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Accelerating freight decarbonisation: the role for regional leadership in delivering 'Net Zero 2050'

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About the research

The UK government has set challenging legal targets for achieving net zero by 2050 with interim measures mandating a 63% reduction of emissions from 2019 to 2035[1], and yet despite this, measurable progress in cutting carbon emissions remains piecemeal and faltering, giving rise to an urgent need to accelerate delivery. Working with businesses, public and third sectors in north and southwest UK, our research[2] investigated the extent to which key freight system actors are knowledgeable and invested in the transition to a future 'net zero' carbon economy. Critically, given the importance of accelerating the delivery of decarbonised freight systems, this research looked at the potential for a regional focus to speed up the transition, using localised knowledge and leadership to plan, co-ordinate and deliver the joined-up infrastructure needed

Key findings

Significant uncertainty is a major challenge for freight service operators and local government as they seek to plan a long-term investment strategy and develop net zero carbon policies. Principal areas of concern remain:

- a lack of transparency and clarity in terms of the direction and timeliness of national regulations and standards.
- the feasibility of timelines for delivering the energy and transport infrastructure on which freight decarbonisation is dependent.
- the maturity and roles for energy carriers such as battery, fuel cell, hydrogen and e-fuel technologies.

Behavioural change in consumers, producers and retailers is frequently overlooked when forming policy for the freight sector due to the widespread perception that decarbonisation as a purely technical challenge. Although consumers and organisations make decisions which contribute to freight sector emissions, they seldom take responsibility being either unaware of the impacts or seeing decarbonisation as 'outsourced' to freight providers.

A regional focus highlights boundary issues when planning future decarbonised freight systems, whether interconnecting UK regions, integrating local and regional infrastructure, and at the interface with national/global freight systems.

Creating alignment with national guidance, fiscal and regulatory measures, was identified as vital for effective regional transition planning. Of concern, regional governance and leadership of freight decarbonisation in the largely absent. In this vacuum, the formation of other regionally-oriented interest groups, such as the South West Infrastructure Partnership (SWIP), could provide a source of semi-formal or formal stakeholder networks on which to build future regional governance, leadership and citizen engagement.

Segmentation of the freight sector however could present significant challenges in the drive to net zero, with conversations and planning of decarbonisation still taking place in sub-sector siloes. Whilst aviation and maritime subsectors are predominantly focused on global or national scales, the domain of road and rail subsectors has a distinctly local to regional focus. Notably, airport and ports could play an important 'boundary spanning' role, bringing global airfreight and shipping perspectives to regional infrastructure planning.

Innovative digitalised technologies will have a major impact on the future configuration of the freight sector as well as facilitating transition to net zero carbon in manufacturing, retail and waste management sectors. They provide the potential for new decarbonised business models built on the 'circular economy' and a reshoring of manufacturing enabled by Industry 4.0. Example transformative technologies include connected autonomous vehicles, digital platforms for online purchasing, blockchain and 'digital twins'.

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Policy recommendations

- *There is an urgent need to develop a society-wide 'carbon literacy' concerning the freight sector's climate impacts and so correct an information market failure.* Increased networking opportunities are required for infrastructure operators to address freight emissions as these become proportionately more significant with increased demand for online delivery services. There is a need to develop greater awareness of the undesirable demands society places on the freight sector, e.g. through raised expectations of just-in-time, next day and 'free' deliveries. Policymakers must be empowered to challenge such practices and business models, including within interdependent sectors such as manufacturing, retail, freight and waste management.
- *Clear national policy guidance is needed urgently from central government to empower businesses and devolved administrations to take action to speed up freight decarbonisation.* This will assist by reducing risks and the current paralysing effect of uncertainty on local investment and policy decision-making. National policy must be well-founded to give the confidence that local decisions will not be subsequently undermined by national policy changes.
- *Greater cross-sectoral engagement is needed from those who commission and buy freight services, and the energy, digital and financial sectors on which logistics depend.* There is a need to develop a collaborative culture in which decarbonisation permeates all future freight decisions. Collective responsibility, sharing of knowledge and alignment of strategy is needed to coordinate and speed up the process of freight decarbonisation. Smaller organisations need support to implement freight decarbonisation plans, either through developing the necessary expertise 'in-house', or through partnerships with external expertise.
- *The UK should develop regional route-mapping and governance to co-ordinate delivery of freight decarbonisation and the supporting infrastructure.* Sitting below national level, regions provide an effective and efficient scale for joining up the UK's transition planning; from top-down national policy, with bottom-up local initiatives, and across neighbouring regions. The approach should integrate resources, expertise and local knowledge: convening stakeholder networks at a sufficient scale for action, and bringing coherence to strategic planning and delivery of decarbonisation in a way that smaller local administration would find difficult. For example, decarbonisation lies at the intersection of the subregional transport decarbonisation strategies and subregional freight strategies being developed by Subnational Transport Bodies (STBs) and it is important that these are joined-up.
- *The route-mapping process should be seen as a process providing direction from the current freight infrastructure, systems and business models to the end goal of net zero emissions by 2050.* Emphasis should be on integrating technologies, piloting new business models and ensuring targets for infrastructure investment are optimally sequenced to maximise progress towards net zero and co-benefits, e.g. improved public health from active travel. Strong monitoring, governance and transparent reporting processes should balance flexibility to adjust the 'route' according to conditions, whilst assuring sufficient interim progress to deliver net zero end-goals
- *It will be important to 'pull through' the findings of publicly funded and private-sector research and innovation, rapidly integrating innovative technologies and business models.* Research funding will be necessary to build real-world demonstrator projects, including living laboratories and 'collaboratories', backed up by data-rich modelling and analysis. The aim should be to create collaborative spaces to transfer knowledge from scientific research, to integrate innovations and so learn how to deliver transformative freight decarbonisation at scale. It will be important to provide assistance to small-scale organisations, including investors and SME start-ups, as these organisations have found it relatively more difficult to engage with the net zero transition process to date.

"Government must lead the change. Reducing emissions and adapting to climate change must be embedded throughout policy. All parts of government have a role, requiring strong coordination and an effective devolution of powers and responsibilities to drive delivery."" Extract from: Progress in reducing emissions 2021 Report to Parliament. Climate Change Committee, June 2021

[1] Committee on Climate Change December 2020. 'The Sixth Carbon Budget. The UK's path to Net Zero.'

[2] This policy briefing has been developed from the findings of the CRAFTeD (Co-produced Route-mapping to Accelerate Freight Decarbonisation: A Transdisciplinary Learning and Decision Framework) project, a research collaboration between University of the West of England and the University of Bristol funded by Decarbonising UK Freight.

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