

Executive Summary



Overview

The University of Sheffield Advanced Manufacturing Research Centre (AMRC) provides world-leading research, innovation and training to the high-value advanced manufacturing sector. For over 20 years, the AMRC has made a major contribution to transforming the UK's industrial and economic performance, delivering step changes in productivity, increasing competitiveness, developing new products and processes and training new talent.

Part of the High Value Manufacturing (HVM) Catapult network of research centres, the AMRC has a physical presence in South Yorkshire, Lancashire and North Wales. In South Yorkshire, the AMRC's operations are located on the site of the former Orgreave colliery and coking works, which is remembered for the 'Battle of the Orgreave' where police and picketing miners clashed during the miners' strikes of 1984. Since founding in 2001, the AMRC has played a key role in transforming the once industrial wasteland into an attractive location for advanced manufacturing businesses, drawing major inward investors such as Boeing, Rolls-Royce and McLaren to the area, and helping the local economy to emerge from the decline of its traditional industrial strengths of coal and steel.

Purpose

In 2021 the AMRC celebrated 20 years of innovation, impact and investment. To reflect on the centre's economic contribution during the first 20 years of operation - and explore how it can continue to support the economic agenda at a local and national level - Lichfields was appointed to undertake a comprehensive analysis of the impacts attributable to the AMRC. The resulting Economic Impact Analysis report represents the first exercise of its type directly commissioned by the AMRC.

The report seeks to capture the fullest possible range of economic benefits attributable to the AMRC. As such, it quantifies the centre's contribution by considering the direct, indirect and catalytic impacts generated by its activities, as defined below:

- **Direct impacts:** those impacts directly attributable to the AMRC and its activities;
- **Indirect impacts:** those impacts realised by partner organisations as a result of research led by AMRC; and
- **Catalytic impacts:** impacts in the wider economy influenced or supported by the activity of the AMRC.

A summary of the key metrics considered in the report and how they map across to the three impact typologies is provided in the graphic overleaf.



Direct

- Total R&D spend and private leverage
- Business / University engagement
- Apprenticeships delivered
- Employment
- Wages and economic output

Indirect

- Sheffield's role as a regional focus for R&D
- Business spin-outs created

Catalytic

- Inward investment attracted

Direct, indirect and catalytic metrics | **Source:** Lichfields

Impact

Innovation and R&D

The AMRC's purpose is to support industry to be more productive, more globally competitive and meet the fundamental challenges around sustainability as the manufacturing sector strives for net zero.

Interviews with the AMRC's partners identified a clear sense that the centre delivers a high level of additionality - by unlocking innovation activity that could not otherwise take place. The AMRC adds value to partners' innovation efforts by:

- De-risking innovation;
- Unlocking coordination benefits (to improve the leverage of R&D expenditure);
- Providing access to dedicated R&D space;
- Providing access to an unrivalled breadth of industrial expertise; and
- Accelerating the commercialisation of research.

In 2019/20 the value of innovation activity undertaken by the AMRC totalled £32.1 million. In addition, the centre unlocked a further £55.6 million of private sector leverage or match funding - supporting the UK Government's aim to double the value of private sector investment in R&D by 2030.

More widely, the AMRC is committed to working alongside industry and academia to drive forward innovation activity. Between 2017/18 and 2019/20, the centre provided support to an average of 1,100 private sector businesses each year (with 42% of this activity taking place with Small and Medium Enterprises). In addition, the AMRC currently has 29 collaborations with UK universities and a further three with European academic institutions. This reflects the AMRC's commitment to collaboration with academia to help industry access the best research relevant to their needs and give real-world insights into ongoing academic programmes.



Education and Skills Development

The University of Sheffield AMRC Training Centre in Rotherham provides the manufacturing industry in South Yorkshire and beyond with access to a pipeline of highly skilled workers needed to drive growth. The centre's strong ties with industry and tailored approach to delivery ensure that courses respond to the sector's evolving needs.

Interviews with clients of the AMRC Training Centre indicated that the added value offered by the training centre with respect to education and skills development is underpinned by:

- A flexible approach to recruitment (with businesses able to identify their own apprentices or be 'matched' with existing AMRC Training Centre learners);
- The AMRC Training Centre Entrance Exam, which provides confidence in the core skills/knowledge of learners;
- The profile and credibility of the AMRC, which allows the training centre (and therefore clients) to attract a large pool of high-quality learners;
- Access to a real-world manufacturing environment and the latest technologies; and
- An approach to training which develops learners with a high level of maturity and professionalism.

Since opening in 2013, the AMRC Training Centre has delivered 1,700 apprenticeships. Residents of South Yorkshire account for approximately 80% of all apprentices, demonstrating the important contribution the training centre makes to upskilling local residents and ensuring that local businesses can access suitably qualified workers. In addition, the training centre helps to support improved social mobility and inclusion, with almost 50% of all learners from South Yorkshire living in areas of high deprivation¹ during their apprenticeship.

The AMRC Training Centre is committed to promoting diversity and inclusion and has supported 130 female apprentices and 100 apprentices from Black, Asian and Minority Ethnic (BAME) communities to date. In 2019, the AMRC was presented with its first Athena SWAN Charter Bronze Award for advancing gender equality.

Employment

In 2021/22, the AMRC supported 1,250 Full-Time Equivalent (FTE) jobs at the UK level. This includes: 520 direct FTE jobs (i.e. those employed directly by the AMRC); and a further 730 indirect and induced FTE jobs (i.e. those employment opportunities supported in the wider economy as a result of supply chain and wage expenditure).

The direct jobs supported by the centre are broken down as follows:

- 443 FTE jobs at the AMRC (including 41 at the AMRC North West and 30 at the AMRC Cymru); and
- 77 FTE jobs at the AMRC Training Centre.

The lower job figures attributable to AMRC North West and AMRC Cymru reflect the fact that these facilities are currently less mature than those in South Yorkshire. It should be noted, however, that both locations have experienced strong growth in employment in recent years – reflecting the strength of demand for the support offered by the AMRC at the national level and in each facility's respective local economy. In addition, both AMRC North West and AMRC Cymru are underpinned by ambitious growth strategies which seek to replicate the labour market impact of the AMRC in South Yorkshire.

An analysis of the AMRC's wage bill indicates that, on average, FTE workers earn an annual salary of £45,800. This exceeds the average salary of a full-time worker at the UK level by 19% and at the South Yorkshire level by 46% and clearly highlights the high value, high productivity nature of the AMRC workforce. Furthermore, it is estimated that the economic output of the centre's 520 direct FTE employees (measured in terms of Gross Value Added) is in the order of £55.8m per annum.

¹ Defined for the purposes of this report as the 30% most deprived Local Super Output Areas nationally



Contribution to Levelling Up

The AMRC's profile and reputation positions it as a signature asset for South Yorkshire, supporting the area's efforts to attract inward investment from advanced manufacturers. This, in turn, has helped to create high value, high productivity jobs in the local economy.

The benefits of locating close to the R&D, innovation and training capabilities offered by the AMRC have attracted a cluster of advanced manufacturing occupiers to the Advanced Manufacturing Park, in Rotherham, and the neighbouring Sheffield Business Park. This includes globally significant businesses with strong ties to the AMRC including Boeing, McLaren and Rolls-Royce. In total, it is estimated that £260m of investment has been attracted across both sites - at least in part - by the presence of the AMRC, resulting in the creation of 600 jobs.

"The AMRC is a key attractor of Foreign Direct Investment and an important part of South Yorkshire's pitch to prospective investors. Some of the biggest investments into the area over the last 10 to 15 years would not have taken place without the AMRC"

Rachel Clark, Director of Trade and Investment,
South Yorkshire Mayoral Combined Authority

The success of the AMRC has been so pronounced that it is now recognised as an exemplar for the HVM Catapult and a successful model which other localities have sought to replicate with a view to levelling up their own economies. This can be seen in the decisions to bring forward both:

- **AMRC North West:** established following an approach by the Lancashire Local Enterprise Partnership (LEP) to the AMRC to deliver a facility as part of a strategy to catalyse investment in, and development on, the Samlesbury Enterprise Zone; and
- **AMRC Cymru:** established to leverage the AMRC's technical expertise to support the delivery of Airbus UK's 'Wing of Tomorrow' programme. In the face of uncertainty regarding future trade relationships post-Brexit, the programme was seen as critical to safeguarding 6,500 jobs at Airbus' site in Broughton and thousands more in the supply chain.

