Support for innovation to deliver net zero 01/06/23

Summary

- The logistics sector is embracing the decarbonisation agenda and is committed to playing its part to help the UK achieve net zero.
- The sector is seeking firmer plans from government over the energy infrastructure and technology required to support a fair transition to a green economy. These plans are vital for unlocking private sector investment.
- In some areas of logistics, the most viable technologies for decarbonisation are known, such as electric vans. However, for larger vehicles across all transport modes, the answer is much less clear or is not yet mature. Relevant deadlines are fast approaching and a smooth, managed transition requires business to be able to plan ahead. Both Government and the private sector need to be able to secure value and a return on investment.
- Innovation, including government-backed innovation, plays a key role in determining the pathway to decarbonising logistics. The logistics sector is concerned about the pace of progress of innovation to deliver net zero and over the complexity of the various government innovation funds and programme.
- To make progress and unlock private sector investment, the logistics sector is seeking:
    - Government leadership in progressing cutting-edge technologies within the logistics sector, including delivering the Zero Emission Road Freight (ZERFT) Demonstrator Programme at significantly greater pace.
    - A successor to the Freight Innovation Fund, with this reformed into a long-term fund that consolidates government-backed innovation funding and is focused on facilitating the National Freight Network.
    - Increased focus on supporting the uptake of innovation, including by both the public and private sectors including opportunities to drive down the cost of implementation.

About Logistics UK

Logistics UK is one of the country's largest business groups, supporting, shaping and standing up for safe and efficient logistics. We are the only organisation representing the entire logistics sector.

We represent a sector delivering an increasingly innovative, productive and sustainable system of essential national infrastructure. This system ensures the availability of the products that households, businesses and public services rely on every day, and is supporting the UK's transformation for the future. Our membership of over 20,000 includes global, national and regional businesses and SMEs spanning the road, rail, sea and air industries as well as the buyers of freight services, such as retailers and manufacturers.

Response to inquiry

1. The logistics sector is embracing the decarbonisation agenda and is committed to playing its part to help the UK achieve net zero, with the UK having the opportunity to be a leader in green innovation and investment. However, with achieving net zero by 2050 requiring unprecedented change across logistics, the sector is seeking firmer plans from government over the energy infrastructure and technology required to support a fair transition to a green economy. These plans are vital for unlocking private sector investment.
2. In some areas of logistics, the most viable technologies for decarbonisation are known. For example, for vans and medium-sized HGVs, electric vehicles are assumed to be the way forward and many operators have begun the transition; and for rail freight, electrification is key, and it is estimated that only 800 miles of additional electrification is needed in the UK to enable 95% of rail freight to be electrically hauled. Delivery drones are also expected to be battery powered. To enable this transition, the sector is calling for increased government investment in vehicle charging and electrification, as well as investment in the underlying energy network to ensure it has the capacity required.
3. For larger logistics vehicles across all transport modes, the answer is much less clear or is not yet mature. On road, large electric HGVs supported by rapid chargers may be the answer but hydrogen and/or overhead catenary systems may also play a role, as may low carbon, including, synthetic drop-in fuels. For aviation, the government's Jet Zero

Strategy sees the first large zero emission commercial aircraft entering into service in 2035, potentially fuelled by zero-carbon hydrogen. For maritime, various solutions are being considered, from electric to alternative fuels. All pose challenges, including whether: the energy sources will be dense enough to enable sufficiently long journeys; electricity networks will be sufficiently strengthened for the required increase in charging; zero emission fuels can be produced sustainably in large enough quantities; the required fuel infrastructure will be in place; and, crucially, whether plans for all of these developments will be firm enough to unlock private sector investment in time to meet net zero targets. Plans need to be credible and to align with technology and investment cycles.

4. **While it is not clear which technologies are the most viable for larger logistics vehicles, and which will be supported with the necessary infrastructure, the deadlines the transition are fast approaching and not always aligned with international targets or within the UK:**

    - 2025 – Public sector van procurement restricted to EVs in Scotland and Wales
    - 2027 – Public sector van procurement restricted to EVs across UK
    - 2030 – Sales of new petrol and diesel vans end
    - 2030 – Sustainable aviation fuel (SAF) mandate to ensure at least 10% of jet fuel is SA
    - 2030 – No new public sector diesel HGV procurement in Wales
    - 2035 – Sales of new non-zero emission L-category vehicles (eg, two and three wheeled vehicles) end – proposed
    - 2035 – Sales of hybrid vans and non-zero emission tailpipe trucks smaller than 26 tonnes end
    - 2040 – Sales of all non-zero emission tailpipe HGVs end
    - 2040 – domestic flights to be net zero
    - 2040 – no more diesel-only trains on the rail network
    - 2045 – Scotland aims to be 100% net zero GHG emission
    - 2050 – Net zero.

5. **Innovation, including government-backed innovation, plays a key role in determining the pathway to decarbonising logistics.**

6. To assess how the government is supporting innovation to reach emissions reduction targets, the Department for Business, Energy & Industrial Strategy (BEIS) published, in October 2021, the *Net Zero Research and Innovation Framework* which set out 31 challenge areas across seven categories. One of these challenges is transport, including the decarbonisation of roads, rail, aviation and maritime, and the role transport and mobility as a system can play.

7. Following this, in March 2023, the Department for Energy Security and Net Zero (DESNZ) published the *UK Net Zero Research and Innovation Framework: Delivery Plan 2022 to 2025*, which sets out the landscape of public sector support for net zero research and innovation. This maps the government's current portfolio of research and innovation programmes for the Spending Review period 2022 to 2025 against the categories in the above BEIS Framework. This exercise identified 115 funding programmes supporting net zero research and innovation activities across eight public bodies, ranging in size from £0.35 million to £685 million.

8. The National Audit Office has since reported that: "the complexity of public sector funding will make it hard for DESNZ and the Innovation Delivery Board to track spending" ; "to achieve its net zero objectives the government depends on innovations gaining commercial viability, but the Delivery Plan only covers government support up to the end of the commercial prototype stage" ; "organisations were finding it difficult to access support because of the number and complexity of innovation funding scheme" ; and that "private capital investment in net zero in the UK will need to increase substantially by the late 2020s." We agree with all of this.

9. In the area of logistics, the most important government-backed innovation funds and programmes for achieving zero emissions are below. Government funding is required to expedite progress given the high levels of risk – and also to ensure that private businesses collaborate and share learning. This list does not include the many important programmes designed to reduce emissions as opposed to achieving zero emissions.

    - The DfT Zero Emission Road Freight (ZERFT) Demonstrator Programme, £200m, is focused on the heaviest HGVs (40-44 tonnes) and is aimed at making decisions to inform the deployment of zero emission HGVs and the infrastructure required to support them.
    - Network Rail's and the Rail Safety and Standards Board's on-going R&D Programmes, £24m, which is partly focused on reducing the cost of rail electrification, including through discontinuous electrification.

- The DBT Aerospace Technology Institute (ATI) Programme, £685m, which aims to support the development of zero-carbon and ultralow-emission aircraft technology.
- The Zero Emission Flight Infrastructure project, £1.2m, providing funding for research into the ground handling of future hydrogen aircraft.
- UKRI's Industrial Strategy Challenge Fund (ISCF) Future Flight Challenge, £87.9m, which is focused on drones, electrical / hydrogen infrastructure, regulation and standards amongst other areas, to develop an aviation ecosystem to allow the safe and effective operation of new forms of net zero aircraft.
- The DfT UK Shipping Office for Reducing Emissions (UK SHORE) challenge, £206m, which is about developing and demonstrating pre-commercial clean maritime technologies and accelerating the deployment of near-commercial solutions – for vessels and port-side infrastructure.
- The DfT supported Tees Valley multi-modal Hydrogen Transport Hub, £24m, which is exploring how hydrogen works across transport modes.
- UKRI's network on hydrogen-fuelled transportation, that is looking at what would be needed to support all modes of transport and hydrogen energy.

10. Behaviour change including modal shift is also important for supporting net zero, and the most important government-backed programme for innovation in this area is the DfT's Freight Innovation Fund, £7m, aimed at supporting the commercialisation of capital projects that improve inter-modal links as part of supply chains or further enabling modal shift.
11. **The logistics sector is concerned about the pace of progress of innovation to deliver net zero. The UK is competing with global investment plans for zero carbon – we cannot afford to lose momentum. Logistics businesses want to plan ahead and are currently unable to, as technologies and approaches need to be developed before decisions are made, in partnership between government and the private sector.**
12. Logistics businesses want to plan ahead for the following reasons:
    - Vehicles remain in operation for many years and need to be supported with the necessary charging/fuelling infrastructure. As a result, businesses have lengthy procurement cycles for their fleets and are seeking to develop their zero emission vehicle investment plans now, rather than waiting for the deadlines.
    - They are aiming to deliver a gradual transition to net zero, rather than transform all vehicle fleets in a tight timeframe, as the latter approach would risk severe vehicle and skills shortages which would harm the UK's supply chains and overall economy.
    - As electric cars come into greater use, some of the support structures relied on by the operators of large diesel vehicles – such as fuelling infrastructure – are expected to decline sharply in availability.
    - Many large logistics businesses have their own ambitious carbon reduction targets and are eager to put in place business plans to deliver them.
    - Logistics vehicles are cross-border, in terms of their use and their manufacture. It is therefore important that the UK's planning for net zero includes sufficient time and resources for international collaboration and alignment.
13. **To make progress and unlock private sector investment, the logistics sector is seeking:**
    - Government leadership in progressing cutting-edge technologies within the logistics sector, including delivering ZERFT at a significantly greater pace, as well as maintaining the momentum behind zero emission aviation and maritime innovation. To note, the government initially said that the ZERFT demonstrators would begin in 2022 but the successful projects are yet to be announced.
    - A successor to the Freight Innovation Fund, which concludes in 2024/25. This should be reformed into a long-term fund that consolidates government-backed innovation funding and is focused on facilitating the National Freight Network, committed to in the DfT's 2022 Future of Freight Plan. This would reduce the complexity of public sector funding.
    - Increased focus on supporting the uptake of innovation, including by driving down the cost of implementation. This includes innovation to reduce the cost of increasing energy connections at logistics facilities, in order to support the electrification of road logistics vehicles.

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