IMPROVED COOKING OVEN

Product Catalogue - 2015

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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 sized 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	ca. 2.0 kg/hr
Burning chamber capacity	0.6 – 0.7 kg of firewood
Cooking temperature	170 – 250 °C
Product lifetime	Up to 3 years

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, the combustion chamber and of the smoke-routing canals to assure 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

Source: MicroEnergy International

Source: The Ashden Awards for Sustainable Energy

Source: A.C.R.E.S.T Improved Stoves

Type of Financing

Microfinance loans can be 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 cost of firewood, and typically ranges from three months to three 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

Environment: ICO reduces pressure on natural resources: firewood consumption is reduced by approximately 50 percent, while emission of particulate matter is reduced by an average 63 percent. Part of the heat produced can be reused.

Climate change mitigation: ICO reduces greenhouse gas (GHG) emission thanks to more efficient processes (CO_2 emission reduction by an average of 96 percent), and offset of local deforestation (if it offsets use of non-renewable biomass).

Climate change adaptation: ICO could contribute to reduce vulnerability against weather shocks due to environmental degradation (if it offsets local deforestation), and to reduce vulnerability to price increase and volatility for natural resources.

Synergies with: Increase in environmental awareness[1].

References

A.C.R.E.S.T Improved Stoves http://www.acrest.org/domaines-d-interets/foyer-ameliore/?synSiteLang=2

Ashden Awards for Sustainable Energy http://www.ashden.org/ashden_awards

1 For further information on potential synergies check the other product catalogues for EE and RE technologies.

European Microfinance Platform

The European Microfinance Platform [e-MFP] was founded formally in 2006. e-MFP is a growing network of 120 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.

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With the support of

THE GOVERNMENT
OF THE GRAND DUCHY OF LUXEMBOURG
Ministry of Foreign and European Affairs

Directorate for Development Cooperation
and Humanitarian Affairs

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