SCCS submission

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Submission to Energy and Climate Change Committee inquiry

Leaving the EU: implications for UK climate policy

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1 Identification

Scottish Carbon Capture & Storage (SCCS) is the largest Carbon Capture and Storage (CCS) research group in the UK. Our internationally renowned researchers work across the full CCS chain. Founded in 2005, SCCS is a partnership of British Geological Survey, Heriot-Watt University, University of Aberdeen, the University of Edinburgh and the University of Strathclyde working together with universities across Scotland. We are currently funded by the Scottish Funding Council.

2 Executive Summary

- The UK has consistently played a leading role in supporting and delivering strong EU climate change action, including the creation of EU CCS development policy and supporting policies.
- CCS deployment across multiple sectors is critical to meeting UK, EU and international objectives to mitigate climate change. The UK has a European-scale strategic asset in geological CO_2 storage and subsurface industry expertise.
- The EU Emissions Trading System (EU-ETS) is a key policy for supporting CCS deployment. The UK has been instrumental in guiding its improvement and creating direct funding for CCS from New Entrants' Reserve scheme revenues and the forthcoming Innovation Fund. The UK's exit from the EU-ETS would be hugely disrupting and would result in the loss of access to these substantial funds. We strongly advocate that the UK remains within the EU-ETS and retains eligibility for the Innovation Fund.
- EU climate legislation largely complements and supports the UK's domestic climate legislation. Continued collaboration and coordination on climate policy is necessary and will bring substantial mutual benefit. Misalignment of UK and EU climate mitigation objectives would damage low-carbon developer and investor confidence, and the UK Government should be mindful to avoid any uncertainty with respect to UK legislation, which has been framed with reference to EU legislation.

3 Context

The EU referendum result and the expectation of some degree of exit from the EU have huge potential implications for the UK's climate change policy. There is little clarity as yet on the structure of future UK-EU relations, including involvement in EU climate objectives and wide-ranging associated policies. In our submission, we focus on the role of the UK and the EU in Carbon Capture and Storage (CCS) research, development, demonstration and support towards deployment, and suggest that both continue to cooperate and collaborate on CCS for mutual benefit.

There is strong consensus that the economy-wide decarbonisation necessary to address climate change at national, EU and international scales is reliant on CCS deployment in order to facilitate deep decarbonisation across multiple sectors, including power, industry, heat and transport[1]. CCS is critical to realising international (UNFCCC Paris Agreement), EU (40% by 2030 on pathway to 80-95% by 2050)[2], and UK (Climate Change Act, fifth and future carbon budgets)[3] emissions reduction objectives. The UK's decarbonisation pathways rely on widespread CCS deployment across sectors in the early 2030s. This requires development of a delivery strategy and the establishment of initial projects and infrastructures during this Parliament[4].

The UK has consistently played a leading role in supporting and delivering strong EU climate change action. This has included UK-led successful advocacy, both in Council and by UK MEPs, for European CCS development and support policies. These include EU legislation (EU-ETS and amendment by the 2009 CO_2 Storage Directive), research and development funding (Framework Programmes and Horizon 2020), demonstration project funding (European Energy Programme for Recovery, New Entrants' Reserve 300 and forthcoming Innovation Fund), CO_2 transport infrastructure funding (Projects of Common Interest), and international CCS collaborations (e.g. EU-UK-China Near Zero Emissions Coal).

The UK Government's withdrawal of capital funding from its CCS Commercialisation Programme in the November 2015 spending review was a major setback for UK – and EU – CCS development. Nonetheless, the need for and potential value of CCS in the UK remains substantial. In particular, the UK offshore has huge, well-characterised and accessible geological CO_2 storage capacity (estimated at around 78 gigatonnes[5]) and experienced subsurface industries. These combine to provide the largest, most reliable and deliverable CO_2 storage resource in Europe and, as such, are widely recognised as a Europe-wide strategic asset.

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[1] Intergovernmental Panel on Climate Change, *Synthesis Report Summary for Policymakers*, 2014 https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf

[2] *EU Commission Energy Roadmap 2050* https://ec.europa.eu/energy/sites/ener/files/documents/2012_energy_roadmap_2050_en_0.pdf

[3] *The Fifth Carbon Budget: The next step towards a low-carbon economy*, UK Committee on Climate Change, November 2015 https://documents.theccc.org.uk/wp-content/uploads/2015/11/Committee-on-Climate-Change-Fifth-Carbon-Budget-Report.pdf

[4] *A Strategic Approach to CCS*, open letter by UK Committee on Climate Change, July 2016 https://www.theccc.org.uk/wp-content/uploads/2016/07/Letter-to-Rt-Hon-Amber-Rudd-CCS.pdf

[5] www.co2stored.co.uk

4 What role has the UK played within the EU in terms of driving the bloc's international climate change ambitions?

The UK has played a substantial role in supporting and securing an ambitious climate change agenda both within the EU and internationally. With specific regard to CCS, UK leadership established the EU CCS demonstration ambition (EU Council 2007) and enabling legislation (CO_2 Storage Directive (2009/31/EC)) and demonstration funding (European Energy Programme for Recovery, New Entrants' Reserve 300).

Market and domestic political difficulties have so far prevented the realisation of EU CCS demonstration projects. However, the UK-led EU ambition was influential in the creation of parallel CCS demonstration objectives and programmes worldwide, including in the US and Canada, where operational CCS projects are now proving and advancing CCS technologies. Similarly, UK leadership resulted in the EU successfully supporting the case for CCS eligibility under the Kyoto Protocol Clean Development Mechanism.

It is of great concern that, without the UK's ongoing leadership and advocacy role, the EU's perspective on CCS will weaken. This could have serious consequences with regard to achieving the EU's decarbonisation ambitions necessary to fulfil international commitments. In particular, the decarbonisation of high-emission industries, for which CCS is the only practicable option, is needed to meet EU emissions reduction targets. Failure to advance a programme for industrial CCS deployment could increasingly undermine delivery of EU emissions targets (it is unlikely that Member States will tolerate closure of these high-value sectors), and impact the EU's corresponding international leadership on climate change mitigation action.

5 What should the Government's priorities be on the EU Emissions Trading System when negotiating the UK's exit from the EU? What would a successful negotiation outcome look like?

The intention of the EU-ETS is to drive decarbonisation of emissions efficiently across participating sectors and incentivise low-carbon investment. It is of critical importance for CCS as, unlike the additional investment support provided for renewable energy technologies by Feed-in Tariffs, it was envisaged that the EU-ETS alone would make the market case for CCS investment. The much lower than anticipated EU-ETS carbon price and uncertainty over its future trajectory has resulted in market failure for CCS. The UK has been instrumental in advocating for structural reforms to the system to help address these issues.

From a perspective of supporting investment in CCS, the requirements from an ETS are for a higher carbon price (at least €40) with a well-defined and stable upward trajectory, and fair conditions, informed by science, for licensing and liability for stored CO_2. Additionally, this needs to be underpinned by an investment strategy, perhaps by re-investment of ETS revenues, to create the enabling CO_2 transport and storage infrastructure in strategic regional hubs rather than loading these costs directly onto first-mover projects. Alongside this, the

issuance of free allowances to industry to compensate for carbon leakage risk requires reform. Its phasing out should be coordinated with the creation of regulatory and market measures to support and sustain investment in industrial CCS deployment.

With regard to future UK and EU-ETS interaction, the UK should seek to maintain stability and phase-alignment with the EU-ETS. Any (partial-) exit mid-phase would likely create widespread confusion in both the UK and EU, badly undermining the basic functioning of the EU-ETS and damaging confidence in climate mitigation policies and ambitions.

More broadly, should the UK exit the EU to some degree, there appear to be two options for the EU-ETS relationship: ongoing participation with some possible loss of influence in its future management and design or the creation of a UK-ETS, which would subsequently seek linkage with the EU-ETS. Theoretically, a UK-ETS could be designed to fulfil the CCS supporting requirements outlined above. However, in practice it is highly unlikely that such a system would be deliverable within the five to ten year timeframe necessary for CCS to contribute to UK carbon budgets.

Furthermore, the UK Government and its representatives have been instrumental in the creation of an Innovation Fund of 400 million or more allowances as part of the forthcoming EU-ETS Phase IV (2021-2030) to support CCS development. Exclusion of UK projects from this substantial funding would be of detriment to both the UK and EU as successful deployment of CCS across Europe is likely reliant on the development of the UK's offshore CO_2 storage assets.

Lastly, the UK is currently allocated €300M from the EU-ETS Phase III New Entrants' Reserve 300. This funding was assigned to the now cancelled White Rose CCS demonstration project in the UK CCS commercialisation programme. The status of this funding is now unclear, but we suggest that the UK should seek to ensure that it continues to be invested in strategic UK and European CCS development as a bridge towards the Innovation Fund – e.g. FEED studies for industrial capture clusters, CO_2 transport planning, maintenance of offshore assets for CO_2 storage, and/or CO_2 injection and storage testing.

Overall, we strongly advocate that the UK remains within the EU-ETS and seeks arrangements that continue to maximise UK influence on ETS reforms and retain eligibility for the forthcoming Innovation Fund.

6 What should be the Government's priorities in deciding which EU-led climate policies and legislation to retain?

EU climate policies and legislation are complementary to the UK's domestic commitments enshrined in the UK Climate Change Act and provide important alignment for low-carbon technology developers and investors across the EU market. With respect to the EU-ETS (see above), while far from perfect it nonetheless provides an important long-term framework and a key source of funding for CCS development. We strongly advocate continued participation in the EU-ETS.

The UK Government should also be mindful of the need to reflect the European Commission's Effort Sharing Decision role in providing a clear framework for stakeholders and investors in non-traded sectors. Here, while CCS is generally regarded as applicable to electricity generation and industry emissions, we note that CCS may also have a substantial role in enabling low-carbon heat and transport through hydrogen production. Any misalignment during or after UK (partial-) exit would create damaging uncertainty on climate objectives both in the UK and across the EU, where collaboration and cooperation is to necessary and substantial mutual benefit.

Lastly, the EU CO_2 Storage Directive underpins UK CO_2 storage legislation within the Energy Act. Any hiatus or uncertainty in UK CO_2 storage regulation would be hugely damaging to investor confidence and would likely incur substantial delays.