

# Sunny Future for Solar Heater

A Smart Award-winning solar water heating system is far simpler to fit than traditional solar systems, plus it costs less. Invented in Edinburgh, Solartwin's novel freeze-tolerant solar water heating panel uses an 'intelligent' solar electric pump, which consumes no mains electricity.

**Barry Johnston**, a freelance journalist and environmental consultant had been fascinated by the potential of solar energy for some time, when he came across a unique solar water heating panel patented by environmental engineer Kerr MacGregor at Napier University, in Edinburgh.

In 1997 he sought to license the patent and drew up a business plan. Unfortunately, his first attempt to raise money to commercialise the product failed, so he went back to environmental management consultancy in the Middle East, "helping oil companies to go green".

In 1998, Barry refined the business plan and won a £43,000 Smart Award matched by £80,000 of his own funds for a Smart technical feasibility study.

Together with Napier University the product was fine-tuned and launched in Spring 2000, targeted at the 'deep green domestic market' with advertisements in Friends of the Earth magazine. The Chester-based firm also decided to eliminate the labour-intensive home solar survey and now quotes by phone, saving costs and avoiding the environmental impact of 'on the road' survey teams.

Whereas conventional solar panels feature metal panels that may freeze or crack in winter, Solartwin's patented panel contains flexible, silicone rubber water channels. Adopting this innovation has brought numerous knock-on technical simplifications. Solartwin has eliminated the electronic controllers, complex plumbing, and need for anti-freeze and maintenance necessary for conventional solar. Additionally, Solartwin uses a unique variable, single pass solar-electric pump which adjusts to daylight as low as 15%. Its innovative panel coatings can heat water up to 70°C on a sunny day.

Nearly 1,000 Solartwin panels are now installed in the UK, Ireland, and as far afield as Saint Helena in the South Atlantic. Eight staff are employed directly and 16 under subcontract. "We'd never have got off the ground without a DTI Smart Award," says Barry. "Our solar water heating panel is more sustainable and cost effective than any on the market."

## Lessons Learnt

- A robust business plan is vital, no matter how clever an invention looks.
- Include lateral thinkers in your team.
- Ask for help: a lot of people, even customers, give favours.

## In Focus

**Concept**  
Simple solar water heating: 100% solar pumped

**Inspiration**  
Kerr MacGregor: "Freezing is no problem."

**Market**  
Deep green and off-grid home-owners

**Future**  
Growing domestic and social housing markets

