The Green Pages
NEW FUELS GUIDE
PEIMF+
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Are classic cars exempt from ULEZ?

Since 2019, The Ultra Low Emission Zone has been expanded to include all London boroughs. Other cities have followed suit, such as: Birmingham, Bristol, Aberdeen, Dundee, Glasgow and Edinburgh.

But what exactly is ULEZ and how does it work? And most importantly, does it mean the end for classic cars?

WHAT IS ULEZ?

It means that cars that do not meet specific emissions standards have to pay a daily fee if they enter the zone. Vehicles must meet emissions standard Euro 4 or above if it runs on petrol, or Euro 6 if it is a diesel, meaning petrol cars must be registered after January 2006, or September 2015 for diesels.

HOW DOES ULEZ WORK?

Cars not meeting the European air pollution standards outlined above will incur a charge when you drive into a ULEZ. This applies 24 hours a day, 7 days a week and its fees must be paid on top of any Congestion Charges.

Currently, the ULEZ fee is £12.50 a day for cars, small vans, motorcycles and other light vehicles.

WHAT CARS ARE EXEMPT FROM ULEZ?

We learned recently that classic cars exempt from ULEZ. In fact, all vehicles built before 1 January 1973 actually qualify as ULEZ exemptions.

However, when it comes to other classic and historic cars, ULEZ charges will only be removed if they have a 'historic' tax class status registered with the DVLA.

To successfully change a car's tax class to 'historic' and get it qualified as an ULEZ-exempt car, it has to be at least 40 years old. This means that many modern classics, which were made in the 1980s or 1990s, will not count as Ultra-Low Emission Zone classic cars.

Plus a friend

The DVLA will not process any applications asking for a transfer into the historic class until 1 April, so applications could be waiting around for a while.

If you're unsure whether you can get a ULEZ classic car exemption, you can enter your vehicle's details into the government's Clean Air Zone Service portal.

You should note that if you are disabled, your car will not be granted an ULEZ exemption. However, you can apply for a ULEZ grace period that extends to 2027. If you do not apply, you will still be eligible for a ULEZ fee.

To make sure you aren't charged when you drive your classic car, you need to have it registered as a vehicle of historical interest – by updating your log book.

Loving the red telephone box

These lovely photos of a classic Triumph Stag are courtesy of Steve Harrington, sharing his pride and joy with us.

Following-up our brilliant site visit in 2022, here's an update on our welcoming host

Tyseley Refuelling Hub

The UK's first multi-fuel, open access, low and zero carbon fuel refuelling station is now open and ready to receive commercial fleet, public transport fleet and private vehicles.

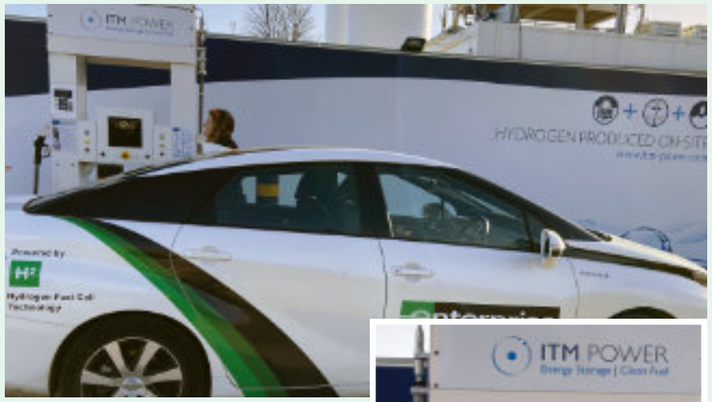
Offering Hydrogen, Compressed Natural Gas, Biodiesel and Electrical Vehicle charging options, the unmanned facility is available 24/7 for refuelling with integrated pay at pump options that accept credit, debit and fuel card payments.

The station has benefited from £10 million investment from a combination of public and private funding, including £1.5 million from Greater Birmingham and Solihull Local Enterprise Partnership.

The facility is supporting the city in its commitment to reduce the levels of air pollution across the Birmingham by refuelling the hydrogen double decker buses purchased by Birmingham City Council. The TEP refuelling station is part of the Birmingham Transport Plan, supporting the introduction and supply of cleaner fuels to improve air quality across the city.

MOTIVE HYDROGEN REFUELLING STATION

Commissioned in 2021, the refuelling station is the largest green hydrogen refuelling station in the UK. It takes power from a dedicated offshore wind turbine and generates zero carbon, fuel cell grade hydrogen. The site comprises of a car refueller operating at both 700 bar and 350 bar. Two bus refuellers operating at 350 bar and a tube trailer refueller operating at up to 450 bar. The site can generate over a tonne of hydrogen per day. Enough to fuel up to 40 buses a day.



Hydrogen is produced on site using a 3MW Motive Power Proton Exchange Membrane (PEM) electrolyser, which splits water into hydrogen and oxygen. The hydrogen generated is very high purity, meeting all requirements for Fuel Cell Electric Vehicles (FCEVs). The hydrogen is dispensed at 700bar and 350bar ensuring a very quick and efficient refuel that can provide a 300-350 mile range.

When hydrogen is used in a fuel cell, it returns back to water vapour, meaning hydrogen as a fuel is a very clean fuel option.

GD+ AN ADVANCED HVO FUEL

The UK's leading provider of HVO, GBF offer a simple, clean alternative to diesel. Gd+ is a 100% drop-in replacement for diesel and gasoil, creating an opportunity to turn highly polluting engines and generators into clean ones.

ELECTRIC CHARGING

Improved vehicle design and battery performance and falling prices is enabling widespread electric vehicle market penetration. This combined with policy support and restrictions on other vehicles to improve air quality, such as Birmingham's Clean Air Zone will increase this momentum even further.

Tyseley Energy Park will offer a range of electric charging facilities including 150kW electric vehicle rapid chargers. Vehicle and fleet owners will be offered a lower cost electric charging unit price if they commit to a defined dwell time at the charging points.

For further information on electric charging available please contact enquiries@tyseleyenergy.co.uk

Cranfield University

The good people at Cranfield University hosted our PEIMF+ annual event a couple of years ago. Let's make sure we keep them on our radar.

They are at the forefront of imagining and delivering a sustainable green planet, leading research from water to aerospace, agrifood to transport, design to energy, manufacturing to the environment, all underpinned by management excellence.

TRANSPORT

Reducing the environmental impact of our transport systems is a global challenge and requires expertise across all modes of transportation from air, road, rail and marine vehicles alongside the infrastructure, businesses and logistics that integrate and manage them.

With over 50 years' experience, Cranfield's award-winning research and teaching is helping to define the future of global transport. Our teaching and research is making a significant difference now, as we all work together to meet the needs of the population and industry of tomorrow.

HYDROGEN & SYNTHETIC FUELS

Cranfield is a leading research and development centre for hydrogen.

We are creating a hydrogen ecosystem at our UK campus, linking projects and facilities in production, storage, materials, propulsion, usage, aircraft design and airport operations.

Our hydrogen-related work extends into many sectors including aerospace, energy, marine and automotive sectors. We are working with industry leaders in these spaces.

Cranfield University at the forefront of new £14.1m global initiative to transform Net Zero hydrogen production

ENERGY AND SUSTAINABILITY

Our expertise and experience within energy and power places us at the very forefront of helping to deliver a more sustainable world for everyone. Our vision for achieving this is grounded in decades of world-renowned teaching and research, and equipping our graduates with the skills, knowledge and passion to become the next generation of leading scientists, engineers and managers.

MANUFACTURING

Today's manufacturing industry, in line with the arrival of the fourth industrial revolution, is challenging the traditional notions of manufacturing with a focus on digital data, connectivity, and artificial intelligence, as well as sustainability.

With an emphasis on developing a smart, lean, and green approach to manufacturing, our vision is embedded in our research into the potential for the 'eco-factory'. This is based on the principle of the circular economy, using waste materials for manufacturing new products, as well as mapping pathways for the sustainable 'factory of the future', re-looking at established manufacturing processes to find energy-saving opportunities for the sector.

AEROSPACE

At the forefront of aerospace technology, addressing the challenges to deliver a sustainable future for aviation, rethinking the airports, airlines, airspace management and aircraft of the future.

The relationship between aviation and the environment is one of the key challenges facing developed societies. Cranfield University is working to meet environmental targets and provide a sustainable future for aviation.

As one of the few universities in the world with our own airport, we are at the forefront of aerospace technology, working to address the challenges to deliver a sustainable future for aviation by rethinking the airports, airlines, airspace management and aircraft of the future.

www.cranfield.ac.uk

Millbrook Proving Ground

We greatly enjoyed our visit to Millbrook last year. As part of the UTAC organisation, they are the leading vehicle test centre in the UK. Here is there update on just a few of the relevant services they can provide.

Since 1924, UTAC has been at the forefront of the mobility industry, advancing it towards a safer and cleaner future. We provide a large range of services to bring your vehicle to the market. With a global presence and a team of trusted experts, UTAC continues to shape the future of mobility. We strive to provide agile services that help us to fulfill our mission: leading the mobility industry to new frontiers.

Batteries tested here

BATTERY TESTING

UTAC conducts hybrid and electric vehicle (EV) battery testing to assess the life of battery cells, modules and packs, determine battery safety in a wide range of situations including crash events, and validate the performance of automotive batteries under a range of environmental conditions.

UTAC operates a state-of-the-art battery life and performance test facility in the UK. It tests all major Lithium-ion chemistries and a range of other chemistries by simulating normal and extreme operating conditions.

These tests include :

- Pack life and performance testing
- Cell and module life and performance testing
- Shock Testing
- Battery Safety and Abuse, including Battery Drop and Nail Penetration Testing

Our facilities also offer a range of electric machine and inverter tests and provides full vehicle test facilities including the ability to crash EVs and FCVs.

DEVELOPING AND MARKETING SAFE AND RELIABLE PRODUCTS WITH UTAC

As development and approval testing experts in the mobility sector, we understand the regulatory, economic, and competitive challenges that you face. In addition to advising you with everything from understanding new legislation to testing your systems, our international experts are able to support with development scenarios, evaluation and approval of your vehicles.

POWERTRAIN

NEW CHALLENGES FOR POWERTRAIN TESTING

New traction systems, increasing electrification of vehicles, and innovative energy sources. Mobility is changing very rapidly, raising many challenges for the entire sector.

These technological innovations and advances are spurring vehicle and equipment manufacturers to develop new products that are cleaner and more eco-friendly to meet the mobility challenges of tomorrow. In view of this transformation, comprehensive, efficient solutions to test all the systems and subsystems of conventional, electrified, and electric powertrains are necessary throughout the vehicle development phase and in the context of approvals.

Our goal is to accompany you through the development, integration, performance, and durability testing processes. In anticipation of the final homologation phases, we accompany you on pollution/consumption tests on chassis dynamometers and in RDE (Real Driving Emission).

40 miles of hills, curves, bumps and potholes!

Fastest EV charger in the UK

Watch out!

We give our full commitment to providing you with technical and regulatory support for the development of your product. Our test facilities combined with our simulation methods enable us to offer a wide range of tests so that together, we can anticipate the mobility of the future.

SAFETY AND AUTONOMOUS DRIVING

SAFETY, A PRIORITY FOR MOBILITY

In the last few decades, technological innovations have considerably improved road safety. Vehicles now offer better protection for occupants and other vulnerable road users. Advanced Driver-Assistance System (ADAS) equipped vehicles continue to drive further improvement in safety in parallel with increasingly stringent legislative and consumer group requirements.

Since July 2022, new vehicle types placed on the European market must be fitted with several advanced driver-assistance systems. These include an emergency lane keeping system (ELKS), autonomous emergency braking (AEB), and intelligent speed assistance (ISA).

www.utac.com

Decarbonising the UK's buses

The UK has been leading the way on zero emission buses, but we must keep up the momentum. The transition to zero-emission buses (ZEBs) in the UK, has been a big success story.

1,000 ZEBs IN 2023

The UK has been leading in this transition. In 2023 alone, around 60% of all new buses registered across the UK had drivetrains that were fully zero-emission at the tailpipe; either battery electric or hydrogen fuel cell electric. Indeed, 2023 was the first year in which over 1,000 ZEBs had been registered in a single year. This followed two consecutive years where ZEB registrations accounted for 50% of total market registrations, in 2021 and 2022 respectively.

To date, 2024 is following a similar trend to 2023, with ZEBs registrations sitting at the 60% mark, with an expectation that it'll be another record breaker at year end.

So what has driven this progress? The main driver has been government grant funding, and lots of it. Since 2010, the UK Government and devolved administrations have invested around £1bn in zero emissions buses through a variety of mechanisms. This funding has supported rapid technological development to temper fears held by operators that these vehicles wouldn't be up to the challenge.

SLOWER TAKE-UP OUTSIDE LONDON

Transport for London was an early pioneer in trialling new technologies ahead of the rest of the sector, taking the leap beyond the stepping stone of diesel hybrid buses, helping to kick-start the development of zero emission bus technology. TfL accounts for nearly half of the 4,000 zero emission buses in service across the UK today.

Outside London, the transition has been somewhat slower, owing to a lack of operator confidence in the vehicle technology, particularly the longevity of batteries, and associated warranties, as well as the range of vehicles. These worries were, perhaps, exacerbated by the challenges operators faced with earlier diesel hybrid buses, and issues with poor battery performance, plus extensive maintenance requirements. A lack of confidence in the technology was coupled with the challenge of overcoming the additional capital cost requirement to purchase zero emission buses and accompanying infrastructure, compared to diesel.

This is where government funding schemes have played a vital role in breaking down these barriers.

GRANT FUNDING

Competitive grant funding schemes in England and Scotland (Wales and Northern Ireland have different mechanisms for allocating funding) began over a decade ago, with a focus on supporting so called 'low carbon' buses - most notably efficient diesel, diesel hybrid and biomethane buses - while zero emission tailpipe buses were still in the trial phase.

As technology developed, more operators took the plunge and invested in zero-emission buses at larger scale, supported by government funding. As more zero emission buses were rolled out, the technology continued to develop, and a 'virtuous cycle' kicked. Funding schemes soon ruled out combustion-based technologies, solely funding fully zero emission buses. The latest iterations of these schemes, the Zero Emission Bus Regional Areas (ZEBRA) scheme in England and the cotZEB Challenge Fund in Scotland, have cumulatively supported the introduction over 2,500 ZEBs and accompanying infrastructure with funding worth over £500m. These schemes have driven registrations across the UK, in tandem with the ongoing decarbonisation of TfL's bus fleet.

Continued on GP6

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Continued from GP5

GOOD LEADERSHIP

According to Zemo Partnership analysis, with funding already allocated to operators, the zero emission bus fleet is expected to reach 20% of the total UK fleet by 027/28, doubling the 10% milestone reached this year. While government funding has been crucial to driving the transition, operators and local transport authority bodies have shown the leadership required by setting tough targets for zero emission fleets.

Transport for London was the first to show such leadership, committing to no longer purchasing new diesel vehicles in 2021, with a target for a fully zero emission bus fleet by 2034, or earlier. Large operators like First Bus are taking the initiative too, committing to a zero-emission bus fleet by 2035, a target shared with Go-Ahead Group.

Manufacturers have continued to play their part, catering for the needs of operators through rapid technological development. This has focused on improving efficiency and honing battery performance to meet the varying range requirements of the UK's bus services. The batteries have been a particular point of focus for operators, not knowing when and if they will have to be replaced.

In early generation vehicles, warranties for battery packs were typically no longer than seven years, around the half-life of the vehicle, providing a headache to operators about what to do when that period ends. Fast forward to today, some manufacturers are now offering warranties of 10 years or more as standard. Alexander Dennis for example, recently unveiled a new generation vehicle for the London market with a 14-year or one million kilometre warranty on the battery pack.

SUPPORTED BY ZEMO PARTNERSHIP

Throughout this time, Zemo Partnership has been supporting industry and government to navigate the challenges and find solutions to accelerate the UK bus sector's decarbonisation transition. Formed in 2002 as an initiative of the Powering Future Vehicles Strategy,the (then) Low Carbon Vehicle Partnership (LowCVP) was established to bridge the divide between government and industry to cut emissions from road transport through collaboration and policy development.

Following a rebrand in 2021, Zemo Partnership has grown into a membership organisation with around 200 stakeholders from a diverse range of sectors. Zemo's Bus Working Group has been tackling the challenge of reducing emissions from buses for over 15 years, with a membership comprising vehicle manufacturers, bus operators, local transport authorities, technology suppliers, energy providers, trade bodies and finance houses. The diverse nature of stakeholders coupled with Zemo Partnership's technology-neutral, evidence-based approach, has enabled the development of policy and initiatives based on the consensus view of all key, participating stakeholders.

Zemo Partnership
Accelerating Transport to Zero Emissions

INDEPENDENT TESTING

A key area of work that Zemo Partnership has led, is the independent, physical testing and certification of vehicles to determine their eligibility for government funding schemes, a process which first started with the testing of low carbon buses to align with emerging funding schemes.

At the beginning of the transition away from standard diesel vehicles, it was deemed necessary to introduce a testing regime to ensure public money supports proven low and zero emission vehicle technologies that will perform in service. The certificates enable local authorities and bus operators to understand expected performance including drivetrain efficiency, regulated tailpipe emissions and well-to-wheel (WTW) greenhouse gas (GHG) emissions ahead of deployment.

The independent nature of testing using a regimented test procedure also provides a means for operators to compare different suppliers and technologies on a like-for-like basis. The cornerstone of the accreditation schemes has been the industry-informed definition that manufacturers must meet during testing to qualify for government funding. The iterative process has been fully supported by industry and government throughout, ensuring a balance is found between driving technology development and maintaining an accessible market.

The latest iteration is the Zero Emission Bus (ZEB) definition which was introduced to support zero emission bus-focused funding schemes like ZEBRA, as well as the BSOG 22p/km operational incentive for zero emission buses which was introduced in England in 2023. Under the definition, vehicles must have no combustion engines on board (including diesel heaters), produce no regulated emissions from the tailpipe(s) and achieve a 50% well-to-wheel greenhouse gas saving compared to a conventional Euro-6 diesel over the UK Bus Cycle (UKBC).

This definition, builds on previous editions (Low Emission Bus and Ultra-Low Emission Bus definitions), pushing manufacturers to improve vehicle efficiency and develop new systems like fully electric heating and cooling systems (early generations of zero-emission buses utilised diesel heaters, which are now banned if government funding eligibility is sought). Importantly, Zemo Partnership has always pushed the boundaries in terms of emissions analysis, moving beyond regulated tailpipe emissions to assess WTW GHG emissions in support of a truly net zero transport system.

NEW ACCREDITATION

In this regard, Zemo hopes to introduce a new element to the accreditation process, looking at life cycle carbon emissions including manufacturing and end of life emissions. Zemo will continue to work alongside industry and government to ensure any changes are introduced in a manner that works for all. Zemo Partnership's collaboration with government and industry has not just focused on testing vehicles. Indeed, the Partnership has worked with government to develop funding mechanisms and see that wider policies work for industry to ensure a sustainable sector.

Supporting that is the work Zemo has done in disseminating best practice and learnings from the transition in the form of guides and workshops to openly share information and data in the interest of collaboration and mutual benefit.

To this end, Zemo stands ready to support the UK Government as it looks to address growing uncertainty in the sector around ongoing funding for zero emission buses and the long awaited date for the end of sale of new non-zero emission buses (consulted on in 2022). With no indication (yet) of more grant funding coming forward for zero emission buses and limited detail on the role of franchising, both operators and manufacturers are looking for answers. More clarity around future policy is needed to maintain the significant progress made to date. Without clarity around bus decarbonisation policy, the sector is at risk of losing momentum, putting an already fragile industry at even greater risk.

Tim Griffen is programme manager at Zemo Partnership. He manages work focused on heavy duty vehicles, overseeing the Bus and Coach Working Group and associated projects.

Thanks to Zemo Partnership for producing this article.

www.zemo.org.uk

www.passengertransport.co.uk

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Phillips 66 JET CHARGE launch delivers 'what EV charging should be like'

JET has launched JET CHARGE: the fuel brand's ultra-rapid pay-as-you-go EV charging offer.

Following a launch at three company-owned sites in North Yorkshire, County Durham and North Lincolnshire – JET CHARGE has received highly positive reviews with customers highlighting 'speed', 'simplicity of use' and 'easy payment' as key features.

One customer who used JET CHARGE at Beacon Garage commented:

"This is what charging should be like. Rock up. No waiting. Present card, plug in. Pause. Present card, unplug, and away you go."

CUSTOMER FIRST

Featuring 150kWh ULTRA-RAPID charging, pay-as-you-go payment and no minimum charge, JET CHARGE has been developed with the customer's needs first and foremost.

Oliver Mueller, retail business manager, Phillips 66 Ltd says;

"Speed, reliability and simplicity define JET CHARGE. Unlike a number of existing products that require convoluted app downloads and complex payment methods – we have chosen a very different road. No connection fees, no subscriptions – just fast reliable charging with no minimum charge."

Reliability and consistency around charging times is a well-documented concern for EV drivers with advertised charge times often doubling or trebling at busy, high-usage periods.

SPEED IS THE HOLY GRAIL

Mr Moeller continues:

"Our research among EV drivers was unequivocal. Speed of charge is the holy grail. And that's why JET charging sites all have infrastructure in place to enable stable and fast charges.

It's definitely made the process of coming to market slower – but we were clear that we would launch once we had addressed the issues that our customers were telling us about.

"JET is a value-for-money brand dedicated to getting our customers back on the road quickly and safely. JET CHARGE is no different."

Eye-catching and easy to use, the chargers all feature the two most common connectors – CHAdeMO and CCS – with the kilowatt per hour price displayed on roadside poles alongside fuel prices.

JET CHARGE will be listed on all popular and relevant destination directory services including: Zap-map, Google maps, Waze and in-car navigation systems.