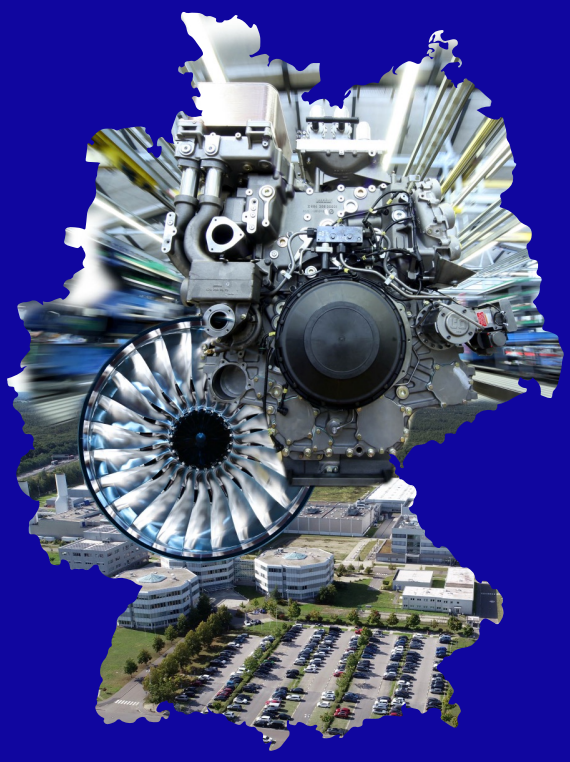

ROLLS-ROYCE ECONOMIC AND SOCIAL IMPACT REPORT 2024: GERMANY

Rolls-Royce 2025

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A MESSAGE FROM THE CHIEF EXECUTIVE OF RRPS AG AND ROLLS-ROYCE CUSTODIAN IN GERMANY



Jörg Stratmann, Chief Executive of RRPS AG and Rolls-Royce Custodian in Germany

At Rolls-Royce in Germany, our mission is to deliver the power and propulsion systems that underpin German industry, national resilience and technology leadership—securely, sustainably and at scale. Our Friedrichshafen-based Power Systems division and Dahlewitz-based Aerospace activities are critical parts of Rolls-Royce's global operations. We are proud to be the only company in Germany, and Europe, with end-to-end capability to design, assemble, certify and maintain complete aero-engines, supporting national and European sovereignty in critical technologies. This sovereign capability is vital for strategic autonomy across defence and civil sectors and aligns with Bundeswehr modernisation and wider government objectives.

Our impact today

In 2024, we generated €5.2 billion in GVA through our operations and an estimated €3.2 billion through R&D spillovers, while supporting over 35,000 total jobs across the German economy. As some segments of the automotive sector face headwinds, advanced manufacturing in aerospace, power generation and defence provides an important growth pillar for Germany's industrial heartlands.

We are a long-term, reliable employer in our regional hubs, especially at Lake Constance and in Brandenburg, which host our headquarters and most of our employees. We offer high-productivity roles with average pay around 40% above the national manufacturing average, and we are recognised as an award-winning training provider with a strong record in R&D.

Germany is a key hub for globally relevant R&D across Rolls-Royce. Our contribution extends beyond engine production to include in-house software and electronics development built and designed in Germany. Through four University Technology Centres and partnerships with more than 25 academic and national research institutes, we help keep R&D and industrial skills deeply rooted in the national ecosystem. With 300+ apprentices and dual-study participants annually, we are investing in people and know-how so colleagues can progress from hands-on roles to leadership through continuous learning.

We recognise the responsibilities that come with our position. As a critical supplier to NATO fleets, a global leader in energy resilience and a cornerstone of Germany's high-tech industry, we work as a strategic partner to government, industry and society—building sovereign capability, strengthening supply chains and delivering growth that is secure, sustainable and inclusive.

Power Systems: Keeping critical infrastructure running

Our Power Systems division supports NATO land platforms such as Leopard 2, PUMA and BOXER, and powers naval platforms from German F126 frigates to customs vessels. As the sole or critical supplier on many NATO platforms, with no viable alternatives in several mission-critical roles, we are indispensable to European security and alliance resilience. Our mtu Series 4000 and 2000 platforms, designed and manufactured in Germany, are the backbone of power systems used in critical infrastructure worldwide.

In 2024, we invested to expand our German industrial footprint. In Friedrichshafen, we are hiring hundreds more colleagues to meet accelerating global demand for backup power in data centres and defence. From hospitals and airports to government sites, we provide trusted emergency energy supply—'made in Germany'—for customers who cannot afford downtime.

Aerospace: A European centre of excellence

Our aerospace business in Dahlewitz is equally vital. We are the only end-to-end aero-engine integrator in Germany, and Europe. In business aviation, we are the market leader in the very-long-range and ultra-long-range segments, powering flagship platforms at Gulfstream and Bombardier. Our Pearl family of engines comfortably exceeds current sustainability standards, and we continue to advance efficiency through technologies such as the UltraFan® Power Gearbox. In 2023, we announced a c.€35 million investment to scale Trent overhaul and accelerate Pearl development, adding 100+ roles. We also continue to explore the opportunity to re-enter the narrowbody market through partnership in the late 2030s.

Looking to the future

Beyond existing platforms, we are supporting next-generation defence programmes, including high-tech air-defence initiatives such as Loyal Wingman concepts in partnership with ITP Aero, drawing on a network of 800+ German and European suppliers. We are also accelerating Germany's energy transition: nearly 80% of our power-systems portfolio and 100% of our aero engines in production are compatible with sustainable fuels such as HVO and SAF. Alongside hydrogen- and e-methanol-capable engines, hybrid systems, biofuels and integrated energy management, we are driving decarbonisation across power generation, marine and industrial segments—exporting German innovation to global markets.

We continue to work closely with federal and regional stakeholders to ensure that our contributions align with national policy on industrial strategy, innovation, export and security.

As Europe rethinks energy security, defence posture and industrial competitiveness, Rolls-Royce in Germany stands ready to be a long-term partner—rooted in our regions, proven in our capability, and committed to European industrial excellence and sovereignty.



WHAT IS AN ECONOMIC AND SOCIAL IMPACT ASSESSMENT?

Economic and social impact assessments are designed to evaluate and quantify the contribution of an organisation across its full value chain. This report answers a central question: **What is the annual economic and social impact of Rolls-Royce's operations across Germany?**

To quantify Rolls-Royce's impact on the German economy, we applied Input-Output (I-O) economic modelling methodology and R&D spillover analysis, informed by national data and industry standard frameworks. I-O analysis examines the interdependencies between industries by tracing the flow of goods, services, labour and capital throughout the economy. This approach enables us to assess the economic activity supported by Rolls-Royce's operations across its full value chain in 2024. The study evaluates the direct impact of Rolls-Royce's activities, including its operations in manufacturing, engineering, R&D and services, as well as the indirect and induced effects generated through transactions with suppliers, partners and employees. It follows the flow of value from upstream inputs such as technology, intermediate goods and services, through to final outputs and economic outcomes. Using industry, commodity and household expenditure data from national statistical agencies, the modelling quantifies how Rolls-Royce's footprint contributes to both national and regional economies. Standard metrics include gross value added (GVA), employment, wages and tax contributions, providing a comprehensive view of Rolls-Royce's economic and social contribution across the country.



The analysis showcases Rolls-Royce's overall contribution to the German economy.

Intermediate inputs (goods and services)

Purchases of goods and services from supply chain

Transformation process

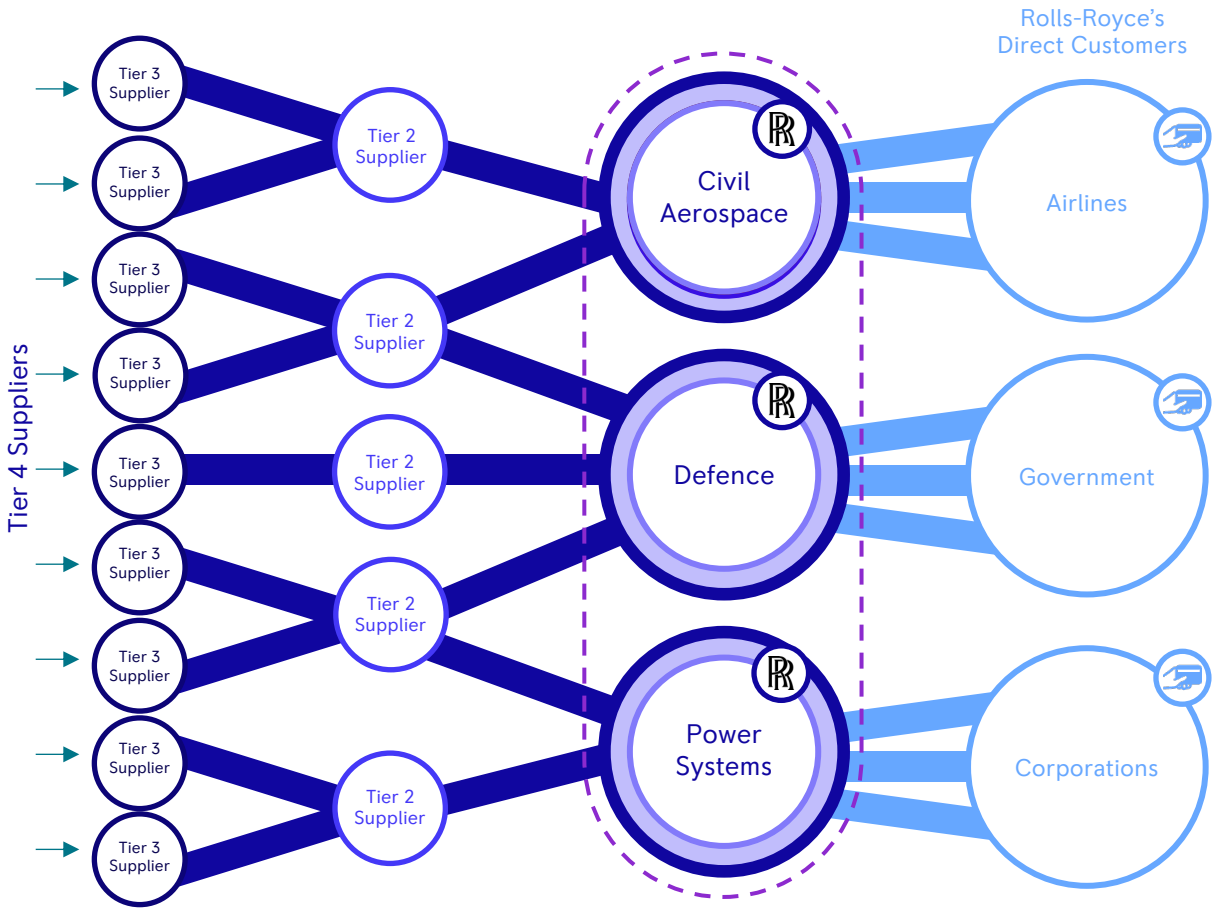
Employees' work activities, technology inputs

Economic value added

Outputs (value of production)

Goods and services produced for sale to other industries and final demand

Fig. 1—Illustrative overview of the Rolls-Royce supply chain



This study analyses the economic impact of activities across Rolls-Royce's value chain, including the company's own operations and its transactions with suppliers and partners, by measuring the backwards linkages through the Input-Output model. The report is structured by business unit, and it traces the flow of value from suppliers through production and services, quantifying Rolls-Royce's direct, indirect and induced impacts at each stage of the supply chain. R&D spillovers are assessed by applying benchmark elasticities from academic literature to Rolls-Royce's R&D spend, capturing the long-run productivity uplift generated as innovations diffuse through supply chains and the wider economy. R&D spillover represents a separate long-run productivity effect and should be interpreted alongside our operational GVA impact.

DIRECT

Refers to the effects generated by Rolls-Royce's own operations across its business units, including manufacturing, engineering, R&D, services and associated commercial activities

INDIRECT

Captures the effects generated through B2B purchases, specifically, the transactions between Rolls-Royce and its suppliers, as well as the downstream impacts across the wider industrial ecosystem

INDUCED

Measures the effects of employee spending, reflecting how wages paid to those directly and indirectly employed by Rolls-Royce contribute to additional economic activity in the wider economy

GERMANY EXECUTIVE SUMMARY

100+
Years in Germany

10,400+
Rolls-Royce employees in Germany

Facilities in
10
federal states

61
Nationalities among our employees

KEY:

- Civil Aerospace
- Defence Aerospace
- Power Systems
- Joint Venture
- University Technology Centres

75%
Of Oberursel site managers started as apprentices

300+
Apprentices and interns (2024)



1,200+
Novel patents first filed by Rolls-Royce in Germany over the last decade

25+
German research centre R&D partners

Dahlewitz



German Aerospace Headquarters, employing 2,400+ people across civil and defence operations and home of the Pearl engine family

Friedrichshafen



The headquarters of Power Systems, employing over 6,000 people

Oberursel



Centre of competence for the manufacture of rotating aerospace parts

€5.2bn
Operational GVA impact, 2024

€3.2bn
R&D spillover GVA impact, 2024

Rolls-Royce is the only player in Germany with truly end-to-end expertise for gas turbine and aero engines

€1 → €39
Every €1 invested or spent with us by the German Government returns €39 to the German economy

35,200
Total national employment supported, 2024

17,300
National employment supported through the supply chain, 2024

7,500
Induced national employment supported, 2024

2.4x
For every German Rolls-Royce employee, 2.4 additional German jobs are supported

Total German capital investment

€140m+
2024

€520m+
2020-2024

Total gross R&D spend

€440m+
Over the last year, 2024

€5.3bn
Over the last 10 years

Total supply chain spend

€2.5bn+
2024

700+
Number of suppliers in Germany, 2024

POWER SYSTEMS

Our Power Systems technologies provide mission-critical, sustainable solutions for safety-critical drive and power-generation systems, serving governmental, marine, mining, rail, energy, and industrial clients.


Hospitals


Yachts


Data centres


Tanks – Leopard 2


Infantry fighting vehicles (IFV) – PUMA

AEROSPACE

Our Pearl engines are the most advanced business aviation engines ever developed, and they are the "engine family of choice" in the very-long and ultra-long-range market.





Dahlewitz is home to the test and development centre for Rolls-Royce's Power Gearbox, a key component of the UltraFan® demonstrator programme.

OUR HISTORY IN GERMANY

Rolls-Royce's roots in Germany trace back to the beginning of the 20th century, with predecessor companies such as Motorenfabrik Oberursel, which manufactured the engines for Manfred von Richthofen's red triplane, and Karl Maybach's Luftfahrzeuge Motorenbau, which was founded more than 100 years ago. The foundation of the BMW Rolls-Royce Aero Engines GmbH in 1990 marked the start of Rolls-Royce's own operations in Germany.

Over the last century, we have continued to evolve from early pioneers into a strategic pillar of Germany's industrial and engineering capability. Throughout our history, we have consistently created highly productive jobs.

Maybach and mtu engines, the precursors of today's Power Systems division, powered some of the first Zeppelins on their historic journeys around the world, replaced steam locomotives and set speed records on railways and across the Atlantic.

Today, our world-leading technologies power and secure Germany's critical infrastructure, including hospitals, railways and data centres. Our aerospace engines connect people and economies around the world, while our products for the defence market are helping to protect the world, powering tanks, submarines, surface ships and fighter jets. We anchor a pan-European supply chain, working with over 840 suppliers in Germany and the EU, driving and supporting high-growth advanced manufacturing industries in Germany.

Building on decades of innovation, today's Rolls-Royce products are world-leading, providing efficient, sustainable and reliable power on land, at sea and in the air. Most mtu engines now have the potential to run on HVO, cutting climate impact by up to 90%. Meanwhile, our first hydrogen-powered engines are already in service, with methanol and other alternative fuels in development. These advanced products are enabled by a total R&D spend of over €440 million in 2024, more than half of which is dedicated to low-carbon solutions.



1892

Motorenfabrik Oberursel founded
Beginning more than a century of engine manufacturing in our Oberursel site



1901-11

mtu roots and early Zeppelin flight
Founding of Luftfahrzeug-Motorenbau in Friedrichshafen; first Zeppelin airship powered by mtu engines



1924

First Maybach diesel engine 'hits the rails' in a locomotive
These engines would go on to achieve a speed record in 1933 (Hamburg–Berlin: 160 km/h)



1990

BMW Rolls-Royce Joint Venture launched marking Germany's post-war return to civil and defence aero engine development



1996

The debut of the Series 2000 and 4000 engines put mtu on the world stage. Followed by the introduction of the most powerful mtu engine (20V8000) in 2000



1996

Revolutionising Business Aviation
The BR710 engine becomes the foundation of Rolls-Royce's market-leading position



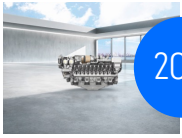
2014

Power Systems acquired
A leading supplier to the German Armed Forces, Power Systems and the mtu brand become part of the Rolls-Royce Group



2016

Power Gearbox Centre opens in Dahlewitz
Home of the world's most powerful aerospace gearbox, critical to the highly efficient UltraFan® technology programme



2021

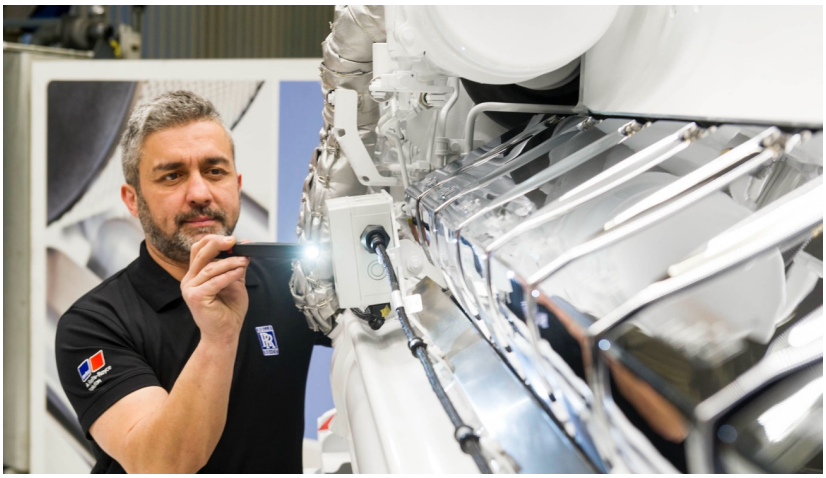
25 years of S4000 and S2000
More than 110,000 Series 2000 and Series 4000 internal combustion engines delivered worldwide, with over 320 million operating hours



2025

9,000th aero engine delivered
Rolls-Royce remains Germany's only certified complete systems integrator for aero engines

Our German operations serve as the foundations for broader European industrial and military resilience. As the only end-to-end jet engine integrator in Germany, Rolls-Royce is a key player in sustaining sovereign capabilities in aerospace and power systems across Europe and for NATO armed forces. Alongside this, our Rolls-Royce mtu engines power thousands of tanks and a significant proportion of naval fleets, operated by Germany as well as by NATO and allied states. As geopolitical tensions remain heightened, the importance of sovereign capability across energy, defence and aviation continues to grow. Rolls-Royce plays a crucial role in Germany by ensuring independent manufacturing capability with a European-focused supply chain. This enables rapid scaling to meet challenging deadlines and ensure NATO interoperability.



+600

Employee growth over the last five years

ROLLS-ROYCE IN GERMANY IN 2024

Today, Rolls-Royce in Germany is a champion of advanced manufacturing. Through hard work and sustained investment, we have become the only end-to-end aero-engine manufacturer in the country across Aerospace and Power Systems, as well as a global leader in propulsion and energy systems for both civil and defence applications.

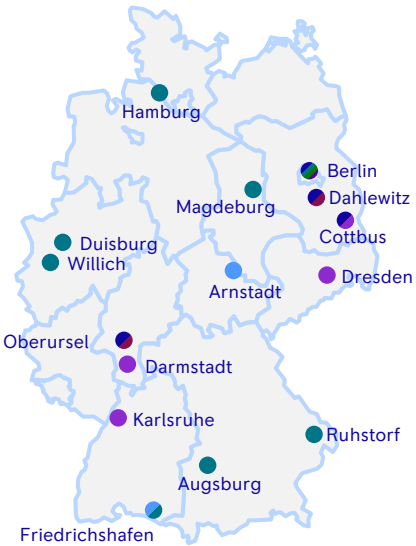
Our Dahlewitz hub is home to the Pearl engine family, some of the most advanced jet engines in the world, and we play a central role in supporting Europe's sovereign defence capabilities, which are now more important than ever.

Headquartered in Friedrichshafen, our Power Systems division provides world-class power solutions and complete lifecycle support under the product and solution brand mtu. We deliver and service comprehensive, powerful and reliable systems, based on both gas and diesel engines, as well as electrified hybrid systems. These clean and technologically advanced solutions serve our customers in the marine and infrastructure sectors worldwide.

We employ over 10,000 people across 10 federal states in Germany, representing our largest workforce outside of the UK. We are growing rapidly, with double-digit revenue growth over the past three years. Our supply chain anchors local employers in regional economies across the country, particularly in the former East, where about a quarter of our employees are based. As a leading employer in Brandenburg, we sustain high-productivity, long-term employment in a historically underinvested area. Since 1990, we have invested over €6 billion in development programmes and infrastructure at our Dahlewitz and Oberursel facilities. We are proud of our impact today and are committed to growing our footprint in Germany. Since 1919, when Maybach introduced one of the first apprenticeship programmes (which still operates), we have prided ourselves on forging high-quality, long-term careers across Germany.

KEY:

- Civil Aerospace
- Power Systems
- Defence Aerospace
- Joint Venture
- University Technology Centres



We make a comprehensive contribution to high-tech aerospace manufacturing, one of the most productive, export-intensive and high-growth sectors in Germany. We have built a high-value industrial ecosystem, including more than 840 European suppliers. Our investment and long-term stability support German and European sovereignty, employment and technological capability throughout our supply chain.

We continue to focus on R&D to strengthen our world-leading solutions, investing €5 billion over the past 10 years and partnering with over 25 German research institutes to develop next-generation technologies that help decarbonise defence aerospace applications and energy generation across the EU. We are investing more than ever before in new engine platforms, forward-looking technologies and the expansion of our plants. This will enable us to lay the foundations for sustainable growth and to strengthen our technological leadership.

We continue to invest in growth. In mid-2026, part of the large-scale modernisation of the production facilities in Friedrichshafen will be completed, adding a new assembly line for the mtu Series 4000. Other parts of the plant will be continuously improved to meet rising demand and to enable production to be as efficient as possible, using state-of-the-art technology.

Power Systems

Power Systems

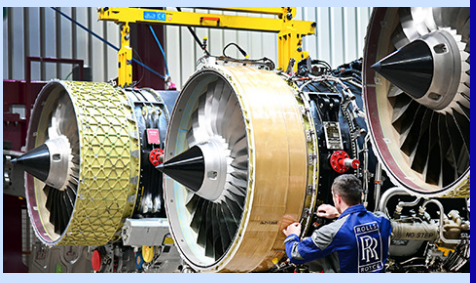
Rolls-Royce Power Systems supports mission-critical infrastructure in Germany and around the globe. Our mtu 4000 gensets provide emergency backup for the European Commission in Luxembourg, while Series 199 engines power military platforms in 15 NATO countries. From defence to data centres, we deliver resilient solutions essential to military readiness and energy security.



Aerospace Power & Propulsion

Civil Aerospace Power & Propulsion

Rolls-Royce is Germany's only fully certified end-to-end engine manufacturer, with the capability to develop, assemble, certify and maintain complete aero engine systems. Our Civil Aerospace operations deliver the full Pearl engine family for business aviation and provide MRO services for large civil engines like the Trent 1000, supporting major operators such as Lufthansa.





Defence Aerospace Power & Propulsion

Rolls-Royce Defence powers key German military aircraft, including the Special Mission Bombardier Global 6000, enabling the country's military and technological independence. For over 30 years, we have supported NATO programmes across Europe, including the Eurofighter Typhoon and A400M Atlas, and continue to be a key player in supporting Germany to deliver on its NATO commitments.

We are the only engine maker in Germany with end-to-end aero gas turbine engine development capabilities, delivering critical technologies for Germany and Europe.



Unmatched design capability: Unlike most peers, we possess in-house design expertise. While others can assemble engines or design components, they lack the capability to design a complete engine independently. This means that we are uniquely positioned to deliver new platforms quickly: with the IP, the practical experience and the technology ready to be deployed for future defence needs.

KEY

✓ Capabilities offered by Rolls-Royce

Rolls-Royce is the only player in Germany offering truly end-to-end expertise for gas turbine and aero engines.

ROLLS-ROYCE ACROSS EUROPE

The EU is a strategic focus for Rolls-Royce as a growing market, a critical supplier base and a key partner in collaborative R&D projects. As one of the few companies with end-to-end gas turbine capabilities, Rolls-Royce plays a vital role in strengthening the EU's industrial competitiveness and defence autonomy. As a provider of critical backup power systems, our Rolls-Royce mtu engines are a critical component of the EU's strategic infrastructures, from battery storage to data centres to cutting-edge defence programmes.

c.€3.4bn Spent with EU supply chain partners, 2024

840+ Supply chain partners in the EU, 2024

17 of 27 We have suppliers in 17 EU countries

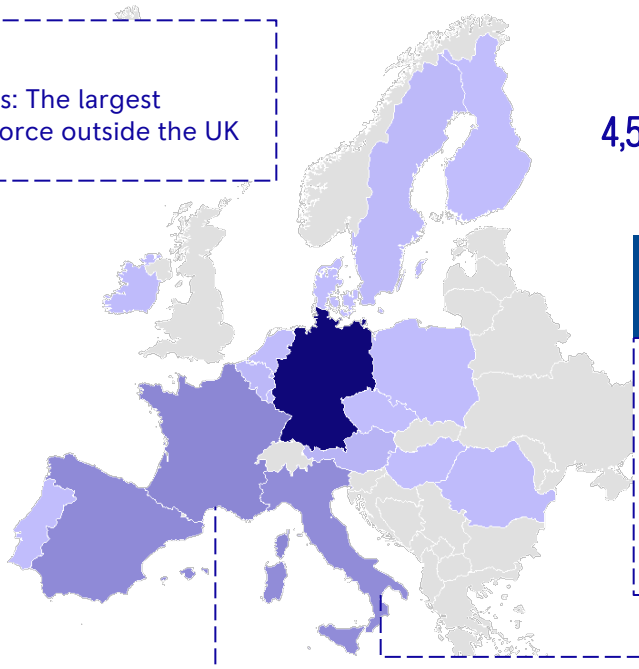
c.€5.3bn Gross investment in R&D, 2015-2024

4,580+ Total patents filed in Europe over the last 10 years

Rolls-Royce Group EU supply chain by country, 2024

€1.0m — €2.6bn

Germany
10,400+ employees: The largest Rolls-Royce workforce outside the UK



11,500+

Total number of Rolls-Royce employees in EU, 2024

38,750+

Total number of jobs supported by Rolls-Royce across Europe

Rolls-Royce plays a vital role in NATO's operational readiness, providing propulsion systems for key NATO assets, including the Leopard 2 tanks and K130 naval vessels.

France



Rolls-Royce in France operates across Civil Aerospace, Defence and Power Systems. Our facility in Le Haillan supports the integration of the Pearl 10X engine into Dassault's Falcon 10X. We are a key participant in the MissionCare™ defence programme and collaborate closely with Airbus and Safran. Power Systems activities include original equipment and service solutions for rail, marine, yacht, governmental and power generation applications. We collaborate with key customers such as SNCF, Naval Group and Camper & Nicholsons.

Italy



Rolls-Royce employs 900+ people in Italy, with key operations in Power Systems and Defence. Its site in Arcola delivers mtu-branded energy and marine solutions. Partnerships with Avio Aero and Leonardo support advanced fighter engine programmes such as Tempest and the EJ200 for Eurofighter, strengthening Europe's defence industrial base and contributing to the EU's strategic autonomy in air combat capabilities.



OUR ECONOMIC AND SOCIAL IMPACT IN GERMANY

OVERALL ECONOMIC IMPACT IN GERMANY

Rolls-Royce is a key contributor to Germany's economic resilience, technological leadership, defensive stability and international export income.

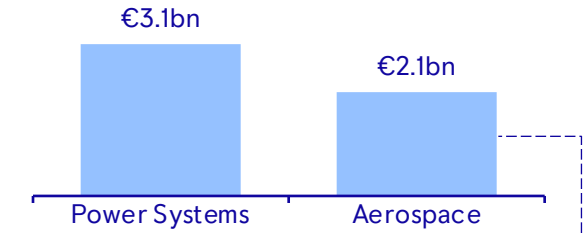
In 2024, our operations contributed €5.2 billion to the German economy, as well as an estimated €3.2 billion through productivity spillover benefits associated with our R&D investments. Our impact stretches across all federal states, with significant contributions across regional hubs in Baden-Württemberg (€2 billion GVA), Brandenburg (€830 million GVA) and Hesse (€567 million GVA). Over our 100-year history, we have demonstrated a deep commitment to regions in the former East, with c.30% of our economic impact in those areas, and remain committed to supporting local economies and driving regional regeneration. As we continue to expand our capacity, grow our workforce and invest in cutting-edge technological advancements across civil aerospace, defence and power generation, we will continue to encourage long-term economic growth in Germany.

€5.2bn Total GVA impact in Germany through operations, 2024

€3.2bn R&D spillover GVA impact, 2024

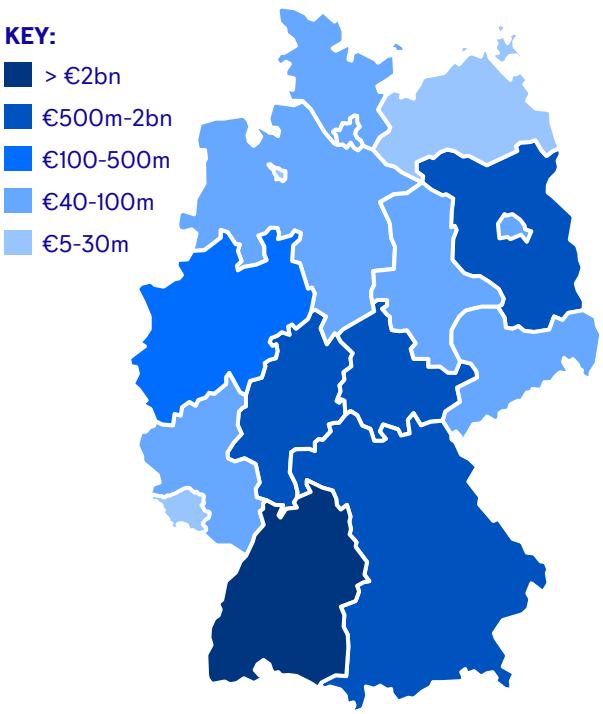
700+ Suppliers across Germany, 2024

Operational GVA impact by division, 2024

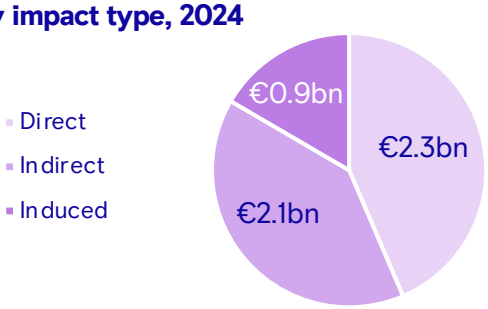


Rolls-Royce's future ambitions in the market offer the potential for significant further growth in our aerospace operations and overall GVA impact.

Total GVA impact by region, 2024



Operational GVA impact by impact type, 2024



€520m+

Total capital investment by Rolls-Royce in Germany, 2020-2024

3,300+

National employment supported by capital investment, 2020-2024

€140m+

Capital investment, 2024

Over the past four years, Rolls-Royce has invested more than €520 million in Capex across Germany, much of which is directed towards the ongoing optimisation and expansion of the Power Systems production facility in Friedrichshafen. These investments enhance operational capability and generate wider economic benefits by creating employment and supplier contracts in construction, machinery and equipment.

Looking ahead, we are investing c. €35 million to modernise engine assembly and test capabilities in Dahlewitz, supporting near-term demand for large civil engines and improving future production capacity. From 2025, this investment is expected to boost new engine production. These forward-looking upgrades strengthen our delivery model and reinforce Germany's leadership role in global aerospace.

In parallel, Rolls-Royce Group has committed to investing more than €500 million in advanced power technologies, further deepening our impact on the wider German economy.

CASE STUDY

N3 expansion—Scaling Civil Aerospace MRO capacity in Germany

N3 Engine Overhaul Services, a joint venture between Rolls-Royce in Germany and Lufthansa Technik, is undergoing a €150 million expansion at its Arnstadt site in Thuringia. Already a European Centre of Excellence for Trent engine maintenance, N3 is scaling capacity from 132 to 250 engines annually to support a growing global fleet powered by our Trent engines. In 2024, the facility completed a record 155 overhauls. Construction is underway on new facilities, including a logistics hub, high-bay warehouse and 40 new machines, alongside reconfigured office and meeting spaces. With over 1,000 employees from 28 countries and 200 additional roles planned in 2025, the expansion will bring more capabilities to Germany and reinforce the country's leadership in MRO technologies, while supporting Thuringia's transformation into a high-value industrial hub.



OUR OVERALL EMPLOYMENT IMPACT IN GERMANY

35,200 Total national employment supported by Rolls-Royce, 2024

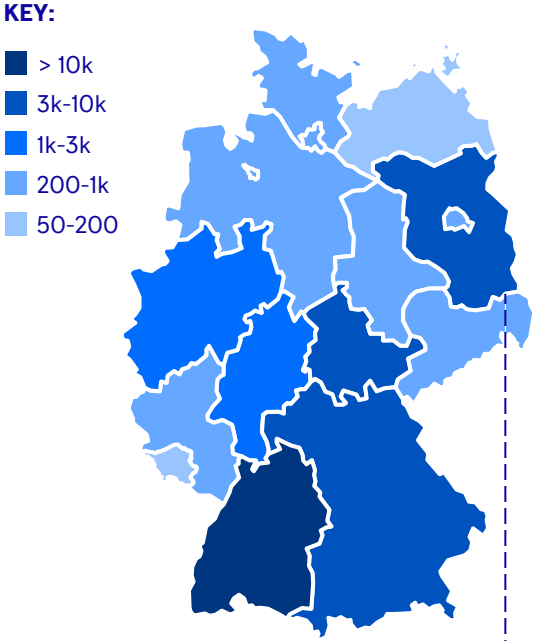
€2.5bn Employee remuneration supported by Rolls-Royce, 2024

2.4x Rolls-Royce employment multiplier, 2024

With more than a century of history in Germany, Rolls-Royce plays a vital role in Germany's industrial ecosystem.

Our employment impact extends nationwide through our facilities and supply chains, as well as the 'ripple effect' generated by our economic activities. Our footprint is particularly strong in Baden-Württemberg, Bavaria and Brandenburg, where we support nearly 24,000 jobs in total. Our work spans several highly productive sectors, including advanced engineering, high-tech manufacturing and cutting-edge R&D, providing long-term, well-paying careers and on-the-job training. Through our supply chain, we also support highly skilled employment across major industrial players and SMEs, helping to strengthen Germany's regional economies and national industrial resilience. As we continue to invest in technology, improved product performance and increased production capacity, we expect to continue to grow our impact with hundreds of additional jobs over the coming years as we scale to meet increasing demand from key customer sectors.

Employment supported by region, 2024

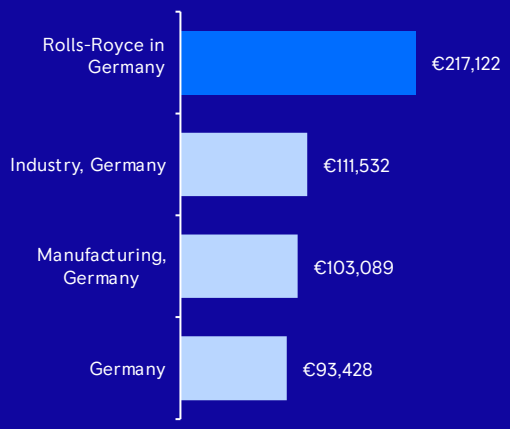


A champion for the German Government's economic transformation plans for the former East, Rolls-Royce is one of the largest employers in Brandenburg, supporting 9,800+ high-quality jobs in the region.

Employment supported by division and impact type, 2024

	Power Systems	Aerospace	Totals
Direct	7.2k	3.3k	10.4k
Indirect	10.8k	6.4k	17.3k
Induced	4.8k	2.7k	7.5k
Totals	22.8k	12.4k	35.2k

Mean employee productivity, GVA per employee, 2024



We provide long-term, highly productive and well-paid careers across Germany.

Our employees produce an average GVA twice as high as Germany's manufacturing average.

We pride ourselves on building long-term careers through high-quality career pathways and award-winning early careers and training programmes. We help our people realise their full potential to become highly skilled and world-leading engineers.

The high productivity of our employee base presents a compelling strategic alternative to driving long-term economic growth as automotive manufacturing comes under increasing pressure.

We invest in the future of German engineering talent through apprenticeships, internships, dual-study programmes and continued education.

In our Aerospace division, more than 75% of our Oberursel site managers began their careers through these pathways. Presently, there are over 300 apprentices training across our sites in Dahlewitz, Oberursel and Friedrichshafen, learning cutting-edge techniques in disciplines such as industrial mechanics and computer science to become the experts of tomorrow. We also support exchange programmes with the UK and provide continued development opportunities throughout careers to build the leadership of the future.

From delivering net-zero solutions to strengthening Europe's security infrastructure, we are equipping the next generation with the practical skills and R&D capabilities needed to drive technological progress where it matters most.

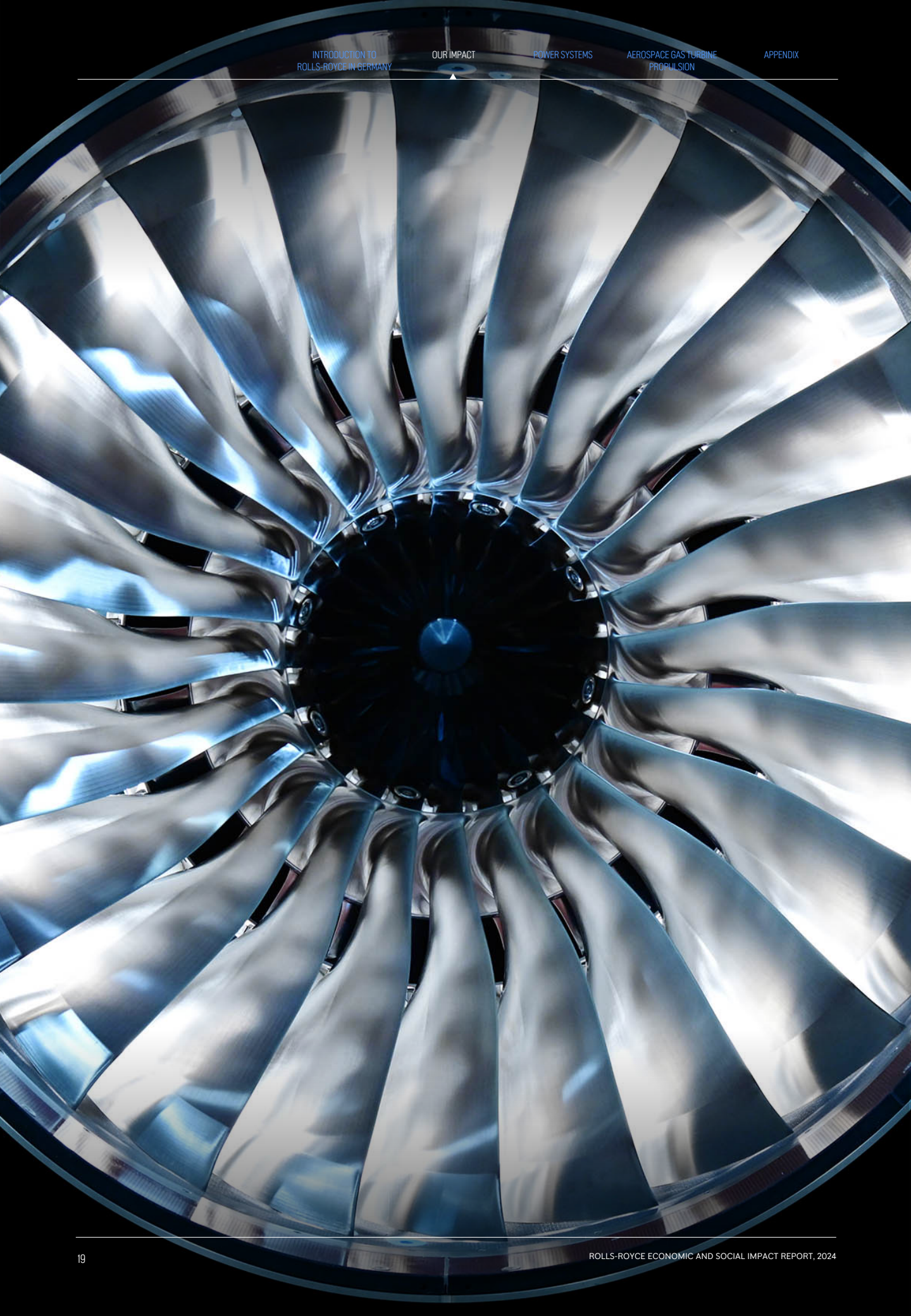
61
Nationalities among our employees

80%+
Conversion rate from apprenticeship to full-time

300+
Annual apprentices and interns

75%
Oberursel site managers started as apprentices





BREAKING DOWN OUR IMPACT IN GERMANY

GVA contribution by business unit

Germany – Total GVA		Gross Value Added – By Business Unit		Gross Value Added – By Impact Type	
Germany	€5.2bn	Power Systems	€3.1bn	Direct	€1.2bn
				Indirect	€1.4bn
				Induced	€0.6bn
		Aerospace	€2.1bn	Direct	€1.1bn
				Indirect	€0.7bn
				Induced	€0.3bn

Employment impact by business unit

Germany Total		Business Unit – Employment Supported		Employment Supported – By Impact Type	
Germany	35.2k	Power Systems	22.8k	Direct	7.2k
				Indirect	10.8k
				Induced	4.8k
		Aerospace	12.4k	Direct	3.3k
				Indirect	6.4k
				Induced	2.7k

R&D spillover impact by business unit

Country	Total R&D Spillover (2015-24)	Business Unit	R&D Spillover (2015-24)
Germany	€3.2bn	Aerospace	€2.2bn
		Power Systems	€1.0bn

Note(s): Figures may not sum due to rounding

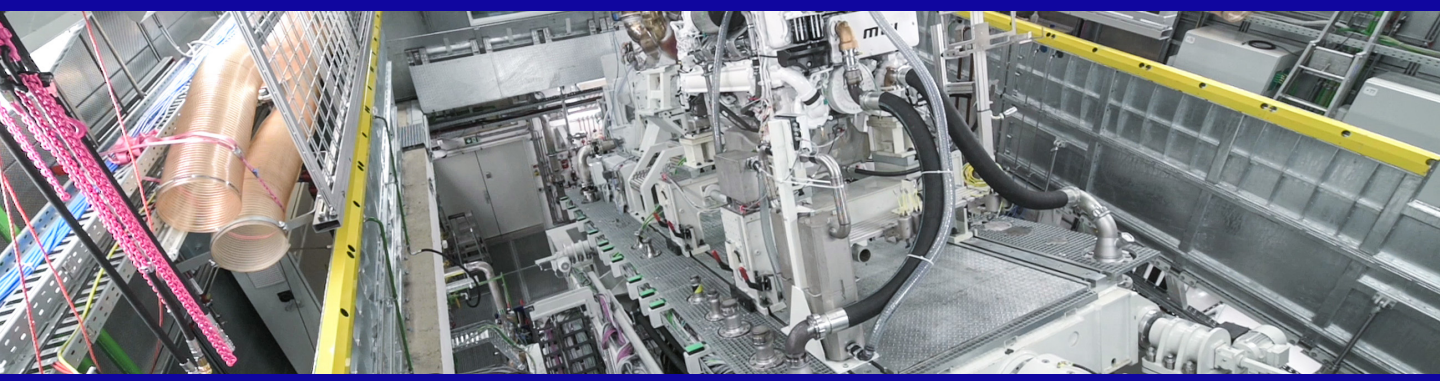
OUR OVERALL R&D IMPACT IN GERMANY



€441m	Gross R&D investment, 2024
€5.3bn	Gross R&D investment, 2015-2024
€3.2bn	R&D spillover impact, 2024
25+	German research centre R&D partners
1,200+	Novel patents first filed by our entities in Germany over the last decade
100%	Sustainable aviation fuel compatibility for all in-production civil aero engines

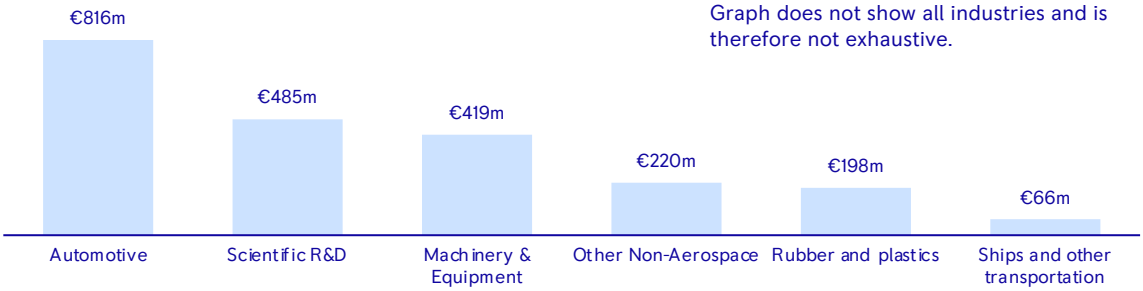
Rolls-Royce plays a key role in Germany's industrial and technological ecosystem. Across our Power Systems and Aerospace divisions, we are advancing critical technologies that support national priorities, from sovereign defence capabilities to energy decarbonisation, with our groundbreaking work on sustainable fuels technology, hydrogen engines and award-winning, next-generation UltraFan® gearbox.

Alongside directly supporting over 1,000 R&D roles in Germany, we anchor an ecosystem of four University Technology Centres, 25+ German research centre R&D partners and help fund joint projects with industry partners and academia, which helps us consistently file hundreds of patents per year. This ecosystem is supported by national and state-level programmes, such as LuFo, which co-fund some of our most advanced aerospace research initiatives and drive significant economic spillover while strengthening Germany's position as a technology hub and helping to accelerate net-zero.



Rolls-Royce Aerospace R&D spillover GVA impact by industry in Germany, 2024

Note: R&D spillover measures how much the benefits of our R&D extend beyond our business, benefitting other industries. Graph does not show all industries and is therefore not exhaustive.

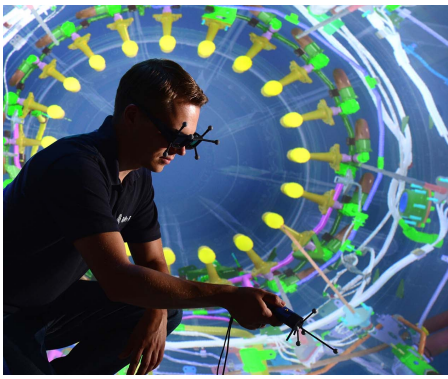


We continue to be a high-tech champion and global technology leader, and our R&D delivers significant spillover benefits, contributing c.€3.2 billion in GVA across Germany's manufacturing sectors. Our Gross R&D investment in Germany makes it a key R&D hub across the Group, with our investments driving new, lucrative export opportunities for Germany. Our high export intensity contributes to national productivity, generating broad economic spillover, creating high-quality jobs and strengthening Germany's position as an international leader in energy and aerospace technologies.

CASE STUDY

AI-driven engineering advancements in Germany

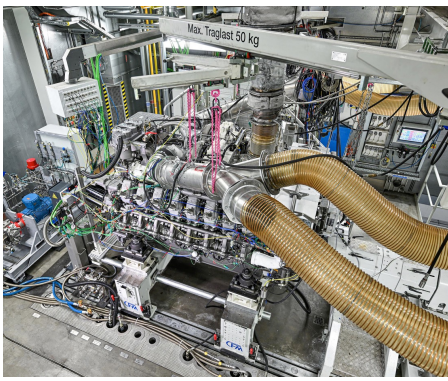
Rolls-Royce has partnered with Altair in Germany to integrate artificial intelligence into its engineering processes. This collaboration brings together AI, simulation and high-performance computing to accelerate product development. It also enhances system optimisation and supports more data-driven engineering across the business. The project demonstrates the breadth of Rolls-Royce R&D leadership in Germany, combining engineering expertise with cutting-edge digital capabilities and AI-driven design tools.



CASE STUDY

Pioneering methanol combustion for carbon-free marine propulsion

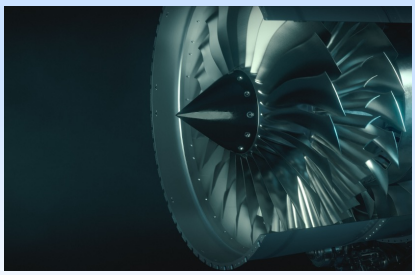
Rolls-Royce Power Systems in Germany is developing a methanol-fuelled combustion engine for marine use, supported by the German Federal Ministry for Economic Affairs and Climate Action. Engineered in Friedrichshafen together with EU partners Woodward L'Orange and WTZ Roßlau, the system adapts mtu Series 4000 technology to run on green methanol, delivering low-emission, CO_2-neutral propulsion for next-generation ships. The project highlights Rolls-Royce's role in advancing methanol as a strategic pillar of the energy transition and reinforcing EU sovereign capability in clean maritime propulsion.



OUR POTENTIAL FUTURE IMPACT IN GERMANY

Aerospace

As Germany's only end-to-end aero engine integrator, Rolls-Royce is uniquely positioned to support sovereign engine capability across Germany and the EU. This capability will be critical for delivering future defence programmes at speed and sustaining Europe's leadership in business aviation.



Significant growth in aviation demand is boosting our German revenue, and we are investing c.€35 million in our Dahlewitz facilities and expanding our services in Oberursel to meet this rising demand. With significant investments in our existing engines, particularly the Pearl family, we expect to remain at the technological forefront of the aerospace sector and to enable increasing economic impact across Germany.



$1.6tn

Expected cumulative size of the market for next-generation narrowbody aircraft engines



Re-entry into the large narrowbody market has huge potential for the Rolls-Royce Group and our German business. We are exploring a return to the narrowbody market, building on our leadership in widebody and business aviation to play a key role in the next generation of narrowbody jets in the late 2030s. With its strong industrial base and engineering expertise, Rolls-Royce in Germany is well-positioned to contribute. The expansion could create high-value jobs, boost exports and reinforce Germany's central role in sustainable aviation. Realising the opportunity will require significant investment in advanced manufacturing, R&D and supply chains, backed by a strong government-industry partnership, especially as global competitors benefit from generous direct state support.

In the context of heightened geopolitical tensions, our end-to-end capability is critical to Germany and the EU's defence infrastructure. Through our programmes in land and naval defence, and our unique gas turbine capabilities in Germany, Rolls-Royce plays a critical role in supporting sovereign defence capability across Germany and the EU's defence fleets. Our broad network of 840+ German and European suppliers enables us to quickly and reliably support the Readiness 2030 Plan, NATO objectives and efforts to reduce Europe's reliance on non-European defence suppliers, which is becoming increasingly important in a shifting geopolitical landscape. With the Group's annual spending with German suppliers exceeding €2.5 billion, and with that figure set to grow, we are supporting Germany's infrastructure and defence programmes through our nationwide footprint.

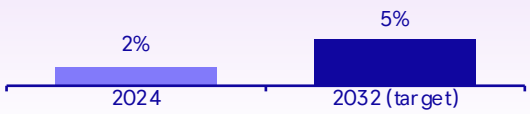
€800bn

Amount set to be mobilised by the European Commission's Readiness 2030 Plan

Power Systems

As the world prioritises secure low-carbon energy, demand for resilient, clean energy solutions is growing rapidly. As a trusted provider with advanced technologies, Rolls-Royce Power Systems in Germany is well-positioned to capture transformational opportunities in high-growth sectors such as data centres and defence, as well as continuing growth in marine and BESS; all of which benefit the communities we operate in.

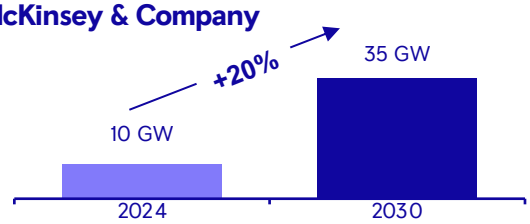
NATO defence spending commitment (% GDP)



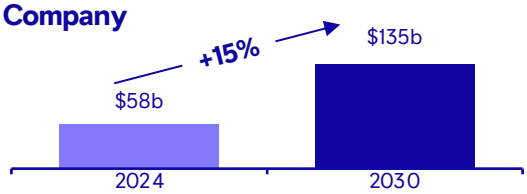
Europe's rearmament push is increasing defence demand across the continent. Rolls-Royce Power Systems in Germany stands out as a critical supplier to NATO fleets. Often as the sole or critical propulsion supplier for NATO fleets on land and at sea, with no viable alternatives in many mission-critical applications, we are a strategic asset for national and European security.

Demand for digital infrastructure is expected to triple over the next five years, and we are well-positioned to capture that growth. As data centres scale, driven by cloud, AI and connected systems, energy resilience is becoming critical. A critical part of data centre infrastructure, Rolls-Royce Power Systems is delivering backup power solutions while tackling the challenge of decarbonisation through hydrogen- and HVO and e-Diesel compatible generators. Our lower-emission engines make us a critical partner in scaling digital infrastructures with environmental responsibility.

European data centre demand growth, McKinsey & Company



Estimated BESS market size, McKinsey & Company



Deployment of our battery energy storage systems (BESS) is rapidly increasing as the BESS market looks set to double by 2030, driven by surging demand for cleaner, more flexible energy solutions. Designed to enhance grid stability, integrate renewables and strengthen energy resilience, our systems are already deployed in over 140 projects worldwide and are expected to deliver over 2,000 megawatts of BESS capacity in the next two years alone. We continue to expand our BESS business through strategic partnerships, technological enhancements and organic growth.



20% Projected Rolls-Royce power generation revenue growth per annum to 2028

2.5x Increase in EU NATO defence spending

OUR SOCIAL IMPACT IN GERMANY

Rolls-Royce delivers environmental and social impact in Germany that extends well beyond our economic impact. Currently, 50% of our gross R&D spend is directed towards next-generation low-carbon technologies, ensuring that our aero engines and power systems help to decarbonise key sectors including aviation, data centres and rail transport, supporting the energy transition while strengthening the energy resilience of Germany's critical infrastructure.

Our social activities include educational outreach, charitable donations, social partnerships and community engagement. In 2024 alone, we contributed over €640,000 to social causes in Germany, including 5,400+ dedicated volunteering hours from our people, half of which supported STEM education initiatives aimed at inspiring the next generation.

€20m+

Decarbonisation Capex, Rolls-Royce Group, 2019-2024

34%

Reduction in normalised energy consumption, 2019-2024

21%

Scope 1 and 2 emissions reduction, 2019-2024

Rolls-Royce Civil Aerospace's R&D in Germany is at the forefront of aviation decarbonisation. Our Pearl engine family already exceeds future international sustainability thresholds, and all in-production Rolls-Royce civil engines, including the BR700 and Pearl families developed in Germany, are able to use 100% sustainable aviation fuel (SAF), enabling significant lifecycle emissions reductions of about 80%.

We are due to increase the share of our gross R&D spend dedicated to lower-carbon and net-zero technologies from 50% to over 75% in 2025, supporting advancements in next-generation propulsion systems, low-emission fuels and hybrid-electric platforms.

Our Power Systems division is at the forefront of decarbonising marine, rail and stationary power applications, with R&D programmes targeting 35% lifetime emissions reductions by 2030 (vs. 2019 levels), driven by improvements in engine design, fuel flexibility and digital optimisation. Technologies developed in Friedrichshafen and across our German research network are already enabling new engine models to operate on HVO, hydrogen and methanol.

CASE STUDY

mtu hydrogen combustion engines

In 2024, Rolls-Royce advanced its hydrogen programme by developing the first mtu hydrogen combustion engine, adapted from its proven gas engine platform with new turbochargers, redesigned cylinders and advanced engine controls. The first units shipped to Duisport in 2024, supplying power and heat to Germany's first carbon-neutral container terminal as part of the EnerPort project, with series production expected from 2026.

In parallel, conversion kits are being designed to retrofit existing gas engines for hydrogen use, providing customers with a pathway to decarbonisation once green hydrogen becomes widely available. Together with mtu fuel cells, also in development, the engines form part of a broader mtu hydrogen ecosystem, offering reliable, low-carbon solutions for industry and municipalities.



€640,000+

Discretionary social contributions in Germany, 2024[1]

€400,000+

Cash contributions including charitable donations in Germany, 2024[1]

5,400+

Total hours volunteered in Germany, 2024

51%

Contributions support our STEM education and skills priority in Germany, 2024

12,000+

People reached through our STEM activities and programmes, 2024

Rolls-Royce actively champions STEM education across Germany, with a particular focus on fostering diverse engineering talent in the former East. Each year, over 60 of our employees take part in Girls' Day and STEM ambassador programmes, inspiring children aged five to 18 to explore STEM subjects and careers. We also invest €50,000 annually in Wissenswerkstatt Friedrichshafen e.V., which offers young people free access to hands-on STEM projects and supports conferences that allow school and university students to engage with current issues and form independent perspectives.

We have partnered with the German Red Cross Blood Donation Service East since 2002 through the 'Helping Hands' initiative. With growing employee participation, we now host biannual three-day blood donation drives at our Dahlewitz factory premises. We also support regional organisations such as Kinderschutzbund Friedrichshafen e.V., which provides safe and inclusive childcare for vulnerable children.

Educational outreach

Social partnerships

Charitable donations

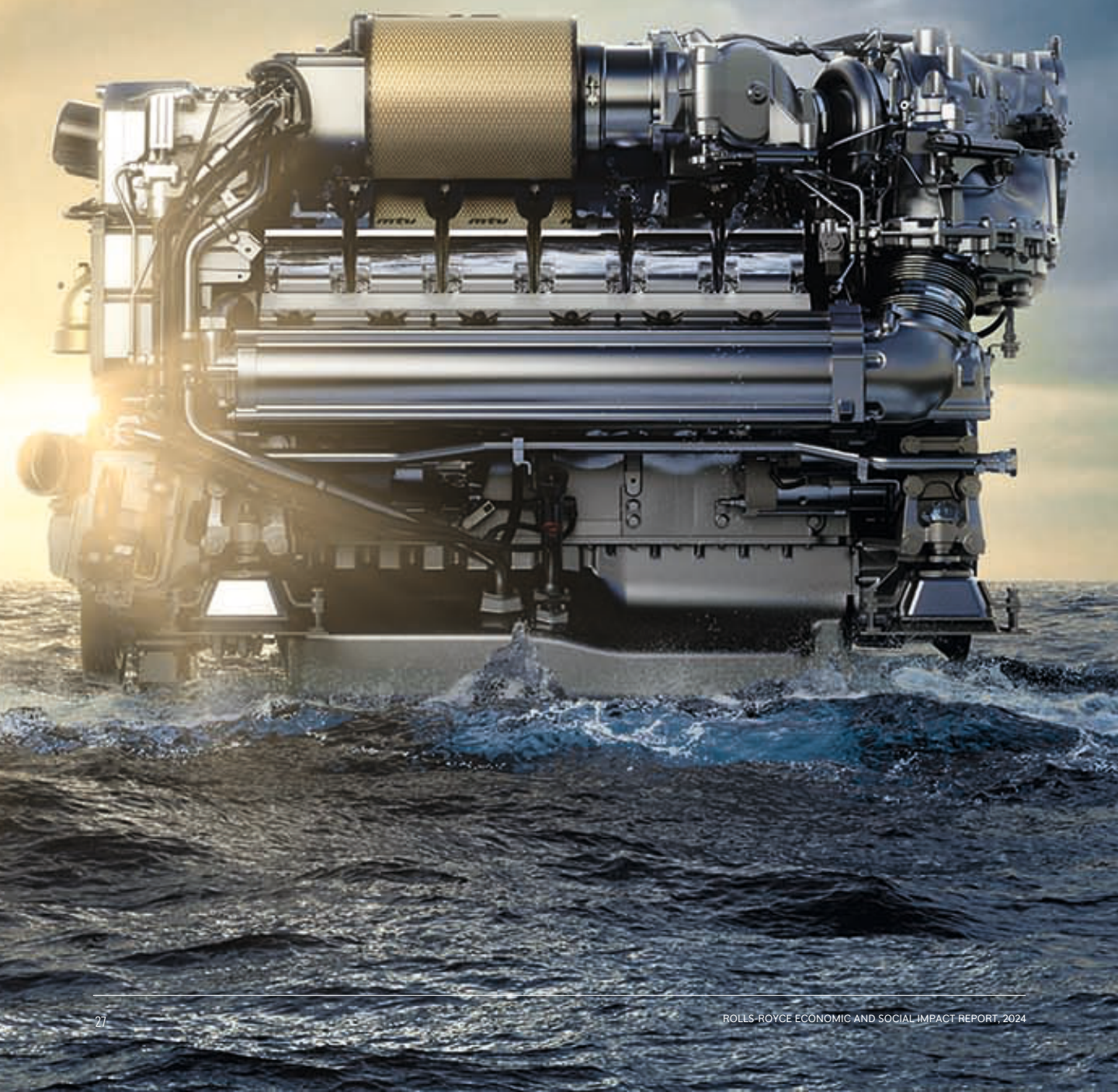
Community and colleague engagement

We are committed to charitable causes and equality of opportunities for all. In 2024, we donated over €50,000 to the Fliegerwerkstatt of Social Return Foundation, which trains young people from disadvantaged backgrounds and refugee communities in craftsmanship to enter apprenticeship programmes. We also supported Straßenkinder e.V., which works to get children off the streets and help them build a better future, as well as investing €50,000 per year in Wissenswerkstatt Friedrichshafen e.V., which provides young people from age five to 18 free access to STEM and technology courses. In addition, we publicly donated €250,000 to aid organisations supporting casualties of the Christmas market terror attack in Magdeburg.

Our employees engage directly with local communities through hands-on volunteering, renovating schools and childcare centres, supporting refugee and disability facilities and helping at youth homes and playgrounds. These efforts not only help meet local needs, but also strengthen team cohesion and deepen our regional roots.

Note(s): 1. We use B4SI's community investment model to value our social contributions in cash, people time and in-kind resources, and our STEM reach is externally assured

The 12V2000 M96Z is the most powerful 12-cylinder engine in Rolls-Royce's mtu Series 2000 portfolio, delivering 1,634 kW (2,222 mhp) for high-performance marine applications. Developed and built in Friedrichshafen, it offers class-leading power density with minimal increase in size or weight. The engine is certified for use with renewable HVO fuel and supports clean, efficient propulsion for fast yachts, patrol vessels and sportfishing boats around the world.



BUSINESS OVERVIEW
POWER SYSTEMS GERMANY

Rolls-Royce provides world-class power solutions and complete lifecycle support under the product and solution brand mtu. Through digitalisation and electrification, we develop drive and power-generation solutions that are increasingly clean and smart, thus providing answers to the challenges posed by the rapidly growing societal demands for low-carbon energy and mobility. We deliver and service comprehensive, powerful and reliable systems, based on both gas and diesel engines, as well as electrified hybrid systems. These clean and technologically advanced solutions serve our customers in the marine and infrastructure sectors worldwide.

With over 7,100 employees across nine federal states, we contribute to sovereign defence and resilient national infrastructure, while providing long-term job creation in high-growth, high-productivity sectors. By partnering with a network of over 240 German supply chain partners, we support the Mittelstand and champion local production while delivering exports to over 150 countries.

As demand grows, we continue to invest in next-generation technologies driving decarbonisation across power generation, marine and industrial segments, with pioneering methanol-capable engines, battery systems and energy management solutions. These investments underline our significant contribution to helping Germany meet its climate targets while remaining dynamic, resilient and self-reliant in a shifting geopolitical landscape.

7,100+ Rolls-Royce Power Systems in Germany employees, 2024

25% YoY Power Systems revenue growth, 2024

46% YoY increase in global data centre revenue for Rolls-Royce Power Systems, 2024

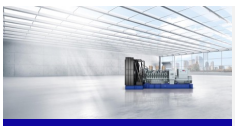


Rolls-Royce Power Systems in Germany powers thousands of Leopard 2 tanks across NATO and around the globe.

Infrastructure supported

Our Power Systems technologies provide the backup power that essential services rely on, supporting digital infrastructure, mass transit and national security across the country. With the recently announced €500 billion Sondervermögen for infrastructure and climate neutrality, these technologies will become increasingly critical to meeting our national priorities, and we stand ready to help government deliver.

As a high-tech German industrial leader, we play a critical role in advancing the energy transition. Our HVO-compatible engines have achieved a nearly 90% reduction in emissions. Our German-based team has developed in-house software and electronic systems that improve efficiency and reduce emissions, positioning us as a leader in both physical engine technology and intelligent digital solutions.

Sector	Our role
 Hospitals	Our emergency gensets provide life-saving backup power for equipment, supporting resilience in hospitals like Charité in Berlin.
 Airports	Our backup power systems safeguard air traffic control and fuel depots for important airports.
 Data centres	We partner with the largest data centre operators worldwide, helping to power digital infrastructure across the globe.
 Transport	We have supplied over 8,000 PowerPacks to rail customers worldwide and also support marine transport.

Category	Impacts
 Tanks—Leopard 2	In service in over 18 countries, the programme powers over 3,500 tanks globally as a trusted platform for NATO land forces.
 Infantry fighting vehicles (IFV) —PUMA	Selected for NATO's Very High Readiness Joint Task Force, PUMA is Germany's most advanced IFV in power-to-weight ratios.
 Submarines—U212A	Enables stealth air-independent propulsion for the German Navy and has been exported to Italy since 2006 and partnered with Norway since 2017.
 Surface ships—Frigates & Corvettes	Supports missions from patrol to deep-sea combat for German and allied navies since the early 2000s.

Rolls-Royce in Germany also delivers mission-critical power and propulsion solutions for defence. Built in Germany and used across NATO, these systems form a vital part of Germany's national resilience and export strength, while securing the EU's sovereignty over critical capabilities.

With full design and integration capabilities for complete propulsion trains, we can meet demanding timelines and rapidly scale production to meet evolving governmental needs. Our extensive in-field and service support ensures the mission readiness of land and naval defence platforms, wherever and whenever it matters most.

CASE STUDY

Sustainable backup power for the Nordics' greenest data centre

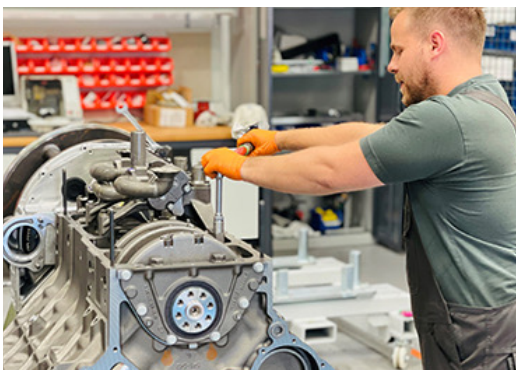
At Sweden's EcoDataCenter, 32 mtu Series 4000 gensets from Rolls-Royce in Germany provide uninterrupted backup power running entirely on renewable HVO fuel, cutting lifecycle CO_2 emissions by up to 95% compared to diesel engines. Since 2017, EcoDataCenter has relied solely on Rolls-Royce for backup power and is continuing to expand its fleet, with 16 more gensets on order. In partnership with BOS Power and Neste, Rolls-Royce's low-emissions technology continues to anchor one of Europe's most sustainable and secure digital infrastructures.



CASE STUDY

Powering NATO's armoured readiness

Rolls-Royce in Germany delivers the propulsion backbone for NATO's land combat vehicles, with over 4,000 mtu Series 199 engines deployed across Europe and North America. From the UK's Ajax AFV to the German-made Boxer and the Polish Borsuk, our systems are the most widely used for NATO-standard combat vehicles. Now, with hybrid-electric propulsion and a new 1,100 kW 10V 199 concept, Rolls-Royce is designing the next generation of high-mobility, low-signature power systems, enabling quieter operations, greater fuel efficiency and enhanced battlefield survivability across future NATO missions.



SUPPLIER OVERVIEW
POWER SYSTEMS GERMANY

Rolls-Royce Power Systems in Germany supports one of Germany's most advanced industrial ecosystems, with a pan-European network of firms providing key inputs that power critical infrastructure and European defence: from precision-engineered crankshafts and forged steel to generators, cooling systems and industrial software.

Our supply chain spans 12 federal states and enterprises of all sizes, from specialist SMEs with a handful of staff to major industrial partners. Our commitment to our supply chain and long-term investment helps these partners scale their operations, invest in technology and improve their processes while supporting cutting-edge manufacturing capabilities and skills development across Germany.

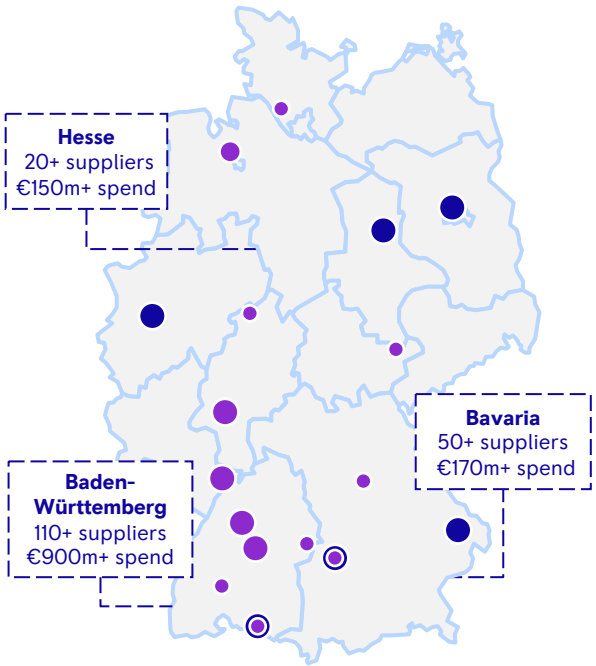
240+ German suppliers, 2024

€1.7bn Rolls-Royce Power Systems in Germany spend on German suppliers, 2024

83% Percentage of supply chain spend on German suppliers, 2024

We work closely with key suppliers, not only through direct purchasing, but also by co-investing, collaborating on joint R&D programmes and offering long-term incentives to co-develop high-performance systems. This partnership model enables our suppliers to expand capacity, advance new technologies and grow their customer base beyond Rolls-Royce, creating even more employment opportunities across the country. For many of our suppliers, Rolls-Royce is not just a customer, but also a partner and a platform for scale, technological progress and access to global markets. Our efforts to develop cutting-edge solutions continue to drive technological innovation and skills development across the supply chain.

By sourcing a wide range of components from skilled German businesses, we support employment in advanced technology sectors across Germany, both in major industrial companies and among the Mittelstand, Germany's highly specialised technical SMEs. In doing so, we play a crucial role in developing Germany's engineering and manufacturing talent, maintaining national industrial strength, opening export opportunities and ensuring long-term economic resilience in these regions.



KEY:

- **Key Rolls-Royce Power Systems in Germany sites**
- **Key Rolls-Royce Power Systems in Germany suppliers** *(€50m+ annual spend)*
- **Key Rolls-Royce Power Systems in Germany suppliers** *(€15m+ annual spend)*





Our approach to decarbonisation is transforming our supply chain. By co-developing low-emission technologies such as hybrid propulsion and HVO-compatible engines, we enable our suppliers to advance their capabilities in sustainable engineering. As we expand internationally through export-focused projects, such as our sustainable shipping collaborations with Damen, SCHOTTEL and WETA, we open new markets for our suppliers. This supports high-quality jobs in future-focused sectors and embeds green technology deep within the European industrial base. Rolls-Royce is not just a power system provider, but is also a force multiplier for industrial competitiveness and climate leadership across our supply chain.

CASE STUDY

Maschinenfabrik Alfing has been supplying crankshafts to Rolls-Royce Power Systems in Germany since the founding of its predecessor Luftfahrzeug-Motorenbau in 1911. As demand for mtu engines grows, particularly in the global data centre market, we are helping Alfing to scale up production capacity through a joint investment in new facilities, machines and talent. As Alfing's largest customer, our partnership extends beyond business: Alfing's young engineers regularly visit Rolls-Royce Power Systems in Germany sites to see how their components fit into complete engines, fostering deeper engagement and purpose. In 2018, we helped Alfing establish a joint venture in China to secure crankshaft supply for our Asia-Pacific operations, driving additional German exports through our supply chain. This global integration makes Alfing a standout example of our ability to drive broad-based growth through our supply chain partnerships.

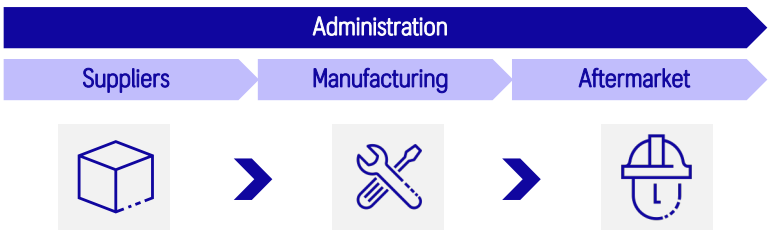


ECONOMIC IMPACT
POWER SYSTEMS GERMANY

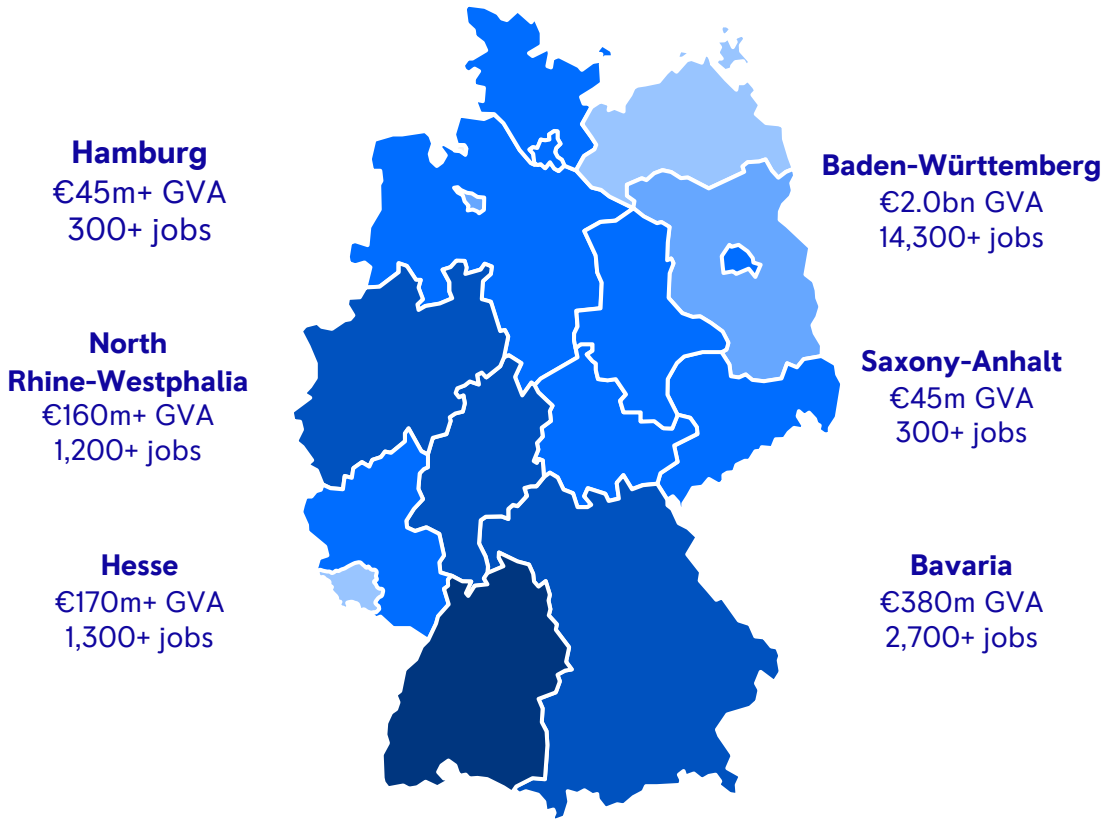
It is estimated that Rolls-Royce Power Systems in Germany contributed €3.1 billion in GVA to the German economy in 2024, with a further €1.0 billion in estimated productivity uplifts from R&D spillover benefits. Our impact is felt across the whole of Germany, from our nationwide supplier network to our manufacturing hubs, service operations and engineering centres supporting defence and critical infrastructure.

€3.1bn Operational GVA impact, 2024

€1.0bn R&D spillover GVA impact, 2024

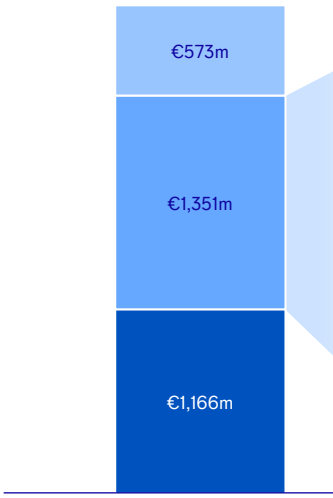


Rolls-Royce impact by region, 2024

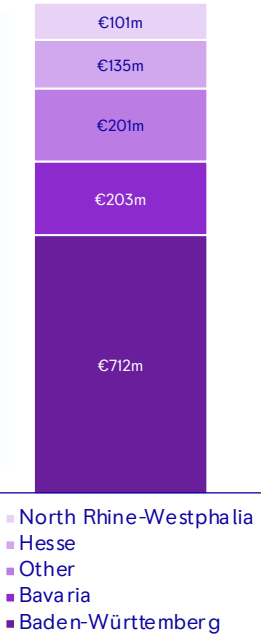


Rolls-Royce Power Systems in Germany is a leading industrial employer across multiple regions, including Baden-Württemberg, Bavaria and Saxony-Anhalt. In Baden-Württemberg, where our headquarters are located, our 2024 contribution equated to €2 billion GVA, underlining our crucial role in driving regional prosperity and supporting local communities.

GVA by impact type



Indirect GVA impact by state



Rolls-Royce Power Systems in Germany plays a vital role in strengthening local economies, particularly in regions beyond Germany's traditional industrial hubs. In 2024, our operations supported jobs, supply chains and infrastructure in areas outside of traditional German industrial hubs such as Magdeburg and Ruhstorf.

In these communities, our presence helps address regional disparities by creating high-quality employment, investing in skills and fostering local supplier networks.

Our direct and indirect presence amplifies economic activity, as wages earned in our facilities and supply chain are spent in local communities. By embedding advanced manufacturing in these areas, we help to regenerate local economies and build long-term career pathways supporting some of Germany's most strategic sectors.

CASE STUDY

In 2023, Rolls-Royce Power Systems in Germany opened a new €30 million assembly plant in Kluftern, just outside Friedrichshafen. The facility now produces mtu Series 2000 engines for global use across the marine, industrial and backup power sectors, creating over 100 new jobs locally. This strategic development benefitted the local community and generated additional export opportunities for the German economy, better enabling us to service global demand.

The investment made in constructing the facility supported an estimated €24.5 million GVA in the Baden-Württemberg region and more than €28 million GVA nationally in 2023. More significantly, the ongoing operation of the new assembly plant is now contributing c.€42 million in annual GVA to Germany, while supporting an additional 208 jobs across the supply chain, on top of those directly employed by Rolls-Royce. As Rolls-Royce Power Systems in Germany continues to invest in its facilities, these economic impacts will compound, driving long-term, recurring value for both the local community and the German economy.

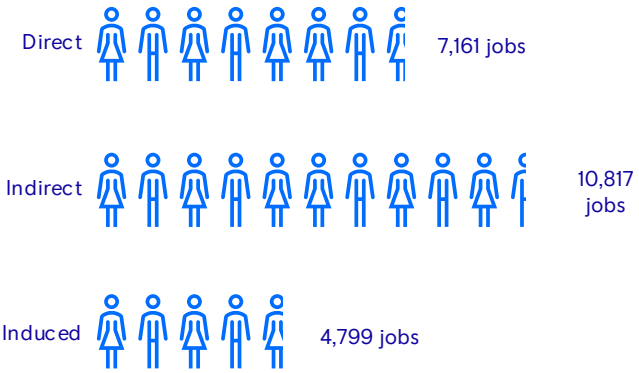


€40m+ Annual GVA contribution to Germany

300+ Total jobs supported annually

EMPLOYMENT IMPACT
POWER SYSTEMS GERMANY

National employment supported by impact type, 2024



Rolls-Royce Power Systems in Germany employs over 7,100 people in high-skilled and high-productivity roles spanning assembly, engineering, procurement and R&D. The long-term careers we offer are underpinned by the consistent growth of our defence, energy and industrial programmes, and support an additional 10,800+ jobs through our supply chain.

At Rolls-Royce, generational skill transfer is central to sustaining our global competitiveness. Through a variety of early career programmes, we ensure that knowledge and capability are continuously renewed to meet evolving technological demands and to reinforce Germany's industrial strength.

22,700+ jobs — Total national employment supported by Rolls-Royce Power Systems in Germany, 2024

€1.7bn — Employee remuneration supported by Rolls-Royce Power Systems in Germany, 2024

2.2x — With every Rolls-Royce Power Systems employee, approximately 2.2 additional jobs are supported across Germany

Region	Direct employment supported	Indirect employment supported	Induced employment supported	Total employment supported
Baden-Württemberg	6,016+	5,700+	2,607+	**14,323+**
Bavaria	604+	1,543+	648+	**2,795+**
Hesse	9+	1,040+	285+	**1,334+**

Despite limited direct employment in Hesse, we support 1,000+ jobs through our extensive supply chain networks and 285+ additional jobs through the economic activity of these employees in Hesse.

We have a major presence in Baden-Württemberg, both as an employer and through our supply chain, supporting the creation of over 14,000 jobs.

Through 120+ technical apprenticeships, 20+ business apprenticeships and 80+ dual-study placements per year, we are investing in the next generation of German engineering talent with our award-winning and IHK-standard training programmes. These pathways equip young people with practical skills ranging from industrial mechanics and computer science to mechatronics engineering and warehouse logistics, securing long-term capability in sectors vital to Germany's industrial future.

CASE STUDY

We have trained more than 8,200 apprentices to date, with 80-85% of trainees going on to join us full time each year. Today, around 90 managers in Friedrichshafen began their careers as apprentices at Rolls-Royce Power Systems in Germany. Our apprenticeship programme spans the full breadth of our business, from engineers and logistics experts to catering specialists, with our global presence allowing us to give apprentices the chance to visit international facilities as part of their development.

In 2019, we invested in a 3D printer in our training centre to allow apprentices to experiment with new manufacturing methods while building hands-on R&D skills. The success of this pilot led to the installation of a metallic 3D printer, now used to produce rare spare parts for mature engines, some over 70 years old. This capability, led by our apprentice team, is now supporting operations across Rolls-Royce's service network.

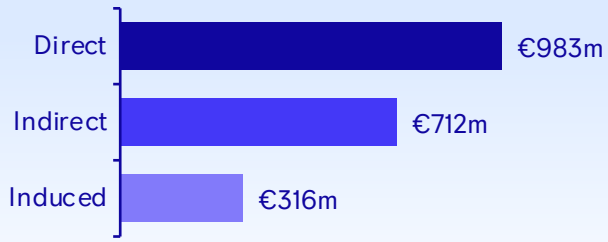
Our hands-on approach empowers our apprentices to contribute to real-world engineering problems, helping us to develop Germany's next generation of R&D leaders within and beyond Rolls-Royce.



50%+ Higher than average manufacturing salaries in Germany

OUR IMPACT IN BADEN-WÜRTTEMBERG
POWER SYSTEMS GERMANY

GVA impact by impact type, Baden-Württemberg, 2024



Baden-Württemberg is Rolls-Royce's global hub for Power Systems.

Rolls-Royce Power Systems in Germany contributed €2 billion in total economic impact across Baden-Württemberg in 2024. We directly employ over 6,000 people, with each of our employees supporting a total of 2.4 jobs in the local economy through indirect and induced impacts.

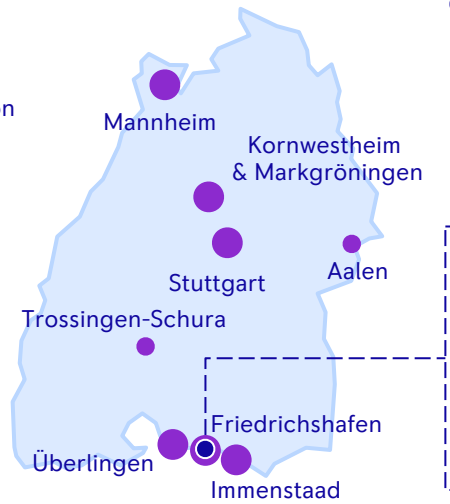
Rolls-Royce Power Systems in Germany operations and impacts in Baden-Württemberg

€1.2bn

Employee compensation distributed in Baden-Württemberg, 2024

1.4x

For every Rolls-Royce employee in Baden-Württemberg, 1.4 additional jobs are supported across the Land



KEY

- Rolls-Royce Power Systems in Germany sites
- Key suppliers (€50m+ annual spend)
- Key suppliers (€15m+ annual spend)

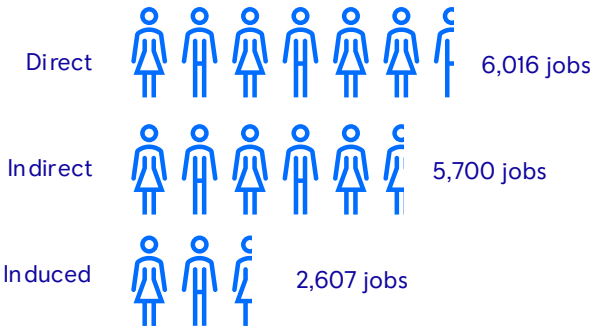
Friedrichshafen is the global headquarters of Rolls-Royce Power Systems and a 2023 Kearney 'Factory of the Year' competition winner for operational excellence. Employing more than 6,000 people, it is our principal centre for R&D, engineering, manufacturing, service support and training in Germany.

6,000+ jobs

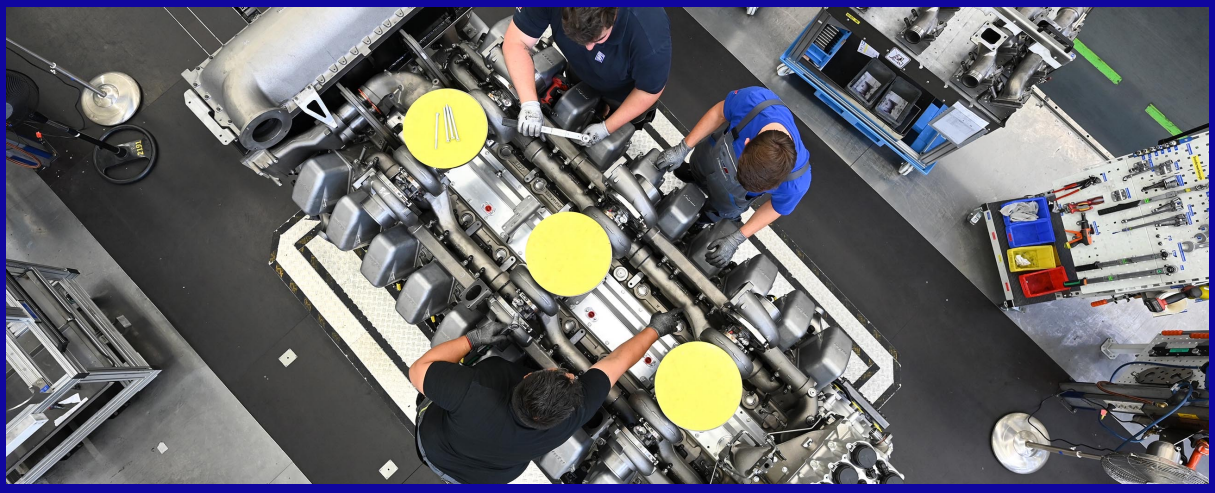
Total direct employment supported by Rolls-Royce Power Systems in Baden-Württemberg, 2024

We are one of the largest employers in the Friedrichshafen region, and we support more jobs in Baden-Württemberg than any other federal state. More than 2,100 (36%) of our workforce in Baden-Württemberg work in production and assembly, and more than 900 (16%) in R&D. We work with 110+ suppliers in the region, supporting 5,300+ jobs in the supply chain through €900+ million in spend in 2024.

Employment supported by impact type, Baden-Württemberg, 2024



Our employees in Baden-Württemberg generate a GVA per hour worked that is more than 10% higher than the national manufacturing average and c.30% higher than the national average for all workers, demonstrating the impact of our work in the region in creating high-productivity jobs, with high productivity levels supporting high wages. With growing demand and expanding production, we plan to continue to attract skills and talent from across Germany and around the world.



€590m+ Capital investment in Baden-Württemberg to expand our sites and operational capacity

CASE STUDY

A thriving Friedrichshafen for the future of energy and defence

Friedrichshafen is at the heart of major industrial expansion to meet rising demand across the energy and defence sectors. In the coming years, Rolls-Royce will add hundreds of new employees in Friedrichshafen alongside new assembly lines and facility upgrades in direct response to increased orders from the German Government and allied nations. In parallel, the site has received €4.25 million in funding from the Baden-Württemberg Ministry for the Environment to establish new hydrogen infrastructure, with the aim of scaling production capacity up to 10 MW. Rolls-Royce in Germany is helping to drive Friedrichshafen's thriving industrial growth, with multiple ongoing projects closely aligned with Germany's national security and sustainability objectives.



R&D IMPACT
POWER SYSTEMS GERMANY

With more than 1,000 employees dedicated to R&D and over €2 billion invested over the past 10 years, Rolls-Royce Power Systems in Germany is at the forefront of future-ready, sustainable power-generation technologies. These technologies are ready to meet the evolving demand of our customers across the energy, marine, defence and data centre sectors, and, in response to the business's strong growth, our R&D operations in Germany are expanding significantly.

Our German-based engineering and test centres lead the development of next-generation reciprocating engines, energy storage systems and hybrid-ready solutions, and we continue to expand our engine portfolio to accommodate alternative fuels, including the mtu Series 4000, now capable of running on 100% hydrogen or HVO fuel.

Power Systems Germany R&D stats

€2.2bn
Total gross investment in R&D, 2015-2024

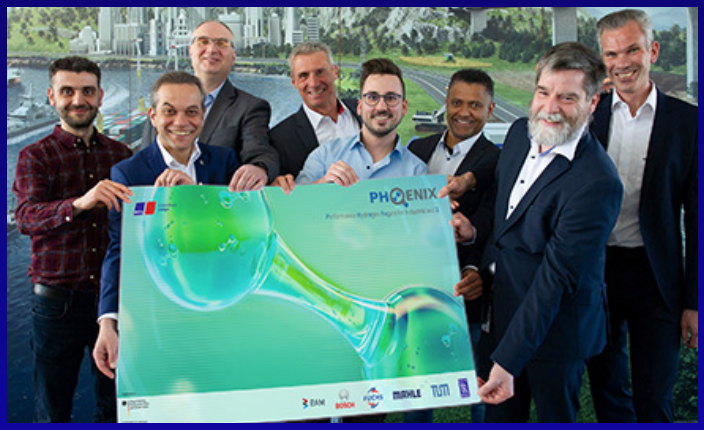
530+
Novel patents first filed by Rolls-Royce Power Systems in Germany over the last decade

5
Strategic initiatives including next-gen Series 4000 engine, hybrid land defence systems and hydrogen CHP

1,000+
Employees in R&D

#1
Award winner for environmental technology by the Environment Ministry, Baden-Württemberg

€200m+
Gross R&D investment, 2024



With funding from the German Federal Ministry for Economic Affairs and Climate Action, we are leading the three-year Phoenix programme in partnership with the Technical University of Munich, MAHLE, Bosch, BAM and FUCHS. Together, we are developing a next-generation hydrogen combustion engine for combined heat and power (CHP) systems, targeting the efficiency and power density of natural gas engines (up to 2.5 MW) while enabling fully CO_2-neutral operation using green hydrogen fuel.

CASE STUDY

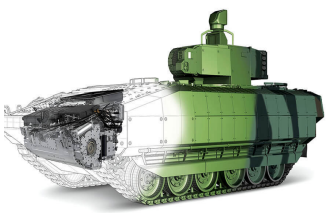
New-generation Series 4000

Rolls-Royce Power Systems is developing a new mtu engine platform that benefits from the experience gained with the proven Series 4000. The first new mtu engines are scheduled to hit the market in 2028 to meet the future demands for increased power, power density and fuel flexibility. The new platform offers a 25% increase in power with the 16- and 20-cylinder systems and expands the mtu power range for emergency power solutions to up to 4,500 kVA (50 Hz) / 4,000 kWel (60 Hz).

Combustion engines are an important pillar of the energy transition due to their reliability and efficiency, and in applications that cannot be electrified due to their power requirements, the use of sustainable fuel is critical to CO_2 emissions reduction. The first application for these engines will be emergency power generation, with a focus on data centres.



We are also contributing to the long-term sustainability of Europe's regional rail fleet through a major remanufacturing programme with Alpha Trains. Covering up to 1,000 mtu PowerPack overhauls, Rolls-Royce will provide lifecycle engineering, component upgrades and replacement solutions for Talent, Desiro and LINT series Diesel Multiple Units. This project is led from Magdeburg and applies mtu's advanced Reman process in disassembling, testing and rebuilding PowerPacks to "as-new" condition with improved components and lower environmental impact. This extends each unit's life by up to 18,000 hours, while reducing raw material use and energy consumption. This initiative reinforces Germany's role as the European hub for sustainable industrial technology and lifecycle R&D, supporting jobs, exports and long-term competitiveness in European rail.



CASE STUDY

Future-proof power: A new variant of the Series 199 engine

Rolls-Royce Power Systems is advancing the next generation of the proven mtu Series 199 engine family. The upcoming 10-cylinder variant will extend the power range up to 1,100 kW, enabling applications in vehicles weighing between 50 and 70 tonnes. At the same time, logistical commonality across the 6- to 10-cylinder configurations, based on shared components, significantly reduces lifecycle and support costs for armed forces. The latest addition to the portfolio is the new mtu 12V 199. Delivering more than 1,300 kW, this 12-cylinder engine is designed to meet the demanding requirements of next-generation heavy military land vehicles. With this expansion, the Series 199 offers a scalable and future-ready propulsion platform for a wide range of current and future defence applications.

The Pearl 10X is the most powerful engine in Rolls-Royce's business aviation portfolio, delivering over 18,000 pounds of thrust to power Dassault's flagship Falcon 10X. Designed and built in Dahlewitz, Germany, it combines industry-leading efficiency with ultra-low emissions and noise. The Pearl 10X features a high-performance core derived from the Advance2 demonstrator and will support a new generation of ultra-long-range business jets.



© Dassault

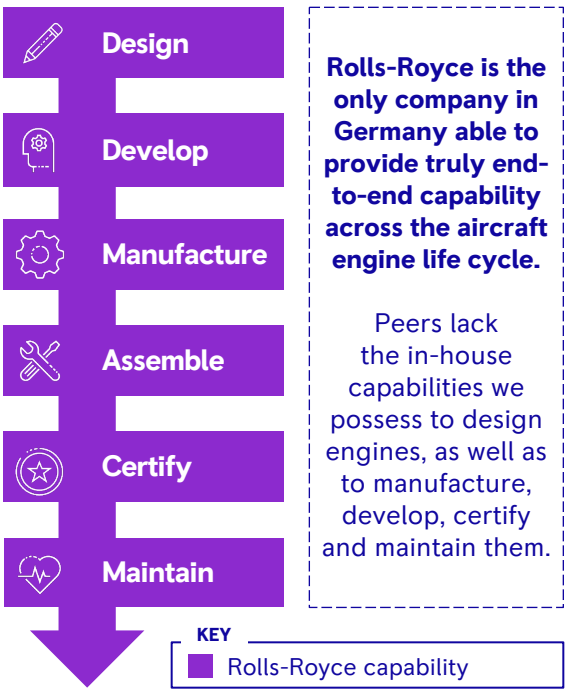
BUSINESS OVERVIEW
AEROSPACE GERMANY

Our German aerospace activities are headquartered in Dahlewitz, Brandenburg. We are Germany's only end-to-end jet engine integrator able to design, assemble, certify and maintain complete engine systems for civil aviation and defence platforms. Having delivered more than 9,000 aero-engines to date, we support Germany's strategic autonomy in gas turbine and aero-engine technologies whilst providing significant contributions to international exports.

We are recognised globally as world leaders, and our site in Dahlewitz is the birthplace of engines such as the BR700 and the Pearl engine family, which are amongst the most high-performing and efficient engines in business aviation today. We power aircraft for the world's leading airframers, such as Bombardier, Dassault and Gulfstream, and serve as a trusted long-term partner to customers including Lufthansa, the German Armed Forces and NATO. Our efforts have generated material export value for the German economy, playing a critical role in strengthening Germany's strategic position in the global export market.

3,200+ Rolls-Royce employees in Aerospace sector in Germany, 2024

7-9% Projected annual growth in aircraft in service with engines made by Rolls-Royce in Germany until 2030



Rolls-Royce is the only company in Germany able to provide truly end-to-end capability across the aircraft engine life cycle.

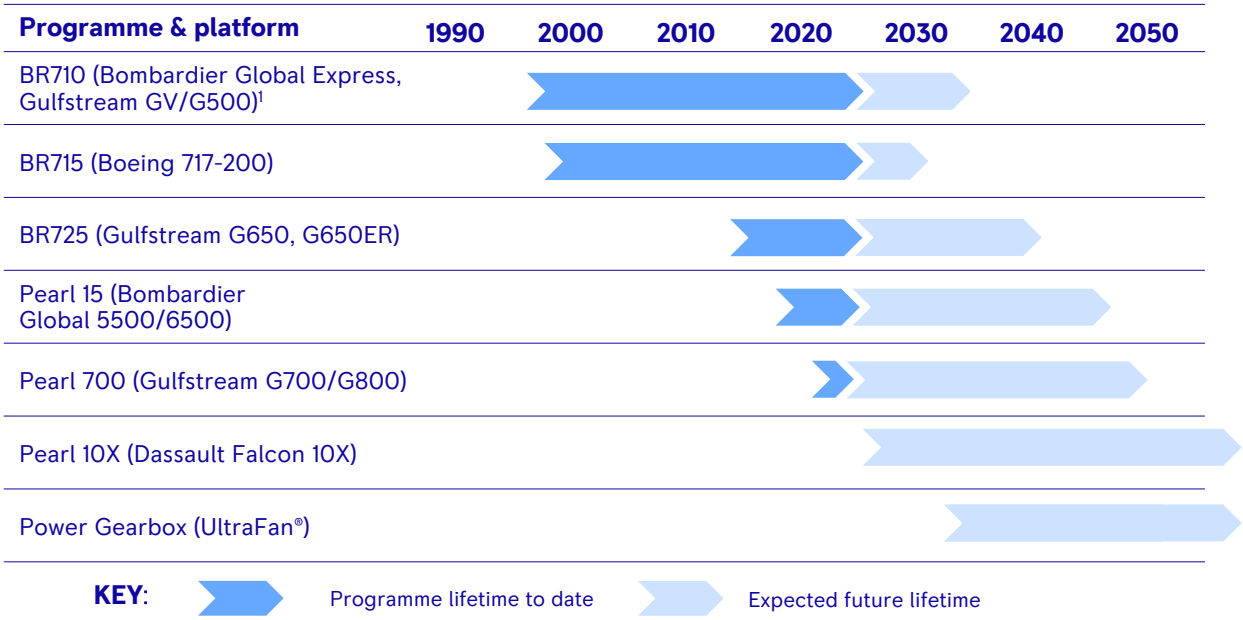
Peers lack the in-house capabilities we possess to design engines, as well as to manufacture, develop, certify and maintain them.

We are investing significantly in technologies such as the UltraFan® Power Gearbox for future widebody and, potentially, narrowbody applications. We serve both civil and defence jets from a shared industrial base, leveraging common infrastructure, engineering talent and testing facilities. This dual-use model ensures that each euro of our investment delivers greater value: strengthening Germany's global competitiveness in business aviation while reinforcing its sovereign capability in defence.

With over 2,400 employees at our sites in Brandenburg, we are one of the largest industrial employers in the state. For over 30 years, we have played a vital role in the regional economy, investing in local communities and nurturing talent across the former East. With the number of aircraft in service powered by engines from Rolls-Royce in Germany projected to grow by c.7-9% per annum in the next five years, and flying hours expected to reach c.120% of 2019 levels, we will continue to invest in these communities. Our recent c.€35 million investment in Dahlewitz enables us to recruit more than 100 new front-line operations roles and to significantly expand our MRO and OEM capability to meet future demand.

Decades of excellence in aviation

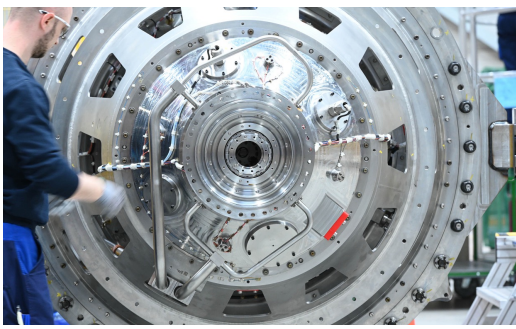
Our German-designed and produced engines power some of the world's most advanced aircraft platforms, securing Germany's place as a leader in civil aerospace in the global market.



CASE STUDY

Record breaker—Power Gearbox

Dahlewitz is home to the test and development centre for Rolls-Royce's Power Gearbox, a key component of the UltraFan® demonstrator programme, providing the technology for the next generation of fuel-efficient civil engines. The Power Gearbox set a world aerospace record with 87,000 horsepower while helping to make a next-gen UltraFan® based engine 25% more fuel efficient. With this and other technological breakthroughs, we are driving progress toward more sustainable aviation and our broader net-zero ambitions.





CASE STUDY

Market leader—The Pearl engine family

Rolls-Royce Pearl engines are the most advanced business aviation engines ever developed and are today's 'engine family of choice' in the very-long- and ultra-long-range markets. Delivering unmatched efficiency, thrust and noise levels, the Pearl family positions Germany at the forefront of global business aviation. As the country's only fully certified end-to-end integrator of modern gas turbine aero engines, we oversee the entire development, assembly and testing process at our Dahlewitz facility, maximising employment opportunities for the local community.

Note(s): 1. Non-exhaustive

As well as being a leader in the German civil aviation industry, our technologies also power some of Germany's most strategic and important military platforms, supporting national defence, NATO interoperability and European security. From airlift and fighter programmes to autonomous systems, Rolls-Royce Aerospace in Germany contributes directly to the strength of German and NATO armed forces, and to the sovereign capabilities they rely on for independent defence operations.

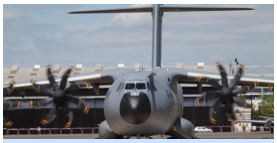
By combining advanced R&D, proven technological synergies between civil and defence aviation, and a robust pan-European supply chain, we have built a delivery model that responds quickly and reliably to Government needs. Our end-to-end engine capability means that we are uniquely positioned to deliver at speed and to help Germany and Europe meet challenging defence deadlines.



Eurofighter Typhoon

EJ200

2003-2045+



A400M Atlas

TP400-D6

2013-2050+



C-130J Super Hercules

AE2100D3

2024-2055+



Loyal Wingman

Advance2 core

2024-2050+

Our deep European industrial ties have enabled us to co-develop the Eurofighter Typhoon and A400M Atlas programmes with companies such as Avio (Italy) and Safran (France).

Alongside legacy programmes that continue to create jobs and deliver economic impact, we have teamed up with ITP Aero (Spain) to develop Europe's only purpose-built propulsion systems for large remote carriers.



CASE STUDY

Loyal Wingman engine—Europe's future combat air systems

Rolls-Royce and ITP Aero are jointly developing a next-generation engine for the Loyal Wingman programme—uncrewed systems designed to operate alongside manned fighter jets as part of Germany's and Europe's Future Combat Air System (FCAS).

Based on the proven Advance2 core (also used on the world-leading Pearl engines), the Wingman engine is designed for high performance, low observability and reliability in high-threat operational settings, where electronic warfare, anti-air defences and hostile access zones pose significant challenges.

Unveiled at the 2024 ILA Berlin Air Show, this pan-European, German–Spanish initiative is part of the Future Combat Air System programme, reinforcing Europe's drive for sovereign propulsion capability, highlighting Rolls-Royce's role in transferring civil innovation into strategic defence platforms and helping Europe develop the next generation of defence systems.

SUPPLIER OVERVIEW AEROSPACE GERMANY

Rolls-Royce Aerospace Germany sits at the centre of one of Europe's most advanced engineering ecosystems, supporting a highly skilled network of 580+ manufacturers, engineers and technology suppliers across Germany and the wider EU. From precision-machined components to turbine seal segments and sensors, our supply chain in Germany is critical to Germany's globally competitive aerospace sector, helping to deliver civil and defence programmes across Europe, securing sovereign European propulsion capability.

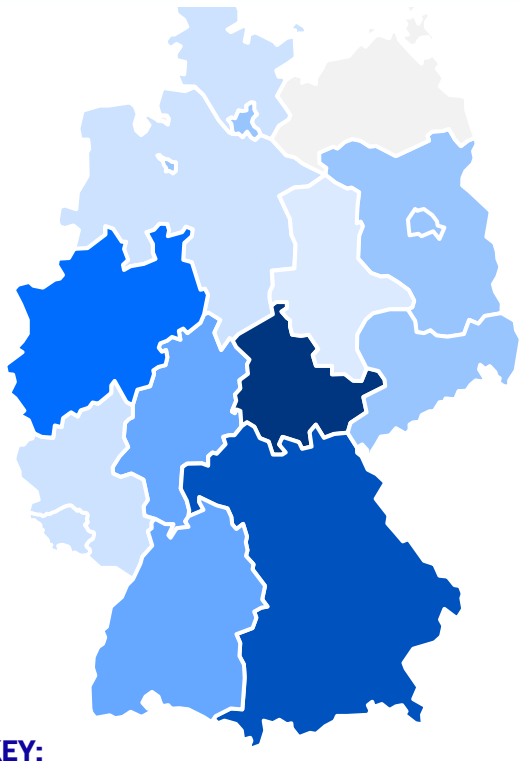
510+ German suppliers, 2024

€880m+ Rolls-Royce spending on German suppliers to its aerospace business, 2024

Rolls-Royce Group supply chain by region, 2024

In 2024, our aerospace supply chain covered 15 of 16 German states, with particularly strong footprints in Bavaria and North Rhine-Westphalia. Our supplier network includes both leading industrial champions and technology-led Mittelstand. We provide long-term stability to our supply chain partners, helping to sustain local employment, grow specialist manufacturing capacity and anchor advanced manufacturing in a highly productive Aerospace sector, which is increasingly becoming a key pillar of growth in the German economy.

Our focus on driving sustained German growth is reflected in our increasing Gross R&D investment and in our continued work with suppliers to build technical capability and future skills. We expect the number of aircraft in service powered by Rolls-Royce engines from Germany to grow by 7-9% YoY over the next 5 years. This requires additional investment and employment throughout our supply network to ensure that our production capacity is scalable. Our growth and investments are opening new export opportunities and creating additional opportunities for our supply chain partners, fuelling long-term job creation and industrial growth across Germany.



KEY:

- > €500m
- €100-500m
- €30-100m
- €5-30m
- €1-5m
- < €1m

580+

EU suppliers, 2024

€1.7bn+

Spent on EU suppliers, 2024

Rolls-Royce's German manufacturing capability is supported by a robust pan-European supply chain, with suppliers across Europe playing a role in delivering both civil and defence aero systems. Our suppliers span 17 EU member states, including France, Spain, Italy, Ireland, Romania and Poland. They contribute to key products such as the Pearl engine family, the EJ200 powering the Eurofighter Typhoon and emerging programmes like the Loyal Wingman, supplying some of the tens of thousands of parts needed to build our engines.

At a time of rising geopolitical uncertainty, this integrated European network ensures European sovereignty over the technology needed to defend the European Union. It enables us to deliver mission-critical systems at speed and to support Europe's industrial and strategic autonomy.



Supply chain spend, by country, 2024



€1.0m €900m



CASE STUDY

Aerotech Peissenberg

Since 1970, Aerotech Peissenberg has been at the cutting edge of industrial manufacturing, developing high-quality engine parts. Over the last decade, Aerotech Peissenberg has been one of Rolls-Royce's largest suppliers for engine parts in Germany. This relationship has been key to helping to drive Aerotech Peissenberg's growth, enabling the organisation to expand its manufacturing competencies to cover some of the most critical engine components, including compressors and turbine discs, and to apply aerospace-specific knowledge to grow its industrial gas turbine offerings. Having trusted, long-term clients like Rolls-Royce enables companies like Aerotech Peissenberg to invest with confidence, and thereby scale and grow, with Aerotech Peissenberg investing to double its capacity in recent years.

ECONOMIC IMPACT
AEROSPACE GERMANY

Rolls-Royce's activities in the Aerospace sector in Germany contributed an estimated €2.1 billion in GVA to the German economy in 2024, with a further €2.2 billion in estimated productivity uplifts from R&D spillover benefits. From Dahlewitz to Oberursel, and across a nationwide supply chain, our civil and defence operations support local economies, national exports and German industrial resilience.

€2.1bn Operational GVA impact, 2024

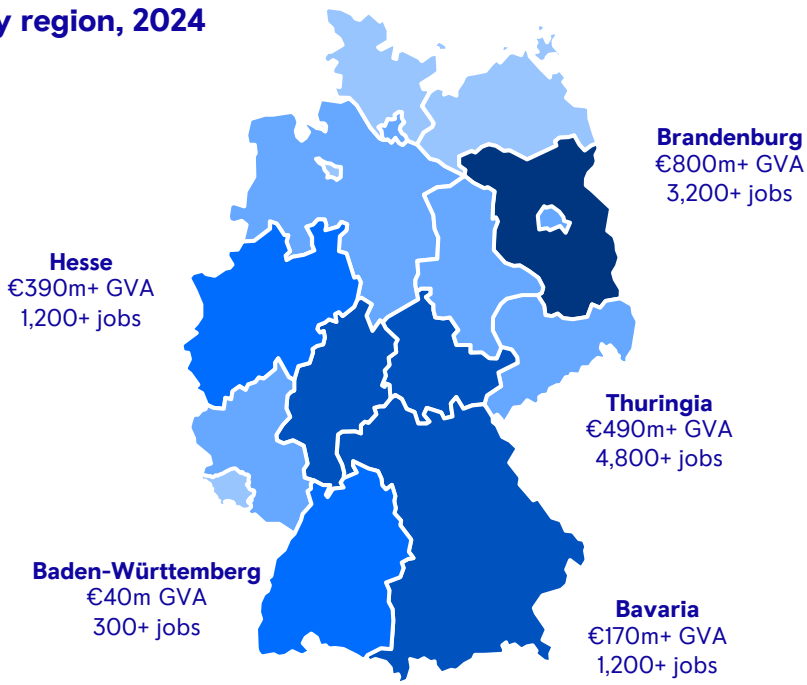
€2.2bn R&D spillover GVA impact, 2024



Rolls-Royce GVA impact by region, 2024

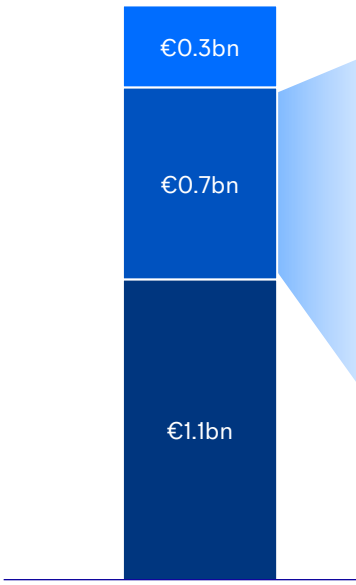
KEY:

- > €500m
- €100-500m
- €30-100m
- €5-30m
- €1-5m

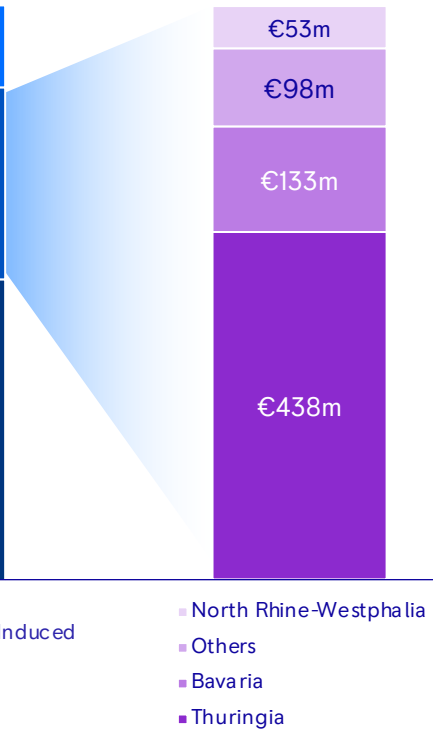


Our economic impact, generated directly through our operations and indirectly through our supply chain, reaches every federal state in Germany. We have a significant impact in the former East, where our operations generated €1.4 billion GVA in 2024—65% of our Aerospace activities' total economic contribution in the country. We are proud of the impact we have had in these historically underinvested regions, creating high-productivity job opportunities, training pathways and providing long-term security to our supply chain partners, underpinning long-term regional growth.

GVA by impact type



Indirect GVA impact by state



Our presence in Brandenburg and Hesse supports more than just industrial production; we support local communities and help shape the future of Germany's advanced manufacturing supply chain.

For more than 30 years, our suppliers have grown with us as we scale production, enter new markets and undertake joint investment programmes to maintain the world-class quality of our engines and components.

As increasing demand drives the growth of our business, more capacity and technology investment will be required to help us deliver industry-leading engines globally. We provide a secure long-term platform for our suppliers to make long-term strategic investments, which, in turn, generates significant long-term impacts in the economy, driving sustainable growth, creating high-productivity jobs and positioning Germany as a world-leading hub for engine manufacturing.



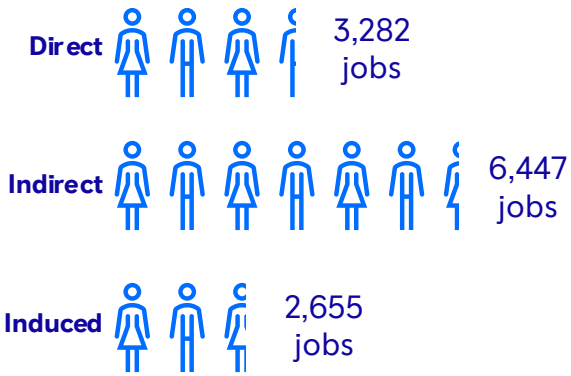
CASE STUDY

Investing in the future

N3 Engine Overhaul Services, a joint venture between Rolls-Royce in Germany and Lufthansa Technik, is undergoing a €150 million expansion at its Arnstadt facility. The company has developed six vocational programmes with recognised professional qualifications, reskilling over 250 people since 2022. It expects to create 200 new roles in 2025 alone, on top of its 1,000+ existing employees from 28 nations. Supported by the German Government's short-time work schemes during the pandemic, N3 successfully retained its team and is now shifting from recovery to growth. Following a record-breaking performance in 2024, the site is set to overhaul up to 250 engines annually, nearly doubling its previous capacity. This expansion will reinforce Germany's leadership in civil aerospace MRO and provide crucial support to Thuringia's transformation into a centre for high-value manufacturing.

EMPLOYMENT IMPACT AEROSPACE GERMANY

National employment supported by impact type, 2024



Rolls-Royce employs almost 3,300 people across the aerospace sector in Germany in high-skilled roles. These experts underpin sovereign capability in both civil and defence sectors. As we have grown, so has our workforce, and we are proud to be one of the largest industrial employers in South Brandenburg.

We deliver highly skilled and high-paying jobs. With over 61 nationalities and 17% of employees being non-German, our diversity is both a competitive strength and a cultural asset. We are also continuing to invest in our workforce, with over c.€35 million earmarked to expand our capacity in Dahlewitz. As part of this, we are recruiting more than 100 new frontline operations roles by 2026.

12,300+ jobs Total national employment supported by Rolls-Royce aerospace activities in Germany, 2024

€802m+ Employee remuneration supported by Rolls-Royce aerospace activities in Germany, 2024

2.8x Approximately 2.8 German jobs are supported by every Rolls-Royce Aerospace Germany employee



61 Nationalities represented amongst our direct German Aerospace employees

€1.0m Spent on training in 2024

Employment supported by impact type, top three states, 2024

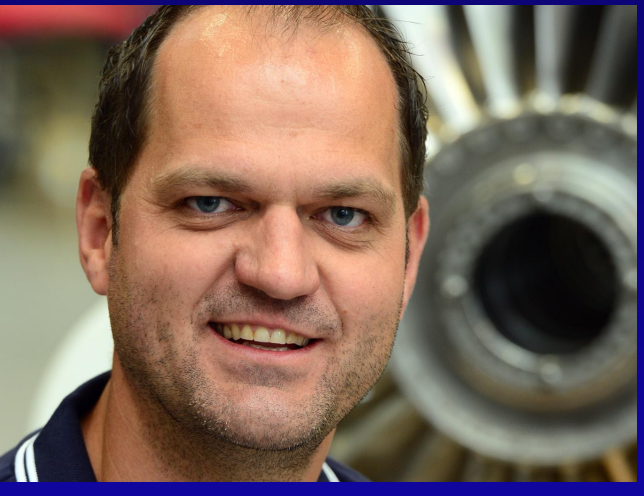
Region	Direct employment supported	Indirect employment supported	Induced employment supported	Total employment supported
Brandenburg	2,427+	98+	697+	**3,222+**
Hesse	823+	145+	274+	**1,242+**
Thuringia	8+	4,290+	517+	**4,815+**

We spend more on suppliers in Thuringia than in any other state. As a result of our contracts, we support over 4,290 high-tech jobs through our supply chain in the region.

Through the economic activities of the employees we support, both directly and indirectly, we sustain over 690 additional jobs in Brandenburg.

74% of our workforce is based in former East German regions with lower productivity levels than the national average. Despite this, our employees are substantially more productive than the German manufacturing average, helping to create high-productivity, high-skill ecosystems in the former East, contributing to closing the productivity gap.

With over 100 apprentices currently in training across Dahlewitz and Oberursel, our apprenticeship programmes span disciplines such as aircraft mechanics, machining technology and metalworking. We support further education through dual-study degrees and technical programmes with financial backing. Our approach delivers results: more than 75% of our Oberursel site managers began their careers as apprentices. Of the 760+ apprentices that have joined us since 1990, over 380 still work for Rolls-Royce, demonstrating the long-term value and career progression our programmes provide. Most of our apprentices join from within a 50 km radius of our sites, underscoring our contribution to regional employment and local skills development in Brandenburg and Hesse.



CASE STUDY

Apprentice to leader: Tim's career journey

Tim began his career as an industrial mechanic apprentice at Rolls-Royce, completing his training early before taking on roles as a fitter and tooling specialist. Supported by Rolls-Royce, he pursued further education alongside work, qualifying as a team lead and later progressing into engineering. After a decade of hands-on and leadership experience, Tim transitioned into training and now leads the Apprenticeship Centre in Oberursel. His career reflects Rolls-Royce's commitment to nurturing talent through practical experience, continuous learning and clear pathways to leadership.

OUR IMPACT IN BRANDENBURG
AEROSPACE GERMANY



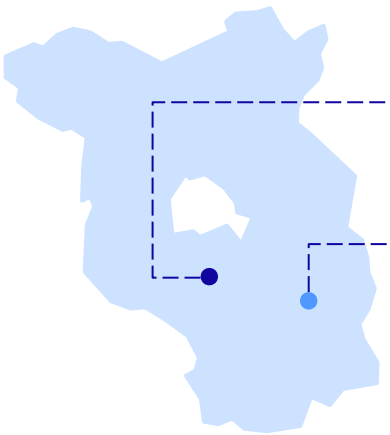
Brandenburg is the Rolls-Royce aerospace hub in Germany

Rolls-Royce contributed over €820m in local economic impact across Brandenburg in 2024 and supported over 3,180 jobs in the region. As one of the largest industrial employers in South Brandenburg, we play a vital role in bringing prosperity and growth to this important part of the historical East.

Rolls-Royce Aerospace operations and impacts in Brandenburg

€280m+

Total employee compensation supported in Brandenburg, 2024



We employ c. 2,400 employees across Civil and Defence at our **Rolls-Royce Dahlewitz HQ**, which is also home to our full-engine integration facilities, R&D hub and apprenticeship and training centre

Rolls-Royce supports research at **the Brandenburg University of Technology,** aimed at advancing Multidisciplinary Process Integration

Brandenburg is a key focus of the German Government's regional development strategy to reduce economic disparities in former coal regions through targeted investment in advanced industries. As one of the largest employers in the region, Rolls-Royce has been a key participant in this effort. Alongside our almost 25-year research partnership with Brandenburg University of Technology Cottbus-Senftenberg, a significant share of the €45 million+ we have invested in Germany over the past three years has been directed to Dahlewitz. In 2024, our operations and investments supported over 690 jobs in Brandenburg across construction, equipment manufacturing and logistics, in addition to over 2,400 of our own employees.

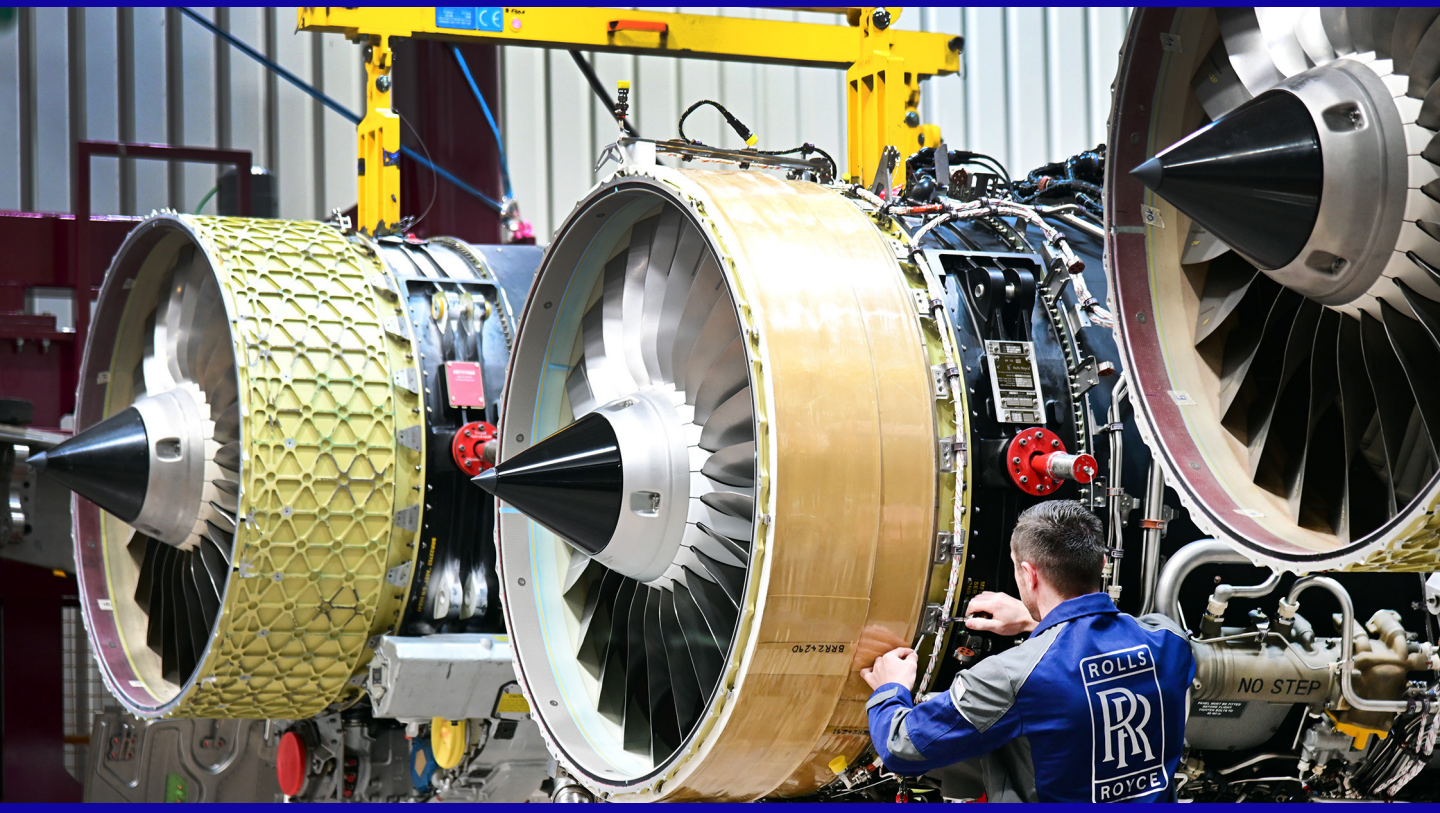
€820m+

GVA generated by Rolls-Royce Aerospace in Brandenburg, 2024

3,200+ jobs

Total employment supported by Rolls-Royce Aerospace in Brandenburg, 2024

We are a high-salary employer, with **average salaries more than 50% higher than manufacturing jobs in former East German states** and more than 10% above the national manufacturing average. In a region where average manufacturing salaries are 34% lower than the national average, we are helping the local community combat historical under-investment and economic disparities.





CASE STUDY

Global growth driving local opportunity

To meet rising global demand in aviation, Rolls-Royce is scaling up its production and servicing capacity in Dahlewitz. With a planned c. €35 million investment and over 100 new recruits, we are expanding support for Trent 1000, and, from 2026, for the assembly and testing of the Trent XWB-84, the world's most efficient engine in service. This is proof of the local opportunities presented by export-led growth, and we will continue to invest in enabling that growth.

R&D IMPACT
AEROSPACE GERMANY

Germany is a key intellectual property hub for the Rolls-Royce Group, playing a crucial role in enabling cross-border and cross-sector knowledge transfer. It plays a key role in advanced research in the Group, allowing it to leverage innovation across global markets and to collaborate internationally, particularly within the EU. This includes strategic projects like the Loyal Wingman programme, delivered in partnership with Spanish company ITP Aero.

Aerospace Germany R&D stats



€3.1bn
Gross investment in R&D, 2015-2024



690+
Novel patents first filed by Rolls-Royce Deutschland in Germany over the last decade



4
University Technology Centre partnerships



25+
R&D research partners across Germany

Rolls-Royce sits at the centre of Germany's aerospace R&D ecosystem, acting as the nexus between in-house research, academic institutions and industry partners. Working with leading universities and research centres, we help translate German research excellence into market-leading propulsion capabilities, building a strong STEM talent pipeline for one of Europe's most strategic industrial sectors. Our growing aerospace R&D footprint in Germany makes a critical contribution to strengthening Europe's sovereign capability in aero engines across both business aviation and defence.

Our R&D efforts have delivered tangible results: our Pearl engines are already exceeding current and future sustainability thresholds. We work closely with our customers, such as Bombardier, Gulfstream, the German Armed Forces and NATO, as well as a network of 580+ industrial and SME suppliers across Europe, co-developing next-generation technologies and components for our best-in-class engine platforms.

CASE STUDY

Planetary Power Gearbox—Advancing Germany's R&D leadership

With over €80 million invested in testing infrastructure alone, the Planetary Power Gearbox project positions Germany at the centre of long-term aerospace technology development. Rolls-Royce's Dahlewitz facility is home to the world's most powerful aerospace gearbox, a key component in the UltraFan® demonstrator programme. The Planetary Power Gearbox, developed and tested in Germany, has broken an aerospace world record with over 87,000 horsepower transmitted. This milestone cements Dahlewitz's role not only in civil engine assembly, but also in advanced propulsion R&D. The gearbox enables next-generation efficiency by decoupling turbine and fan speeds and reflects Germany's growing contribution to future low-emission aviation platforms.



Over the past 30 years, Rolls-Royce has invested more than €6.5 billion in research programmes and supporting infrastructure in Germany. This includes c.€800 million invested in R&D over the past three years, and we will continue to invest in performance improvements across key programmes such as nacelle design, engine core optimisation and the UltraFan® Power Gearbox. These industry-leading developments are driven from our Dahlewitz site and supported by our Mechanical Test Operations Centre, specialising in evaluating mechanical components in high-performance applications. These technologies directly feed into the Pearl engine family, Germany's most advanced business aviation platform, and emerging defence systems such as the Loyal Wingman.

By integrating civil and defence R&D, Rolls-Royce maximises the value of every euro invested, enhancing fuel efficiency and lifecycle performance in civil aviation, while advancing sovereign defence capabilities such as the Eurofighter EJ200, the F130 and future remote carriers. These dual-use technologies reinforce Germany's strategic leadership in European aerospace, support the efficient delivery of high-value exports and keep the nation at the forefront of next-generation materials and propulsion technologies across both sectors.



CASE STUDY

Next-gen efficiency—Scaling Pearl for the Falcon 10X platform

Rolls-Royce in Germany is leading the development and testing for the Pearl 10X, which is set to power the Dassault Falcon 10X, the most advanced ultra-long-range business jet in its class. The engine features advances in low-emission combustion, noise reduction and lightweight materials, many of which have emerged from German-led research partnerships with KIT Karlsruhe and TU Dresden. These engines are expected to come into service in the coming years, with the Pearl 10X shaping the future of more sustainable business aviation and embedding next-generation R&D capability in Dahlewitz whilst highlighting Rolls-Royce's broader emissions compliance and SAF readiness.



APPENDIX

METHODOLOGY, DATA SOURCES, DEFINITIONS

Impact metrics

This report quantifies Rolls-Royce's impact across Germany in terms of gross value added (GVA), employment supported, employee compensation and tax contributions. These indicators measure the economic activity supported by Rolls-Royce's operations, supply chains and capital investments.

- Gross value added (GVA): Represents the value generated after subtracting intermediate inputs, serving as a proxy for GDP. It follows IMPLAN's National Income Approach
- Employment: Reflects the total number of jobs supported, both full-time and part-time
- Employee compensation: Includes wages, salaries and employer-paid benefits

Types of impact

Three types of impact are considered:

- Direct: Activity within Rolls-Royce's own operations
- Indirect: Impact generated through spending on suppliers and upstream activity
- Induced: Effects of spending by employees of Rolls-Royce and its suppliers in the wider economy

Modelling approach

Input-output modelling was conducted using the IMPLAN model, augmented by some manual analysis, across all regions to estimate the economic effects of Rolls-Royce's activities. Financial entities from Rolls-Royce's HFM structure were simplified to remove non-revenue-generating entities and exclude those outside priority regions. Entities were assigned to specific countries and consolidated where appropriate. To prevent double-counting, underlying external revenue was used for most units. For Power Systems, total revenue was used to align with annual reporting and to ensure full impact coverage in Germany. Gross Operating Surplus was approximated using Operating Profit + Depreciation for each entity, apportioned based on headcount. When compensation data was unavailable, facility-level averages were used. Remote workers were distributed according to each entity's headcount split.

Readers should note that, whilst the data contained in this Economic and Social Impact report is true to the best of Rolls-Royce's knowledge and belief, there may be differences in the methodology and/or data sources set out in this report and in the methodologies and data sources used in the production of other Rolls-Royce publications, including Rolls-Royce's current or previous Annual Report and accounts. It may not, therefore, be possible to directly correlate data sources in this report with those in other reports provided by Rolls-Royce.

Supply chain and investment modelling

Supply chain impacts were calculated using supplier invoices to determine total external supply chain spending, excluding any inter-company or joint-venture spending.

To improve accuracy, global supplier spend was manually assigned to regions based on each business unit's revenue split. Intermediate Inputs were zeroed out in IMPLAN, and outputs were adjusted accordingly. Spending was input as an industry spending pattern event with 100% Local Purchaser Percentages. Power Systems used commodity-level data; Civil and Defence used the aircraft engine manufacturing profile.

Capital investment for 2024 was modelled using internal data on Rolls-Royce facilities, with expenditures assigned as industry or commodity output events by location.

R&D spillover

A comprehensive body of economic research has demonstrated that R&D spend boosts productivity at the national level via spillover impacts. This provides the conceptual basis for estimating the wider effects of Rolls-Royce's own R&D investment. This is above and beyond the operational impact of Rolls-Royce's activities on GVA as calculated via our input-output analysis using IMPLAN. To estimate the impact of Rolls-Royce's R&D spend, we calculated cumulative local Rolls-Royce gross R&D investment in Aerospace and Power Systems R&D over the past 10 years, adjusted for inflation (adjusted using the GDP deflator to 2024 prices). We then applied multipliers for aerospace and other sectors based on estimates of these spillover effects from published literature (by authors including the ATI, UKRI and Frontier Economics). The approach assumes consistent spillover benefits across geographies (on a per-unit currency invested basis), which may modestly overstate or understate impacts depending on local absorptive capacity, and does not account for transnational spillover. These effects are conceptually and economically separate from those resulting from operational impacts, and therefore should not be considered together, although there may be some modest degree of overlap. Any such overlap is unquantified but expected to be immaterial relative to total estimated impacts. We do not adjust for any dampening of spillovers arising from confidential aspects of R&D activity, although such effects are expected to be limited.

Data sources

Data used in this analysis was provided by Rolls-Royce and includes employment numbers, employee compensation, financials, supplier spending and capital investment values across its business units and global footprint. These data inputs were specific to the 2024 calendar year and were used to model direct, indirect and induced economic impacts at regional and national levels. Where employee compensation or operational data was unavailable, facility- or entity-level averages were used. All modelling reflects Rolls-Royce's business-as-usual operations in 2024, without reference to potential competitive displacement or alternative use of resources.

Currency and regional scope

All economic values are presented in 2024 real terms, using IMPLAN deflators and the following average exchange rates:

- 1 GBP = 1.2781 USD
- 1 EUR = 1.0822 USD
- 1 GBP = 1.1812 EUR

The estimates of Rolls-Royce's operational impacts refer to Rolls-Royce's gross impacts. As such, it does not consider any potential resource redeployments in Rolls-Royce's absence.

Other

Rolls-Royce commissioned Teneo to conduct this economic and social impact assessment and produce this report.

GLOSSARY

General key terms

Term	Meaning
Advanced Manufacturing	Sector focused on the use of innovative technologies and processes to improve the design, production and performance of complex products, often involving automation, digital tools and precision engineering
AMRCs	**Advanced Manufacturing Research Centres;** collaborative research facilities that bring together industry and academia, typically in high-value sectors
AMR	**Advanced Modular Reactor;** term for the next generation of nuclear reactors (Generation IV), designed for improvements in safety, efficiency, as well as making use of modular-build principles
ATI	**Aerospace Technology Institute;** a UK Government-funded body that supports strategic aerospace R&D projects to maintain national competitiveness
BESS	**Battery Energy Storage System;** technology that stores electrical energy for later use, enhancing grid stability and supporting renewable energy integration
DoD	**Department of Defense;** the U.S. federal department responsible for coordinating and supervising all agencies and functions related to national security and the armed forces
E-Frac	**Electric Fracturing;** method of fracking, using electric-powered equipment rather than traditional diesel-powered equipment
E-Methanol	Methanol produced using renewable electricity, typically via the electrolysis of water to generate hydrogen, which is then combined with captured carbon dioxide
GDP	**Gross Domestic Product;** a measure of the total economic output of a country, reflecting the value of goods and services produced
GVA	**Gross Value Added;** represents the value generated after subtracting intermediate inputs, serving as a proxy for GDP
HVO	**Hydrotreated Vegetable Oil;** renewable diesel fuel produced from vegetable oils, animal fats or used cooking oil, and can often be used interchangeably with existing diesel engines and infrastructure
IHK	**Industrie- und Handelskammer (German);** the German Chambers of Commerce and Industry, which oversee vocational training programmes in Germany
ITAR	**International Traffic in Arms Regulations;** U.S. regulations controlling the export and import of defence-related articles and services for national security purposes
MoD	**Ministry of Defence;** the UK government department responsible for defence policy and the armed forces
MRO	**Maintenance, Repair and Overhaul;** the process of maintaining and restoring equipment to ensure safety, reliability and operational efficiency
NAMRC	**Nuclear Advanced Manufacturing Research Centre;** a UK research centre focused on developing manufacturing techniques for the nuclear industry
OEM	**Original Equipment Manufacturer;** a company that produces parts, components, or systems that are incorporated into another company's finished product
OBR	**Office for Budget Responsibility;** an independent UK watchdog that produces economic and fiscal forecasts
ONS	**Office for National Statistics;** the executive office of the UK Statistics Authority, being the UK's largest independent producer of official statistics and economic data
RAF	**Royal Air Force**; the UK air and space force
SAF	**Sustainable Aviation Fuel;** aviation fuel produced from renewable or waste sources, with reduced emissions, whilst often being interoperable with standard aviation fuel, especially on newer engines
SME	**Small and Medium-sized Enterprise**
SMR	**Small Modular Reactor;** category of compact and simplified nuclear reactors designed for greater scalability and cost-effectiveness, achieved typically through standardised, factory-built modules

Term	Meaning
STEM	**Science, Technology, Engineering and Mathematics;** academic disciplines and career fields critical to innovation and industrial development
UTC	**University Technology Centre;** scheme of collaborative research partnerships between Rolls-Royce and academic institutions focused on engineering innovation
VTOL	**Vertical Take-off and Landing**
WTO	**World Trade Organisation;** an intergovernmental body regulating international trade

Programmes and schemes

Programme	Description
AUKUS	A trilateral defence pact formed in 2021 between Australia, the UK and the U.S. to strengthen Indo-Pacific security. It includes support for Australia's nuclear-powered submarines and collaboration on technologies like AI, quantum and hypersonics
FLRAA (Future Long-Range Assault Aircraft)	A U.S. Army programme to develop a next-generation vertical lift aircraft, intended to replace the Black Hawk helicopter
Europe's Future Combat Air System (FCAS)	A collaborative European defence programme, primarily involving France, Germany and Spain, to develop a next-generation air combat system, including manned and unmanned aircraft
MissionCare™	Rolls-Royce's engine service programme offering predictive maintenance and comprehensive lifecycle support for military platforms and customers
Tempest	The Tempest programme began in 2018 as the UK's sixth-generation fighter jet initiative, later merged into the Global Combat Air Programme (GCAP). "Tempest" remains a commonly used name within the UK for both the programme and the fighter aircraft being developed under it
TotalCare®	Rolls-Royce's engine service programme offering predictive maintenance and comprehensive lifecycle support, charged on a fixed cost per flying hour basis
UltraFan®	Rolls-Royce's next-generation geared turbofan engine programme, focused on powering the next generation of widebody, and potentially narrowbody, aircraft

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