

**Technology Strategy Board**

Driving Innovation



# Ultra low carbon vehicle technology and supply network development

**COMPETITION FOR COLLABORATIVE R&D FUNDING**

**FEBRUARY 2010**

# Ultra low carbon vehicle technology and supply network development

## COMPETITION FOR COLLABORATIVE R&D FUNDING

### Summary

We are launching a competition with up to £19m available to invest in innovative, industry-led collaborative research, development and demonstration in the field of low and ultra low carbon vehicles.

We are funding this competition with the Office for Low Emission Vehicles to strengthen UK capability and develop the UK's supply networks for vehicle-centric technologies that can deliver a major improvement in cutting carbon dioxide emissions.

In this area the UK has the chance to build on its existing capabilities and establish a global competitive advantage and economic benefit for the UK.

We expect to invest in three to six projects. We welcome applications from any type of industry-led consortium. Strong participation from vehicle manufacturers (VMs) and/or tier 1 suppliers is expected. A partnering event has been set up to facilitate consortia building for this competition; it will be held at Warwick University, Coventry, on 4th February 2010.

### Background and challenge

We established the Low Carbon Vehicles Innovation Platform in September 2007 to promote low carbon vehicle research, design, development and demonstration in the UK, to deliver:

- significant carbon emissions reduction in domestic and international vehicle markets
- faster introduction of low carbon vehicle technology and vehicles (compared with a purely market-driven process)
- a UK automotive sector including the supply chain benefiting from growing demand for lower carbon vehicles – in domestic and international markets.

This is the fourth competition under the innovation platform's Integrated Delivery Programme (IDP). The programme aims to

integrate the low carbon vehicle innovation chain, from the science base, through collaborative R&D to fleet-level demonstration.

The programme has secured over £120m of funding from the Technology Strategy Board, the Office for Low Emission Vehicles, the Engineering and Physical Sciences Research Council, Advantage West Midlands, One North East and Invest Northern Ireland.

The innovation platform has been working with key stakeholders to understand the research priorities needed to support the future developments of road vehicles to help reduce carbon emissions and therefore meet UK and EU climate change targets.

The IDP's industry-led advisory panel has helped develop the scope of this competition. Its input has been informed by the New Automotive Innovation and Growth Team report – *An Independent Report on the Future of the Automotive Industry in the UK* ([www.bis.gov.uk](http://www.bis.gov.uk) under Publications).

### Scope

We are looking to invest in innovative, industry-led collaborative projects which focus on strengthening UK capability and developing the UK's supply networks for vehicle-centric technologies for low and ultra low carbon vehicles.

Consortia should demonstrate the potential to build on the UK's existing capabilities, targeting global competitive advantage and economic benefit for the UK.

We will consider any type of industry-led consortium. We expect the consortia to involve strong participation from VMs and/or tier 1 suppliers with significant supplier involvement, which could include tier 1, 2 and 3 suppliers, small and medium-sized companies with innovative technology, R&D companies and academic partners. We also encourage the participation of companies that are not currently part of the automotive supply chain that can bring technical knowledge and expertise to the consortium.

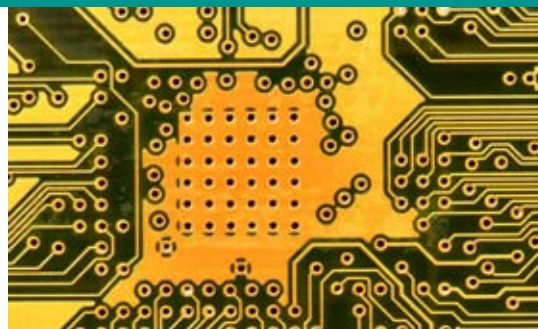
Consortia must demonstrate that each member brings essential attributes, from both a technical and a supply network building perspective. We expect that supply network participants will be predominantly UK-based; however, we also welcome the participation of non-UK companies that wish to set up a base in the UK to be part of this competition, and that intend to expand their activity within the UK beyond the duration of the project.

The project must show technologies that deliver significant cuts in vehicle CO<sub>2</sub> emissions compared to current best-in-class technologies. Each project needs to show how these technologies will accelerate the introduction of vehicles to market and demonstrate an ability to build significant supply chain capability within the UK.

We expect to invest in three to six projects. A physical demonstration of technology at a vehicle or system level is required as part of the project deliverables. The timeline of each project will be left up to the consortium; however, the assessment process will take into consideration the technology, the consortium members and the potential to create and grow supply networks for the duration of this project and beyond.

Each project will need to:

- quantify expected CO<sub>2</sub> savings relative to the technologies' target mass market application when compared to current best-in-class
- demonstrate an approach which will clearly help grow and develop a globally competitive UK-based supply network for the duration of the project and beyond
- accelerate the introduction of technologies that build on the UK's capability and demonstrate a clear route to a viable market
- provide evidence that the durability, integrity and safety of any technology proposed will be in line with industry expectations.



## Technology and consortium examples

We welcome applications from any type of industry-led consortium as long as it meets the criteria. The following technologies and consortia are examples only. We expect each consortium to be creatively developed to address this specific challenge.

**Example 1:** A consortium led by a single VM developing multiple technology supply networks.

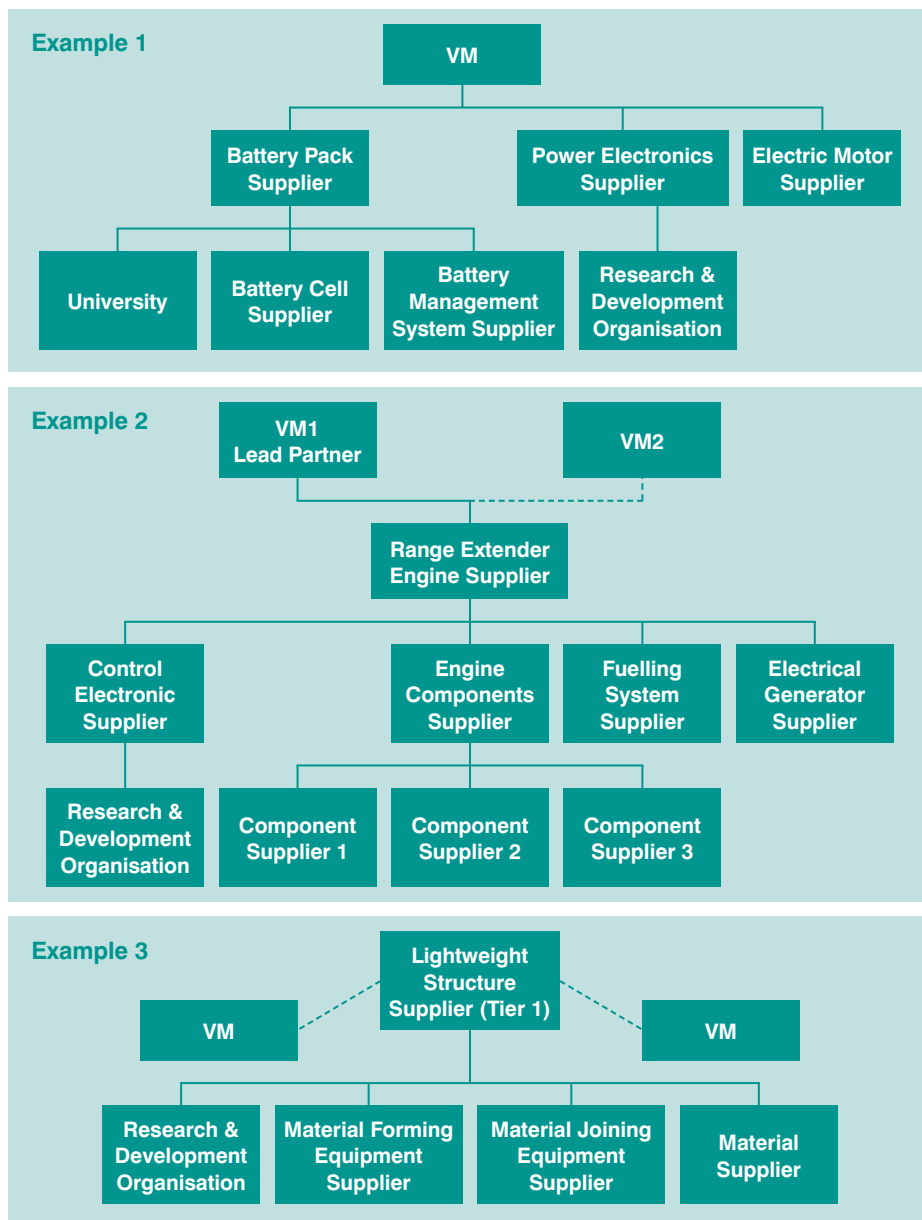
A single VM is developing an electric car. It needs a supply network to support the development and future delivery of key technologies. Suppliers are likely to design, develop and manufacture battery packs, power electronics and electric drive motors. The project could include novel manufacturing techniques that support the introduction of these key technologies for mass market. The key suppliers are likely to be tier 1s with support from many tier 2s.

**Example 2:** A consortium with two VMs developing a single key technology.

Two or more VMs see the need for an efficient, compact combustion engine optimised to provide generation for electrical storage systems in range-extended electric vehicles. The supply companies are likely to be those that design, develop and manufacture the engine. Suppliers of key components for the engine could also be involved. The key supply base involvement would probably be a tier 1 with possible support from R&D organisations.

**Example 3:** A tier 1 supplier developing a single key technology.

A tier 1 is focusing on lightweight structures as a key enabler for future vehicles. It needs input from VMs to understand the vehicle-level requirements. Suppliers will range from base material developers to developers of innovative manufacturing and joining techniques. This project could include tier 1s, tier 2s and R&D organisations.



## Funding allocation and project details

Up to £19m has been allocated to fund highly innovative collaborative research, development and demonstration projects.

We anticipate that the funding will be allocated to proposals working on a combination of applied research (attracting 50% public funding) and experimental development (25% public funding)

activities. Any project also has the potential to include elements of industry-orientated basic research (75% public funding).

Applicants must make a very robust case to support the requested level of funding against each element of the proposed project. A Guidance for Applicants will be published by **8th February 2010** that defines the funding level categories; this can be found on our website at **www.innovateuk.org** under Competitions.

## Application process

The competition opens on **8th February 2010** and applicants need to register their intent to submit an application by **25th March 2010**. The application form, including annexes and finance forms, has to be formally received by **1st April 2010, noon**. An independent assessment panel will review this application. Following the review we will invite a number of high-quality projects, whose proposal fits firmly within the scope and the criteria of the competition, to provide a presentation to a panel of assessors and Technology Strategy Board and co-funding officials. Feedback from the panel assessment will be provided to the successful applicants by **28th April 2010**. It is expected that consortia will address this feedback as part of their presentation, which will commence during the week beginning **24th May 2010**. We will inform applicants of the funding decision by **11th June 2010**. Feedback will be provided to all unsuccessful applicants from the written and presentation stage by the end of **July 2010**.

## Key dates

Consortia building workshop, Warwick University (optional)	<b>4th February 2010</b>
Competition opens	<b>8th February 2010</b>
Briefing day, London (optional)	<b>16th February 2010</b>
Registration of intent to submit deadline (compulsory)	<b>25th March 2010</b>
Deadline for receipt of application	<b>1st April 2010, noon</b>
Invitation to presentation	<b>28th April 2010</b>
Presentation (for invited applicants) week commencing	<b>24th May 2010</b>
Decision to applicants	<b>11th June 2010</b>
Feedback to all unsuccessful applicants	<b>by end July 2010</b>

An optional partnering event has been set up to help facilitate consortia building for this competition; it will be held at Warwick University, Coventry, on **4th February 2010**. Details can be found at [www.low-carbon-ktn.org.uk](http://www.low-carbon-ktn.org.uk) under Events.

There will also be an optional briefing event on **16th February 2010**, which will explain the application process and competition requirements in more detail. Applicants are strongly advised to attend.

## Further information

For information about this and other competitions, and details of how to register and apply, visit [www.innovateuk.org](http://www.innovateuk.org) under Competitions. The Guidance for Applicants will also be available online by **8th February 2010**.

Competition helpline:  
0300 321 4357

Email:  
[competitions@tsb.gov.uk](mailto:competitions@tsb.gov.uk)

## Publicity

The Technology Strategy Board frequently publicises the results of competitions and this includes engagement with the media. All applicants will be given a chance during the competition process to opt out of any publicity. Willing applicants will be asked to provide an agreed form of words for use in publicity material. E-mail [pressoffice@tsb.gov.uk](mailto:pressoffice@tsb.gov.uk) with any queries.

*The Technology Strategy Board is a business-led executive non-departmental public body, established by the Government. Its role 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. See [www.innovateuk.org](http://www.innovateuk.org) for more information.*

The Technology Strategy Board  
North Star House  
North Star Avenue  
Swindon  
SN2 1UE

Telephone: 01793 442700

[www.innovateuk.org](http://www.innovateuk.org)