

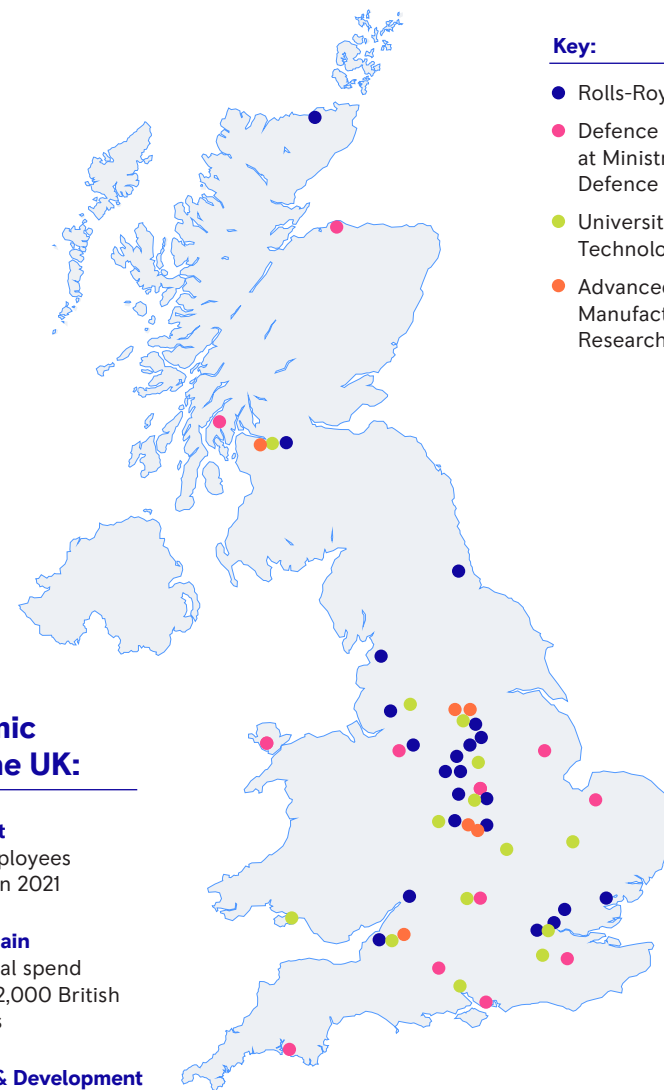


We are proud to power the Royal Air Force's Voyager which is a vital strategic capability simultaneously able to perform air-to-air refuelling, while also carrying military personnel, passengers and freight, with the capacity for aeromedical evacuation.

Rolls-Royce across the UK

Key:

- Rolls-Royce sites
- Defence operations at Ministry of Defence sites
- University Technology Centres
- Advanced Manufacturing Research Centres



Our economic impact in the UK:



Headcount
19,700 employees in the UK in 2021



Supply Chain
£2bn annual spend with over 2,000 British companies



Research & Development
£573m invested in UK-based R&D in 2021



Research Partners
We work with 14 University Technology Centres & 5 Advanced Manufacturing Research Centres nationwide

Pioneering innovation & economic benefit in the UK



Our UK business creates global impact

Rolls-Royce products
account for

1.5%

of all UK goods exported

Over

75%

of what we produce
in the UK is for export

We have
customers in

150

countries

CASE STUDY

Trent XWB

Designed, assembled and tested in Derby, the Trent XWB is the world's most efficient large civil aero engine in service today, exclusively powering the Airbus A350 and supporting many thousands of jobs in the supply chain across the UK.

It is the fastest selling widebody engine globally, with orders for over 1,600 engines from over 50 customers across Africa, Americas, Asia, China, Europe and the Middle East. These include airlines, leasing companies, corporate and VIP aircraft.



The Trent XWB is the world's most efficient large civil aero engine in service today, and is also the fastest selling Rolls-Royce Trent engine in our history. Trent XWBs are assembled and tested in Derby and exported around the world.



We invest £1.2bn a year in R&D, with almost half spent in the UK working alongside experts from within our supply chain, across our University Technology Centre network and alongside the Advanced Manufacturing Research Centres. These partners are critical to developing our technologies.



We invest **£1.2bn on R&D globally**, with almost half spent directly in the UK



Many of our technologies are supported through Government grant funding, which **Rolls-Royce leverages as much as 30 times through private investment** in bringing products to market.



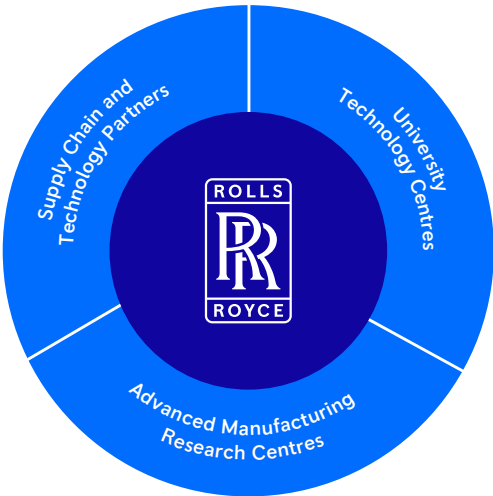
The **Aerospace Technology Institute** is a vital enabler of UK aerospace research and has **supported 80 Rolls-Royce projects** since 2013, **benefitting over 120 UK partners**



More than **85% of Aerospace Technology Institute funding** for our projects flows out to our partner organisations, including SMEs

Our technologies are developed through an innovation ecosystem that brings together research, manufacturing and commercial skills.

Rolls-Royce has long been at the forefront of technological innovations which has been achieved through valued collaboration with expert businesses and Government support.



CASE STUDY

Investment in Washington, Tyne & Wear

We invested £200m in a new manufacturing campus in Washington, Tyne and Wear that specialises in highly skilled precision discs for our engines. The site incorporates improved manufacturing methods we developed at the Advanced Manufacturing Research Centre in Rotherham which reduce manufacturing time by 50% for the discs produced there.





We have over 600 apprentices throughout the business on our advanced, higher and degree apprenticeship programmes. Recruitment is now rising and we are increasing our apprenticeship intake.

94%

of our apprentices
went on to a
full-time role
within the
company

Pioneering our future



Our pioneers

Rolls-Royce has a rich history of developing high quality skills that can provide a career for life. This continues today with the business inspiring children as young as five about STEM, forging new skills through the apprenticeship programme, and supporting lifelong learning throughout the business.

Rolls-Royce apprenticeships

We offer a diverse range of apprenticeships, principally through our Civil Aerospace and Defence businesses in the UK, including:

- Engineering at Advanced, Higher and Degree level
- Manufacturing Engineering at Degree level
- Business Degree programmes in Commercial, Digital, Project Management, Supply Chain Planning & Control, and Procurement

CASE STUDY

Nuclear Skills Academy

Rolls-Royce is establishing a new Nuclear Skills Academy dedicated to nuclear training and creating a pipeline of talent.

The Academy in Derby will support 200 new apprentices every year for the next ten years, giving them access to the best courses and mentors from the Nuclear Advanced Manufacturing Research Centre, the National College for Nuclear, Derby City Council and the University of Derby.





Pioneering low carbon transport

Rolls-Royce is delivering the technologies that will make transport more sustainable for our planet.



Sustainable Aviation Fuels (SAFs)

Today all our large Trent and business aviation engines are certified to fly with a 50:50 blend of sustainable and traditional aviation fuel. By 2023 all of these engines will be compatible with 100% SAF and ready to support the wider move towards cleaner aviation.

SAF engine testing is being conducted at our new testbed in Derby, as well as in Bristol. We are also working with the RAF on demonstrating the use of 100% SAF on a military aircraft.



Electric flight

The Spirit of Innovation is the world's fastest all-electric aircraft, setting two world speed records, and we were proud to showcase it at COP26.

Advanced battery and propulsion technology has exciting applications in the advanced air mobility market. We are focused on becoming the leading supplier of all-electric and hybrid-electric propulsion systems for electric vertical take-off and landing (eVTOL) and commuter aircraft that will enable passengers to travel sustainably and help deliver net zero by 2050.



Hybrid rail

Our 100mph diesel battery hybrid rail solution is the first in passenger service in the UK. Powered by two hybrid power packs, the new hybridFLEX train reduces carbon emissions by up to 25% and noise by up to 75%.

Stored energy created through braking is released throughout the journey so that emissions and noise are reduced, especially benefitting urban areas and in stations. It is designed for use on non-electrified routes.

CASE STUDY

SAF Flight Tests

We have already carried out 100% SAF flight tests powered by our Trent 1000, Trent XWB and Trent 900 engines and we are continuing our testing regime to further progress the use of SAFs in civil aviation. SAFs will also be used in Defence applications in the future.





Pioneering power for a net zero society

We are playing an important role in creating a resilient, inclusive, net zero carbon future, both in our own operations and throughout the sectors we serve. Our technology will enable the transition to a low carbon global economy.

Our net zero commitment:

- Achieve net zero greenhouse gas emissions for our operations and facilities by 2030 and reach net zero carbon across our value chain by 2050
- Signatory to the UN Race to Zero and UN Business Ambition to 1.5°C campaigns ensuring our net zero commitment is science based and aligned to a 1.5 degree trajectory
- Pioneering new breakthrough technologies that can accelerate the global transition to net zero

CASE STUDY

Net zero operations

We are working towards being net zero across our own operations and facilities by 2030 (excluding product testing and development).

We are introducing new technologies and solutions to reduce our emissions, including more sustainable heat sources and on-site renewable energy generation. Our site in Bristol is leading the way to achieving this target with other sites to follow.



UltraFan enables a step change in gas turbine sustainability, saving 25% fuel compared with the first generation of Rolls-Royce Trent engines. UltraFan technologies are vital for enabling faster adoption of SAF and many will also benefit Hydrogen gas turbines.



The technological innovations our people are pioneering will help shape our planet's destiny. Few companies are better placed to pioneer the vital solutions we need to create a net zero future."

Warren East, CEO

Delivering a sustainable future

CASE STUDY

Small Modular Reactors

Rolls-Royce Small Modular Reactors (SMR) will deliver 470MW of secure low carbon energy per reactor – electricity for 1 million homes and equivalent to more than 150 onshore wind turbines – whilst only occupying one tenth of the space of a conventional nuclear plant. When fully operational, the Rolls-Royce SMR programme will create 40,000 UK jobs, primarily across the North and Midlands where the majority of UK nuclear expertise is located, adding £52bn to the economy and creating a significant export industry.

The UK Government's British Energy Security Strategy set an ambition to increase the UK's energy production to create more secure and potentially cheaper supply. Rolls-Royce's Small Modular Reactor will deliver a low cost, low carbon solution at scale to help the UK

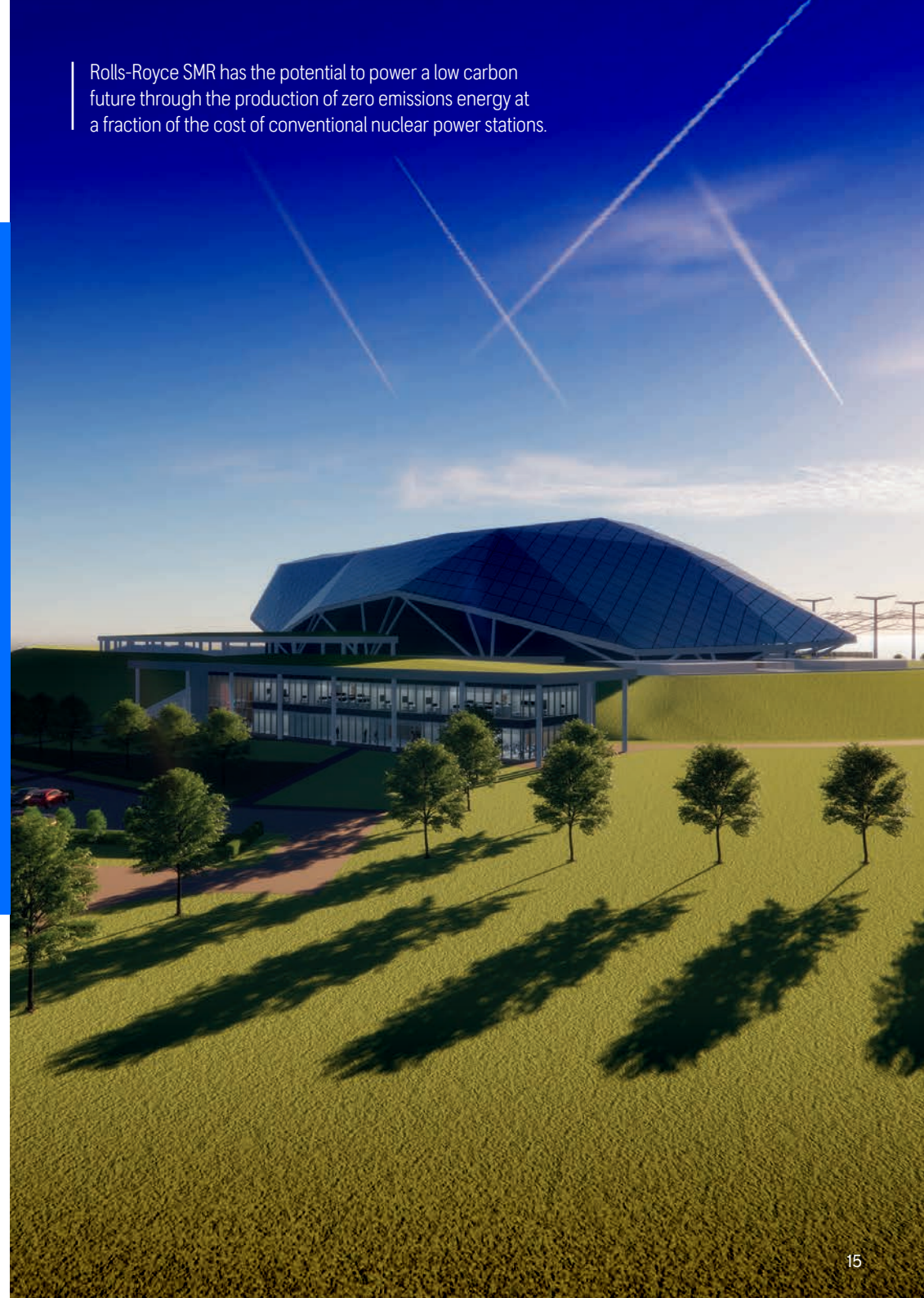
achieve up to 25% of the projected electricity demand by 2050. By building factories and procuring domestic components, we will support the Government's levelling up agenda and provide significant export opportunity for the UK.

As well as providing grid electricity, SMRs can be used to power the production of green hydrogen and Synthetic Aviation Fuels to support the decarbonisation of transport. Supported through a mixture of public and private capital, we are now going through the UK regulatory design approval process and SMRs represent the fastest route to market for new nuclear deployment in the UK. By using existing nuclear sites and with Government backing, we could be generating power within the decade.

Micro-reactors: We believe nuclear technology could provide safe, sustainable and reliable power for a broad range of applications, including defence, mining, and in remote communities. We are also working in collaboration with the UK Space Agency on developing micro-reactor technology for use in space that could support further exploration, lunar surface operations and habitation.

Direct Air Capture (DAC): DAC has the potential to be a substantial economic and environmental contributor enabling the UK's carbon capture, usage and storage capability, ultimately helping to deliver one of the Government's priorities in its Ten Point Plan for a Green Industrial Revolution.

Rolls-Royce SMR has the potential to power a low carbon future through the production of zero emissions energy at a fraction of the cost of conventional nuclear power stations.



A Rolls-Royce powered Spitfire flying alongside our Rolls-Royce powered Spirit of Innovation. We have always been at the forefront of innovation and will play an important role as we transition to a low carbon and more resilient future



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