

Technology Strategy Board

Driving Innovation

PRESS RELEASE

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£25M TRIAL PUTS ELECTRIC CARS ON UK STREETS

Eight new low carbon vehicle projects are set to benefit from a share of £25 million of Government funding to run 'real life' trials, Science Minister Lord Drayson and Transport Secretary Lord Adonis announced today.

The project will be the biggest of its kind and accelerate the availability of innovative low carbon cars to consumers. The successful bids, which bring together car manufacturers, power companies, RDAs, councils and academic institutions will operate 'real life' trials in eight locations across the UK.

Government investment will support the investment already made by the consortia themselves and is the most significant step in the UK to date of a co-ordinated move towards low carbon transport.

Lord Drayson, Science Minister in the newly formed Department for Business Innovation & Skills, said:

"Low Carbon doesn't mean low performance. Modern electric cars offer power and bucket loads of torque.

"Today's announcement signals our intent to reduce our dependence on petrol- and diesel-based engines, and determine the best practical alternatives.

"Government and consumer demand for more environmentally-friendly vehicles is already creating business opportunities for established industry players and innovative new entrants."

Transport Secretary Andrew Adonis said;

"We want Britain to be at the forefront of ultra-low carbon automotive technology, blazing a trail for environmentally friendly transportation.

"Central to our plans is the stimulation of demand for low carbon cars through projects like this to test the technology and give motorists the opportunity to feedback the information needed to make greener motoring a reality

"Our aim is for ultra-low carbon vehicles to be an everyday feature of life on Britain's roads in less than five years. This is a challenging target and there is still a long way to go. However, if we continuing to work closely with motorists

and the industry with initiatives like the demonstrations project, I believe it is achievable."

It is planned that approximately 340 vehicles will begin trials on UK roads within the next six to eighteen months, the biggest project of its kind. The majority of the vehicles are electric, with a small number being plug-in petrol/electric hybrids. The information gained from this project will make an important contribution to the future plans of manufacturers and their partners, to develop low carbon vehicles for the mass market.

The Technology Strategy Board created the Low Carbon Vehicle Demonstrator competition to act as a catalyst for industry, the public sector and academia to come together to create low emission vehicles and provide solutions to powering them.

The winning consortia showcase new and emerging low carbon vehicle technologies in real world situations - many of the electric cars will be recharged via plug-ins around cities across the UK, as well as at home.

Motoring journalist Quentin Wilson supporting the launch, said:

"For me this announcement signals the start of an exciting journey that will see a radical change in the type of cars that we see on the UK's roads in the next half century. The fact that there will be a move towards making these cars as appealing and as powerful as petrol consuming vehicles makes the next few decades a very interesting time for the environmentally conscious UK car driver."

For further information on the Technology Strategy Board visit <http://www.innovateuk.org>.

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Notes to editor

Additional Quotes

Iain Gray, Chief Executive of the **Technology Strategy Board** said: "The journey towards low carbon transport will not be easy, but the demonstrator programme, which we are launching is a major step in the right direction. With over 340 cars being trialled in several regions across the UK, and with the involvement of large and small manufacturers, local authorities and infrastructure companies, it is the biggest project of its kind to date."

Edmund King, **AA president**, said: "Today's announcement is a great leap forward on the road to a lower carbon future. The Ultra Low Carbon Vehicle Demonstrator programme has the potential to spark a personal transport revolution in UK cities."

Dax Lovegrove, Head of Business & Industry Relations at **WWF**, said: "This is a superb initiative and WWF welcomes the convergence between power and car companies and local authorities to

drive the electrification of vehicles. We also need to accelerate the scaling up of such mobility systems, the de-carbonising of power supply and the phasing out of gas guzzlers."

Director at the **Environmental Transport Association**, Andrew Davis, said: "This scheme paves the way for an electric equivalent to the Ford Model T; a green and affordable car that will revolutionise the way we travel."

Paul Everitt, Chief Executive at **SMMT** said: "Ultra low carbon vehicles are now mainstream business for the motor industry. The Technology Strategy Board's competition provides the ideal incentive to develop and demonstrate new technologies in the UK and the beginning of an important new phase in the development of the UK motor industry."

About the Technology Strategy Board

The Technology Strategy Board is a business-led executive non departmental public body, established by the Government. Its mission is to promote and support research into, and development and exploitation of, technology and innovation for the benefit of UK business, in order to increase economic growth and improve quality of life. It is sponsored by the UK's Department for Business, Innovation and Skills (BIS). www.innovateuk.org

Ultra Low Carbon Vehicle Demonstrator Competition

As part of the Low Carbon Vehicles Innovation Platform, £25 million has been allocated to highly innovative, industry-led collaborative research projects in the field of ultra low carbon vehicle development and demonstration. The competition focused on encouraging the development of industry-led consortia that can deliver in bringing significant numbers of vehicles onto roads quickly. The competition winners will deliver over 340 new innovative cars on the road in eight locations around the UK in the next six to eighteen months.

The programme is led by the Technology Strategy Board, as part of the Low Carbon Vehicles Innovation Platform, and co-funded by Department for Transport, Advantage West Midlands, One North East and the South East England Development Agency. Many car manufacturers are involved in the programme, including, Ford, BMW, Jaguar Land Rover, Allied Vehicles, Mercedes-Benz, Toyota, Mitsubishi and Nissan, alongside the wider car industry supply base, four energy suppliers, five universities, and three regional development agencies.

Demonstrator programmes will take place in Glasgow, the North East, the West Midlands, Oxford, three projects in London (central London, West London, Westminster) and countrywide.

Ultra-Low Carbon vehicles in the UK

The Government published its strategy for **Ultra-Low Carbon vehicles in the UK** on 16 April 2009. As outlined in the document, the demonstrator programme is a key milestone alongside the support we are offering for the development of lead cities and regions, and the roll-out of consumer incentives of £2000 - £5000 per vehicle in helping to build consumer awareness, confidence and the market for low emission vehicles here in the UK. The strategy is available at <http://www.berr.gov.uk/files/file51017.pdf>

Detail on the winning consortia

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CABLED

The West Midlands consortium, called CABLED - short for Coventry and Birmingham Low Emission Demonstrators – is made up of 13 organisations, led by Arup, a company with experience that crosses all areas that touch this project, from vehicle design to planning, to infrastructure and energy. The consortium will develop and demonstrate 110 road-worthy vehicles to be trialled in the two cities over 12 months, 40 of which will be smart electric vehicles.

Part funding for the project has been requested from the regional development agency, Advantage West Midlands, who are hugely supportive of the proposal and who recognise its importance for the economy of the West Midlands region.

Each of the six vehicle manufacturers – Jaguar/Land Rover, Mitsubishi/Colt, Mercedes Benz/Smart, Tata Motors, LTI and Microcab Industries – are contributing vehicles towards the low carbon scheme, which includes a mix of fully electric vehicles, plug-in hybrids and hydrogen fuel cell cars.

Electricity providers E.ON are delivering charging points for the trial with assistance from the city councils of Birmingham and Coventry.

Three of the Midlands' leading universities play a major role in the scheme: Coventry University on the selection of drivers, Aston University in the analysis of vehicle usage, and the University of Birmingham in the use of hydrogen fuelling station – theirs is currently one of the very few of its kind in UK. A new hydrogen station is planned for Coventry University.

Electric Vehicle Accelerated Development in the North East - EVADINE

The £10.7million North East project will see an initial 35 passenger vehicles developed in the region, which is already home to one of Europe's most productive car plants, Nissan, and Smith Electric Vehicles, the world-leading manufacturer of commercial electric vehicles.

The consortium consists of Nissan, Smith Electric Vehicles in partnership with LTI, AVID Vehicles, Liberty Electric Cars, Newcastle University and One North East. The project will include 15 Nissan cars, 10 Smith electric taxis, five Smith people carriers, a Smith executive minibus, two AVID saloon cars and two Liberty urban Range Rovers, alongside a network of charging points. Newcastle University's Transport Operations Research Group will monitor and model the performance and use of the vehicles.

Ford Focus Battery Electric Vehicle

Ford Motor Company's global commitment to the development of Battery Electric Vehicles is reinforced with Ford demonstration prototypes as part of the UK Government's Ultra-Low Carbon Vehicle fleet.

With support from Scottish and Southern Energy, a fleet of zero emissions prototype Ford Focus BEVs will be used by both the energy company and evaluation drivers based in Hillingdon, Middlesex.

A consortium of Ford, Scottish and Southern Energy and Strathclyde University will provide the prototype vehicles and a charging infrastructure in and around Hillingdon during 2010. Ford of Europe is specially developing the prototype Focus BEVs to participate in the scheme and test the technology's suitability for potential future application in Ford's European passenger car range.

London South East Bid

Since 2007 smart has been trialling 100 smart electric cars with partner companies across the country. The resulting positive feedback has been instrumental in our decision to put the car into small series production.

Additional cars will be brought to the UK in early 2010 when smart will be carrying out an important trial with the support of the Technology Strategy Board. Individuals can apply to participate in these „smart electric drive“ research trials across the London South East and West Midlands regions.

The research is a unique opportunity for users to influence the future product development and will include a focus on domestic recharging behaviour over a 12 month period. 60 vehicles are planned for the London South East region,

smart will work with a number of partner organisations to deliver this programme for Technology Strategy Board.

London South East partner organisations:

- o EDF Energy
- o Greater London Authority
- o Elektromotivte
- o Westminster City Council

MINI E Research Project

Funding provided by the Technology Strategy Board is supporting a 12 month field trial of forty MINI E models. The trial will evaluate the technical and social aspects of living with an all-electric vehicle in a real world environment. In addition to BMW Group, the consortium includes Scottish and Southern Energy, responsible for providing the infrastructure in and around Oxford and the South-East of England by installing the private and public charging points; and Oxford Brookes University's Sustainable Vehicle Engineering Centre will be responsible for undertaking scientific data analysis, as well as conducting customer surveys to capture the subjective feedback from users of the MINI E test vehicles.

The Allied Vehicles Project

The Allied Vehicles Project aims to design, test and bring to production 40 battery electric cars by October 2009, via partners Allied Vehicles, Glasgow City Council, ScottishPower, Axion and Strathclyde University. The vehicles will have zero tailpipe emissions of CO2 or indeed any other noxious gases. The vehicles will have a range of 80 to 100 miles on a full recharge and will be capable of recharging from domestic or commercial power supply. The performance of the vehicles will be tested to UN-ECE regulation 101.

This project will produce a range of passenger battery electric vehicles based on the well-accepted Peugeot car range and Peugeot Expert Tepees. Converted by Allied Vehicles, a proportion of the vehicles will be equipped to transport wheelchair passengers, thus widening the range of potential users as far as possible.

The vehicles will be tested in Glasgow, where Glasgow City Council is committed to a low carbon future and is keen to participate in the project. The Council will nominate a variety of users of the vehicles during the test period until December 2010.

The project will significantly extend our knowledge of the ways in which Electric Vehicles (EV) are driven, including information on charging frequencies and locations, distances driven and driving styles. This will provide hugely useful information to utilities and vehicle and battery manufacturers, enabling us to improve future EV batteries, by optimizing their performance to meet empirically-demonstrated needs.

40 charging points will be located around Glasgow. During this one-year test period the vehicles will be monitored using an innovative GPS system to record the number and length of individual journeys, the date and time and the energy usage of each journey, the time and length of charging and the ambient temperature. This data will be gathered via the internet for analysis by experts at Strathclyde University.

Completed analyses will then be made available to ScottishPower, for whom it will provide empirical evidence of the charging infrastructure required to support much greater uptake of electric vehicles. This information will also be of use to government, who may wish to invest in such infrastructure. The information will also be invaluable to battery manufacturers, enabling them to improve the performance of future EV batteries by tailoring them to perform optimally in real-world conditions.

PHV – Paving the way to full commercialisation of plug-in hybrid vehicles

Toyota and EDF Energy have been awarded UK Government funding through the Ultra Low Carbon Vehicle Demonstrator Competition to support a trial of up to 20 innovative Toyota Plug in Hybrid Vehicles (PHV).

Toyota intends to lease the vehicles to existing Toyota Prius fleet customers including a mix of public bodies and private companies. The trials will start in mid 2010, predominately within London for a period of 3 years.

The trial will assess the vehicle's performance in urban driving conditions while also gathering information about the experience of drivers and passengers. This would include an understanding of their habits and preferences when recharging the vehicle – either at home, using a standard electrical point, or at charging points at vehicle fleet depots and elsewhere.

Based on Toyota's full hybrid technology, the new PHV will come equipped with a new powerful lithium-ion battery extending the vehicle's range in electric vehicle mode allowing for zero-emissions drive.

Toyota's Plug-in Hybrid Vehicle enhances the benefits of Toyota's full hybrid technology, which offers low CO₂, exceptional fuel efficiency, seamless acceleration and quiet driving. Toyota's PHV can be driven as an electric vehicle for city commutes, while for high-speed, long-distance journeys it operates as a full hybrid, with its petrol engine serving as both a power source and battery generator when required. The battery is charged during driving, deceleration or braking, or by connecting its plug to a standard electrical point at home or at work.

Since September 2008, Toyota and EDF Energy is trialing one current PHV unit in London.

EEMS Accelerate

The 'EEMS Accelerate' project, will put 21 cutting edge high specification electric sports cars on the road for 12 months with support from the Technology Strategy Board. By monitoring every aspect of their performance over a variety of drive cycles, the project results are expected to provide a major boost to widespread adoption of these exciting and aspirational vehicles. The vehicles demonstrated by 'EEMS Accelerate' have the potential to outperform most of the conventional competition due to the instant torque delivered from electric motors and superior weight distribution offering better chassis dynamics. It is hoped that the resultant knowledge that the latest 'aspirational' cars are actually electric cars will bring about change to current assumptions about Electric Vehicle technology.

The Consortium

AEA, one of the world's leading energy, climate change and data management consultancies, will lead the consortium. AEA will provide specialist project management, energy and environmental assessment, dissemination and market analysis expertise.

The electric vehicles will be produced by four UK automotive partners:

Delta Motorsport – An automotive engineering consultancy with a pedigree in vehicle development and engineering, early stage concept projects, aerodynamic consultancy and design work for Formula one teams

Lightning Car company – a privately owned firm with a small, professional and enthusiastic team of design, engineering production and marketing specialists

Westfield Sports cars – one of the larger niche vehicle manufacturers in the UK, experienced in the development of lightweight vehicles for road and motorsport applications, with a development focus on hybrid and electric vehicle technology.

Ecotricity cars – the world's first wind-powered cars created by the UK's leading green electricity company (charged via energy derived from wind turbines)

Green-Motion, Europe's first car and van rental network focused on providing low emission vehicles will be providing fleet management and support services to the project.

Project Plan

The project will support a programme of demonstration, testing and performance enhancement while simultaneously showcasing UK engineering and design expertise. The electric sports cars will be placed with driving enthusiasts where they will be used for commuting and leisure purposes, including closed-circuit driving.