SMMT WRITTEN EVIDENCE TO THE TRANSPORT SELECT COMMITTEE INQUIRY ON LOW CARBON VEHICLES

16 APRIL 2012

Introduction and summary of key points

1. The Society of Motor Manufacturers and Traders (SMMT) is one of the largest and most influential trade associations in the UK. It supports the interests of the UK automotive industry at home and abroad, promoting a united position to government, stakeholders and the media. The UK automotive industry is dynamic and globally competitive. Our sector is a vital part of the UK economy with £40 billion turnover and £8.5 billion value added. With over 700,000 jobs dependent on the industry, it accounts for 10% of total UK exports and invests £1.5 billion each year in R&D. The industry plays an important role in the UK's trade balance, with vehicle manufacturers exporting almost 80% of production. The UK is home to the world's largest number of low volume vehicle manufacturers.

2. SMMT welcomes the opportunity to respond to the House of Commons Transport Select Committee inquiry on low carbon vehicles. The UK automotive industry is committed to the development of the low carbon vehicle market, where there is a significant challenge in reducing the emissions of vehicles and contributing to the wider decarbonisation of transport. SMMT has established an Electric Vehicle Group (EVG) to support the UK's emergent low carbon vehicle industry. The group includes organisations from all areas of the industry; such as traditional volume vehicle manufacturers, niche vehicle producers, battery suppliers, charger manufacturers, energy companies and many associated stakeholders.

3. Summary of key points:

    - Industry is committed to low carbon vehicles and this is demonstrated by significant investment announced by automotive companies in the UK on low carbon projects. Average new car CO_2 emissions in the UK have fallen 23.7% since 2000.

    - The benefits of low carbon and plug-in vehicles are wide-ranging, contributing to CO_2 emissions reduction, improved wider environmental benefits such as noise and reduced air pollution, as well as economic benefits for the UK in technology, manufacturing, exports and employment.

    - The early market for plug-in vehicles is developing and government incentives are welcome, however a long-term, consistent, and joined-up government approach is essential to maximise uptake and encourage further investment.

    - Infrastructure is a key element of government policy in supporting the development of a plug-in vehicle market. SMMT calls on government to ensure that it renews efforts on coordinating national recharging infrastructure as its strategy develops.

    - Collaboration between industry, government and academia has provided key roadmaps for the development of new technology. Technology Strategy Board support for R&D is welcome and must remain responsive to the strategic future of automotive investment. Government should consider how it can further support investment in R&D through the TSB or its 'Catapult' programme.

    - SMMT welcomes the UK's approach in supporting the development of low carbon vehicles, but government must assess the effectiveness of approaches and scale of support in other countries, particularly in relation to infrastructure and R&D.

Decarbonisation of transport

4. Industry views the challenge of climate change and the resulting need to reduce carbon emissions from vehicles as well as improving energy efficiency of manufacturing processes as essential to the future and current competitiveness of the sector. The low carbon agenda is core to the business of SMMT members. European legislation regulating emissions from new cars and vans provides challenging targets which the industry is working towards. The move to a low carbon economy presents many

industrial opportunities for UK automotive, with companies already committed to greater investment in research, development and new technology. Recent announcements from vehicle manufacturers and companies in the supply chain already demonstrate industry's commitment to significant low carbon ambitions in the UK. Over £4 billion of investment has been announced over the last year by automotive companies in the UK[1].

5. Industry has made significant improvements to CO_2 emission levels in recent years and recognises its responsibility to deliver environmental improvements. Vehicle manufacturers have delivered more efficient and lower CO_2 emitting vehicles to the market which helped see average new car CO_2 emissions fall to a new low of 138.1g/km in 2011, 4.2% down on the 2010 level of 144.2g/km and 23.7% below the 2000 figure of 181.0g/km[2].

6. The automotive sector is committed to the decarbonisation of transport. The development of the technology roadmaps, created through co-operation between industry, government and academia, recognises the long-term need for a transition to new lower carbon technology. This strategic approach has put the UK at the forefront in responding to the challenges associated to the adoption and uptake of new technology. It is important to note that a wide variety of technologies will contribute to lower carbon road transport, be that through the refinement of existing technologies and development of next generation petrol and diesel engines, to developing a range of alternatively fuelled vehicles, electrification and plug-in technology.

7. An integrated approach is proving an effective and necessary way to encourage emission reductions and lower carbon choices. Government, industry, wider stakeholders and consumers all have a crucial role to play. Driver behaviour is a particularly important area in which there is large potential for emissions savings. Industry operates a wide range of eco-driving courses, demonstrating how driving techniques can be improved to reduce emissions, increase fuel efficiency and impact positively on safety. Schemes are also being run for purchasers of ultra-low emission vehicles, adding value and demonstrating techniques to increase battery range in an electric vehicle, for example. SMMT supports the Campaign for Better Tyres, which aims to encourage individuals, business and the public sector to choose tyres that are more energy efficient.

8. The importance of the decarbonisation of the energy sector and electricity supply is crucial in the context of the decarbonisation of transport through low emission and plug-in vehicles. A failure to decarbonise the electricity supply and investment in domestic and public recharging infrastructure, will negatively impact the move towards low carbon vehicles, as purchasers will question the value of electric vehicles in environmental terms versus less costly and improving conventionally powered vehicles. Government must address uncertainties around policies such as the short notice changes to feed-in tariffs for small scale renewables to provide reassurance to consumers and industry that government is fully committed to the decarbonisation of energy supply.

9. When discussing the environmental impact of vehicles, it is also important to recognise the impact on environmental factors other than CO_2, such as air quality and noise. The regulatory push to reduce CO_2 emissions also takes place at the same time as regulatory pressures on improving air quality of vehicles through Euro standards. Plug-in vehicles have demonstrable benefits in relation to air quality, where pure electric vehicles have no tailpipe emissions. This is a particularly important factor when looking at the adoption of plug-in vehicles in large urban areas. London, for example, has continuing problems with air pollution and therefore the attraction of low carbon and electric vehicles has an obvious environmental benefit on air quality.

Uptake of plug-in vehicles

10. As of 31 March, SMMT registration figures show that 1,412 vehicles eligible for the Plug-In Car Grant have been registered in the UK since the scheme opened in January 2011[3]. The growth of this early low and ultra-low carbon vehicle market is significant. Looking at registration figures for 2011 where full year data is available, 1,052 Plug-In Car Grant eligible vehicles were registered, representing an 847% increase over 2010, which saw 111 registered[4]. The introduction of the grant has had a crucial impact in bringing new ultra-low carbon plug-in vehicle models to market. At present there are ten eligible vehicles under the Plug-In Car Grant, some of which are due to be launched later this year. As further models are launched and there is an increase in the variety, type and number of models available to consumers,

[1] SMMT press release, 20 December 2011: http://www.smmt.co.uk/2011/12/2011-a-step-change-year-for-uk-automotive/
[2] SMMT press release, 6 January 2012: http://www.smmt.co.uk/2012/01/new-car-market-betters-forecast-but-was-down-4-4-in-2011-to-1-94-million/
[3] SMMT registration figures: http://www.smmt.co.uk/2012/04/march-2012-%E2%80%93-ev-and-afv-registrations/
[4] SMMT December 2011 – EV and AFV registrations: http://www.smmt.co.uk/2012/01/december-2011-%e2%80%93-ev-and-afv-registrations/

uptake of ultra-low carbon vehicles will steadily increase. The wider economic climate remains uncertain and this must also be taken into account when discussing the registrations of new vehicles. Private demand in the new car market remains fragile, therefore government should focus on policies that boost consumer and business confidence.

11. Consumer acceptance of new technology traditionally follows a pattern, where in the short-term, as the technology first comes to market, uptake is modest. Mid-term, as consumers see vehicles being driven on the road and the perception of purchasers' changes, there is then a wider acceptance of technology, a change in consumer purchasing attitudes and uptake increases. An explicit example of this type of behavioural change can be seen in the uptake of petrol-electric hybrid technology. Registrations of petrol-electric hybrid vehicles shows that year-on-year between 2011 and 2010, volumes increased by 5.6%, from 22,127 units in 2012 to 23,370 units in 2011.

Improving uptake

12. The UK is at an early stage of the low carbon vehicle market development and this context must be fully understood when analysing the uptake of vehicles. As demonstrated above, we are seeing the steady development in the number of ultra-low carbon vehicles being sold in the UK, however there are a number of areas in which government and industry have a responsibility in ensuring that an early market becomes established, providing the basis for a mass market to grow.

13. It has been demonstrated that the introduction of purchase incentives, as well as a favourable tax regime applied to low carbon vehicles has contributed to the increased uptake of such vehicles. SMMT welcomed the government's decision at the beginning of 2012 to provide consistency and certainty for its Plug-In Car Grant through the lifetime of this Parliament. A long-term approach to such incentives gives confidence to vehicle manufacturers and bolsters consumer confidence. Schemes across government must be consistent to ensure incentives are maximised.

14. Financial incentives that can be implemented locally also have an impact on the uptake of low carbon vehicles. London's Congestion Charge provides 100% discounts for electric and plug-in vehicles as well as petrol and diesel powered vehicles that have CO_2 emissions below 100g/km and meet the Euro 5 standard for air quality. Other measures such as free or subsidised parking, free electricity from public recharging infrastructure and use of bus and car pool lanes all provide additional benefits for purchasers of low carbon vehicles, which should be considered by local authorities and government.

15. As with any new technology, increased consumer acceptance and experience will improve uptake, and there is a need for a coordinated increase in information and education for consumers. SMMT has developed an Electric Car Guide[5], which aims to answer common questions around plug-in vehicles, demonstrating the advantages of purchasing electric vehicles as well as highlighting the challenges faced. Industry is working collaboratively with government on maximising messages around electric vehicles to encourage uptake. Countries such as Denmark are funding research into consumer acceptance of electric vehicles, where initial findings are positive and demonstrate that particular perception barriers are broken down in relation to vehicle range, as well as reducing emissions.

16. Government, local authorities and public bodies can all have a positive impact on the uptake of low carbon vehicles through procurement regimes. The Department for Transport (DfT) set up the Low Carbon Vehicle Public Procurement Programme (LCVPPP) in 2007 and launched a second phase in November 2011. Concerns arose around the complexity of the initial phase, which provided an element of uncertainty to low carbon commercial vehicle manufacturers and limited the impact of the scheme in the wider uptake of low carbon vehicles in public fleets. The 2011 Autumn Statement outlined how government would be reviewing procurement policy, including improved strategic engagement with industry and simplification of the UK procurement process. These are two crucial factors in enabling procurement to become an effective mechanism to support the uptake of low carbon vehicles.

17. Fleet and business purchases of low carbon vehicles are a significant proportion of new plug-in vehicle registrations. It is therefore vital for specific action to be taken forward in promoting low carbon vehicles and their benefits to the fleet sector. Fleet demonstrations and evaluations are valuable in raising public and government awareness. SMMT has carried out specific work in relation to fleets and is looking to continue a programme of activity that will seek greater engagement and activity to support the uptake of low carbon vehicles within fleets. The Climate Group's fleet initiative[6] is a welcome piece of work that will

[5] SMMT Electric Car Guide, 2011: http://www.smmt.co.uk/2011/08/electric-car-guide/
[6] The Climate Group, Plugged-in Fleets: A guide to deploying electric vehicles http://www.theclimategroup.org/_assets/files/EV_report_final_hi-res.pdf

complement other actions to raise awareness and provide evidence-based research on the business case for introducing electric vehicles into fleets.

Incentivising commercial vehicles

18. SMMT welcomed government's announcement following its review of the Plug-In Car Grant that the incentive would be extended to van purchases. The Plug-In Van Grant complements the scheme in place for cars and shows determination to encourage the uptake of low carbon commercial vehicles, which is an important sector when looking to reduce emissions from all types of road transport. The additional grant also strengthens the UK's offer and package of incentives that is critical in demonstrating the attractiveness of the UK as a location to invest and do business. As the vehicles eligible for the Plug-In Van Grant were announced relatively recently, it is too early to analyse any impact of the grant, however SMMT is keen to monitor this segment of the market and work with government to ensure that uptake of low carbon commercial vehicles accelerates.

19. Experience shows that commercial vehicles present a good platform for the adoption of plug-in technology. Vehicles being used in a commercial environment often have known duty cycles and pre-planned routes. The urban setting where commercial vehicles, in this case often vans, are part of fleet and go 'back to base' at the end of their cycle, presents an opportunity where plug-in vehicles are well suited to operate, with a known battery range and a depot or base to provide vehicle recharging. Benefits to business in operating low carbon vehicles include reducing their carbon footprint, costs, as well as providing brand benefits in demonstrating low carbon credentials.

20. When looking at low carbon commercial vehicles, it is important to recognise the work ongoing to reduce vehicle emissions and improve efficiency performance in larger commercial vehicles. The Automotive Council's Technology Group has developed a specific commercial vehicle and off-highway roadmap which is outlined later. This reinforces the need for a multi-technology approach to bring about a lower carbon transport system.

21. The UK is a leader in low carbon bus technology, where bus operators are increasingly looking to introduce hybrid and other forms of low carbon buses into their fleets. The current and previous governments have looked to support the manufacture of low carbon buses through successive rounds of the Green Bus Fund. SMMT welcomes this vital support that encourages operators to invest in low carbon technology that has a direct impact on the design and manufacture of many low carbon buses in the UK.

22. SMMT published a low carbon heavy goods vehicle (HGV) strategy in 2010[7], in which industry accepted the need to reduce CO_2 from HGVs and highlighted some early strategic principles, such as the need to decarbonise the fuel, the significant contribution available from operational efficiency improvements and the understanding that operators need incentives to adopt break-through low carbon technologies. The strategy also highlighted the need for CO_2 performance to be measured in a way that recognises the load carrying capacity of the vehicle: gCO_2/tonne km or per m^3 or per passenger.

23. Policies to reduce CO_2 emissions from road freight will only be successful if they reflect the complexity of the HGV market. One major problem with previous approaches has been to have a measurement procedure which enables straightforward verification of regulatory compliance. Policy measures and regulation to support the uptake of low carbon HGVs must recognise the complexity of this market (from 3.5 tonnes to 60 tonnes, different duty cycles, multi stage build).

24. Fuel efficiency is a key customer priority and the European industry has become a world leader in this area. If the rate of improvement is to increase, then the market forces need to be strengthened. An integrated approach is required leveraging activity in fuels, logistics, driver training, traffic flow and then considering vehicle technology.

25. Following close working with industry, in November 2011, DfT announced the Logistics Growth Review, which included a £9.5 million TSB competition for low carbon truck demonstration and refuelling infrastructure for alternative fuels[8]. This is an opportunity for manufacturers to showcase the capabilities of technologies that are already available. SMMT has stressed that this would need to be carefully designed to avoid a perpetual cycle of vehicle demonstrations, without them being taken up across the mainstream fleet.

[7] SMMT press release: http://www.smmt.co.uk/2010/06/ultra-low-carbon-truck-strategy-launched/
[8] TSB: https://connect.innovateuk.org/web/low-carbon-truck-demonstrator-trial

26. Alongside the publication of the review, it was confirmed that key industry bodies (including SMMT) and the DfT would work together through a Strategic Task Force to advise government on lower emission HGVs. SMMT is keen to see it build on the Automotive Council roadmap for Commercial and Off Highway Vehicles[9], to analyse the barriers to uptake of low carbon technologies and options to overcome them. SMMT urges government to convene the first formal meeting of the Task Force at its earliest opportunity to begin this work.

Taxation

27. Government policies to further lower carbon choices need to retain the diversity of the UK industry as a strength and support R&D investment and innovation across the whole UK automotive industry, irrespective of industry segment or vehicle type. The tax regime in the UK is an important tool for government in shaping consumer behaviour and uptake of new technology. SMMT continues to call for long-term certainty as well as consistency and clarity so that industry and consumers have confidence to invest and plan. SMMT is engaged with the Treasury in its consultation on changes to the R&D tax credit to make it 'above-the-line', which is an essential element of government policy to ensure further investment of R&D in the UK.

28. SMMT has welcomed government's approach to encourage lower carbon choices through the Vehicle Excise Duty and Company Car Tax regimes, as well as first year enhanced capital allowances for ultra-low carbon vehicles. Fleets and businesses will benefit from these measures, key customers in the early ultra-low carbon vehicle market. It is important that such regimes are supported to provide clear and certain benchmarks for business. Sudden changes to the treatment of low carbon vehicles in relation to company car tax and capital allowances could be detrimental to the uptake of low carbon vehicles and put off fleet and business purchasers making decisions on the basis of cost of a vehicle over a number of years.

29. SMMT was disappointed at statements made in this year's Budget that removed the first year capital allowance incentive leased business cars, which was announced with no previous notice. Such unexpected announcements cause instability in the fleet market and provide mixed messages on market support. SMMT also expresses concern that from April 2015, the five-year exemption for zero and ultra-low emission vehicles will come to an end, sharply rising to 13% in April 2015 and 15% in 2016-17. Certainty to 2015 is welcome, however government itself has recognised the fragility of this market, and the need for a long-term framework of incentives to increase up-take and create a strong and growing low carbon vehicle market in the UK. Government and industry should work together to ensure support reflects this developing market.

30. Government must also ensure that its policies on low carbon vehicles are co-ordinated across departments. SMMT works closely with officials in the Office for Low Emission Vehicles (OLEV), which is tasked to coordinate government policy on low carbon vehicles. OLEV provides effective collaboration between the Department for Transport, Department for Business, Innovation and Skills, and the Department of Energy and Climate Change, however closer involvement of the Treasury would provide a crucial link to ensure rational and stable policy decisions.

Infrastructure

31. SMMT welcomed the announcement under the previous government to establish the Plugged-In Places project and the commitment that the coalition government has given to see it through to completion in 2013. Ensuring there is appropriate public infrastructure for plug-in vehicles is a crucial factor for consumer acceptance and uptake of this technology, but must be managed so as to reduce the risk of stranded charging assets. SMMT also welcomed government's Plug-In Vehicle Infrastructure Strategy published in June 2011. SMMT members believe that the approach taken to focus on domestic and workplace recharging is appropriate as this is where the majority of recharging will be taking place.

32. The Plugged-In Places projects will be useful in informing government policy on the wider roll out of infrastructure. There has been varying success in the eight Plugged-In Places projects, with some locations demonstrating commercially viable plans for when government funding ends and others whose status is less certain. It is vital that when government reviews its Plug-In Vehicle Infrastructure Strategy at the beginning of 2013, actions are put in place to enable the infrastructure associated with the eight projects remains viable and open for public use. Issues of interoperability between regions have yet to be resolved with registered users of one Plugged-In Places scheme still being unable to use neighbouring schemes without separately registering. Plans for a National Whitelist, enabling interoperability, are to be welcomed but is not yet in place. Government should encourage plug-in vehicle charging infrastructure owners to sign up to the National Chargepoint Registry. Government

[9] Automotive Council: http://www.automotivecouncil.co.uk/wp-content/uploads/2011/07/COM-OH-Roadmap.pdf

should ensure that the disparate approaches made by Plugged-In Places regions are joined-up and complemented by a cohesive and clear plan for a national network of public recharging infrastructure.

33. SMMT is engaged with officials at OLEV on a number of issues related to plug-in vehicle recharging infrastructure, including looking at how consumers can be enabled to charge at home and off-peak. It is important that consumers are supported to be able to conveniently charge at home, ensuring that both the physical infrastructure is reliable and in place, as well as being able to access value-for-money tariffs.

34. Energy companies have a role to play in providing competitive tariffs that encourage and incentivise plug-in vehicle recharging at home and off-peak. The consumer proposition for plug-in vehicles must include running and ongoing costs. Rising oil prices will in itself make plug-in vehicles an attractive proposition, however incentives and market signals that reduce further the refuelling costs is a crucial element in increasing uptake. This reinforces the importance of an integrated approach where all stakeholders have a responsibility to ensure consumers and businesses are supported in their purchasing decisions.

35. Physical infrastructure needs for domestic and workplace recharging are a critical area of focus. Being able to install appropriate, affordable and safe charging equipment should be a key element of government's infrastructure plans. The Institution of Engineering and Technology's (IET) Code of Practice for Electric Vehicle Charging Equipment Installation is supported by SMMT and looks to set out best practice for the safe installation of electric vehicle charging equipment. Appropriate solutions will differ from customer to customer and will vary in terms of cost. Efforts should be made to minimise the cost of charging equipment installation as this could present itself as a market barrier to uptake of plug-in vehicles.

36. SMMT recommends to the Committee that government considers how the Green Deal initiative could support the purchasing of electric vehicle charging infrastructure. The scope of the Green Deal, looking at energy efficiency improvements for households and businesses, fits well with the aims and objectives of plug-in vehicle technology and the decarbonisation of transport. Government itself recognises in its infrastructure strategy that those taking up core Green Deal measures are also likely to be plug-in vehicle adopters. The scheme could offer low cost finance with no upfront cost to install home and workplace charging facilities. There is also recognition that the Green Deal could be a potential way in which information about ultra-low carbon vehicles is communicated. Such a move would compliment other measures to encourage the wider take up of low carbon vehicles. The Department of Energy and Climate Change should ensure that the offer to businesses and customers through the Green Deal reflects policy across government, and the wider efforts to reducing emissions from road transport.

37. Government's recently published National Planning Policy Framework is a welcome move that builds on actions to promote sustainable transport through planning and development policy. Encouraging developments to incorporate facilities for charging plug-in vehicles is a positive step in supporting workplace and domestic charging. Government should further pursue considerations made in its infrastructure strategy looking to explore whether voluntary standards such as the Code for Sustainable Homes can be a route to bolster domestic infrastructure needs.

Technology and R&D

38. As mentioned above, UK industry, government and academia have collaboratively developed consensus technology roadmaps for cars (Figure 1, below) which provide a key focus for industry, recognising the long-term challenges associated with the transition to ultra-low carbon vehicles. A commercial vehicle and off-highway vehicle roadmap was published in April 2011, outlining the drivers and timescales of technology development across the sector. To support these roadmaps, technology neutrality is essential for government policy, as industry has identified through the Automotive Council that there are a plethora of technologies supported by the sector.

39. The Automotive Council has set out strategic investment priorities for the move to lower carbon technologies, working with the Technology Strategy Board (TSB) in identifying five 'sticky' or priority technology groups where the UK has the potential for a significant return on investment, which industry, government and R&D funding bodies should strategically exploit and support. The 'sticky' technologies are: energy storage and management, electric motors and power electronics, internal combustion engines, lightweight vehicle and powertrain structures, and intelligent mobility. The UK should move quickly to support these technologies to maximise the potential economic and industrial benefits.

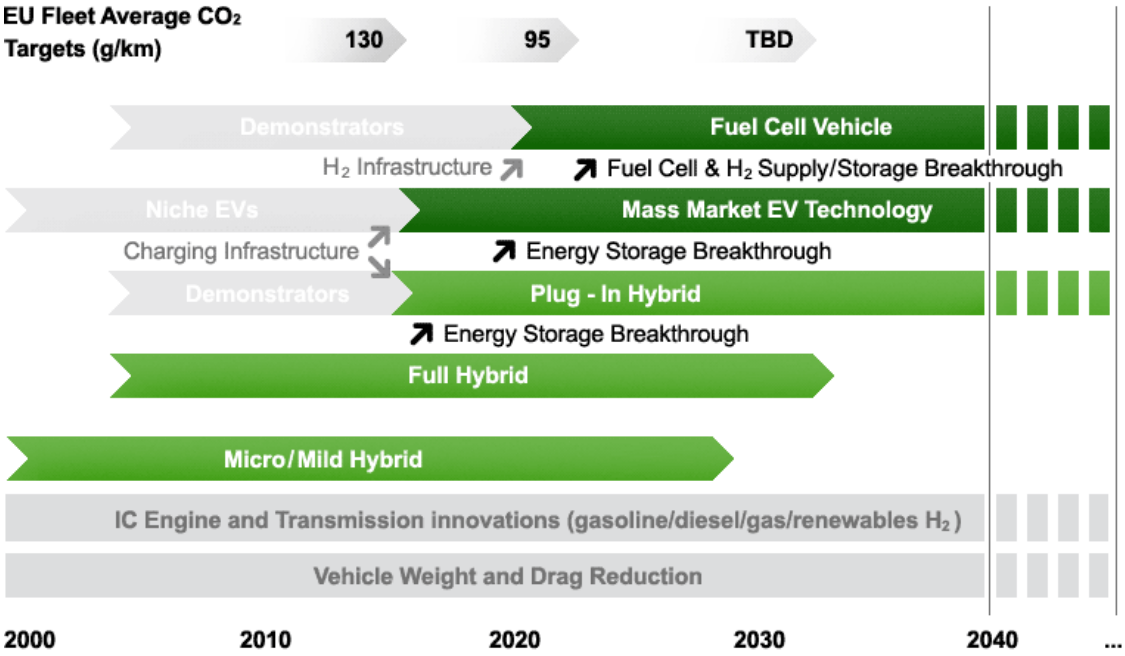

Figure 1: Passenger car consensus industry technology roadmap, Source: Automotive Council

40. Automotive companies are investing heavily in UK R&D to develop innovative technologies that lower the emissions and environmental footprint of their products. Long-term commitments from government for continued support of new technology will enable the UK to build on this area of opportunity and strengthen the UK's leading role. As mentioned previously, SMMT welcomed government's announcement to introduce above-the-line R&D tax credits, which will be significant in leveraging further investment in R&D in the UK.

41. SMMT supports the Technology Strategy Board's (TSB) coordinating role in providing government funding for strategic R&D low carbon projects. The TSB is a vitally important funding body and must remain responsive to the strategic future of automotive investment. R&D support is a crucial element in supporting low carbon industrial opportunities in the UK. Compared to government support for R&D investment in other countries, as highlighted later, SMMT believes government should consider how best to further support and garner more low carbon R&D investment in the UK. In particular how government support mechanisms can address the 'valley of death' - the funding gap between promising research and the transition to the marketplace.

42. An option for government could be to increase funding through the TSB, or to exploit the strategic opportunities presented following the work of the Automotive Council and the 'sticky technologies' highlighted above through the 'Catapult' programme. Government has already set up a Catapult centre for one of the sticky technologies - intelligent mobility and transport systems. The remaining four areas – energy storage and management, electric motors and power electronics, internal combustion engines, lightweight vehicle and powertrain structures – have support as part of the wide mix of technologies through the general Advanced Manufacturing Catapult. Government should consider the creation of new Catapult centres that focus on low carbon vehicle technologies, encompassing all areas of the low carbon automotive technical agenda. Such support would both signal government's commitment to delivering on the Automotive Council's priorities, while providing a focal point for UK R&D in these technologies.

43. Among TSB funded projects, the Ultra Low Carbon Vehicle Demonstrator Programme[10] made available £25 million to provide some of the costs for business-led demonstration projects for low carbon vehicles. The project funded eight consortia to undertake research around consumer attitudes to low carbon vehicles. This workstream is providing important information on real-world testing that will help inform industry, government and other stakeholders to understand customer perceptions and concerns, as well as identify challenges with infrastructure.

44. Recent government and industry collaboration has seen a consortium of companies, including vehicle manufacturers, suppliers and energy companies come together to form UKH_2Mobility, with the aim to produce an evaluation on the potential for hydrogen as part of the low carbon vehicle mix in the UK,

[10] Initial findings from TSB demonstrator programme: http://www.innovateuk.org/_assets/pdf/press-releases/ulcv_reportaug11.pdf

developing an action plan for anticipated roll out to consumers. This work is an important element of industry collaboration to support the economic opportunities and environmental benefits across all low carbon vehicle technologies.

45. Continual improvements to making the business environment for R&D more attractive will enhance the UK's capabilities and increase the industry's international competitiveness. Policies that support this aim would help ensure future low-carbon automotive technologies are not only deployed but developed and manufactured in the UK, as well as encouraging new technologies to be brought to market faster and encourage growth in the UK's domestic supply chain.

International comparisons

46. The UK is striving to be at the forefront of the European low carbon vehicle market. SMMT analysis shows that uptake of vehicles is of a comparable level to that of other major markets in Europe. Where data is available for the whole of 2011, UK electric vehicle registrations were 1,082, representing a total market share of 0.06%. Registrations in France were 2,328, a 0.11% market share; Spain 862, representing a 0.05% market share; the Netherlands with 862, representing a 0.16% market share; Norway with 1,996, representing a 1.44% market share; and Italy with 289, representing a 0.02% market share. Partial data up to October of 2011 shows Portugal with a 0.10% market share and Germany with a 0.07% market share. Markets further afield demonstrate greater levels of registrations, with the United States recording 8,153 vehicles registered up until October 2012, representing a 0.16% market share and Japan with full year 2011 registrations of 12,600, representing a 0.36% market share.

47. The UK government's package and offer in terms of incentives for low carbon vehicles is also comparable to those provided by other European and international competitors. Purchase incentives similar to the UK's £5,000 Plug-In Car Grant are available in France (worth up to €5,000), Spain (worth up to €7,000), Ireland (worth up to €5,000), and Portugal (worth up to €5,000). In the United States the offer of a tax credit up to a maximum of $7,500 is available. Notable markets such as the Netherlands and Germany do not offer national level grant-type incentives. It is worth noting that in some countries such as Spain, the United States, and China, regional authorities provide additional grants and incentives than those provided for at national level. In the case of the United States, significant additional grants are available in various states.

48. Application of favourable tax rates and exemptions from road and circulation taxes for low carbon vehicles are consistent throughout all the major markets in Europe, as well as the United States and Japan. Many countries have signalled a preference for incentivisation of low carbon vehicles through tax regimes. While taxation is an important element as outlined previously, SMMT believes that the UK's approach to provide an incentive at the point of purchase is a crucial factor in providing a reduction to consumers of the up-front cost of new low carbon technology.

49. SMMT welcomes the UK's approach of supporting the entire development chain from idea through to product purchase and use. Other European countries have placed differing priorities in terms of support for the adoption and uptake of low and ultra-low carbon vehicles.

50. Infrastructure support from central government has been a major focus in Portugal and the Netherlands. Rolling out infrastructure was seen in the Netherlands as the top priority, with infrastructure being installed slightly faster than the speed of vehicles arriving on the market. In 2009 the Dutch government allocated €65 million for publically funded electric vehicle support, as well as establishing a prominent group of organisations to increase the uptake of electric vehicles in the Netherlands. The team is headed by Prince Maurits of the Netherlands and also includes two other well known Dutch business figures who are used in publicity to increase the awareness and uptake of electric vehicles. The Portuguese government chose to entirely fund the roll out of publically available infrastructure across the country, which was the world's first nationwide plug-in vehicle charging network. The 'MOBI.E' network had the intention of introducing over 1,300 charging points that would be operated centrally and owned by the government.

51. Elements of such support for R&D, purchase incentives and infrastructure development vary from market to market. Some markets, such as Germany, have placed a larger emphasis and considerable funds on R&D support, which looks to develop an industrial base for the research, design and manufacture of low carbon vehicles. Germany committed €2 billion of investment for battery R&D between 2007 and 2014, the French government is investing €125 million in a battery factory with Nissan and Renault. The United States has provided over $2 billion in grants for batteries and electric motors and during the recession, the US government provided $8 billion in Energy Department loans to help automotive manufacturers create fuel-efficient vehicles. Funds were awarded to companies that demonstrated investment to increase fuel standards at least 25% beyond 2005 levels.