



The roto-moulding manufacturing process and simplicity of design of 'Hot Harry' allow for an affordable, high-performance, robust solar hot water heater.

SOLAR HOT WATER PROVIDED CHEAPLY

The potential advantages of solar power are being realised in Townsville with the launch of 'Hot Harry', a rotationally moulded, cost-effective solar hot water heater. Gough Industries developed the system with the help of a \$600,000 grant under the Renewable Energy Commercialisation Program. Gough Industries is an industrial plastics company with factories in Australia and Brazil supplying industries that include housing, manufacturing, mining and agriculture.

Water heating accounts for approximately 30 per cent of household energy consumption. Solar hot water heaters can provide most of this energy and have been recognised by federal and state governments as an effective and simple way to reduce energy consumption. However, the initial purchase cost of solar hot water heaters has always been high compared with electric or gas systems. Hot Harry is competitive by virtue of a low-cost manufacturing process, innovative design and the use of new materials.

The system combines the solar collection and water storage functions into one unit. The base is made from rotationally moulded polypropylene, which has the obvious advantage of being rust-resistant. The unit is backed up by an electric or gas booster to ensure a constant flow of hot water. The water is fed through the system by mains pressure which does away with the need for pumps or electric motors. While Hot Harry is operating 100 per cent on solar, there are zero greenhouse gas emissions.

A key innovative feature is the transparent upper surface of the unit that enables sunlight to be absorbed both within the water body and at the bottom of the tank. This provides for more uniform water heating and a significantly lower top heat loss, resulting in an estimated 50 per cent improvement in heater performance. Also, the glazed water storage chamber allows the solar energy to pass as light, which avoids the thermal resistance normally associated with plastic tank walls.

Hot Harry was designed by Dr Harry Suehrcke from James Cook University, Dr Jonathan Harris of Maunsells, and Rod Lowe, Andrew Gough and Simon Gough from Gough Industries. The group sought public comment which revealed that aesthetics is also a problem with traditional solar hot water systems. Another advantage of combining the tank and collector is the elimination of the unsightly storage tank. Hot Harry is easily installed on a tile, iron or flat roof.

The commercialisation of the technology will begin in northern Australia and will be rolled out nationally and internationally over three years.



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FOR MORE INFORMATION, PLEASE CONTACT

Mr Ian Gough

Gough Industries

PO Box 7570

Garbutt BC

Townsville QLD 4814

Freecall 1800 069 805

Tel (07) 4774 7606

Fax (07) 4774 7608

Email igough@gough.com.au

Internet www.gough.com.au