



Transport Committee Inquiry

Low carbon vehicles

Statement of Evidence

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1. Introduction

- 1.1. **pteg** represents the six Passenger Transport Executives (PTEs) which between them serve more than eleven million people in Greater Manchester (Transport for Greater Manchester), Merseyside (Merseytravel), South Yorkshire (SYPT), Tyne and Wear (Nexus), the West Midlands (Centro) and West Yorkshire (Metro). Bristol and the West of England, Leicester and Nottingham City Councils, Transport for London and Strathclyde Partnership for Transport are associate members of **pteg** though this response does not represent their views.
- 1.2. The PTEs plan, procure, provide and promote public transport in some of Britain's largest city regions, with the aim of delivering integrated public transport networks accessible to all.

2. The contribution of plug-in vehicles to decarbonising transport

- 2.1. The transport sector continues to depend strongly on fossil fuel energy sources. Oil, the main energy source for transport, supplies nearly 100 per cent of road transport fuels. With the movement of people, goods and services, the reliance on road-based transport will continue.
- 2.2. Decarbonisation of transport is dependent on the substitution of fossil fuel sources by CO₂ - free alternative fuels. Substitution of oil in transport for low carbon alternatives, such as plug-in vehicles, supports the decarbonisation of transport, but only if the energy system itself is decarbonised. Currently much of our electricity is generated by fossil fuelled power stations. Decarbonisation of transport and decarbonisation of the source of energy need to be addressed as two complementary strategic lines.
- 2.3. Research conducted for **pteg**¹ found that support for the take up of low carbon vehicles was among the strongest transport CO₂ abatement measures alongside:
 - Stricter enforcement of speed limits
 - Eco-driving
 - Improved cycling infrastructure
 - Targeted roll-out of Smarter Choices initiatives
 - Improvements in bus fleet efficiency
 - Introduction of workplace parking levy or equivalent demand management schemes.The report finds that city regions can achieve significant reductions in transport emissions by implementing a comprehensive package of interventions.
- 2.4. Plug-in vehicles have a significant contribution to make as part of such a package. They emit zero emissions at the tail pipe, reducing pollution and improving air quality, especially in inner-city areas where people on lower incomes are disproportionately affected by poor air quality. Most electric vehicles also use regenerative braking technology, helping to reduce levels of harmful particulate matter from brake wear.
- 2.5. However, plug-in cars and vans still come with many of the same problems of their conventional counterparts. Roads will still be congested, streets will still be filled with parked

¹ **pteg**/Atkins (2010) Carbon Pathways for transport in the city regions, available from <http://www.pteg.net/PolicyCentre/Sustainability/Research>

cars and electricity will still need to be generated from somewhere (mostly from fossil fuelled power stations). Also there are the public health impacts of continuing to choose cars over walking, cycling and public transport, modes which help people to become more active, even if this is just a walk to the bus stop.

- 2.6. There is, therefore, a need to ensure a wider shift from the car to walking, cycling and public transport and to reduce the need to travel in the first place. Converting the car and van fleet to low and zero carbon technologies is important, but a green traffic jam is still a traffic jam. The decarbonisation of vehicles needs to go hand-in-hand with strategies for restraining traffic growth and encouraging a shift to more sustainable modes. Furthermore, if undue weight is given to supporting the greening of the car fleet, there is a risk of encouraging a shift away from under-resourced public transport networks, increasing the problem of congestion.

3. Uptake of plug-in vehicles and how this can be improved

Affordability

- 3.1. Whilst we welcome the continuation of the Government's Plug-in Car Grant and the introduction of the Plug-in Van grant, plug-in vehicles remain unaffordable for many consumers and businesses. According to research by Transport for London, the typical plug-in vehicle owner already has several other cars and has a high household income (£79k on average).
- 3.2. For consumers and businesses, the high upfront costs could be offset with clearly communicated, impartial advice on the extent of savings likely to be achieved by switching to plug-in vehicles. For example, electric vehicles typically cost around 2 pence per mile for fuel, compared to 14 pence per mile for petrol or diesel vehicles. If we assume vehicles will typically travel 8000 miles a year, this results in a saving of £960 per year.
- 3.3. It is believed that Total Cost of Ownership (TCO) will become the dominant metric for private consumers for deciding whether to purchase a vehicle, as it is already for fleet managers.
- 3.4. However, regardless of Government incentives and the potential for long term savings, the high upfront cost of a plug-in vehicle will continue to pose an insurmountable barrier for many people.
- 3.5. According to Department for Transport statistics, a quarter of all households - rising to half of all households on the lowest incomes - do not have access to a car. It is important that we continue to invest in walking, cycling and public transport infrastructure to ensure that everybody is able to access opportunity whether or not they are able - or choose - to run a car.
- 3.6. One option to improve the affordability and accessibility of plug-in vehicles for more people would be to move away from an ownership model towards a car club or combined mobility model.
- 3.7. Owning a car makes it more likely that people will use it for the majority of their journeys. City Car Club report that their members drive less miles each year than an average motorist because they think more carefully about each trip they make in a car and make greater use of alternative travel options such as walking, cycling and public transport.

- 3.8. Ultimately, plug-in pooled vehicles could form part of a package of transport options designed to keep people moving. This 'combined mobility' package would also include other transport services - bike hire, buses, trains, trams and taxis. A single smartcard could be used to access them all, leaving the individual to decide the best mode for the journeys they are making that day.

Seeing is believing

- 3.9. There are real and perceived barriers to the use of plug-in vehicles, including the concept of 'range anxiety' where the perceived inability to recharge a plug-in vehicle creates concern. In this respect, seeing is believing – the more opportunities for people to get hands-on experience of plug-in vehicles, the better the chance of wider uptake. According to Cenex, after a six month test period 72% of drivers would switch their full-time car to an electric vehicle, compared to 47% before the trial.
- 3.10. Encouraging the use of plug-in vehicles in company and public sector vehicle fleets as well as via car clubs, may be a good way to build up a critical mass of users and infrastructure as well as offer a wider range of people the experience of using a plug-in vehicle. Leeds City Council, for example, is trialling electric and hybrid transit vans for their fleet.
- 3.11. Visible infrastructure at destinations (like railway stations, workplaces and supermarkets) and en-route (rapid pathway charging) for longer distance journeys may also be helpful. Consideration should also be given to convenient charging options for the 35% of car owners in the UK who have no off-road parking to enable charging at home.
- 3.12. Good land-use planning has an important role to play in supporting residential and commercial developments that include charging points and facilitate access to car clubs as well as encourage walking, cycling and use of public transport. Travel plans for homes and workplaces help to bring all of these elements together.
- 3.13. In line with the combined mobility model, there are significant opportunities for integrating electric cars with public transport to allow people to make longer journeys with confidence (e.g. charging points at stations to allow people to continue their journey by rail).

4. The effectiveness of the Plugged-In Places scheme

- 4.1. The Plugged-In Places scheme is focused on supporting the installation of recharging infrastructure for plug-in vehicles in order to build consumer confidence.
- 4.2. As noted above, visible recharging infrastructure is an important part of normalising plug-in vehicles. Drivers will not find plug-in vehicles attractive without ready access to charging infrastructure, parts and repair services. On the other hand, energy suppliers and car manufacturers will not invest in plug-in technology without the prospect of a large market. Government pump-priming of the market through schemes such as Plugged-In Places is therefore to be welcomed.
- 4.3. However, installing charging points alone will not act as a catalyst for increasing the uptake of plug-in vehicles. As set out in the previous section, there are further barriers to overcome around affordability and opportunities for people to try out the technology for themselves.

The West Midlands experience

- 4.4. We have received feedback from one of our members, Centro, on the effectiveness of the Plugged-In Places scheme in the West Midlands as part of the wider Plugged-In Midlands scheme.
- 4.5. Within the West Midlands, the effectiveness of the scheme is largely unknown. It is a new initiative and during the first year of Plugged-In Midlands, no charging points were installed. This may have been the result of early delays caused by the abolishment of the Regional Development Agencies, which previously managed the programme. Plugged-In Midlands is now jointly managed by Cenex and Central Technology Belt and, now in its second year, is starting to gain momentum.
- 4.6. Centro is keen to be part of the programme and is installing recharging points at strategic rail park and ride sites within the West Midlands and at its office in Birmingham City Centre. Centro has taken a cautious approach to the installation of charging infrastructure due to the small number of electric vehicles and the unknown uptake in the region. Most of Centro's rail park and ride sites are oversubscribed and it is felt that charging bays would not be utilised in the short-term. However, Centro is mindful of the fact that without the infrastructure, consumers are unlikely to buy electric vehicles and is therefore keen to install recharging points at carefully targeted sites.

5. The role of plug-in vehicles alongside other technologies to reduce carbon emissions from road transport

- 5.1. Plug-in vehicles are not the only answer. As mentioned previously, they need to form part of a wider, integrated package of transport options including walking, cycling and public transport.
- 5.2. Furthermore, relying too heavily on one new technology is not practical, particularly as plug-in technology is not suitable for all types of vehicles –HGVs and larger buses, for example. Factors such as distance to travel, weight to carry and size of vehicle will have a bearing on the type of solution chosen. Hybrid, biofuels and hydrogen and fuel cell could all have a part to play and some of these technologies could prove to be more effective at reducing carbon emissions than plug-in vehicles, depending on the circumstances.
- 5.3. These alternative technologies must be explored and tested and the findings communicated. A report commissioned by **pteg**, for example, examined the costs and benefits of different fuels and technologies with the potential to reduce pollution and carbon emissions from urban bus fleets². There is considerable expertise within the city regions regarding green vehicle technologies.
- 5.4. Merseytravel, for example, have over fifteen years of experience in testing alternative fuels, whilst Leeds City Council organised a major low emissions vehicle exhibition and conference in October 2010, featuring a showcase of 29 different low emission vehicles (ranging from 44 tonne articulated lorries to scooters). The aim of the event was to demonstrate to fleet

² **pteg/TTR** (2009) Scenarios and opportunities for reducing greenhouse gases and pollutant emissions from bus fleets in PTE areas, available from:
<http://www.pteg.net/PolicyCentre/Sustainability/Research>

managers across the North of England how these technologies work and their potential for saving money and reducing emissions.

- 5.5. In addition, Leeds City Council count biomethane powered vehicles amongst their fleet and were the first UK local authority to purchase their own permanent gas refuelling station. Elsewhere, Sheffield City Council uses compressed natural gas to fuel some of their recycling collection vehicles across the city.
- 5.6. The city regions have also achieved success in all three rounds of the Green Bus Fund, resulting in increasing numbers of low carbon buses on our city streets. In total, PTE areas are set to receive over 400 green buses through the fund.

6. Action taken by other countries to encourage the uptake of plug-in vehicles

- 6.1. In European cities, much of the focus appears to be on plug-in vehicles, with widespread installation of recharging points (for example, the Autolib car hire scheme in Paris). To meet carbon targets, much greater emphasis needs to be put on investigating other alternative vehicle technologies and the infrastructure required.
- 6.2. The European Union needs to take a leading role by working with Member States at all levels to build-up the charging and refuelling infrastructure to ensure they are as comprehensive as today's network of petrol stations. In doing so, however, Member States should not ignore the vital role that walking, cycling and public transport have to play in decarbonising our transport systems as well as in reducing congestion and improving public health.