

Minutes of the fifth Carbon Capture and Storage Development Forum held on 1st May 2012

Chair: Charles Hendry, Minister of State, Department of Energy & Climate Change

Welcome by the Chair

The Minister welcomed members of the forum and outlined the agenda.

The Minister noted key events since the last Development Forum including the two Industry Days, the launch of the CCS Commercialisation Programme and publication of the CCS Roadmap.

The Minister and said he wanted to capitalise on these events and to discuss how this coherent package could be used as a platform going forward.

The Minister welcomed John Scowcroft, Global CCS Institute; Jill Duggan, Doosan Power Systems; and Patrick Dixon, Expert Chair OCCS.

Introductory Remarks by Patrick Dixon, Expert Chair OCCS

Patrick Dixon highlighted that, as Expert Chair, he remained independent from OCCS and that this was key to his role. He acknowledged the history of those seeking to get CCS off the ground and commented that the delivery by OCCS since his arrival had been extraordinary. Whilst the outcome from the CCS competition needed to stand on its merits it should not be viewed as an end in itself. Therefore, he was beginning to focus on investment needed post competition.

The Minister acknowledged the importance of Mr Dixon's role as Expert Chair and encouraged Forum members to engage with him.

Introductory comments, Charles Hendry

The Minister made clear that, in line with the need to ensure fair engagement in the CCS Commercialisation Programme Competition, no comment would be made at the Forum about the competition beyond information already in the public domain. The Minister therefore asked members not to put forward queries relating to bids.

With regard to the future programme, the Minister emphasised that the challenge of development and deployment of CCS should be shared by the whole CCS community – government, industry and regulators. The intention was to achieve a new world-leading UK CCS industry that could compete with other low-carbon sources to ensure security and diversity of the electricity supply, and that could make energy intensive industries cleaner and bring jobs and wealth to the UK.

The recently published CCS Roadmap set out the package of measures to bring down the costs of CCS and enable deployment. The package consisted of:

- **The CCS Commercialisation Programme** – the competition with £1bn in upfront capital funding and additional support during the operational period, subject to affordability, through Contracts for Difference;
- **£125m over four years to support research and development** including a new UK CCS Research Centre to bring down the cost of components and take forward new innovative technologies and techniques;
- **Long-term Contracts for Difference through Electricity Market Reforms** to provide the stable financial incentives needed to drive in commercial scale CCS in the 2020s;
- **Commitments to working with industry to address barriers to deployment** including developing the skills and supply chain, development of a storage strategy and assisting the development of CCS infrastructure;
- **A collaborative approach to international engagement** to share knowledge and learn from work in other countries. This included the £60m to support CCS in emerging markets, announced at the Clean Energy Ministerial 25th/26th April 2012.

The Minister highlighted the shared challenge, made more difficult given the fiscal climate. He signalled that the package of support was one of the best offers from

any government in the world and that it needed to be used to bring down the cost of CCS.

The Minister announced that Dr Jeff Chapman, CEO Carbon Capture and Storage Association, had been invited and agreed to chair the CCS Cost Reduction Task Force. The Task Force would look beyond the current competition and early projects, to develop an industry view of what needed to be done to ensure rapid cost reduction of CCS. The Task Force would report in early 2013. To inform the work of the Task Force, Mott MacDonald had been commissioned to undertake a review of existing material on the costs of CCS.

UK CCS Roadmap, Adam Dawson, CEO OCCS

Adam Dawson spoke about the CCS Roadmap and the importance of it to the CCS Community. He also signalled the importance of maintaining energy and enthusiasm when selection of projects through the CCS Commercialisation Programme was complete. He explained that the Roadmap provided a framework of objectives for creating cost-competitive CCS and a viable and sustainable industry:

- **Reducing the costs and risks** so that CCS is cost-competitive with other low carbon technologies;
- **Putting in place the market frameworks** to enable CCS to be deployed by the private sector cost effectively; and
- **Removing key barriers** to the deployment of CCS.

Adam then discussed in more detail the package of measures set out through the Roadmap.

- The **CCS Commercialisation Programme** had generated an encouraging degree of interest (receiving double digit bidder sign-ups). OCCS was aware of stakeholders' eagerness for the competition to make rapid progress.
- Delivery of the £125m **Research and Development** package was recently evident through the launch of the £20m Innovation Competition on 13th March 2012 (which included an invitation to use CO₂ from pilot projects) and establishment of the CCS UK Research Centre.

- OCCS was ensuring that low carbon fossil fuels were recognised in the **Electricity Market Reforms**, including exploration of how Contracts for Difference could be made to work in early projects and the need to manage fuel price risk.
- The work already underway to look at storage liability as part of commitments to **tackle barriers to deployment** of CCS.
- The value or project to project learning to progress CCS **internationally**.

Adam concluded by asking the Forum to hold OCCS to account in delivery of the Roadmap Action Plan.

Comments by Colin Imrie, Deputy Director Energy Markets, Scottish Government

Colin stated the Scottish Government strongly welcomed recent announcements, especially in relation to the Contracts for Difference, and signalled the commitment to work with DECC. He emphasised expertise in Scotland, and the potential for clusters and Enhanced Oil Recovery, and acknowledged the work done internationally to maintain UK's leadership position on CCS

Issues raised by Forum Members

- Access to the £60m available through the International Climate Fund. In response it was made clear that the Asian Development Bank and World Bank were expected to play key roles and that Forum members should direct queries to Adam Dawson.
- A concern that grandfathering the Emissions Performance Standard to 2045 might lead to high levels of unabated gas. Emphasis was put on the importance of the gas generation strategy, due in the Autumn. The Minister made clear that there was a need to ensure security of supply and that Government was aware of a related need to address concerns from the sector about the risks of introducing a retrospective Emissions Performance Standard.

Mott MacDonald Costs Study Discussion Paper , Guy Doyle, Chief Economist, Mott McDonald

Mott MacDonald had been commissioned to prepare a discussion paper reviewing the scope for further cost reduction in CCS in the UK to inform the work of the Cost Reduction Task Force . The work would be made available on the OCCS pages of the DECC website and would inform the work of the Cost Reduction Task Force.

Guy Doyle, Mott MacDonald, presented slides (see attached). He outlined existing information available on costs; estimates associated with early commercial scale projects; evidence from comparator technologies and analysis of cost projections; and the key areas offering scope for cost reductions.

Cost Reduction Task Force, Dr Jeff Chapman, CEO CCSA

Dr Jeff Chapman had accepted the role as Chair of the Cost Reduction Task Force. Dr Chapman stated that the first official meeting would be in July but would be preceded by preliminary discussions. The intention was to publish an interim report in Autumn 2012 with a final report published early 2013. The Task Force would build on the work by Mott MacDonald and, provisionally, progress three workstreams:

- **Planning and Infrastructure** - focussing on optimising pipeline routes;
- **Commercial Issues** - to drive out costs from commercial arrangements including through the right financial models and contracts, ways to capitalise projects and risk allocation and insurance; and
- **Capture technology** - with the biggest impact expected to relate to parasitic load and dispatch-ability.

The Task Force would also look at industrial applications and R&D opportunities. Membership would be by invitation with some Forum members signalling interest.

OCCS Report , Adam Dawson, CEO OCCS

Mr Dawson set out the key achievements since the last meeting (see OCCS report, attached).

The Minister invited Stuart Haszeldine, Edinburgh University, to comment on the UK Carbon Capture and Storage Research Centre (UKCCSRC). The centre would provide a single communication portal between academics and industry and had

been awarded funding for five years with more information available on the website www.ukccsrc.ac.uk.

Comments from Forum Members

- Interest was expressed in the work on storage liabilities with comments to the effect that there were technical and commercial risks to consider.
- There was acknowledgement of the need for a wider CCS programme beyond the CCS Commercialisation Programme. Adam Dawson highlighted the R&D programme, plans for Contracts for Difference as part of the wider Electricity Market Reforms; and the work of the Cost Reductions Task Force.

Closing remarks, Charles Hendry

The Minister concluded by acknowledging the positive position on CCS in the UK. There would now be a focus on the competition and work of the Cost Reduction Task Force. As a result there was a need to consider the structure of the Forum going forward and the Minister would write to members later in the year.