

Interface Response:

This submission is on behalf of [Interface](#) which provides companies and organisations (including social enterprises) with a central point of access to the expertise available in Scotland's Higher Education, Research Institutions and colleges. Our core mission is *"to enable business-academic collaborations for economic and societal benefit"*. The impartial business support service that Interface provides directly supports Scotland's Economic Strategy by increasing competitiveness and fostering innovation by matching business to academic expertise. We have a pan-Scotland remit and while funded through the Scottish Funding Council, Scottish Enterprise and Highlands & Islands Enterprise our activity across the country whether sector focussed, rural or urban reflects local needs.

We have responded to the question below based on our experiences of interaction with the research pooling initiative.

Please provide a brief summary of your experience of, or connection with, the research pooling initiative

The underpinning research funding levered in by Research Pools to Scottish Institutions is fundamental to ensuring the depth and breath of blue skies and applied research relevant to Scottish companies. Whilst many of the small medium sized (SME) companies that are supported by Interface are seeking expertise or technologies to respond to short term business challenges, the academic knowledge to co-create solutions may have emerged from many years of impactful research in key areas eg. chemistry or physics.

Our response below is based on the connections we have established with many of the Research Pools to both increase the visibility and application of world leading research, technology and specialist facilities to businesses both large and small and to promote demand led business challenges to researchers within the pools. However, for the ~1,900 collaborative projects brokered between industry and academia and the >1,200 innovation voucher applications awarded we do not know how many of the lead academics are associated with research pools.

Regional Business Engagement – translating business led challenges suitable for academics

Interface's level of engagement with each of the Research Pooling Initiatives depends on the relevance of expertise to the businesses that we work with.

ETP, SAGES, ScotCHEM and SICSA are part of Interface's brokerage process between business and academia. These research pools in addition to relevant university departments, will receive relevant company led expertise searches from Interface, where a business is seeking academic expertise. The research pools will actively outreach to academics within their network and respond to Interface with relevant expertise and resources to support the business challenge. In addition, we have shared many company led requests for access to specialist facilities with research pools such as SULSA and ScotCHEM.

We recognise that since the establishment of research pools, the remit of the many of the executive teams has evolved. For example both SUPA and ETP have dedicated teams to engage with industry (similar to Interface) and ring fenced funding for offsetting the cost of academic – company collaborations.

With the case of ETP their Business Development Managers (BDMs) embedded within university departments have the sector and field expertise, time and resource to proactively work with academics to respond to Interface expertise searches. However, Interface have also observed that as BDMs who are keen to engage with businesses with distinct KPIs from their funding, there can often be overlap and duplication with Interface's Business Engagement team where a business may be working with both organisations at the same time.

As both Interface (in managing the Innovation Voucher programme) and some of the research pools provide business support services and funding to offset the cost of collaboration there can be a lack of awareness and confusion amongst businesses around who they should work with and who provides the most relevant services for them.

Project Funding for offsetting the costs of company collaboration

Since 2011 research pools have funded 17 academic collaborative projects brokered by the Interface projects via; ETP Knowledge Exchange Network (KEN), ETP Studentships, SUPA Inspire or SUPA Feasibility Start totalling £176,576. This represents 1% of the total number of projects facilitated by Interface during this period (2011-2018). The impacts from this funding often leverages further funding to grow and extend the business and their projects with academia. This can be best demonstrated through case studies;

[Renewable Parts Ltd. \(RPL\)](#) is one of the leading suppliers of parts for wind turbines in the UK. The company were looking to develop an innovation programme for the repair of wind turbine parts requiring significant technical expertise from a Scottish university in the areas of market research, technical assessment, design and test before production-ready solutions could be delivered.

The company was referred to Interface by Highlands & Islands Enterprise. Interface successfully matched the company with the University of Strathclyde who was looking to apply a multi-disciplinary approach to identify the tasks and areas to be researched. They believed that the combination of the department of Electronic and Electrical Engineering, the Strathclyde Institute for Operations Management (SIOM) and the Scottish Institute for Remanufacture (SIR), hosted at the University of Strathclyde, provided the multi-disciplinary approach needed for the new business models/process that Renewable Parts wanted to investigate, as well as the technology expertise required for remanufacturing of wind turbines.

The project investigated data on wind turbine component failure rates to identify which components could be remanufactured/repared/reconditioned, and the Strathclyde team completed a report for the company which outlined a number of potential components that might be of interest. Renewable Parts Ltd was successful in not only establishing a partnership with University of Strathclyde but in securing funding from the Energy Technology Partnership. The total cost of their initial project was £23,075, with ETP contributing £13,575 in cash, and RPL contributing £9,500 in-kind.

The funding allowed RPL to develop implementation processes for two of these components, enabling the remanufacture/repair/recondition of said parts in-house. This meant that RPL could create a new manufacturing base in their original site of Lochgilphead in Argyll, an economically fragile region of the Highlands and Islands, creating jobs and supply chain opportunities. In December 2018, the company secured a £171k grant from Zero Waste Scotland.

[Soltropy's](#) solar thermal heating systems reduce CO2 emissions by displacing the use of fossil fuels. The company sought academic expertise to provide solid data on the overall system performance. Interface brokered introductions with the Energy Academy at Heriot Watt University who modelled their software. This has proved to be very useful to the company, indicating clear areas where the design can be modified, resulting in different characteristics.

This collaboration led to a grant of £6.5K from the ETP consultancy fund being secured to build a prototype and carry out comparison testing with an incumbent solar thermal system. Testing was carried out at the Heriot-Watt University Renewable Energy Test site with the installation of two evacuated tube solar panels. One panel was modified to incorporate the Soltropy technology; with instrumentation installed to measure fluid flow rates and fluid temperatures so as to determine an accurate thermal performance for the duration of the project. The work was carried out by two Mechanical Engineering students, funded by student bursaries, as part of an MSc programme in the School of Engineering and Physical Sciences.

In December 2014, Soltropy, along with project partners Heriot-Watt, succeeded in securing Innovate UK funding with a grant of almost £175k as part of the Early Stage Energy Catalyst. In June 2016, Soltropy were awarded the £100k Scottish Edge Higgs award. Soltropy Ltd has benefited from the collaboration with a more optimised system through theoretical modelling. It now has data to back up claims it will make when convincing potential investors and, ultimately, installers and consumers, of the superiority of the system.

Promotion of Research Pools expertise, knowledge and events

Interface also engages with research pools to support marketing activities such as promotion of programmes, events and specialist facilities;

- Interface promote programmes of activity such as the recent SAGES PhD fully funded internships
- Interface exhibits at SICSA's annual DemoFest and promotes the event on behalf of SICSA. We have worked alongside the Demofest team at the request of the SICSA director to help translate the research to further engage companies at events
- Reciprocal blogs have been written with SICSA to promote Interface to SICSA's network and SICSA to Interface's networks
- Interface have promoted ScotCHEM's Benchtop NMR and other specialist facilities which is available for businesses to hire
- Interface have specialist facilities on their database which sit within university departments applicable to the research pools

Looking ahead

We have been very encouraged by the synergistic engagement established in the last few years with the Scottish Graduate School for Arts & Humanities and Scottish Graduate School of Social Science. The co-working between the graduate schools' executive and Interface teams has facilitated a significant number of SMEs and other organisations to co-create impactful industry led collaborations suitable for Collaborative Doctoral Awards and Applied Research Collaborative Studentships. We would be keen to establish similar co-operation with other Research Pools to foster greater industry engagement.