22 June 2015

LowCVP 2050 Transport Energy Infrastructure Roadmaps show the way to transport decarbonisation

- Studies complement existing vehicle and fuels roadmaps and explain the refuelling infrastructure needed
- Coordination between central and local government, and industry will be critical to future success

A new series of reports for the LowCVP says that the UK can develop the infrastructure necessary to deliver the low carbon fuels of the future but that strong coordination is needed between key actors. Initial public support will also often be needed to enable investment in the necessary infrastructure to be kick-started.

The research, by consultants Element Energy, says that the deployment of the public refuelling infrastructure that is necessary for the UK to meet its carbon emission reduction targets for transport will require investment of more than £10bn by 2050. It will also require long-term policy clarity and consistent government and regulatory support.

The reports will be presented, with responses from leading stakeholders, at the LowCVP's Annual Conference on 24 June in Westminster.

The studies are the 'missing piece', complementing earlier work particularly by the Automotive Council – a government-industry collaboration - which focused on the transition to lower carbon powertrains and fuels. The Automotive Council vehicle roadmaps provided a critical backdrop to these new reports.

Written with input from a wide range of expert industry and government stakeholders, the reports are divided into five parts: A summary report and roadmaps for four different fuel streams: liquid fuels; methane; electricity and hydrogen.

Much recent attention has focused on vehicle electrification with concerns raised about its impact on the supply infrastructure and management challenges. The researchers found that the existing network, utilising smart technologies, is well suited to support the electrification of transport. They found that growing electrification of (mainly) cars will present a peak demand but not a production challenge.
They also found, however, that millions of mainly residential charge points will be needed to support widespread EV deployment and that progress is constrained by uncertainty over future charging technologies.

A visible, accessible and reliable public charging network, the report says, should be rolled out for light vehicles.

The researchers also found that there are many opportunities for heavy duty vehicles to use natural gas supported by mature refuelling technologies but that regulatory barriers need to be addressed. The UK, they said, benefits from an extensive and advanced (uniquely high pressure network) gas grid but that the siting of refuelling stations needs to take account of well-to-tank emissions to deliver on targets to reduce carbon emissions.

For hydrogen, the study highlights its medium- and long-term potential as a vehicle fuel. Initial infrastructure investments will require financial support from government, and local government can also play a key role in providing 'base load' by adopting hydrogen and fuel cell vehicles in public fleets. Hydrogen demand from a range of vehicle types, from passenger cars to commercial vehicles and buses, will be needed to sustain the infrastructure during this early phase. Beyond 2020, decreases in fuel cell vehicle costs and access to low cost, low carbon hydrogen is expected to allow a transition to profitable, private sector investments to build a UK-wide refuelling network and provide the same convenience to customers as petrol and diesel cars today.

The drive for more fuel efficient engines and the introduction of other road transport fuels will inevitably reduce demand for traditional liquid fuels. The reports predict that post 2030 this will put pressure on the commercial viability of the existing forecourt network, particularly in rural locations.

The reports also comment on the potential for LPG and, longer term, for liquid air to contribute to decarbonisation and air quality improvement before 2050.

Jonathan Murray, **LowCVP**'s Policy and Operations Director, said: "The Infrastructure Roadmaps provide much of the missing information that was needed to give policymakers and key industrial actors with a clear overview of the road to decarbonisation in terms of transport fuels."

Celine Cluzel, the lead author for **Element Energy**, said "These reports show the transport refuelling system of the future will be very different from today – more diverse but also more integrated with the existing energy networks. It also shows there is still scope for many innovations and R&D, which is an opportunity for the UK to seize."

Mark Constable, **EDF Energy's** Senior Product Manager - Electric Vehicles and Future Heat, said: "EDF Energy welcome these reports and wholeheartedly supports their findings. The reports recognise the quite different stages of lifecycle development for each fuelling infrastructure. In particular, the balance between the excellent progress made for electricity by the industry and Government thus far, and the challenges that remain, is well struck.

"We hope that this report is of value to all who read it, and that the march towards the ULEV future continues unabated."

Richard Cook, **National Grid's** Design Manager - Network Design, said: "We believe that the use of methane (natural gas) as a fuel in the transport sector can play a significant role in reducing greenhouse gas emissions. Whether it's compressed natural gas (CNG) or liquefied natural gas (LNG), the benefits for use as a fuel in HGVs and buses are clear; lower emissions, quieter engine noise and favourable fuel prices, compared with traditional liquid fuels.

"National Grid owns and runs an extensive natural gas network throughout the UK and we are pleased to have been involved in this project. We believe the reports provide a comprehensive and balanced view of the state of the current methane infrastructure, and what changes are needed to realise the significant environmental benefits associated with this fuel.

"This roadmap can act as a catalyst to significantly grow support for this fuel sector and ensure that the correct legislative and regulatory framework is in place to allow this market to thrive."

The reports are downloadable from the LowCVP website.

NOTES TO EDITORS:

The Transport Energy Infrastructure Roadmap to 2050 reports were prepared for the LowCVP by Element Energy.

The project steering committee included representatives of: Autogas Ltd; BEAMA; BOC Ltd; Calor; EDF Energy Customers PLC; Energy Networks Association; National Grid; OLEV; Renewable Energy Association; Transport for London; Transport Scotland; UK Petroleum Industry Association. A workshop to inform the project included a wider range of stakeholders.

The LowCVP Annual Conference will feature a presentation, with stakeholder responses, of the Infrastructure Roadmap. 'The Energy for Future Transport' will take place on Wednesday 24 June in Westminster. There will be a press briefing (9-9.45am) featuring Formula E Chief Executive Alejandro Agag and AA President Edmund King prior to the LowCVP Conference. Media representatives interested in attending should contact Neil Wallis, as below.

About the LowCVP
The LowCVP (www.lowcvp.org.uk), which was established in 2003, is a public-private partnership that exists to accelerate a sustainable shift to lower carbon vehicles and fuels and create opportunities for UK businesses. Nearly 200 organisations are engaged from diverse backgrounds including automotive and fuel supply chains, government, vehicle users, academics, environment groups and others.

For further information, please contact:

Neil Wallis, Head of Communications. neil.wallis@lowcvp.org.uk Tel: 0207 304 6806 Mob: 07974 255720
Celine Cluzel (Element Energy – lead author), celine.cluzel@element-energy.co.uk