

Cynulliad Cenedlaethol Cymru Pwyllgor Amgylchedd a Chynaliadwyedd	National Assembly for Wales Environment and Sustainability Committee
Dyfodol Ynni Craffach i Gymru?	Smarter energy future for Wales?
Ymateb gan Calor (Saesneg yn unig)	Response from Calor
SEFW 15	SEFW 15



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National
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Wales



Alun Davidson
Committee Clerk
Environment and Sustainability Committee
National Assembly for Wales
Cardiff Bay
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4th September 2015

Dear Mr Davidson

Calor Response to Environment & Sustainability Committee 'A Smarter Energy Future for Wales?' Consultation

Throughout the Fourth Assembly the Environment & Sustainability Committee has held a series of important enquires on Welsh energy policy. As A Smarter Energy Future for Wales will be one of the Committee's final enquires, Calor would like to take this opportunity to thank Committee Members and Clerks for their work since 2011, and for the frequent opportunities to provide written and oral evidence.

The terms of reference and questions for this inquiry place significant focus on the generation of electricity. While Calor does not engage in this activity, we wish to use this response to highlight the importance of domestic heat generation and transport fuel to our national carbon emissions. Changes to this infrastructure, also provides a crucial avenue through which Wales can help tackle climate change, increase energy efficiency, and save money.

As the UK's leading supplier of Liquefied Petroleum Gas (LPG), we are keen to highlight LPG's wide variety of applications from providing a versatile fuel for heating for both domestic and commercial use – particularly in off-gas grid rural areas, to a viable alternative transport fuel. LPG also has a lower carbon footprint than commonly used alternative fuels such as heating oil, coal and charcoal.

Home Energy Efficiency & Domestic Carbon Reduction

It is Calor's view that the Welsh Government are yet to realise the full potential of low carbon LPG technologies for the cost-effective reduction of emissions in areas of the economy where transformation may be hardest to achieve i.e. off-grid rural areas. While we recognise that there are a range of controls out there with many of new products coming to market, Calor is working to ensure compatibility for our off-grid customers through sustained investing to bring low carbon space heating and electricity generation technologies such as micro CHP, boiler/heat pump hybrids and LPG driven heat pumps to market.

These products provide consumers with low carbon alternatives to the current range of LPG and Heating Oil Boiler technology. Deployed at scale, Calor is set to offer consumers in rural areas easily adoptable, low carbon solutions which utilise an established and secure fuel supply infrastructure and in some cases empower customers to take greater ownership and generate their own energy to feed back into Wales' increasingly diverse network.

Policy support is required at both a UK and Welsh level to start the UK market and achieve capital cost reductions to close the capital gap with standard condensing boilers. At a Welsh Government level, ECO should also be reviewed, with the aim of securing ECO funding to complement existing Welsh schemes such as NEST and Arbed, to ensure uptake of energy efficiency measures in off-grid homes.

Over the long term, a clear path could be set for future changes in Welsh building regulations Part L with respect to replacement of heating systems. At present, condensing boilers must be fitted. In future it may be possible to set a new minimum performance standard (for example, requiring controls, or a minimum efficiency for heating equipment or installations). A long term plan to transition to more efficient low carbon LPG heating in rural Wales would generate significant policy and economic benefits and render Wales a leader in this emerging field.

Heating technology	Carbon emissions (tCo2/year)	Carbon emissions (tCo2/lifetime*)
Heating oil boiler	3.39	28.17
LP-gas boiler	2.95	24.57
LP-gas driven micro-CHP	2.82	23.47
LP-gas driven heat pump	2.04	17.01
LP-gas driven hybrid heat pump	1.72	14.36
LP-gas driven fuel cell	1.36	11.32

*lifetime, assumed to be 10 years for all technologies. Lifetime carbon emissions are discounted at 3.5% social discount rate

Furthermore, from 2016 bio-propane will be available for our UK consumers. Up to 40,000 tonnes per year could be made available to the UK market – enough bio-propane to more than meet the energy needs of all of Calor’s customers in Wales. This new product, which is exclusive in the UK to Calor, can provide a fully renewable fuel which can deliver lower carbon energy in any existing LPG appliance. Replacing existing fossil fuels with biopropane will result in significant carbon savings across Wales’ off-grid network. Combined with the next generation of LPG technologies and extremely low carbon, yet entirely reliable, versatile and reassuring range of heating options will be available to support achievement of emissions targets.

Automotive LPG: lower carbon, lower cost

Automotive LPG has been in wide use for UK drivers since 2000. To date around 150,000 drivers benefit from using this cleaner and affordable fuel from 1,400 refuelling sites across the UK. There is potential to increase the shift from petrol and diesel to LPG as the infrastructure is already in place and can be expanded at no cost to the taxpayer if demand can be further incentivised.

The landmark decision by the Supreme Court in April 2015, in favour of the environmental law firm, Client Earth, to force the Secretary of State for Environment, Food and Rural Affairs to submit a new National Air Quality Plan to the European Commission by the end of the year will require an urgent assessment of the quick and effective measures policy makers can implement to bring down harmful emissions from transport. LPG can significantly improve local air quality:

- The European Commission's GHG intensity calculations contained within the Fuel Quality Directive confirm that, on a well to wheel basis, LPG Autogas emits up to 21% less CO₂ than Petrol and up to 23% less CO₂ than diesel.
- LPG emits lower level of harmful particulates (PM). The actual figures are 0.000000106 kg/km for LPG and 0.000001022 for petrol. LPG emissions are an order of magnitude lower.
- LPG emissions are lower particularly on hydrocarbons, NO_x and PM, which are considered to be the worst actors with respect to air quality.

Calor has quantified the impact on UK air emissions from substituting LPG cars for diesel cars between 2016 and 2029. The study shows that it is possible to achieve a 90% reduction in NO_x and PM by such a displacement. This transition would have a quantifiable impact in Wales as it has the potential to contribute towards improving air quality in Wales' Air Quality Management Areas (AQMAS). AQMAS began in 1997 and mark out areas where local authorities feel air quality objectives are not like to be met. There are currently ten Welsh authorities that contain such areas: Powys, Monmouthshire, Cardiff, Rhondda Cynon Taf, Swansea, Carmarthenshire, Neath Port Talbot, Newport, Caerphilly and Pembrokeshire. Alongside combatting emissions across Wales, policy should focus on implementing a transition from gasoline and diesel fuelled vehicles to LPG vehicles in these AQMAS in order to reduce harmful emissions.

This focus need not contradict current policy to support electric vehicles, but if progress on air quality is to be made quickly, a transitional and cost-effective pathway to zero-emission vehicles must be adopted. To do so it will be essential for Wales to fully appraise what conditions are required to enable consumers to make the switch. This should be done in discussion with vehicle manufacturers, and by looking at equivalent examples across Europe.

While some aspects of this work can only be done at a Westminster level, it is vital that the Welsh Government looks at what can be achieved at a devolved level. For instance, local authorities and public sector organisations are already using LPG to cut emissions and reduce operating costs. In Wales this is best evidenced by the Ynys Môn case study below.

Case Study:

Delivering benefits for the public sector

Isle of Anglesey Council reduces its carbon emissions whilst making 'phenomenal savings'.

Isle of Anglesey County Council has 63 LPG vehicles in their fleet of 172 road vehicles. The majority of these are vans, used by highway inspectors, waste management inspectors, and home carers as well as for general council duties. With another seven vehicles carrying a full warranty to be purchased this year with the conversion done before delivery, the use of LPG is set to rise.

Having used autogas LPG now since 2000 the Fleet and Driver Manager, Noel Roberts, says he has lots of proof to back up the 'phenomenal savings' they have seen from this switch to running diesel vehicles to this dual fuel option. So much so, that it is now policy for Anglesey Council to buy dual fuel vehicles.



Not only are the cost savings high on their average of 12,000-15,000 miles per year on each vehicle, but looking at the complete picture, CO₂ emissions have been reduced. Since the process started, a number of reports and submissions have been produced, proving that these vehicles are really making the promised difference with vehicles tested over 750,000 miles over a one year period, and have proved the test of time of LPG.

Isle of Anglesey County Council now has its own tank on site for refuelling using 107,000 litres last year. On-going servicing and care isn't a problem either, with a reputable garage able to help out with any LPG queries to keep the fleet running at all times.

Calor is keen to engage further with the Environment & Sustainability Committee on these issues and have provided an enclosed 'Efficient gas heating technologies as a

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realistic option for Wales heating decarbonisation' presentation for consideration and an annex to our consultation response. We would also be willing to provide oral evidence to the Committee during the autumn term if requested.

Regards,

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Corporate Affairs Manager