Oil & Gas UK
6th Floor East
Portland House
Bressenden Place,
London SW1E 5BH

Telephone +44 (0)20 7802 2400
Fax +44 (0)20 7802 2401
Email info@oilandgasuk.co.uk

www.oilandgasuk.co.uk

To be sent electronically to:

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BUILDING A ZERO-CARBON ECONOMY – CALL FOR EVIDENCE

Please find attached the Oil and Gas UK response to the above call for evidence. As you are aware, we recently published our first Energy Transition Outlook document that explored a number of these themes. We are also signatories of the Decarbonised Gas Alliance and have had some input into their submission.

Our attached response highlights the issues that we think are the most relevant to our membership which consists of the main offshore oil and gas exploration and production businesses and over 300 contractor and supply chain companies. We have only responded to the questions most relevant to our interest and expertise.

We would be happy to discuss the main elements with you and your colleagues when it is convenient, and we will be in touch to set up a suitable date. In the meantime, should you require any further information or have any queries on the above points, please don't hesitate to contact me at wwebster@oilandgasuk.co.uk.

Will Webster
Energy Policy Manager

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Company No. 1119804 England | A Company Limited by Guarantee | VAT No. 241 4219 95
Registered Office: 6th Floor East, Portland House, Bressenden Place, London SW1E 5BH

Part 1: Climate Science

Question 2 (CO_2 and GHGs): Carbon dioxide and other greenhouse gas gases have different effects and lifetimes in the atmosphere, which may become more important as emissions approach net-zero. In setting a net-zero target, how should the different gases be treated?

We do not see any reason for the UK to adopt different GWP weightings – either in terms of the weightings themselves, or in terms of the number of years – to the international standards. Increasing the GWP weightings for non-CO_2 gases such as methane would risk increasing UK imports of those products (including oil and gas) with higher than average methane emissions simply from having different weightings. This would be on top of the existing impact of carbon leakage that is already a consequence of the UK having a higher level of overall ambition in terms of GHG reduction.

Part 2: International Action

Question 3 (Effort share): What evidence should be considered in assessing the UK's appropriate contribution to global temperature goals? Within this, how should this contribution reflect the UK's broader carbon footprint (i.e. 'consumption' emissions accounting, including emissions embodied in imports to the UK) alongside 'territorial' emissions arising in the UK?

We agree with the UK setting itself ambitious targets in order to provide global leadership and to give certainty to businesses on how to respond to the energy transition. As we note in our Energy Transition Outlook report, we consider that industry and government objectives for the UK offshore oil and gas sector (Vision 2035) to be wholly consistent with energy transition pathways. Part of the success of the UK policy, and its reputation as a global leader in this area of policy, is based on the successful *achievement* of targets set to date.

There is therefore an important need to ensure that targets are backed up by a sound evidence base and that they are in line with key technological and economic drivers, and that the implications are accepted by consumers and society. Policy makers also need to recognise that emission targets need to be underpinned by clear objectives and credible policies that will deliver the required investment. These policies need to reflect other government objectives relating to, for example, industrial strategy and maximising the potential of the UK advantages and expertise in particular sectors and locations in order to maintain and create employment opportunities and achieve a "Just Transition".

In terms of "consumption" emissions we would agree that, as far as possible, the UK should seek to minimise the impact of carbon leakage or "outsourcing" emissions countries. This is particularly relevant for energy products like oil and gas where emission and environmental standards are generally lower in producing countries. We would therefore support publication by BEIS of annual estimates of consumption emissions alongside annual production emissions figures.

Question 4 (International collaboration): Beyond setting and meeting its own targets, how can the UK best support efforts to cut emissions elsewhere in the world through international collaboration (e.g. emissions trading schemes and other initiatives with partner countries, technology transfer, capacity building, climate finance)? What efforts are effective currently?

As well as the clear opportunities for the UK in improving air quality through international collaboration which are set out in the DGA response, a key area where the UK can develop, demonstrate and export other technology will rest on our success in being among the first countries to successfully implement CCUS at scale and develop hydrogen supply for heat and transport uses, in particular through advanced methane reformation using the UKCS industrial base and expertise as a building block.

Another important aspect of international collaboration is developing legislative and regulatory frameworks that can deliver private sector investment in alternative energy and infrastructure more generally. The UK also has a strong reputation in using economic regulation to deliver investment and supporting innovation in energy utilities, notably through Ofgem's "RIIO" regulatory framework.

Going forward, regulatory frameworks need to continue to encourage innovation and the role that networks can play in developing the technology and operational models of the future. Government and regulators should also consider how price controls can further support larger scale transition using the learning from innovation projects, such as work to deliver a gas network capable of carrying a wider range of decarbonised gases or in support of offshore carbon transport and storage.

Part 3: Reducing emissions

Question 6 (Hard-to-reduce sectors): Previous CCC analysis has identified aviation, agriculture and industry as sectors where it will be particularly hard to reduce emissions to close to zero, potentially alongside some hard-to-treat buildings. Through both low-carbon technologies and behaviour change, how can emissions be reduced to close to zero in these sectors? What risks are there that broader technological developments or social trends act to increase emissions that are hard to eliminate?

Reducing emissions to the existing 80% target and beyond will require CCUS and Hydrogen to be developed in order to deliver a cost effect transition that is acceptable to businesses and consumers. This also goes beyond the sectors identified above and extends to the provision of heat to domestic and commercial customers as set out on, for example, the H21 feasibility study and National Grid "Future of Gas" document. Decarbonised gas will have lower overall cost and higher consumer acceptability than a full electrification outcome, especially if it is expected that electricity will also be used to cover a significant element of transport demand in future.

The UK has important strengths in these areas of innovation including its world-class oil and gas industry expertise and one of the most substantial gas networks in the world, which supplies around 900TWh of gas each year and which is already being upgraded through the Iron Mains Replacement Programme, which will make it more amenable to transporting hydrogen.

The CCUS task force and government's response set out a clear vision and potential frameworks for supporting the initial phases of CCUS for industry based around particular cluster areas. Our view is that the government needs to take strong supporting measures to support these so that CCUS can achieve the required scale and scope to deliver anticipated cost reductions.

With respect to domestic heat, the H21 North of England report showed how the main cities of the North of England could be converted to hydrogen by 2034. These documents suggest that emissions from production and combustion of the hydrogen would be 14.47g CO_2e/kWh (thermal).

As for CCUS, Developing Hydrogen as a heat solution requires a commercial and regulatory structure that delivers investment and also legislation to clearly set out requirements on businesses that are active in the sector across the supply chain, including the governance of switching from existing natural gas supply.

Hydrogen also has potential to serve some transport needs, particularly journeys that require a large range in the freight and public transport in particular. The success of initial schemes in, for example, Aberdeen show the potential for a wide range of local initiatives to take root in this aspect of the Energy Transition. For example, hydrogen powered trains are now starting to enter service, and these may offer a much cheaper alternative to rail electrification in some circumstances.

Question 7 (Greenhouse gas removals): Not all sources of emissions can be reduced to zero. How far can greenhouse gas removal from the atmosphere, in the UK or internationally, be used to offset any remaining emissions, both prior to 2050 and beyond?

We do not have expertise in the areas of direct CO2 removal from the atmosphere. However, the potential for this technology serves to underline the need for the development of CCUS and for the UK to take the lead in developing this technology as a priority.

As well as capturing and storing our own emissions, the UK also has the potential to store CO_2 on behalf of other countries with our storage capacity estimated to be around 78 billion tonnes. This is many times the UK current annual emissions of around 400 million tonnes. The future global CCS market is estimated to be around £100bn/year with 11 billion CO2 needing to be permanently stored by 2060 to meet Paris Agreement emissions reduction targets.

Question 8 (Technology and Innovation): How will global deployment of low-carbon technologies drive innovation and cost reduction? Could a tighter long-term emissions target for the UK, supported by targeted innovation policies, drive significantly increased innovation in technologies to reduce or remove emissions?

As noted in the response to Question 3, setting ambitious but achievable emission reduction targets has been one important element of the success of policy in the UK. However, this is only one aspect. Development of clear objectives and credible policies and regulatory frameworks in individual areas has also been crucial to deliver the £ billions of investments that are needed. A stable and realistic regime for investors is central to any successful deliver of the energy transition.

In addition, experience in other sectors also demonstrates that sustained government involvement may be needed to achieve the increases in scale and coverage necessary to reduce costs and deliver innovations with offshore wind being the obvious example. A similar degree of commitment will be needed for carbon capture and the development of hydrogen supply

Question 9 (Behaviour change): How far can people's behaviours and decisions change over time in a way that will reduce emissions, within a supportive policy environment and sustained global effort to tackle climate change?

Experience suggests that climate policies have been more successful when they take account of consumer preferences and are in tune with the requirements of households and businesses. Efforts to shift or supress these preferences have had a mixed record and also have the potential to conflict or duplicate wider polices or to unhelpfully absorb the attention of major decision makers in business and in government. For example, it is clear that domestic consumers are comfortable and familiar with heating using gas, which has a track record and history going back more than fifty years.

Developing future low carbon heating systems will need to work with these embedded preferences and also make use of the accumulated expertise of the thousands of gas engineers and plumbers in the UK rather than seeking to replace this wholesale with a different technology paradigm. Likewise, policies need to recognise that the existing housing stock in the UK will not change substantially and that changes will be driven by millions of individual decisions. Policies to influence these directly have not been particularly successful or good value for money.

Affordability also remains an important parameter. This applies to both commercial and industrial consumers. Electricity costs consumers at least three times more per kWh than gas and although the efficiency of heat pumps can offset this, the use of this technology is not likely to be suitable for a large proportion of the existing housing stock. Similarly, industrial gas prices are less than one third of industrial electricity prices and many energy intensive industries operate in highly competitive global markets, with small margins.

Question 10 (Policy): Including the role for government policy, how can the required changes be delivered to meet a net-zero target (or tightened 2050 targets) in the UK?

Please see the Policy Recommendation Section of our Energy Transition Outlook report

https://oilandgasuk.co.uk/energy-transition-outlook-2018/

Part 4: Costs, risks and opportunities

Question 11 (Costs, risks and opportunities): How would the costs, risks and economic opportunities associated with cutting emissions change should tighter UK targets be set, especially where these are set at the limits of known technological achievability?

Please see response to question 3

Part 5: Devolved Administrations

Question 13 (Devolved Administrations): What differences in circumstances between England, Wales, Scotland and Northern Ireland should be reflected in the Committee's advice on long-term targets for the Devolved Administrations?

There is a good case for some aspects of energy policy to be dealt with by devolved administrations and local authorities. This allows for initiatives to be tailored to local situations and advantages. The Hydrogen initiatives in Aberdeen are a good example of this. This approach could be usefully extended to, for example, other policy areas relating to e.g. renewable heat or energy efficiency where the nature of the local housing stock and businesses is likely to be important and where centralised schemes at UK level have struggled to achieve the expected impact.

Developing some areas of energy policy would allow central UK government to concentrate on the major strategic decisions around sustained support for key technologies like CCUS and Hydrogen and developing a regime for carbon pricing after the UK has left the EU.