

Technology Strategy Board

Driving Innovation

Press Release

Embargoed until 0001 on Thursday 5 November 2009

4 November 2009

£9m for new electric city car that can be sustainably manufactured

A project to develop a new all-electric urban car, that will be affordable for many consumers when it reaches market and manufactured using an innovative and sustainable production process, is announced today.

The development of the T.27, the brain child of Gordon Murray Design and Zytec Automotive Technology, has been made possible through a £4.5m investment from the government-backed Technology Strategy Board. With a total cost of £9m, a new research and development project will allow the consortium to develop four prototypes of the vehicle by February 2011.

Science and Innovation Minister Lord Drayson, who will test drive the T.25 - the existing petrol version of the car – today, said:

“The T27 is a great example of smart engineering and sustainable design. It’s timely too, as the UK must demonstrate its readiness to exploit the emerging low-carbon vehicles market. The challenge is far greater than simply meeting stricter EU emissions targets. We need to expand our car industry through green innovation.”

The T.27 is a sustainable vehicle, which means that it will be designed in a way that minimises the use of materials and keeps the embedded carbon of the vehicle as low as possible. The aim is to ensure that the environmental impact of the materials and energy that are used are as low as can be. The iStream® production process is also highly efficient, and flexible to minimise the cost of production.

Gordon Murray, Chief Executive and Technical Director of Gordon Murray Design said:

“The iStream® manufacturing process behind the T.25 and T.27 is all about sustainable, low energy process by design. The T.27 programme is a great opportunity for us and our partners to create what will be the world’s most efficient electric vehicle. An opportunity to start from a clean sheet of paper combined with our disruptive manufacturing technology will result in a product which truly pushes the boundaries of urban vehicle design and further protecting our mobility”.

The aim of the 16 month project is to develop prototypes that will put the consortium in the position where they can further explore the possibility of scaling up and building a manufacturing facility, with the ultimate goal of making this affordable, fun and environmentally friendly car widely available on the open market.

Ends

Editor's notes

1. Consortium partners for the T.27 project are Gordon Murray Design as the lead organisation and Zytec Automotive Limited. Technical support will be provided by Michelin Plc and Continental Corporation and sub-contractors will include MIRA Limited, Vocis Driveline Controls, VCA UK, and ENAX.
2. Iain Gray, Chief Executive of the Technology Strategy Board also commented: "The Technology Strategy Board exists to support projects like this and ensure that clever, innovative and realisable ideas do not founder because of the amount of investment and risk taking that is needed to enable them to succeed. It is essential that business continues to innovate despite tough economic times and the development of this new vehicle is testament to the fact that, despite the risk, businesses that innovate now will be better placed to benefit from economic opportunities in the future."
3. Steve Tremble, Sales and Marketing Director at Zytec also commented: "Zytec have been developing a wide range of electric and hybrid vehicle drivetrains for the past 15 years, but this is one of those rare opportunities where the whole drivetrain (comprising battery, gearbox, motor and power electronics) will be developed from a clean sheet of paper. This will allow us to build on all of our previous experience, and produce a light weight, highly efficient drive-system that, when combined with Gordon Murray's lightweight design philosophy as embodied in the T.27, will result in a step change up in overall vehicle efficiency"
4. The T.27 project will produce four running prototypes of a 3-seater all-electric vehicle achievable of 4-star Euro NCAP rating and excellent pedestrian safety. This ambitious target cannot be achieved by applying a conventional stamped steel construction design, nor with a drivetrain using existing gearboxes, motors or batteries. Instead, an entirely fresh approach is proposed; accepting no compromise in safety, performance, range, space, weight, rolling resistance, ride quality, etc. By applying iStream® methodology to the T.27, a new manufacturing process developed by Gordon Murray Design, and fully integrating it with a custom-designed lightweight, highly efficient drivetrain from Zytec and partners, every aspect of the vehicle can be optimised. This holistic approach results in a car slightly smaller than a Smart, but with more interior space. A similar approach was used by Gordon Murray Design for a 3-seater petrol-driven car (T.25) which is receiving significant market interest. The T.25 provides confidence that the T.27 aims are 100% achievable. T.27 will also set new standards in environmental sustainability. High level life cycle analysis derived from T.25 data predicts life-cycle emissions 63% less than the average car and for the T.27 life-cycle emissions 27% less than similar EVs which is partly due to the iStream® manufacturing approach. The T27 is unique in that it simultaneously addresses all of the factors noted above and this combination of attributes is highly marketable.
5. Public funding for the T.27 will leverage equivalent private funding and the project outcomes will help justify the required follow-on commercial investment to take the vehicle into manufacture by providing a body of evidence that the concept is a viable design for production. The 16 month project has several aims; to position the consortium positively to further explore the possibility of scaling up and building a manufacturing facility in the UK, with the ultimate goal of producing the T.27 in this country; keeping the new technology and IPR within the UK; making this affordable, fun and environmentally friendly car widely available on the open market.
6. The iStream® assembly process is a complete rethink and redesign of the traditional manufacturing process and could potentially be the biggest revolution in high volume manufacture since the Model T. Development of the process began over 15 years ago and it has already won the prestigious 2008 'Idea of the Year' award from Autocar who were given privileged access in order to make their assessment. The simplified assembly process means that the manufacturing plant can be designed to be 20% of the size of a conventional factory. This could reduce capital investment in the assembly plant by approximately 80%. Yet the flexibility of this assembly process means that the same factory could be used to manufacture different variants. The iStream® design process is a complete re-think on high volume materials, as well as the manufacturing process and will lead to a significant reduction in CO2 emissions over the lifecycle of the vehicles produced using it, compared with conventional ones.
7. Gordon Murray Design Limited is a new British company operating from Shalford in Surrey. The new company aims to be the world leader in automotive design and reverses the current industry trend for sub-contracting by having a complete in-

house capability for design, prototyping and development. The company will remain compact and focused and will undertake automotive and other engineering programmes in an efficient and innovative way. For more information please contact Tiffany Hutt on 07872 190103. www.gordonmurraydesign.com

8. ZyteK Automotive Technology is a British engineering company with a reputation for success, pursued both on and off the track. Its substantial automotive engineering experience has been gained by providing major vehicle manufacturers with advanced powertrain and chassis control systems. This expertise led to the rapid growth of its engineering consultancy business, and most recently, to the design, development and manufacture of innovative Hybrid and Electric drivetrains. For more information please contact Steve Tremble on 07836 376090 www.zytekgroup.co.uk.
9. Vehicle manufacturers worldwide will have to adapt to the new EU CO² emissions target of 130g/km, which is to be placed on their sales fleets in 2012.
10. 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 the quality of life. It is sponsored by the Department for Business, Innovation and Skills (BIS). For more information please visit www.innovateuk.org.

Issued by **Claire Cunningham, Media Relations Manager**, Technology Strategy Board.

Switchboard: +44 1793 442700 Direct line: +44 1793 442901, Mobile: 0755 4115745
<mailto:Claire.Cunningham@tsb.gov.uk>.