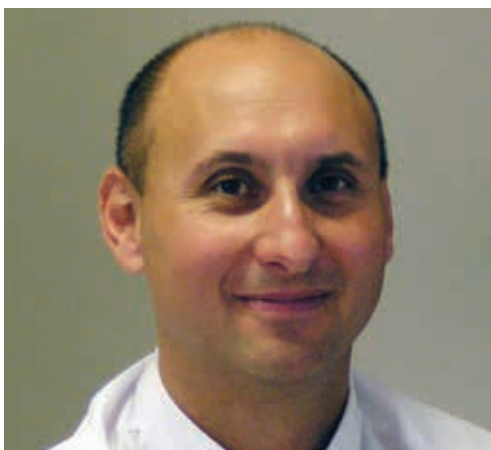


VIEWPOINT

Can Formula E electrify mainstream motoring?



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Just a few years ago, the term 'electric vehicle' conjured up images of a milk float. But perceptions are changing fast and likely to be shifted further with motor racing now going electric as the first FIA Formula E series visits London at the end of this month.

Battersea Park will host the final weekend of racing in the inaugural Formula E series on 27–28 June, bringing motor racing, vehicle electrification and environmental issues into sharp focus in the heart of Britain's capital city. London is an appropriate venue for the series finale; most of the racing teams and technology suppliers are based in the UK and city environments like London are well-suited to electric vehicle adoption, where recent uptake has indeed been encouragingly brisk.

The electrification of vehicles has emerged as one of the most prominent objectives of governments, in the UK and elsewhere, as they seek to meet commitments to cut greenhouse gas emissions. The UK's Committee on Climate Change's analysis for its Fourth Carbon Budget, for example, suggested that it would be broadly appropriate to aim for EVs to represent 60% of new car sales by 2030. Several other countries have announced similarly challenging aspirations, prompting motor manufacturers and the automotive supply chains to invest heavily in

R&D and innovation, introducing a growing range of new electrified products to the market.

From motorsports to mainstream

Technology is a big part of the challenge in the electrification revolution and one in which its proponents say Formula E has an important part to play. As seen in other motorsport series, technical solutions in Formula E stimulated by the intense competition between teams, are promised to 'trickle down' to mainstream models, improving performance and cutting costs.

This first year's cars are based around technology developed by a small group of manufacturers – including Spark Racing Technologies, McLaren Electronic Systems, Williams Advanced Engineering, Dallara and Renault – and more of the leading manufacturers are expected to join the competition in future. From next season, teams will be able to develop their own distinct cars with bespoke technology, and there are hopes that the competition will prompt a race to create even more powerful batteries that will ultimately end up in mainstream road vehicles.

There are already encouraging signs that technology being developed for electric car racing could begin to make an impact in the mainstream. Race series sponsor Qualcomm, for example, sees Formula E as an opportunity not just to showcase technologies but to evaluate and improve wireless connectivity and electric vehicle technology across the globe, especially in the host cities. The company is showcasing Wireless Electric Vehicle Charging (WEVC) technology which it believes will supplant wired charging.

New energy sources

To help overcome the 'well-to-wheel' criticism that electricity used to charge electric vehicles comes from fossil-based sources, Formula E is working with a British company, Aquafuel Research,

which was commissioned to build a pair of mobile generators running on a fuel that it says is virtually emission free – glycerine.

The generators are based on standard production diesel engines – a Cummins KTA50 – that have been adapted with Aquafuel's patented technology. The glycerine itself is a by-product of the biodiesel production process. Traditionally its commercial uses have been mainly in cosmetics but with the new biodiesel supply outstripping traditional demands, this is an alternative application for the product.

The initiative is a result of a research project with (LowCVP member) Greenergy and the partners have been delighted by the results: they found the fuel has improved lubricity and cleaner burning properties and it is also more efficient than diesel in the same engine.

Electricity is only one of the options, of course, for decarbonising road transport fuel, and even here in Formula E we see the need for development of low carbon liquid fuels as a core enabler. It is this complex energy choice for transport which led the LowCVP, in collaboration with the Department for Transport, to convene the Transport Energy Task Force. The Task Force recently concluded that transport energy can and should contribute to major reductions in greenhouse gas emissions and that, for the foreseeable future, increasingly sustainable biofuels have a significant role to play along with other low carbon fuels including methane and LPG as well as progressively decarbonised electricity.

The glamour of Formula E, though, should certainly help to make 'new energy' vehicles sexy, hopefully shifting attitudes towards their adoption as well as helping to transform technology. ●

These and related themes will be discussed at the LowCVP's Annual Conference on June 24 in Westminster. More details are available at www.lowcvp.org.uk/events/conference

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