



Heat Raider

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Personal Information

Contact Name:	Michael Romer
Organisation/Business Name:	Ikusasa Eco Moulding (Pty) Ltd
Organisation Type:	SME
Email Address:	romer@mtnloaded.co.za
Location:	Stutterheim, Eastern Cape
Type of Industry:	Renewable Energy
Technical Area:	Waste Heat Recovery system

Technology Offer Description

Technology Maturity:	Prototype
Proof of Concept:	There are three working prototypes in various shops in Stutterheim and in the process of installing full system at the ELIDZ Science and Technology Park for testing.
Intellectual Property:	No
Desired Relationship:	Investor/Funding, Co-development partner



Summary:

Heat Raider is a product that will harvest waste heat from the refrigeration cycle and generate 'free' hot water. Heat Raider is not a heat pump but uses the waste heat of an existing refrigeration unit to heat up hot water and does not need electricity supply to operate. This system is designed for the unique African conditions, which include the quality of the water of which not all is potable. These include PC boards and expensive flow pumps. Cleaning of the unit is done manually without the interruption of the refrigeration system or the flow of the water system. Heat Raider must be an affordable, off the shelf product, that is easily acquired and installed.

Detailed Description:

As thumb of rule: for every 1Kw of refrigeration cooling, i.e. in a cold room, there is 1.4Kw of heat been expelled by the outdoor condensing unit. This is lost energy that can be recycled by making use of the Heat Raider. The first part of renewable energy must be energy conservation and recycling, as outlined in government policy. The Heat Raider does not make use of a flow pump and similar products are not produced locally and not for South African conditions.

A medium sized supermarket has an average of 3 x 200L geyser, each using 3.5Kw elements. These electrical geysers can be replaced with the Heat Raider system and taken completely off the grid. This in turn not only saves the store owner money but also elevates the national grid. The targeted market is supermarkets, abattoir, hospitals, hostels, hotels, anyone with a working refrigeration unit that requires hot water.

The Heat Raider is made up of the copper tubing (tube in tube) that runs lengthwise parallel to each other. The copper tubing is off-set at each interval (using our Z-zag IP). This allows for the water to move easily using the thermo-siphon principle (no flow pumps). Each end of the tube in tube will have an end cap that will allow for cleaning and access to the spring-clean (IP) technology. Once the unit has been pressure tested, it is fitted to its casing and then fitted onto the heat recovery vessel by means of brackets, is ready for installation.

The Heat Raider is at the stage of development where there is a need to bridge the gap between development and entering the market. This will include stages of testing and verification of the Heat Raider that will advance the rapid development of the prototype and speed up the process of entering the market. Currently the prototype is being tested at the ELIDZ Science and Technology Park. The next level would be commercialisation and manufacturing.

Team and Related Experience:

Michael Deon Romer, Managing Director, inventor and prototype manufacturing, refrigeration technician, self-employed for more than 20 years. Tamsanqa Gxowa, Director-Marketing and business development.

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