



Office for  
Low Emission  
Vehicles

# Investing in ultra low emission vehicles in the UK, 2015 to 2020



April 2014

The Office for Low Emission Vehicles (OLEV) is a cross Government, industry-endorsed, team combining policy and funding streams to simplify policy development and delivery for ultra low emission vehicles. OLEV currently comprises people and funding from the Departments for Transport (DfT), Business, Innovation and Skills (BIS), and Energy and Climate Change (DECC). The core purpose is to support the early market for electric and other ultra low emission vehicles (ULEVs). OLEV is based in DfT and this document is published by the Department for Transport.

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**Cover image:**

Ultra low emission vehicles from BMW, Nissan, Renault, Toyota and Vauxhall at the launch of the Go Ultra Low campaign in January 2014.

# Contents

Introduction.....	4
1. Summary of responses to the call for evidence.....	5
Introduction.....	5
Consumer incentives .....	5
Infrastructure.....	5
Research & development.....	5
Taxis, private hire vehicles and car clubs .....	6
Regional/city schemes.....	6
Other vehicle segments .....	6
2. Supporting the early market .....	8
Consumer grants to support ULEVs .....	8
City scheme.....	11
Ultra low emission taxis .....	13
Low emission buses .....	14
3. Shaping the required infrastructure .....	16
Charging infrastructure .....	16
Gas refuelling infrastructure.....	19
Hydrogen infrastructure .....	22
4. Investing in UK automotive capability.....	24
Research & development.....	24
Go Ultra Low - Key Facts .....	26

# Introduction

This document sets out key elements of the Government's proposed package of support for ultra low emission vehicles (ULEVs) in the period 2015-20. It follows the announcement in the 2013 Spending Round that the Government was making £500m available to support ULEVs in this period.

The outline package of measures set out here confirms the UK Government's strong commitment to making the UK a premier location for the design, manufacture and adoption of ULEVs. It also confirms a long term, stable and comprehensive policy framework backed by a significant funding commitment. The package gives certainty on grant support for consumer incentives, provides funding for vital infrastructure, recognises the importance of other vehicle sectors including buses, taxis and HGVs and provides guaranteed funding for ULEV-specific R&D. It also encourages innovative measures from cities to turn their areas into exemplars for ULEV take-up.

All further detail on the high level measures included here will be made available by autumn 2014. The Government is also seeking to adopt a flexible approach - not all the £500m funding is allocated here and minimum allocations are given which could be extended to reflect market conditions. Many elements of the package, including the consumer incentives, are also subject to securing the necessary State Aid approvals from Europe.

Office for Low Emission Vehicles

April 2014

# 1. Summary of responses to the call for evidence

## Introduction

- 1.1** In November 2013 the Office for Low Emission Vehicles (OLEV) launched a call for evidence to inform the design of the 2015 to 2020 phase of Government measures to support the early market for ultra low emission vehicles. 134 responses were received from a range of organisations and individuals, including vehicle manufacturers, supply chain companies, trade associations, academics and local authorities. The summary below gives an overview of the key themes that emerged from the responses.

## Consumer incentives

- 1.2** Over 90% of responses suggested that Government should continue to provide upfront consumer grants for cars and vans. Many also suggested that the emissions threshold for vehicle incentives should be reduced from its current value of 75g CO<sub>2</sub>/km.
- 1.3** The majority of responses considered that the incentive offered to consumers should continue to be technology neutral.

## Infrastructure

- 1.4** Responses indicated a desire to further improve the rapid charger network to address “range anxiety” for battery electric vehicles (BEVs) and encourage uptake of electric vehicles beyond urban environments.
- 1.5** Other key themes were the importance of strategic positioning of chargepoints and their interoperability.
- 1.6** Several responses commented that since the majority of charging takes place at home and in the workplace, support should be focused on these areas.
- 1.7** A strong case was also suggested in several responses for Government support to encourage early investment in hydrogen refuelling infrastructure as hydrogen fuel cell vehicles come to market from 2015.

## Research & development

- 1.8** Many reported that the Technology Strategy Board has been a highly successful and appropriate channel for OLEV's funding of essential research, development and demonstration work. However it was also

frequently noted that for various reasons it was more difficult for smaller companies to access funding through this source. Some form of early stage equity was suggested as a possible alternative to address this concern.

- 1.9** Wireless technology and hydrogen propulsion systems were commonly suggested as the areas of ULEV technology that would benefit most from further trials and demonstrations.
- 1.10** In order to boost investment in the UK, there were several suggestions that UK successes should be better promoted at an international level. Similarly, participation in European collaborative projects should be encouraged.
- 1.11** Strong arguments were put forward that for the UK to achieve pre-eminence in the development of ULEV technology then incremental improvements in R&D funding would be insufficient. Instead a genuine step-change in funding would be required to put the UK on an equal footing with competitor nations.

## Taxis, private hire vehicles and car clubs

- 1.12** Responses acknowledged the importance of support for the roll out of ULEV taxis, private hire schemes, and car clubs not only to deliver emissions reductions, but also to provide a valuable means of showcasing the technology. On the other hand, some vehicle manufacturers argued that funding should instead be prioritised and targeted towards passenger vehicles to deliver the greatest benefits.
- 1.13** Suggested approaches to encourage uptake of these categories of vehicles included reduced licensing fee for taxis, free parking, use of bus lanes, creation of low emission zones, subsidised retrofitting, working with operators to better understand the problems faced by industry, and providing advice on deploying the vehicles and understanding the potential cost savings.

## Regional/city schemes

- 1.14** Responses were largely in favour of some form of regional funding model. Some argued in favour of including rural areas while others felt funding should be targeted towards cities only where air quality problems were greatest.
- 1.15** Several local authorities commented that if some form of regional scheme was taken forward, the application process should not be too onerous.

## Other vehicle segments

- 1.16** Infrastructure to support heavy goods vehicles was popular, with particular emphasis on gas refuelling. Several responses suggested that supporting infrastructure was preferable to vehicle subsidies in order to

deliver greater longer term benefits and avoid temporarily distorting the market.

- 1.17** Opinions were split on whether government should support the uptake of smaller ULEVs such as motorcycles. Those in favour highlighted the potential for this market to grow in the UK, while those who were against argued that it would be more effective to target activity on vehicle segments with the greatest CO2 emissions.
- 1.18** It was widely commented that the Green Bus Fund had been a success, and that additional Government support in this area should be introduced with longer term funding certainty.

## 2. Supporting the early market

### Consumer grants to support ULEVs

- We will commit at least £200m in the period 2015-2020 to bridge the additional cost of ultra low emission cars. This is a minimum provision and may change to reflect market conditions.
- The current £5,000 grant incentive will remain in place. This level will remain until at least 50,000 cars have been sold or until 2017, whichever is the sooner; at which point we will review its future level.
- From that point we will hold annual reviews to ensure the right level of grant is in place, giving as much notice as possible of any changes.
- We will also commit at least £30m over the period to support other vehicles including vans.

**2.1** In 'Driving the Future Today',<sup>1</sup> the Government's ultra low emission vehicle strategy published in September 2013, we gave a commitment to continue the existing plug-in vehicle grants to May 2015, and to retain a consumer incentive beyond this date.

**2.2** In the early market for ULEVs, the higher upfront cost of vehicles is one of the biggest barriers to uptake. The difference in cost between a petrol or diesel vehicle and an ULEV can be significant and the need for market intervention remains if we are to support a sustainable and growing ULEV mass market. Over 90% of respondents to the call for evidence supported a continuation of the current Plug-in Car Grant offer of up to £5,000 per car; and emphasised the need for long-term certainty of these incentives.<sup>2</sup>

**2.3** We will therefore make at least £200m available to continue the plug-in car grant, and commit to retain the £5,000 cap until at least



50,000 cars have been sold or until 2017, whichever is the sooner; at which point we will review its future level. From this point we will hold

<sup>1</sup> Driving the Future Today - a strategy for ultra low emission vehicles in the UK, September 2013, Office for Low Emission Vehicles.

<sup>2</sup> Pictured, five of the eligible vehicles for the current Plug-in Car Grant. From left to right - Renault ZOE, BMW i3, Toyota Prius plug-in, Nissan LEAF and Vauxhall Ampera, crossing Westminster Bridge.

annual reviews to ensure the right level of grant is in place, giving maximum notice of any changes.

- 2.4** There is also a need to bridge the high upfront costs of ultra low emission vans. We currently offer a grant to vans of less than 3.5 tonnes. Uptake of this grant has been low, primarily due to limited product availability. We will therefore consider whether the scope of the grant should be widened to include larger vehicles, and possibly other vehicles which we have not supported to date.<sup>3</sup>



### **Geographic availability**

- 2.5** The grants will be available UK-wide.

### **Next steps**

- 2.6** The extension to the existing plug-in car grant will take effect from April 2015. We will announce any significant changes to the current car grant criteria shortly.
- 2.7** For the other vehicle grant, we will publish the scope and criteria of the grant by autumn 2014. Vans smaller than 3.5 tonnes will continue to be incentivised on a similar basis to the current plug-in van grant, but this will be subject to regular reviews.

### **Q&A**

#### **Q. Who can access the car grant?**

The grant will be available to business and private buyers across the UK, including for leased vehicles.

#### **Q. Will there be any changes to the eligibility criteria?**

The criteria for the plug in car grant are in need of updating to reflect the changing car market, although the purpose of the grant itself remains unchanged. Details of any amendments will be announced very shortly.

#### **Q. Will this be technology neutral? What about hydrogen vehicles?**

Grant funding will be available to any vehicle which meets the eligibility criteria, regardless of technology type.

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<sup>3</sup> Source: Fruit 4 London. Renault Kangoo Z.E. - one of the eligible vehicles for the current Plug-in Van Grant

**Q. What happens when the £200m runs out?**

We are providing a minimum of £200m funding. We will review the market in advance of 50,000 cars being sold, or pre-2017, whichever is the sooner and announce any changes to the grant. We will hold regular reviews thereafter to ensure that we are responding appropriately to market developments.

**Q. Will the 50,000 cars include the ones already on the road today?**

Yes, the 50,000 is a cumulative figure. It will include all the claims made before April 2015 (the current running total is c.10,000).

**Q. Is there a time limit on the grant?**

The £5,000 grant cap will remain in place until at least 50,000 cars have been sold or until 2017, whichever is the sooner. We will hold regular reviews thereafter to determine future levels, ensuring that we respond appropriately to market developments. As much notice as possible of any changes will be given.

**Q. What types of "other vehicle" will the £31m support?**

We will continue to support vans up to 3.5 tonnes and consider the case for extending this to include larger vehicles, quadricycles and powered two wheelers. More details of the scope of this grant, and eligibility criteria will be published by autumn 2014.

## City scheme

- We will make up to £35m available to the 2 to 4 cities that commit to supporting a step change in ULEV adoption in their areas through measures like access to bus lanes, ULEV car club support, infrastructure for residents, parking policy and changing their own fleets.
- These cities will lead the way in increasing uptake through improving the offer to businesses and consumers and will become international exemplars.

- 2.8** International experience suggests that drivers place significant value on softer measures which improve their overall driving experience, for example offering free parking for ULEVs or access to bus lanes. When such perks are packaged together, it will help to make a strong case for buying a ULEV.
- 2.9** We want to give a small number of UK cities the opportunity to become flagship cities for ULEVs through implementing a suite of measures and trialling new ideas. These cities will then be in a position to advertise their successes to other cities looking to reduce their emissions and improve their local air quality.
- 2.10** The UK has also been infringed by the EU for breaching local air quality limits in some areas. As the majority of these infractions are in urban areas, the city scheme will directly help to combat this.
- 2.11** The cities will also attract international attention and so positively influence inward investment decisions.

### Geographic availability

- 2.12** We are currently working with colleagues in the Devolved Administrations to determine scope. It will be announced along with further details in the autumn.

### Next steps

- 2.13** By autumn 2014 we will publish the funding framework and the geographic extent of the scheme. The criteria by which the city bids will be judged will also be defined.

### Q&A

#### **Q. Who can access the funding? Is this just open to cities?**

Yes, the scheme will only be open to cities.

#### **Q. How will you make this funding available?**

The details of the scheme will be published finalised by autumn 2014.

#### **Q. What is the criteria for successful bids?**

The details of the scheme will be published by autumn 2014. It is likely that local air quality will be important in the evaluation.

**Q. What sort of measures are you expecting?**

Winning cities will need to show real ambition and innovation in their proposals. We will not prescribe measures but we would expect cities to consider things like: their own vehicle fleet procurement policies, infrastructure provision, building codes and planning standards, car clubs, parking policy (especially for residents without off-street parking) and bus lane access.

**Q. How will ULEV access to bus lanes work?**

This will be a matter for local authorities to decide – it is in their gift as they have the powers to designate access to specific portions of the road. However, all the evidence from other countries shows that these sorts of softer measure can really drive early adoption of the technology. Clearly this wouldn't have to be a permanent measure but would send a strong signal to prospective purchasers.

**Q. Why are you focussing on individual cities? Won't the money be best used spread across several areas?**

By concentrating the funding on 2-4 individual cities we are most likely to realise the benefits on a visible scale. The selected cities will be in a position to share their experience of introducing different measures to other areas of the country.

## Ultra low emission taxis

- We will make at least £20m available to local authorities who commit to supporting a step change in cleaning up the taxi fleets in their areas through the introduction of ULEV taxis.

- 2.14** Increasing uptake of ULEV taxis is an important part of our overall commitment to increasing the number of ULEVs on the road. Taxis provide a direct means of demonstrating the benefits of ULEVs to passengers, and could encourage them to consider ULEVs when they next buy a car.
- 2.15** Taxis can also be significant contributors to air quality problems, due to the stop start nature of their driving and their high mileage in urban areas. Targeting improvements to taxi fleet emissions will make a significant improvement to local air quality.
- 2.16** Increasing the uptake of ULEV taxis also supports our commitment to encouraging investment in the UK automotive industry; a number of market entrants are likely to be built in the UK.

### Geographic availability

- 2.17** We will publish further details of the scope of this scheme by autumn 2014.

### Next steps

- 2.18** By autumn 2014 we will publish the criteria of the scheme and announce when the scheme will be open for applications.

### Question and answers

**Q. Who can access the funding? How will we make this funding available?**

The details of the scheme will be published by autumn 2014.

**Q. Will the funding be available to private hire vehicles?**

The details of the scheme are still to be confirmed, but forms of support to encourage ULEV uptake as private hire vehicles remain under consideration. In the event that the scheme is restricted to taxis only, private hire vehicles would still be eligible for the Plug-in Car Grant.

**Q. What exactly are you proposing to fund?**

It is likely that funding will be available for both vehicles and supporting infrastructure. Scheme criteria will be published in autumn 2014.

## Low emission buses

- We will commit at least £30m from 2015 to clean up bus fleets. This could put over 1,000 new low emission buses onto the roads.
- We are also working with the Green Investment Bank to explore additional financing options.

### Introduction

- 2.19** The Department for Transport (DfT) has supported the Green Bus Fund for the last five years to encourage the uptake of low emission buses in England. Building on the success of this initiative, we are committing additional funding to the deployment of low emission buses in order to influence purchase decisions and speed up the transition to a low emission bus fleet.
- 2.20** Low emission buses, including electric and hybrid buses, offer significant CO2 savings, for example, every low carbon bus in London saves around 26 tonnes of CO2 per year. Buses are also a significant contributor to the UK's local air quality problems (particularly in city centres) and are highly visible, so are a good way to demonstrate the benefits of new technology to millions of passengers.
- 2.21** The UK is a leading manufacturer of low emission buses and technologies, so incentives that encourage their uptake in the domestic market can have a positive impact on levels of UK manufacturing. They will also encourage investment in the UK from bus manufacturers looking to establish themselves in the EU market. Our towns and cities have a global reputation for showcasing and demonstrating the very latest in buses and bus technology and so a large fleet of low emission buses in service in UK also provides our manufacturers with global export opportunities.
- 2.22** This funding for low emission buses will be provided on a declining basis in step with a closing cost differential for these vehicles and as the total operating costs become more attractive. Future details of the scheme, the trajectory of up-front support and any details of complementary financing opportunities, will be announced by autumn 2014.
- 2.23** DfT has been working with the Green Investment Bank, as part of its mandate to improve the energy efficiency of the UK's infrastructure, to explore options for meeting the financing challenges facing organisations who wish to purchase low emission buses in the UK.

### Geographic availability

- 2.24** We will publish further details of the scope of this scheme by autumn 2014.

### Next steps

- 2.25** By autumn 2014 we will publish further details on the scheme, including eligibility criteria, scope and potential applicants.

## **Q&A**

### **Q. Who can access the funding? How will we make this funding available?**

The details of the scheme will be published by autumn 2014.

### **Q. Is this the same as the Green Bus Fund?**

The new initiative will build on the success of the Green Bus Fund in increasing the number of low emission buses on UK roads. The precise details will be published by autumn 2014.

### **Q. Will this be technology neutral?**

There will be no specific technology requirements. The precise details of the scheme, including emissions thresholds, will be published by autumn 2014.

### **Q. What role will the Green Investment Bank have?**

We are working with the Green Investment Bank to explore options for meeting the financing challenges facing organisations who wish to purchase low emission buses in the UK.

## 3. Shaping the required infrastructure

### Charging infrastructure

- There will be a rapid chargepoint at every motorway service station by the end of 2014 and we will have a network of over 500 rapid chargers across the country by March 2015 – the best network in Europe (see map on Page 18).
- We need to go further to ensure that worries about charging are never a barrier to ULEV adoption.
- We will provide a £32m fund for charging infrastructure in the period 2015-2020. Among other things, this will ensure that ULEV drivers can easily find a rapid chargepoint to help undertake any journey they choose.

**3.1** We expect rapid chargers to play an important role in the uptake of electric vehicles, particularly through facilitating longer journeys, by allowing drivers to top up their charge at key locations around the strategic road network. They can also aid the adoption of plug-in vehicle by fleets, by allowing vehicles to quickly top up their charge during natural breaks in their duty cycles.

#### Geographic availability

**3.2** This will be confirmed when the details of the scheme are published by autumn 2014. There may be key target areas where coverage of rapid chargers needs to improve in order to ensure a truly national network which meets drivers' requirements.

#### Next steps

**3.3** We are undertaking analysis of the UK rapid network as it currently stands, and what that network will look like in March 2015. This will inform decisions around the geographical extent of the available funding, how it is targeted and to whom, as well as any specific conditions that may be placed on the funding.

**3.4** Full details will be published by autumn 2014.

#### Q&A

##### **Q. Who can access the funding? How will we make this funding available?**

The details of the scheme are still to be confirmed, but will be published by autumn 2014.

**Q. What is a rapid chargepoint?**

A rapid chargepoint can charge a battery electric car from almost fully discharged to at least 80% in as little as 30 minutes.

**Q. Will the £32m be used purely on rapid chargepoints?**

The £32m is for chargepoint infrastructure funding. Rapid chargepoints are key element in this, but some of the £32m will be used to support chargepoints in other settings.

**Q. What other type of chargepoints will this cover? And how much for each?**

The £32m covers all recharging infrastructure, not just rapids. Several responses to the call for evidence commented that since the majority of charging takes place at home and in the workplace, that support should be focused on these areas. Details of the infrastructure schemes will be published by autumn 2014.

**Q. How will you ensure ULEV drivers can find a rapid chargepoint whenever they need one?**

All publicly accessible chargepoints that are funded by the Government have to be placed on the National Chargepoint Registry, a freely available dataset of chargepoints used by website, app and sat-nav developers to communicate the locations of chargepoints to drivers.

**Q. Will the funding also be available for grid reinforcement and connections?**

The cost of grid reinforcement and connections when installing a rapid chargepoint can be significant and in some cases prohibitive. We are considering with the Department of Energy and Climate Change, Ofgem (the energy industry regulator) and industry how this can be addressed.

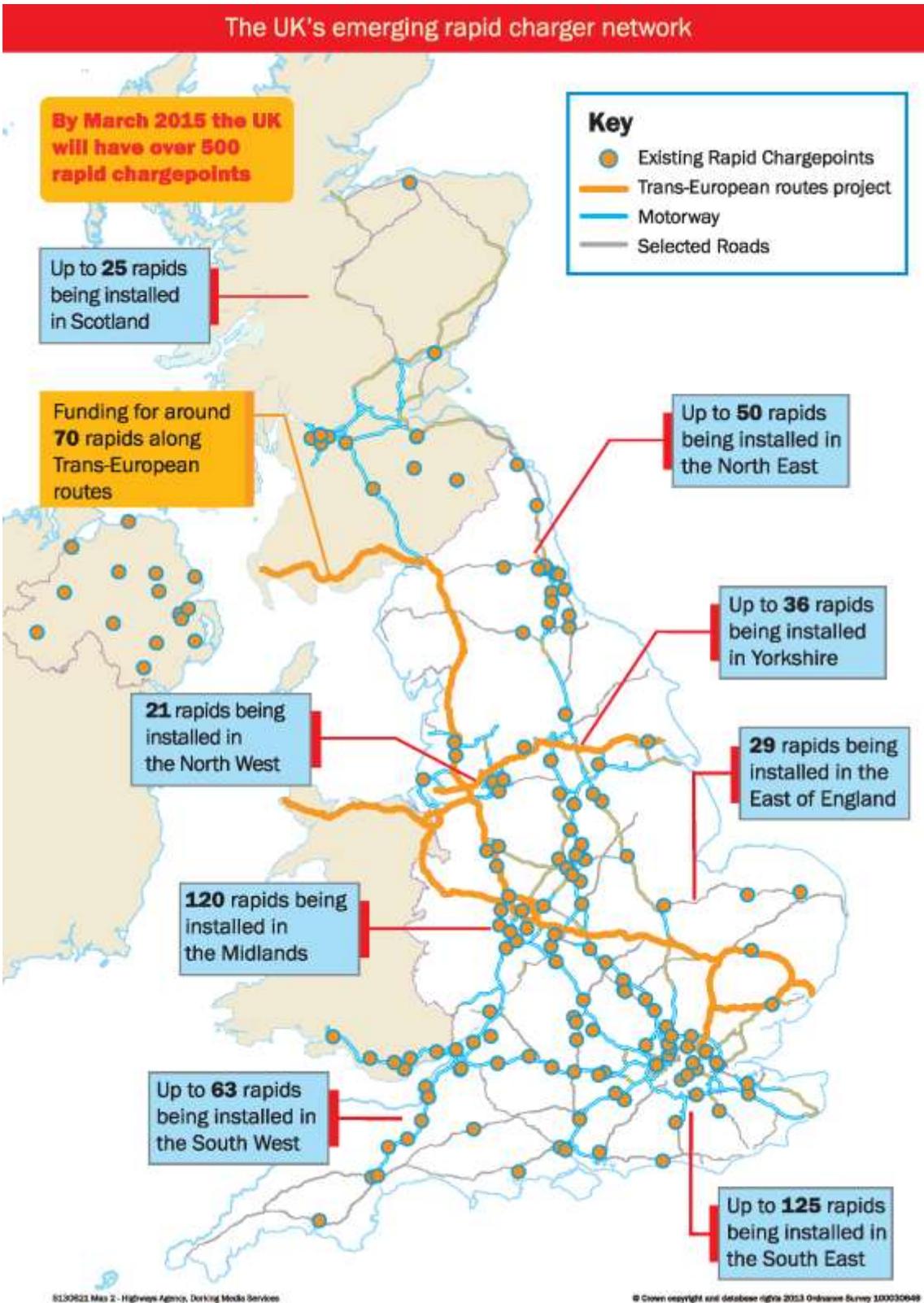
**Q. What about the reliability and maintenance of chargepoints?**

The Government recognises that the reliability of charging infrastructure is crucial for drivers, and we are committed to ensuring they receive the best possible 'offer'. To date, all chargepoints funded by the Government through OLEV have to be maintained in a serviceable condition for 3 years, otherwise the Government can seek to recover the funding. We will consider whether this approach is still sufficient. There will be at least a similar requirement around maintenance for this new funding scheme, and we will work with industry to ensure drivers can have access to chargepoints as and when they need them.

**Q. Will the rapids work with all electric cars?**

The Government is technology neutral and to date has not made particular requirements regarding connector types on rapids. We secured a multi-standard approach to future legislative requirements during recent negotiations in Europe and have long emphasised to grant recipients the importance of ensuring that their rapids are compatible

with as many vehicle types as possible. This message has been heeded – almost all of the rapids being installed under the current funding round cater to all three of the main rapid charging standards. We will continue to reinforce that message with recipients of future funding.



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<sup>4</sup> Source: Office for Low Emission Vehicles

## Gas refuelling infrastructure

- We are allocating £4m to ensure the UK has an initial network of gas refuelling stations to support freight and logistics operators in their efforts to reduce the environmental impact of their businesses.

- 3.5** Government is committed to supporting the development of low and ultra low emission alternatives across all vehicle sectors. The lack of publicly accessible gas refuelling infrastructure has been identified as a significant barrier to the increased uptake of cleaner gas fuelled HGVs. Infrastructure grants supporting the rollout of natural gas (and biomethane) refuelling facilities for HGVs would give freight operators more confidence to invest in this market-ready low emission technology.
- 3.6** A joint Government and industry HGV Task Force was established under the Government's 2011 Logistics Growth Review to identify and promote low emission, fuel efficient road freight technologies. In its recent report 'Recommendations on the use of methane and biomethane in HGVs' the Task Force considers switching more HGVs from conventional diesel onto gas will provide greenhouse gas (GHG) and local air quality benefits as well as the potential for lower fuel costs for operators. HGVs using fossil gas are estimated to emit between 5% and 16% less GHG than those burning diesel. If biomethane is used GHG savings are estimated to be between 33% and 65%.
- 3.7** There are currently a limited number of gas refuelling stations across the UK, with larger operators favouring their own on-base refuelling stations. A better public refuelling infrastructure would enable operators without their own refuelling facilities to use gas vehicles and allow those who tend to refuel at base to operate more efficiently through increased payloads and/or the ability to cover larger trip distances.<sup>5</sup>
- 3.8** The establishment of a strategic network of cleaner natural gas (and biomethane) refuelling infrastructure for HGVs, linked to potential demand from freight operators and other users, could create the right conditions for road freight operators to invest in new technologies and deliver a breakthrough in the take up of cleaner gas HGVs. This does not preclude support for the development of other carbon reduction technologies as part of an overall approach which remains technology-neutral.



<sup>5</sup> Picture source: Stobart Group

- 3.9** The 2013 Autumn Statement announced that the fuel duty differential for road fuel gases (natural gas and biomethane) would remain in place until 2024. This increases freight operators confidence that they can recover the additional up-front cost of the vehicles through the fuel duty differential over the lifetime of the asset.

### **Geographic availability**

- 3.10** UK wide.

### **Next steps**

- 3.11** We will work through the joint Government and industry HGV Task Force, as well as direct with key stakeholders, to determine how best to support the efforts of freight and logistics operators to reduce the environmental impact of their business.

### **Q&A**

#### **Q. Does this mean the Government will provide funding to support gas refuelling infrastructure?**

Our trial of low carbon trucks and infrastructure included the launch of several gas refuelling points with open access to encourage other operators to consider using gas or dual-fuelled HGVs. We will work with the joint Government and industry HGV Task Force, as well as key stakeholders to ensure that infrastructure is built in a co-ordinated and planned way.

#### **Q. What vehicles will this support?**

So far, there are only a few hundred gas powered HGVs in use in Great Britain. In order to achieve a significant contribution to CO2 reduction, there needs to be a step-change in the scale of gas HGV usage. There are around 460,000 HGVs over 3.5 tonnes registered in Great Britain in 2012 (DVLA data). The long haul and regional delivery duty cycles, identified as making the greatest contribution to HGV CO2 emissions, typically use articulated vehicles up to 44 tonnes and rigid vehicles in the 18 to 26 tonne categories. Around 192,000 registered HGVs are over 18 tonnes, which gives an idea of the scale of the potential market for gas powered HGVs. This will include some vehicles mainly used on other duty cycles (including municipal refuse and some construction vehicles), but these can still make a contribution to CO2 reduction. There are a further 90,000 vehicles between 8 and 18 tonnes, where gas may be a more feasible low carbon option than electric power.

#### **Q. Compressed natural gas (CNG) or liquefied natural gas (LNG)?**

Operators tend to have a preference for either liquefied or compressed gas, depending on their location, operations and routes, including return to base frequency. CNG use normally requires access to the gas grid, while LNG stations can be located more flexibly in line with demand as they are supplied by road tanker. LNG can also be evaporated and

delivered in CNG form at LNG refuelling points. Therefore a range of infrastructure for both LNG and CNG refuelling is required.

**Q. Where can I find out more on the recommendations from the HGV Task Force?**

The Department for Transport have published the recommendations on the [www.gov.uk](https://www.gov.uk) website<sup>6</sup>.

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<sup>6</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/287528/taskforce-recommendations.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/287528/taskforce-recommendations.pdf)

## Hydrogen infrastructure

- We are positioning the UK to be a lead market for the introduction of hydrogen fuel cell vehicles and will announce soon, and no later than autumn, 2014 the actions that both Government and industry stakeholders will be taking to achieve this.

**3.12** 'Driving the Future Today' identified that we would explore the options for Government grant funding to support industry's investments in the initial network of hydrogen refuelling stations required to support the commercial deployment of hydrogen fuel cell electric vehicles (FCEVs) in the UK.

**3.13** It also gave a commitment that we will work with industry to identify and resolve outstanding practical issues around the refuelling and use of hydrogen FCEVs, including the hydrogen quality assurance process, integration of hydrogen refuelling into conventional fuel retail forecourts and ensuring an optimal consumer experience.

### Geographic availability

**3.14** UKH2Mobility, a joint Government-industry project evaluating the potential of hydrogen as a transport fuel, has concluded that an initial network of 65 hydrogen refuelling stations across the UK, covering major population centres and the connecting roads, could provide sufficient coverage for the early market.

### Next steps

**3.15** Phase 3 of UKH2Mobility – focused in implementation planning – has not yet completed. An announcement will be made soon, and no later than autumn 2014, on the actions that both Government and industry stakeholders will be taking to position the UK as a lead market for the introduction of hydrogen fuel cell vehicles.<sup>7</sup>



### Q&A

#### Q. How does hydrogen fit with other technologies?

We have always said that the decarbonisation of road transport will be achieved through a portfolio of technologies. We believe battery electric vehicles, plug-in hybrids and hydrogen fuel cell vehicles will all have a role to play.

<sup>7</sup> Pictured, Toyota FCV-R fuel cell car. Source: Toyota

**Q. When will you make an announcement on hydrogen support?**

We are positioning the UK to be a lead market for the introduction of hydrogen fuel cell vehicles and will announce by autumn 2014 the actions that both Government and industry stakeholders will be taking to achieve this.

# 4. Investing in UK automotive capability

## Research & development

- We will make £100m available to further bolster the UK's position as a key destination for ultra low emission vehicle R&D.
- This builds on the £1bn joint government/industry commitment on an Advanced Propulsion Centre announced last summer and will focus on the technologies needed to deliver mass market ultra low emission vehicle motoring.

**4.1** Manufacturing is central to the Government's strategy for growth and our resurgent automotive industry, supported by a strong partnership with Government, has undergone a dramatic transformation in recent years. It is now at the heart of the productivity growth of the UK economy. Government and industry investment of £1bn over ten years in the Advanced Propulsion Centre represents a step change in the scale of activity and will enable the next generation of propulsion technologies to be commercialised and produced in the UK safeguarding over 30,000 existing jobs.

**4.2** For the longer-term, it is vital that we capitalise on this momentum and that we secure a leading global competitive position in ultra low emission vehicle R&D to ensure the future health and continued growth of the automotive industry in UK.<sup>8</sup>



**4.3** A growing and sustainable UK automotive sector is one that is playing a decisive role in developing and commercialising ultra low emission vehicles and technologies. Our academic institutions, established research centres and industry have globally recognised expertise in areas such as electric machines and power electronics, lightweighting and energy storage and management. These generic technologies can be commercialised and exported around the world provided investment in R&D is sustained at the right level to achieve and maintain global competitive advantage.

<sup>8</sup> Jaguar XJ-e plug in electric hybrid car. Source: Jaguar Land Rover

- 4.4** By engaging vehicle manufacturers and tier one suppliers with companies in the UK supply chain and our academic institutions, we ensure R&D is focussed on market need, whilst the requirement for at least match-funding reduces the investment risks in step change innovation and ensures participants have the necessary competence. Since many UK manufacturers are foreign owned the UK needs to be attractive to inward investment in advanced technologies and Government investment in R&D can boost the UK supply chain to make the most of the available opportunities.

### **Geographic availability**

- 4.5** UK wide and creating high value opportunities for attracting inward investment.

### **Next steps**

- 4.6** Office for Low Emission Vehicles will continue to co-ordinate ultra low emission vehicle R&D and supply chain support activity across Government, working through the Automotive Council to identify opportunities and closely with industry on how best to target funding to maximise value for the UK. We will continue to work closely with the Technology Strategy Board, the UK's innovation agency, and ensure alignment with activities of the Advanced Propulsion and Energy Storage Centres.
- 4.7** The first call for new projects will be published by the end of 2014.

### **Q&A**

#### **Q. How will we make this funding available?**

We will continue our existing dialogue with industry and key stakeholders, including the Automotive Council, the Technology Strategy Board and the Automotive Investment Office to determine how best to make this funding available out to 2020.

#### **Q. Who will be able to access the funding?**

We will encourage Original Equipment Manufacturers, suppliers, small and medium-sized companies, R&D organisations and academic institutions with the potential to build on the UK's existing capabilities, deliver a global competitive advantage and achieve economic benefit for the UK to apply. We will welcome participants already established in the UK, as well as those looking to set up a base in the UK intending to expand their activity in the UK beyond the end of any funding arrangement.

#### **Q. Will funding be restricted to on-vehicle technologies?**

No, we expect to consider supporting a range of areas, including infrastructure and the wider technologies associated with this sector.

