The Green Pages
NEW FUELS GUIDE
PEIMF+
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Delivering net zero in a changing world

A new Council for Net Zero Transport, convened by Zemo Partnership, comprising senior stakeholders will help steer UK transport's decarbonisation transition as it moves into the crucial delivery phase.

The Council will be chaired by Lord Deben, formerly UK Environment Secretary and Chair of the Climate Change Committee. It will engage senior figures from government, industry, environment and academic sectors to help focus the Partnership as we work together to forge a clear, strategic direction for road transport decarbonisation.

Lord Deben said:

"Our generation faces no greater challenge than that of tackling climate change.

"With transport responsible for over a quarter of the UK's greenhouse gas emissions, if we're going to solve this problem we have to effectively decarbonise transport. We must do this for our environment, and we will reap rewards both politically and economically from doing so."

Zemo's new Executive Director, Claire Haigh, said:

"Decarbonising transport is a vital, and particularly challenging, element of the UK's legally binding net zero targets.

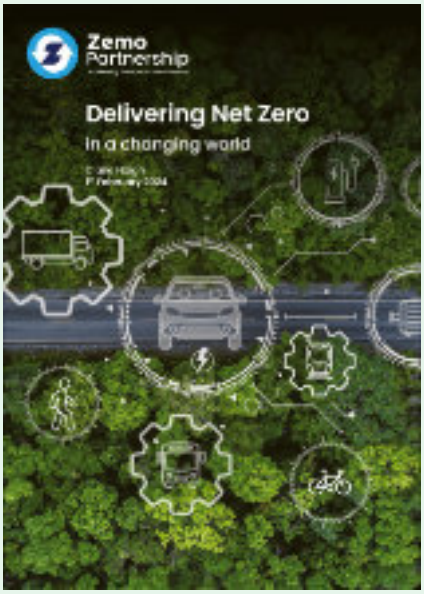
"The policy prescriptions needed to do this are complex, nuanced and cross-sectoral, and achieving a successful outcome will be of huge benefit to the UK's environment, society and economy. This is too vital a task for us to be distracted by over-simplifications and the short-term vagaries of our political system.

"We have some world-leading targets but we're at a key moment in the transition and what we need now is a laser-like focus on delivery. To achieve this, we'll need the full participation of government (nationally and locally – to the level of each town and parish council) industry, consumers and operators."

Zemo Partnership (formerly Low Carbon Vehicle Partnership/LowCVP) is a uniquely broad stakeholder partnership. A not-for-profit organisation, it has been working for over two decades to provide unbiased guidance to government and industry around the policy and initiatives needed to accelerate road transport decarbonisation.

In addition, Zemo Partnership is also running an exciting new project on behalf of the Welsh Government.

The Welsh Commercial Vehicle Decarbonisation programme will deliver a bespoke strategy for Wales covering heavy and light-duty commercial vehicles, with focus on sustainable fuels, electrification and the potential role for hydrogen. Zemo will be working closely with the Government of Wales to develop the strategy and routes to delivery.



Commenting on the project, Lee Waters, Deputy Minister for Climate Change in the Government for Wales said:

"We're excited by the potential of this project to stimulate and accelerate the decarbonisation of commercial vehicles in Wales which we view as a key challenge on our path to net zero."

Zemo Partnership's Chair, Philip Sellwood CBE, said:

"The new Council for Net Zero Transport, along with the invitation to work alongside the Welsh Government come at a key time in transport's decarbonisation transition.

"We'll be working even more closely with our wide-ranging membership, to focus on what we need to do together to deliver the targets in the best interests of our environment and the UK's industrial future."

www.zemo.org.uk

EV charging statistics 2024

Tracking the growth in charging points across the UK

The UK's electric vehicle (EV) charging infrastructure is continually growing and changing shape to meet the needs of EV drivers. Through the data collected to drive the Zapmap app, Zapmap tracks these changes to provide the EV charging statistics below. The statistics, which detail how many electric charging points there are in the UK, are updated on a monthly basis.

The tables and charts shown demonstrate the growth rate of UK charge points, which are the largest networks, and the distribution of UK charging points by geographical area, as well as how many electric charging points in the UK there are at the end of each month. You can also see how many rapid charging points there are across the country.

HOW MANY PUBLIC CHARGING POINTS ARE THERE IN THE UK?

At the end of February 2024, there were 57,290 electric vehicle charging points across the UK, across 32,575 charging locations. This represents a 47% increase in the total number of charging devices since February 2023.

HOW MANY PUBLIC CHARGING POINTS WERE ADDED IN FEBRUARY 2024?

In February 2024, 1,989 net new EV charging devices were added to the Zapmap database.

This was made up of 1,268 net new slow devices, 295 fast, 290 rapid and 136 ultra-rapid devices.

These numbers take into account that every month some devices are decommissioned by charge point operators. These net new figures reflect the number of additions to the Zapmap database minus those devices that have been removed from the database.

These figures show how many electric charging points in the UK there are that are part of the country's public EV charging infrastructure. However, they do not include the many charge points installed at home or at workplace locations, which are estimated to be more than 700,000. Some of these EV charging points are available to the public in some form via community or visitor charging.

HOW IS THE UK CHARGING POINTS NETWORK GROWING OVER TIME?

As the chart above reveals, the past few years have seen a significant increase in the number of public EV charge points in the UK. Since February 2023 a further 18,308 charge points were added to the UK network, a growth of 47%.

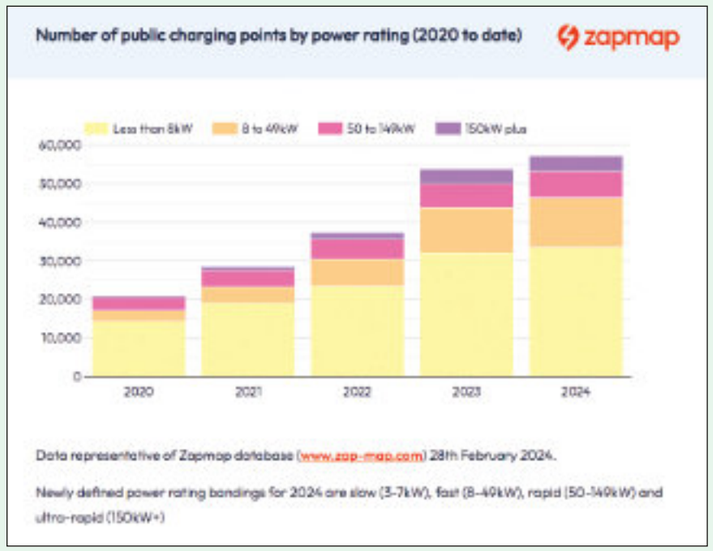
HOW POWERFUL ARE THE CHARGING DEVICES AVAILABLE IN THE UK?

The four speeds or power ratings that are tracked are defined as slow (3-7kW), fast (8-49kW), rapid (50-149kW) and ultra-rapid (150kW+). These new bandings reflect those referenced in the government's new Public Charge Point Regulations.

The graph above focuses on the number of charging devices, rather than the capacity to deliver electricity. This masks the fact that devices with different power ratings provide a significant difference in capacity. For instance, while rapid and ultra-rapid chargers only make up around 20% of total devices, they account for around 60% of the total capacity.

WHICH NETWORK HAS THE LARGEST NUMBER OF EV CHARGERS?

The charging network with the most charge points is Shell Recharge Ubitricity, with its network of lamppost chargers. Next up is Pod Point, a network of destination chargers found mainly in retail car parks, particularly supermarkets.



In third place is Connected Kerb, which has an extensive network of on-street chargers across the UK.

This data combines devices across all the different power ratings, and the data shows the network with the most charge points but not the highest amount of charging capacity.

WHICH AREAS HAVE THE MOST CHARGE POINTS ACROSS THE UK?

The geographical area that has the most EV charging points is Greater London with 18,927, followed by the South East with 6,661 and Scotland with 4,880.

Again, this aggregates all the different types of charge devices, so caution should be used when making comparisons.

HOW MANY ELECTRIC CHARGING POINTS IN THE UK ARE RAPID AND ULTRA-RAPID?

As of February 2024, there are 10,967 rapid or ultra-rapid charging devices, across 5,113 charging locations in the UK.

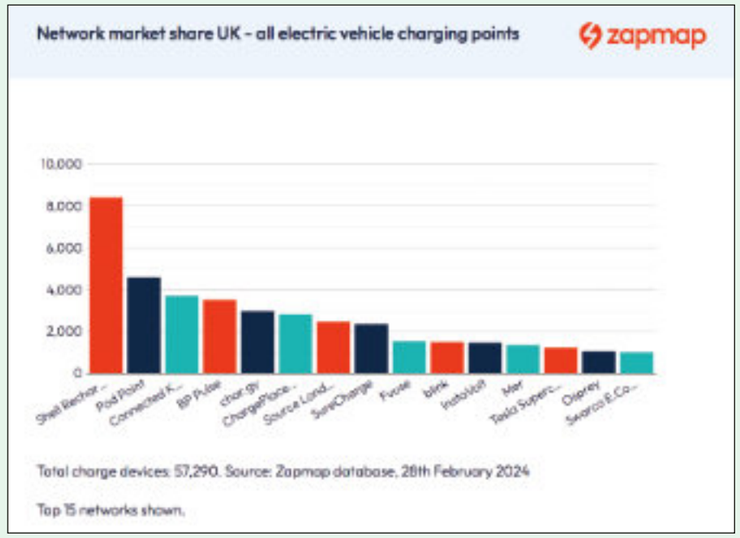
Last month, 426 net new rapid or ultra-rapid charging devices were added to the Zapmap database.

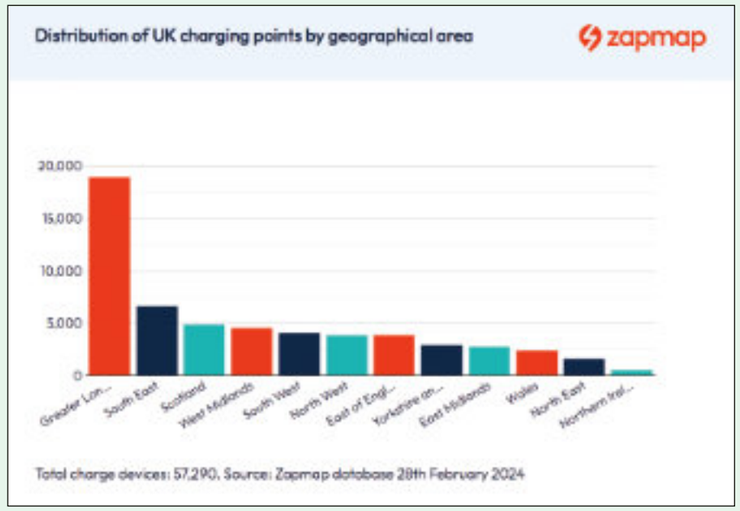
WHICH CHARGE POINT OPERATOR HAS THE MOST RAPID AND ULTRA RAPID DEVICES?

The network with the most rapid and ultra-rapid electric vehicle charging points is InstaVolt, which had 1,445 charge points at the end of February 2024.

After InstaVolt, Tesla operates the most rapid and ultra-rapid charging points in the UK, with 1,240, followed by bp pulse with 1,225.

zapmap





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Glossary of terms used for renewable and low carbon road fuels

This useful table was produced in partnership by RTFA, SMMT, Fuels Industry UK and Zemo Partnership.
Please contact PEIMF+ if you disagree with a definition, feel it could be improved or if you spot any omissions.

LIQUID FUELS

Term (& acronym)	Meaning
1G (First generation)	Term describing biofuels that are produced from crops that can be used as food or feed e.g. sugar, starch or oil crops
2G (Second generation)	Biofuels that are manufactured from non-food biomass
B10	A blend of up to 10% biodiesel / FAME (meeting BS EN 14214) with the remainder petroleum diesel (meeting BS EN 590) which when combined typically meet BS EN 16734
B100	Pure biodiesel/FAME, typically meeting the requirements of BS EN 14214
B20	A blend of up to 20% biodiesel / FAME (meeting BS EN 14214) with the remainder petroleum diesel (meeting BS EN 590) which when combined typically meet BS EN 16709
B30	A blend of up to 30% biodiesel / FAME (meeting BS EN 14214) with the remainder petroleum diesel (meeting BS EN 590) which when combined typically meet BS EN 16709
B7	A blend of up to 7% biodiesel / FAME with the remainder petroleum diesel. This is the diesel fuel sold at retail outlets (filling stations used by the public to fill their diesel cars) and typically meets BS EN 590
BtL (Biomass to Liquid)	See GtL
Bio petrol / biogasoline	A hydrocarbon made entirely from biomass sources which is functionally equivalent to gasoline
Bioblend	No longer a commonly used term, but defined in the Hydrocarbon Oil Duties Act as "Any mixture that is produced by mixing both: biodiesel and heavy oil that has not been charged with the excise duty on hydrocarbon oil"
Biodiesel	A renewable liquid fuel consisting predominantly of Fatty Acid Methyl Ester (FAME) and meeting the requirements of BS EN 14214
Bioethanol	Ethanol made from biomass and meeting the requirements of EN 15376
Bioethanol blend	A blend of bioethanol that meets the requirements of EN 15376 and gasoline
Bio-LPG	Another term for either biopropane or biobutane
Biomethanol	A renewable liquid fuel consisting methanol made from biomass feedstocks (CH3-OH). It can be blended in with gasoline
Blend wall	The maximum percentage of a particular renewable fuel that can be blended into retail fuels while meeting conventional fuel standards
Development fuel	A fuel meeting the RTFO eligibility criteria for the development fuels sub target, i.e. a fuel made from a waste or a RFNBO, but not made from segregated oils or fats. And which is one of the following fuel types: • Hydrogen, biosynthetic natural gas (BioSNG), • Sustainable Aviation Fuel or • a fuel able to be blended at levels over 25% by volume and still meet the EN 228 or EN590 fuel specifications
DME (Dimethyl ether)	Dimethyl ether (CH3-O-CH3) can be liquified under low pressure and used as an alternative to diesel. Can be synthesised from renewables (see rDME)
Drop-in fuel	Drop-in fuels are alternatives to fossil fuels that can be blended at any level into standard fuels without requiring changes to vehicles or infrastructure. (Some fuels commonly described as “drop-in” may not meet current technical fuel standards (EN590 / 228) in all respects, but are warranted by OEMs to be used in certain vehicles at any blend level (up to 100%)
E10	A blend of up to 10% bioethanol (meeting BS EN 15376) with the remainder gasoline which when combined typically meet BS EN 228
E5	A blend of up to 5% bioethanol (meeting BS EN 15376) with the remainder gasoline which when combined typically meet BS EN 228
E85	A blend of up to 85% bioethanol (meeting BS EN 15376) with the remainder gasoline
e-fuel	A specific subset of synthetic fuels that use hydrogen produced by renewable electricity
ETBE (Ethyl tertiary butyl ether)	A common additive to gasoline. It is produced by reacting isobutene with ethanol. It can be produced from renewable resources. Chemical formula (CH3)3C-O-C2CH3
ETG or E2G (Ethanol-to-Gasoline)	The process that converts ethanol (or bioethanol) to gasoline via dehydration and oligomerization usually over a zeolite catalyst
FAME (Fatty Acid Methyl Esters)	Pure biodiesel, typically meeting the requirements of BS EN 14214
FT (Fischer Tropsch reaction)	A collection of chemical reactions that converts a mixture of carbon monoxide and hydrogen (or "syngas") into liquid hydrocarbons
GtL (Gas-to-liquid)	These are all synthetic fuels, made from methane or syngas (from gasification) converted to a liquid hydrocarbon through the FT process. • Renewable sources of gas include: a) Syngas (from the gasification of pure biomass) b) Biogas c) BioSNG (i.e. derived from syngas from the gasification of pure biomass) (a-c could also be termed BtL biomass to liquid) d) RFNBO methane, i.e. methane made from reacting renewable hydrogen with CO2 (in which case it could be referred to as an e-fuel) • Fossil fuel sources include: a) natural gas / gasified coal (could be CtL – coal to liquid) b) Recycled carbon fuel Or it could be a combination of the above. E.g. syngas from gasification of a mixed waste containing biogenic and recycled carbon feedstock (in which case the resulting fuel would be a part renewable and part RCF fuel)

LIQUID FUELS CONTINUED

Term (& acronym)	Meaning
HBBF (High blend biofuel)	A term often used for fuels with a renewable content that is greater than that of the retail equivalent. E.g. B20, B30 and B100 are all fuels with high blend of biodiesel compared to B7, plus E15, E20 and above (in countries where E10 is the retail grade). (Biomethane could also be supplied in a blend with natural gas (at any proportion))
HVO (Hydrotreated Vegetable Oil)	A paraffinic diesel very similar to petroleum diesel but made by the hydrotreatment of vegetable oils or other lipids, typically meeting the requirements of BS EN 15940
LCF (Low Carbon Fuel)	Fuels that can provide GHG savings compared to fossil fuels on a life-cycle basis
LPG (Liquefied Petroleum Gas)	Gases derived from petroleum sources in liquid form; can be any mixture of propane and butane
MTBE (Methyl tertiary butyl ether)	A common additive to petrol. It is produced by reacting isobutene with methanol. It can also be produced from renewable resources. Chemical formula (CH3)3C-O-CH3
MTG or M2G (Methanol-to-Gasoline)	The process that converts methanol (or biomethanol) to gasoline. Methanol is first converted to dimethyl ether by being passed over a gamma-alumina catalyst. The methyl ether is then passed over a zeolite catalyst to oligomerize into longer chain hydrocarbons to gasoline
Paraffinic diesel	A fuel comprising predominantly alkanes that is functionally equivalent to diesel. It can be made by hydrotreating lipids or via the gas to liquid or power to liquid routes. It typically meets the requirements of BS EN 15940
Petroleum	Petroleum is a naturally occurring liquid found beneath the earth's surface that can be refined into fuel. Petroleum is a fossil fuel, meaning that it has been created by the decomposition of organic matter over millions of years
PtL (Power-to-Liquid)	A fuel produced using renewable electricity and sources of carbon to produce fuels through synthesis
Pure bio oil	A fuel type classification used by RTFO Unit which includes fuels referred to as "Pure vegetable oil" in previous years' RTFO statistical reports
RCF (Recycled Carbon Fuel)	Recycled carbon fuels (RCFs) are fuels produced from fossil wastes that cannot be avoided, reused or recycled and have the potential to reduce GHG emissions relative to conventional transport fuels. Feedstocks include industrial waste gases and the fossil-derived fraction of municipal solid waste (e.g. non-recyclable plastic). Some feedstocks can be considered part renewable and part RCF when combined with biogenic material such as food waste
rDME (Dimethyl ether)	DME synthesised from renewable feedstocks. For the potential renewable sources, see definition of GtL. Chemical formula C2H6O
Renewable diesel	A common term for various forms of non-fossil derived diesel fuel, including FAME, HVO or paraffinic diesel (when made from renewable sources). Sometimes this term is used for HVO or paraffinic diesel exclusively (to distinguish from FAME/biodiesel)
RFNBO (Renewable Fuel of Non-Biological Origin)	Rather than from biomass, the energy content of a RFNBO typically comes from renewable energy such as wind or solar
RME (Rapeseed oil Methyl Ester)	Biodiesel produced from rapeseed oil
Synthetic Fuel	A fuel which is produced from a mix of hydrogen and a carbon source (e.g. carbon monoxide or carbon dioxide). A synthetic fuel can also be classed as a renewable fuel if the hydrogen is produced from a renewable source and any carbon source used is from a renewable or unavoidable carbon stream, for example an industrial process where carbon dioxide would otherwise be vented into the atmosphere, in which case it would be a RFNBO
TME (Tallow Methyl Ester)	Biodiesel produced from tallow
UCOME (Used Cooking Oil Methyl Ester)	Biodiesel produced from used cooking oil

GASEOUS FUELS

Term (& acronym)	Meaning
Biobutane	Butane derived from renewable sources. Chemical formula C4H10
BioCNG	A term used for compressed biomethane. This can also be referred to as CBM – compressed biomethane (not to be confused with Coal Bed Methane)
BioLNG	A term used for liquefied biomethane. This can also be referred to as LBM – liquified biomethane
BioLPG	Another term for either biopropane or biobutane. (Is liquid when under pressure)
Biomethane	Methane (CH4) derived from biomass, either via a biological route – anaerobic digestion – (in a dedicated AD plant, sewage treatment works or landfill), or thermal route via gasification and methanation of the syngas
Biopropane	Propane (C3H8) made from biomass. Most commonly derived as a by-product of the HVO production process
BioSNG (bio Substitute Natural Gas)	Term used for renewable methane via the thermal route (unspecified as to whether it is compressed or liquified). This qualifies as a development fuel (if made from waste) under the RTFO
CBM (Compressed Biomethane)	Compressed Biomethane. (NB not to be confused with Coal Bed Methane)
LBM (Liquified Biomethane)	Biomethane (in liquified form). Liquified Bio Methane
RFNBO (Renewable Fuel of Non-Biological Origin)	Rather than from biomass, the energy content of a RFNBO typically comes from renewable energy
SNG (Synthetic / Substitute Natural Gas)	Gas (mainly methane) which can be produced by a number of routes which may be more commonly referred to by more specific terminology. E.g. if produced by anaerobic digestion and CO2 removal = biomethane; gasification and gas clean up of biomass = bioSNG. It can also be produced by the gasification of coal

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The public charge point regulations 2023

The Government has published new regulations, relating to the operation of public electric vehicle charge points. Here is an abridged version, or you can see the complete document at www.legislation.gov.uk

These Regulations extend to the whole of the UK.

WHAT ARE PUBLIC CHARGE POINTS?

A public charge point includes a charge point that:

- May only be accessed during specific hours; or
- Is situated in a public car park

A public charge point does not include:

- A workplace charge point, intended solely for the use of employees and contractors at their workplace, or visitors
- A charge point restricted for the exclusive use by; a vehicle produced by a specific manufacturer, a person engaged in a specific occupation or an occupier of, or visitor to, residential premises.

PAYMENT REQUIREMENTS (TO BE IN PLACE WITHIN 1 YEAR OF THESE REGULATIONS)

Contactless payment

For a new public charge point with a power of 8 kilowatts or above, contactless payment must be available.

For a rapid charge point, in operation before the regulations come into force, contactless payment must be available.

Where an existing charge point (8kW and above) becomes a public charge point after the coming into force of these regulations, contactless payment musts be available.

Payment roaming

A charge point operator must, within two years from the date on which these regulations come into force, ensure that a person using any of its charge points is able to pay to charge an electric vehicle using a payment service provided by a third-party roaming provider.

PERFORMANCE REQUIREMENTS

Reliability

A charge point operator must, from one year from the date on which these regulations come into force, ensure that its network of rapid charge points complies with the reliability requirement of being (on average) reliable for 99% of the time during each calendar year.

A rapid charge point is considered to meet compliance with the reliability requirement, where it is either: working, available, charging; or reserved.

Or is ineligible for measurement, if unknown or blocked.

A rapid charge point is not considered to be reliable, if it is inoperative or out of order.

Where a rapid charge point can be accessed only during specific hours, reliability is to be assessed only by reference to those hours.

The charge point operator must publish information on its compliance with the reliability requirement on its website.

REGULAR REPORTING

A charge point operator must submit a report to the Secretary of State for its network of rapid charge points for each calendar year, stating the total number, and reliability of each charge point operated during this period.

HELPLINE

A charge point operator must provide a staffed telephone helpline available free of charge for 24 hours per day for each day of the year to allow persons using or intending to use one of its charge points to seek assistance regarding the functionality of the charge point.

This must then be reported quarterly, with the total number of calls received, with a breakdown of assistance sought, length of calls, success or otherwise

OPEN PUBLIC CHARGE POINT DATA

Data

A charge point operator must ensure that data held is accurate; and is available to the Secretary of State and to any Electricity Systems Operator that supplies energy to its public charge points.

PRICING TRANSPARENCY

The total price for charging an electric vehicle through a public charge point must be clearly displayed in pence per kilowatt hour. This cannot increase once charging has started.

Good news for green hydrogen

bp's green hydrogen project on Teesside progresses to next stage of Government negotiations

HyGreen Teesside has been selected to progress to the negotiation stage for the Government's first electrolytic hydrogen allocation round. The project aims to generate around 660 jobs through the construction phase and create over 100 jobs during operation, supporting Teesside's low carbon transformation.

This follows the UK Government's announcement in March, that HyGreen was shortlisted for DESNZ's Hydrogen Business Model (HBM) and Net Zero Hydrogen Fund (NZHF) programmes.

These are intended to support commercial deployment of hydrogen projects, and kickstart the low carbon hydrogen economy across the UK.

LARGEST GREEN HYDROGEN FACILITIES

Green hydrogen is produced by the electrolysis of water, powered by renewable energy.

Aiming to start production in 2026, HyGreen Teesside is planned to be one of the UK's biggest 'green' hydrogen facilities.

It is initially targeting 80MW of green hydrogen production, with potential further growth to up to 500 MW by 2030, up to 5% of the UK government's hydrogen target of 10GW.

The project aims to help fuel the development of Teesside, leading the way for large-scale decarbonisation of heavy transport, airports, ports, and rail in the UK. It will also help carbon intensive sectors in the region, such as chemical and process industries, to decarbonise.

Matt Williamson, UK Head of Hydrogen, bp, said:

"We're excited to have passed another important milestone towards the development of this ground-breaking project. HyGreen Teesside has the potential to help transform energy use, the economy and skills in the region. At bp, we're backing hydrogen to help Teesside and the UK decarbonise its industry and mobility."

bp has recently completed a six-week community consultation on HyGreen Teesside, ensuring that local people, businesses and other stakeholders can have their say on the project. As part of the consultation, bp shared its initial design with the public and organised multiple public information events. Having taken on board community views, bp will now submit a finalised planning application to Redcar and Cleveland Borough Council.

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First Bio-CNG station in the South East

This site is a joint venture between ReFuels and the Foresight Group. It is being built to expand Waitrose's fleet of biomethane-powered heavy goods vehicles.

ReFuels has commenced construction of a new public access Bio-CNG refuelling station at Aylesford in Kent, to be operated under the CNG Fuels brand. The facility is set to open additional transport routes for South East England, a region with a population of approximately 9.3 million.

OVER 500 TRUCKS

Owned by a joint venture with Foresight Group, the new site will feature 12 fuel pump islands, which will allow over 500 trucks to be refuelled per day. Construction has begun on land acquired from the John Lewis Partnership, adjacent to Waitrose's South East distribution centre.

This will enable the retail giant to rapidly grow its fleet of biomethane-powered heavy goods vehicles (HGVs), which is already the largest such fleet in the UK.

Philip Fjeld, CEO of ReFuels, said:

"Well over one hundred fleets across the UK are now adopting the fuel en masse. Our new site in Aylesford, built on land acquired from one of the UK's biggest retail HGV fleets, is a testament to this growing demand and the value fleet operators place on Bio-CNG refuelling infrastructure."

6,000 HGV'S DAILY

The current CNG Fuels network in the UK can refuel more than 6,000 HGVs daily. This equals an annual dispensing capacity of more than 264,000 tonnes of biomethane annually. A potential saving of more than 750,000 tonnes of CO2 emissions annually when compared to diesel.

Refuels' year-end 2026 target of 30-40 stations in operation equals a total capacity of up to 15,000 HGVs per day, and more than 600 million kg of biomethane annually.

DRIVING HEAVY GOODS TRANSPORT IN EUROPE TOWARDS A LOW CARBON FUTURE

By bringing together the industry-leading renewable biomethane supplier, RTFS, and the UK's leading alternative refuelling infrastructure provider, CNG Fuels, ReFuels will be Europe's first fully integrated, end-to-end renewable fuel supplier for commercial transport.

CNG Fuels was founded in 2014 and operates the UK's largest CNG refuelling network, RTFS was founded in 2017 and is Europe's largest supplier of unsupported biomethane to the transport sector. The two businesses have combined in 2023 to make ReFuels, forming a fully integrated energy supplier dedicated to decarbonising Europe's commercial fleet.

Sites are already being secured with space for additional fuels, including hydrogen, and fast charging to support consumers to transition away from fossil fuels into a multi-fuel, zero-carbon future.

www.refuels.com