

EI BAROMETER 2018

Decarbonising transport

There has been a concerted drive to decarbonise transport in the UK, evidenced by the publication of the 'Road to Zero Strategy' and the government's commitment to ban all new petrol and diesel cars and vans from 2040. Such renewed interest is hardly surprising in view of the aspiration to achieve net-zero greenhouse gas (GHG) emissions this century, especially given that transport is now the highest-emitting sector in the UK. Amidst the reinvigorated debate on the transition to zero-emission vehicles, the Energy Institute (EI) asked its members via the *Energy Barometer 2018* survey to take a closer look at the opportunities and challenges of decarbonising transport.

Energy professionals feel that the dominance of petrol and diesel for road transport will be drastically reduced over the next two decades, with electricity filling much of that gap. Electricity is expected to increase its portion of the road transport fuel mix in 2040 to about 34%, from less than 1% currently. Hydrogen and bioliquids are also forecast to increase, by 11% and 9% respectively in the next two decades, from their current very minor contributions. Hence, despite expectations that petroleum will still account for nearly half of the road fuel supply, it is anticipated to be outweighed by the rise of alternative, low carbon fuels before 2040.

However, before the benefits of transport decarbonisation can be realised, there are still major challenges to overcome, including the availability of charging points and other infrastructure, the effects of electrified transport on the grid, and the customer uptake of new and potentially disruptive technologies.

One of the biggest barriers to the decarbonisation of passenger transport identified in the *Energy Barometer* is the deployment of electric vehicle (EV) charging points. Several factors are seen to be obstructing deployment, including the lack of capacity of the distribution grid to support significant additional demand. Capacity and distribution constraints should be addressed in an open and transparent way as

Rupinder Pamme and Kinga Niemczyk highlight EI members' views on the opportunities and challenges of decarbonising the UK transport sector.*

the EV rollout progresses, to allow for informed perceptions of, and industry solutions to, these constraints. More public discussion of 'smart charging' would be particularly useful, as it will be critical for the ability of the network to cope with the expected EV uptake.

Modal shift

The future success of smart charging depends not only on technological development and new market structures, but also on consumer acceptance and behavioural changes. In fact, 'a modal shift' was highlighted by energy professionals as the second most effective factor for reducing emissions from passenger road transport.

The power of consumers will influence market development and will drive, for example, the take-up of EVs, autonomous vehicles or car sharing. Various transport options must be considered, including innovative solutions like 'Mobility as a Service' (MaaS), which will enable consumers to pay for a standard of service rather than by unit of fuel. The impact of other disruptive transport technologies must also be considered.

Moreover, the focus on passenger/light road transport shouldn't overshadow the

complexity of decarbonising freight, shipping and aviation sectors, which are significant and growing GHG emitters. Energy professionals prioritise the shift from road to rail as the most effective measure to reduce emissions from freight road transport. At the same time, they acknowledge the current capacity constraints of the rail network and urge for infrastructure investment in this area. Given the significant investment required for rail network upgrades, other measures singled out in the *Energy Barometer* should also be considered such as setting and enforcing vehicle emission limits, and the potential transition of heavy goods vehicles (HGVs) to hydrogen, CNG or electric drivetrains. In the shift to low carbon freight transport, it will be increasingly important to ensure that fuels such as CNG or hydrogen are indeed low carbon, and are treated as bridge fuels to true zero-carbon vehicles.

When it comes to emissions generated by shipping and aviation, energy professionals are charting a course for efficiency. More than 60% of EI members point to efficiency as the best way to reduce emissions from these two sectors. Aviation is particularly challenging, with forecasts of significantly increased passenger demand in coming decades.

Energy professionals appreciate that the decarbonisation of transport is a complex process, which requires a holistic approach and cooperation between transport, heat, power and other sectors. It obliges all those directing the low carbon transition to better understand consumers' preferences, using a variety of digital technologies. Most important is the need for industry, academia and government to continue engaging with each other, to achieve decarbonisation of transport in the least disruptive manner that delivers the needs of consumers. ●

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The decarbonisation of transport is one of many topics covered in the 2018 *Energy Barometer*. To download a copy of the report, visit knowledge.energyinst.org/barometer

