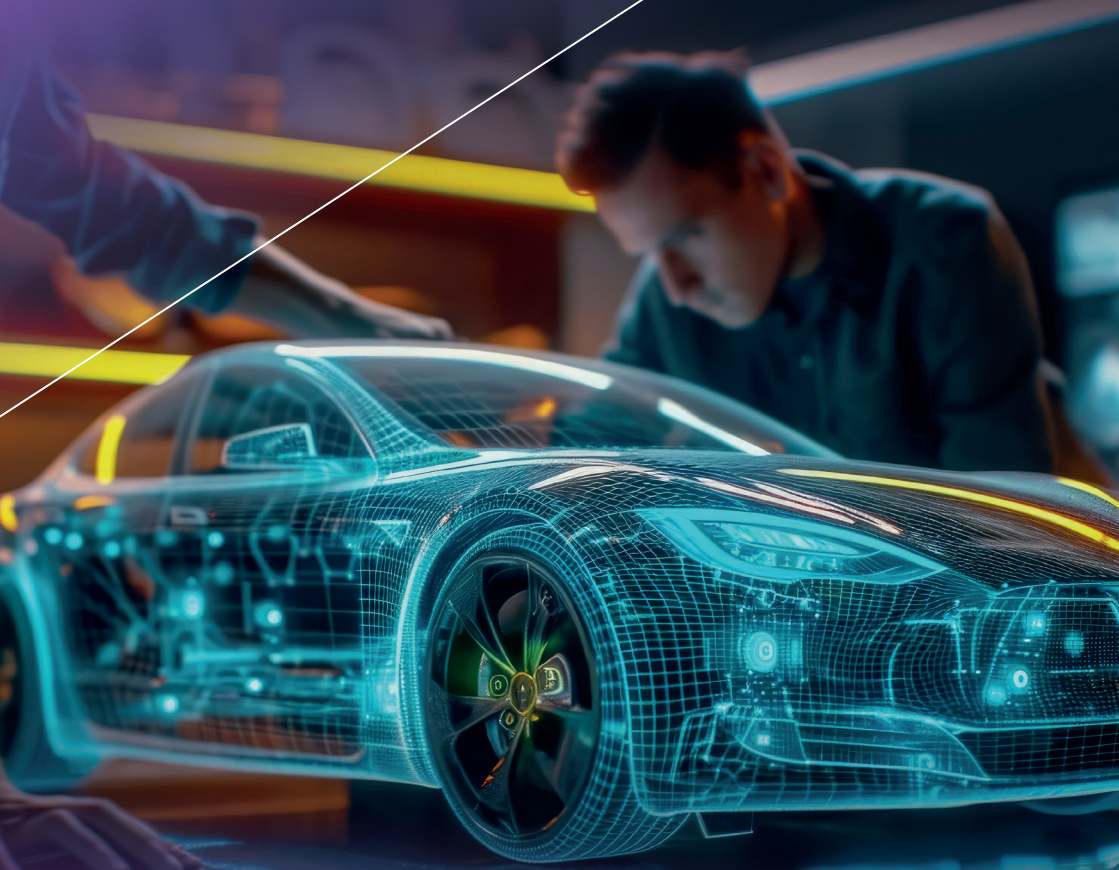


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DRIVE35



Department for
Business, Innovation,
Science and Trade



ADVANCED
PROPULSION
CENTRE UK



Innovate
UK



Funded by
UK Government

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As part of DRIVE35, the Demonstrate funding stream supports UK-based companies at an early stage in their product or process development

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Welcome

Rik Adams
Innovation Delivery Director, Advanced Propulsion Centre UK



In July 2025, the UK Government made an unprecedented £4 billion commitment to the automotive sector through DRIVE35, helping to secure investment, support thousands of jobs and ensure the UK remains at the forefront of zero-emission vehicle innovation and manufacturing.

With more than a decade of experience delivering funding and support programmes to the automotive industry, the Advanced Propulsion Centre UK (APC) is proud to continue its role as a key delivery partner for DRIVE35, working in partnership with the Department for Business, Innovation, Science and Trade and Innovate UK. Together, we're helping businesses develop, industrialise and commercialise the technologies that will strengthen the UK's zero-emission vehicle supply chain.

Focused on three core pillars, Innovation, Scale-up and Transformation, DRIVE35 supports organisations at every stage of their journey, from developing pioneering technologies and products, through to scaling manufacturing capability and attracting investment into large-scale industrial transformation projects.

Simpler and easier to access

Built on years of industry collaboration and experience, DRIVE35 provides a clear and accessible route to funding for businesses of all sizes developing the technologies and manufacturing capabilities needed for the transition to zero-emission vehicles.

Demonstrate forms an important part of this landscape. Building on the success of the

Advanced Route to Market Demonstrator programme, it enables companies to accelerate R&D by delivering a product or process demonstrator in under 12 months. Demonstrators remain one of the most effective ways of accelerating innovation towards commercialisation, helping businesses showcase capabilities, engage customers and partners, and reduce barriers to adoption.

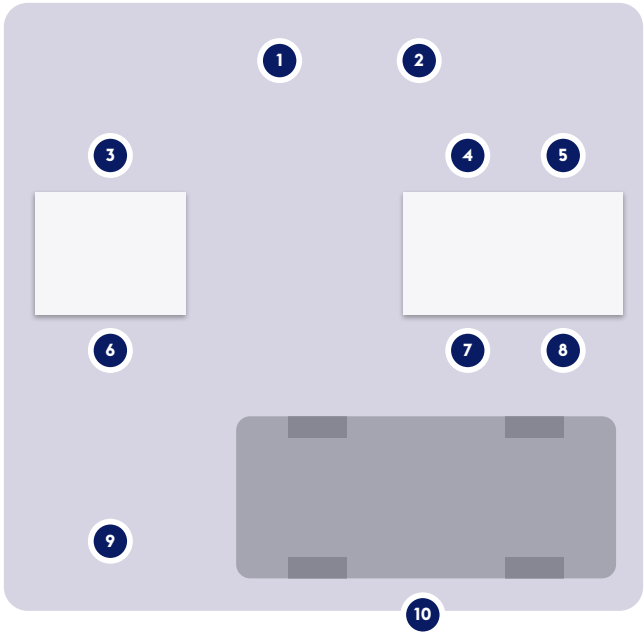
Over the past year, we've seen strong engagement from industry and an exciting pipeline of projects emerge through the programme. The breadth of innovation on display reflects the changing nature of the sector, spanning electrification, hydrogen technologies, software-defined vehicles, advanced manufacturing, digitalisation, circular economy solutions and next-generation supply chain capabilities.

Here at the Advanced Engineering Show 2026, we're proud to showcase some of the pioneering technologies on our main Demonstrate stand (H180) and on stands F190 and H194. Together, these spaces offer opportunities to discover cutting-edge innovation and connect with colleagues and partners from across the automotive and advanced engineering communities.

I encourage you to take the time to explore the technologies on display and speak with the teams behind them. If you'd like to understand more about Demonstrate, DRIVE35, or the wider opportunities available through APC, our team would be pleased to discuss how we can help accelerate your innovation journey.

Stand map

1	Lorillion	8	Batri
2	Electrified Motors	9	Thermulon
3	Yasa	10	Morris JE
4	Ford		
5	Talos		
6	Advanced Electric Machines	On stand F190 and H194	
7	Gelion	Leyland Trucks (F190)	
		CoolVan (H194)	



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Advanced Electric Machines



Email: info@advancedelectricmachines.com

Web: advancedelectricmachines.com

We eliminate rare earth dependency from electric motors while delivering superior performance and complete recyclability

AEM's compressed aluminium coil technology delivers a unique combination of performance, cost and sustainability benefits. By compressing aluminium conductors into a highly efficient stator design, AEM achieves a higher slot fill factor than conventional windings, enabling greater torque and power density from a compact motor package. The use of aluminium also significantly reduces motor weight compared with copper-based designs.

Aluminium is substantially lower cost than copper and offers reduced exposure to commodity price volatility, helping OEMs lower drivetrain costs at scale. From a sustainability perspective, aluminium has a lower embodied carbon footprint and supports the use of recycled materials, aligning with increasingly demanding environmental targets. The compressed coil architecture also enhances thermal performance, improving heat transfer and supporting high continuous power operation. Combined with AEM's rare-earth-free motor technology, compressed aluminium coils enable high-performance electric motors that are lighter, cheaper and more sustainable than conventional alternatives.



Coil winding process



AEM's HDRM150 with compressed coils

Batri



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BATS: Battery Anode to Tonne Scale Production

Batri develops and manufactures materials and technologies for sodium-ion batteries, with a focus on scalable, locally sourced supply chains.

Our core product is a high-performance hard carbon anode derived from coal feedstocks and engineered for commercial sodium-ion cells. Through our APC-supported scale-up programme, we have moved production from pilot quantities towards larger-volume manufacture, making material available today with a clear route to scale.

Our aim is to help build a resilient UK sodium-ion supply chain, reducing reliance on imported battery materials while creating domestic manufacturing capability in an important emerging technology.

Alongside material supply, Batri works with cell manufacturers, research organisations and industrial partners on testing, validation and product development.

If you are developing sodium-ion cells, evaluating alternative battery technologies, or looking for a UK materials and scale-up partner, we would be very interested to talk.



Batri's hard carbon and sodium-ion cells

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CoolVan



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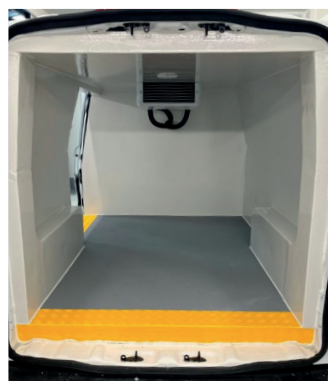
A smarter approach to refrigerated vehicle insulation, combining advanced manufacturing with faster, more efficient conversions

Our innovative insulation system combines lightweight, durable materials with an advanced manufacturing process using CNC machining and thermoforming. This approach simplifies panel production, reduces manufacturing waste and significantly shortens the time required to convert a standard van into a refrigerated vehicle.

Unlike traditional insulation methods, our system uses specially designed, preformed panels that allow for quicker, more straightforward installation while maintaining excellent thermal efficiency and durability.

Improved insulation can also reduce the energy required for refrigeration, an increasingly important consideration as the industry moves towards electric commercial vehicles.

Through the ASSURE project, CoolVan is demonstrating how innovative materials, manufacturing techniques and practical engineering can improve refrigerated vehicle conversions, delivering benefits for vehicle converters, operators and the wider temperature-controlled transport industry.



Refrigerated vehicle interior fitted with CoolVan's preformed insulation system, designed for efficient installation and reliable temperature control



Preformed insulated door pods for improved thermal efficiency

Electrified Motors



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Highly efficient and compact PMAC electric motors

Electrified are a UK electric motor manufacturer mainly operating within the off-highway markets. They have a range of highly efficient and compact PMAC electric motors producing power between 2kW – 35kW across a wide and versatile range of low, medium, and now high voltage applications.

Electrified Motors has developed a High-Voltage Low-Power (HVLP) offering from its current motor range, supported by UK Government grant funding and the Demonstrate project. This development opened up opportunities in applications and markets unsuitable for the company's current low and medium-voltage motors. Through this work and with the help of the Advanced Propulsion Centre UK, Electrified Motors has identified significant opportunities for future business development and expansion of manufacturing capability in the Southwest of the UK.



Electrified Motors HVLP PMAC Motor



Nominal voltage	Peak torque	Peak power [S2-5]	Rated power [S2-60]	Maximum speed	Motor weight
24 - 850V	35 – 210Nm	5 - 60kW	2 - 35kW	7000RPM	8.8 - 25kg

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Ford



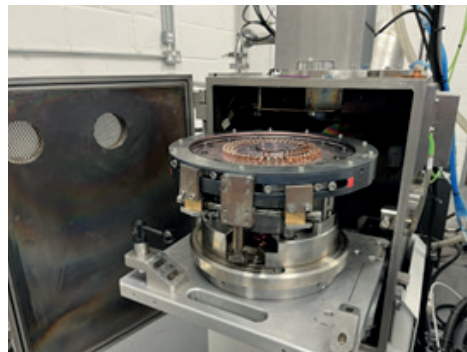
Email: dchantzi@ford.com

E-BEAMING is aiming to industrialise Electron Beam Welding Technology for high-volume e-motor production lines

The E-BEAMING project is an innovative initiative aimed at transforming the manufacturing of stators, a critical component of electric machines.

E-BEAMING brings together industry leaders Ford Motor Company, Cambridge Vacuum Engineering (CVE), and the world-class RTO Warwick Manufacturing Group to develop right-first-time technology for joining hairpin windings in the next generation of e-motors.

The project focuses on demonstrating the effectiveness of Electron Beam Welding (EBW) for aluminium hairpin windings, extending the lifespan of EBW systems using LaB6 cathodes, and integrating an in-situ, non-destructive, X-Ray-based quality monitoring system.



Full scale electron beam welding of Ford stator

Gelion



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Advancing next-generation sulfur cathodes delivering higher energy density through scalable, manufacturing-compatible battery technology

Gelion's proprietary Nano-Encapsulated Sulfur (NESTTM) cathode technology is advancing a new generation of high-performance batteries by replacing conventional cathode materials with abundant sulfur. Designed to integrate with existing battery manufacturing processes, NESTTM offers a pathway to higher-energy batteries without requiring significant changes to established production infrastructure.

The technology addresses one of the most significant challenges associated with lithium-sulfur batteries, with independent testing demonstrating operation without the polysulfide shuttle effect while achieving market-leading power capability and cycle life for a sulfur cathode. Through the DRIVE35 Demonstrate-funded project, Gelion's NESTTM technology was successfully demonstrated in lithium-metal pouch cells and validated by QinetiQ under application-relevant conditions, including drone-representative duty cycles.

By combining breakthrough chemistry, independent validation and manufacturing compatibility, NESTTM is helping accelerate the commercial deployment of next-generation batteries for aerospace, defence, mobility and other high-performance applications, strengthening the pathway from innovation to real-world adoption.



QinetiQ-validated lithium-sulfur pouch cell demonstrated market-leading performance for aerospace, defence and drone applications

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Leyland Trucks

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LEYLAND TRUCKS

A **PACCAR** COMPANY

in collaboration with

BUCHER
municipal

BERS – Battery Electric Road Sweeper

The BERS project represents our continued drive toward net zero, being the only UK volume manufacture of large commercial vehicles we are committed to leading the charge in sustainable truck manufacturing. This project demonstrates an expansion of our battery electric vehicle capabilities, supporting UK export growth, and delivering real-world solutions that help local authorities and operators reduce emissions in urban environments. We see battery electric vehicles as a critical part of our future product strategy.

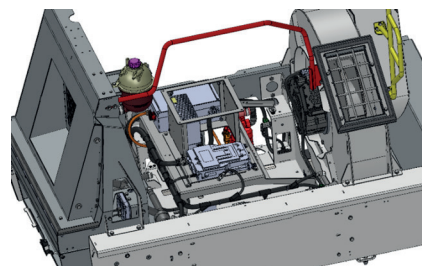


DAF – Battery layout configuration

Leyland Trucks

Developed in collaboration with our specialist technology partner, our sweeper body technology combines with their fully electric chassis and battery system to deliver a powerful, efficient and sustainable sweeping solution. This partnership brings together proven sweeping performance with zero emissions in operation, reduced noise and lower environmental impact. Fully electric sweeping supports cleaner, healthier communities, enabling local authorities to maintain exceptional street cleanliness while meeting environmental targets and delivering quieter, more sustainable operations.

Bucher Municipal



Bucher – Internal fan and inverter pack

Lorillion

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Project DUALCHARGE: Market-leading 2-in-1 Power Conversion Unit

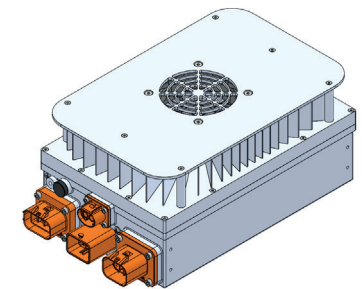
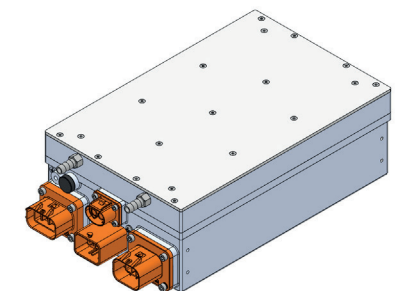
Typical commercially-available On-Board Chargers and DC/DC Converters are unsuitable for 400V electric motorcycle applications, due to their size, weight and the need for liquid-cooling. DUALCHARGE develops a concept ready 2-in-1 Power Conversion Unit (PCU) suitable for a 200-600V electric motorcycle application.

The project demonstrates advancement in power electronics, and the integration of systems to maximise power density.

The project took the opportunity to innovate in the development of the air conduction-cooling system and system control to ensure optimum temperature control in both charging and running modes, where levels of required cooling will differ greatly.

The combination of these technologies will enable a smaller, lighter and more commercially viable solution to OBCs and DCDC converters for the performance electric bike market.

DUALCHARGE has additional applications in the eVTOL / Industrial Equipment sectors. It is envisioned that applications will be at the smaller end of these sectors (cargo drones and AGV).



Air-cooled and liquid-cooled variants of the Dual Charge PCU

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Morris JE



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Morris JE advanced recycled carbon body and structure using a high volume production process

Project MARCH is demonstrating a new route to producing lightweight vehicle body structures from recycled carbon fibre at significantly higher production volumes.

By combining recycled carbon fibre, optimised in-line prepreg production and fast-cycle press moulding, the project aims to reduce material waste, manufacturing cost and CO₂ emissions while delivering high-quality, complex automotive components.

The technology is being demonstrated on the Morris JE electric van through the manufacture of a complex recycled carbon front door, bringing together material development, component design, simulation and physical validation.

The approach is important because it addresses a key barrier to wider adoption of recycled carbon fibre: developing a cost effective, scalable manufacturing process suitable for medium-to-high volume automotive production.

Morris JE is a completely new, fully electric van of super lightweight construction with a fully recycled CF monocoque body and aluminium chassis. It has a GVW of 2.5 ton GVW, with 1 ton payload and a 300-mile driving range.



The latest pre-production carbon fibre JE Van from Morris



Morris JE - the story so far

Talos



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Talos Dual Flux Technology: a new architecture for electric motor design

Talos Technology has secured a new contract with Heaviside Industries to design and develop electric motors for drone applications.

As part of this project, Talos is working closely with Heaviside to develop a motor architecture around the specific requirements of the application, with a focus on performance, efficiency, weight and operational capability.

Rather than adapting an existing off-the-shelf motor, the Talos engineering team are using its electric machine design expertise and engineering tools to evaluate and refine a solution specifically to meet Heaviside's requirements.

The contract expands Talos Technology's work within the rapidly developing unmanned aerial systems sector and demonstrates the company's ability to apply its electric machine engineering capabilities across increasingly specialised applications.



Dual Flux Technology™ – exploded view of the hybrid rotor architecture

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Thermulon, CamMotive,
Jaguar Land Rover

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AEROMOTIVE – Stopping the spread of fire in packs: aerogel anti-thermal-propagation pads for EV batteries.

AEROMOTIVE is a UK collaboration between Thermulon, CamMotive and JLR. It is developing and evaluating a UK-made, aerogel-based thermal runaway barrier for next-gen EV batteries.

Thermal runaway in Li-ion cells can spread across a pack, leading to fire or explosion. AEROMOTIVE uses thin layers of aerogel ATP material between cells to stop heat spreading from one cell to the next. Silica aerogel is the best solid insulator to exist and non-combustible, which is why it's perfect for ATPs

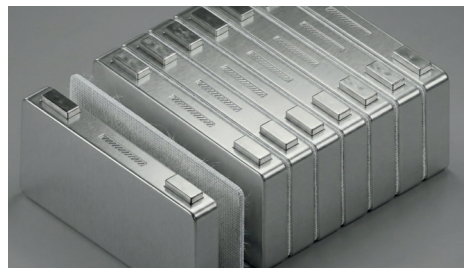
New cell chemistries bring more energy density and range, but they make it harder to balance safety against cost. AEROMOTIVE addresses four challenges:

- Thermal propagation between cells
- Cell swelling and pad compression
- Cost of high-performance insulation
- Security of supply

The project consists of Project partners – Thermulon: an advanced materials company, which develops the silica aerogel pads. CamMotive: an electric powertrain development consultancy, which designs the

testing and validation programme, including prismatic cell swelling and compression testing and JLR: the UK OEM partner.

Building UK capability in affordable aerogel supply and cell rig-testing.



Prismatic module with aerogel-ATP pads between cells



CamMotive advanced cell test rig

YASA

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Web: yasa.com



Engineering Revolution: Redefining electric propulsion with ultra-light, power-dense motors for performance without compromise

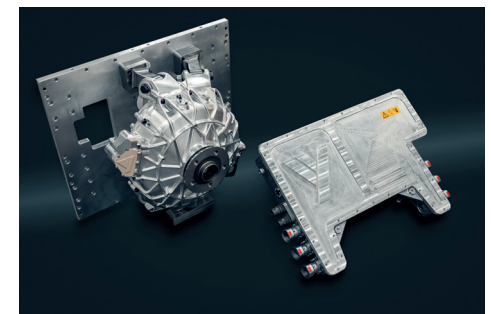
YASA has developed an in-wheel motor and inverter technology to enable a step change in EV architecture addressing weight, efficiency and handling challenges for compelling high-performance sports EVs.

This project has allowed YASA to set a new benchmark for power-to-weight ratio. Headlined by a design achieving 59 kW/kg. Combining exceptional power density with efficiency, YASA's technology is built to meet the performance and packaging demands of the next generation of electric vehicles.

This new architecture delivers performance increases, huge weight savings, WLTP range improvement, and significant space savings for battery or luggage space in the vehicle.



YASA's In-wheel motor can fit an 18 inch wheel



YASA's in wheel motor and dual inverter

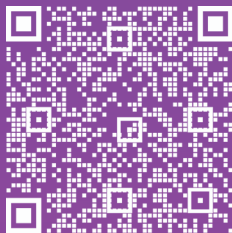
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Notes



Scan for more
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 Advanced Propulsion Centre UK



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