

Senedd Cymru
Y Pwyllgor Newid Hinsawdd,
Amgylchedd a Materion Gwledig
Ymgynghoriad ar effaith argyfwng
Covid-19
CCERA(5) CP 15
Ymateb gan Liquid Gas UK

Welsh Parliament
Climate Change, Environment and Rural
Affairs Committee
Consultation on the impact of the Covid-
19 pandemic
CCERA(5) CP 15
Evidence from Liquid Gas UK



Liquid Gas UK

About Us

Liquid Gas UK is the trade association for the Liquefied Petroleum Gas (LPG) and bioLPG industry in the UK, representing companies who are LPG producers, distributors, equipment and service providers, and vehicle converters. It is dedicated to the safe and effective development of LPG and takes a leading role in consultation and negotiation with legislators and policy makers. Member companies cover 99% of the total LPG distributed in the UK. Our members have a collective turnover of £1bn and together plan to invest around £600m in the next 5 years.

An introduction to LPG and bioLPG

LPG is the lowest carbon conventional energy source available to off-grid homes and businesses in the UK, which provides immediate, expedient and cost-effective heat and energy. As LPG emits more than 33% fewer carbon emissions than coal and 15-20% fewer carbon emissions than oil¹, **LPG is a transitional solution in its own right.** It also emits virtually no NO_x, SO_x and Particulate Matter, enabling immediate air quality improvements.

BioLPG, alternatively known as biopropane, is a **versatile, 'drop-in' renewable solution which can provide up to 90% emissions reduction** compared to fossil based LPG.² Already available on the market today, bioLPG is chemically indistinct from LPG and can be used as it is, just like conventional LPG. This means it can be 'dropped-in' to existing supply chains and can be used by consumers in their existing heating appliances, stored in existing bulk tanks and cylinders, and transported using today's infrastructure and skilled workforce.

Switching to LPG systems today also locks-in a **seamless pathway to renewable energy use**, as bioLPG can directly replace conventional LPG going forward in a hassle-free way. LPG and bioLPG can also be used in hybrid systems, alongside heat pump technology. The Committee on Climate change modelled off-grid hybrids using bioLPG in their leading Net Zero report³.

¹ UKLPG, Response to A Future Framework for Heat in Buildings (June 2018)

² NNFCC, Biopropane: Feedstocks, Feasibility & our Future Pathway (2019)

³ Committee on Climate Change, Net Zero – Technical Report (2019)

Impact of Covid-19 on climate change

The full and far reaching consequences of Covid-19 on sectors is still unknown, and will likely to be unknown for many months to come. The calls have been heard loud and clear on many that Covid-19 does not eliminate the risks of climate change, but at the same time Covid-19 could and will affect how to tackle climate change.

For example, any future recession and economic uncertainty due to the impact of Covid-19, will test the patience and willingness of individuals and households to spend money on things such as improve energy efficiency and decarbonising heat. That does not mean we should not try to do either of those things, but it does mean we need to take a sensible, cost-effective approach to doing them, which will empower consumers and not penalise them.

This consultation response will focus on responding to the impact of Covid-19 on tackling climate change and why taking a mixed technology approach, will provide the most cost-effective route to enabling change at one of the most uncertain points of time in recent history.

Energy efficiency in Welsh Homes

There should be a focus on readily available, well established and affordable decarbonising technology for off-grid homes and businesses in Wales. LPG is the lowest carbon conventional energy source which provides immediate, expedient and cost-effective heat and energy for off-grid homes in Wales. LPG is used for space, hot water and process heating.

LPG boilers offer a long-term, cost effective pathway to decarbonisation through the gradual introduction of bioLPG into the mix; this means over time carbon emissions will increasingly reduce.

It is the industry's ambition to offer 100% renewable energy solutions by 2040.⁴ LPG and bioLPG can also be used in hybrid systems, alongside heat pump technology, with the Committee on Climate Change modelling off-grid hybrids using bioLPG in their leading Net Zero report.⁵

Electrification of heat is not a silver bullet for all homes:

Electrification of heating systems should not solely be seen as the solution to decarbonisation and low carbon heat in Wales, especially in rural areas. It is important that regulations and policy reflect that **different solutions will be required for different types of building stock and locations across the country. Incentives to support the growth in a range of sustainable solutions to coal and oil are required to drive the transition.**

Newer homes or highly energy efficient homes are more likely to suit a heat pump solution. For older, rural homes LPG / bioLPG as a standalone solution or as part of a hybrid system is likely to be more appropriate. This is because these homes may be difficult to retrofit and retain heat. As such, inflicting a heat pump on owners of such properties will likely ask them to spend more on a less consistently warm home.

⁴ Liquid Gas UK, 2040 Vision (July 2019)

⁵ Committee on Climate Change, Net Zero – Technical Report (2019)

This is particularly important for Wales, as it has some of the highest off-grid coverage in the UK; in Powys, 68% of homes are off-grid.

A mixed technology approach is more affordable:

These factors will impede switching to more sustainable solutions. We therefore advocate a **mixed technology approach** to installing heating technologies in off-grid homes and non-domestic properties. Energy consultancy Ecuity has found that this approach will enable the UK to achieve its net zero target. It was found to be the most cost-effective approach, and ultimately saved £7bn in levelised cost analysis across the whole of UK⁶. We believe a mixed technology approach in Wales will best encourage consumers with different circumstances, earning capacities and building types to make environmentally sustainable choices.

The upfront cost and ongoing running costs of electrified heating solutions is significant. On an individual off-grid home level, when looking at levelised cost analysis, which takes into account bills, a case study in the recent study by Ecuity showed that a typical pre-1918 detached family home would face levelised costs of 40% higher, equating to £22,6000, if forced to switch to a heat pump rather than to switching onto LPG/BioLPG.

This is especially important to recognise when at least 16% of householders in off-grid areas are in fuel poverty⁷ and generally use cheaper, high-carbon heating oil to keep warm in winter months.

It is also important to not just look at the house in isolation, but the location of the off-grid home as heat pumps will cause a significant rise in demand for electricity consumption on the local network, especially when coupled with demand for electricity to power electric vehicles.

Mixed-technology approach commercial/industrial buildings and agriculture

Nearly a quarter of UK businesses are off the gas grid⁸. For commercial business or industrial plants that are situated in rural areas, as well as in the agricultural sector, switching to LPG can be economical and convenient due to its versatility and portability, and as such, it is accessible to even the most remote areas.

LPG is commonly used as heating (space, hot water, cooking) in hospitality (pubs, B&Bs, hotels), warehousing and agricultural buildings. LPG can also be used for process heating in industry, for temperatures ranging between 30 and 2,000 degrees (for drying, separation melting, rolling, kiln firing). In both sectors, oil is used more commonly⁹. **Similar to the domestic environment, regulatory support for a mixed technology approach, together with consumer incentives, would allow LPG and bioLPG to play an important contributory role in converting businesses from oil and coal use.**

⁶ Ecuity / Liquid Gas UK, A Practical Approach: Analysis of Off-Grid Heat Decarbonisation Pathways (2019)

⁷ Annual Fuel Poverty Statistics Report, 2019 (2017 data) - BEIS

⁸ World LPG Association, 'The role of LPG and bioLPG in Europe (2019). www.wlpqa.org/wp-content/uploads/2019/09/The-Role-of-LPG-Bio-LPG-in-Europe-2019-Report.pdf

⁹ World LPG Association, 'The role of LPG and bioLPG in Europe (2019). www.wlpqa.org/wp-content/uploads/2019/09/The-Role-of-LPG-Bio-LPG-in-Europe-2019-Report.pdf

Switching to LPG systems today also locks-in a seamless pathway to renewable energy use, as bioLPG can directly replace conventional LPG and reduces the cost, as well as hassle, for businesses to have a smooth transition to renewable energy.

Such a regulatory framework, with incentives, would in time allow sectors hard hit by Covid-19, such as hospitality, the encouragement to reduce their carbon emissions. As well as lowering emissions, LPG and bioLPG can improve local air pollution as they are clean burning fuels that produce almost zero particulate matter (PM) when combusted.

Indigenous bioLPG production in Wales

We welcome Wales' commitment to becoming a zero waste, net zero emissions society that realises the economic potential of repairing, reusing and recycling waste. LPG and BioLPG have a significant part in to play helping Wales reduce its emissions and deliver a circular economy; this role is further enhanced through indigenous production of bioLPG using waste products, sustainable feedstocks both as a sole product or as a co-product of making renewable aviation or road fuels.

A recent study by NNFCC found that the deployment pathway for a full switch from fossil LPG to bioLPG by 2040 is considered feasible¹⁰. NNFCC found that there is significant potential for rapid scale-up of indigenous bioLPG production in the UK, as a co-product of sustainable aviation fuel production at new HVO¹¹ plants or from establishing gasification and Fischer-Tropsch synthesis facilities.

Indeed, there is currently a strong focus on how to promote production and use cleaner aviation fuels. **As bioLPG is a co-product of sustainable aviation fuel production, there should be incentives developed to direct the bioLPG into decarbonising hard-to-treat homes, businesses and industrial processes.** This also ensures best use of feedstocks, with a two for the price of one mentality and enables industry to tackle the two largest emitting sectors – heat and transport.

Examples of feedstocks which will be available to support UK production of bioLPG include used cooking oil, animal fat, vegetable oil, waste, plant dry matter, sugar and starch. UK Government should work with industry to look at what feedstocks are most available and appropriate in different parts of the country and if they can facilitate the development of production facilities which can in turn supply local / regional bioLPG demand. BioLPG production also could be established near high use demand in off-grid heat, such as clusters of industrial and commercial consumers.

These new production facilities could sit at the heart of a circular economy in Wales, utilising sustainable local feedstocks, creating jobs for the local area, contributing to economic growth and ultimately creating the energy to be used in rural homes, businesses and industries. As the gas-grid transitions towards hydrogen, and away from biomethane, these facilities could be adapted to produce bioLPG instead, creating a lifeline for the anaerobic digestion industry and utilising existing infrastructure, feedstocks and supply chains.

¹⁰ NNFCC, Biopropane: Feedstocks, Feasibility and our Future Pathway, 2019 (p. 5)

¹¹ Hydrotreated Vegetable Oils

Liquid Gas UK would welcome the opportunity to discuss appropriate mechanisms for encouraging the production of and capture of bioLPG in Wales. The association is underway with a study into establishing an indigenous bioLPG supply chain in the UK, exploring local feedstocks, the production methods which could be invested in, the cost of this transition and how industry can work with the Welsh Government.