



Technology Developer
Accelerator Programme

Helping to accelerate SME
innovations to market



Department for
Business, Energy
& Industrial Strategy



ADVANCED
PROPULSION
CENTRE UK

Accelerating
Progress

Enabling UK SMEs to grow and prosper

We recognise the UK has a wealth of knowledge and expertise in its SMEs, which are important in building a vibrant supply chain. The Technology Developer Accelerator Programme (TDAP) supports SMEs, whether start-ups, spin-outs or more mature organisations, who have an early-stage transport technology concept and want to accelerate their route to market.

TDAP provides



A structured early-stage accelerator programme



Focused product and business approach



Independent expert consultancy, mentoring and support



A gateway-driven process



Up to £135,000 grant support (APC do not take equity stake)



Automotive industry networking



'SMEs play a crucial role in the low-carbon future of the automotive industry; by supporting companies at the beginning of their commercialisation journey we can ensure the UK stays competitive with some of the most exciting technological innovation in the sector.'

Josh Denne, Head of SME Programmes, APC

Up to £135,000 grant support
to develop your novel zero
emission enabling
automotive technology

Helping to accelerate innovations to market

Our TDAP initiative has been running for five years and we have seen five waves of technology developers go through the programme, benefitting from £7 million of funding support.

We have supported technologies from new energy storage and management systems, through to novel thermal control technologies, lightweight materials and even digital tool developers.

These businesses have often been able to understand new routes to market and take real meaningful steps towards their commercial goals.

£7 million

of funding support

TDAP benefits and impacts



Credibility boost through APC process



Innovation advanced to Technology Readiness Level 4/5



Businesses experience an accelerated route to market



Organisations leave TDAP with a robust strategy and a business model to take their product to market



68 businesses engaged, 36 completed the programme



Over £63 million investment / debt raised



Businesses average a 50% increase in headcount following TDAP

Mentoring, funding and support

TDAP is designed to help fast-track low emission technologies towards commercialisation. The programme provides mentoring as well as facilitating financial support for SMEs, helping bring forward their innovative technologies.

Through TDAP we provide financial and technical support, along with invaluable business development mentoring to help grow your SME. Our team of specialists have many years' experience in the automotive industry, bringing both product knowledge and industry understanding, allowing them to offer you visibility to a range of key industry players.

APC facilitates this support by providing up to £135,000 of grant benefit, on a match-funded basis. The programme is delivered by a dedicated team working in partnership with external Delivery Partners (DPs) to complete six specific focus areas over an 18-month phased process.

Participants work with the APC's Delivery Partners to:

- Understand the best application fit for their technology
- Identify their target market and develop their route to market strategy
- Understand and articulate their value proposition
- Develop their IP strategy
- Understand their potential business model
- Develop a financial and investor plan
- Develop their leadership and new venture building skills
- Develop their PR & communications strategy
- Undertake a validation project to test their product and their business assumptions

Six specific focus areas



Who does TDAP support?

We are looking for SMEs that fit the following criteria:

The business

- Ambitious UK-based micro, small and medium-sized companies
- Technology developers able to benefit from programme activities, APC engagement and programme team expertise

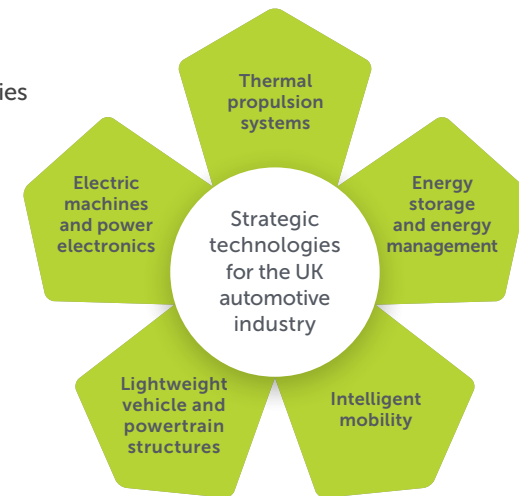
The technology

- Innovative automotive technology, products and services which support the shift to:
 - Zero-emission vehicles; or
 - Net-zero carbon automotive products
- Aligns with one or more of the Automotive Council's five strategic technologies; or
- Develops improved industrial processes that could enable the route to net-zero automotive products; or
- Digital technologies that could enhance or accelerate the shift to zero-emission vehicles or net-zero processes; or
- Outside of these areas but demonstrating strong automotive impact potential
- Development status of the technology should be TRL 2–4 (UK Automotive Council)
- On or off-vehicle technology eligible:
 - Software or hardware technologies
 - Full vehicles (including e-bikes, e-mopeds, etc.) are in scope, however the technology deployed within the vehicle must be innovative of itself and the application needs to show how the vehicle supports or accelerates the move to zero-emission transport

APC's objectives

- Enable participants to accelerate their strategy, business case and technology development
- Anchor UK innovation, research and development and economic impact

Automotive Council's
five strategic technologies



Technology Readiness Levels

1

TRL Level 1 – The light bulb moment

We've had an idea for a new technology. At TRL 1 we've identified new science, but we are not sure where it could be applied.

2

TRL Level 2 – Where can we use our idea?

Invention begins – we start to think about the potential practical applications for our new technology. Applications are still speculative at this stage.

3

TRL Level 3 – Test elements in isolation

Active Research and Development (R&D) begins – this includes analytical and laboratory studies to test the different elements of our idea in isolation.

4

TRL Level 4 – Connect the elements together

Our basic technological components are joined together to establish if they will work in harmony. Our lab model is relatively simple compared with the final commercial product.

Programme structure

The programme is delivered over three core phases. Each phase involves a number of activities designed to support participants in the six specific focus areas.

The APC understands that no two businesses are the same, and whilst there are common elements involved in the development of most business ventures, each will also have its own unique challenges. The programme is therefore formatted as a selection of essential activities as well as a 'menu of options' that can be specified by the Technology Developers (TD) to help them answer the questions that are most pertinent to their venture development. While each activity adds individual value, the highest impact is felt by those who progress through the gateway and are able to benefit from the entire programme of activities.

Phase gateway

A review assessment is undertaken at the end of the Market Focus phase, during which each TD will be required to present to a panel of assessors. The criteria for assessment reflects the content of the phase of work and a review of the TDs' progress in these areas. APC expects approximately 80% of participating TDs to progress through to the next phase.

Grant funding

TDAP funding is provided on a matched funding basis. At the start of the programme, APC will work with TDs to assign an appropriate day-rate to each TD employee. Through participation in the programme, TDs are able to match the grant funding allocation with their allocation of time and resources dedicated to completing the programme objectives and any related technical development. TDs are able to attract funding towards their internal costs once the required level of match-funding contribution is achieved.



TDAP Wave 6 Timeline

Applications for TDAP Wave 6 open on 28th October 2021.

If you would like to express your interest, please visit the website and complete the EOI form.

TDAP Wave 6 Milestones	Indicative Dates
Expressions of Interest open	28th October 2021
Applications open	28th October 2021
Application deadline	2nd February 2022
Interviews	w/c 14th March 2022
Applicants notified	w/c 28th March 2022
Kick-off meeting	3rd May 2022
Market Focus gateway	w/c 28th November 2022
Technology Validation kick-off	5th December 2022
Programme end	29th September 2023

TDAP testimonials

'We're perhaps not the sort of organisation that would typically apply for funding through the APC, as we're essentially a materials developer rather than an engineering company. I'd definitely recommend the TDAP programme to others in that position, though. The APC's network of suppliers, vehicle manufacturers and potential customers is what really helps to open doors in the automotive industry.'

Haroon Ihsan, Managing Director, Alsitek

'The key highlight has been the focus that it has brought. The ability to narrow down and look at a single application space has allowed us to advance that a lot quicker than we would have done on our own.'

John Tingay, Paragraf

'Having a good idea is only a fraction of what makes a business. The experts at the APC helped us to understand how we could build a business around that and how we could progress towards commercialisation. That was a massive opportunity in itself, while the funding allowed us to produce a proof of concept and take on our first staff. That simply wouldn't have been possible without the help from the APC.'

Marcel Fowler, founder of New Motion Labs

'The TDAP support was really useful, and not just from a technical perspective. If you have a technology that you think might be applicable in automotive, but you're unsure of its commercial value or you need to address IP issues, the APC provides invaluable guidance and a wide network of further support from experts in the business.'

Dr Jörg Feist, Managing Director, Sensor Coating Systems

'Creating a prototype part that our customers could use was a key milestone in our growth strategy. The TDAP process was hassle-free and we were very well supported throughout the project. There was a lot of help with the business plan, the technical strategy and protecting the IP. I'd certainly recommend the TDAP programme.'

Peter McCool, founder of SHAPE

'TDAP has helped in terms of developing our technology and the robustness of it. We have moved from a TRL 4 or 5 to TRL 7. We have integrated our technology onto an EV and it has enabled us to open up into new markets around electric bikes, electric motorbikes and heavy duty trucks, so it has been brilliant.'

Justin Ott, Spark EV

Our latest TDAP success stories

Nine exciting small and medium-sized businesses took part in our TDAP Wave 4 and have successfully come to the end of the programme, netting some great results in terms of technology development, business growth and supply chain collaboration.

Their achievements to date are already having a positive impact on green innovation and green recovery, helping to accelerate the delivery of the next generation of low-carbon automotive technology to secure a carbon-neutral future.



Photo**centric**



Sam Pearce
design



BALANCE
BATTERIES

You can find out more about two of these cutting-edge projects over the next few pages.

EMPEL Systems Limited

Scalable Multi-Voltage Electric Module Product Family

Highly parametrised scalable product family of multi-voltage electric drive modules with a novel configuration that can offer very high performance, unparalleled integration, flexibility but with a major advancement in product value.



To find out more about this technology contact:

EMPEL System Limited
info@empelsystems.co.uk
www.empelsystems.com

Potential benefits

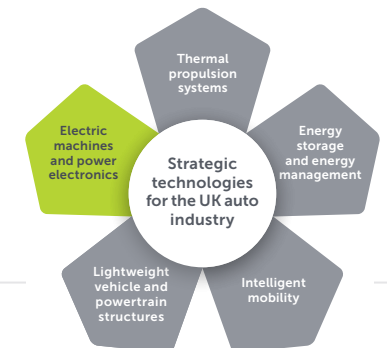
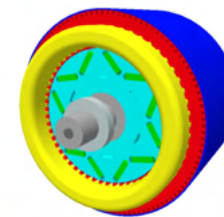
- Smaller package (compact), highly integrated
- Lightweight modular design
- Scalable
- Lower cost
- Multi-voltage

Features

- Inverter is integrated into the motor reducing components, sharing cooling, connections, cables, etc.
- Segmented "lego-like" motor and inverter internals
- Simplified "Tesla Model 3" like discrete component-based inverter
- Architecture designed to work from 48 – 1000V

Potential applications

- Automotive traction with e-axle
- Automotive P2.5 / P3 hybrid transmission
- High speed e-compressor, e-turbine, MGU-H
- Electric (flywheel) energy storage system (FESS)
- Multiple non-automotive



Spark EV Technology

Spark develops and supplies energy modelling software solutions for EVs of all sizes. Utilising its patented Energy AI system, its solutions alleviate range and chargepoint anxiety, enhancing vehicle performance and user experience for every step of the journey.



To find out more about this technology contact:

Spark EV Technology
sales@sparkevtechnology.com
www.sparkevtechnology.com

Potential benefits

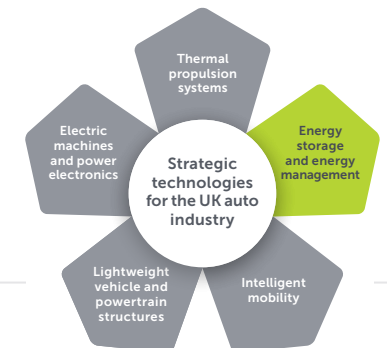
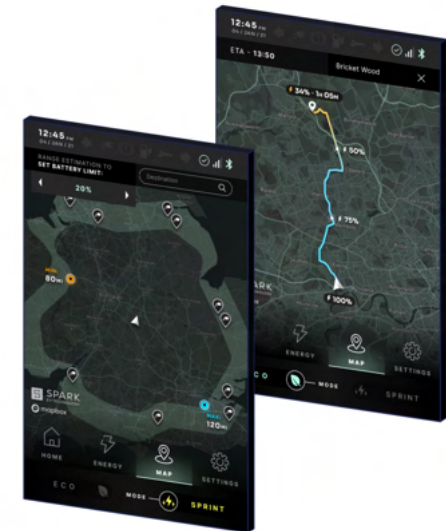
- Enhanced OEM brand trust enabling and accelerating eMobility adoption
- Intelligent, personalised and contextual management of vehicle energy, and the significant improvement of range prediction accuracy
- ASSURE, FLOW and EV FLEET CONVERT solutions facilitate a closed-loop customer experience and offers the opportunity to enhance the performance of the whole vehicle

Features

- Personalised range predictions utilising live data from the vehicle, driver, weather, routing, battery data and more
- Real world data shows Spark solutions are an order of magnitude more accurate and reliable than any solution available today
- Over three years of real world trials with OEM and Tier 1 partners across Asia, Europe and North America
- Vehicle integrated solution through HMI or mobile application

Potential applications

- Micromobility
- Passenger cars
- Commercial vehicles
- Mapping and navigation





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Backed by the Department for Business Energy and Industrial Strategy, TDAP is delivered by the Advanced Propulsion Centre

Are you eligible for up to £135,000 of TDAP funding and business support?

- ▶ **Up to £135,000 of combined grant funding and business support for SMEs**
- ▶ **Accelerate the development of your innovative automotive technology**
- ▶ **Engage with the automotive industry**

Funding and support to grow your business

The Technology Developer Accelerator Programme (TDAP) helps SMEs to develop innovative automotive technologies. If you are developing a product, technology or process with the potential to reduce the environmental impact of the transport sector, you could be eligible for up to £135,000 of combined grant funding, technical support and business mentoring over an 18-month period.

Tailored automotive industry support

Access expert support including market strategy, IP strategy, automotive new product development, investor readiness and more.

Apply for TDAP Wave 6

Our next wave of TDAP support will open for applications on 28th October 2021. You can find out more about TDAP and how you can get involved by visiting www.apcuk.co.uk/TDAP, or getting in touch with the TDAP team at info@apcuk.co.uk.



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