

CCS Cost Reduction Task Force

10.30-14.30, 19 March 2013

Held at the Shell Centre, London SE1 7NA

Minutes of the 8th meeting

Introduction

1. The Chair, Dr Jeff Chapman, welcomed all participants to the eighth meeting of the CCS Cost Reduction Task Force. The purpose of the meeting was to discuss issues set out in the gap analysis produced by Poyry for the four workstreams (Generation and Capture, Infrastructure, Commercial and Finance, Cross-Cutting Issues) in order to deliver the final report. The meeting would identify the actions currently being undertaken by Task Force members, the activities to be carried out to meet the gap between work underway and what is required to meet the Candidate Actions identified in the Interim Report of the Task Force actions, the timings of the actions and the candidates who will have lead responsibility.

Minutes of last meeting and actions

2. The minutes of the last meeting held on 18 February were agreed.
3. Actions arising from the last meeting:
 - Knowledge sharing network: DECC had discussed the Task Force's suggestion of a knowledge sharing network and was keen to engage with members to explore their ambitions for knowledge transfer. It was suggested that the CCSA should be involved in order develop work that was already in progress.
 - R&D support: DECC had discussed R&D funding with the Task Force lead on Generation and Capture following the last meeting and explored how industry engagement could influence the design of future calls for funding.

Final report update

4. A detailed gap analysis for each workstream had been produced by Poyry and circulated to all task Force members in advance of the meeting. Poyry presented a summarised account of all workstream activities showing the work currently underway, identified actions and next steps. Individual workshops had been held for each workstream. Specific actions had been identified for each workstream from the candidate actions

contained in the interim report. Poyry would produce a further draft of the gap analysis taking account of the points raised at the meeting.

5. At the start of the meeting a question was raised whether the Task Force might want to consider delaying the publication of the final report until the announcement on the CCS competition had been made. The date of the announcement was not yet known and a view was expressed that a slight delay in publication could allow the report to reflect on the outcome of the competition. After a short discussion it was agreed that the Task Force should proceed as intended and publish the report in the spring as planned.

Infrastructure

6. The specific actions set out in the gap analysis are:

- Maximising benefits of early transport and storage configurations
- Allow CO₂ injection into multiple stores
- Promote characterisation of CO₂ storage areas

7. It was noted in discussion that there were a number of links between other workstreams where issues would also be considered. It was commented that there needed to be clear emphasis on the actions needed to create storage hubs, without which the other actions would not result in the achievement of cost reductions. There was also discussion about the need for the actions scoped out in the gap analysis to focus directly on cost reductions to be achieved by the early 2020s.

8. The Task Force discussed the need for the creation of a new group that would work on characterisation of CO₂ storage and consider the potential of Enhanced Oil Recovery (EOR). It would work alongside The Crown Estate and report to DECC and the CCSA. This would form one of the recommendations of the Task Force's final report.

Generation and capture

9. The specific actions set out in the gap analysis are:

- Increase scale of generation and capture plant
- Optimise plant design requirements and specifications
- Examine benefits and downsides of generation and capture integration
- R&D funding for future technologies should continue

10. At the workshop there had been no significant changes in actions but they had agreed to deal with integration separately. It was recognised that most of the information

held was about projects in the 200-450MW range. For projects in the 600-1000MW range there was less information held, but more was needed as cost reductions would be achieved with greater scale. Large scale projects had the potential to be the most economic but would need incentives for project developers. The discussion stressed the importance of Government awarding sufficient levels of support through Contracts for difference and strong support for CCS projects under the Levy Control Framework.

11. The discussion also raised the need for a UK knowledge sharing network. Knowledge sharing would be an important aspect in realising cost reductions, drawing on lessons learned from the UK and international projects like Gassnova's Technology Centre at Mongstad in Norway and the Sask Power project at Saskatchewan in Canada.

12. It was agreed that a knowledge sharing seminar should be arranged as soon as possible. Once the FEED contracts in the CCS competition had been signed there should be the development of a Knowledge Sharing Network and the agreement of a knowledge sharing plan.

13. Consideration could also be given to publication of an article in a journal to share this with a wider industrial and academic audience - e.g. the IEA Green House Gas Journal. This would be discussed with DECC.

ACTION : Owain Tucker (Shell) to discuss with Louise Barr (DECC)

14. On R&D, it was generally agreed that industry needed to continue engage with Government on the design of future calls for funding. The Advanced Power Generators Technology Forum (APGTF) provided a useful forum to raise this.

Commercial & Financial

15. The specific actions set out in the gap analysis are:

- Developing business models for CCS cluster development
- Ensuring funding mechanisms are fit for purpose
- Continued involvement from financial and insurance sectors
- Creating bankable contracts

16. The workstream had considered CCS cluster development and felt this was an issue that would fall largely within the remit of the proposed CO2 Storage organisation.

17. Funding mechanisms were being considered and Scottish Enterprise were already working with Element Energy on a study.

18. The workstream had considered the need to encourage the finance and insurance sectors to provide finance to support CCS projects and the need to create a separate body that could facilitate these actions. The Task Force discussed the work currently being led by Ecofin in partnership with Societe Generale and the CCSA. They had already had a number of discussions with financial organisations and it was agreed that this work should continue and report back to the Task Force.

19. The workstream would also consider the Invitation to Participate in Discussions (ITPD) documentation on the DECC website and draft a case study as an example of how bankable contracts for CCS projects could be created.

Cross-Cutting Issues

20. The specific actions set out in the gap analysis are:

- Create policy and financing regimes for CCS industrial CO₂
- Continue to develop a UK CCS policy and regulatory framework
- Create a vision for further development of CCS in the UK
- Develop spatial planning and consenting regimes for the CCS industry
- Optimal strategy for locating CCS
- Assess wider energy system benefits
- The value of CCS flexibility to the power sector
- Create CO₂ EOR brownfield tax regime

21. The Cross-Cutting Issues workstream had considered a range of issues. The following main points were raised in discussion:

Industrial CCS: The CCSA were working with BIS and were due to meet with a BIS Minister to discuss options for incentivising industrial CCS

Policy and regulatory framework: The CCSA were engaging on a routine basis with DECC on regulatory issues. This also linked to a desire to see a 'vision' for CCS, although it was recognised that Government policy favoured presenting a range of scenarios rather a specific vision for individual low-carbon technologies – which would need to compete to become cost-competitive. The Task Force discussed whether the CCSA might want to review its strategy document to reflect any specific issues.

Location of CCS projects: The location of projects was closely linked to the creation of a 'vision' for CCS. The Task Force considered that a study would be needed, and it was noted that ETI had already had work underway on the Teesside region.

Wider system benefits: This linked to other aspects of the workstream, notably the creation of a 'vision' for CCS.

Value of flexibility of CCS: The Task Force considered that a study was needed on the value of CCS flexibility to the power sector. Poyry had already discussed the option with ETI and whether any work currently existed.

CO2 EOR Brownfield tax regime: Scottish CCS had agreed to carry out initial work and this would be followed up.

Publishing and printing

22. Preparation for publication of the final report was discussed and whether there would be a launch event with possible Ministerial involvement to coincide with publication.

23. Members were asked to consider any potential images that their companies held that could be used in the final report. Members who has not yet provided biographical details and a photograph for inclusion in the final report were asked to do so. The secretariat would follow-up with members.

ACTION: Members to consider potential images for inclusion in the final report and provide to Ian Donaldson (The Crown Estate).

ACTION : David Fielder (DECC) to follow-up with members to provide biographies and photographs.

Next steps

24. The need for a further meeting of the Task Force was discussed but a date was not yet set and additional work on the final report may be carried out by email. A meeting of the core group to discuss next steps would be arranged.

CCS Cost Reduction Task Force

10.30-13.30, 19 March 2013

Held at the Shell Centre, London SE1 7NA

Attendees

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|--------------------------|--|
| 1. Jeff Chapman | Chair |
| 2. Christopher Bryceland | Scottish Enterprise/Industry & Power Association |
| 3. David Clarke | ETI |
| 4. George Clements | SSE |
| 5. Patrick Dixon | DECC |
| 6. Jason Golder | The Crown Estate |
| 7. Jonathan Holyoak | DECC |
| 8. Bryony Livesey | Costain |
| 9. Wilfied Maas | Shell |
| 10. Alastair Rennie | AMEC |
| 11. Thomas Stringer | Alstom |
| 12. Owain Tucker | Shell |
| 13. Angela Whelan | Ecofin |

Consultants

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| 1. Phil Hare | Poyry |
| 2. Stuart Murray | Poyry |
| 3. Eligiusz Baumgart | Poyry |

Secretariat

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| 1. Ian Donaldson | The Crown Estate |
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| 2. John Overton | DECC |
| 3. Sarah Johnson | DECC |
| 4. David Fielder | DECC |

Apologies

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| 1. Allan Baker | Societe Generale |
| 2. Mike Farley | Scottish Enterprise/Industry & Power Association |
| 3. Leigh Hackett | Alstom |
| 4. Jonny Horsford | National Grid |
| 5. Stuart Haszledine | Scottish CCS |
| 6. Andy Houston | Poyry |
| 7. Colin Imrie | Scottish Government |
| 8. Chris Littlecott | Scottish CCS |
| 9. Max Mawby | BIS |
| 10. Richard Metcalfe | Norton Rose |
| 11. Ian Phillips | CO2 Deepstore |
| 12. Andy Read | E.ON |
| 13. Jim Ward | National Grid |
| 14. Luke Warren | CCSA |