OVERCOMING BARRIERS TO NET ZERO TRANSPORT

A discussion paper on how to enable a place-based approach

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About this paper

This discussion paper accompanies the research paper Net Zero Transport: the role of spatial planning and place-based solutions, which was carried out by a research consortium led by LDA Design with City Science and Vectos. It summarises discussions with stakeholders during the course of the research, which helped to illuminate key barriers to a place-based and plan-led approach to transport decarbonisation, and suggested possible solutions.

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Introduction

This discussion paper accompanies the research paper Zero Carbon Transport: the role of spatial planning and place-based solutions, which was carried out by a research consortium led by LDA Design with City Science and Vectos.

During the literature review and stakeholder workshops, the research team identified a series of barriers which make it difficult to convert the public, political and legislative will to achieve net zero surface transport and better place outcomes into tangible results on the ground. The barriers point to the need for action to deliver:

1. **More effective leadership**

2. **Better integration across public policy**

3. **Greater support for policy and decision makers at the local level**

4. **More funding and resources**

5. **Actions which make active, public and shared mobility more accessible and affordable than private modes**

6. **A behavioural shift away from car-dependent lifestyles**

This discussion paper describes the barriers in more detail, and sets out possible recommendations for change that were suggested during the stakeholder workshops and in subsequent discussions among the research team.

These barriers and recommendations are not exhaustive. Many overlap and some will be more applicable than others, depending on local experiences and circumstances. They have been included to raise awareness of some of the practical issues that may be faced in pursuing a place-based approach to net zero transport, and to stimulate discussion over how the planning, transport and development sectors might explore new ways of working as they rise to the challenge of decarbonisation.

While many of the suggestions relate to leadership, policy and funding decisions at various levels of government, private developers and consultants also have a key role to play by embedding net zero principles and better placemaking at the heart of land promotion, design and development activities.

1. Effective leadership

Barriers

A perceived lack of leadership within central and local government and the development industry is a major barrier to achieving net zero transport and better placemaking. Without effective leadership, it is immensely challenging to drive forward the net zero agenda and ensure that plans, policies and decision-making prioritise measurable decarbonisation and the creation of better places.

A place-based approach to transport decarbonisation will require radical transformation of how we plan, design and use space. Many of these changes will require major adjustments to how people live their lives and move around on a daily basis. These adjustments should deliver multiple benefits to people and communities in the form of healthier, happier, more resilient communities, better access to amenities and greenspace, safer and more equitable mobility, a more resilient natural environment and a more secure future for the planet.

However, some of the changes required to deliver these benefits will be controversial, as they involve curtailing private vehicle movements and ensuring that alternative modes of travel are always the easier and more affordable option. This is necessary as the evidence suggests that providing viable alternatives to private vehicle use, without also making it more difficult to drive, will not achieve net zero emissions in the required timescale. It would also fail to realise the wider placemaking benefits that arise from reducing the dominance of vehicles in the public realm and from creating space for people.

In short, difficult decisions are needed both to reach net zero and to realise its full potential for transformative change, and we will not succeed without taking them.

Discussions during the course of the research suggest that the political leadership needed to make these difficult decisions is currently lacking, with significant resistance among many elected councillors and officials to implementing 'changes on the ground' such as road closures, road space reallocation and the implementation of Low Traffic Neighbourhoods. This is despite the fact that an increasing number of local authorities have declared 'Climate Crises' and 'Ecological Emergencies'.

Part of the of the problem may lie in the lack of empirical evidence available to decision makers to make informed decisions about the transformative interventions needed to achieve net zero transport. While the role of electric vehicles (EVs) will be important, there is a misconception that these will be a 'silver bullet' in delivering emissions reductions, and that they are without environmental cost. It has also been suggested that that an 'EV first' approach is often being favoured as it is perceived to minimise disruption to established transport networks and lifestyles. This reasoning fails to take account of the fact that high-car dependency is ultimately a barrier to the creation of environments that can reduce the need to travel and facilitate the switch to more sustainable modes such as walking, cycling and public transport. There is therefore a perceived gap between the position of some leader's with regard to support for net zero emissions and higher quality design, and the action needed to achieve these objectives.

It has also been suggested that successful implementation of national policy at a local level has

sometimes been hampered by a perceived lack of visible support - and a positive narrative - from central government and local MPs. This has been observed in relation to Covid-19 related active travel measures to widen pavements, close streets and create cycle lanes. This experience may reduce the willingness of local councillors to bring forward more ambitious proposals in relation to active travel, and/or to maintain and expand upon existing measures following initial trial periods.

Recommendations

- Establish a cross-party commission to achieve consensus on the Department for Transport's 'Decarbonising Transport Action Plan' and provide long-term certainty over policy.

- Create a dedicated Minister for Decarbonisation with a single brief to drive forward decarbonisation across all areas of government and to work with local leaders to support practical implementation of measures to reduce emissions from transport and development.

- Create a shared decarbonisation vision through local and regional policy, focused around mobility capacity and better placemaking.

- Ban the use of single mode transport models as evidence to inform policy and decision-making by elected leaders and public authorities.

2. Integration across public policy

Barriers

There is a clear lack of integration between public policy at national and local levels in terms of aligning the transport and the town and country planning systems with achievement of net zero targets and delivery of better place outcomes. For example:

- There is no reference to 'zero carbon' or the net-zero target in the National Planning Policy Framework (NPPF), which refers only to the planning system supporting the transition to a less ambitious 'low carbon future' and 'low carbon economy'.

- There is no requirement in the NPPF for Local Plans or individual planning applications to measurably demonstrate how plans, policies and proposals will contribute to the delivery of the net zero target, or indeed the less ambitious 'low carbon' target.

- Local Plans are too focused on the allocation and management of land for growth, and lack the strategic vision and policies needed to ensure that future growth is planned to deliver zero-carbon outcomes or that existing places are a focus for proactive renewal to reduce carbon emissions.

- National transport policy is contradictory, setting out aspirations for walking and cycling to become the natural choice for short-journeys, while the Road Investment Strategy (RIS) proposes extensive road-building that will encourage further car-based development and lock-in high car dependency.

- The transport appraisal process focusses on journey times and road capacity and fails to place sufficient emphasis on the carbon impact of trips or the embodied carbon of transport infrastructure.

- Local Transport Plans often accept and protect existing road traffic capacity, to the detriment of delivering high quality and direct mobility interventions such as active travel corridors or high-quality public transport through reallocation of roadspace.

- When planning for strategic infrastructure needs, Local Transport Plans place too much emphasis on the delivery of long-planned roads-based schemes that may no longer be compatible with achieving net zero, or necessary due to the increase in digital commerce, education and home-working which the Covid-19 pandemic has dramatically accelerated.

- Local Plans and Local Transport Plans are often prepared independently by local planning and highways authorities, and lack a shared vision for net zero emission transport that uses the full potential of integrated land use and transport planning to achieve decarbonisation in the required timescale.

- There is often limited ability to plan effectively across administrative boundaries, despite the fact that journeys don't stop at these boundaries.

- The proposed Future Homes Standard that is due to become mandatory in England from 2025 currently does not set standards for household transport emissions, despite the fact that transport is now the biggest carbon emitting sector in the UK.

The disconnect between different layers of legislation and policy prevents the emergence of genuine spatial planning, where transport, land use, climate change and other areas of government policy related to social inclusion, health and wellbeing, environmental restoration and industrial strategy can be planned and delivered in an integrated way to maximise added-value and co-benefits.

The proposals for planning reform set out in the Planning White Paper are unlikely to address this disconnect without significantly strengthening provisions on strategic cross-border planning and ensuring that town planning and transport authorities operate as one integrated team aligned behind a shared vision for net zero places.

Recommendations

- Update the NPPF to:
  - Make 'zero carbon outcomes' a key component of the definition of 'sustainable development' against which Local Plans and planning applications are considered.

  - Replace all references to 'low carbon' with 'zero carbon' to ensure that policy aligns with the legally binding requirement for 'net-zero' emissions in the Climate Change Act.

  - Introduce a definition of and explicit support for '15 minute neighbourhoods' and apply an 'exception' test for proposed development that cannot demonstrate conformity with these principles.

- Ensure that all land allocated for development (or zoned for 'Growth' or 'Renewal' in Local Plans under proposals put forward in the Planning White Paper) is subject to strict requirements for delivery of outcomes related to zero carbon transport and local living and is accompanied by an ambitious, place-specific vision.

- Place a duty on transport planning authorities to ensure that Local Transport Plans are prepared on the basis of a vision-led approach with the purpose of meeting defined carbon reduction targets, reducing trips, maximising use of active and shared modes and achieving the ultimate goal of net zero emissions from transport in the local area.

- Consider ways of better integrating Local Plans and Local Transport Plans to deliver a shared net zero agenda. This could be potentially be achieved through the creation of integrated 'Local Place and Mobility Plans' to bring together land use and transport planning in a single digital document focused on the planning and delivery of net-zero communities based on local living and sustainable mobility.

- Update Building Regulations to ensure that the Future Homes Standard considers emissions from transport within the definition of zero-carbon.

3. Empowered local authorities

Barriers

The lack of integration between national planning policy and the legislative net zero target can create difficulties for local planning and highway authorities who wish to pursue a more ambitious policy agenda to drive net-zero outcomes at the local level. For example:

- Local authorities seeking to adopt a more ambitious and interventionist approach to achieve net zero sometimes feel they are limited by the lack of explicit support for net zero outcomes in the NPPF, with policies requiring delivery of net zero development potentially open to challenge at Examination and leading to costly and time-consuming revisions.

- Many measures relating to monitoring and control of emissions for end-to-end trips are outside the operational control of individual planning and highways authorities and require coordinated action on a regional or national basis, which can be hard to achieve in the absence of robust legal or policy frameworks on cross-boundary working.

- Local planning and transport authorities do not have the power to compel freight and distribution operators to consolidate logistics hubs to enable more efficient use of road space and facilitate last-mile delivery by other, more sustainable modes.

- The wide range of operators of public transport, new forms of shared mobility and EV charge infrastructure is a barrier to the development of genuinely integrated local networks, with limited powers available to local authorities to ensure integration of infrastructure, access and pricing.

- Financial support to encourage uptake of sustainable modes such as subsidising active travel equipment, public transport and the cost of purchasing EVs is not within the power of

most local authorities, or is contingent on support from central government to provide the necessary funding and infrastructure.

- Local fiscal measures to disincentivise journeys by private vehicles can be difficult to introduce due to a narrow emphasis on congestion and roadside air quality in Local Transport and Air Quality Management Plans, as opposed to reducing carbon emissions.

- The Traffic Regulation Order (TRO) process to reprioritise road space and introduce access controls on vehicles is vulnerable to failure due to opposition from drivers of private vehicles and the nervousness of local elected officials in implementing controversial changes.

Public authorities need both the vison and the power to deliver that vision in order to achieve transformational change and deliver net zero transport. Importantly, they also need the confidence that the planning tools already available to them can be used to deliver new forms of growth and spatial outcomes that function very differently from 'business as usual'.

This is not incompatible with a market-led approach to housing delivery and development, or indeed a thriving mobility and logistics sector. On the contrary, setting out an ambitious vision, required spatial outcomes and a clear pathway to deliver these through the planning system provides certainty and clarity to developers and operators.

It has been suggested that efforts by some developers to be more ambitious in limiting vehicle ownership and pursuing low-car mobility strategies have been resisted by some highways authorities due to non-compliance with current policies. Discussions around incorporation of infrastructure for shared mobility such as eBikes and car clubs, as well as provision of EV charge points can also be frustrated by uncertainty over how new forms of spatial development and mobility will be delivered, maintained and operated in future.

The answers to some of these questions will only be found through sustained engagement across the public, private and community sectors to understand where there are gaps in existing legislation, policy and regulatory systems and what needs to be done to overcome them to deliver net zero transport.

Recommendations

- Use Local Plans and Local Transport Plans to set ambitious requirements for trip reduction, mode share targets and 'zero carbon' outcomes to provide a strong basis for introducing 15 minute neighbourhoods, road space reallocation and demand responsive public transport and shared mobility.

- Create stronger strategic or regional planning structures to enable emissions to be monitored, mapped and reduced through appropriate measures across the length of a whole journey.

- Require local planning, highways and transport authorities to create Local Distribution Networks and identify areas for consolidated logistics hubs to better manage the impacts of increasing home deliveries and enable rapid decarbonisation of the commercial fleet, including through consolidated EV charge infrastructure and greater use of 'last mile delivery' via active and shared modes.

- Introduce national regulation of shared mobility and EV charge infrastructure operators to ensure networks are open-access, interoperable and aligned with national and local strategies to deliver a zero-carbon public transport network.

- Enable local areas to strike Advanced Quality Partnership Agreements (AQAPs, as defined in the Buses Act 2017) with all public transport and shared mobility providers to create fully integrated, high quality local mobility networks that provide a genuine alternative to private vehicle ownership.

- Make greater use of 'Experimental Traffic Regulation Orders' to reprioritise road-space at pace and work with communities to explain the reason for such measures and to identify how they can be tailored to deliver benefits to the community.

4. Funding and resources

Barriers

A lack of funding and resources to invest in active travel, public transport and other forms of shared mobility networks has been cited as a key barrier to implementing more ambitious and transformational projects to deliver net-zero.

The Cycling and Walking Investment Strategy (CWIS) published by government in February 2020 provides longer term certainty over funding for active travel. However, its success in boosting active travel mode share will be dependent on the ability of local authorities to design and build integrated networks.

The government's pre-Covid-19 Budget in March 2020 allocated £5 billion of spending in England to buses and active travel combined. This is insufficient to deliver the kind of networks needed to achieve a transformational shift away from private cars towards walking and cycling on a national scale.

General budgetary pressures have also been identified as a barrier to introducing access and parking restrictions to discourage and prevent private vehicle use and create 'Low Traffic Neighbourhoods'. Particular disincentives to pursuing more ambitious schemes include:

- Loss of revenue for local authorities from on-street car parking.

- The cost of implementing Traffic Regulation Orders (TRO) and investing in higher quality paving, street furniture and modal filters that are perceived to place an additional financial burden on highways maintenance budgets.

- A lack of capital funding available to local areas to invest in major active and public transport infrastructure.

- A lack of revenue funding to subsidise services and ensure timely delivery and integration of networks from the outset in new developments.

- The high cost of upgrading the electricity grid to facilitate installation of EV charge points at the scale and locations where they are needed, which is unviable for most local planning

and highway authorities and public transport operators.

- The high cost to developers of 'reserving' grid capacity for EV infrastructure in new developments, which will be built out over a long timeframe with uncertain demand. This is also at a time when developers are being encouraged to switch from gas to electric home heating.

Securing funding for measures to reallocate roadspace and invest in new infrastructure can be especially problematic in areas with two-tier local government that lack the strategic decision-making and more focussed approach to transport budgets that unitary and Combined Authorities can deliver. However, every new home built without the potential for zero carbon transport represents a future cost for conversion in the future.

There are also issues around significant competing priorities for the allocation of funds from the Community Infrastructure Levy and Section 106 developer contributions, with affordable housing and roads-based schemes such as junction capacity upgrades often prioritised over delivery of area-wide active travel networks and enhancements to public transport.

It is vital that ambitious policies and initiatives to achieve net-zero transport are accompanied by sufficient funding to deliver the necessary infrastructure and spatial changes. This includes not just investing in active and public transport infrastructure, but also providing funding to local areas to adapt and retrofit existing places along 15 minute neighbourhood principles to facilitate more local living and trip reduction. This includes introducing traffic-free streets, mobility hubs, co-working spaces, superfast broadband, local retail and leisure spaces and high quality public open space and green infrastructure.

Many of these spatial interventions might typically be considered as area-based 'regeneration' or 'redevelopment' and outside the scope of transport funding. However, their impact on reducing trips and therefore reducing carbon from transport means they need to be a priority in future budgeting at national and local level.

Recommendations

- Reappraise proposed spending plans in the March 2020 Budget to consider how national transport and planning spending could better reflect net zero goals and the potentially long-term impact of Covid-19 in reducing both the number and average length of trips.

- Substantially increase the amount of funding available to local areas to invest in creating active travel networks, including through more extensive implementation of 'quick wins' such as street closures, road space reallocation and low traffic neighbourhoods in addition to the planning, design and delivery of segregated cycle networks and e-Bike hire services.

- Provide local areas with increased funding for the development of integrated public transport and shared mobility networks, including capital investment for new strategic infrastructure and sufficient revenue funding to ensure that transport planning authorities and operators can guarantee a consistently high standard of service that meets long-term local transport needs.

- Work with transport providers, electricity distribution network operators and local government to find a cost-effective solution for delivering strategically located EV charge

infrastructure for the public transport, shared mobility and logistics networks.

- Ensure that zero carbon transport is a priority in the collection and distribution of developer contributions from new development.

5. Accessible and affordable sustainable modes

Barriers

In order to reduce trips and achieve modal shift away from vehicles, places need to be designed to make local living as easy as possible and to make active travel, public transport and other forms of shared mobility the obvious choice for journeys outside the local area. Where journeys via public transport or private vehicles are needed, these need to be zero emission. Crucially, local living, active travel and zero emissions modes need to be accessible and cost competitive for providers and travellers. There are currently multiple cost and accessibility barriers that limit the scope for significant mode shift, including:

- The absence of existing local services in many areas which force people to travel to access daily needs and for work and leisure.

- The often-disconnected nature of active and public transport networks compared with the perceived convenience and comfort of driving, resulting in little incentive for many people to choose a non-car based journey without a clear cost advantage.

- The high cost of using public transport and shared mobility, which continues to rise above the rate of inflation.

- The comparatively low cost of driving for people who travel on a regular basis, supported by the national policy to freeze fuel duty since 2010

- The high cost of procuring EVs of all forms, which currently limit the extent to which public transport, commercial, and private vehicle fleets are switching to zero emission fuels (though this is expected to become less of a problem as zero emission fuel costs fall rapidly).

- The cost of upgrading the electricity transmission grid and installing the necessary charge infrastructure, which will limit the roll-out and accessibility of strategically planned zero emission fleets at scale even as costs for vehicles falls.

As EVs are not liable for fuel duty, this fiscal disincentive to vehicle use will decline over time. This could further entrench the cost disadvantage faced by active and public transport relative to private vehicles, particularly as the currently high cost of EVs falls.

There is a clear need to consider alternative means of disincentivising vehicle use through the tax system. This needs to be part of a broader review of how the tax system can be used to complement spatial interventions brought forward through the planning system to reduce trip

demand, and accelerate the shift towards active and public transport.

Recommendations

- Introduce a zonal approach in urban areas to establish a hierarchy of accessibility for private vehicles, ensuring that active and public transport are the most convenient options in most circumstances.

- Consider greater access restrictions and fiscal disincentives for ownership of the largest and most polluting vehicles, including a potential ban on SUVs and HGVs in urban areas to account for their high energy and space demands and the higher safety risk they pose to people walking and cycling.

- Introduce distance-based road pricing to ensure private vehicle ownership is taxed appropriately as fewer vehicles are liable for fuel duty, and to create a more direct link between cost and mileage to help influence consumer behaviour.

- Review pricing of public transport at national and local level to ensure fares are simple and affordable for all users.

- Consider development of a national 'model' 'Mobility as a service' (MaaS) platform for integrated mobile ticketing, service information, maps and connection details across modes and service providers.

6. Changing behaviour

Barriers

Behavioural attachment to cars, and the idea that streets and roads are primarily for the movement and storage of vehicles, is perhaps the most intractable barrier to delivering place-based solutions to decarbonisation.

The fact that transport overtook power generation as the largest emitting sector in the UK in 2015 is testament to the cultural normalcy attached to driving, private vehicle ownership and road-based logistics, despite a growing acceptance and understanding of climate change among the general population.

If the decarbonisation of transport is to be a catalyst for creating healthier, happier and resilient communities, then overcoming entrenched attitudes to the role and purpose of streets, spaces and neighbourhoods, and the need and ability to travel by road-based transport, will be a major challenge.

It requires an honest discussion at national and local level over the scale of changes needed and the respective roles that government, communities and individuals need to play in reaching net zero as quickly and as equitably as possible.

Recommendations

- Undertake a process of engagement with local communities to generate better understanding of the link between travel, transport, carbon emissions, air quality and health and the need to pursue bold actions through spatial planning to reduce trips, private car use and road based logistics in particular.

- Establish a clear expectation through local and national planning policy that streets and spaces in urban areas are primarily for the amenity, enjoyment and local movement of people, and that walking and cycling are the obvious choice for short trips.

- Use national and local planning tools, including the forthcoming National Model Design Code and updates to Manual for Streets, to present an inspiring vision of what streets and neighbourhoods designed for zero-carbon could look like and to highlight the benefits to different groups of people and communities.

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