

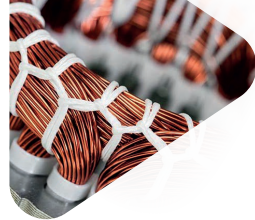
The Advanced Propulsion Centre UK Impact Report 2024



Funding
Collaboration
Expertise



ADVANCED
PROPULSION
CENTRE UK



Foreword

Ian Constance | CEO, Advanced Propulsion Centre UK

For over a decade, the Advanced Propulsion Centre UK (APC) has been at the forefront of driving innovation in the automotive sector. Our collaborative efforts, spanning government, industry and academia, have yielded remarkable results. But beyond the technological advancements in our journey to net zero and economic growth, there is a fundamental principle that underscores our work: the value of public sector intervention.

The APC stands as a testament to the effective utilisation of public funds. By strategically investing in innovative research, development and industrialisation, we have not only bolstered the British economy but also propelled our nation toward a sustainable future. The impact of our collective endeavours reverberates far beyond the automotive industry – it resonates with every citizen, every community and every commitment to net zero.

As we navigate the challenges of the 21st century, the APC remains steadfast in its mission to sustain and grow UK long-term automotive capability and investment to generate safer, smarter, more sustainable and affordable mobility for all. We recognise that public funds are not merely resources; they are trust placed in our hands – a trust to drive progress, foster collaboration and shape a cleaner, greener tomorrow. Our success story is one of purposeful partnerships, where public investment ignites private innovation and where societal well-being intersects with economic prosperity.

As a nation, we are globally renowned for our pioneering technology, and we already hold an established track record for zero-emission innovation. Our aim at the APC is to ensure that this rich legacy of innovation continues, and UK capability grows. We facilitate funding, provide collaboration opportunities and share industry expertise to UK-based businesses of all sizes. We are at the heart of enabling a zero-emission future by supporting early and late-stage collaborative research and development projects and scale-up feasibility studies.

We are also proud to play a leading role in delivering large-scale capital transformation projects, such as

AESC Envision's gigafactory in the North-East and the associated work we are doing to establish a sustainable UK battery supply chain, creating thousands of new jobs and underpinning our industry transformation. This transformation includes helping businesses to adapt and evolve their technology, as highlighted through our support of Ford Halewood's recent transition from manufacturing components for internal combustion engines to become a global centre of excellence for electric drivetrain production.

Connecting industry, government and academia, we are uniquely placed within the zero-emission funding ecosystem to make key introductions and facilitate the collaboration that must happen to drive UK global competitiveness. Technology agnostic, we provide independent analysis; offering industry insights to identify trends, supply chain risks and opportunities and create essential roadmaps to help organisations navigate their way through the most promising R&D pathways and commercial decision-making, accelerating the journey to net zero by 2050.

In this Impact Report, we share more detail about the essential work we have completed to date to establish a world-leading, zero-emission automotive value chain here in the UK, safeguarding and creating local jobs and evolving and onshoring vital technologies, including raw material extraction, processing and end-of-life circularity. The impacts we have made on our journey to date are impressive and are an exemplar of what can be achieved when public and private sectors unite with a shared vision. Together, we accelerate progress, redefine possibilities and pave the road toward a net-zero future.

However, it is not job done. There is much more to do to continue supporting the growth of a sustainable, domestic supply chain, focused on developing net-zero technology for a rapidly evolving market.

We thank all our business partners, past, present and future, for joining us on this transformative journey.

A decade of achievements¹



264

low-carbon projects



58,000

jobs forecast to be created or safeguarded



More than

£1.55 billion

in government and industry funding



working with over

492

project partners



ADVANCED PROPULSION CENTRE UK



410 million

tonnes of CO₂ savings projected



£2.05bn

of additional UK investment created



More than

10 years

of success



[Discover more about our impacts and how you can get involved.](#)



Department for Business & Trade

The Advanced Propulsion Centre UK (APC) operational costs are funded by the UK Government's Department for Business and Trade (DBT) and industry contributions. DBT is the ministerial department for economic growth, supporting businesses to invest, grow, and export, creating jobs and opportunities across the country. Our combined mission is to accelerate the development of advanced propulsion technologies to reduce greenhouse gas emissions, minimise embedded carbon, and improve air quality.

¹ Figures based on APC project portfolio data, across CR&D, NVN, TDAP, and academic community activity. Data comes from APC research and development funded projects awarded between 2013 and March 2024.



Our impact across the UK

We boost businesses across the UK, from the smallest SME to the biggest multinational. Projects supported have not only led to exciting and innovative new technologies, but they've also helped to create jobs, grow local economies and give new life and purpose to communities across the region. These maps show where and how some of these areas have benefitted from APC involvement.

Importantly, we do more than just facilitate funding for our project partners. Throughout every project, including those overleaf, we provide a unique blend of expertise and experience at every step of the innovation and industrialisation journey. From conception to completion, our team work closely with businesses to assist each project towards its envisioned future.

Top three grant regions²

Grant funding by region	Grant total
West Midlands	£235m
South East England	£122m
East Midlands	£113m

Top three partner distributions by region

Region	Total partners
West Midlands	66
South East England	52
East Midlands	37

Salary uplift

Average UK salary 2023
£34,963

Average salary post APC-funded project
£42,383

Average APC-funded post-project salary vs average UK salary
+21%

² 80% of funding has been awarded to projects outside London and the South East. Data on this page encompasses 2013 to March 2024 unless otherwise stated.



Wrightbus
Ballymena, Northern Ireland
Developed a single deck hydrogen fuel cell concept demonstrator bus.



JLR
Warwickshire, England
Developed a state-of-the-art compact Electric Drive Unit (EDU). Enabled the anchoring of manufacturing and supply chain of the EDU within the UK.



Meritor
Cwmbran, Wales
A new integrated e-Powertrain system for heavy duty vehicles including gearbox, brakes, motors and inverters.

APC project partners

- Large³
- Small and medium enterprises
- Academic / Research and Technology Organisations

³ Over 250 employees. Map not drawn to scale. Taken from Office for National Statistics Administrative Boundary. Regional lines shown are an approximate guide.



Danfoss Scotland Ltd
Scotland
Development of a digital displacement hydraulic pump to deliver significant fuel savings and productivity benefits for off-highway vehicles.

AESC

AESC
Sunderland, England
Investing in a pioneering battery facility to create an electric vehicle hub.



Toyota
Derby, England
Creating the first-ever electrified, hydrogen fuel cell Toyota Hilux pick-up truck.



Ariel
Somerset, England
Creating a cutting-edge, extreme-performance, electric supercar – HIPERCAR.



CNH Industrial
Basildon, England
The launch of the world's first fugitive methane-powered tractor – built in the UK.



Investing in the UK

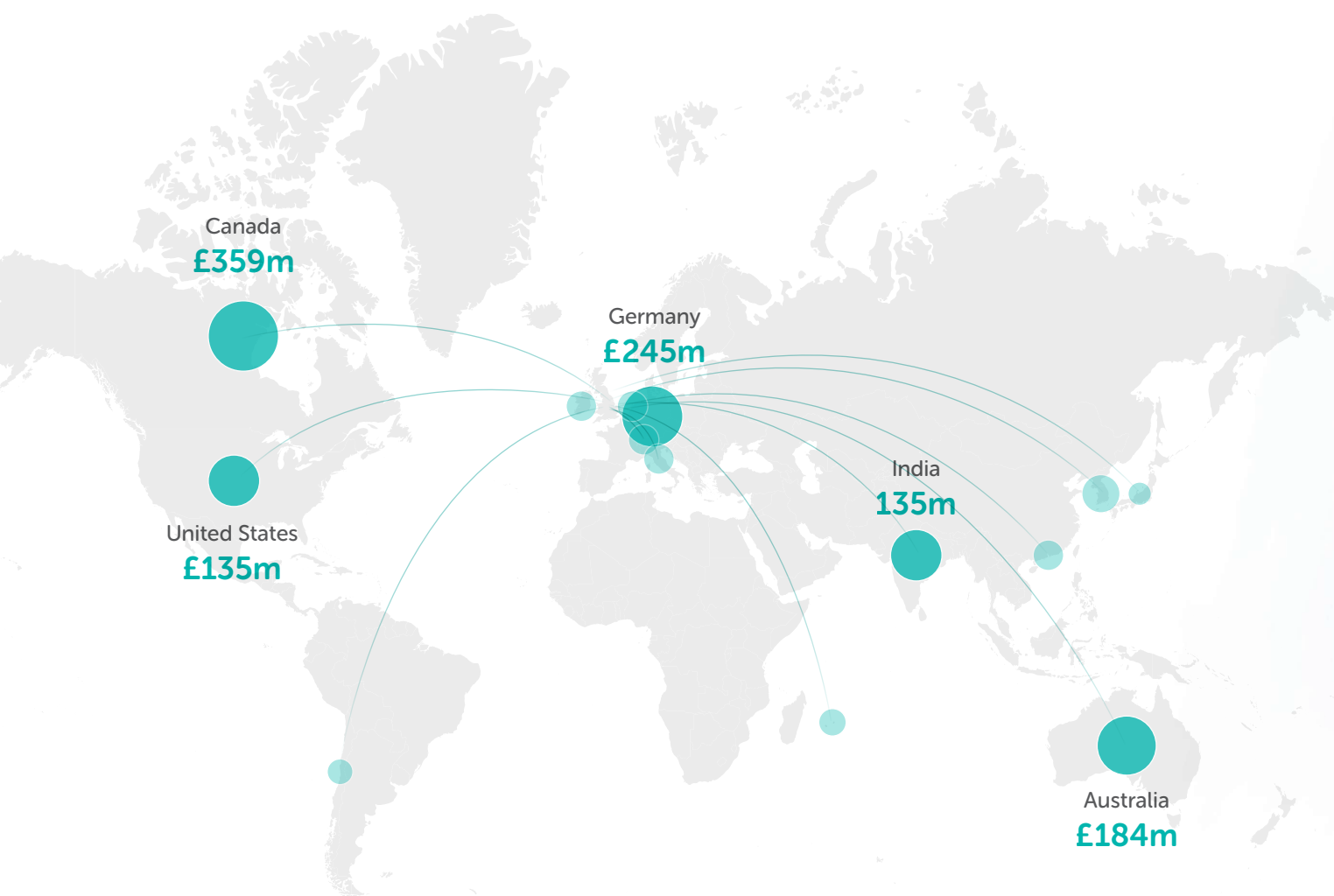
Not only does our work have real-world impacts in the UK, but it also helps lead the way for UK businesses across the globe. Work supported by the APC through the various funding streams, our collaboration and our expertise, helps to industrialise green technologies, build supply chains and grow business.

From the roadmaps we produce on behalf of the Automotive Council to the UK Pavilions we organise around the world on behalf of the Department for Business and Trade to showcase the latest automotive innovations;

the red carpet visits we facilitate to demonstrate the UK's competitiveness and the connections we make to explore new business opportunities – these are just some of the tangible benefits we provide in terms of economic growth and development.

This positions the UK in the global mindset as an open, receptive and forward-thinking place for automotive development and investment. As the data here shows, the APC supports pioneering UK companies, who go on to attract major investment from global organisations.

Attracting investment: top five Foreign Direct Investment and acquisition sources⁴



⁴ Figures are foreign direct investment amounts that companies who have received funding facilitated by APC have attracted after receiving government funding.

Inward FDI flows into companies who have received funding facilitated by APC



£1.2bn

Overall inward FDI flows into companies who have received funding facilitated by APC.

£ for £ investment benefit

For every £1 of government grant, funded companies have gone on to attract £3 total investment (of which £1.70 is FDI).



Did you know?

For every £1 of APC-facilitated grant, the UK economy realises a benefit of £12⁵



⁵ This £ for £ is an APC calculated Net Present Value benefit for collaborative research and development competitions. The calculation includes; grant funding, the incremental benefit from jobs retained and created (when compared to the average salaries in that postcode), and the additional private investment as a result of the grant funding.



Funding UK innovation

Facilitated by the APC, government funding enhances the UK as a leading destination for the research and development of cutting-edge green technologies, building supply chains and growing the economy. We have accelerated progress in the transition to net zero. The breadth of the funding portfolio enables businesses of all sizes to benefit from our funding, collaboration and expertise.

CR&D
Collaborative
Research & Development



Supporting innovators to transform prototype technologies into production-ready solutions

Collaborative Research and Development (CR&D) funding and expertise supports late-stage R&D projects in implementing new propulsion technologies and processes within the automotive sector, including passenger car, bus, off-highway and heavy duty vehicles.

Did you know?

56,491 jobs are forecast to be created or safeguarded through CR&D projects. That's enough to fill the O2 arena nearly three times over.⁶

⁶ Data comes from APC CR&D projects between 2014 – March 2024.
⁷ Data comes from ATF investment awarded between 2020 and March 2024

Spotlight



Trident project

'With the help of the APC, through this project, we've already created 17 jobs and we will be creating 110. We've doubled turnover in one business, and we've created a standalone business that will be aiming to turn over £20 million within the first five years of trading. We've engaged relationships with a number of academic institutions, we've filed six patents, and we've garnered a great relationship with a global OEM in the automotive sector.'

Neil Dickinson
Chief Technology Officer,
Holdson

[Discover the case study video in full](#)



ATF
Automotive
Transformation Fund

Scaling up the industrialisation of an electrified supply chain

Designed to support strategically important capital and R&D investments in the UK, the Automotive Transformation Fund (ATF) provides funding and expertise for large-scale, capital-focused projects in key electric vehicle technology areas.

Did you know?

The £196m of ATF capital grant funding has attracted a total forecasted investment of £1.28bn into the UK, with a matched-funding from the companies equal to £1.09bn.⁷

TDAP
Technology Developer
Accelerator Programme



Helping SMEs accelerate early-stage transport technology concepts to market

Technology Developer Accelerator Programme (TDAP) supports SMEs, whether start-ups, spinouts, or more mature organisations, who have an early-stage transport technology concept and want to accelerate their route to market. TDAP provides up to £170,000 of combined grant funding, technical support and business mentoring to each successful applicant. Over the past nine years, TDAP has supported over 100 founders and helped to raise over £300 million of equity.

Did you know?

Businesses who have completed TDAP have accelerated their route-to-market by an average of 19 months.

Spotlight

Ford Halewood

'We were in a position to look at our facilities in the UK and determine how they could be the best facilities within Ford of Europe to produce e-drives. We selected our Halewood site, which was a transmission site, working with the APC, through an ATF feasibility competition. It managed to get us to the point where we could confidently predict that this was the best place to make e-drives for our vehicles in Europe.'

Chris White
Chief Engineer, Manufacturing
Engineering, Ford Motor Company
[Discover the case study video in full](#)



Spotlight

Echion Technologies

'TDAP helped us to define our value proposition, find our target market and position in the value chain and refine our business plan which enabled us to raise £1.5m private investment. We have recently raised a further £29m in our series B funding round. I would strongly recommend TDAP when you are a young company with an exciting new technology.'

Jean De La Verpilliere
Co-founder and CEO,
Echion Technologies
[Discover the case study video in full](#)





Showcasing UK capability

As part of our mission, we strive to not only showcase world-leading innovation, but also highlight the benefits of investing in the UK to potential partners across the globe. Additionally, we promote the UK as a forward-thinking, exciting and innovative place for businesses to operate within. We achieve this through exhibiting at and hosting a number of industry-leading events throughout the year, as well as maximising speaking and thought-leadership opportunities.

UK events

We target strategic industry events to promote our work and engage with stakeholders; enabling us to share our latest insights on technology developments and trends, provide information about upcoming funding competitions and encourage applications, and raise awareness of the support that's available in the UK to accelerate the transition to net zero.

National Propulsion Showcase

The National Propulsion Showcase is our own event venue based in Coventry. The space not only showcases some of the pioneering projects that we work with, but is also hired out for free to companies that are committed to the low-carbon automotive innovation agenda. This provides somewhere for people and businesses to come together for the benefit of collaboration, knowledge-sharing and idea generation.

International Events Programme (IEP)

The International Events Programme, delivered in partnership with and part-funded by the Department for Business and Trade (DBT), helps to promote and demonstrate the UK's latest advanced propulsion technology to audiences around the world at some of the most significant international events. The programme supports the next generation of zero-emission SME innovators to gain exposure to investors and prospective customers on a world stage.

'A small-sized company like ours would not be able to exhibit at a booth of this scale like the UK Pavilion on our own. It helped to make us stand out as a British company through the design and structure of the pavilion.'

SBD Automotive exhibiting at JSAE 2023

Value of orders from the International Events Programme

Year	Orders as a result of exhibiting through the IEP	Orders expected in the next two years following exhibiting through the IEP	Total orders expected
2023	£32,150,000	£105,700,000	£137,850,000
2016 – 2022	£34,738,000	£58,805,000	£93,543,000



Did you know?

450 hours

That's how many free hours of event space our National Propulsion Showcase offers to industry each year.⁸

462 SMEs

The number of SMEs that have engaged with, and benefitted from, the International Events Programme since 2016.

See highlights from some of our events



⁸ Calculated as 90 booked days times five hours average booking length.

Over the past three years, we've helped to promote the benefits the UK automotive industry offers at events in 11 major countries.





Planning the road ahead to net zero

Building on funding and collaboration opportunities and impacts, we share our expertise across industry, academia and government; promoting knowledge-sharing through our insights and foresights. From imparting industry data and analysing technology trends, to creating automotive roadmaps, our work provides key tools for our stakeholders to navigate strategically important opportunities and challenges.

Our work includes:

Demand Reports

Analysing industry data and topics with insight on future trends. This helps businesses to identify strategic commercial opportunities and better plan for an ever-changing automotive landscape.

Roadmaps

On behalf of the Automotive Council UK, our Roadmaps are an essential tool in identifying the path to a net-zero future, highlighting key milestones that present opportunities and also challenges that must be overcome.

Insights

Identifying opportunities in the UK for different technologies in the automotive industry and supporting the sector to grow.

Value Chains

Providing an end-to-end view of the collection of different technologies, covering the critical steps required to support UK industry in creating and strengthening supply chains.

Visit the [APC Knowledge Base](#) to access our latest technology trends work



'The APC Knowledge Base, from quarterly demand reports and technology roadmaps to insight and foresight reports on key trends in the automotive value chain, is an invaluable source of information to the industry. It is used by various organisations to inform their own product planning and R&D pathway decisions and provide an evidence base for shaping industry-government collaboration on strategic investments that are critical to the success of the UK automotive industry.'

Mike Hawes, CEO, SMMT

Did you know?

There have been over 5,800 downloads of our Automotive Council Roadmaps since 2021.



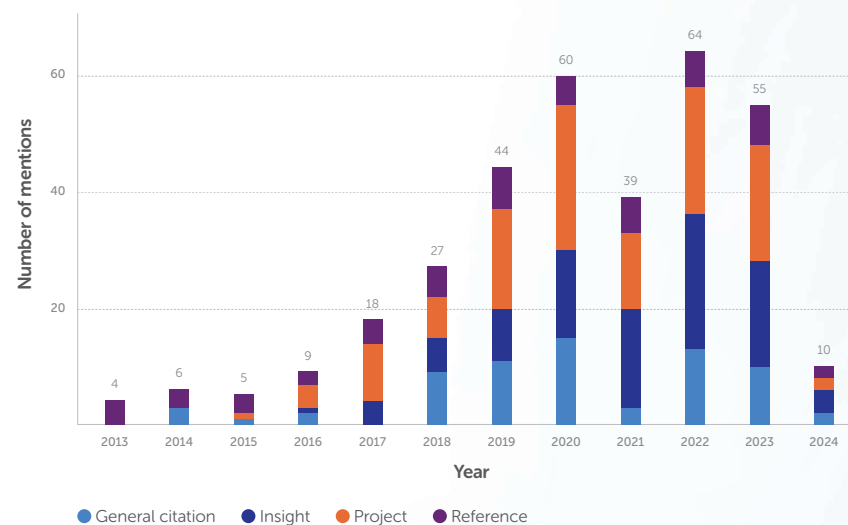


Providing knowledge and insights for industry, government and academia

Great projects deserve great platforms to share their successes and demonstrate their impacts. The stories we share are valued for their interesting, trusted and impartial insights, told through news releases, journalist briefings, thought-leadership articles and much more. The wide variety of coverage we achieve helps to deliver the good news of innovation and industrialisation across the UK automotive sector and beyond.

Our work can be used by industry and government to provide impartial, reliable and helpful information about technology trends and sector data. We endeavour to support and foster links with great minds and organisations across the UK's academic network. From our industry insights to project case studies, sharing our knowledge with others in government and academia helps to solidify and grow the UK's technological capabilities and standing on a global stage.

341 mentions in academic reports



● General citation ● Insight ● Project ● Reference

CEO Ian Constance meets Sir Vince Cable (former Secretary of State for Business, Innovation and Skills and President of the Board of Trade), Nusrat Ghani (former Minister of State for Industry and Economic Security, Department for Business and Trade), and Matt Western (MP for Warwick and Leamington) at our 10-year Anniversary Celebrations at Westminster, held on 29 November 2023.



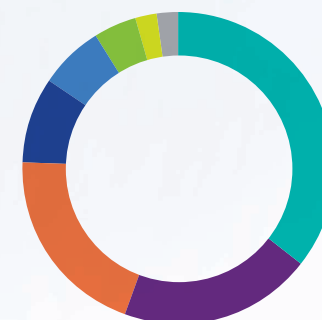
Consultation responses submitted to government departments in 2023/24

- UK battery strategy – Business and Trade Committee (Sept 2023)
- EV Consultation – House of Lords Environment and Climate Change Committee (Sept 2023)
- APC's response and data referenced in the Business and Trade Committee response to EV battery manufacturing (Nov 2023)
- NRMM Decarbonisation Consultation – DESNZ (March 2024)
- Direct engagement with some of the Select Committees secretariats, e.g. Business and Trade Committee



45 mentions in UK Government policy documents

- 16 Report
- 9 Documentation
- 9 Strategy paper
- 4 Promotional material
- 3 Policy paper
- 2 Evaluation
- 1 Green paper
- 1 White paper



'The Advanced Propulsion Centre UK does an outstanding job supporting our automotive sector in the net zero transition. It's fantastic to see their project with Intelligent Energy realise such an important hydrogen fuel cell technology breakthrough with a product that is designed and manufactured here in the UK.'

Nusrat Ghani MP
Former Minister of State for Industry and Economic Security, Department for Business and Trade, commented on the success of the ESTHER project that supported work in the passenger car fuel cell field.

*'In such a short time, as a collective,
we have achieved so much, but we
appreciate that this is just the start.*

Ian Constance, 2024


Find out more


[Discover more about our impacts and the work
we continue to do to transition to net zero.](#)



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 Advanced Propulsion Centre UK



Department for
Business & Trade



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Accelerating
Progress

Cover image from The Battery Show North America featuring Helix's scalable motor technology, which received government funding through the Automotive Transformation Fund's Scale-up Readiness Validation (SuRV) competition.

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