

Results of competition:

Building an automotive supply chain for the future (IDP10) - Collaborative R&D

Total available funding for this competition was £10m from the Technology Strategy Board.

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
Ariel Limited (lead) Delta Motorsport Limited Equipmake Limited Productiv Limited Xtrac Limited	High Performance Carbon Reduction Sports Car (HIPERCAR)	£3,323,843	£1,966,752
Project description (provided by applicants)			
A low-volume, ultra-high performance production sports car with zero and low emissions achieved through advanced hybrid technology to be built in low-volume using and expanding a UK technology-led supply-chain.			

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<p>Dearman Engine Company Limited (lead) Air Products Public Limited Company CENEX MIRA Limited Productiv Limited The Manufacturing Technology Centre TRL</p>	<p>CE-POWER</p>	<p>£3,244,980</p>	<p>£1,855,914</p>
<p>Project description (provided by applicants)</p>			
<p>This project will deliver a production-feasible waste heat recovery system for urban commercial vehicles, which offers life-cycle CO₂ savings of up to 40%, fuel savings up to almost 50%, and potential payback in less than three years. The project uses the Dearman Engine, a high efficiency liquid-air expander that uniquely harvests low grade heat sources and is most effective in urban duty cycles, working with the internal combustion engine as a hybrid.</p> <p>In so doing, a more efficient and less transient ICE operation is realised, leading not only to higher efficiency but to potential for improved air quality or simplified after treatment. The technology uses readily available materials with low embedded carbon, and operates with commercially available liquid nitrogen which is already produced using off-peak electricity and has great potential for storing “wrong-time” renewables.</p> <p>Bringing together expertise in the Dearman system, industrial gases, IC engines, vehicle systems, legislation and standards and manufacturing, the consortium will advance TRL, MRL and develop an exploitation plan. This will be achieved through an on vehicle demonstration of the system alongside a process of engaging the potential supply, demand and legislative chains. The project creates significant UK advantage in a future urban medium/heavy duty vehicle market of over 3 million units per year.</p>			

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Jaguar Land Rover Limited (lead) European Thermodynamics Limited Ford Motor Company Limited University of Nottingham	Vehicle Integrated Powertrain Energy Recovery (VIPER2)	£3,379,472	£2,067,597
Project description (provided by applicants)			
<p>Jaguar Land Rover, in partnership with Ford Motor Company Ltd, European Thermodynamics Ltd and Nottingham University, will launch a 3-year program of research in which conventional concepts of engine management of thermal energy will be re-examined using state-of-the-art simulation tools, and a novel test engine which will allow the heat available to be directed to the most important components such as the cylinder liner walls. Some of the heat that will inevitably escape down the exhaust will be converted into electricity using a Thermo Electric Generator.</p> <p>In the longer term, if all the project targets are met, it is believed that a 5% improvement in fuel economy is possible through the conversion and management of heat energy. This research programme, scheduled to start in early 2014, is enabled by a £2m grant from the UK government's Technology Strategy Board, and builds on an earlier programme which was also co-funded by the Technology Strategy Board.</p>			

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Lotus Cars Limited (lead) Flybrid Automotive Limited Productiv Limited	Integrated Flywheel KERS - A low-cost, lightweight hybrid solution	£4,948,299	£2,599,180
Project description (provided by applicants)			
<p>The Integrated Mechanical Flywheel KERS low-cost, lightweight hybrid drive project is an Industrial Research initiative designed to accelerate the maturation of the race proven mechanical flywheel energy storage system from Flybrid for use in a Lotus Evora road car.</p> <p>The integration of the flywheel into the manual gearbox will deliver a CO₂ reduction while increasing available power and torque. The project will use matched funding through the Technology Strategy Board IDP 10 competition to accelerate the development of the Flywheel, electronic clutch, vehicle integration and control software by the consortium members to a production intent status.</p> <p>This UK led low carbon technology will generate a positive future revenue stream and support the growth of the UK supply chain.</p>			

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Torotrak (Development) Limited (lead) Advanced Forming Research Centre Forgemasters Limited Tata Steel UK Limited The Manufacturing Technology Centre	Supply Chain Optimisation of Traction Drive Core Components Technology (S-CONTACCT)	£4,183,237	£2,653,288
Project description (provided by applicants)			
<p>This Technology Strategy Board supported project will research and develop an innovative supply chain processes for the production of key components. These components form part of a highly innovative range of products that will support vehicle manufacturers to meet their obligations to reduce carbon emissions.</p> <p>The lead industry partner will be Torotrak (Development) Limited supported in the consortium by Tata Steel, South Wales Forgemasters, the Advanced Forging Research Centre and the Manufacturing Technology Centre.</p> <p>This group will evaluate and develop the most appropriate steels that suit the innovative forging processes to ultimately reduce post processing and thus costs and the supply chain lead time. The outcome will then enable industry to exploit the new processes and therefore see the CO₂ reducing products into market to support the vehicle manufacturers.</p>			