

## **Consultation Response Form**

Your name	Duncan Carter Corporate Affairs Manager
Your address	Calor Gas Athena House Athena Drive Tachbrook Park, Warwick, Warwickshire, CV34 6RL
Preferred contact details (email/phone/post)	<a href="mailto:dcarter@calor.co.uk">dcarter@calor.co.uk</a> [REDACTED]
<u>Organisation (if applicable)</u>	Calor Gas

## 1. NDF Outcomes (chapter 3)

The NDF has proposed 11 Outcomes as an ambition of where we want to be in 20 years' time.

- Overall, to what extent do you agree or disagree the 11 Outcomes are a realistic vision for the NDF?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	<i>Don't know</i>	<i>No opinion</i>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- To what extent do you agree with the 11 Outcomes as ambitions for the NDF?

Agree with all of them	Agree with most of them	Agree with some of them	Agree with none of them	<i>Don't know</i>	<i>No opinion</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- If you disagree with any of the 11 Outcomes, please tell us why:

Calor agrees with the 11 outcomes of the National Development Framework. Calor maintains that action to tackle climate change is absolutely vital, thus we particularly welcome Outcome 11 of the National Development Framework, to deliver a competitive, sustainable decarbonised society. Calor agrees that decarbonisation and renewable energy commitments and targets are opportunities, and we ourselves are the first company to bring BioLPG to the Welsh market, aiming to offer our customers 100% renewable energy solutions by 2040. We would encourage further integration of Outcome 11 throughout the policies outlined in the National Development Framework.

Carbon emissions from the operational use in housing currently accounts for 28% of all global emissions, thus housing has an important role to play in the decarbonisation process. Calor would encourage that Outcome 11 and pathways to decarbonisation be built into policies throughout the National Development Framework, particularly in Policy 5 on affordable housing. To achieve decarbonisation of the housing stock and tackle fuel poverty, energy efficiency upgrades will be needed, as well as heating switched to appropriate low-carbon sources, such as BioLPG.

## 2. Spatial Strategy (policies 1 - 4)

The NDF **spatial strategy** is a guiding framework for where large-scale change and nationally important developments will be focused over the next 20 years.

- To what extent do you agree or disagree with the spatial strategy and key principles for development in...

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	<i>Don't know</i>	<i>No opinion</i>
Urban areas (Policies 1, 2 & 3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Rural areas (Policy 4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- If you have any comments on the spatial strategy or key principles for development in urban and rural areas, please tell us:



### 3. Affordable Housing (policy 5)

The NDF sets out the approach for providing affordable housing, encouraging local authorities, social landlords, and small and medium-sized construction and building enterprises to build more homes.

- To what extent do you agree or disagree with the approach to increasing affordable housing?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	<i>Don't know</i>	<i>No opinion</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- If you disagree, in what other ways can the NDF approach the delivery of affordable housing?

#### Affordable Housing and Decarbonisation

Calor believe that the National Development Framework approach to affordable housing needs to be complementary to their target to reach Net Zero by 2050, and Outcome 11. Heat decarbonisation will require both changes to the supply of energy, and significant infrastructure investment. Affordable housing needs to be affordable to buy, affordable to run, and in keeping with Outcome 11 and wider Welsh Government decarbonisation targets. It is important that the National Development Framework approach to decarbonising and affordable housing ensures that decarbonisation costs to consumers are minimised. Government should support a range of low-carbon technologies and avoid picking winners, especially if some of these are potentially very costly for consumers. Minimising hassle, investment and energy costs will be key to securing consumer support for heat decarbonisation.

#### Building Regulations

Building Regulations to date have pushed housing developers to improve their standards greatly, so that modern homes have a much lower energy demand, particularly when it comes to heating. Energy demand in UK homes now is only increasing for electrical appliances; lighting and heating demand is reducing. However, we advise caution before setting higher standards as this could have a negative impact on rural affordable housing provision as the cost of housebuilding increases. In terms of zero-energy, this target requires proper definition as current standards are already 23% higher for some homes than the level the Department for Communities and Local Government deemed to be 'cost optimal' in their report in 2013<sup>1</sup>.

<sup>1</sup> Cost optimal calculations: UK report to European Commission, DCLG, May 2013. Achieving energy efficiency in a cost optimal manner is a requirement within the European Performance of Building Directive and is detailed therein.

The UK Government's announcement of a Future Homes Standard is due for consultation alongside its review of Part L of building standards later this year. The former Chancellor's announcement at the Spring Statement outlines that the Future Homes Standard will seek ***"to ensure that all new homes are built with world-leading levels of energy efficiency and low-carbon heating."***

The media has interpreted this as all gas boilers will be banned, largely due to recommendations made within the Committee on Climate Change's report UK Housing, 'Fit for the Future' published prior to the Spring Statement that has recommended that all gas connections should be banned from new builds from 2025 onwards if we are to meet future emissions targets.

Calor would urge the Welsh Government not to arbitrarily ban gas connections in new-build off-grid homes as this could have the unintended consequence of significantly increasing build costs for SME builders who service this part of the housing market. A recent report from Briary Energy commissioned by Calor shows that the average additional costs of building a house on LPG in comparison to mains gas are less than £1,000 per plot. In contrast, developers selecting air source heat pumps could see an increase in build costs of between £5,000 to £8,000 per plot, depending on the development size.

LPG central heating systems should continue to be supported for new build homes away from the gas grid as a cost-effective and affordable decarbonisation pathway is provided by BioLPG. Furthermore, maintaining a flexible future approach for green gas solutions will require less reinforcement to rural, local electricity grids that are currently unsuitable for widespread heat pump adoption or electric vehicles.

We suggest an approach that focuses on achieving emissions reductions at lowest cost and least disruption for consumers, rather than focusing on particular technologies such as boilers.

### **Energy Performance Certificates**

For off-gas grid homes, the format of the EPC creates unintended consequences. Currently the main measure of a home's energy efficiency is based on the cost to heat any given home. It is not based on the energy required to heat a home or the associated carbon impact. As such they are unreliable as a measure of 'energy efficiency' in off-gas grid areas. This is because all energies used to heat properties in off-gas grid areas (heating oil, electricity, solid fuel and LPG) are typically more expensive than natural gas meaning that any building's EPC will automatically score a lower score – typically at least one if not two grades lower i.e. an 'F' (rural) rather than a 'D' (urban).

In off gas grid areas, where heating oil is common, homeowners choosing oil to heat their homes have recently benefitted from an improved EPC rating as oil prices have fallen. Nothing else has been done to the building fabric, simply the cost to heat has fallen so the EPC rating has increased. This creates a perverse incentive for consumers to switch to oil from LPG to boost a property's EPC rating. This is despite

conventional LPG's lower emissions of carbon, NO<sub>x</sub>, SO<sub>x</sub> and particulate matter compared to oil. In addition, oil does not have a viable route to 100% renewable product like bioLPG. The Committee on Climate Change recognises that oil boilers are incompatible with Net Zero. Calor asks that this approach is reviewed and corrected to reflect the environmental impact of a dwelling, not the cost to the dwelling.

There is a simple solution. The responsibility for EPCs lies with the UK Government, but vocal support across the UK is needed for change to happen. We aren't asking government to lose the information on the EPC that gives homeowners advice on the expected running costs of their property. This should be retained. We are just asking government to change the Energy Efficiency Rating so that it is based on kWh/m<sup>2</sup>/year and truly reflects the energy efficiency of a property.

### **Decarbonising Rural New Housing**

The SOLCER scheme in Wales is delivering some really interesting results for newly built homes, however the technologies employed are again not possible for every home, in every location. For example, the roof orientation is vital to ensure the optimum use of glazed solar photovoltaic panels, fully integrated into the design of the building, which allow the roof space below to be naturally lit. Additionally, the house's energy systems, which combine solar generation and battery storage to power the building's services, are only effective if the house has been built to very high thermal standards, which run the risk of overheating, if designed incorrectly.

However, for rural homes, not on the mains gas grid, reaching zero carbon will require a different approach to urban homes. Building off the gas grid means that solutions such as a district heat network, are usually not feasible, as this is only effective when there is a high density of housing. Rural homes tend not only to be off the gas grid but also a long way from other homes and at the end of the electricity distribution network as well.

For new homes in rural locations, the Freedom Project, run by Wales and West Utilities is a great starting point to examine practical ways to deal with the challenge of meeting heat demand whilst maximising the use of renewable energy generation. This project is looking at how energy storage, demand side response and green gases can be deployed to heat homes in the future in the most efficient and low carbon manner. However, we would caution against extrapolating too much from such a small pilot and think further pilots need to be undertaken to improve the evidence base. For example, the Freedom Project included only one property using a hybrid heat pump in this trial and the heat input was supplemented by a wood burning stove whose use was not recorded. This means it's impossible to know how much of the heat input was delivered the heat pump, LPG boiler or wood burning stove.

We are fully supportive of the Optimized Efficiency Programme the Welsh Government is running and look forward to working with the Welsh Government and partners. Calor continues to look at further solutions specifically for off gas grid homes and investigate future piloting opportunities for heat pumps. This includes technological solutions to ensure bioLPG provenance, allowing specific sources of

bioLPG to be directly linked to individual properties (on a mass balance basis), for example, and upstream investment in new, sustainable sources of bioLPG, including [this](#) partnership with the airline KLM.

However, we advise caution before setting even higher standards as this could have a negative impact on rural affordable housing provision as the cost of housebuilding increases. In terms of zero-energy, this target requires proper definition as current standards are already 23% higher for some homes than the level the Department for Communities and Local Government deemed to be 'cost optimal' in a 2013 report.

#### 4. Mobile Action Zones (policy 6)

- To what extent do you agree or disagree the identification of mobile action zones will be effective in encouraging better mobile coverage?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	<i>Don't know</i>	<i>No opinion</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- If you disagree, in what other ways can the NDF improve mobile phone coverage in the areas which currently have limited access?

#### 5. Low Emission Vehicles (policy 7)

- To what extent do you agree or disagree that policy 7 will enable and encourage the roll-out of charging infrastructure for ultra-low emission vehicles?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	<i>Don't know</i>	<i>No opinion</i>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- If you disagree, in what other ways can the NDF enable and encourage the roll-out of charging infrastructure for ultra-low emission vehicles?



Calor believe that Policy 7 will encourage the rollout of charging infrastructure for ultra-low emission vehicles, however we urge the Welsh Government to recognise the plurality of low-emissions vehicles available.

It is widely recognised that an all-electric transport future can't be delivered quickly due to cost and charging infrastructure constraints so will not solve air quality problems in the short term. In addition, larger-sized, commercial vehicles may be some way off being fully electric due to the energy constraints of existing battery technology. Automotive LPG, however, is a solution that can be deployed quickly and cheaply; LPG is cleaner than traditional transport fuels delivering significantly lower harmful emissions including NOx & PM, as well as carbon savings. The supply infrastructure for LPG is already in place, with over 1,400 existing public refuelling, with around 100 across Wales, which can be expanded without the use of public money. LPG is more than 40% cheaper than petrol and diesel on a pence per litre basis.

### **LPG vehicles as a low carbon alternative**

Calor believes that the Welsh Government should promote hybrid vehicles as a genuine mid-term air quality solution, while electric vehicle charging infrastructure and technology develops. An LPG hybrid solution for vehicles is already in operation in both the UK in Newcastle based private hire vehicles and significantly in Japan with the Toyota JPN taxi. Hybrid LPGs have a significant CO2 advantage over petrol hybrids – removing any concern over a risk to increased global warming pollutants brought by the move away from diesel. SMMT figures demonstrate an uplift in CO2 in Q4 2017 – an alarming development, but LPG can counter this issue.

In terms of LPG infrastructure, unlike other alternative fuels and EVs, no government support has been or will be required – it is self-funding. Whilst there may have been a small decline in the numbers of refuelling stations (now 1,300), this reflects the urbanisation of the LPG market. Historically, LPG was predominantly in rural areas, used to extend the life of a vehicle. Nowadays, consumers are aware of the environmental benefits of switching to LPG in urban areas – due to an increasing awareness of the harm to health from diesel emissions - and demand has changed correspondingly. At present the market is also driven by an LPG 'back to base' solution, where Autogas Ltd supplies a Local Authority or fleet provider with a tank directly. The ratio of LPG vehicles to filling stations in the UK is 1 site per 100 vehicles. In Continental Europe, where LPG usage is significantly higher, the ratio is actually poorer with 1 site per 326 vehicles. LPG drivers do not therefore need to worry about range, unlike drivers using other alternatively powered vehicles, such as electric or hydrogen.

### **BioLPG**

Calor was the first company to bring bioLPG to the Welsh market. SHVE delivered its first shipment of BioLPG to several EU markets in March 2018 and it has since been delivered across Wales. The agreement Calor has with Neste will see 160,000 tonnes of BioLPG delivered over the next four years. BioLPG can reduce carbon emissions by up to 88% over conventional LPG (dependent on feedstock) and our commitment is that, by 2040, 100% of our energy products will be made from renewable sources. This commitment is shared by the LPG industry. There are no technical limits to how much bioLPG can be produced. It's therefore a more valuable



nearer term solution than hydrogen, which is reliant on either industrial-scale Carbon Capture and Storage or abundant low carbon electricity.

BioLPG can be 'dropped in' to existing LPG vehicles and refilling station with no need for changes to infrastructure as it is chemically identical to LPG. If required, Autogas Ltd would be able to provide a Local Authority with a certification of 100% bioLPG. Already, for example, Sainsbury's drop in biomethane into their fuel mix. While at present – due to economies of scale not having taken effect – bioLPG is more expensive than traditional LPG, it does qualify for the Renewable Transport Fuel Obligation. In terms of emissions, bioLPG delivers the same results as LPG for NOx and particulate matter, but up to an 89% reduction on CO2 versus petrol. It can therefore provide a longer-term solution to low emission and low carbon transport.

## 6. Green Infrastructure (policies 8 & 9)

- To what extent do you agree or disagree with the approach to maintaining and enhancing biodiversity and ecological networks?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	<i>Don't know</i>	<i>No opinion</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 7. Renewable Energy and District Heat Networks (policies 10-15)

- To what extent do you agree or disagree with the NDF's policies to lower carbon emissions in Wales using...

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	<i>Don't know</i>	<i>No opinion</i>
Large scale wind and solar developments	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
District heat networks	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- If you disagree with the NDF's approaches to green infrastructure, renewable energy or district heat networks, what alternative approaches should we consider to help Wales to enhance its biodiversity and transition to a low carbon economy?

For rural homes, not on the mains gas grid, reaching zero carbon will require a different approach to urban homes. Building off the gas grid means that solutions such a district heat network, are not usually feasible, as this is only effective when there is a high density of housing. Rural homes tend to not only be off the gas grid but also a long way from other homes and at the end of the electricity distribution network as well.

Renewable electricity, delivered by the electricity network, is able to bring a rural home to zero carbon, if there is an appropriate electric heating solution installed. For older homes, electric heating is often very difficult to retrofit. Another important factor is that the electricity network is not designed to deliver the requisite quantity of power required to heat rural homes. This part of the network is at the periphery of the current grid, usually exposed and lacking recent investment. The electricity distribution network will require large scale investment to bring it up to the necessary standard and capacity to supply all rural homes with sufficient power to meet peak heat demand and the rollout of EVs.

Additionally, increased electric demand for heating homes will require a large construction programme to build more electricity generation capacity. Heat demand is much greater and much more variable than electricity demand (see Figure 1 below), so a large amount of standby generation would be required for the times of peak demand. This is especially so for the days when it's very cold, cloudy and still – as it often is in winter – and there is no renewable electricity being generated by PV



or wind installations. On these days, electric generation capacity is required that can easily be ramped up and down, which means gas or even diesel, not nuclear.

## 8. The Regions (policy 16)

- To what extent do you agree or disagree with the principle of developing Strategic Development Plans prepared at a regional scale?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	<i>Don't know</i>	<i>No opinion</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The NDF identifies three overall regions of Wales, each with their own distinct opportunities and challenges. These are North Wales, Mid and South West Wales, and South East Wales.

## 9. North Wales (policies 17-22)

We have identified Wrexham and Deeside as the main focus of development in North Wales. A new green belt will be created to manage the form of growth. A number of coastal towns are identified as having key regional roles, while we support growth and development at Holyhead Port. We will support improved transport infrastructure in the region, including a North Wales Metro, and support better connectivity with England. North West Wales is recognised as having potential to supply low-carbon energy on a strategic scale.

- To what extent do you agree or disagree with the proposed policies and approach for the North Region?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	<i>Don't know</i>	<i>No opinion</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 10. Mid and South West Wales (policies 23-26)

Swansea Bay and Llanelli is the main urban area within the region and is our preferred location for growth. We also identify a number of rural and market towns, and the four Haven Towns in Pembrokeshire, as being regionally important. The haven Waterway is nationally important and its development is supported. We support proposals for a Swansea Bay Metro.

- To what extent do you agree or disagree with the proposed policies and approach for the Mid and South West Region?

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	<i>Don't know</i>	<i>No opinion</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



## 11. South East Wales (policies 27-33)

In South East Wales we are proposing to enhance Cardiff's role as the capital and secure more sustainable growth in Newport and the Valleys. A green belt around Newport and eastern parts of the region will support the spatial strategy and focus development on existing cities and towns. Transport Orientated Development, using locations benefitting from mainline railway and Metro stations, will shape the approach to development across the region. There is support for the growth and development of Cardiff Airport.

- To what extent do you agree or disagree with the proposed policies and approach for the South East Region?

[illegible]

If you have any comments about the NDF's approach or policies to the three regions, please tell us. If you have any alternatives, please explain them and tell us why you think they would be better.

--

## **12. Integrated Sustainability Appraisal**

As part of the consultation process, an Integrated Sustainability Appraisal (ISA) was conducted to assess the social, economic and environmental impacts of a plan. The report identified a number of monitoring indicators, including health, equalities, Welsh language, the impact on rural communities, children's rights, climate change and economic development.

- Do you have any comments on the findings of the Integrated Sustainability Appraisal Report? Please outline any further alternative monitoring indicators you consider would strengthen the ISA.

No comments.

## **13. Habitats Regulations Assessment**

As part of the development of the NDF, a Habitats Regulations Assessment (HRA) was undertaken. The purpose of the HRA process is to identify, assess and address any 'significant effects' of the plan on sites such as Special Areas of Conservation and Special Protection Areas for birds.

- Do you have any comments on the Habitats Regulations Assessment report?

No comments.

## 14. Welsh Language

We would like to know your views on the effects that the NDF would have on the Welsh language, specifically on opportunities for people to use Welsh and on treating the Welsh language no less favourably than English.

- What effects do you think there would be? How could positive effects be increased, or negative effects be mitigated?

No comments.

Please also explain how you believe the proposed NDF could be formulated or changed so as to have:

- I. positive effects or increased positive effects on opportunities for people to use the Welsh language and on treating the Welsh language no less favourably than the English language, and
- II. no adverse effects on opportunities for people to use the Welsh language and on treating the Welsh language no less favourably than the English language.

No comments.

## 15. Further comments

- Are there any further comments that you would like to make on the NDF, or any alternative proposals you feel we should consider?

No further comments.

**16. Are you...?**

Providing your own personal response	<input type="checkbox"/>
Submitting a response on behalf of an organisation	<input type="checkbox"/>

<b>Responses to the consultation will be shared with the National Assembly for Wales and are likely to be made public, on the internet or in a report. If you would prefer your response to remain anonymous, please tick here</b>	<input type="checkbox"/>
--	--------------------------