

THE CCUS ADVISORY GROUP

TERMS OF REFERENCE

1. Context

- 1.1 The Government's CCUS Deployment Pathway: An Action Plan ("Action Plan") is designed to enable the UK's first CCUS facility to be commissioned from the mid-2020s in order to meet its commitment for the UK to have the option to deploy CCUS at scale during the 2030s subject to the costs coming down sufficiently. The Action Plan sets out a number of actions designed to enable this.
- 1.2 Central to this is Government's commitment to commence detailed engagement with industry on the critical challenges to delivering CCUS in the UK, focusing (at least initially) on: CCUS for industry (this can include hydrogen for industry or transport); CCUS for power; and carbon dioxide transport and storage infrastructure. It can include "full and part chain" projects as appropriate.
- 1.3 This reflects a desire of the Government and industry for detailed engagement to develop the cost structures, risk sharing arrangements and the necessary market mechanisms which create the stable investment framework necessary to deliver projects. Both the Government and industry see this as a necessary priority action to build mutual confidence that CCUS can play an affordable and potentially critical role in decarbonising the UK economy and support the Industrial Strategy.
- 1.4 This engagement will support and shape the Government's Review of Delivery and Investment Frameworks which will be consulted on in 2019 and the outcome published by the end of 2019. It will also be an important step in developing the analysis in relation to the Government's CCUS ambition set out in the Clean Growth Strategy and Action Plan.
- 1.5 To enable and progress this engagement and address these critical challenges, BEIS and industry will jointly establish a CCUS Advisory Group (the "Advisory Group")

2. The CCUS Advisory Group

- 2.1 The Advisory Group is designed to be an industry led group working in partnership with Government to advise on the critical challenges that face CCUS as identified in the Government's CCUS Deployment Pathway.
- 2.2 The work of the Advisory Group will be **problem solving and solutions focused**, bringing in specific expertise from across the CCUS industry and finance, combined with a public sector view of policy constraints and objectives. It will also include, where relevant, updates from other work BEIS may have commissioned to ensure consistency and integration, to make recommendations on developing the CCUS market in the UK, focusing initially on the market frameworks for CCUS.
- 2.3 For example, BEIS has committed to a review of the delivery and investment frameworks for CCUS to develop market-based frameworks that can best support investment in, and deployment of, CCUS. As such, a key role of the

Advisory Group will be to support and shape the Review with clear recommendations to BEIS that command market support.

2.4 The outputs from the Advisory Group will be short, targeted summaries on the critical challenges facing CCUS and the Advisory Group's analysis and recommendations on how these challenges can be met and at what cost and to whom. The outputs will be supported by clear and robust evidence, including the use of modelling and detailed costings where appropriate.

2.5 The Advisory Group will focus on the following areas:

Market frameworks for CCUS

- Develop, exemplify and advise on the business models proposed for CCUS investments principally focusing on industrial CCUS, power production and CO₂ transport and storage. Consideration should also be given to how the proposed business models interact with each other to minimise issues such as cross-chain risk.
- For each business model tested, the Advisory Group will identify and outline:
 - a) Revenue support mechanisms and who pays including consideration of the implications on taxpayers and/or bill payers¹. This should also consider the issue of balance sheet funding from Government and any contingent liabilities.
 - b) Risk allocation and risk management options (covered in more detail in the next section).
 - c) Ownership structures.
 - d) Capital financing structures (including development costs).
 - e) The likely cost of capital that will flow from each model and how each business model is likely to affect the overall cost of capital. Consideration of financiers' views on this would be welcome.
 - f) The legislative requirements for each business model (with the starting point to minimise or avoid primary legislation).
 - g) Advise on whether and how the business model, Government exposure and balance sheet treatment might evolve as the CCUS industry matures.

The Advisory Group will recommend initial business models and risk allocations for each sector, evaluated against a suite of public and private objectives, which although non-binding can then form the basis of subsequent costing by the Group and wider industry.

Risk allocation and risk management solutions

- For each business model tested for CCUS investments for industrial CCUS, power production and CO₂ transport and storage, the issue of risk allocation and risk management should be described in detail:
 - a) The options for risk allocation of CCUS clusters and how the options may impact price, contingent liabilities and balance sheet treatment.

¹ If a RAB model is recommended for CO₂ transport and storage, this should include how it will be funded for example, any balance sheet implications and contingent liabilities.

- b) Identify options for different risk allocations and risk management solutions for different types of CCUS clusters.
- c) Describe how the options for risk allocation framework can be flexible, and how they can evolve, this should include how this can be assessed and managed over time.
- d) Show the impact of each option on overall WACC/capital structures of developers, and the impact of each option on taxpayers, consumers.

This detailed analysis will, inter alia, allow Government to understand the balance sheet treatment of each of the models, with the objective that all or most clusters will be off Government's balance sheet.

Delivery capability:

- Describe the delivery capabilities needed in the UK to support deployment of CCUS (including Government, industry, projects and finance).
- Describe how these delivery capabilities can be created, and recommend the actions needed to create them.

Costings

- Provide ranges for the estimated costs (capex and opex) of prospective CCUS projects using the business models tested and related costs of capital. This can include engagement with potential industrial clusters which CCUS projects may be a key component of.
- Consider a suite of metrics that should be used to assess the possible range of CCUS projects, e.g. compare power with industry and then industry sub-sectors (including hydrogen); compare BECCS with gas CCUS.
- Provide quantified estimates of cost reduction trajectory from initial CCUS projects (including the range of possible projects).

Process

- Describe how competitive pressure can drive cost reduction and where and when other approaches, e.g. collaboration might prove more productive.
- Describe how productive competitive pressures can be maintained in CCUS in a framework which does not use a standard competitive government procurement process

3. Ways of working and resources

3.1 The Advisory Group will be chaired by an industry representative and supported by industry the CCS Association and BEIS.

3.2 It will be established and run for an initial 7 months (to 31 July 2019). BEIS and industry will review the Advisory Group's Terms of Reference and role in July 2019 to decide on the role of the Advisory Group after this point.

3.3 The Advisory Group's membership will be from industry and the finance sector and BEIS (proposed membership is at Annex A). Additional industry members willing to contribute resources to the group may be able to join.

- 3.4 The Advisory Group will meet fortnightly with sub-groups meeting on alternative weeks to progress actions. The fortnightly meetings will be held in compliance with Competition Law and attendees reminded of their Competition Law obligations at the start of each meeting. .
- 3.5 The Advisory Group will be resourced from in-kind contributions from its Members, with some funding from members to cover independent costs, advice, accommodation and admin.
- 3.6 The papers, findings and recommendations from the Advisory Group will be made available and will be based on wider industry engagement.