



Department for
Business, Energy
& Industrial Strategy

CCUS COUNCIL

Fourth meeting - summary

21 March 2019

Attendees

Co-chairs

- Claire Perry, Minister of State for Energy and Clean Growth and Co-Chair of the CCUS Council
- James Smith, Former Chair of the Carbon Trust and Co-Chair of the CCUS Council

Council members

- Roz Bulleid, Head of Climate, Energy and Environment, EEF
- Rodney Allam, 8 Rivers & NET Power
- Steinar Eikaas, Vice President – Low Carbon Solutions, Equinor (on behalf of Stephen Bull)
- Allan Baker, Global Head of Power Advisory & Project Finance, Societe Generale
- Frances Warburton, Director of Energy Systems Transition, Ofgem (on behalf of Dermot Nolan)
- Paul Booth, Chair, Tees Valley Local Enterprise Partnership
- Peter Whitton, MD Progressive Energy for Cadent, (on behalf of Simon Fairman)
- Stuart Haszeldine, Director, Scottish CCS
- Sinead Lynch, UK Country Chair, Shell
- David Reiner, Senior Lecturer in Technology Policy, Cambridge University
- Peter Mather, Group Regional President, Europe & Head of Country, UK, BP (on behalf of Dominic Emery)
- Cathy McClay, Head of Future Markets, National Grid (on behalf of Fintan Slye)
- Charlotte Morgan, Partner, Linklaters
- Tom Shields, Acting Chair, Chemical Sciences Scotland Industry Leadership Group
- Lawrence Slade, Chief Executive, Energy UK
- Colin McGill, Project Director, OGCI Climate Investments (on behalf of Pratima Rangarajan)
- Laura Sandys, Chief Executive, Challenging Ideas
- Fiona Wild, Vice President Sustainability and Climate Change, BHP
- Guloren Turan, General Manager, Advocacy, GCCSI (on behalf of Brad Page)
- Luke Warren, CEO, CCS Association

Observers

- Matt Taylor, Deputy Director, Carbon Capture and Renewable Sectors, BEIS
- Will Lochhead, Head of CCUS Policy Team, BEIS
- Andrew Russell, CCUS Policy Team, BEIS
- John Waldron, CCUS Policy Team, BEIS
- Jason Golder, The Crown Estate,
- Sian Wilson, The Crown Estate Scotland
- Ed Hadley, HM Treasury
- John Scowcroft, Global CCS Institute

- Mahamad Ahmed, Oil and Gas Authority
- Stuart McKay, Scottish Government
- Kevin Friis, Welsh Government
- Patrick Dixon, Project Manager, CCUS Advisory Group
- Paul Davies, Chair, CCUS Advisory Group

Apologies

- Dermot Nolan, CEO, Ofgem
- Dominic Emery, Vice President for Strategic Planning, BP
- Dustin Benton, Policy Director, Green Alliance
- Fintan Slye, Director of UK System Operator, National Grid
- Brad Page, CEO, Global CCS Institute
- Pratima Rangarajan, CEO, OGCI Climate Investments

Introduction from James Smith

- James Smith, CCUS Council Co-Chair, began the Council meeting by describing the momentum that has been built up on CCUS since the beginning of 2018, commenting on the outstanding CCUS Cost Challenge Taskforce Report, and the equally high quality CCUS Action Plan that the Government produced shortly after the November Council meeting.
- James mentioned that the set-up of the CCUS Advisory Group is timely and would continue that momentum and stated how important CCUS is in order to support UK decarbonisation.
- James described how the CCUS Council should be thinking about the “exam questions” that need to be answered on decarbonisation and the role of CCUS.

Opening remarks from Minister Claire Perry

- Minister of State Claire Perry described the progress that has been made since the last Council, with particular emphasis on the International CCUS Summit and Conference in Edinburgh in November 2018.
- Minister Perry described how the CCUS Action Plan sets out the detailed steps we need to undertake to overcome the barriers to CCUS deployment in the UK and highlighted the Government’s continued commitment to tackling hard to decarbonise sectors in the Chancellor’s spring statement.
- Minister Perry also highlighted the UK’s Industrial Clusters Mission to establish the world’s first net-zero industrial cluster by 2040 backed by up to £170 million from the Industrial Strategy Challenge Fund.
- The Minister outlined that government and industry need to work in partnership and announced the establishment of the CCUS Advisory Group (CAG).
- Minister Perry reminded the Council that establishing business models which will deliver the first CCUS project in the UK is a key priority for 2019.

CCUS Action Plan

- Matthew Taylor updated the Council on the government’s publication of the CCUS Deployment Pathway: An Action Plan.
- Matthew provided an update on the Department’s progress in delivering against the Action Plan.
- Matthew outlined that the period from now until December will be critical in establishing the future policy framework for supporting CCUS in the UK and encouraged timely input from industry through the CAG.
- The Council agreed that there should be a future agenda item on ‘Engagement and Communications’ and for members of the Council to engage BEIS on this.

Formation of the CCUS Advisory Group

- Paul Davies (CAG Chair) and Patrick Dixon (Project Manager) introduced the CAG to the Council.

The Council highlighted several areas that the CAG should focus on and James Smith concluded the item by recommending a meeting between the CAG and Council in June.

Review of Delivery and Investment Frameworks

- Matthew Taylor opened up a Council discussion on CCUS in power, industry and CO2 transport and storage. The Council welcomed the opportunity to discuss these issues.
- The questions that were posed to the Council in advance and key discussion points were as follows:

Power:

'We would welcome the Council's views on the position of power CCUS in the merit order, as well as their views on the implications of incentivising baseload and flexible generation separately?'

- There was a wide-ranging discussion on whether CCUS in Power would need to be baseload or flexible:
 - Cathy McClay said that for National Grid to be able to operate a low carbon grid there needs to be flexible CCUS deployed on the system, preferably by the mid-2020s.
 - Several Council members stated that the flexibility CCUS can offer in the power sector was one of the key benefits of the technology and we would be losing a key part of the argument for incentivising CCUS if it was only used to provide baseload generation.
 - Colin McGill agreed with this sentiment but emphasised that a CCUS Power project must come first amongst fossil fuel generators in the merit order.
 - Charlotte Morgan said that we need a model that allows for flexible generation, but it must be financeable. Charlotte described a proposal for a 'graded CfD' to ensure that projects can attract investment, including three elements:
 - A base availability payment
 - A T&S pass through payment
 - A flexible payment based on generation, which could also be linked to fuel costs.
 - Some other members of the Council suggested it may be better to incentivise baseload CCUS generation and then flexibility can be applied by using excess power, for instance to create hydrogen, so that power generated by these CCUS plants does not displace other renewables such as wind.

Transport and storage:

'How can interface risks between capture operators and T&S operators be dealt with effectively? For instance, what mechanisms should be put in place to ensure all parties are fairly treated in scenarios where either the capture or the T&S facility are unavailable?'

'Where are storage monitoring costs, and leakage liabilities best placed and should this change over time (e.g. post-operation)? Should these liabilities be capped?'

- The Council discussed the two questions with the focus of discussions around risk allocation and risk mitigation
 - Charlotte Morgan explained that if you want private sector to finance T&S then you need part of liability with the private sector but this must be capped and not include long term liabilities. There is a need for any model to be about when liabilities need to be borne by HMG as otherwise the private sector cannot cost it. The Thames Tideway model demonstrates how irreducible risks fall to HMG.
 - John Scowcroft noted that it is hard to quantify CO2 leakage in 50/60years' time and there is no guarantee that operators will be around then; therefore, no company can be expected to take that risk. However, with technological innovation over this period that risk will not be great for HMG.
 - The Council discussed interface risk between CO2 capturers and the T&S operator and that focusing on both parts of the chain is vital to remove doubts and realise FID for projects.
 - Members discussed whether the model should be designed for one project or a system of projects. The advantage of a cluster design is that you build flexibility and increase the ability to mitigate CO2 leakage risks.

Industry:

'Following the research project led by Element Energy on industrial carbon capture business models, we are developing our thinking on a range of business models, and would welcome Council Members' views on which models would be most applicable to achieving our aims of commissioning the first facility from the mid-2020s, to deliver CCUS at scale in industry from the 2030s'.

- There was a wide-ranging discussion on the need to deliver industrial decarbonisation and what was the appropriate model to deliver this:
 - Peter Whitton outlined the need for urgency as industrial CCUS is possible now at the cheapest cost of abatement (£25/tonne) but if action is delayed industry will have gone.
 - Charlotte Morgan stated that you need to understand what you are trying to achieve and also consider how to get new plant into the UK – which you can with CCUS deployment.

- The Council discussed the CCTF recommendation around tax credits, with a consensus that this mechanism could work, that it is a quick way to deliver as if you don't build CCUS infrastructure you don't get paid, and that it can drive businesses with multiple sites and equipment to take action across the business. Making tax credit transferable, at different price levels and across the life of the project (not US system) will help and if tax credit is linked to the amount of carbon abated there could be state aid advantages.
- The Council agreed a Certificates model could be feasible in the longer term
- Members discussed the RAB model and revenue recovery. Concerns were raised that RAB can deal with revenue assurance but it depends on who pays, as the model requires consistent revenue recovery. Pricing mechanisms to consider could include the Ramsey pricing approach, the gas network example or the use of a single till mechanism.
- Members highlighted that cost of capital and CO2 capture varies for different operators and could be very high for EILs so any model needs to bring EILs along. The Element Energy report was cited as providing good clarity on this.

Summary of agreed actions and next steps

- A sub-group will be formed to consider CCUS Engagement and Communications and will consider public perception.
- Consideration will be given to a process for reporting and updates between the CCUS Advisory Group to the CCUS Council.
- A future CCUS Council will discuss the deployment pathway in light of the CCC's 1.5 degrees report.
- The next meeting of the CCUS Council is scheduled to be held in July.