

# Science, Innovation and Technology Committee

## Oral evidence: Innovation showcase, HC 523

Tuesday 13 May 2025

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Members present: Chi Onwurah (Chair); Dr Allison Gardner; Tom Gordon; Kit Malthouse; Jon Pearce; Steve Race; Martin Wrigley.

Question 15

Witness

I: Julie Todd, Head of Administration, Rocoil.

## Examination of witness

Witness: Julie Todd.

**Chair:** Welcome to today's innovation showcase from the Select Committee for Science, Innovation and Technology. The Committee wants to understand how the UK supports innovators and what more can be done to support them. To inform our work, each member of the Committee takes a turn to select an innovator to share their story before our main evidence session. Today's innovator is brought by Tom Gordon. The innovator is Julie Todd of Rocoil. Tom, over to you to introduce her.

Q15 **Tom Gordon:** Thank you, Chair. I am really delighted to welcome Julie today. I went out and saw Rocoil in my constituency of Harrogate and Knaresborough. It is now quite nice that she has come to see me at work; tables have turned.

As a biochemist, physics is the area that I avoid at all costs. I had a steep learning curve when I went out to try to understand what the team at Rocoil does. Rocoil is a local business that manufactures equipment that measures electric currents in a wide range of settings. Julie brings a rich background, having worked in the company for a substantial number of years. It was fantastic to see the local team and hear about how it basically started out in a garage and how it has grown to be so much more. I'll hand over to Julie to tell us about Rocoil.

**Julie Todd:** I am very much here representing David Ward, who is the founder and director of the company and very much the innovator in this situation.

Rocoil is a family-run business. We specialise in Rogowski coil technology, which measures electric current. I have here an example of a Rogowski coil. They come in lots of different shapes and sizes and are made from different materials. This is a rigid one. The clever bit is the winding of the wire around, in this scenario, a rigid plastic form. We can configure the winding to measure different currents for different applications. The machines that we produce at Rocoil, which are unique, we believe, are exceptionally good at making uniform winding, which is very exactly spaced around the coil. This is an example of a flexible one—the same thing, basically, but bendy. We believe that our innovation is the combination of a physicist's point of view—David is a physicist—on an engineering issue and the knowledge of our highly skilled engineers and technicians, who create customised coil designs, and also our unique winding and calibration facilities.

Rocoil is known worldwide as a supplier of precision coils. No competing technology operates as well at very high currents. When we talk high current, we can measure up to nearly 2 million milliamps in calibrations. We could go higher if we were asked to. There are other manufacturers of coils, but none seems to have the understanding for designing a precision coil that Rocoil has.



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The nuclear fusion international market is worth nearly \$300 billion globally. Rogowski coils are used in that technology. We already supply equipment to four fusion projects in Europe and America. In the last two years, just one of the US projects has generated £250,000 in sales for Rocoil. The market for electric furnaces is increasing following policy changes worldwide in favour of them over blast furnaces. The measurement from a coil ensures that the arc on the furnace is held at an exact level to make sure we have maximum efficiency.

Forty per cent. of European steel is produced via arc furnaces and the market is expected to grow. We already provide goods to an estimated 40% of the major suppliers. We also supply equipment to university research projects, and for safety and signalling applications in the railway industry. One of the most noteworthy market opportunities we have identified is the potential to develop an international standard for the measurement of very large electric currents. We are currently working with the NPL to validate our calibration and measurement procedures. This would confirm the UK as a lead in the technology. The accurate measurement of electric current is vital for many systems. It leads to more efficient operation for plants to save energy. With the increasing development of environmentally friendly manufacturing methods, such as arc furnaces, and innovations in production, including fusion and smart grids, the use of Rogowski coils is gaining a higher profile.

Our strategic approach to development is very much customer-driven. We carry out a deep dive into the customer's actual requirements. Our strength is the ability to create theoretical models and design special measuring systems that exactly fit customer specifications, rather than offering standard off-the-shelf items. If we discover that we cannot meet a customer's needs and we do not secure a sale, the knowledge gained from the research exercise is still considered of value to the company. We are very careful to tell customers the limitations of the goods that they are purchasing, which has established our reputation for being knowledgeable, helpful and honest, and generates much good will and respect from our customers, and is confirmed by the number of customers we have who are big players in the electricity sector.

We have a company website, but have not been proactive in marketing our products. We rely solely on word-of-mouth recommendations. This is an area we ought to develop. Literally, it is all word of mouth and we are a very profitable company. Approximately, 90% of our products are shipped abroad and we have customers in over 50 countries on six continents. We carry out most of our admin activities in-house, as it helps reduce costs and increases our operational flexibility and speed. As a small business, we are able to accommodate the different and often complex business set-ups of our customers.

David Ward founded Rocoil in 1991 due to redundancy, following the privatisation of the CEGB. At that time, there were many factors that helped him establish Rocoil. He had a ready-made product based on work



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he had carried out at the CEGB. Initially, he had to pay a licence fee for that, but it was later revoked. The CEGB arranged a two-week residential course for people starting their own business and allowed the use of facilities such as typing services and fax machines. Due to the closure of the laboratories, scientific equipment was available at little or no cost. David enrolled on an enterprise allowance scheme, which provided some funding as well as a mentor for advice and guidance.

More recently, we have experienced business challenges due to Brexit increasing shipping admin, as well as upsetting some of our European customers. Most of our customers are unable to source our products elsewhere, which helped secure sales during this time. It would have been and would still be useful if there were some form of central hub that was able to provide SMEs with advice about how to navigate international business admin.

We had been working, as a sub-contractor to a UK Government authority, on a significant European development project. This was paused following Brexit. Subsequently, an agreement was put in place between the European Commission and the UK that should have enabled the UK to continue to be involved. However, it was clearly a politically sensitive issue for Europe and the work was awarded to an Italian company. Ironically, they later came to us for help with the calibrations, so we ended up doing the work anyway.

Employment law has been an issue for Rocoil as an SME. We take our social responsibility seriously and strive to be an equitable employer. However, we have found that the law is open to abuse. For an SME, the nuanced legal knowledge required, and the admin burden that places on an SME, can hinder the employer's ability to operate in a commercially viable way. If future changes to employment law could consider ways to minimise abuse, it would go a long way to encouraging both good employers and good employees. As a family-run business, we are unsure how inheritance tax will affect the company. We want to be able to reassure our employees that the business and their jobs are protected. Assistance with succession planning for family-run businesses would be welcome.

As an SME, it is quite difficult to dedicate time to nurture business links with other organisations that have similar interests to us so that we can grow together. It has also been difficult to access commercial frameworks at the consultation phase or at the start of the supply chain, so any initiatives that you can put in place to help SMEs with those activities would be appreciated. Thank you.

**Chair:** Great, Julie Todd. Thank you very much. That was fascinating and very topical. Steel and arc furnaces are a very important subject right now. Thank you very much, Tom, for bringing in Julie Todd as the innovator. Thank you, Julie Todd, for enlightening us today on your products; a great British company succeeding on the global stage.