Knowledge Transfer Partnerships

KTP BENEFITS

Knowledge Transfer Partnerships are designed to benefit everyone involved

- Businesses will acquire new knowledge and expertise
- KTP Associates will gain business-based experience and personal and professional development opportunities
- Universities, colleges or research organisations will bring their experience to enhance the business relevance of their research and teaching

Knowledge Transfer Partnerships
Accelerating business innovation;
a Technology Strategy Board programme

http://www.ktponline.org.uk

SIGEN LTD
KTP PROMOTES RENEWABLE ENERGY EXPERTISE

ABOUT THIS CASE STUDY

siGEN Ltd, based in Aberdeen, provides fuel cell (hydrogen) based power solutions and hydrogen production systems. In 2003 the company embarked on a Knowledge Transfer Partnership (KTP) project with the Robert Gordon University (RGU), which aimed to provide novel techniques for the integration and monitoring of elements of a renewable energy power system being installed as a demonstrator unit for a remote community.

ABOUT THE SPONSOR

The Engineering and Physical Sciences Research Council (EPSRC) is the UK Government's leading funding agency for research and training in engineering and the physical sciences.

FAST FACTS

- Highly successful KTP, through which Associate was selected as 'Business Leader of Tomorrow' award winner 2005
- Enhanced knowledge of hydrogen production and fuel cell
- Company now recognised as leading UK authority in hydrogen production
- Extended company product portfolio
- Improved competitive position

The Company

"The biggest benefit I see coming from the KTP programme is the structured training for professional and personal development. These are critical skills, which we should manage in business, and find difficult, being forced to do them is a very good thing."

David McGrath, Managing Director, siGEN Ltd

siGEN Ltd are experienced designers of small-scale energy systems using hydrogen fuel cells and small hydrogen production systems. They offer consultancy to design, test and install to specific customer needs. Hydrogen systems are becoming increasingly important and are considered to be the energy of the future. siGEN is integrating renewable energy and hydrogen systems to decrease fossil hydrocarbon energy dependence.

ABOUT THE PROJECT

siGEN was asked by Unst Renewable Energy Project (PURE) to design, install and test a small demonstrator unit. The project involved using two wind turbines to provide power to a small industrial building via the production of hydrogen and the use of surplus hydrogen for other power projects. Certain aspects of this project were novel and beyond siGEN's technical capability. The two-year KTP with RGU assisted the company with matching the output from wind turbines to electrolyser, controlling the storage and utilisation of hydrogen, and the interface between UPS (Un interrupted Power Supply) and the island grid. The KTP also provided expertise in remote sensing and system modelling.

BENEFITS

The work developed on the hydrogen production, in particular the interface to the variable wind power source has enabled siGEN to become leading UK authorities in this area of technology. The knowledge gained extended beyond the parametric modelling objectives of the project, and dealt with fundamental engineering issues of turbines and their mechanical performance.

The work on fuel cell has been instrumental in securing additional fuel cell contracts around the UK.

RESULTS

The company has gained advanced knowledge of hydrogen production, storage and deployment through fuel cell systems. The KTP enabled the company to successfully tender for fuel cell systems installation projects. Detailed knowledge about renewable energy and generation technologies have also been embedded within the company, facilitating the company's product portfolio extension, including renewable energy devices, such as domestic wind turbines. In sum, the company's competitive advantage has greatly improved as a result of the KTP.

The Associate

"During my time as a KTP Associate I have had the opportunity to apply my engineering knowledge and expertise in renewable energy to a real world system. The KTP scheme has also given me the opportunity to develop my leadership and project management skills, as well as develop my academic qualifications."

Ross Gazey, KTP Associate

The individual employed to carry out this project was Ross Gazey.

BENEFITS

Ross benefited in many ways from his role as Associate; the KTP facilitated improvements to his project and people management, presentation skills, technical capabilities, risk assessments and researching skills. Furthermore, Ross was given the unique opportunity to work on a highly challenging project, leading a team of engineers.

He has since become an expert in small-scale renewable energy using hydrogen storage, and has presented on the subject at international conferences and contributed to national radio features.

As a result of the excellent work Ross achieved through this KTP he was awarded the accolade: 'Business Leader of Tomorrow' - a prestigious award, judged by senior Government officials and KTP programme management.

The Academic Partner

"This KTP project has given RGU the opportunity to be engaged in the research and development of new and growing renewable-based technologies, benefiting the University's understanding and expertise in this area."

Professor S K Salman, lead academic.

This KTP was delivered in partnership with the School of Engineering at Aberdeen-based Robert Gordon University. Academic supervisor and Lead academic was Professor S K Salman.

BENEFITS

The outcomes developed in this KTP will be used in new modules taught at the University, for example 'Modern Power Systems and Embedded Generation'. A number of undergraduate projects have been introduced for investigating fuel cell-based systems and the project has led to four conference papers and one refereed journal paper. Additional funding has also been secured, helping to re-enforce RGU's existing facilities. The knowledge, experience and expertise gained form the involvement in this KTP programme by the "Renewable Energy Power System Group" led by Prof. Salman has led to further research proposals being prepared for submission to the EPSRC.