Written evidence from the Urban Transport Group (ELV0063)

Consultation response

Electric Vehicles Enquiry

Environment and Climate Change Committee

Lords Select Committee

Content

1. Introduction

1.1. The Urban Transport Group (UTG) is the UK's network of city region transport authorities. UTG represents the seven largest city region strategic transport bodies in England, which, between them, serve over twenty million people in Greater Manchester (Transport for Greater Manchester), London (Transport for London), the Liverpool City Region (Merseytravel), Tyne and Wear (Nexus), the Sheffield City Region (South Yorkshire Mayoral Combined Authority), the West Midlands (Transport for West Midlands) and West Yorkshire (West Yorkshire Combined Authority).

1.2. Our wider associate membership includes Cambridgeshire and Peterborough Combined Authority, Nottingham City Council, Strathclyde Partnership for Transport, Tees Valley Combined Authority, West of England Combined Authority, Translink (Northern Ireland) and Transport for Wales.

1.3. We are a thought leader in urban and local transport policy, bringing together stakeholders across the transport sector to advocate for policies that deliver affordable, trusted, green transport networks that enrich and connect people and places.

2. Response

Q1 What are the main obstacles to the achievement of the Government's 2030 and 2035 phase-out dates?

2.1. Our member areas all have ambitious targets for achieving net zero carbon emissions in the coming years and decarbonising transport is a key part of this. In addition, priorities around improving air quality require a shift to electric private vehicles where public transport or active travel do not provide viable or practical alternatives.

2.2. The scale of the challenge of meeting the ambitious phase out dates is significant. The Government has made decarbonising vehicles a policy priority and made funding available for this task. However, there is a need for greater cohesion of national policy with less fragmentation between the approach taken to different transport modes and the provision of green energy infrastructure to support them.

2.3. A key obstacle towards achieving Government's 2030 and 2035 phase-out dates is the lack of a coordinated, long-term approach on strategy, funding and delivery. There is also uncertainty around the future of motoring taxation linked to previous subsidies for zero emission vehicles and emerging conversations around road user pricing.

2.4. If local transport authorities are to support the successful delivery of the phase-out plan - and decarbonisation of transport in general - as rapidly and efficiently as possible, then there is a need for government to involve city regions more closely in the formulation and implementation of policy.

2.5. The current fragmentation impacts on the ability of local transport authorities to support the provision of infrastructure and work with key partners to enable the transition to electric vehicles. Currently there is both insufficient infrastructure as well as capacity for its growth. Restricted network capacity and the cost of upgrades is also a considerable issue.

2.6. In order to meet the 2030 target, there is a need to address the challenges around affordability and access to charging facilities. Beyond the lack of rapid expansion of electric charging infrastructure, equitable access to charging facilities for those without access to off-street parking who rely on public charging must urgently be addressed.

2.7. Although incentives like the Local Electric Vehicle Infrastructure (LEVI) scheme will increase the number of chargers, it will not assist drivers with the higher costs of public charging. Without greater policy support to level the playing field of costs for drivers it is likely that local authorities will increasingly have to deal with residents attempting to charge EVs using home supplies even where this presents a hazard for other road/pavement users.

2.8. Throughout our response to this inquiry, we will further explore the specific challenges and changes needed to deliver sufficient charging infrastructure and grid capacity as well as to assist local transport authorities to support private vehicle decarbonisation alongside decarbonisation of their fleets and the wider public transport system.

2.9. In order to decarbonise the transport system and achieve the phase out target dates it is also important to consider other non-ICE vehicle solutions, such as hydorgen powered vehicles. Hydrogen fuel cell vehicles are very similar to electric vehicles in that they use albeit smaller numbers of batteries and feature similar if not identical electric drive motors and axles. Hydrogen vehicles also require a significantly smaller amount of time when comparing recharging batteries in the conventional way. Therefore, the support to transition to hydrogen vehicles along with the installation of the required infrastructure should be considered holistically as part of the phasing out and decarbonisation plans.

2.10. There is in general a considerable tension between equitably supporting the transition of private cars to zero emission technology without encouraging car use[1]. It is not enough for authorities to simply encourage transition from ICE to zero emission private cars; they must also encourage mode switch to more sustainable forms of travel. It is, therefore, important that the shift to zero emission vehicles, and the provision of the charging infrastructure they require, is not considered in isolation, but as part of a strategic approach to decarbonising the whole transport system, including modal shift and reducing the need to travel. It is critical that the shift to zero emission cars is not to the detriment of public transport use and active travel which remain the greenest, and most space-efficient, means of transporting people.

[1] UTG, 2022 Decarbonising urban vehicles - Challenges and opportunities for city region public authorities

Q2 What specific national policies, regulations or initiatives have been successful, or have hindered, EV adoption to date?

2.11. We welcome the ambitious pledge to end all sales of new petrol and diesel cars and vans in the UK by 2030. We believe this has accelerated the transport decarbonisation journey and invigorated the public debate around the topic. However, our primary concern is with the strategic policy surrounding the pledges. For example, the Decarbonisation Plan[2], whilst featuring many welcome sentiments and bold ambitions, fails to commit to specific policies and legislative changes or longer-term funding arrangements[3].

2.12. The Zero Emission Vehicle (ZEV) mandate, set to come into force in 2024, is also welcome and should support the availability and affordability of EVs. However, this will not be fruitful if charging infrastructure and capacity issues are not addressed urgently. To meet this growing demand, we need a charging network that can deliver, both in terms of availability and reliability.

2.13. As has been raised by many EV industry representatives, the current VAT differential between public (20%) and home (5%) EV charging, is an outdated policy hindering EV uptake among those without driveways. Reviewing and potentially reducing this differential could make EVs significantly more appealing to many consumers and improve equity for those who cannot charge at home. The current VAT differential coupled with the fuel duty freeze for petrol and diesel cars, is likely to deter many drivers from switching to an electric vehicle.

2.14. The emergence of technologies like 'gullies' (cable trays) that offer residents the option to connect to their home supply to charge on the street is also creating a further tier of inequality in terms of which residents can benefit from these technologies and the associated costs and liability concerns for local authorities. Much of government policy appears to be driven by surveys of drivers and the desire to have charging where cars are currently parked, i.e. on street. This approach does not acknowledge that some behaviour change is also going to be needed to support new technology.

2.15. We have previously explored the role that local transport authorities play in transport decarbonation, including in our 2022 report Decarbonising urban vehicles[4]. This report, amongst many other committee consultation submissions, highlights our concerns over the lack of integrated policy making and implementation. For example, the Electric Vehicle Infrastructure Strategy[5] states that "local authorities are fundamental to successful charge point rollout, particularly for the deployment of widespread on street charging. They are ideally placed to identify the local charging needs of residents, fleets and visitors." However, the current picture is mixed, due in large part to a lack of

[2] Decarbonising Transport – A Better, Greener Britain (publishing.service.gov.uk)
[3] UTG, 2020 Response to DfT consultation on Transport Decarbonisation Plan
[4] UTG, 2022 Decarbonising urban vehicles - Challenges and opportunities for city region public authorities
[5] UK electric vehicle infrastructure strategy - GOV.UK (www.gov.uk)

cohesive policy making and long-term funding support that would enable local transport authorities to fulfil this role.

Q3 Given that the Government should apply a behavioural lens to policy-which involves people making changes to their everyday lives, such as what they purchase and use-is there a role for clearer communication of the case for EVs from the Government?

2.16. Clear and targeted communication to alleviate any anxiety or concern that drivers, or for that matter all stakeholders involved in the provision of EVs and decarbonisation, is crucial. This is both to reassure as well as to 'sell' the benefits of a transition to an EV.

2.17. Similar clarity in communication is necessary regarding incentives and support for consumers. Many expect and support more incentives and direct financial help towards purchasing and operating an electric vehicle. The government should be both promoting the available support as well as being clear on future plans.

2.18. The language used in the debate surrounding transport in general also matters. The false dichotomy on 'motorist vs other' is making a significant impact on the public debate and perception of the decarbonisation agenda. Pitting different transport modes against each other will only hinder the wider task of decarbonising.

2.19. Communication alone will of course not alleviate the reasonable concerns drivers hold. In order to switch to EVs, drivers need to be confident that there will be, for example, accessible and effective charging infrastructure to enable their mobility needs.

Q4 What are the overall environmental benefits that would result from achieving the 2030 and 2035 targets?

2.20. The full transition to electric vehicles, alongside modal shift to public transport and active travel, is one of the most important actions needed to achieve the UK's Net Zero target and the countless associated health, economic, societal benefits that comes with it.

2.21. The UK was one of the first countries in the world to establish legally binding carbon emission reduction targets, in the 2008 Climate Change Act[6]. This mandated emission reductions of 80% by 2050. In 2019, the Committee on Climate Change recommended that this be extended to a Net Zero greenhouse gas emissions target for 2050 in order to meet the commitments under the Paris Agreement[7]. This recommendation was incorporated into law as an amendment to the 2008 Climate Change Act in June 2019[8].

[6] HM Government (2008) Climate Change Act
[7] Committee on Climate Change (2019) Net Zero: The UK's contribution to stopping global warming
[8] Prime Minster's Office (2019) PM Theresa May: we will end the UK contribution to climate change by 2050

2.22. Air pollution is one of the most considerable environmental risks to human health and is responsible for up to 36,000 early deaths in the UK every year[9]. Around 24 million people live in urban areas with air pollution above legal limits in England. Transport is both a cause, as well as a solution to addressing this major challenge. With an increasing number of local transport authorities pursuing air quality improvement policies, national efforts with a clear timeframe and strategy will further complement this local work and make a considerably larger impact.

2.23. Motorised road travel is the largest contributor to transport carbon emissions (responsible for almost 70% of the UK's annual domestic transport CO2 emissions), with more than 95% of the 26 million tonnes of transport-related carbon emissions per year from road transport[10]. This makes the challenge of decarbonising transport a vital part of environmental action.

2.24. The 2030 phase out target is a significant milestone for climate action in the UK. It will help to significantly cut carbon emissions and represent a big step towards meeting the UK's near-term climate targets. Urgent action is required to drive down transport emissions, as they have remained largely flat since 1990[11].

2.25. Electric vehicles have significantly lower total carbon output per vehicle lifetime than a typical Internal Combustion Engine (ICE) powered vehicle. An electric car emits 37% less CO2 than petrol[12].

2.26. Whilst the use of EVs produces zero tailpipe emissions and can reduce lifecycle emissions significantly, they are not entirely emission-free, highlighting the continuing need for modal shift away from private vehicles. Like ICE vehicles, EVs generate harmful particulate matter from the wearing down of brakes, clutches, tyres and road surfaces, as well as by the suspension of road dust[13]. The European Environment Agency (EEA) report outlines how manufacturing and production of EV's carries a significant environmental impact, and is much higher than fuel-based vehicles, due to the materials used to produce an EV and the requirement of more energy to mine raw materials.[14] The extraction of these raw and precious materials presents not only a considerable environmental cost but also significant ethical concerns, given complex political and humanitarian issues due to the location of the mines and the problematic practices often involved[15]. These environmental and ethical dilemmas need to be considered by decision makers and manufacturers, as the demand for these materials increases. A circular economy approach could help address this, through encouraging the

[9] Air pollution: applying All Our Health - GOV.UK (www.gov.uk)
[10] TfN (2021) Decarbonisation Strategy
[11] Climate Change Committee (2020) The UK's transition to electric vehicles
[12] How much CO2 can electric cars really save? (transportenvironment.org)
[13] OECD (2020) Non-exhaust particulate emissions from road transport
[14] EEA report confirms electric cars are better for climate and air quality — European Environment Agency (europa.eu)
[15] The Ethics and Geopolitics of the Electric Vehicle Transition | Carnegie Council for Ethics in International Affairs

reuse and recycling of vehicles and batteries, alongside the development and support of more ethical and environmentally conscious extraction processes.

Q5 What is the value and role of alternative transport models such as car clubs and micro mobility vehicles in the Government achieving the 2030 phase out date, and how should the Government consider their roles and opportunities for use in transport decarbonisation?

2.27. Shared mobility modes such as car clubs, shared bike and e-scooter schemes have an important part in decarbonising the UK's transport system through encouraging modal shift; improving transport choices and accessibility; and reducing the numbers of private vehicles on the road.

2.28. E-bikes and e-scooters, for example, have major potential to bring about modal shift for certain demographics, journey types and geographies where a transition to public transport or conventional bicycle would be difficult or unrealistic to achieve[16].

2.29. Our report 'Fully charged: Powering up the potential of e-bikes in the city regions' [17] explores the role of e-bikes in the new urban transport systems and decarbonisation. E-bikes offer an attractive alternative to the car for people living in urban, suburban and even rural areas as well as filling gaps in public transport networks for less well served areas, enabling people to cycle further or connect with transport hubs for onward travel.

2.30. An evaluation of e-bike schemes across continental Europe found that typically around half of e-bike trips replaced car trips and that in some cases, as many as 70% of e-bike trips were previously made by car. This report also finds evidence that e-cargo bikes have the potential to revolutionise first and last mile travel and logistics, replacing up to a quarter of commercial deliveries in cities, 50% of commercial service and maintenance trips, and 77% of private trips.

2.31. The levels of mode shift that could be achieved through greater use of e-bikes and other shared mobility modes could result in substantial carbon savings and congestion reduction as well as health benefits for users.

2.32. However, these benefits can only be fully realised if shared mobility is integrated into transport systems and wider placemaking and spatial planning. Shared mobility hubs (bringing together a range of modes from e-bikes to car-club vehicles in one place) have the potential to bring transport choice to people's doorsteps, connecting places underserved by public transport and enabling people to join onto the core network for their onward journey[18]. Mobility hubs could even include public charging points for EVs, bringing benefits for those without the option for home charging.

[16] UTG (2022) Equitable Future Mobility: Ensuring a just transition to net zero transport
[17] UTG (2021) Fully charged: Powering up the potential of e-bikes in the city regions
[18] UTG (2022) The Good Life: The role of transport in shaping a new and sustainable era for suburbs

2.33. In order to unleash the potential of shared mobility both to support modal shift and decarbonization targets, urgent legislative changes must be delivered, for example to grant permissive powers for city regions to regulate the market for new mobility formats, and standardized e-scooter regulations[19].

Q6 How does the charging infrastructure for EVs need to develop to meet the 2030 target? Does the UK need to adopt a single charging standard (e.g., the Combined Charging System (CCS)) or is there room in the market for multiple charger types?

2.34. In order to meet the 2030 target, there is a need for a rapid expansion of electric charging infrastructure. Public charging infrastructure has struggled to keep pace with EV uptake to date. Whilst electric vehicle numbers rose fourfold to almost 400,000 between 2019 and 2021, the number of public charge points increased by just 70 per cent in the same period, according to the Society of Motor Manufacturers and Traders[20]. Currently there is both insufficient infrastructure as well as capacity for its growth.

2.35. The UK Government's National EV Strategy estimates that 300,000 public chargers will be needed nationally by 2030[21]. However, its supporting modelling material states that the requirement could range from 280,000 to 720,000 public chargepoints over the period.

2.36. The current challenge highlights the need to have certainty and regulatory and financial clarity on the pathway from the Government for both local transport authorities and private suppliers, and support for the industry and authorities in making the necessary investments in delivering charging infrastructure.

2.37. Private sector interest is often focused around the most commercially attractive sites, meaning some areas are likely to be left behind if left solely to market forces[22].

2.38. There is also a need for a holistic approach to charging to manage the spikes in demand due to mass EV adoption. This must include incentives for consumers, businesses and fleets, in addition to education and awareness campaigns, and greater collaboration between government, energy companies and clean tech companies.

2.39. For local transport authorities, the challenge of delivering EV charging infrastructure highlights many of the shortcomings in the current approach. This includes the prevalence of piecemeal, short term and competition-based funding allocations, outdated regulations and competing demands on the use of street[23].

2.40. Planning permission delays, for example, are often a major brake on the speed of deployment, and the interaction between local parking and charging

[19] UTG (2022) Future Streets: Challenges and opportunities
[20] Electric Vehicle Infrastructure position paper - SMMT
[21] Taking charge: the electric vehicle infrastructure strategy (publishing.service.gov.uk)
[22] Transport for the North (2022) Electric Vehicle Charging Infrastructure Framework
[23] UTG (2022) Decarbonising urban vehicles - Challenges and opportunities for city region public authorities

policies is also not fully resolved. Clear process for the development of land use sites and the provision of energy to those sites is needed.

2.41. There are particular challenges regarding delivering on-street parking charging solutions. Amongst the challenges is the health and safety risk from cables trailing over pavements as well as that of allocating limited space. In busy areas, allocating space for electric vehicles to charge may not be popular with non-EV drivers as they would find their parking options reduced. There are also many other conflicting demands on street space from bike storage to loading bays. Overall, kerb side management is an increasing issue which needs to be resolved. This is something UTG has previously explored in our report Future Streets: Challenges and opportunities[24].

Q7 In terms of charging infrastructure, are there unique barriers facing consumers in areas of low affluence and/or multi-occupancy buildings, such as shared housing or high-rise flats? Do you consider public EV charging points to be accessible and equitable compared to home-charging points? What can be done to improve accessibility and equitability?

2.42. As mentioned in our response to previous questions, accessible and affordable on-street charging solutions are a significant concern to local transport authorities and consumers.

2.43. Research by Field Dynamics has found that around 25% of people do not have access to off-street parking at their home, and so charging infrastructure has to be carefully planned to ensure all EV users have and are aware of charging options[25].

2.44. The cheapest and easiest way to refuel an electric car is at home. Therefore, the impact of not having access to off-street charging is further compounded by the tariffs faced by those without driveways to park and charge. In many city region areas, which UTG represent, such as in South Yorkshire, terraced housing without access to off-street parking tends to be in areas that correlate with economic deprivation, which further compounds inequalities that already exist. More needs to be done to address the cost disparity which is emerging.

2.45. The continued pressure on local authorities to solve this equitable access issue through the use of solutions like 'gully' (cable tray) charging with dedicated parking bays presents further issues, as explored earlier in this response.

2.46. Rapid charging hubs could help with equitable access by allowing those who rent, live in apartments or have no access to off street parking to have easy access to vehicle charging. However, beyond the limitations of the hub locations, charging at rapid charging hubs is usually more expensive than home charging

[24] UTG (2022) Decarbonising urban vehicles - Challenges and opportunities for city region public authorities
[25] As fleets go electric, nearly 25% of drivers don't have anywhere to charge them. - Field Dynamics (field-dynamics.co.uk)

and could disproportionately impact those on lower incomes without the ability to charge at home. Ensuring there is sufficient grid capacity for these hubs is also a challenge shared by all authorities as the cost for upgrades can be large[26]. Charging solutions must also be futureproof and must take into account the charging needs of different types of vehicles. For example, the charging needs of long-wheel base vehicles are currently not addressed through on-street or hub type solutions.

2.47. Local authority owned car parks are being used as easily accessible charging hubs working with the private sector, also serving areas without off-street charging potential. This option, however, also has challenges for local transport authorities, such as maintenance arrangements, space demands, and the long payback period on charge point infrastructure and the resultant long contracts private sector operators request from authorities (10+ years). These long contracts introduce risks around car parks being left with legacy assets, as well as potentially introducing penalties should the authority want to develop the site to more productive use.

2.48. There is clearly a limit to what can be done by local authorities installing chargepoints on local authority owned land alone. There is a need for incentives to be developed for the commercial sector to rapidly increase the level of installations in publicly accessible locations.

2.49. Whilst grid capacity and provision of sufficient infrastructure are significant concerns, so is the safety of this infrastructure and that of battery technology in general. Across the different modes where BEV technology is used safety concerns are growing, given the increasing trend of fires starting in both the batteries themselves and within the charging infrastructure[27]. A number of micro mobility vehicles (scooters and e-bikes) are now no longer permitted to be taken on some of the UK rail network due to the increased risk they represent[28]. The nature of many road going fleet applications involves large numbers of vehicles returning to a depot setting at night where they are parked in very close proximity to each other further increasing the risk of significant damage if a fire was to break out. Whilst some developing software may be able to recognise a spike in cell temperature of batteries, it is not yet very clear how much of an early warning this could provide and even less clear how many vehicles could be removed to reduce the loss of fleet and minimise the potential size of any fire.

2.50. Whilst the handling of a variety of different types of hazardous fuels, such as hydrogen, is very clearly set down in regulation, the risks surrounding battery fires is only really starting to become appreciated now. With the insurance sector reportedly looking into such potential risks surrounding BEV operation, there is a concern that in order to better control the risks, further adoptions to facilitate safe vehicle storage and charging could be required. This would present

[26] UTG (2022) Decarbonising urban vehicles - Challenges and opportunities for city region public authorities
[27] Data reveals extent of electric vehicle fires around the UK | CE Safety Blog
[28] Train operators ban e-scooters because of fire risk | Rail Business UK | Railway Gazette International

significant issues around accommodating such requirements in existing depots and parking and charging areas. Therefore, it is crucial that safety concerns and any associated mitigations are urgently investigated and addressed, alongside the futureproofing of existing and newly installed infrastructure.

Q8 What are the challenges or concerns around grid capacity in relation to significantly increased EV adoption?

2.51. As urban regions strive to reduce their dependency on energy derived from fossil fuels, there is growing pressure on the electricity grid to fill growing demand. One contribution to this shift in consumption is demand for EV charging, with road transport electricity demand forecast to increase by 15%-25% by 2050[29] .

2.52. As the UK moves towards Net Zero, and electrifies heating as well as transport, the demands on the distribution network will only increase. Grid capacity is increasingly becoming a limiting factor for EV investment and deployment - especially as current solutions lack the flexibility of hydrocarbons, requiring long term-planning and costly infrastructure[30].

2.53. Grid constraints pose a significant barrier to the roll-out of EV infrastructure, adding to the delivery cost, introducing delays and preventing sites from being commercially viable. There is overall a need to move towards a more place-based approach to managing grid capacity and investment. There is an opportunity for local and city region authorities to encourage and facilitate this collaboration between transport and energy stakeholders.

2.54. EV charging is likely to be clustered in specific areas, for example power demand for private EVs being greater in residential areas and electric fleet vehicles requiring energy at depots and transit hubs. Similarly, charging is likely to be clustered around certain peak times (e.g. 5-7pm)[31].

2.55. This issue is further compounded by the tendency to focus deployment of charging into area where cars are already parked, which are typically densely populated urban and suburban centres. Taking up much of the available grid capacity in these areas is likely to impact the challenge of transitioning away from fossil fuels, for example in heating homes. The approach to using the grid during the decarbonisation journey needs to have a holistic and long term approach.

2.56. This clustering of energy demand will put greater pressure on the grid, however regulatory tools, incentives and smart chargers can partially mitigate this peak demand[32]. Bi-directional vehicle-to-grid charging can help to balance the grid; this enables the grid to draw energy from vehicle batteries, and vice-

[29] National Grid (2021) Future Energy Solutions. Available at: download (nationalgrideso.com)
[30] UTG (2023) How the energy sector works: a guide for transport professionals
[31] UTG (2022) Decarbonising urban vehicles - Challenges and opportunities for city region public authorities
[32] Driving (2021). Electric vehicle chargers to switch off at peak times to avoid electricity blackouts. Available at: Electric vehicle home chargers to switch off at peak times to avoid electricity blackouts (driving.co.uk)

versa, effectively decentralising electricity storage throughout the EV stock. Opportunities for creating new commercial areas with rapid charging in areas where grid supply is not constrained must also be explored. Utilising the energy storage capacity of EV batteries, through enabling technologies like bidirectional charging and smart technologies, can help to balance energy storage in the grid. Vehicle-to-grid connectivity could save up to £10 billion per year by 2050 by reducing the amount of generation and network needed. [33]

2.57. For rural locations with significant grid capacity concerns and outdated infrastructure, battery energy storage systems are also likely to be the most cost-effective option, compared to direct grid upgrades.

2.58. There are great local examples of integrating transport through sustainable approaches to grid capacity. Nottingham, for example, has set a goal of becoming a fully self-sufficient 'energy city'. It was the first city to have a publicly owned car park with solar panels above the parking spaces. The 448 solar panels at the council's Harvey Hadden sports centre are expected to generate more than 50 MWh of electricity per year, generating revenue worth more than £10,000 per year.

2.59. Nottingham is one of four cities taking part in a EU-funded vehicle-to-grid trial using 40 new electric vehicles, stand-alone batteries and solar panels to balance energy use, generation and storage (for example, through using the electric vehicle batteries and standalone batteries to store energy in order to reduce the peak draw on the grid). The aim is to work out how electric vehicle storage and on-site generation can help optimise charging, maximise use of renewable generation and help balance the grid[34].

2.60. Greater support is needed for local integrated planning of net zero solutions with energy infrastructure. Whilst the Local Energy Plan (LEAP) methodology supports this, it is currently is expensive and lengthy. There is a need for a more streamlined approach to enable local authorities to plan effectively and to inform DNO of potential issues to allow for mitigation planning and investment.

Q9 What is the role of distribution network operators in ensuring EV infrastructure can be rolled out sufficiently to meet 2030 target?

2.61. Close collaboration with the energy sector will be required to facilitate the 2030 target and the decarbonisation of transport. There is also likely to be competition for zero emission electricity as we seek to decarbonise other sectors of the economy, particularly domestic heat.

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[33] Department for Transport (2022). Outcome and government response to the green paper on a New Road Vehicle CO2 Emissions Regulatory Framework for the UK (online). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1067018/outcome-and-government-response-to-the-green-paper-on-anew-road-vehicle-co2-emissions-regulatory-framework-for-the-uk.pd

[34] UTG (2019) Making the connections on climate: How city regions can join the dots between transport, energy and the built environment

2.62. The deployment of EVs is a challenge that requires a cross-disciplinary solution that falls at the intersection between transport, energy and city planning. There is currently a lack of clarity in the most effective ways for city regions to influence and engage with distribution network operators (DNOs), and other stakeholders in these sectors, making it difficult to implement cross-sectoral solutions[35].

2.63. DNOs represent a significant point of connection between a local authority and the energy sector. DNO are currently not empowered enough to advise on the best solutions and are responding to customer demand. Greater powers for DNOs to plan the overall system and to work with the local authorities to create better ways of balancing the demands on infrastructure, such as Regional Systems Planners, would be welcomed. Greater creativity around solutions such as flexibility and battery storage with renewables is also needed. The current risk-averse approach presents a barrier to effective investment in solutions designed to ease grid constraints.

2.64. Local authorities would benefit from engaging with their local DNO to understand the major constraints in the networks, the places where existing capacity is available and to provide input on major transport strategies which will need to be factored into long-term planning. Across the energy sector more broadly, the creation of 'Local Area Energy Plans' by local authorities can be used by DNOs in development of their business plans, although it is not a mandatory[36]

2.65. There is a need for the existing relationship between local transport authorities and DNOs to be supported and further enabled. City region authorities need greater influence over DNOs and investment decisions to support a place-based energy approach, which aligns energy with land use and transport planning. This could support an efficient, resilient and strategically distributed charging network to enable the deployment of urban electric vehicles at scale. Greater devolution may further support this, e.g., through the creation of a city region statutory consultee role.

2.66. Local authorities and combined authorities also have an important role in developing evidence to inform local infrastructure investment through methodologies, such as LAEP. However, currently these are not funded by government and more work is required to ensure that the benefits of the process are realised by local authorities. The Net Zero Hubs likely have an important supra-regional role to play in support for skills and resources to enable greater system planning nationally.

2.67. There are also issues around both the cost and the prioritisation of projects within an area, which ought to be addressed. DNOs generally work on a first come first served basis in terms of providing grid upgrades, causing

[35] UTG (2019) Making the connections on climate: How city regions can join the dots between transport, energy and the built environment

[36] UTG (2023) How the energy sector works: a guide for transport professionals

substantial delays for authorities looking to decarbonise vehicles according to local strategies, including public transport vehicles where grid upgrades are required e.g. to support a depot transitioning to EV. There is a need to make a change in this approach for the development of an approach, based on set criteria, to prioritise grid upgrades with strategic importance. Alongside this, DNOs and local authorities should work together to ensure clarity on the forward pipeline of planned grid upgrades to enable planning and to capitalise on opportunities.

2.68. DNOs and other energy stakeholders could also make their network capacity data open-source, to allow for more collaboration in finding solutions for urban charging infrastructure. This can alleviate the burden on the grid by strategically locating charging infrastructure to not cluster high energy demand in certain areas[37].

Q10 What are the issues facing rural residents, urban residents, and sub-urban residents and how do they differ?

2.69. As discussed in our response to previous questions, there are considerable differences in the services available to rural and urban/suburban communities when it comes to the availability and affordability, particularly in EV charging.

2.70. Those with access to off-street parking have the possibility to access cheaper charging with instalment costs heavily subsided, coupled with access to larger charging hubs.

2.71. Many rural communities at the same time are often described as 'charging deserts'.[38] Rural areas are currently considerably underserved by EV charging infrastructure, as the public infrastructure is currently based around urban areas, motorways[39].

2.72. Rural challenges, impact on the grid and usage patterns as well as demand are not well understood due to lack of monitoring and data.

2.73. This is in a sense a 'chicken and egg' situation - due to lack of reliable infrastructure, take up of EVs is lower, which continues to make the business case for infrastructure development less viable.

2.74. Poor infrastructure is also likely to be impacting many rural economies, as tourists who do own EVs may avoid visiting areas without enough available chargers[40].

2.75. Because public transport often is not as frequent or reliable as it is in towns and cities, rural households are more likely to rely on cars to access amenities and services. They are likely to be more directly impacted by the

[37] UTG (2023) How the energy sector works: a guide for transport professionals
[38] Industry warns of fleet “EV charging deserts” - transportandenergy

[39] UTG (2022) Decarbonising urban vehicles - Challenges and opportunities for city region public authorities
[40] Public Electric Vehicle Charging Infrastructure. Deliberative and quantitative research with drivers without access to off-street parking. Research report. (publishing.service.gov.uk)

upcoming phase out targets, and therefore require particular attention and planning.

2.76. Local Authorities are producing local and regional approaches to the issue. For example, North Yorkshire Council has adopted a new EV strategy aiming to tackle rural charging limitations.[41] Under the new strategy, they are planning to install 150 EV chargepoints across the county, alongside battery energy storage units. In order to fund the charging infrastructure, £2.2m has already been secured from the national Local Electric Vehicle Infrastructure (LEVI) pilot scheme, topped up with £1.2m capital funding to extend the pilot scheme. Whilst a positive step, it is unlikely to provide anywhere near the necessary charging capacity for such a large area, highlighting the need for further central policy and financial help beyond one-off funding pots.

2.77. There is a limit to what can be achieved through Government schemes like LEVI, particularly for rural and suburban areas. There needs to be greater certainty for residents around what a just transition for zero emission vehicles looks like to ensure that current inequalities in access to transport are not amplified.

2.78. What role do you see local authorities playing in the delivering the 2030 phase out target, particularly in relation to planning regulations, charge points and working with District Network Operators? How can government best support local authorities in their roles?

Q11 Local Transport Authorities are playing a key role in advancing the UK wide transport decarbonization efforts as well as the 2030 phase of target, as covered throughout our response.

2.79. Local Transport Authorities for the city regions in England outside London are already responsible for overarching transport policies and investment programmes, including in relation to the decarbonisation of vehicle fleets and on measures that will promote modal shift in ways that reduce carbon emissions. They are also providing different forms of revenue support for public transport in order to support modal shift, and promoting the transition to decarbonised urban transport through communications, travel demand management programme, outreach and their network of contacts with local businesses, the wider local public sector and community groups[42]. Local Transport Authorities make wider connections between the decarbonisation of transport, energy and the built environment at the local level. This could include, for example, municipal renewable energy generation or programmes of decarbonising public sector buildings. We explore this in more detail in our 'Making the connections on climate' report[43].

[41] Agenda item - North Yorkshire Council Electric Vehicle Public Charging Infrastructure Rollout Strategy | North Yorkshire Council
[42] UTG (2022) Consultation response Review of Net Zero: call for evidence
[43] UTG (2019) Making the connections on climate: How city regions can join the dots between transport, energy and the built environment

2.80. In order to accelerate this work and support the delivery of the 2030 phase out target, local authorities should be empowered through clear guidance and integrated cross-governmental approach to strategy and delivery, long term stable investment and necessary legislative streamlining and changes.

2.81. Local and city region authorities are well placed to bring together energy, transport and land-use planning in order to deliver charging infrastructure that serves the whole community. However, without sustained funding - both capital funding for installation of infrastructure and revenue funding for resource and capacity to plan for chargepoints - local authorities will be unable to deliver on this at scale. Authorities will need to work closely with industry to ensure that installations are not overtaken by technological development. The public sector also has a key role to play in supporting charging that may be less commercially attractive to industry but may be of social importance. Transport and local authorities lack adequate leverage in relation to DNOs, which is leading to higher costs and delays in the transport electrification initiatives.

2.82. We expect that local authorities will have a crucial role in enabling the transition to ZEVs for the 20-30% of residents without access to off-street parking and those areas which are less commercially viable. Ensuring that local authority networks are self-sustaining over time will be very important, as there is no budget to continue to support these without subsidy. Local authorities need support in delivering cost parity between those who can install chargepoints at home and those who cannot and will rely on public charging networks.

2.83. City region and local authorities are developing their visions for the decarbonisation of all segments of the vehicle fleet, and they ought to be supported centrally in achieving them. Crucially, authorities need the capacity to develop and deliver strategic investment opportunities, as opposed to tactically bidding into competitive funding pots.

2.84. The decarbonisation of urban vehicle fleets is not only essential for wider decarbonisation goals, but it also represents a major opportunity to create good jobs and to benefit local economies[44]. However, for this opportunity to be fully realised transport and local authorities need to be at the top table as part of a joined-up approach to the task.

Q12 What are the successful approaches to the rollout and uptake of EVs in other countries, and what can the UK learn from these cases?

2.85. Nordic countries are leading the way and can provide useful examples of best practice, which UK ought to consider.

2.86. Norway leads the world in EV adoption. EVs account for more than 20 percent of passenger vehicles in the country and more than 80 percent of new vehicles sold[45].

[44] UTG (2019) Making the connections on climate: How city regions can join the dots between transport, energy and the built environment

[45] Why Norway is racing ahead on electric vehicle adoption | World Economic Forum (weforum.org)

2.87. Their success is in most part thanks to early investment in infrastructure, effective and use of tax policies and public spending along significant incentives, as well as sustained long term policy support.

2.88. More than 30 years ago Norway began redesigning its tax structure within the auto industry. Incentives supporting the market, such as removal of import tax on EVs in 1990 and 50% decreased company car tax for EVs introduced in 2000, was coupled with generous incentives for consumers - 0% VAT on EV purchases, 50% discounts on parking and road tolls, amongst others has been a clear success. The accumulation of these EV tax breaks, plus the considerable 25% tax on fossil-fuel cars, makes EV models in Norway often more affordable than ICEs[46].

2.89. Early investment in charging infrastructure has also played a significant role in the country's successful EV adoption. This was underpinned by significant public investment, but also setting clear and ambitious policy goals to support their work with the private sector. The commitment of installing at least one fast charging station every 50 kilometers (31 miles) on major highways and offering subsidies to providers to accelerate installations is an example of this. There are more than 15,000 public charging points in Norway today - 8% of the total number of EU's public chargers (while Norway's population makes up about 1% of the EU's).[47]

2.90. Innovative approaches have also been found for residential charging rollout, with several municipalities offering grant schemes to support the development of charging stations in housing cooperatives.

2.91. The takeaway for UK decisionmakers from Norway's success story is the vital importance of clear, long-term policy setting with ambitious immediate goals, accompanied by considerable tax policy reforms and productive long term work with the private sector.

2.92. Many examples of good practice can also be learned from Germany. For example, in Munich, MVG (the municipally owned company responsible for operating public transport in Munich) have been carrying out pilots for e-mobility stations, with plans to establish at least 12, combining charging stations for electric cars as well as a hire points for shared bikes, e-bikes and e-trikes (for cargo) as well as electric cars[48].

2.93. UTG would be happy to further support the committee in its inquiry, including by providing further detail on the points raised above or providing oral evidence in further stages of the enquiry.

[46] Norwegian EV policy - Norsk elbilforening
[47] Norwegian EV policy - Norsk elbilforening
[48] UTG, 2019 Making the connections on climate: How city regions can join the dots between transport, energy and the built environment