Helianth Systems Ltd Project Stratodisc

Update August 2011

The problem

When hot water is drawn from storage cylinders the incoming cold water mixes with the remaining hot water, resulting in a gradual decrease of the water temperature at the outlet. To compensate for this mixing most conventional cylinders are oversized by 30-50% and cylinders for renewables by 40-75% relative to the actual daily hot water demand. Cylinders below 100 litres are practically non-existing. An oversized cylinder has higher heat losses to the environment and larger/more powerful equipment is required to reheat it in a given timeframe.

The Solution - Stratodisc

Our technology prevents mixing of hot and cold water in the cylinder. This means cylinders size can be reduced to the actual daily hot water demand, heat losses are reduced and heating equipment can be scaled down, thus reducing the capital and operating costs of hot water systems.

Market opportunities

1. Domestic and commercial hot water cylinder market

Some 3.4 Million cylinders for conventional and renewable water heating are expected to be sold in 2011 in Europe with annual growth rate of 5.3% until 2015. Stratodisc enables the use of smaller, more energy-efficient cylinders. The top tier manufacturers Worcester Bosch, Vailliant and Viessmann supply cylinders as part of complete conventional and renewable water heating packages.

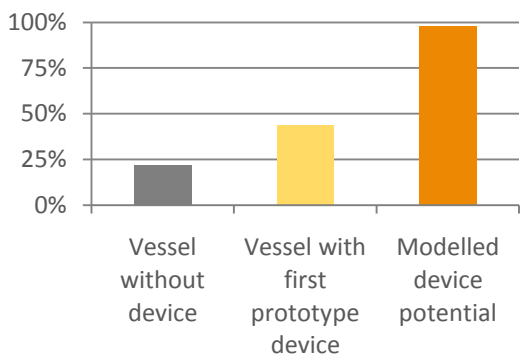
2. New product for unmet domestic market need

Stratodisc enables the production of small and affordable solar water heating kits comprising of a small hot water storage cylinder and small and/or wall-mounted solar collectors. These kits are ideal for small households, including flats. In the Western world more than 50% of all households comprise 1-2 persons (OECD 2010) and this proportion is set to increase. There are presently no renewables solutions addressing this vast market.

Development progress

- Our computer modelling predicts that a suitable Stratodisc enables discharge of 98-99% of hot water from an 88 litre vessel without a drop in temperature (Nov 2010)
- Validity of the model has been confirmed experimentally (Jul 2011)
- The first basic disc design extended the period of hot water discharge by up to 44% compared to a vessel without a disc (Aug 2011)

Hot water discharge relative to complete discharge



Business model

- Complete proof-of-concept work
- File patent applications
- Evaluation of technology by potential licensees
- Licensing agreements by application or territory
- Royalty revenues

Projected revenues (£ 000s)

Y1	Y2	Y3	Y4	Y5
(92)	(167)	465	2,786	4,574

Funding required

R&D and IP:	£75K
Business Development and operations:	£325K
Total:	£400K

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