Results of Competition: APC 10: Advancing the UK’s Low Carbon Automotive Capability

**Competition Code: 1804_CRD1_TRANS_APC10**

Total available funding is £30 million

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

<table>
<thead>
<tr>
<th>Participant organisation names</th>
<th>Project title</th>
<th>Proposed project costs</th>
<th>Proposed project grant</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAGUAR LAND ROVER LIMITED</td>
<td>Tucana</td>
<td>£22,236,670</td>
<td>£9,339,401</td>
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<tr>
<td>BROETJE-AUTOMATION UK LTD.</td>
<td></td>
<td>£2,217,898</td>
<td>£931,517</td>
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<td>CCP GRANSDEN LTD</td>
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<td>£1,706,022</td>
<td>£1,023,613</td>
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<td>EXPERT TOOLING &amp; AUTOMATION LIMITED</td>
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<td>£2,466,423</td>
<td>£1,233,212</td>
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<td>Magna International Holding (Uk) Ltd</td>
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<td>£2,841,567</td>
<td>£1,193,458</td>
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<td>TORAY INTERNATIONAL U.K. LIMITED</td>
<td></td>
<td>£2,020,268</td>
<td>£848,513</td>
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</tbody>
</table>

*Note: you can see all Innovate UK-funded projects here [https://www.gov.uk/government/publications/innovate-uk-funded-projects](https://www.gov.uk/government/publications/innovate-uk-funded-projects)*

Use the Competition Code given above to search for this competition’s results

Funders Panel Date: 20/08/2018
| University of Warwick | £4,130,802 | £4,130,802 |

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Funders Panel Date: 20/08/2018
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<th>Project description - provided by applicants</th>
</tr>
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</table>
| Stiffer, lighter vehicle structures are required to enable mainstream electrification of common vehicle platforms, boosting adoption of electrified vehicles and improving their environmental performance. However, this requires a step-change in cost effective structural performance at a design, material and manufacturing-level which is currently unmet across the industry.  

In Project Tucana, Jaguar Land Rover leads a consortium of world-leading academic and industry partners spanning the entire supply chain to introduce large composite assemblies and realise world leading lightweight body structures.  

The consortium will leverage globally cutting edge industrialised materials, design and manufacturing concepts to integrate much higher quantities of affordable lightweight carbon-fibre composites into premium volume automotive applications, while also increasing the knowledge of these global businesses and the UK research base.  

As an enabler for a zero-emission electrified vehicle platform, Project Tucana has potential to reduce vehicle CO2 emissions and improve range and air quality. The project will deliver inward investment opportunities and strengthen UK capability by integrating existing automotive lightweight technologies and developing knowledge to deliver a new UK supply chain at a globally significant scale for cost competitive carbon-fibre-composites.

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</thead>
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<tr>
<td>SIGMATEX (UK) LIMITED</td>
<td>Affordable high Rate Composite Structures (ARCS)</td>
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<td>Cranfield University</td>
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<td>£2,432,964</td>
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<td>GKN AUTOSTRUCTURES LIMITED</td>
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<td>£1,132,796</td>
<td>£487,102</td>
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<td>NISSAN MOTOR MANUFACTURING (UK) LIMITED</td>
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<td>£107,884</td>
<td>£53,942</td>
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Use the Competition Code given above to search for this competition’s results

Funders Panel Date: 20/08/2018
| University of Sheffield | £634,725 | £634,725 |

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Funders Panel Date: 20/08/2018
The global automotive industry continues to face significant challenges in meeting the future needs of the mobility sector, such as improved fuel efficiency, reduced emissions, electrification of power train, autonomous driving and connectivity. One of the biggest opportunities in rising to these challenges comes through the selection of the right materials in the right places within the vehicle. This multi-material approach, giving the design engineers the freedom to select the most appropriate material for a particular component is expected to be a major feature of automotive design in the future. CFRP will play a significant part in that material selection due to its benefits of high strength and stiffness but with a much lower weight factor than alternative materials.

As the mainstream automotive OEM's move increasingly in the direction of CFRP, the industry supply chain must respond to that challenge by demonstrating that it can supply consistent quality parts, to the right performance level, at the rate level required and at a competitive price level.

Whilst much progress has been made on the technology side, the general view is that CFRP is still too expensive versus metallics, and with added complications in terms of CFRP component integration within the vehicle. It is therefore necessary to reduce the cost difference between CFRP and metallic components if CFRP is to truly fulfil its potential as a lightweight material solution to serial Automotive.

The objective of this project is:

* To develop an innovative high volume, low cost carbon fibre textile and material handling process that will provide a step change in achieving cost competitive CFRP parts for serial automotive applications.
* To accelerate the development of a UK supply chain capable to support volume demand for composite components at a rate of \( \geq 50,000 \) units per year (per component).
* To deliver significant CO2 savings through creating an economically viable solution for the cost-effective use of composite parts in affordable cars.
* Create many high skill level jobs that will strengthen the UK's position as a technology leader in the fields of automotive design and manufacture.

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