

## 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 development opportunities
-  University, college or research organisation will bring their experience to enhance the business relevance of their research and teaching

A DTI Business Support Solution

<http://www.dti.gov.uk/ktp/>

# CALEDONIAN ALLOYS LTD 'SUPER' KTP PROJECT FOR SUPERALLOY RECYCLERS






### ABOUT THIS CASE STUDY

CALEDONIAN ALLOYS LTD RECYCLES AND PROCESSES NICKEL, COBALT AND TITANIUM SUPERALLOYS. THIS KNOWLEDGE TRANSFER PARTNERSHIP (KTP) PROJECT WITH HERIOT-WATT UNIVERSITY, EDINBURGH, SOUGHT TO IDENTIFY AND IMPLEMENT MEANS OF REDUCING VOLATILE ORGANIC COMPOUND (VOC) EMISSIONS WITHIN THE EXISTING ALLOY DE-GREASING PROCESS, WHILST IMPROVING THE EFFECTIVENESS OF THE PROCESS.

### ABOUT THE SPONSOR

THE DEPARTMENT FOR TRADE AND INDUSTRY (DTI) DRIVES THE AMBITION OF 'PROSPERITY FOR ALL' BY WORKING TO CREATE THE BEST ENVIRONMENT FOR BUSINESS SUCCESS IN THE UK. THE DTI AID INDIVIDUALS AND COMPANIES IN IMPROVING PRODUCTIVITY BY ENCOURAGING ENTERPRISE, INNOVATION AND CREATIVITY.

### FAST FACTS

-  Cost savings in the alloy cleaning process
-  Reduced environmental impact of the cleaning process
-  New focus on research, development and innovation within the company
-  Potential to enter new areas of the market
-  Increased credibility with multi-national customers

## The Company



"The KTP Associate provided the company with a focus for research, development and innovation... we got clarity and projects started to happen. Getting involved with KTP ... had the effect of broadening our horizons and I have no doubt it will help us enter new markets."

**Hugh Stewart**, Chairman, Caledonian Alloys Ltd

**Headquartered in West Lothian, Caledonian Alloys has grown from five employees to 160, with eight processing facilities and three sales offices around the world. It's Europe's largest recycler, with an annual turnover in excess of £30 million.**

The company has carved a lucrative niche in the multi-billion dollar global aerospace market by recycling the special alloys used in the production of aircraft engines, land-based turbines and in the petrochemical industries. A core process is recovering the metal left after machining, then cleaning, grading and preparing it to be returned as 'chips' to specialist melters for re-use.

#### **ABOUT THE PROJECT**

The KTP partnered Caledonian Alloys with Heriot-Watt University, whose initial brief was to reduce the emissions of volatile organic compounds (VOCs) used during the cleaning and recycling process. The next phase of the two and a half year KTP is to work on two projects involving 'blue sky'

research that are vitally important to the company and could take them into new markets.

#### **BENEFITS**

The project exceeded the ten per cent reduction target for VOC emissions. The KTP's scope gave Caledonian credibility with many large multi-national companies who now see Caledonian as a market leader with a "can-do" attitude.

Caledonian Alloys is now hoping to set up another KTP programme project to develop supply chain management.

#### **RESULTS**

- 🔄 Reduced emissions of volatile organic compounds (VOCs)
- 🔄 Built credibility and enhanced reputation amongst large multi-national companies
- 🔄 Developed the R&D focus within the company
- 🔄 Capacity to enter new markets

## The Associate

**"What other programme would allow you to do a further engineering degree and higher management award on company time, pay for your training and development, send you away on four weeks of training modules and allow you time to be in university conducting your own research experiments?"**

**Cameron Fraser**, KTP Associate

#### **BENEFITS**

Cameron Fraser graduated as a chemical engineer from Heriot-Watt University. Since he joined Caledonian Alloys, Fraser has undergone rapid personal and professional development, growing in confidence and ability. Fraser has also had the opportunity to visit Caledonian Alloys' facilities in the United States, China and the Czech Republic.

#### **RESULTS**

- 🔄 Accelerated learning,
- 🔄 Fast-track development of management skills
- 🔄 Opportunities for travel, rapid personal and professional development
- 🔄 Opportunity to contribute to 'blue sky' research
- 🔄 Gained NVQ Level 4 in Management

## The Academic Partner

**"I have found myself energised by tackling real world problems and seeing the fruits of our labour in the workplace."**

**Robin Westacott**, School of Engineering and Physical Science, Heriot-Watt University



#### **BENEFITS**

The project met the initial brief by reducing losses during the cleaning process, reducing emissions and increasing efficiency, beating targets by a factor of three or four.

The project, says Robin Westacott, has given the University an income, the chance to make industry connections and the potential to create new intellectual property. Perhaps most importantly, it has allowed some of the current undergraduates the opportunity to work on real research projects under the guidance of departmental staff.

#### **RESULTS**

- 🔄 Increased income for the University
- 🔄 Industry connections
- 🔄 Potential to create intellectual property
- 🔄 Undergraduate research projects