the height is adaptable to all cultural habits. The heat of the fire is absorbed by the structure of the stove. A mud mixture comprised of clay, sand, termite earth and straw is ideal. It is locally available, cost free material which is easy to handle and able to store heat. The first opening for the cook-pots is ideal for fresh cooking, while the second can handle semi-cooked food for subsequent slow cooking. The third is for hot water supply. There even can be openings for 4 or more pots.

These three deep openings solve the problem of undirected exposure of the pots to the flame preventing heat loss to the surrounding area. The pots fit exactly when placed in the holes to prevent smoke escaping from the gaps.

To make the fuel burn more efficiently there is no grate inside the fire box (combustion chamber). Especially to ensure complete combustion there are three little holes in the front sliding door. The effect is that the wood burns slow, heats the pots and as a result the flames store the heat inside the stove before leaving outside. It goes without saying to instruct the users by giving simple operating and maintaining instructions.

To lead the smoke outside it is necessary to build a short chimney.

A specific problem is the size of wood. Energy saving stoves favour short pieces of wood and the work of chopping the wood is essential to save fuel. Despite that fact the maximal length of fuel is 100 cm. To store the heat, there is a damper that closes completely the draft of the fire, it can also be used to make the kitchen smoky or to chase away aggressive insects



Built in Zimbabwe 2002 by Richard Jussel

Examples of this simple and sound stove for cooking and heating follow on the next pages:



Built in Zimbabwe 2002 by Richard Jussel



Built in Niger 2010 by ONGSAABY (Organisation Non Gouvernemental SAABY)



Built in Germany 2008 by Martin Schleyer



Built by Florian Hackenberg for Mucheresconexito in Ecuador 2013



Built by Florian Knaus, engineer without frontiers, in Tansania 2013



Built by the stove fitters of Kantandililo, Tansania 2013 with the help of Florian Knaus



Built by the stove fitters of Mahongole, Tansania 2013 with the help of Florian Knaus



Built by the stove fitters of Mahongole, Tansania 2013 with the help of Florian Knaus



Josef Schagerl mit Ofensetzern in Uganda 2013



Josef und Elsa Schagerl, two energysavingstoves for a big kitchen Uganda 2013



How to install a proper chimney, made by Josef und Elsa Schagerl, Uganda 2013