Case Study
Whitfield Solar: A spin-out company

Background

**Whitfield Solar Ltd** is a spin-out company from the School of Systems Engineering in the University of Reading. It was formed in 2004 to commercialise the results of over 30 years of multidisciplinary research into more cost-effective and efficient solar power systems. The late Dr George Whitfield, Dr Roger Bentley and Dr Clive Weatherby led an interdisciplinary team of researchers from Cybernetics, overseas utilities and commercial companies which developed optimised systems to deliver novel and economically viable solutions. Funding to carry out the research programme was awarded by UK Research Councils and the European Union.

The Challenges

The aim of the commercialisation process was to develop low-cost solar concentrator technology for the high-growth solar photovoltaic market that could be manufactured by companies in the automotive and similar high volume product industries. The University’s Technology Transfer Office worked with the academic team to secure funding to enable the development by a sector expert of a business plan for a spin-out company.

Dr Clive Weatherby was seconded from Solarcentury to lead the venture and Whitfield Solar was subsequently established with a landmark investment by the Cascade Fund, a venture capital fund that supports the commercialisation of academic research at Reading and four partner universities in the South East. Carbon Trust Investments Limited led a second funding round in 2006 and a third in 2007 in partnership with Kilsby Limited.

Investment of over £2m has enabled Whitfield Solar to develop its first solar concentrator product, to take the product through testing and to install a grid-connected demonstration site in Spain. The novel design uses 25% of the silicon of a conventional PV module. It is assembled from injection moulding components and a sheet aluminium body, and uses a moulded Fresnel lens to concentrate the sun onto individual solar cells. The result is low cost, low weight and low wind-loading product, all key advantages over conventional solar panels.

In 2008 Whitfield Solar was chosen as one of the Guardian/Library House Cleantech 100 group of private cleantech companies with the best prospects in Europe.
Benefits to the company

The process of establishing Whitfield Solar and obtaining the initial investment was managed by the University’s Technology Transfer Office (TTO).

Whitfield Solar was initially based at Reading Enterprise Hub, a business incubator on the University campus providing an environment for growth for high-tech start-ups. The company graduated from the Hub and now occupies its own offices close by the campus and continues to benefit from its close relationship with the University. The Technology Transfer Office has provided expert advice and support on all aspects of Intellectual Property (IP) management as well as facilitating the securing of further funding and interaction with the rest of the University. In particular Whitfield Solar has been able to make use of testing and other facilities, as well as accessing its academic expertise through a Knowledge Transfer Partnership project and several student placements.

Dr Clive Weatherby commented ‘It is wonderful to see the transformation of theoretical laboratory-based ideas into a well engineered, fully commercial mass-produced product’.

Benefits to the University

The University has benefited through the realisation of impact from its previous research, commercial feedback into its current and future research, the opportunity for students to gain work experience and as an exemplar for other academics considering commercialising their research.

‘We are delighted at the calibre of the commercial and product development team that is now in place at Whitfield to take their low cost solar concentrator product to market. We believe the market will increasingly focus on cost and simplicity within the solar sector and Whitfield is well placed to exploit this opportunity.’

Jonathan Bryers
Investment Partner, Carbon Trust

University of Reading

The University of Reading is a world-class research-intensive university covering a broad spectrum of disciplines across the Life and Physical Sciences, Arts and Humanities, Social Sciences and Henley Business School. Areas of particular strength include: Climate Systems Science, Preventative and Therapeutic Health Sciences, Sustainable Construction and Environments and Computational Science and Informatics.

The Technology Transfer Office manages the University’s portfolio of intellectual property as a vital component of Open Innovation, offering companies access to IP through licence agreements or creating spin-out companies to develop new products and bring them to market.