



36.1 Major Developments in 2017

In 2017, the UK set out a commitment⁷⁸ that: ‘Our ambition is for Britain to lead the world in electric vehicle technology and use. We want almost every car and van to be zero emission by 2050’. The UK’s Air Quality⁷⁹ plan restated this. We will end the sale of new conventional petrol and diesel cars and vans by 2040. Meeting the 2040 commitment should be industry-led, with Government monitoring developments closely. Against a rapidly evolving international context, we will seek to maintain ambitious targets and our leadership position, intervening firmly if not enough progress is being made.

By 2040 almost all new cars and vans will need to deliver a significant proportion of journeys with zero tailpipe emissions. This ambition is technology neutral, and the UK Government welcomes any innovative thinking that helps us to achieve this ambition. An updated strategy detailing the Government’s role in the decarbonisation of road transport will be published by the end of March 2018.

To achieve this, the UK Government is investing nearly £1.5 billion (1.7 billion EUR) between April 2015 and March 2021. This investment supports one of the most comprehensive global programmes of support for ULEVs (ultra low emission vehicles), with grants available for plug in cars, vans, lorries, buses, taxis and motorcycles, and schemes to support charge point infrastructure at homes and workplaces and on residential streets.

The UK’s Clean Growth Strategy⁸⁰, National Air Quality Plan and Industrial Strategy,⁸¹ all highlight the importance of electric vehicles, which is why the Prime Minister announced in December 2017 that the UK would host a Zero Emission Vehicle Summit in Autumn 2018. The UK’s high level Government summit in autumn, will bring together countries from around the world to further the development of the global low emission and electric car market. It is hoped the

⁷⁸ <https://www.conservatives.com/manifesto>

⁷⁹ <https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017>

⁸⁰ <https://www.gov.uk/government/publications/clean-growth-strategy>

⁸¹ <https://www.gov.uk/government/topical-events/the-uks-industrial-strategy>

Summit will inspire attendees to make new commitments to investing in zero emission vehicle technology and infrastructure, helping to meet the ambitions of the Paris Agreement.

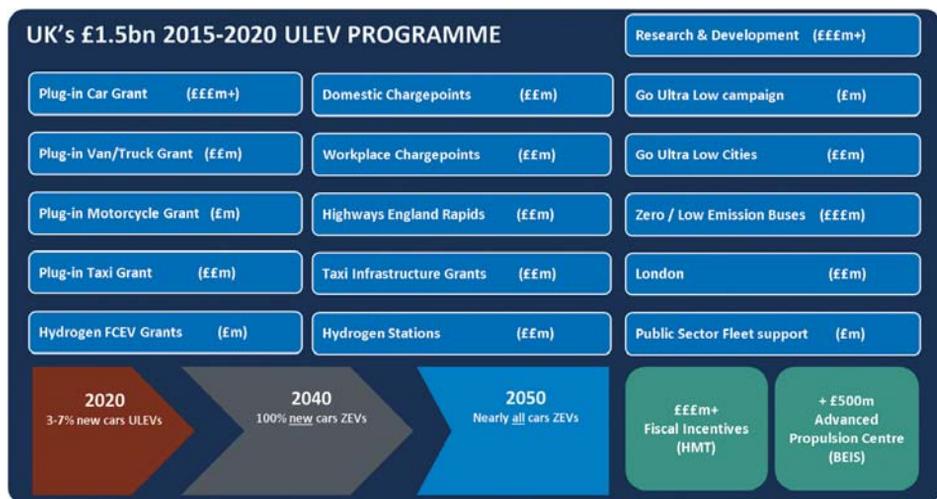


Figure 1: Overview of UK's support package for ULEVs (Source: Gov.uk)

36.1.1 Demand Side Support for Ultra-low Emission for ULEVs

Plug-in Car Grant

There have now been over 130,000 claims made for the Plug-in Car Grant⁸². The scheme offers up to £4,500 (5,099 EUR) off the cost of an electric or fuel cell car and up to £2,500 (2,832 EUR) off qualifying plug-in hybrids. The categories for the grant are explained in figure 2 and the guidance on the grant criteria needed for cars to be included on the approved list can be found on the Office for Low Emission Vehicles website⁸³. The grant will continue with its current levels until April 2018⁸⁴ and there will be a grant of some sort until March 2020.

⁸² <https://www.gov.uk/plug-in-car-van-grants>

⁸³ <https://www.gov.uk/government/publications/plug-in-car-grant/plug-in-car-grant-eligibility-guidance>

⁸⁴ <https://www.gov.uk/government/news/funding-for-thousands-of-electric-car-charge-points-unused-by-councils>

Plug in Van Grant

The Plug-in Van Grant⁸⁵ offers 20 % off the price of qualifying vehicles up to a maximum of £8,000 (9,064 EUR). In 2016 the UK Government announced that the grant would be expanded to include N2 & N3 vehicles (i.e. vans over 3.5 t and HGVs), with up to £20,000 (22,663 EUR) available for the first 200 vehicles. The Office for Low Emission Vehicles have published guidance⁸⁶ for manufacturers wishing to have their vehicles approved and placed on the list of eligible vehicles.

GRANT CATEGORIES	1	2	3
CO2 EMSSIONS (NEDC)	<50g CO ₂ /km	<50g CO ₂ /km	50-75g CO ₂ /km
ZERO EMISSION RANGE	70 miles+ (>112 km)	10-69 miles (16-111 km)	20 miles+ (>32 km)
GRANT OFFERED	£4,500	£2,500	£2,500
PRICE CAP	-	£60,000	£60,000

Figure 2: UK Plug-in Car Grant categories as of February 1, 2018

Plug-in Taxi Grant

Taxis are one of the main contributors to poor air quality in urban areas which is why in the UK cities like London are bringing in policies⁸⁷ to improve their environmental performance. To support these efforts the UK Government announced the Plug-In Taxi Grant⁸⁸ (PITG). £50 million (56.6 million EUR) has been set aside to support the Plug-in Taxi Grant programme. This grant will give licensed taxi drivers up to £7,500 (8,498 EUR) off the price of a new vehicle. In addition the UK is investing £14 million (15.8 million EUR) to deliver new dedicated charging points for electric taxis in 10 council areas.

⁸⁵ <https://www.gov.uk/plug-in-car-van-grants>

⁸⁶ <https://www.gov.uk/government/publications/plug-in-van-grant/plug-in-van-grant-vehicles-list-and-eligibility-guidance>

⁸⁷ <https://tfl.gov.uk/modes/driving/ultra-low-emission-zone/cleaner-greener-taxis>

⁸⁸ <https://www.gov.uk/government/news/1000-jobs-created-at-new-300-million-factory-for-electric-taxis>

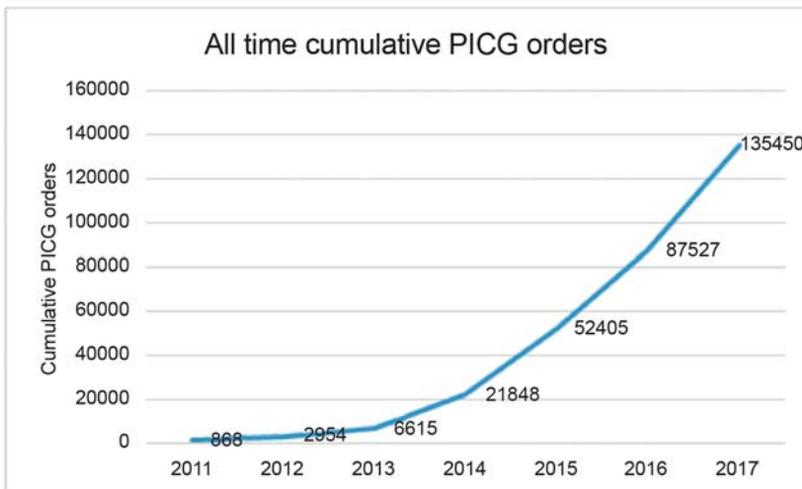


Figure 3: Uptake of the Plug in Car grant since its inception in 2011



Figure 4: London Electric Taxi (Source: emobilservr)

Low Emission Bus Scheme

In 2016, the 13 winners of the £30 million (33.9 million EUR) low emission bus scheme were announced. In total, 326 buses will be procured – including electric, hybrid, hydrogen and bio-methane buses – to their fleets, and will install more than £7 million (7.93 million EUR) worth of infrastructure. On August 28, 2017 it was

announced that a further six local authorities will receive £11 million (12.46 million EUR) for low emission buses.

Plug-in Motorcycle Grant

The scheme was announced in 2016 with qualifying powered two wheelers being eligible for a grant of 20 % up to £1,500 (1,699 EUR). Currently there are over seven scooters and motorcycles eligible.

36.2 HEVs, PHEVs and EVs on the Road

Table 1: Distribution and sales of EVs, PHEVs and HEVs in 2017 (Data source: Driver and Vehicle Licensing Agency database for the UK)

Fleet Totals on 31 December 2017					
Vehicle Type	EVs	PHEVs	HEVs	FCVs	Total ⁶
2- and 3-Wheelers ¹	1,105	0	0	1	1,272,028
Passenger Vehicles ²	49,842	85,564	320,180	68	32,201,089
Buses and Minibuses ³	305	0	6	0	164,026
Light commercial vehicles ⁴	6,290	224	66	4	4,011,322
Medium and Heavy Weight Trucks ⁵	385	0	0	1	523,336
Totals without bicycles	57,927	85,788	320,252	74	38,171,801

Total Sales during 2017					
Vehicle Type	EVs	PHEVs	HEVs	FCVs	Total ⁶
2- and 3-Wheelers ¹	402	0	0	0	116,412
Passenger Vehicles ²	16,368	3,909	66,431	35	2,566,798
Buses and Minibuses ³	45	0	2	0	9,049
Light commercial vehicles ⁴	1,272	95	5	1	371,658
Medium and Heavy Weight Trucks ⁵	12	0	0	0	51,959
Totals without bicycles	17,697	38,004	66,438	36	2,999,464

n.a. = not available

¹ UNECE categories L1-L5

² UNECE categories M1

³ UNECE categories M2-M3

⁴ UNECE categories N1

⁵ UNECE categories N2-N3

⁶ Including non-electric vehicles

36.3 Charging Infrastructure or EVSE

Thanks to Government leadership, a growing private sector & Local Authority engagement, the UK now has over 11,500 publically accessible charging points. This includes over 900 rapid charging points, one of the largest networks in Europe. Our grant schemes and the recently announced public-private Charging Infrastructure Investment Fund will see thousands more electric vehicle charging points installed across the UK. In addition, Highways England has commitment⁸⁹ to £15million (16.99 million EUR) to ensure there are charging points (rapid where possible) every 20 miles on 95 % of the Strategic Road Network.

Domestic Charging

The UK Government believes that the majority of electric vehicle charging will be carried out at home and overnight which is why they are supporting the Electric Vehicle Homecharge Scheme⁹⁰. To date there have been over 90,000 installations under this and predecessor schemes and it was announced recently that the EVHS would continue at its current rate of £500 (566 EUR).

Table 2: Charging stations for EVs in the United Kingdom

Charging Infrastructure on 31 December 2017	
Chargers	Quantity
AC Level 1 Chargers	2,743
AC Level 2 Chargers	8,754
Fast Chargers	754 (AC) / 1,909 (DC) (Tesla 262 / Type 2 754 / Combi 691 / CHAdeMO 956)
Totals	14,160

36.4 EV Demonstration Projects

In 2016, the UK announced the winners of the Go Ultra Low Cities programme⁹¹. The four main winning cities were Bristol⁹², London⁹³, Milton Keynes⁹⁴ and

⁸⁹ <https://www.gov.uk/government/collections/road-investment-strategy#policy-documents>

⁹⁰ <https://www.gov.uk/government/collections/government-grants-for-low-emission-vehicles#electric-vehicle-homecharge-scheme>

⁹¹ <https://www.goultralow.com/news/consumer/go-ultra-low-cities-winners-announced/>

⁹² <https://travelwest.info/drive/electric-vehicles/go-ultra-low-west>

⁹³ <https://www.londoncouncils.gov.uk/our-key-themes/transport/roads/gulcs>

⁹⁴ <https://evexperiencecentre.co.uk/go-ultra-low/>

Nottingham⁹⁵ in addition the governments also set aside £5 million (5.66 million EUR) of the total £40 million (45.31 million EUR) fund for specific initiatives in Dundee, Oxford, York and the North East region to finance some elements of their bids. The key deliverables for each city in the scheme are outlined in Figure 4.



Figure 5: Key deliverables from the Go Ultra Low City Scheme (Source: Go Ultra Low)

Hydrogen for transport

Following the analytical work of UKH2Mobility⁹⁶ the UK Government introduced an £11million (12.46 million EUR) Hydrogen for Transport Advancement Programme which has seen 12 hydrogen refueling stations installed and the introduction of 50 FCEVs on the UK's roads. In March we announced⁹⁷ a new £23.5 million (26.62 million EUR) fund to accelerate FCEVs and refueling stations.

Go Ultra Low Communications

The Go Ultra Low communications campaign is now into its fourth year. This jointly funded government and industry initiative aims to inform vehicle purchasers about the benefits of ULEVs and to dispel widespread myths. The Go Ultra Low industry partners are: Audi, BMW, Hyundai, Kia, Nissan, Renault, Toyota, and VW. Centered around the Go Ultra Low website⁹⁸ the campaign also includes multi-channel content including video on demand delivered via the Go

⁹⁵ <http://goultralownottingham.org.uk/>

⁹⁶ <http://www.ukh2mobility.co.uk/>

⁹⁷ <https://ee.ricardo.com/htpgrants>

⁹⁸ www.goultralow.com

Ultra Low YouTube channel⁹⁹ as well as paid for content in print media and on radio.

Research and Development

Alongside a £500 million (566.43 million EUR) Government investment in the joint-industry Advanced Propulsion Centre¹⁰⁰, the OLEV R&D programme includes support dedicated to research and development into ULEV-specific technologies, building UK capability, skills and leadership. Most OLEV R&D funding is delivered through a partnership with Innovate UK¹⁰¹, a Business Energy and Industrial Strategy Department-sponsored organisation. Innovate UK's Low Carbon Vehicles Innovation Platform has three main aims: significantly reduce carbon emissions from vehicles; accelerate the introduction of low-carbon vehicle technologies; and to ensure that the UK automotive sector benefits from growing demand for ULEVs. In the last five years Innovate has supported over 300 projects through investment of over £500 million (566.43 million EUR) in collaborative research and development.

The Faraday Battery Challenge¹⁰² (FBC) is part of the International Strategy Challenge Fund. In phase one the FBC will invest £246 million (278.71 million EUR) over the next four years to focus on collaborative research, development and scale up. This will accelerate the UK as a world leader in battery technology and provide the catalyst required for future investment of large scale production of batteries needed to sustain the UK's position in car production. The FBC will deliver a coordinated programme of competitions that will be split into three streams:

- £78 million (88.37 million EUR) for a new 'application-inspired' research programme coordinated at a national scale;
- An £88 million (99.71 million EUR) innovation programme to stimulate collaborative research and development with co-investment from the industry;
- An £80 million (90.6 million EUR) scale-up programme to allow companies of all sizes to rapidly move new battery.

⁹⁹ <https://www.youtube.com/user/GoUltraLow>

¹⁰⁰ <http://www.apcuk.co.uk/>

¹⁰¹ <https://innovateuk.blog.gov.uk/tag/electric-vehicles/>

¹⁰² <https://www.gov.uk/government/collections/faraday-battery-challenge-industrial-strategy-challenge-fund>

As part of the challenge, the Faraday Institution¹⁰³ was established to bring together key founding industry partners and universities with the shared aim of ensuring the UK is a global leader in battery research and technology. This includes taking advantage of the predicted £50 billion (56.66 billion EUR) market across Europe by 2025 and anchor the automotive sector to the UK.



Figure 6: Example Go Ultra Low creative content

Regulation

The Automated and Electric Vehicles Bill¹⁰⁴ has been laid in the UK Parliament and is proceeding through the necessary legislative steps. The Bill will give the government new powers to improve the provision of electric vehicle infrastructure. These proposals include powers to regulate technical standards of infrastructure to ensure easy compatibility with vehicles, to ensure availability of data on charging point locations and availability, and to require provision at motorway service areas and large fuel retailers.

36.5 Outlook

The way people, goods and services move is changing. The Government has a long term aim to ensure that almost all cars and vans on the road are zero emission by 2050. This shift presents significant air quality, carbon reduction and energy security benefits, and new global opportunities for UK businesses. This is why the Government will be publishing a strategy in 2018.

¹⁰³ <http://www.faraday.ac.uk/>

¹⁰⁴ <https://services.parliament.uk/bills/2017-19/automatedandelectricvehicles.html>

The Road to Zero strategy will set out how the Government will lay the groundwork now to ensure the UK has the right infrastructure and incentives in place and is well placed to capitalise on the opportunities.

The strategy will also set out steps we will take to clean up the existing vehicle fleet.

Priorities for the Government are to:

- have the cleanest vehicle fleet possible;
- drive up the uptake of zero emission vehicles;
- ensure we have the right infrastructure in place;
- prepare for the impact on the energy system;
- position the UK as the best place in the world to develop and manufacture these vehicles and find solutions for heavier vehicles.

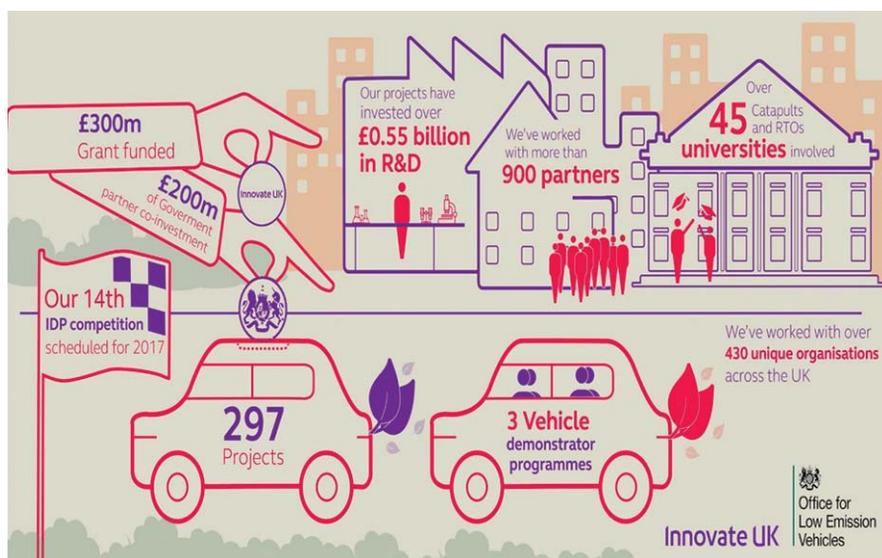


Figure 7: UK R&D Infographic (Source: Gov.uk)