



Accelerating Growth of Advanced Manufacturing in the North East

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Introduction

Advanced manufacturing contributes £5.5bn to economic output (GVA) a year to the North East economy and supports 34,000 jobs (NECA, 2024). The region's wider engineering and manufacturing base i.e. chemicals, pharma etc. employs 122,000 contributing £9.7bn to UK manufacturing output (Make UK, 2025). The North East possesses global capability in lean manufacturing, vehicle production, pharmaceuticals, aerospace machining and component manufacturing.

- **The automotive sector is at the heart of the region's advanced manufacturing capabilities.**

Nissan and its regional supply chain account for 30% of all passenger vehicle manufacturing in the UK. This includes 20% of all battery electric vehicles across Europe (NEAA, 2025).

- **Advanced Battery Production and EV Innovation.**

The North East possesses emerging frontier manufacturing capabilities in batteries. For instance, at the International Advanced Manufacturing Park in Sunderland, AESC is investing £1bn in a 12 GWh manufacturing facility to produce batteries for electric vehicles. Alongside Nissan's EV36Zero electrical programme, this positions the North East as a key centre for next-generation electric vehicle assembly alongside battery production and sustainable energy infrastructure.

- **Emerging space cluster.** In space, the region has an emergent cluster of satellite and materials organisations in County Durham located in proximity to the North East Technology Park. With a growing number of specialist businesses operating across satellite development, advanced

manufacturing, data applications and cutting-edge research, the region is advancing innovations with both national and global impact.

Strengths and weaknesses of the advanced manufacturing sector

Enabling the competitive advantage and growth of the North East's advanced manufacturing sector is its combination of "hard" and "soft" infrastructure:

Transport and Infrastructure

The region's hard infrastructure includes excellent transport interconnectivity through the A1 Road network, national rail freight routes, air e.g. Newcastle International Airport, and the Port of Tyne's deep seawater port. A portfolio of industrial investment sites spearheaded by the £160m North East Advanced Manufacturing Investment Zone connects sites and assets from Northumberland to County Durham.

Research, Development and Innovation

The region is home to national research, development and innovation (RD&I) assets in automotive, pharmaceutical, aerospace, component and lean manufacturing technologies and processes.

- Durham University's fundamental research strengths are in small molecule drug development, aerodynamics and fluid mechanics, structural integrity and systems analysis.
- Newcastle University possesses world-class RD&I capabilities in automotive electrification, drug discovery and translational medicine with strengths in electric and hybrid powertrains, and rare diseases.
- Northumbria University has strong applied aerospace engineering

expertise with core capabilities in aerodynamics and structures with underpinning strengths in advanced manufacturing technologies and materials-enabled components.

- The University of Sunderland's applied R&D strengths comprise low-carbon vehicles, engineering and manufacturing digitisation, medicinal chemistry, lightweight materials and composite components.
- Enabling academic and private sector innovation, the North East is home to the Centre for Process Innovation (part of the High Value Manufacturing Catapult). The Centre develops and scales advanced manufacturing technologies and processes including formulation, battery materials, biologics and industrial biotechnology.

Affordability

The region also benefits from a lower cost base for wages and affordable commercial property compared to southern competitors.

Policy alignment

The sector has benefited from long-standing support, including through successive economic strategies championing advanced manufacturing by policymakers (North East Mayoral Strategic Authority, North East LEP, North of Tyne CA etc.). Alongside this, enabling external intermediaries, for example, Make UK and the Engineering and Manufacturing Network.

Despite a globally competitive advanced manufacturing ecosystem, there are a number of challenges which could provide the focus for future sector strategies and policy support:

Supply chains: Aside from Nissan and its tier 1 and 2 suppliers, the region has limited large scale and local supply

chains in the other advanced manufacturing sub-sectors, such as aerospace. The North East retains a high dependency on the company and a handful of other “anchor” branch plant international firms, such as Hitachi, for maintaining jobs and productivity levels. This creates a vulnerability to changes in global supply chains.

Skills demand and supply mismatch:

The North East illustrates a disconnect between supply and demand in the skills system, hindering the growth of the advanced manufacturing sector. The region exhibits a long-standing, high demand for high-level manufacturing jobs in the building and construction sub-sectors. However, persistent challenges with recruitment and a lack of investment in talent development by businesses in high-level skills across advanced manufacturing and precision engineering positions remains a barrier to growth (Quadrant Insights, 2025). Alongside this, businesses identify lower-level skills gaps in fields including IT, leadership and management, communication and customer service. From a supply side, most of the North East's skills provision is delivered at Level 2 and 3. In the case of apprenticeships, there are over 300 apprenticeships, but the majority are electrical engineering. The alignment between education providers and industry requirements for higher level skills provision continues to be fragmented and uptake of learners is low (Quadrant Insights, 2025).

Technology transfer: Despite a number of research, innovation and technology assets in the region, including the Centre of Excellence for Sustainable Advanced Manufacturing at Sunderland University, the Driving Electric

Revolution Industrialisation Centre at Newcastle University, and the North East England Space and Technology Centre at Northumbria University, the exchange from ideation to diffusion remains fragmented. Programmes such as the the Northern Accelerator academic spin-out programme are seeking to address this. Combined with private sector R&D funding, the North East has one of the lowest levels of business R&D expenditure in the UK, accounting for less than 2% of the national total (Office for National Statistics, 2025).

Opportunities to innovate and grow the advanced manufacturing sector

Pan-Northern Collaboration

As stipulated in the UK Government's Advanced Manufacturing Sector Plan (2025), there are opportunities in sub-sectors to form new collaborations that go beyond regional boundaries. For instance, there are opportunities to align the North East's emerging battery production with the North West's world-leading research and commercial capabilities in AI, robotics and advanced materials.

Sector-specific business support

Previous sector-based business support programmes that stimulated related diversification of the region's engineering and manufacturing base¹ have demonstrated the value of targeted approaches. For example, an advanced manufacturing and engineering diversification programme could combine brokerage, cross-sectoral applied RD&I projects, quality, standards and accreditation support, OEM procurement initiatives, and

cross-sectoral skills exchanges.

Sector mapping and cluster governance

Strategic mapping of shared resources and capabilities across advanced manufacturing businesses would help to foster collaboration, reduce duplication, and create synergies. Greater coordination could focus on identifying complementary skills and technologies, enabling firms to innovate together, and scale more effectively. The North East has existing cluster governance bodies, such as the Engineering and Manufacturing Network and Make UK, that can play a fuller role in orchestrating the regional sector.

Niche sub-sectors

Although the North East has the fewest farm holdings of other UK regions, it is defined by its large farms with an average of 138ha of farmed land, compared to the English average of 87ha (OFS 2025). There is the potential to inject regional public sector policy and investment through the Mayoral Strategic Authority's rural and coastal taskforce into agri-tech innovation. Initiatives such as the £200m Farming Innovation Programme alongside private sector investment could be leveraged to enhance productivity and reduce carbon emissions of the region's farming community.

Regional clustering

A regional clustering strategy would focus on building capability and critical mass amongst indigenous SMEs rather than directing policy and investment around large and often internationally

¹ Such as related technology and service-based firms diversifying from the oil and gas into offshore wind industry

footloose anchor firms. The emerging SME space cluster at NETPark in County Durham is an example that could be further developed through targeted policy interventions using Local Growth Funding, innovation partnership schemes e.g. Local Innovation Partnerships Fund, and strategic marketing of regional clusters.

Supply chain innovation

The region can draw on practice from other parts of the UK that have successfully integrated supply chain innovation, infrastructure and R&D support of OEMs. The MINI plant in Oxford has combined an integrated UK supply network, logistics infrastructure and digital supply chain planning-production support to provide flexible and customised end-to-end supply chain R&D, innovation and infrastructure. The example of MINI and others could be applied to OEMs in the North East to build integrated and scalable supply chain innovation and infrastructure. This could help to enhance quality, improve productivity, build resilience and embed local and regional firms with OEM producers.

Applied R&D and Innovation

The Made Smarter Adoption Programme NE has supported industrial digitisation of SMEs to optimise efficiencies, assets and resource utilisation. Programmes like these should continue to be supported. The proportion of open innovation and supply chain programmes focused on connecting regional OEMs with suppliers could be increased. For example, similar programmes in the past have focused on supply chains connected to Lockheed Martin and Hitachi. The region has some reputable RD&I initiatives, such as the Arrow

regional academic innovation programme, but their profile could be raised in more traditional advanced manufacturing sectors.

Strategic sites

The North East's Advanced Manufacturing Investment Zone (Blyth, River Tyne, Sunderland, South Tyneside and Durham) and potentially the AI Growth Zone (North Tyneside) offer significant potential to stimulate indigenous and foreign direct investment through its combination of tax incentives and dedicated infrastructure investment i.e. energy, digital and logistics.

Skills and workforce development

The North East's Local Skills Improvement Plan highlights a number of areas for future support to address the supply and demand mismatch, including:

- the need and opportunity to improve basic digital skills provision across all advanced manufacturing provision;
- targeted initiatives to meet future demand for advanced electro-mechanical technicians
- reviews of Level 4/5 apprentice standards;
- integration of industrial digitisation into Level 3 curriculums; and
- increased SME engagement in skills bootcamps and apprenticeships (NEAA 2023).

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Insights North East

The Sir Terry Farrell Building
Eldon Place, Newcastle upon Tyne
NE1 7RD United Kingdom

www.insightsnortheast.co.uk
enquiries@insightsnortheast.co.uk