



*Carbon Capture &  
Storage Association*

## **Ofgem: RIIO-2 Framework Consultation**

### **Response by the Carbon Capture and Storage Association**

The Carbon Capture and Storage Association (CCSA) is pleased to provide evidence to Ofgem in response to its consultation on the RIIO-2 framework. The CCSA brings together a wide range of specialist companies across the spectrum of CCS technology, as well as a variety of support services to the energy sector. The CCSA exists to represent the interests of its members in promoting the business of Carbon Capture and Storage (CCS) and to assist policy developments in the UK, EU and internationally towards a long-term regulatory framework for CCS as a means of abating carbon dioxide (CO<sub>2</sub>) emissions.

### **Introduction**

In the context of this consultation, the CCSA represents a range of organisations with an interest in CCS for a wide range of applications including reducing industrial emissions, producing low carbon heat, and low carbon power generation. The successful application of CCS in the heat and power sectors relies heavily on energy networks, and of particular interest is the retention of the UK's upgraded gas networks in order to enable the widest range of decarbonisation options for the UK's heat sector in the 2020s and beyond. The CCSA supports the innovative projects being brought forward by gas network operators to explore possibilities for low carbon hydrogen to replace natural gas for domestic and industrial heat, and welcomes Ofgem's role in supporting this innovation to date through RIIO-1.

The Government is currently undergoing a strategic review of options to decarbonise the heat sector, with the intention of being able to take a strategic decision in the early 2020s. A key part of this decision will be the extent to which the gas networks are repurposed for use with low-carbon hydrogen.

It has been demonstrated that the cost of a fully electrified heating system could be up to three times the amount of repurposing the existing gas grid, due to the need to decommission gas infrastructure and significantly reinforce electricity networks. This could amount to an additional cost to the consumer of over £200bn to 2050<sup>1</sup>. Low-carbon hydrogen created through Steam Methane Reforming or Autothermal Reforming of natural gas or other fossil fuels with CCS is currently the preferred way of producing the volumes of low carbon gas that would be needed. Hydrogen can also be produced at scale through gasification of solid fuels including heavy fuel oil and biomass. The production of hydrogen through gasification of biomass with CCS could unlock negative emissions, with additional value to a decarbonised energy system.

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<sup>1</sup> KPMG, 2050 Energy Scenarios: The UK Gas Networks role in a 2050 whole energy system, 2016

Therefore policy development around CCS and heat are closely linked. It is important the gas and electricity networks are able to keep all options open until a strategic decision is taken.

### **Length of price control**

**Q2 Do you agree with our preferred position to set the price control for a five-year period, but with the flexibility to set some allowances over a longer period, if companies can present a compelling justification, such as on innovation or efficiency grounds?**

**What type of cost categories should be set over a longer period?**

It is important to ensure that companies are delivering services fit for a low carbon future, which necessitates looking beyond the next price control period whether this is 5 or 8 years.

To meet its legally binding commitments under the Climate Change Act the UK will need to rapidly decarbonise heating from the mid- 2020s into the 2030s<sup>2</sup>, so allowing for innovation to take place now to maximise options for delivering low carbon heat cost effectively in the future will be essential.

The Government is currently undergoing a heat options strategic review, with the intention of being able to take a strategic decision on the decarbonisation of domestic heat in the early 2020s. A key part of this decision will be the extent to which the gas networks are repurposed for use with hydrogen. The Oxburgh Report on CCS in the UK estimated that if hydrogen were to be chosen, to begin implementation work in the 2029-2037 regulated period would require considerable planning and development work to be performed in the 2021-2029 period<sup>3</sup>.

Other work has shown that hydrogen can be used in the near term to decarbonise heat in industry and hydrogen can be injected at low levels as a blend with gas enabling infrastructure to be created in the early 2020s. This infrastructure can then be progressively expanded throughout the 2020s to enable large scale CCUS in the 2030s.

Therefore, the CCSA would either support longer price control periods or the flexibility to set allowances over a longer period to enable the required innovation and strategic planning to take place. Furthermore, given the potential for major policy decisions to be taken soon after the start of the next price control, there could be justification for an uncertainty mechanism to enable changes to be made.

For example, if a decision is taken to pursue 100% hydrogen for heat, this would affect the materials used when upgrades are made to the gas networks during the price control period to ensure these are compatible with hydrogen, which could affect costs. Operators could also take early steps to ensure parts of the network could be isolated to facilitate a switchover by adding in extra valves during maintenance works.

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<sup>2</sup> Committee on Climate Change, Next steps for UK heat policy, October 2016  
<https://www.theccc.org.uk/publication/next-steps-for-uk-heat-policy/>

<sup>3</sup> Parliamentary Advisory Group on CCS, Lowest cost decarbonisation for the UK: the critical role of CCS, 2016

## **Innovation**

**Question Q11. Do you agree with our proposal to retain dedicated innovation funding, limited to innovation projects which might not otherwise be delivered under the core RIIO-2 framework?**

The CCSA strongly supports the proposal to retain dedicated innovation funding and to target this effectively to projects which might not otherwise be delivered. The innovation stimulus has had a significant impact on driving innovation within gas networks that in the area of decarbonisation.

The Leeds H21 project, which has contributed significantly to exploring the potential for a 100% hydrogen heat network, Cadent's proposals for a Liverpool- Manchester hydrogen cluster and SGN's 100% Hydrogen Project have all been formulated and enabled by funding from the Network Innovation Allowance. These projects are contributing to addressing one of the biggest challenges facing the UK economy in the near future: how to decarbonise the UK's gas-dominated heat sector at reasonable cost to the consumer. These contributions are vital to maintaining options for decarbonising heat while future government policy remains uncertain. Currently the incentives outside of the RIIO framework for networks to invest in decarbonisation activity in the immediate term are few, although ability to decarbonise will be critical to the future of the gas networks and the continued use of gas as a key energy vector.

It is recommended that the scope of the RIIO innovation funding is widened to support the delivery of early innovative emissions reduction projects. In the absence of new support mechanisms ( which would require primary legislation in an already overcrowded legislative programme) RIIO funding may well provide the only way in which the key projects listed above, and other key first of a kind projects, can move forward. Such projects are crucial to the continued use of gas and the gas network and should be strongly supported by Ofgem in view of their ability to contribute significantly to the UK's climate change commitments.

**Q12. Do you agree with our three broad areas of reform: i) increased alignment of funds to support critical issues associated with the energy transition challenges ii) greater coordination with wider public sector innovation funding and support and iii) increased third party engagement and (including potentially exploring direct access to RIIO innovation funding)?**

- i) The CCSA welcomes that Ofgem identifies the decarbonisation of the gas grid as one of the key challenges that will need to be addressed by the networks, and the recognition that there may be less natural incentives to innovate in this area within the time period of the next price control period. Ultimately the gas networks will need to decarbonise to continue to have value in a low carbon economy, but given the timeframes set out by government and the Committee on Climate Change for significant heat decarbonisation, it is unlikely the necessary innovation would take place now without targeted innovation funding.

- ii) While it can be useful to ensure funding is complementary to other sources of public sector support, the CCSA believes network-specific innovation funding must be retained and expanded, given the challenge gas networks face in the transition to a low-carbon economy. In particular consideration should be given to the use of RIIO funding to support early deployment projects which introduce low carbon gas and are critical to the long term development of a low carbon gas network. For many other projects no other sources of funding which have the potential to socialise costs across users exist.
- iii) CCUS is a key component in the least-cost pathway to decarbonise heat. It is therefore critical that future investments in network innovation are aligned with other complimentary sectors including CCS, as part of a wider energy strategy. This will necessitate close collaboration with third parties. However, networks should have a demonstrable role in any project that has access to RIIO funding.

### **Fair returns and financeability**

#### **Q45. What are your views on each of the options to ensure fair returns we have described?**

The CCSA does not support the option of anchoring returns which is set out in the consultation document. Anchoring could disincentivise companies from working together to address strategic long term challenges as they would be more likely to compete to find innovations that could improve their own performance in the short term.