



IMPROVED COOKING OVEN

Product Catalogue - 2013

Prepared by MicroEnergy International GmbH



EUROPEAN
MICROFINANCE
PLATFORM

NETWORKING WITH THE SOUTH

e-MFP ACTION GROUP
ON MICROFINANCE
AND ENVIRONMENT

Description and Working Principle

Improved Cooking Ovens (ICO) provide households and small and medium enterprises (SMEs) with opportunities to reduce fuel consumption and increase cooking efficiency. The improved cooking oven directs smoke around the center of the oven and out of a chimney, thereby achieving more evenly distributed temperatures throughout the oven. With the use of this portable metal ICO, end-users save money, protect the environment by off-setting non-renewable fuels, and improve indoor air quality.

Technical Characteristics

Target group	SMEs, restaurants, households
Approx. size	1.00 m height (excluding chimney), 0.85 m width, 0.65 m diameter
Approx. weight	100 kg
Fuel type needed	Firewood / dense biomass
Fuel consumption	approx 2.0 kg/hr
Burning chamber capacity	0.6 - 0.7 kg of firewood
Cooking temperature	170 - 250 °C

Ease of Distribution, Installation and Maintenance

ICOs can be manufactured and distributed by local country producers. Considering the weight of each unit, transportation vehicles are usually needed. It is easy to install once delivered to an end-user, requiring no technical expertise unless additional adjustments to the installation site are required. An ICO requires some practice to operate skillfully, but only requires minimal operator training for normal use and minimal low-skill maintenance throughout the equipment lifecycle. Generally, the end-user can conduct regular maintenance without the need for technicians. Typical maintenance work includes regular cleaning of the inside of the oven as well as of the combustion chamber and of the smoke-routing canals to ensure optimal airflow and performance.

Technology Options

The ICO can be built in various dimensions in order to serve different uses. There are a few possibilities to adapt the product to local circumstances, such as increasing chimney length to direct smoke away from specific building interiors, or the addition of ventilators to increase combustion temperature. In addition, in colder regions, the ICO may be able to be adapted to utilize the waste heat from the escaping smoke gases to feed other heating systems, such as water heating or indoor space heating.



Price Range

ICO prices vary depending on the manufacturing materials, capacity and additional adjustments. The price of a small ICO made from galvanized steel starts from USD \$360.

Type of target group	Price range
Households	USD \$360 - \$540
SMEs (restaurants, hotels, etc)	USD \$410 - \$750

Type of Loan

Microfinance loans are provided mostly to individuals, for example microenterprise energy loans or home improvement loans.

Economic and Social Impacts for End-users

A typical ICO reduces the time required to bake food by producing concentrated heat in a shorter period of time; it also reduces the amount of firewood required to cook. In addition, it reduces indoor pollution by routing smoke and particulate matter out of the building, thus contributing to protection of end-user health. Furthermore, due to the increased insulation, the external surfaces of the oven do not overheat, and thus the occurrence of accidental burns is mitigated.

The use of ICO results in a considerable reduction in consumption of firewood for households and SMEs. As a technology that can be used for both productive and private uses, the payback period is related to usage patterns and the cost of firewood, and typically ranges from 3 months to 3 years.

Benefits for the MFI

Savings on fuel expenses and increased productivity due to the efficiency features of the oven enable reliable loan repayments to MFIs financing ICOs. Furthermore, through the inclusion of clean technology products, an MFI can enhance its social and environmental performance, improving its reputation towards clients, funders and donors. Also, the ICO can attract new customer segments for MFIs such as SMEs engaged in the food, restaurant and hospitality industries. The portability of the ICO provides possibilities for increased visibility, as end-users can utilize the oven for special events in public spaces.

Environmental Benefits

- Firewood consumption is reduced by approximately 50%, reducing emissions of CO₂ by an average of 96%. Emission of particulate matter is reduced by an average of 63%
- Local environment can experience reduced deforestation if off-setting non-renewable biomass



Photo: MicroEnergy International

European Microfinance Platform

The European Microfinance Platform [e-MFP] was founded formally in 2006. e-MFP is a growing network of 140 organisations and individuals active in the area of microfinance. Its principal objective is to promote co-operation amongst European microfinance bodies working in developing countries, by facilitating communication and the exchange of information. It is a multi-stakeholder organisation representative of the European microfinance community. e-MFP members include banks, financial institutions, government agencies, NGOs, consultancy firms, researchers and universities.

e-MFP's vision is to become the microfinance focal point in Europe linking with the South through its members.

e-MFP Microfinance and Environment Action Group

e-MFP Action Groups facilitate synergies among e-MFP members and encourage them to implement activities together, thus contributing to the advancement of the microfinance sector.

The aim of the e-MFP Microfinance and Environment Action Group is to bring together microfinance practitioners to discuss and exchange experiences in dealing with environmental issues and to create new practical tools to advance environmental microfinance. The Action Group is also intended to act as a think tank that disseminates its results among e-MFP members and the microfinance sector at large with a view to increasing the awareness of and commitment to act on these issues. It is meant both as an internal knowledge-sharing and external awareness-raising platform that serves as a reference in the microfinance sector.

Head of the Action Group: MicroEnergy International GmbH, www.microenergy-international.com

European Microfinance Platform

39 rue Glesener

L-1631 Luxembourg

Tel: +352 26271382

contact@e-mfp.eu

www.e-mfp.eu

With the support of



GRAND DUCHY OF LUXEMBOURG
Ministry of Foreign Affairs

Directorate for Development Cooperation



THE GOVERNMENT
OF THE GRAND-DUCHY OF LUXEMBOURG
Ministry of Finance