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Transport Committee Inquiry : Motoring of the Future
Written Evidence submitted by the Transport Planning Society

Executive Summary

- Motoring strategy is not limited to vehicles alone and needs to be framed within a wider context, with clear objectives for the role of motoring
- More research is needed into the reasons why people will own (or not own) cars and the extent to which they will use them in the future
- Spatial planning and the affordability of motoring will be key drivers
- But car use will become increasingly subject to demand management measures to meet wider environmental, sustainability, health and congestion reduction objectives
- Industry will be the main driver of technological development, albeit encouraged by government incentives
- Autonomous vehicles will be a game changer but are likely to have limited application only by 2040
- Pan-EU co-operation within the motoring sector is already good but there is more to be done, including preparation for autonomous vehicles
- Vehicle-to-infrastructure data links are an important area to be developed
- Near realtime traffic management is another area that merits further research

Evidence

(1) The Transport Planning Society is an independent institutional body based in England, established to facilitate, develop and promote best practice in transport planning and to provide a focus for dialogue between practitioners and others interested in the field. It is supported by four long established professional institutions – ICE, CIHT, CILT and RTPI - all of whom have an interest in transport planning within their own core activities.

(2) The Transport Planning Society administers its own Professional Development Scheme for transport planners, leading to award of the Transport Planning Professional qualification which is the only professional qualification uniquely aimed at transport

planners. The Society has almost 1000 professional members in the UK and elsewhere. Many of our members are active in traffic, highway and road safety matters, and have an active interest in the future of motoring.

(3) This response has been prepared by the Policy Group within the Society's Board and includes results from a member survey on key issues. We comment on all questions raised by the Committee.

Whether the Government has articulated a clear strategy for motoring?

(4) Motoring encompasses vehicles, vehicle usage, infrastructure and highway management. We see no overarching strategy for motoring embracing all these areas, and such strategy as exists is piecemeal and disjointed. There are specific strategies, for example, to encourage the introduction of ultra low emission vehicles in the UK and "Action for Roads" sets out a vision for the road network. But the two are not connected.

(5) In addition, there is no overall vision of the desirable amount of motoring that should occur or of the desirable role of motoring in the economic and social life of the country. Nor is such motoring strategy as exists related to other policies which will impact on it. For example, policies to improve public transport, to encourage sustainable modes such as walking and cycling, to reduce carbon emissions and to improve the health of the nation will all impact on motoring but we do not see these linkages spelled out. The sustainability aspects of motoring, particularly in terms of emissions and nuisance, also need to be addressed at a strategic level, and better integration between land-use planning and transport could significantly affect the demand for motoring.

(6) Motoring strategy needs to be developed within a much wider context.

How effective are the steps the Government is taking to support technological development in motoring and what actions it should be taking to develop the necessary financial and legal frameworks?

(7) To date, the effect of government interventions has been small although financial incentives to reduce vehicle emissions and to provide plug-in infrastructure are steps in the right direction. Certain other aspects of government policy have had the unintended consequence of encouraging technological development – for example, budget constraints on new road building have forced traffic authorities to turn to technology-based means of maximizing the performance of their networks. Separately from this, the government has a valuable regulatory role, for example, in ensuring that new developments meet safety standards.

(8) However, we feel that the main drivers of technological advance are the industries involved, although Government-funded financial incentives to stimulate new development or accelerate ongoing development will continue to be useful. In legislative terms,

Government can assist by making legislative provision for new technologies (eg autonomous cars) and by introducing legislation to penalise or ban equipment no longer complying with acceptable emissions or safety standards.

(9) On a more proactive note, Government has recognised the importance of new thinking and development in the transport sector by establishing Transport Systems Catapult. Although these are still early days, this perhaps reflects a step change in government support for new transport systems and in developing our thinking about transport of the future, including motoring.

How effective the Government has been at setting its priorities for investment in research and development in motoring, and what further actions it needs to take?

(10) The government has set out a clear strategy for the development of ultra low emission vehicles but while DfT procures research in various other areas, it is hard to see a fully co-ordinated research programme really focused on driving motoring forward and addressing all the related issues raised in paras. 4 and 5. We suggest that the Government needs to start with a clearer vision of motoring of the future, identify the obstacles to its implementation (whether they be technological, social or cost), and then set out a research and development programme designed to address these obstacles.

(11) We would like to see research into the role of motoring in the future. Why do people drive, what trips should be undertaken by car (length, purpose, driver/passenger type), how much motoring should there be, given available road capacity and sustainability issues, how and to what extent should the demand for motoring be constrained by management measures, road user charging and encouragement to use other modes?

(12) A key factor governing the demand for motoring is spatial planning. Since the withdrawal of PPG13, housing and economic growth objectives have taken precedence over careful consideration of the links between land-use and transport. While housing and economic objectives may be the imperative of the moment, the impacts on motoring should not be ignored. We encourage more research into the linkages between spatial planning and transport, and the development of new guidance to better relate the two in a co-ordinated and sustainable manner. Otherwise unnecessary motoring and congestion will result.

Whether current research and development in, for example alternative fuels, safety systems or driver aids, will make a significant impact on mass-market vehicles by 2040, and how likely are changes that would make motoring of the future profoundly different from motoring today?

(13) We can expect current trends towards lower emission vehicles, quieter and safer vehicles, and increasing numbers of driver aids to continue. Zero or ultra low emission vehicles will have a more profound effect on pedestrians and others in the vicinity of

vehicles, and on Air Quality Management Areas, than on drivers and vehicle occupants – the experience and feel of a battery driven car, for example, are not significantly different for the occupants from those of a conventional vehicle. Driver aids will continue to reduce driver workload but the game changer will come if and when driving does not require the driver to be alert throughout the journey, and permit him or her to engage safely in tasks other than driving.

(14) Autonomous vehicles already exist within industry (eg container stackers move autonomously within ports) and Google has trialled its autonomous car, so this scenario may be technically achievable. Self-parking cars are available. Whether vehicles are controlled internally (using sensors etc.) or externally (by an external computer), there are significant implications. Firstly, vehicles would be able to follow closely defined tracks and move closer together, both laterally and longitudinally (such as the HGV platooning experiments). As a group, they will occupy less roadspace so existing infrastructure will have a higher vehicular capacity than today. Secondly, the ability of the driver to engage in other pursuits while travelling may encourage more and longer distance journeys by car. Thirdly, there may be a group of people who do not drive at present but who will choose to do so in the future – such as those enthused by technology or those who have physical difficulty driving a conventional car or those who are nervous in traffic.

(15) It is not yet clear to what extent autonomous and driven cars could share the same roadspace. There may be attractions to the private sector in providing special toll roads, narrower than the norm, for autonomous cars only. If a comprehensive network for autonomous cars were to become available, they could be operated in a driverless taxi-mode where a vehicle is summoned by a user and then left at destination – like the Heathrow Pods.

(16) But will this happen by 2040? We believe this is unlikely except in special locations due to development costs (vehicles, infrastructure and control systems), planning and legislative issues, and societal acceptance. Selected parts of the road network or new roads built for the purpose may become allocated to autonomous cars but the widespread use of "driverless" cars may still be some way away.

How trends in motoring and patterns of vehicle ownership might shape transport planning, policy making and provision?

(17) While there are factors limiting the growth in demand for motoring (such as young people in cities choosing not to own cars, people choosing healthier options etc.), at a national level we feel that the demand for motoring will continue to increase, in response to forecast population growth if nothing else. However, this increase in demand will bring its own problems of congestion, parking etc. and our view is that demand management will be increasingly applied to reduce the associated levels of traffic growth. Road user charging could be a particularly important tool if and when it gains political acceptance but there is

also the prospect of additional interurban road capacity being constructed – our members being split 50/50 on this point. It is not the only option.

(18) We can expect a continuing reduction in casualties on the roads as vehicles and the infrastructure become safer, but greater efforts will be needed to improve the safety of vulnerable road users such as cyclists and pedestrians. We anticipate increased provision being made for these groups in terms of sensing systems on vehicles, reduced vehicle speeds in areas used by vulnerable road users, and an increase in the amount of road or off-road space dedicated to pedestrian and cycle use.

(19) As a result of reduced emissions and reduced road casualties, we anticipate that cars will become relatively more environmentally acceptable. However, their physical presence and the residual accident risk and emissions mean that they may just be better tolerated (by those outside the vehicle) rather than welcomed. On environmental grounds alone, car-free areas remain the ideal aspiration, as pedestrianised streets demonstrate.

(20) In terms of vehicle ownership, on balance we feel that the introduction of further driver assisting technology and a possible increase in car sharing are unlikely *per se* to significantly impact on car ownership levels, which are more likely to be influenced by spatial planning, alternative travel options, driving costs and affordability.

Whether current transport planning, policy making and provision are taking likely future developments into account and how planning, policy making and provision might need to change in the future?

(21) Current transport planning is too much based on an extrapolation of the past, assuming that car ownership and car use will develop very much as in previous decades, in response to the same factors. We need to better understand how car ownership and car usage will adapt to changing circumstances. We need to quantify how the factors listed in the previous question influence car ownership for different sectors of the population, and how these factors will vary in the future. On the specific points raised in the consultation, while we consider that improved vehicle technology will not of itself significantly affect car ownership rates it is not yet clear whether this, in conjunction with lower emission and safer vehicles, will have an effect on vehicle ownership.

(22) However, the bigger issue is perhaps car use. We have mentioned the potential impacts of policies in other areas and we need to better understand how car use will adapt to improvements in alternative modes (public transport, cycling, walking etc.), to management of the demand for travel (eg road user charging, travel plans, parking policy etc) and to other factors such as the desire for a more healthy lifestyle. We need to do some serious thinking and research into how cars will be used in the future in cities, for interurban travel etc. so that we can plan and appraise future transport options accordingly.

(23) Autonomous cars are a whole new ballgame. Our understanding of how they will

operate and how consumers and users will react to them is in its infancy. Although our view is that significant use of autonomous cars lies some way ahead, we should be considering how they might operate and be controlled, what type of roads will be needed and, if appropriate, then consider future proofing our highway infrastructure, in particular, to allow for them.

What evidence there is to show that the Government is co-ordinating its policy making with other Governments and the European Union to achieve joined-up transport outcomes and to establish universal standards?

(24) Whether by accident or design there is already huge co-ordination between EU states on motoring, to the extent that it is simple to start a journey in one country and finish it in any other. Driving licences are uniformly valid, there is a similarity of road signs, road layouts are similar, the same fuel is available throughout, all EU cars meet common safety standards, there is Europe wide satnav etc.. EU funding is widely available for road and safety improvements in those regions that merit it. The EU sets emission standards for individual vehicles. There are still areas for improvement such as making pictorial road signs entirely uniform, developing a Europe wide smartcard for toll payments, driving down casualty figures in all countries to match the best, pan-EU collection of parking fines etc. but overall, the situation is positive.

(25) We assume that this willingness to co-operate will extend to new developments in motoring. For example, an adequate spread of plug-in points throughout the EU will be needed for electrically powered vehicles. But, in the longer term, the most important may be consistent standards for the control systems of autonomous vehicles, so that an autonomous vehicle operating in one country can safely operate elsewhere. As in any development of this type, there will initially be diverging views on the best system, individual countries may wish to support system developed by their own industries and so on, so this will be a challenging but important area for pan-EU co-operation.

What role the Government has in ensuring that the UK has the necessary infrastructure—for example refuelling networks or vehicle-to-infrastructure data networks—to facilitate motoring of the future?

(26) While the Government is rightly providing financial support for recharging infrastructure at this stage, once demand is sufficient we envisage that industry will complete the job on a commercial basis. However, the issue of vehicle-to-infrastructure data networks will be a more important one for the Government to tackle, given that virtually all the infrastructure is publicly owned. It will be for the government to set technical and reliability standards for these networks, which vehicle manufacturers, communications providers and highway authorities can all work to.

(28) We would also like to see a higher level of instrumentation on the highway network

or within vehicles (eg electronic tags) so that enhanced realtime information is available about traffic speeds, flow and congestion on all strategic and principal roads. Coupled with predictive traffic models, this information could then be used to improve realtime management of the network, designed to optimize use of available roadspace and minimize travel times under prevailing traffic conditions. Guidance could be given to drivers either through the use of electronic roadside signs, or directly into the car via radio or a dashboard display. Congestion avoidance is already incorporated to some extent in Satnav systems but they do not include a predictive traffic modelling element, and are unable to predict the consequences for all other traffic of advising some drivers to reroute.

What steps the Government is taking to help UK business exploit new motoring technologies and whether there is scope for it to do more?

(29) Our members are not involved in the automotive industries, so we cannot comment further on this aspect.

(30) However, the UK is a world leader in computerised traffic modelling (both in terms of research and practice) and we would like support for the development of a new generation of near-time predictive traffic models (using realtime data about current traffic operations as noted in para. 28) which could be used to continually monitor and advise on the management of traffic networks, especially at times of disruption.

Conclusion

(31) We trust our submission will be of use and we would be pleased to elaborate on any of the points raised or present oral evidence. Please contact us at info@ice.org.uk if that would be helpful.