

# **Contents**

Gloss	Glossary		
Table	of recommendations	3	
1.1	Zero Emission Vehicles (ZEV)	3	
1.2	Demand management	6	
1.3	Improvements to vehicle efficiency	11	

# **Glossary**

Term	Description		
CAV	Connected and autonomous vehicles		
E-bikes / e- scooters	Electric bikes / scooters		
EV	Electric vehicle		
ICE	Internal combustion engine vehicles		
MaaS	Mobility-as-a-Service		
PGA	'Policy gap action': Actions and activities identified through analysis that are likely to be needed to bridge the policy gap between baseline scenarios and the Decarbonisation Trajectory		
TDM	Travel Demand Management		
TfN	Transport for the North		
UTMC	Urban Traffic Management Control		
ZEV	Zero emission vehicles		

## **Table of recommendations**

The tables below outline policy measure recommendations and actions for Transport for the North (TfN), National Government and TfN Partners to reduce surface transport emissions in line with TfN's Decarbonisation Trajectory. The tables provide a more comprehensive (although not exhaustive) set of recommendations adding to key recommendations outlined in Chapter 5 of the Decarbonisation Strategy.

#### 1.1 Zero Emission Vehicles (ZEV)

Ref	Responsibility	Sub-area	Recommendation
1	TfN	Road vehicles	<b>PGA 1:</b> Develop a pan-northern ZEV infrastructure plan to ensure trans-boundary road trips are considered, factoring in interoperability across the region and optimal locations for high-power charging hubs on the Major Road Network, with input from Local Authorities and the Distribution Network Operators (DNOs).
2	TfN	Road vehicles	<b>PGA 2:</b> Work with Local Authority partners and Highways England to facilitate large ZEV truck trials in high traffic corridors in the North.
3	TfN	Road vehicles	<b>PGA 3:</b> Work with Local Authorities and freight stakeholders to help aggregate large orders of ZEV vans and trucks across the North and overcome demand shortages.
4	TfN	Rail	<b>PGA 4:</b> Through the Northern Powerhouse Rail programme, support the government and Network Rail in identifying appropriate routes for electrification and associated implementation.
5	TfN	Rail	PGA 5: Work with Network Rail and train operating companies to:  ensure service patterns are based around the progression of electrification and minimising the use of diesel-only trains; and  optimise timetables to maximise benefits of frequency and reduce flighting of services.
6	TfN	Rail	<b>PGA 6:</b> Influence Government to trial alternative technology freight locomotives in the North.
7	TfN	Rail	<b>PGA 7:</b> Work with Network Rail to ensure there is sufficient capacity to allow freight traffic to run directly and with minimal dwell times, reducing emissions from existing diesels.
8	National Government	Road vehicles	Strengthen the existing policy to phase-out ICE car and van sales by 2030 to include hybrids.

Ref	Responsibility	Sub-area	Recommendation
9	National Government	Road vehicles	Increase taxes on new ICE vehicles from the early 2020s, with rates escalating in line with emissions intensity.  • Increase Benefit-in-Kind and Vehicle Excise Duty rates on all ICE vehicles from 2023.
			Fiscal policy should shift towards substantially increasing the cost of new ICE vehicles, with rates escalating in line with emissions intensity.
			Taxes should initially target new ICE vehicles, as they will impact low-income consumers the least. Once there is a significant second-hand ZEV market, taxes on running costs should be increased.
10	National Government	Road vehicles	Develop a coherent and comprehensive strategy for charging infrastructure, defining a role for local and regional bodies, providing public funding where appropriate and developing a regulatory regime that enables the private sector to invest and ensure interoperability.
11	National Government	Road vehicles	As more ZEV HGV models become available in the 2020s, introduce a system of strong grants and tax incentives.
12	National Government	Road vehicles	Fund large ZEV HGV trials in high-traffic corridors in the North. Instruct Highways England to facilitate these trials on the Strategic Road Network.
13	National Government	Road vehicles	Implement measures to rapidly increase supply of ZEV models. This could include measures that stimulate domestic manufacture, which also have the potential to drive green growth in the North.
14	National Government	Rail	In partnership with Network Rail, identify and fund a core network for electrification with the highest traffic density, then prioritise secondary, lower density routes where alternative technology will be the permanent solution.
15	National Government	Rail	For routes where alternative technology (battery and hydrogen) is the long-term solution, provide funding to procure new rolling stock based around the residual life of existing diesel trains.
16	National Government	Rail	In partnership with delivery bodies, work with freight operating companies to understand the need for incremental electrification of freight.
17	National Government	Rail	Support freight operating companies and rolling stock builders in the development of alternative technology freight locomotives.

Ref	Responsibility	Sub-area	Recommendation
18	National Government	Rail	In partnership with delivery bodies, work with freight and train operating companies and TfN to ensure there is sufficient capacity to allow freight traffic to run directly and with minimal dwell times, reducing emissions from existing diesels.
19	TfN Partners	General	Develop a model for delivery and maintenance of electric vehicle charging infrastructure, covering rapid hubs, on-street charging, public parking spaces, and council fleets. Initially proactive bidding for Government funds will be needed, but over time private sector investment will support this, subject to an effective national and local regulatory regime.  • Facilitate the early delivery (pre 2025) of
			highly visible, fast and rapid charging infrastructure in publicly-owned car parks.
			<ul> <li>Deliver on-street, or 'nearby', residential charging infrastructure in areas with limited off-street parking and high car usage. Complement this with policies to encourage EV car-club provision and charging price caps to ensure that prices for on-street charging are no more than for those with off-street chargers.</li> </ul>
			<ul> <li>Implement Parking Standards to ensure ongoing and increasing retrofit of existing parking spaces in car parks and leisure and retail venues to EV priority spaces (with charging infrastructure).</li> </ul>
			<ul> <li>Early conversion of council fleets (pre 2025).</li> </ul>
			<ul> <li>Policies to ensure that opportunities to install passive provision for EV infrastructure during road improvements are taken.</li> </ul>
			<ul> <li>Consistent and high maintenance standards on all public charging infrastructure to allay potential user anxiety around this issue.</li> </ul>
			<ul> <li>Implement early, but time limited, 'soft' incentives to encourage EV uptake in town centres, such as reserved/discounted parking.</li> </ul>
20	TfN Partners	General	Implement a common procurement framework for infrastructure across administrative areas to encourage economies of scale and interoperability across the region and attractiveness to private investment.
21	TfN Partners	General	Carry out community engagement to increase understanding and buy-in of EVs and EV infrastructure.
			<ul> <li>This could include local awareness initiatives including telematic diagnostics</li> </ul>

Ref	Responsibility	Sub-area	Recommendation
			and 'try before you buy' schemes. It could also be an opportunity to consult on optimum locations for EV charging).
22	TfN Partners	General	Implement policies to prioritise ZEV shared transport, such as car share and car clubs, supported through prioritised public parking and rapid charging infrastructure. This is likely to be needed most urgently in a Digitally Distributed scenario, which sees a move towards higher car ownership and usage due to the popularity of low-emissions vehicles and the accessibility of CAVs.
23	TfN Partners	General	Collectively adopt taxi licensing policies that require new vehicles to be zero-emission. This will need to be coupled with provision of charging infrastructure at taxi ranks.
24	TfN Partners	General	Aggregate purchases of ZEV vans and trucks across the North (supported by TfN)
25	TfN Partners	General	Commit to contractual requirements with public transport and shared vehicle operators to accelerate the transition to zero-emission vehicles within a defined timeframe.
			<ul> <li>Engage with bus operators to set targets and standards for rapid roll-out of ZEV buses.</li> </ul>
26	TfN Partners	General	Designation of CAV drop off and pick up bays to allow vehicles to vacate city and town centres when not in use, freeing up public realm from charging infrastructure and releasing real estate (current car parks) for other uses. This will be most important under an Urban Zero Carbon scenario and should be implemented alongside other policies to stagger commuting times avoid congestion issues.
27	TfN Partners	In smaller towns, villages and dispersed communities	Incentivise EV uptake (including electric bikes) and development of home charging infrastructure through direct funding and awareness raising (e.g. telematic tests, EV trials).
28	TfN Partners	In smaller towns, villages and dispersed communities	Develop charging infrastructure at rural tourist spots to counter range anxiety. These should be developed in such a way to avoid unsustainable traffic levels within protected rural areas (e.g. National Park park & ride schemes).

## **1.2 Demand management**

Ref	Responsibility	Sub-area	Recommendation
29	TfN	Mode-shift	<b>PGA 8:</b> Develop and implement comprehensive plans for the regional public transport network, such as Northern

			Powerhouse Rail and wider improvements to the rail network.
30	TfN	Reducing car travel	<b>PGA 9:</b> Develop an evidence base on the extent to which less work-related travel has a detrimental effect on productivity and agglomeration to understand whether home-working can be consistent with TfN's vision for a transformed Northern economy.
31	TfN	Shared mobility	<b>PGA 10:</b> Use our role on within the Rail North Partnership to promote shared mobility at train stations, including car share, car club, cycle hire and e-scooter schemes.
32	TfN	Shared mobility	PGA 11: Provide evidence and strategic support to partners to identify opportunities for shared mobility.  • For example, in relation to transport-related social exclusion and where cycle hire and e-scooter schemes would deliver maximum environmental benefit alongside wider social, health and
			economic benefits.
33	TfN	Freight efficiency	<b>PGA 12:</b> Work with Government to support regional coordination of measures to improve logistics efficiency, including consolidation centres, mode shift to rail and information democratisation schemes.
34	TfN	Planning policies	<b>PGA 13:</b> Influence government to develop appraisal guidance that includes the full impacts of transport projects on carbon.
35	National Government	Mode-shift	Work with train operating companies to implement a targeted reduction in rail fares and increase integration and flexibility of ticketing systems.
36	National Government	Mode-shift	Provide a substantial and consistent funding stream to Local Authorities to improve active travel networks and public transport (e.g. subsidise bus and light rail networks to deliver new vehicles, offer cheaper fares to passengers and deliver service improvements).
37	National Government	Reducing car travel	Develop a coherent plan for taxing and pricing car travel that accounts for reduced Fuel Duty revenues and incentivises key outcomes such as reduced overall car travel, more efficient road network operation and uptake of ZEVs.
38	National Government	Reducing car travel	Support employers to roll-out home working, flexible working and remote working hubs.
39	National Government	Shared mobility	Ensure Local Authority funding and planning regimes support shared mobility solutions alongside traditional public transport options.
40	National Government	Shared mobility	Require employers to report on emissions from all employee travel to encourage a shift towards vehicle sharing.

41	National Government	Freight efficiency	Require shippers to provide consumers with information on emissions from different shipping options and encourage uptake through information and pricing.
42	National Government	Freight efficiency	Fund a project to develop common data collection methods, formats and sharing platforms that overcome competition and privacy barriers and enforce data reporting to government.
43	National Government	Freight efficiency	Establish a framework for consolidation centre planning as well as funding and support for Local Authorities to perform local area assessments.
44	National Government	Freight efficiency	Support the licensing of high capacity vehicles on specific roads (major motorways) for specific users where the benefits are clear.
45	National Government	Planning policies	Use the National Planning Framework to promote `15/20-minute neighbourhoods' within the planning process and plan transport investments accordingly.
46	National Government	Planning policies	Develop appraisal guidance that includes the full impacts of transport projects on carbon and air quality.
47	TfN Partners	Mode-shift	Use marketing policies to re-build confidence in the safety and value of public transport.
48	TfN Partners	Mode-shift	Subject to Government funding, invest in bus and light rail networks to and offer improved journey quality, accessibility and cheaper fares to passengers.  • Subsidise the bus network to deliver new buses and offer cheaper fares to passengers.  • Invest in bus priority measures to deliver improvements to overall journey times and reliability.
49	TfN Partners	Mode-shift	<ul> <li>Implement policies to enhance dedicated cycle networks, low-traffic neighbourhoods, and activities to promote behaviour change.</li> <li>Invest in cycling infrastructure using a two-tier approach: delivering a network of fast / direct cycle superhighways and quieter (possibly less direct) routes.</li> <li>Support the delivery of Travel Demand Management (TDM) behaviour change programmes including travel plan support for workplaces, schools, residential and area-based travel plans.</li> </ul>
50	TfN Partners	Mode-shift	Implement policies to promote safe and accessible use of e-bikes and e-scooters, especially for longer or more challenging commutes.
51	TfN Partners	Mode-shift	Implement policies to increase the safety, convenience and safety of active travel.
			Implement development management policy to increase the comfort and convenience of active

			travel users of new or retrofitted offices (e.g. showers, drying facilities, secure cycle storage).
			<ul> <li>Implement policies to protect pedestrian use of pavements. Micro-mobility solutions should not be at the expense of walking and disabled access quality or experience.</li> </ul>
			<ul> <li>Improve the climate resilience of active travel infrastructure, increasing comfort and safety levels in all weather types.</li> </ul>
			<ul> <li>Policies to limit vehicle speeds on main rural cycling/walking routes.</li> </ul>
52	TfN Partners	Reducing car travel	Roll out parking policies to reduce congestion and make space for sustainable infrastructure.
			Develop and/or refresh urban public parking controls, standards and pricing strategies to strengthen parking as a TDM measure, including EV parking strategies and targeted removal of onstreet parking. As part of this, on-street parking in city and town centres should be more expensive than off-street parking to discourage cruising whilst waiting for spaces.
			<ul> <li>Seasonal (or permanent) freeing up of parking spaces to be used as 'parklets' or additional cycle storage.</li> </ul>
			<ul> <li>Provision of reserved delivery parking spaces on residential roads.</li> </ul>
53	TfN Partners	Reducing car travel	Consider charging policies such as clean air zones or congestion charging, particularly where and when sustainable transport modes are a viable alternative option.
54	TfN Partners	Reducing car travel	Utilise urban traffic management control (UTMCs) and Regional Control Centres to proactively manage residual vehicle demand and maximise available road capacity.
55	TfN Partners	Shared mobility	Utilise planning contributions from new developments to enable shared vehicle provision.
56	TfN Partners	Shared mobility	Develop mobility-as-a-service (MaaS) platforms and mobility credit systems to link public transport journey stages and improve accessibility and reliability.
			<ul> <li>Implement policies to incentivise the development of MaaS capability.</li> </ul>
			Direct mobility credit systems at certain geographies or communities where uptake may require greater support or is most crucial, including for low-income groups and those living in areas of low EV home-charging capability.
57	TfN Partners	Shared mobility	Support the provision of demand-responsive bus services to complement existing networks.
58	TfN Partners	Shared mobility	Trial and roll out cycle hire / e-scooter sharing schemes.

			<ul> <li>Identify locations where cycle hire / e Scooter schemes would deliver maximum environmental benefit alongside wider social, health and economic benefits.</li> <li>Support and facilitate introduction of such schemes (subject to Government position following UK wide e-scooter trials).</li> </ul>
59	TfN Partners	Shared mobility	Introduce wider TDM and travel planning measures to promote shared mobility.
			<ul> <li>Consider allowing policy to include docking stations as an alternative / addition to standard cycling parking.</li> </ul>
			<ul> <li>Implement policies that prioritise shared transport options, such as taxis, car sharing and car clubs, through dedicated public parking, discounted and designated charging infrastructure for taxis, and use of bus lanes for shared modes / high occupancy vehicles.</li> </ul>
			Embed car club parking within car parking standards for new development.
60	TfN Partners	Shared mobility	Implement softer measures to encourage the uptake of MaaS.
			<ul> <li>Discounted and designated charging infrastructure for taxis.</li> </ul>
			<ul> <li>Workplace parking levies and 'cash out' schemes that reward employees who choose not to use a workplace parking space.</li> </ul>
			ZEV pricing exemptions.
61	TfN Partners	Planning policies	Use local planning policy to promote `15/20-minute neighbourhoods', prioritise development close to public transport hubs and encourage car-free or car-lite development.
62	TfN Partners	Planning policies	Consider introducing a Workplace Parking Levy, utilising lessons learnt from Nottingham.
63	TfN Partners	Planning policies	Support and facilitate the roll out of car-free zones and streets.
			<ul> <li>In relation to new housing and commercial developments, implement development management policy to ensure active travel modes and public transport are always more convenient than private car use for local trips.</li> </ul>
			<ul> <li>Implement planning policies that encourage the 'unbundling' of the cost of parking from new housing prices to incentivise the take up of car- free or car-lite development.</li> </ul>
64	TfN Partners	Planning policies	Develop park-and-ride sites with integrated EV charging infrastructure and cycle parking. This is likely to be less effective in smaller towns (which will see most of the population and jobs growth under the <i>Priority Places</i> scenario).

65	TfN Partners	Planning policies	Implement planning policies that support the development of freight consolidation centres.
66	TfN Partners	Planning policies	Support the delivery of TDM behaviour change programmes including travel plan support for workplaces, schools, residential and areabased travel plans.

## 1.3 Improvements to vehicle efficiency

Ref	Responsibility	Sub-area	Recommendation
67	TfN	General	<b>PGA 14:</b> Work with partners to increase public awareness of fuel-efficient driving styles and the associated environmental and financial benefits.
68	National Government	General	Ensure an ambitious post-Brexit regulatory regime on new vehicle $\text{CO}_2$ emissions, aligned to UK carbon budget commitments.
69	National Government	General	As per the recommendations above, ensure Benefit-in- Kind and Vehicle Excise Duty rates on all ICE vehicles escalate in line with emissions intensity.
70	National Government	General	Roll out nationally funded eco-driving training schemes, implemented through workplaces in relation to freight operators or organisations with large company car fleets.
71	National Government	General	Support smaller freight operators to implement other efficiency technologies, such as aerodynamic attachments.
72	National Government	General	Ensure new vehicle regulations use technology solutions to support efficient driving styles.
73	National Government	General	Work with Highways England to review maximum speed limits on the Strategic Road Network where safe to do so.
74	TfN Partners	General	Extend existing demand management and pollution abatement measures (e.g. Ultra Low Emission Zones) to consider fuel efficiency of private cars, so as to tackle the trend towards driving larger, heavier private vehicles (e.g. sports utility vehicles).

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