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# KEADBY 3 CARBON CAPTURE POWER STATION

A collaboration between **SSE Thermal** and **Equinor**

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**Planning Inspectorate Ref: EN010114**

**The Keadby 3 (Carbon Capture Equipped Gas Fired Generating Station) Order**

**Land at and in the vicinity of the Keadby Power Station site, Trentside, Keadby, North Lincolnshire**

# Applicant's Comments on Written Representations

**The Planning Act 2008**

**Applicant: Keadby Generation Limited**

**Date: February 2022**

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## GLOSSARY

| Abbreviation | Description |
|---|---|
| ADMS | Atmospheric Dispersion Modelling System |
| AGI | Above ground installation |
| AIL | Additional Abnormal Indivisible Load |
| AQMAU | Air Quality Modelling and Assessment Unit |
| BAT | Best available techniques |
| CCGT | Combined Cycle Gas Turbine |
| CCP | Carbon dioxide capture plant |
| CEMP | Construction Environmental Management Plan |
| CHP | Combined heat and power |
| DCO | Development Consent Order |
| EIA | Environmental Impact Assessment |
| ES | Environmental Statement |
| FFL | Finished floor level |
| FRA | Flood Risk Assessment |
| HP | High pressure |
| HRSG | Heat Recovery Steam Generator |
| LBMEP | Landscaping and Biodiversity Management and Enhancement Plan |
| MW | megawatts |
| NLC | North Lincolnshire Council |
| NSIP | Nationally Significant Infrastructure Project |
| PCC | Proposed Power and Carbon Capture |
| PINS | Planning Inspectorate, The |
| SoCG | Statement of Common Ground |
| WFD | Water Framework Directive |

| Abbreviation | Description |
|---|---|
| ZCH | Zero Carbon Humber |

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## APPENDICES

# 1.0 INTRODUCTION

## 1.1 Overview

1.1.1 This Applicant's Response to Examining Authority's Written Questions Responses (**Application Document Ref. 9.9**) has been prepared on behalf of Keadby Generation Limited ('the Applicant') which is a wholly owned subsidiary of SSE plc and Keadby with Althorpe Parish Council ('The Parish Council'). It forms part of the application (the 'Application') for a Development Consent Order (a 'DCO'), that has been submitted to the Secretary of State (the 'SoS') for Business, Energy and Industrial Strategy, under Section 37 of 'The Planning Act 2008' (the '2008 Act').

1.1.2 The Applicant is seeking development consent for the construction, operation and maintenance of a new low carbon Combined Cycle Gas Turbine (CCGT) Generating Station ('the Proposed Development') on land at, and in the vicinity of, the existing Keadby Power Station, Trentside, Keadby, Scunthorpe, DN17 3EF (the 'Proposed Development Site').

1.1.3 The Proposed Development is a new electricity generating station of up to 910 megawatts (MW) gross electrical output, equipped with carbon capture and compression plant and fuelled by natural gas, on land to the west of Keadby 1 Power Station and the (under commissioning) Keadby 2 Power Station, including connections for cooling water, electrical, gas and utilities, construction laydown areas and other associated development. It is described in Chapter 4: The Proposed Development of the Environmental Statement (ES) (ES Volume I – APP-047).

1.1.4 The Proposed Development falls within the definition of a 'Nationally Significant Infrastructure Project' (NSIP) under Section 14(1)(a) and Sections 15(1) and (2) of the 2008 Act, as it is an onshore generating station in England that would have a generating capacity greater than 50MW electrical output (50MWe). As such, a DCO application is required to authorise the Proposed Development in accordance with Section 31 of the 2008 Act.

1.1.5 The DCO, if made by the SoS, would be known as 'The Keadby 3 (Carbon Capture Equipped Gas Fired Generating Station) Order' ('the Order').

## 1.2 The Proposed Development

1.2.1 The Proposed Development will work by capturing carbon dioxide emissions from the gas-fired power station and connecting into the Humber Low Carbon Pipelines project pipeline network, being promoted by NGCL, for onward transportation to the Endurance storage site under the North Sea.

1.2.2 The Proposed Development would comprise a low carbon gas fired power station with a gross electrical output capacity of up to 910MWe and associated buildings, structures and plant and other associated development defined in

Schedule 1 of the draft DCO (APP-005) as Work No. 1 – 11 and shown on the Works Plans (APP-012).

1.2.3 At this stage, the final technology selection cannot yet be made as it will be determined by various technical and economic considerations and will be influenced by future UK Government policy and regulation. The design of the Proposed Development therefore incorporates a necessary degree of flexibility to allow for the future selection of the preferred technology in light of prevailing policy, regulatory and market conditions once a DCO is made.

1.2.4 The Proposed Development will include:

- a carbon capture equipped electricity generating station including a CCGT plant (**Work No. 1A**) with integrated cooling infrastructure (**Work No. 1B**), and carbon dioxide capture plant (CCP) including conditioning and compression equipment, carbon dioxide absorption unit(s) and stack(s) (**Work No. 1C**), natural gas receiving facility (**Work No. 1D**), supporting uses including control room, workshops, stores, raw and demineralised water tanks and permanent laydown area (**Work No. 1E**), and associated utilities, various pipework, water treatment plant, wastewater treatment, firefighting equipment, emergency diesel generator, gatehouse, chemical storage facilities, other minor infrastructure and auxiliaries/ services (all located in the area referred to as the 'Proposed Power and Carbon Capture (PCC) Site' and which together form **Work No. 1**);
- natural gas pipeline from the existing National Grid Gas high pressure (HP) gas pipeline within the Proposed Development Site to supply the Proposed PCC Site including an above ground installation (AGI) for National Grid Gas's apparatus (**Work No. 2A**) and the Applicant's apparatus (**Work No. 2B**) (the 'Gas Connection Corridor');
- electrical connection works to and from the existing National Grid (National Grid Electricity Transmission) 400kV Substation for the export of electricity (**Work No. 3A**) (the 'Electrical Connection Area to National Grid 400kV Substation');
- electrical connection works to and from the existing Northern Powergrid 132kV Substation for the supply of electricity at up to 132kV to the Proposed PCC Site, and associated plant and equipment (**Work No. 3B**) (the 'Potential Electrical Connection to Northern Powergrid 132kV Substation');
- Water Connection Corridors to provide cooling and make-up water including:
  - underground and/or overground water supply pipeline(s) and intake structures within the Stainforth and Keadby Canal, including temporary cofferdam (**Work No. 4A**) (the 'Canal Water Abstraction Option');
  - in the event that the Canal Water Abstraction Option is not available, works to the existing Keadby 1 power station cooling water supply pipelines and intake structures within the River Trent, including

temporary cofferdam (**Work No. 4B**) (the 'River Water Abstraction Option'); and
  - works to and use of an existing outfall and associated pipework for the discharge of return cooling water and treated wastewater to the River Trent (**Work No. 5**) (the 'Water Discharge Corridor');
- towns water connection pipeline from existing water supply within the Keadby Power Station for potable water (**Work No. 6**);
- above ground carbon dioxide compression and export infrastructure comprising an above ground installation (AGI) for the undertaker's apparatus including deoxygenation, dehydration, staged compression facilities, outlet metering, and electrical connection (**Work No. 7A**) and an AGI for NGCL apparatus (**Work No. 7B**);
- new permanent access from the A18, comprising the maintenance and improvement of an existing private access road from the junction with the A18 including the western private bridge crossing of the Hatfield Waste Drain (**Work No. 8A**) and installation of a layby and gatehouse (**Work No. 8B**), and an emergency vehicle and pedestrian access road comprising the maintenance and improvement of an existing private track running between the Proposed PCC Site and Chapel Lane, Keadby and including new private bridge (**Work No. 8C**);
- temporary construction and laydown areas including contractor facilities and parking (**Work No. 9A**), and access to these using the existing private roads from the A18 and the existing private bridge crossings, including the replacement of the western existing private bridge crossing known as 'Mabey Bridge') over Hatfield Waste Drain (**Work No. 9B**) and a temporary construction laydown area associated with that bridge replacement (**Work No. 9C**);
- temporary retention, improvement and subsequent removal of an existing Additional Abnormal Indivisible Load Haulage Route (**Work No. 10A**) and temporary use, maintenance, and placement of mobile crane(s) at the existing Railway Wharf jetty for a Waterborne Transport Offloading Area (**Work No. 10B**);
- landscaping and biodiversity enhancement measures (**Work No. 11A**) and security fencing and boundary treatments (**Work No. 11B**); and
- minor associated development.

1.2.5 The Proposed Development includes the equipment required for the capture and compression of carbon dioxide emissions from the generating station so that it is capable of being transported off-site. NGCL will be responsible for the development of the carbon dioxide pipeline network linking onshore power and industrial facilities, including the Proposed Development, in the Humber Region. The carbon dioxide export pipeline does not, therefore, form part of the

Proposed Development and is not included in the Application but will be the subject of separate consent application(s) to be taken forward by NGCL.

1.2.6 The Proposed Development is designed to be capable of operating 24 hours per day, 7 days a week, with plant operation dispatchable to meet electricity demand and with programmed offline periods for maintenance. It is anticipated that in the event of CCP maintenance outages, for example, it could be necessary to operate the Proposed Development without carbon capture, with exhaust gases from the CCGT being routed via the Heat Recovery Steam Generator (HRSG) stack.

1.2.7 Various types of associated and ancillary development further required in connection with and subsidiary to the above works are detailed in Schedule 1 'Authorised Development' of the draft DCO (APP-005). This, along with Chapter 4: The Proposed Development in the ES Volume I (APP-047), provides further description of the Proposed Development. The areas within which each numbered Work (component) of the Proposed Development are to be built are defined by the coloured and hatched areas on the Works Plans (APP-012).

## 1.3 The Proposed Development Site

1.3.1 The Proposed Development Site (the 'Order Limits') is located within and near to the existing Keadby Power Station site near Scunthorpe, Lincolnshire and lies within the administrative boundary of North Lincolnshire Council (NLC). The majority of land is within the ownership or control of the Applicant (or SSE associated companies) and is centred on national grid reference 482351, 411796.

1.3.2 The existing Keadby Power Station site currently encompasses the operational Keadby 1 and Keadby 2 Power Station (under commissioning) sites, including the Keadby 2 Power Station Carbon Capture and Readiness reserve space.

1.3.3 The Proposed Development Site encompasses an area of approximately 69.4 hectares (ha). This includes an area of approximately 18.7ha to the west of Keadby 2 Power Station in which the generating station (CCGT plant, cooling infrastructure and CCP) and gas connection will be developed (the Proposed PCC Site).

1.3.4 The Proposed Development Site includes other areas including:

- a high pressure gas pipeline to supply the CCGT including a gas compound for NGG apparatus and a gas compound for the Applicant's apparatus;
- the National Grid 400kV Substation located directly adjacent to the Proposed PCC Site, through which electricity generated by the Proposed Development will be exported;
- Emergency Vehicle Access Road and Potential Electrical Connection to Northern Powergrid Substation;

- Water Connection Corridors:
  - Canal Water Abstraction Option which includes land within the existing Keadby Power Station site with an intake adjacent to the Keadby 2 Power Station intake and pumping station and interconnecting pipework;
  - River Water Abstraction Option which includes a corridor that spans Trent Road and encompasses the existing Keadby Power Station pumping station, below ground cooling water pipework, and infrastructure within the River Trent; and
  - a Water Discharge Corridor which includes an existing discharge pipeline and outfall to the River Trent and follows a route of an existing easement for Keadby 1 Power Station;
- an existing river wharf at Railway Wharf (the Waterborne Transport Offloading Area) and existing temporary haul road into the into the existing Keadby 1 Power Station Site (the 'Additional Abnormal Indivisible Load (AIL) Route');
- a number of temporary Construction Laydown Areas on previously developed land and adjoining agricultural land; and
- land at the A18 Junction and an existing site access road, including two existing private bridge crossings of the Hatfield Waste Drain lying west of Pilfrey Farm (the western of which is known as Mabey Bridge, to be replaced, and the eastern of which is termed Skew Bridge) and an existing temporary gatehouse, to be replaced in permanent form.

1.3.5 In the vicinity of the Proposed Development Site the River Trent is tidal. Therefore, parts of the Proposed Development Site are within the UK marine area. No harbour works are proposed.

1.3.6 Further description of the Proposed Development Site and its surroundings is provided in **Chapter 3:** The Site and Surrounding Area in ES Volume I (**APP-046**).

## 1.4 The Development Consent Process

1.4.1 As a NSIP project, the Applicant is required to seek a DCO to construct, operate and maintain the generating station, under Section 31 of the 2008 Act. Sections 42 to 48 of the 2008 Act govern the consultation that the promoter must carry out before submitting an application for a DCO and Section 37 of the 2008 Act governs the form, content and accompanying documents that are required as part of a DCO application.

1.4.2 An application for development consent for the Proposed Development has been submitted to and accepted for examination by the Planning Inspectorate (PINS) acting on behalf of the SoS. PINS is now examining the Application and

will make a recommendation to the SoS, who will then decide whether to make (grant) the DCO.

## 1.5 The Purpose and Structure of this Document

1.5.1 This document sets out the Applicant's comments on Written Representations received by the Examining Authority at Deadline 2. The remainder of this document comments on Written Representations from the following parties:

- Section 2 – National Grid Electricity Transmission Plc and National Grid Gas Plc
- Section 3 – Marine Management Organisation
- Section 4 – Canal and River Trust
- Section 5 – Environment Agency
- Section 6 – Network Rail
- Section 7 – Client Earth

## 2.0 APPLICANT'S COMMENTS ON NATIONAL GRID ELECTRICITY TRANSMISSION PLC'S AND NATIONAL GRID GAS PLC'S WRITTEN REPRESENTATION

2.1.1 The Applicant's Comments on National Grid Electricity Transmission Plc's and National Grid Gas Plc's Written Representation can be found below in Table 2.1.

**Table 2.1: Applicant's Comments on National Grid Electricity Transmission Plc's and National Grid Gas Plc's Written Representation**

| | **Applicant's Response** |
|---|---|
| **Introduction**<br><br>National Grid Electricity Transmission Plc and National Grid Gas Plc (together "National Grid") wish to make a written representation to protect its position in relation to infrastructure and land which is within or in close proximity to the proposed Order limits. | Noted. |
| National Grid's rights to retain its apparatus in situ and rights of access to inspect, maintain, renew and repair such apparatus located within or in close proximity to the Order limits must be maintained at all times and access to inspect and maintain such apparatus must not be restricted. | Noted. |
| As a responsible statutory undertaker, National Grid's primary concern is to meet its statutory obligations and ensure that any development does not impact in any adverse way upon those statutory obligations. | Noted. |
| National Grid are in ongoing discussions with the Promoter in relation to the points below. | Noted. |
| **Land and Apparatus**<br><br>As set out in the Relevant Representation submitted, the following | Noted. |

<table>
<tr><td>assets, which form an essential part of the electricity transmission network in England and Wales are within, or in close proximity to, the Order limits:<br><br>• Substation: Keadby 400kV Sub Station<br>• Associated overhead and underground apparatus including cables<br>• Overhead Lines<br>  ○ ZDA 400kV Over Head Line;<br>  ○ 4TM 400kV Over Head Line;<br>  ○ 4ZQ 400kV Over Head Line;<br>  ○ 4KG 400kV Over Head Line; and<br>  ○ Other apparatus above and below ground including underground electricity cables.</td><td></td></tr>
<tr><td>Further, the following assets, which form an essential part of the gas transmission network in England and Wales are within, or in close proximity to, the Order limits:<br><br>• Keadby Power Station Gas Transmission Site;<br>• Feeder Main 7 – Eastoft to Keadby Power Station; and<br>• Above and below ground associated apparatus.</td><td>Noted.</td></tr>
<tr><td>The table below sets out the land interests of National Grid Electricity Transmission Plc<br><br>which are impacted by the Project along with the relevant plot numbers:<br><br><table><tr><th>Plot numbers</th><th>Interests</th></tr></table></td><td>Noted.</td></tr>
</table>

| | | |
|---|---|---|
| 11, 12, 13, 14, 16a, 17, 17a, 48, 49, 49a, 51, 72a | In respect of a restriction on freehold title HS308249 | |
| 16, 17b, 50, 72, 165 | In respect of overhead cables and a restriction on freehold title HS308249 | |
| 165a | In respect of overhead cables, pylon and restriction on freehold title HS308249 | |
| 32 | In respect of overhead cables and pylon | |
| 32a, 41, 54, 61, 69, 73, 74, 76, 79, 80, 81, 98, 100 | In respect of overhead cables | |
| 64, 65, 67, 68, 70, 83, 85, 87, 90, 166, 167 | In respect of freehold title HS367748 | |
| 82 | In respect of freehold title HS221644 | |
| 84, 86 | In respect of freehold title HS375015 | |
| 88 | In respect of access relating to title HS358556 | |

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| 94, 107, 106, 110 | In respect of underground cable | |
| 111, 112, 120, 121, 124, 125, 127, 128, 129, 130, 132, 133 , 134, 140, 141, 142, 143, 147, 152, 153, 161, 162 | In respect of underground water pipes | |
| 148 | In respect of access relating to unregistered<br><br>title of sluices grassland and shrubbery west of<br><br>river Trent and east of Trent Side | |
| 159, 160 | In respect of access relating to freehold title<br><br>HS288642 | |
| The table below sets out the land interests of National Grid Gas Plc which are impacted by the Project along with the relevant plot numbers: | | Noted. |
| **Plot Numbers** | **Interests** | |
| 12, 13, 14, 16, 16a, 17, 17a, 17b, 46, 49,<br><br>49a, 50, 50a, 51, 72a, 79, 98, 100, 165, 165a | In respect of underground gas pipeline | |
| National Grid anticipates that land rights agreements will be required with the Promoter for an easement options and | | Noted. |

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| to grant rights for temporary working areas. | |
| National Grid object to compulsory purchase powers being granted over its land – the land and rights are essential to the operational of the gas and electricity transmission systems and all rights and interests must be maintained. | Noted. |
| It is also essential that National Grid retains access to its apparatus at all times for operational and maintenance purposes. | Noted. |
| **Benefit of the Order**<br><br>National Grid note that Work Nos. 2A and 3A relate to connections into the gas and electricity transmission systems respectfully and that National Grid have the benefit of these works under the draft DCO.<br><br>National Grid are in the process are assessing these works to ensure adequate provision has been made for the connections.<br><br>National Grid will raise any concerns in relation to these connections works with the Promoter. | As outlined in the latest SoCG, the Applicant believes at the proposed connections outlined in Work Nos. 2A and 3A of the dDCO [**REP2-003**] are adequate to instruct and operate the electricity and gas transmission networks. The Applicant encourages National Grid to raise any concerns with the proposed works as soon as possible. |
| **Protection Provisions and Side Agreement**<br><br>National Grid notes that protection provisions for its benefit have been included in the draft Development Consent Order and are currently reviewing these provisions fully and considering whether any supplementary agreement is required.<br><br>National Grid will raise any issues in this regard with the Promoter. | The Applicant believes that the protective provisions for electricity and gas in Schedule 10, Part 3 of the dDCO [**REP2-003**] adequately match the standard protective provisions of National Grid. |

# 3.0 APPLICANT'S COMMENTS ON MARINE MANAGEMENT ORGANISATION'S WRITTEN REPRESENTATION

### Table 3.2: Applicant's Comments on Marine Management Organisation's Written Representation

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| The MMO note that the Applicant has confirmed the piling that forms part of Work Numbers 1, 2, 4A, 7, 8B, or 9B do not fall below mean high water springs, and are therefore, outside the MMO's jurisdiction. | Noted. |
| Where piling does fall within the MMO's jurisdiction (Work number 4B), the MMO note that the Applicant has advised where in the DCO the commitment restriction piling works is secured. The MMO welcome the Applicants agreement to include this as a stand-alone condition within the Deemed Marine Licence and will be able to provide comments on the wording in future Deadlines. | Noted. |
| The MMO thank the Applicant for confirming that no dredging or disposal in the sea will be taking place for the Proposed Development. | Noted. |
| The MMO note the comments from the Applicant in regard to both potential scour and underwater noise impacts. The MMO is unable to provide comments at this stage but will endeavour to provide comments to the Applicant prior to Deadline 3. | Noted. |

## 4.0 APPLICANT'S COMMENTS ON CANAL AND RIVER TRUST'S WRITTEN REPRESENTATION

Table 4.1: Applicant's Comments on Marine Management Organisation's Written Representation

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| The Canal & River Trust's written representation provides further detail on those matters raised in out relevant representation. It responds to the Development Consent Order application by Keadby Generation Limited to the Secretary of State in respect of the Keadby 3 Low Carbon Gas Power Station Project. The Trust objects to the grant of the DCO in its current form. | Noted. |
| The representations address the Trust's main outstanding issues:<br>1. The proposed compulsory acquisition of rights over land owned by the Trust<br>2. The inadequacy of the protective provisions contained within Schedule 10, Part 2 of the draft DCO<br>3. The impact that the Project could have on the operation of Keadby Lock | The Applicant and the Trust continue to discuss acquisition of rights with the intention to reach commercial agreement and avoid the need for the exercise of compulsory acquisition powers.<br><br>The protective provisions in favour of the Trust were updated in the draft DCO [**REP2-003**] submitted at Deadline 2 to respond to comments raised by the Trust in their relevant representations. The Applicant will continue to liaise with the Trust to resolve any further concerns as to the adequacy of the protective provisions.<br><br>Regarding the potential effect on the operation of Keadby Lock through the delivery of Abnormal Invisible Loads to the wharf, the Applicant and the Trust have engaged in further discussions on the proposed approach, and it has been agreed in the Statement of Common Ground between the Parties that a Wharf Management Plan will be developed by the Applicant to agree the approach to notification and management of abnormal load deliveries and to include regular liaison |

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| | meetings between the Applicant and the Trust during the construction of the Proposed Development. |
| The representations also provide an update to the Trust's position on the Framework CEMP and Water Abstraction Agreement. | Noted. |
| In summary:<br><br>*Proposed Compulsory Purchase*<br><br>The Trust considers that:<br><br>a) The Applicant has failed to demonstrate that there is a compelling case in the public interest for the land/rights to be acquired by (as required by s122(3) of the 2008 Act); and<br><br>b) The Applicant has failed to comply with guidance issued by the Department for Communities and Local Government, "Planning Act 2008: Guidance related to procedures for the compulsory acquisition of land" (September 2013) (the "Guidance") in seeking to use powers of compulsory acquisition. | The Applicant and the Trust continue to discuss acquisition of rights and agreement of protective provisions with the intention to reach commercial agreement and avoid the need for the exercise of compulsory acquisition powers. |
| *Draft Protective Provisions*<br><br>The Trust consider that the protective provisions contained in Schedule 10, Part 2 of the DCO are inadequate. The Trust considers that the imposition of a cap on liability within the protective provisions is unjustified. The Trust considers that this goes against established practice in other applications and imposes unacceptable risk onto the Trust. Furthermore, the Trust considers that the provisions should require compliance with its Code | The Applicant and the Trust continue to discuss agreement of protective provisions with the intention to reach agreement. It has been agreed between the Parties in meetings – and through the Statement of Common Ground – that a cap on liability can be agreed within the protective provisions, with that cap commensurate with the level of potential risk to the Trust's assets and liabilities.<br><br>It has been agreed between the Parties that works associated with the |

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| of Practice for Works affecting the Canal & River Trust. The Trust also considers that the protective provisions should be extended to cover Work Areas 9A, 9B and 11A, which are also in very close proximity to the canal. | Proposed Development that take place within the canal will be undertaken in accordance with the Trust's Code of Practice for Works affecting the Canal & River Trust. The protective provisions have been updated to reference this also.<br><br>The Applicant and the Trust continue to discuss protective provisions to reach an agreed form. The extent of the works covered by the protective provisions will be reviewed with the Trust to ensure all works likely to impact on the Trust's assets are included where appropriate. |
| *Impact on the Operation of Keadby Lock*<br><br>During the deliveries for the Keadby 2 Power Station Works, which also utilised the same offloading point for AIL deliveries, it was observed by the Trust that some vessels arrived at the offloading point outside of times agreed by the Trust. This resulted in unscheduled closures of Keadby Lock. To avoid this occurring in respect of the Keadby 3 Low Carbon Gas Power Station Project, the Trust request that the Applicant sets out additional processes that it will comply with requiring co-ordination with the Trust prior to the mooring of vessels, including agreement to allow scheduled passage of Keadby Lock to take place. | The Trust has specifically requested in meetings that all vessels seeking to utilise the facility need to pre-book slots for assisted passage. It is agreed by both Parties that Notices to Mariners (Notices and Stoppages) can be provided through the Trust to provide mariners with forewarning of closures. The Applicant acknowledges and appreciates the issues caused by the unscheduled vessel arrivals during Keadby 2 construction and has engaged with the Trust on a proposed approach to improve the scheduling of deliveries. It has been agreed in the Statement of Common Ground that a Wharf Management Plan will be developed by the Applicant to agree the approach to notification and management of abnormal load deliveries and to include regular liaison meetings between the Applicant and the Trust during the construction of the Proposed Development. This has been secured via additional drafting in Requirement 25(3) of the Draft DCO submitted at Deadline 3. |
| **Written Representation** | Noted. |

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| These Written Representations are submitted in accordance with rule 10(1) of the Infrastructure Planning (Examination Procedure) Rules 2010 in relation to an application under the Planning Act 2008 ("the 2008 Act") for a Development Consent Order ("DCO") for the Keadby 3 Low Carbon Gas Power Station Project ("the Project") submitted by Keadby Generation Limited ("the Applicant") to the Secretary of State | |
| The Canal & River Trust (the "Trust") has already provided a summary of its principal concerns by letter on 2nd September 2021 in response to the Stage 2 Consultation in accordance with section 42 of the Planning Act 2008. The Trust has now had an opportunity to consider the application in more detail and has developed its position through the common ground discussions that have taken place with the Applicant. This document sets out in more detail the matters that remain of concern to the Trust:<br>1. The proposed compulsory acquisition of rights over land owned by the Trust<br>2. The inadequacy of the protective provisions contained within Schedule 10, Part 2 of the draft DCO<br>3. The impact that the Project could have on the operation of Keadby Lock | Please see above responses. |
| The Trust has also noted below amendments to the DCO that have been agreed with the Applicant. Finally, answers to the Examining Authority's written questions and requests for information WxQ1) issued on 14 | Noted. |

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| December 2021 are contained in the appendix to this letter. | |
| While the Trust does not object to the principle of the Project, it remains concerned that the DCO, if made, would interfere with the Trust's ability to carry out its obligations as statutory undertaker for the waterways within the Order limits and as a navigation authority. Although the Trust has been in discussions with the Applicant about the effect of the proposals on its undertaking, the protections provided in the Order as applied for do not adequately address the Trusts concerns. The Trust therefore **objects** to the DCO on the grounds set out in this letter. The Trust believes it should be possible to resolve its concerns with the Applicant by negotiation, but reserves the right to appear at Hearing(s) and/or the Compulsory Acquisition Meeting if they are not resolved satisfactorily by that stage. | Noted. It is considered that the concerns raised by the Trust have now been addressed through further discussions between the Parties as set out in the Statement of Common Ground submitted at Deadline 3. |
| *The Canal & River Trust*<br><br>The Trust is the charity who look after and bring to life 2000 miles of canals & rivers. Our waterways contribute to the health and wellbeing of local communities and economies, creating attractive and connected places to live, work, volunteer and spend leisure time. These historic, natural and cultural assets form part of the strategic and local green-blue infrastructure network, linking urban and rural communities as well as habitats. By caring for our waterways and promoting their use we believe we can improve the wellbeing of our nation. | Noted. |
| The Trust has a duty under the Trust Agreement with the Secretary of State for Environment, Food and Rural Affairs | Noted. |

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| (28 June 2012) (the "Trust Agreement") to operate and manage the waterways and towpaths for public use and enjoyment. A copy of the Trust Agreement is at Appendix 2 of this letter. Additionally, the Trust has a duty under S105 Transport Act 1968 to maintain commercial and cruising waterways in a suitable condition for use by the public. | |
| **1. Proposed Compulsory Purchase/Acquisition of Trust land**<br><br>We refer to the Promoter's Book of Reference and note that the Trust is listed as either owner or as having an interest in 8 individual plots of land the Applicant seeks to acquire rights over compulsorily. These comprise of Plots 27; 37; 38; 39; 75; 80; 80a; and 81 as identified within the submitted Book of Reference (Revision VP1.0) and associated Land Plans. | Plots 27, 37, 38 and 39 refer to the existing Pilfrey Bridge which was constructed and is now owned and occupied by SSE pursuant to a lease dated 13 February 2012 between British Waterways Board and SSE Renewable Developments (UK) Limited. The use of this bridge for the proposed development will be similar to its previous use in connection with Keadby 2. The Applicant wishes to vary the lease so that the demise accords with the bridge as constructed and to remove any uncertainty in this regard.<br><br>Plot 80a comprises the proposed acquisition of the freehold interest in land next to the canal for the purpose of constructing a pumping station. Plots 80 and 81 are required to facilitate the installation and maintenance of a below ground water pipe from the pumping station to the main development. |
| The Trust hereby formally **objects** to the compulsory acquisition of rights over land owned by Trust. The Trust considers that:<br><br>a) The Applicant has failed to demonstrate that there is a compelling case in the public interest for the land/rights to be acquired by (as required by s122(3) of the 2008 Act); and | The Applicant and the Trust continue to discuss acquisition of rights and agreement of protective provisions with the intention to reach commercial agreement and avoid the need for the exercise of compulsory acquisition powers. |

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| b) The Applicant has failed to comply with guidance issued by the Department for Communities and Local Government, "Planning Act 2008: Guidance related to procedures for the compulsory acquisition of land" (September 2013) (the "Guidance") in seeking to use powers of compulsory acquisition. | |
| a) *The Applicant has failed to demonstrate that there is a compelling case in the public interest for the land/rights to be acquired*<br><br>S122 of the 2008 Act states inter alia that an order granting development consent may include provision authorising the compulsory acquisition of land only if the Secretary of State is satisfied that there is a compelling case in the public interest for the land to be acquired compulsorily. | The Applicant and the Trust continue to discuss acquisition of rights and agreement of protective provisions with the intention to reach commercial agreement and avoid the need for the exercise of compulsory acquisition powers.<br><br>The Applicant already benefits from rights over Pilfrey Bridge and the compulsory purchase powers are sought to regularize the current position and ensure that access to the proposed Development is available thereby removing a potential impediment.<br><br>The easement and freehold acquisition is required to provide water abstraction from the canal for the operation of the proposed Development. |
| As set out in more detail in sections 2 and 3 below, the proposed development has the potential to have an adverse impact on the Stainforth and Keadby Canal, which is a waterway owned by the Trust. As noted above, the Trust has a duty under the Trust Agreement to operate and manage the waterways and towpaths for public use and enjoyment. Additionally, the Trust has a duty under S105 Transport Act 1968 to maintain | Noted. |

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| commercial and cruising waterways in a suitable condition for use by the public. | |
| If the canal is adversely impacted by any works related to the proposed development, then this could result in the Trust being required to undertake remedial works to ensure that they are not placed in breach of their statutory obligations, or their obligations under the Trust Agreement. The Trust considers that, through the DCO application, the Applicant should provide sufficient detail that sets out how that risk will be mitigated. The protective provisions contained within the DCO (Part 2, Schedule 10) should provide sufficient comfort that the Trust will not be adversely affected by the works and/or will not be put at risk of breaching its statutory obligations. As currently drafted, they do not do so. | The Applicant and the Trust continue to discuss agreement of protective provisions with the intention to reach commercial agreement. |
| The Trust has set out at section 2 below its concerns and its view on how this could be addressed. The Trust's position is that, unless and until those issues are suitably addressed by the Applicant, a compelling case in the public interest for acquisition of rights and land to implement the scheme has not been made out. The use of compulsory purchase powers is not justified where the scheme has the potential to put owners/occupiers in breach of statutory obligations. That is particularly the case where the statutory obligations are to protect the interests of the public, as is the case with those obligations placed on the Trust. | Please see previous response. |
| b) *The Applicant has failed to comply with the Guidance*<br><br>Paragraph 8 of the Guidance states: | Please see previous response<br><br>The Applicant has had extensive and detailed discussions with C&RT initially directly but more latterly via Gerald Eve as their appointed agent. C&RT has |

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| *"The applicant should be able to demonstrate to the satisfaction of the Secretary of State that all reasonable alternatives to compulsory acquisition (including modifications to the scheme) have been explored. The applicant will also need to demonstrate that the proposed interference with the rights of those with an interest in the land is for a legitimate purpose, and that it is necessary and proportionate."*<br><br>Paragraph 25 of the Guidance states *inter alia*:<br><br>*"Applicants should seek to acquire land by negotiation wherever practicable. As a general rule, authority to acquire land compulsorily should only be sought as part of an order granting development consent if attempts to acquire by agreement fail."* | been directed to all documents supporting this application which have been accessible through the Planning Inspectorate Portal together with additional "overlay" plans as and when requested. The Applicant understands that all available documents have been provided/made accessible to C&RT and explanations have been provided as to the need for the requested interests.<br><br>Broad terms have been proposed to C&RT and the Applicant awaits their response thereto. The Applicant is not aware of any disagreement as to the approach being taken which is in accordance with the Compensation Code. Compulsory purchase powers would only be exercised as a matter of last resort to remove a potential impediment. |
| The Trust considers that the Applicant has failed to comply with the above paragraphs of the Guidance. The Trust has made it clear to the Applicant from the outset of the pre-submission consultation that it would be open to the possibility of entering into a voluntary agreement to transfer rights and/or land for both temporary and permanent works. The Trust was clear that such an agreement would need to ensure that any requirements that the Trust has as a statutory undertaker are suitably addressed. Those requirements are more difficult to address where rights/land are acquired compulsorily through a DCO. The Trust made it clear that use of compulsory acquisition powers would not be acceptable to the Trust. As a statutory undertaker, the Trust has no option but to resist the use of compulsory purchase powers that it considers may negatively affect its land | Please see previous response.<br><br>It is the Applicant's stated preference to enter into a voluntary agreement.<br><br>Pilfrey Bridge is not occupied or used by the Trust such that there would be no impact on its occupation thereof.<br><br>The land required in connection with the installation of the underground water abstraction pipe and pumping station comprises a track, which will be reinstated, and a vacant plot of land next to an existing pumping station. |

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| or undertakings, and ability to comply with its statutory duties and obligations. | |
| One of the key concerns of the Trust is that the Applicant agree to abide by the "Code of Practice for Works affecting the Canal & River Trust" (the Code of Practice). If the Trust was entering into an agreement to grant rights voluntarily over land that it owns, then its standard practice is that the party carrying out the rights must abide by the Code of Practice. This ensures that the Trust is able to verify that any works will not negatively affect the continued safety of navigational users of waterways under its control during and after the works. The use of the compulsory acquisition powers bypasses any requirement to agree to the Code of Practice, which would usually be agreed through a voluntary negotiation. | It has been agreed between the Parties that works associated with the Proposed Development that take place within the canal will be undertaken in accordance with the Trust's Code of Practice. |
| Initial approaches were made by the Applicant to the Trust's estates division on the acquisition of rights and ownership from 10th September 2021. The Trust requested additional information, including the provision of a key plan for the plots of land involved (requested on 13th September; 26th October; 18th November; and 20th December 2021) in order to advance these discussions. This information has been received piecemeal, and the key plan was not received until 17th January 2022. | The Applicant first contacted the Trust on 10 June 2021.<br><br>DWD has assisted in providing copies of information already in the public domain and available on the Planning Inspectorate Website in response to various requests together with additional information including an overlay of the land and interests understood by the Applicant to be held by the Trust in comparison to the dDCO plan.<br><br>The key plan referred to was emailed on the 18 January 2022 and set out the total area of land owned by SSE and associated companies. This was derived from plans already in the public domain on the Planning Infrastructure website. |

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| | The Applicant will continue to respond to further queries of the Trust and their agent. |
| The Trust welcome the receipt of this information. However, the delay has meant that the Trust has been prevented from fully reviewing the matter with our professional advisors until this point. The Trust considers that the applicant has failed to take practicable measures to reach a voluntary agreement with the Trust. The Trust considers that the DCO, as drafted, fails to strike an appropriate balance between the scheme and the Trust's interests as landowner and statutory undertaker. | The Applicant and the Trust continue to discuss agreement of protective provisions with the intention to reach commercial agreement.<br><br>The Applicant was contacted by the Trust's agent (Gerald Eve) on 21 January 2022 following which a meeting was held whereby DWD set out the scheme and answered questions. Proposals have also been made by the Applicant to which a response is awaited. |
| The Applicant's proposals indicate that a section of Trust land is sought for the installation of abstraction equipment, alongside a section of the waterway itself. It is noted that no formal agreement has been reached thus far regarding the abstraction of water from the Trust's waterway. We welcome further information from the Applicant regarding their proposals. | The Applicant intends to continue engaging with the Trust in this regard. |
| The Trust have yet to receive full detailed information from the Applicant as to how the Trust's land would be used, and for what duration, to support the delivery of the scheme. In addition, the details provided to date do not give a clear explanation of the practical implications that the use of CPO powers would have for the Trusts access rights, fishing rights, management of the waterway etc. We observe that plots 75, 80 and 81 appear widely drawn, and query whether this area is in excess of what would be required to deliver the scheme. The Trust remains open to | The Applicant and the Trust continue to discuss agreement of protective provisions with the intention to reach commercial agreement.<br><br>In addition, the Applicant is continuing discussions with the Trust's agent. |

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| discussing acquisition of rights voluntarily with the Applicant. | |
| **2. Draft Protective Provisions**<br><br>The Trust is engaging with the applicant upon the wording of parts of the DCO, including the protective provisions contained in Schedule 10, Part 2. Whilst the Trust is encouraged by the proposed inclusion of protective provisions, the Applicant is seeking to include certain exclusions from, and limitations to, its liability, which are unacceptable to the Trust. Until those matters are suitably addressed, the Trust's position is that the DCO should not be granted. | The Applicant and the Trust continue to discuss agreement of protective provisions with the intention to reach agreement. It has been agreed between the Parties in meetings – and through the Statement of Common Ground – that a cap on liability can be agreed within the protective provisions, with that cap commensurate with the level of potential risk to the Trust's assets and liabilities. |
| **2.1 Applicant's proposal to cap its liability**<br><br>Under Paragraph 32(6) of Schedule 10 of the DCO, the Applicant seeks to impose a cap on their liability for consequential losses to the Trust. This paragraph states:<br><br>*"(6) The aggregate cap of the undertaker's gross liability for consequential losses shall be limited to £2,000,000 (two million pounds) for any one occurrence or all occurrences of a series arising out of the one original cause."*<br><br>The implication of this paragraph is that any expenditure beyond the cap on liability would be borne by the Trust. | It has been agreed between the Parties in meetings – and through the Statement of Common Ground – that a cap on liability can be agreed within the protective provisions, with that cap commensurate with the level of potential risk to the Trust's assets and liabilities. |
| The protective provisions are included within the DCO because it is foreseeable that the works to be undertaken as part of the Project could cause detriment to the Trust. It is foreseeable that works associated with the Project could result in losses to the Trust in excess of the proposed cap, for | The Applicant and the Trust continue to discuss agreement of protective provisions with the intention to reach commercial agreement. It has been agreed between the Parties in meetings – and through the Statement of Common Ground – that a cap on liability can be agreed within the protective |

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| example, damage caused by the collapse of the canal wash wall or collisions between boats on the River Trent colliding with Keadby Lock. | provisions, with that cap commensurate with the level of potential risk to the Trust's assets and liabilities. Although, as noted by the Trust, the cap is a limit on consequential losses. Where any detriment is caused to the Trust during construction or through a failure of the specified works or protective works carried out by the undertaker, then it is responsible for making good such detriment and meeting the reasonable costs together with any compensation for loss sustained by the Trust (paragraph 32 of Part 2 of Schedule 10.). |
| The Trust considers that the imposition of the proposed capped amount on liability is unjustified. There are a number of other Nationally Significant Infrastructure Projects for which development consent was granted that included protective provisions relating to assets owned by the Trust (see for example Part 3, Schedule 9 of the Keuper Underground Gas Storage Facility Order 2017; Schedule Part 3, Schedule 12 of the Eggborough CCGT Order 2018). The Development Consent Orders for those projects had no cap on liability. | It has been agreed between the Parties in meetings – and through the Statement of Common Ground – that a cap on liability can be agreed within the protective provisions, with that cap commensurate with the level of potential risk to the Trust's assets and liabilities. |
| As a registered charity, the Trust's funds are limited. It does not serve the public interest for any residual risk from the Project to be borne by the voluntary sector. We believe that the Applicant should be responsible for any such risks and associated liabilities. The Trust does not consider that the circumstances of this case justify the proposed restriction on liability. | Please see previous response. |
| **2.2 Applicant's proposal to limit the Protective Provisions to Work Areas 4A, 8A and 10B** | The Applicant and the Trust continue to discuss protective provisions to reach an agreed form. The extent of the works covered by the protective |

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| The Trust note that the protective provisions included in schedule 10 that relate to the Trust only apply to Work Areas 4A, 8A and 10B with regards to the 'specified work' being carried out. | provisions will be reviewed with the Trust to ensure all works likely to impact on the Trust's assets are included where appropriate. |
| The Trust note that Work Areas 9A, 9B and 11A are also in very close proximity to the canal. The Trust consider that it cannot be ruled out at this stage that activities associated with the construction layout areas, access arrangements, and landscape works associated with these Works do not have the potential to adversely impact the canal; for example through adverse loading or unexpected vibration close to the canal. | Please see previous response. |
| The Trust consider that it is necessary for these areas to be included within the protective provisions, so as to ensure that risks to the canal can be adequately managed and that the Trust will not be liable for any damage repairs or losses due to these Works. | Please see previous response. |
| **2.3 Compliance with the Trust's Code of Practice**<br><br>The Code of Practice is designed to safeguard the Trust's assets and to deal with the nuances of developing adjacent to a 200-year-old waterway heritage assets, which are not built to modern engineering standards. These features have an inherent fragility and the extent to which development adjacent to or over them may affect their stability can reach far beyond any narrow waterway corridor. Ensuring that development is appropriately located and controlled on land adjacent to the Trust's waterways network is crucial to limit the potential for failure of its infrastructure and the associated economic, environmental and social consequences of this. | It has been agreed between the Parties that works associated with the Proposed Development that take place within the canal will be undertaken in accordance with the Trust's Code of Practice. |

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| Therefore, in order to ensure that the construction works will not result in a danger to navigational safety, the Trust requires that any consents given to the works adjacent and over its waterways abide by the Code of Practice. | |
| The Code of Practice is critical to the Trust, as it specifically deals with waterway structures and the nuances of protecting the rights of our users, boaters, anglers etc. Based on the details provided through the application, there is insufficient clarify on what standard would be applied for the Trust to comment on how that might impact the structural integrity of the canal and impact its users. The Trust would normally deal with these matters via the Code of Practice on a site-by-site basis and would need to ensure that measures are in place to mitigate stability and any chances of landslides. | Please see previous response. |
| The wording of Schedule 10, Part 2, includes extracts from the Trust's Code of Practice. However, it has not been adopted in full, which could allow for works to be undertaken outside of the Trust's established process via the Code of Practice. | Please see previous response. |
| The Trust understands that the Applicant is willing to amend the wording of the DCO to make it more explicit that the works will accord with the Code of Practice. This is welcomed by the Trust. The Trust request that they have an opportunity to comment on any proposed wording to accommodate this. | Please see previous response. |
| **3. Impact on the Operation of Keadby Lock**<br><br>**3.1 Background** | It is agreed by both Parties that Notices to Mariners (Notices and Stoppages) can be provided through the Trust to provide mariners with forewarning of closures. The Applicant acknowledges and appreciates the issues caused by |

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| The proposed offloading area associated with Work No 10B lies to the immediate north of Keadby Lock, which provides the sole access between the River Trent and the Stainforth & Keadby Canal. As confirmed in table 8 of appendix 12C: Navigation Risk Assessment submitted by the applicant and referenced in the draft Statement of Common Ground between the Trust and the applicant, it is recognised that it may be necessary to close Keadby Lock for short periods during certain larger AIL deliveries.<br><br>Due to the nature of the Lock access from the Trent, vessels seeking to utilise the facility need to pre-book slots for assisted passage. It is agreed with the applicant that Notices to Mariners (Notices and Stoppages) through the Trust can be used to provide mariners with forewarning of closures. | the unscheduled vessel arrivals during Keadby 2 construction and has engaged with the Trust on a proposed approach to improve the scheduling of deliveries. It has been agreed in the Statement of Common Ground that a Wharf Management Plan will be developed by the Applicant to agree the approach to notification and management of abnormal load deliveries and to include regular liaison meetings between the Applicant and the Trust during the construction of the Proposed Development. |
| **3.2 Procedures for Vessels Arriving Outside of Agreed Times**<br><br>During the deliveries for the Keadby 2 Power Station Works, which also utilised the same offloading point for AIL deliveries, it was observed that some vessels arrived at the offloading point outside of times agreed by the Trust, often due to delays occurring at sea. This resulted in unscheduled closures of Keadby Lock, which prevented craft utilising this structure. | Please see previous response. |
| Due to the events of the Covid-19 pandemic, use of the lock was low during the Keadby 2 deliveries. However, it is anticipated that, as vessels arrive at the AIL loading point outside of scheduled times, this could result in canal-bound vessels becoming stranded on either side of Keadby Lock. | Please see previous response. |

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| The Applicant's submission does not address this specific issue, which the Trust considers needs to be resolved in order to prevent hazards to navigation during the proposed Works for the Project. | |
| To avoid the above occurrence, we respectfully request that the Applicant needs to set out procedures specifying what will occur should vessels arrive at the offloading point outside of scheduled times. Additional processes requiring co-ordination with the Trust prior to the mooring of vessels, including agreement to allow scheduled passage of Keadby Lock to take place, could help to resolve this matter. | Please see previous response. |
| **4. Changes to the Draft DCO Agreed in principle with the Applicant**<br><br>Our previous representation from September 2021 highlighted a number of minor alterations to the wording of the requirements within the draft DCO, which are summarised below:<br><br>• Amendments to Requirement 5(4c) to include the wording 'angle of flow'<br><br>• The amendment of Requirement 5(4c) to secure, in relation to Work 4A, that details are to be submitted to and in consultation with the Canal & River Trust approved by the relevant planning authority<br><br>• The amendment of Requirement 5(4d) to secure, in relation to the cofferdam installation, that details are to be submitted to and in consultation with the Canal & | The amended dDCO submitted at deadline 2 was amended as follows:<br><br>(a) Requirement 5(4)(c) – now includes reference to "angle of flow"<br><br>(b) Requirement 5(4)(a) – amended to required the Trust to be consulted in relation to any details submitted for Works No. 4<br><br>(c) Requirement 5(4)(d) has been updated to reference consultation with the Trust where any cofferdam installation occurs in the canal.<br><br>All of these requested amendments have therefore been incorporated. |

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| River Trust approved by the relevant planning authority<br><br>The Trust note that the Applicant has agreed to make appropriate amendments to these Requirements to address the Trust's concerns, which is welcomed. | |
| **5. Comments on Questions Raised by the Examining Authority**<br><br>Please find the Trust's response to the Examining Authority's written questions and requests for information in Appendix 1. These relate to questions Q1.2.7; Q1.16.13; Q1.16.18; and Q1.16.21. | Noted. |
| In addition to the above responses, we note that the Examining Authority have asked a question to the Applicant (Q.1.13.3) in relation to design proposals for the proposed water abstraction from the Stainforth and Keadby Canal (Work No. 4A). Although not directed at the Trust, we believe the information below may be of use.<br><br>• The Applicant has been working with the Trust regarding the abstraction of water from the canal. No commercial agreement has yet been reached which would give rights to the Applicant to abstract water from the canal. However, in anticipation of this agreement, the Trust (as the relevant Licence Holder for the Stainforth and Keadby Canal) has submitted an application to the Environment Agency for the potential abstraction of the volumes of water proposed by | Regarding the requirement for Scheduled Monument Consent for modifications to the Keadby Lock Scheduled Monument [1005204], formal consent will be sought prior to construction and CRT, as the landowner, will make the application.<br><br>Pre-application discussions have been entered into with Historic England from 9 December 2021. This focused on the scope and design of the modification and the documents that would be necessary to support a formal application. A draft application package has been submitted by CRT to Historic England for review on 7 February 2022. This comprised the following documents:<br><br>• Heritage Impact Assessment<br><br>• Flood Risk Technical Note<br><br>• Scheduled Monument Consent Application Form<br><br>• Options Appraisal Report |

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| the Applicant. No response has yet been received.<br><br>• The proposed water abstraction will require additional water efficiency measures to be undertaken, which will necessitate minor physical modifications to Keadby Lock. Such physical modifications will require consent from the Secretary of State for Digital, Culture, Media and Sport, (advised by Historic England) as these works would occur within the curtilage of the Scheduled Monument.<br><br>• The Trust understand that final designs of the abstraction equipment on site have yet to be developed and as such, no further progress has been made on this matter. The Trust therefore consider that a requirement to submit details of Work No 4A (DCO Schedule 2(4)) is appropriate | • Drawings – 'Site Information and Sections' and 'Elevations<br><br>The purpose of the draft application is to assist Historic England (as advisor to Secretary of State for Digital, Culture, Media and Sport) in being comfortable writing a letter of no impediment (or similar) to the determination of the Scheduled Monument Consent. It is hoped that this will provide the Examining Authority with comfort that that are no impediments on the grounds of heritage to including Work 4A – Canal Water Abstraction in any DCO granted.<br><br>No response from Historic England has yet been received. |
| **6. Other Matters – Framework Construction Environmental Management Plan (CEMP)**<br><br>The Trust has made comments to the applicant on the Framework CEMP on 25th January 2022, which we believe would make it more effective in implementation and in the development of the final CEMP. These concern:<br><br>• Page 19: The inclusion of proposals to cover/seed spoil heaps (see our response to ExA's question Q1.2.7)<br><br>• Page 48: Ensuring the recommendations concerning | The Applicant has amended the wording of the Framework CEMP to address the points raised by the Trust; the revised Framework CEMP is being submitted into the examination at Deadline 3. Confirmation of these changes has been included in the Statement of Common Ground between the Parties submitted at Deadline 3. |

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| fish rescue are consistent with those on page 72 (fish rescue prior to de-watering of any cofferdams)<br>• Page 57: Correction to GPPs being referred to as Environment Agency Documents (as GPPs are not)<br>• Page 57: Recommendations to expand what the Pollution Response Plan will outline to include a map of hazardous materials storage and locations of spill response kit, training details for staff, and details of where incidents will be reported to (including the Trust).<br>• Page 64: The inclusion of the Trust in a list of bodies to be consulted regarding water quality monitoring.<br>• Page 67: Accountability for the role of silt as being potentially damaging to aquatic organisms and habitats (not just what is contained within it)<br>• Page 70: We advise that all refuelling and reoiling needs to take place above a drip tray. Refuelling above an impermeable surface without a drip tray allows for possible contamination of runoff which should be avoided at source.<br>We understand that the applicant is looking into revising the Framework CEMP in line with the advice above. | |
| **Concluding Remarks**<br>The Trust considers that its objections and concerns are capable of being | Noted. |

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| addressed by the Applicant. In the event that the issues are not satisfactorily resolved, then the Trust confirms that it would wish to take part in any Hearing(s) and/or the Compulsory Acquisition Meeting that is fixed to consider these issues.<br><br>The above comments are given without prejudice to any further matters which may be raised by the Trust at a later stage as more details emerge. | |

# 5.0 APPLICANT'S COMMENTS ON ENVIRONMENT AGENCY'S WRITTEN REPRESENTATION

### Table 5.1: Applicant's Comments on Environment Agency's Written Representation

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| **Introduction**<br><br>On 2 September 2021 the Environment Agency ('the Agency') made Relevant Representations (although due to technical problems with making the submission these have been accepted into the Examination as an 'Additional Submission' ref: AS-002) to the proposal by Keadby Generation Limited ('the Applicant') to construct a 910MWe electricity generating station equipped with carbon capture and compression plant and fuelled by natural gas ('the Project') on land to the west of Keadby 1 Power Station, Trentside, Keadby. The purpose of these Written Representations is to provide an update on the summaries contained in our Additional Submission. | Noted. |
| **Scope of these representations**<br><br>These Written Representations contain an overview of the project issues, which fall within our remit. They are given without prejudice to any future detailed representations that we may make throughout the examination process. We may also have further representations to make if supplementary information becomes available in relation to the project.<br><br>Unless otherwise stated the objections, comments and requests made in our Additional Submission remain in place. | The Applicant acknowledges the Agency's stance on work within their remit. |
| **Air Quality (including Environmental Permit)** | The Applicant acknowledges the response and potential to require a second permit variation in the event that the design changes. Both Parties |

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| The Agency notes the Applicant's comments on Relevant Representations (REP1-021), which states that an application to vary the existing Keadby Power Station environmental permit (EPR/YP3133LL/V011) has been submitted. The Agency has not agreed the two-stage permitting approach outlined by the Applicant, as it does not issue a "Permit in Principle"; it will only issue a permit to operate to a design. It may be that a second variation would be required if the design changes. | acknowledge that this misunderstanding arose from previous discussions between AECOM and the Environment Agency. |
| The Agency can confirm that an application to vary the existing permit was received in July 2021. Unfortunately, due to the high volume of permit applications received during the last 12 months, and limited staff resources we cannot currently provide any indication of the timescale for its determination. | The Applicant acknowledges the response and recognizes the Environment Agency permitting resourcing issues, The Applicant re states that the proposed development is due to become operational in 2026, with construction potentially starting as early as Q4 2022 and remains keen to work with the Environment Agency to ensure that there are no barriers to the granting of an environmental permit to meet those timescales. |
| The Agency has not undertaken a detailed review of the Combined Heat and Power Readiness Assessment (APP-036) as this will only be undertaken during the Environmental Permit determination process (i.e. to demonstrate the use of Best Available Techniques). | The Applicant acknowledges the response and information regarding the timing of the Combined Heat and Power Readiness Assessment review. This position is also conformed in the agreed Statement of Common Ground between the parties. |
| **Biodiversity and Nature Conservation**<br><br>The Applicant's comments on the issue of ecological surveys are noted. | Noted. |
| In respect of the Applicant's intention to provide a Fish Management Plan via the Construction Environmental Management Plan (CEMP), the Agency welcomes the commitment for this but | As now agreed between the Parties in the Statement of Common Ground, as the Fish Management Plan would be required for works in the canal as well as in the river Trent, and as the DML |

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| has concern in respect of it being secured via Requirement 17. It is the Agency's view that this would be more appropriately secured via a Condition in Schedule 13 (the deemed Marine Licence (dML)) of the DCO. The Agency had previously suggested this was appropriate within Condition 11 (paragraph 4.5 of its Additional Submission (AS-002)) but would have no objection to the Applicant's suggestion that it is part of the CEMP, providing this is the CEMP secured by dML Condition 10; it is our view that the Marine Management Organisation (MMO) is the relevant body for its approval, not the Local Planning Authority. | only applies to works in the river Trent, it has been specifically included in the requirements of the CEMP and specifically referenced in the revised wording of Requirement 17 of the draft DCO to be updated at Deadline 3 [**REP2-003**]. |
| The Agency also noted in paragraph 4.8 of its Additional Submission (AS-002) that the Conditions (18 and 19) relating to controlling piling works appeared to have been agreed with the MMO. However, it appears from the MMO's Relevant Representation (RR-006) that this may not be the case. The MMO has raised issues in respect of the assessment of Underwater Sound Effects on Fish, Appendix 11H (App-083). Therefore, the Agency supports and defers to the MMO's expert advice on this issue. | It is considered that this comment is addressed by MMO Representation REP2-024 (dated 1st Feb 2022) which indicates that a suitable solution has been identified and can be agreed in more detail later. The MMO has advised "Where piling does fall within the MMO's jurisdiction (Work number 4B), the MMO note that the Applicant has advised where in the DCO [**REP2-003**] the commitment restriction piling works is secured. The MMO welcome the Applicants agreement to include this as a stand-alone condition within the Deemed Marine Licence and will be able to provide comments on the wording in future Deadlines." |
| **Flood Risk**<br><br>Since submitting its previous representations on this topic, the Agency has now completed its review of the Applicant's revised flood model, together with an update to Appendix 12A of the supporting Environmental Statement (Volume II, document Ref: 6.3.20, revision VP2.0) – this document | Noted. |

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| has been submitted into the examination and accepted and published on the website on 30 November 2021 (Examination Library ref: AS-010). The Agency concluded that the modelling is considered fit for its designed purpose. | |
| The modelling shows a maximum flood height of 2.47 metres above ordnance datum (m AOD) during a 0.5% Annual Exceedance Probability (AEP) tidal River Trent breach event on site. The Applicant has proposed to raise the finished floor levels (FFLs) of the development to 2.8m AOD. (This would provide 333mm freeboard). During the same event, raising the ground levels on site to 2.6m AOD will result in increased flood depths and velocities on the existing site (to the east and south), this can be seen in figure 4-4 (Breach Modelling Report). The Applicant has agreed to make an amendment to Schedule 2, Requirement 14(2) to secure the required finished floor level for Works Nos. 1A and 1C of 2.8mAOD to ensure occupant's safety, should a breach to the tidal River Trent defence occur. | As confirmed in the agreed Statement of Common Ground between the Parties, it is agreed that Requirement 14(2) and Schedule 1 of the draft DCO [**REP2-003**] will be updated to reference the adjusted finished ground level for the Main Site (Work Areas 1A and 1C) of 2.8m above ordnance datum. This change to the draft DCO was made and submitted as part of the Deadline 2 submission. |
| The Agency agrees with raising of the critical infrastructure assets to a minimum flood height of 3.6m AOD and where reasonably practical these should be raised to 4.4m AOD (as secured in Requirement 14(5) of the draft DCO). | The Applicant acknowledges the response and is in agreement. |
| The site lies within the Isle of Axholme (IOA), which the North Lincolnshire Strategic Flood Risk Assessment (SFRA) identifies as having a Critical Flood Level (CFL)1. The SFRA advises that all new developments should be raised above the CFL of 4.1m AOD plus 300mm freeboard. The IOA benefits from a complex drainage network (e.g. | Noted. |

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| pumping stations), which maintain the water level within the catchment. The CFL is deemed to be the height flood water would reach if the complex drainage network was to fail, coinciding with a prolonged breach of the tidal Trent flood defences. This poses a residual flood risk to the proposed development. | |
| The Overarching National Policy Statement for Energy (EN-1), paragraph 5.7.5 bullet point 11, states that Flood Risk Assessments (FRAs) should "consider if there is a need to be safe and remain operational during a worst case flood event over the development's lifetime". As identified above, the residual risk of the prolonged failure of the IOA drainage network coinciding with a prolonged breach event would result in a widespread flood height of 4.1m AOD. However, we do not provide comment in respect of which elements of the proposal are essential to remain operational during a flood event. | Noted. |
| As mentioned in paragraph 5.2 above, the flood depths and velocities, which could be experienced on the existing site, are increased as a result of raising the ground levels at this location, during a 0.5% tidal Trent breach scenario. It should be noted these areas are currently at residual flood risk from the same event. Although the safe access and egress assessment is not within the Environment Agency's remit to assess (this is within the remit of the Lead Local Flood Authority – North Lincolnshire Council) we advise that relevant specialist advice to review the emergency/evacuation plans is sought from the Council. | Comments noted. The site is within an area (Isle of Axholme) that is at residual risk of flooding from a drainage system failure or a breach in the Trent defences. The area potentially inundated in these scenarios is widespread and includes much of the transport infrastructure surrounding the site. Safe, dry access/egress is difficult to guarantee. A safer alternative is deemed to be the provision of a suitably equipped and designed refuge area within the site at a level above 4.4mAOD as proposed. This is included within the design of the Proposed Development and secured in the requirements. |

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| We do not comment on or approve the adequacy of flood emergency response procedures accompanying development proposals, as we do not carry out these roles during a flood. However, we would recommend a safe refuge area be set at 4.4m AOD (above the CFL) on site, as suggested within the FRA (Paragraph 6.3.31). North Lincolnshire Council will also need to provide advice in respects to whether this is adequate to ensure the future users of the site remain safe for its designed lifetime. | Comments noted and as per the previous response a safe refuge will be created on site. |
| Flood risk to the Construction and Operational Vehicular Site Access - For information, the northern bend on the track before the proposed bridge over the Stainforth and Keadby Canal is within the fluvial 5% AEP (undefended modelled floodplain outline) from the South Soak Drain, with a flood height up to 1.25m AOD. The maximum flood height during the 1% AEP and 1% AEP plus 30% climate change allowance, is 1.28m AOD. | Noted. |
| Accordingly, the Agency is now of the view that the Applicant has undertaken a FRA, which is appropriate to the scale, nature and location of the proposed development and withdraws its holding objection, made on flood risk grounds. | Noted. |
| **Geology, Hydrogeology and Land Contamination**<br><br>We have no additional comments to make on this topic. | Noted. |
| **Water Resources**<br><br>The application includes two proposals for obtaining cooling water for the Proposed Development: to abstract from either the Stainforth and Keadby | Noted. |

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| Canal or the River Trent. The Applicant's preferred method is to abstract from the Stainforth and Keadby Canal, which is under the jurisdiction of the Canal and River Trust (CRT). | |
| Discussions have taken place, between the Applicant, the Agency and CRT, regarding this proposed abstraction. An application has been submitted to the Agency by the CRT to vary its existing abstraction licence to facilitate the requirements of the Proposed Development. At the current time we cannot provide any information on the likelihood of the licence being granted but we will update the Examining Authority on this matter if further information becomes available during the course of the examination. | Noted. |
| The Applicant has also committed to providing the Agency with an additional technical note to confirm that works proposed to facilitate this abstraction, i.e. additional dredging and works to raise the Keadby Lock bar gate, will not increase the risk of flooding to third parties. Again, we will update the Examining Authority on this matter when this additional information becomes available. | The Applicant acknowledges the response. A separate flood risk appraisal was undertaken to support the abstraction licence variation application submitted by the Canal and River Trust, demonstrating that the proposed changes will not affect flooding in the area. This point has been resolved in the Statement of Common Ground between the Parties. |
| **Carbon Capture**<br><br>We have now had an opportunity to fully review the application submission in respect of Carbon Capture Readiness and Carbon Capture Storage. | Noted. |
| In summary, we consider that the Applicant has set aside enough land to accommodate the carbon capture plant however, despite applying to build a carbon capture plant at the same time as the power plant, they have not demonstrated "there are no foreseeable | The Applicant acknowledges the response and has reviewed Appendix A and responded accordingly in Appendix 1 of the agreed Statement of Common Ground between the Parties. |

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| barriers" to the technical feasibility of installing their chosen carbon plant. Full details of our initial review are contained in a report from our Principal Permitting Officer at Appendix A. This report was sent to the Applicant on 18th October 2021. | |
| The Applicant provided a response to this report, which is appended to the draft Statement of Common Ground with the Agency (REP1-008) – this was submitted at Deadline 1 in draft format as we did not have time to review and agree its contents. | The Applicant agrees. |
| We have now reviewed the Applicant's Appendix 1 to the SoCG and advise that its responses to all items, except for item C6 – Steam cycle, is satisfactory. | Noted. |
| C6 Steam cycle – the Applicant has "confirmed that the CCGT can be configured to deliver this steam requirement from the HRSG and that the CCGT will be designed to provide this steam from the outset." We asked that if the steam used comes from "the HRSG they need to justify this choice and demonstrate that it could be considered comparable, in terms of energy efficiency, to an integrated system taking steam from the turbine once carbon capture is operational." | The only design the Applicant is considering is that whose sole steam source to the Carbon and Capture Plant is the steam turbine. This design is more efficient than one using steam from the HRSG. |
| The Agency does not consider taking steam direct from the HRSG to be BAT (best available techniques). So, the Applicant needs justify this proposal and/or confirm that the efficiency of taking steam from HRSG is comparable to that of taking steam from the steam turbine, given that expanding steam through the turbine to the desired pressure will produce work i.e. | Please see previous response. |

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| electricity and is likely to be more efficient. | |
| **Construction Environmental Management Plan**<br><br>The Agency has reviewed the draft Construction Environmental Management Plan (CEMP) and is satisfied with the content of the documents, bearing in mind the current point in the submission process the Proposed Development has reached. The submission of a final CEMP is adequately secured through Requirement 17 of the DCO. | Noted. |
| **Environment Agency Land Holdings**<br><br>The Agency is a statutory undertaker within the meaning at s.127(8)(a) of the Planning Act 2008. Section 165 of the Water<br><br>Resources Act 1991 (as amended) sets out its powers to carry out flood defence and drainage works (to the extent that it has a power and not a duty). | Noted. |
| The Agency is in contact with the Applicant's land agents (DWD Property & Planning) in respect of the plots listed in the Book of Reference (BoR) (APP-007, May 2021)), where it is thought the Agency holds an interest. It has been agreed that the Agency has no interest in respect of plots 1, 2, 4, 5, 6, 7, 8, 9, 66, 88, 91, 92, 93, 95, 97 - 110, 113, 171. | Noted. |
| The Agency holds an interest in 21 plots of land within the Order limits. The details of these plots are set out in the Table attached at Appendix B. | Noted. |
| The Agency requires clarity from the Applicant in respect of its intention to acquire rights affecting several plots of | The Applicant has engaged in a series of meetings and email exchanges with the Agency to explain and discuss the |

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| land; these relate to the potential impact on existing easements. New easements for the benefit of the Applicant are being requested and negotiations in respect of these are at a very early stage. At this point in time we cannot identify whether or not the proposed acquisitions would affect the Agency's operations, in particular in relation to its flood risk management role. Therefore, the holding objection on this issue remains. We also reserve the right to make oral representations at any Compulsory Acquisition Hearing that may be held. | requirements and impact of the proposed development. The Applicant is considering, for example, the passage of "weed boats" in the vicinity of the proposed Mabey bridge alterations. |
| **Disapplication of Legislation**<br><br>In clause 8.3 of the draft Development Consent Order the Applicant seeks to disapply byelaws made under s66 of the Land Drainage Act 1991. The relevant byelaws which the Environment Agency enforce are the Anglian Water Authority Land Drainage and Sea Defence Byelaws. We would like clarification from the applicant which of these byelaws it wishes to disapply, the reason for seeking disapplication and the justification for it. | Article 8(3)(b) only relates to byelaws made by an internal drainage board. The Anglian Water Authority land Drainage and Sea Defence Byelaws are therefore not affected by this Article. |
| **Further Representations**<br><br>The Agency can confirm that it has no objection in principle to the proposed development, as submitted, but the holding objection in relation to the Agency land interests, which the Applicant seeks to acquire remains. | The Applicant acknowledges the response and remains committed to engaging with the Agency to agree a resolution to the land interests required for the Proposed Development. |
| We reserve the right to add or amend these representations, including requests for DCO Requirements and protective provisions should further information be forthcoming during the course of the examination on issues within our remit. | Noted. |

# 6.0 APPLICANT'S COMMENTS ON NETWORK RAIL'S WRITTEN REPRESENTATION

### Table 6.1: Applicant's Comments on Network Rail's Written Representation

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| Introduction<br><br>We are instructed by Network Rail Infrastructure Limited ("Network Rail") in relation to the development consent application made by Keadby Generation Limited ("the Promoter") for a combined cycle gas turbine (CCGT) power station, comprising a CCGT unit with a capacity of up to 910 megawatts electrical output (gross), carbon capture and compression plant, electrical, gas, and cooling water connections, and associated development ("the Project"). This section Written Representation is made on behalf of Network Rail. | Noted |
| The draft DCO includes powers for the Promoter to acquire compulsorily new rights to enable access over plots 28 and 29 as shown on the Land Plans and set out in the Book of Reference. These plots comprise airspace occupied by a bridge over the railway that was constructed by SSE pursuant to a lease. SSE also maintain and use the bridge. Network Rail is the freehold owner of this airspace. | Noted |
| The rights to be acquired over these plots are to facilitate the following works:<br><br>1. Work No. 8A: access route comprising the maintenance and improvement of an existing private track running between Work Nos. 1 and 2 including private bridge and the existing junction with the A18 nearby to the west of Pilfrey Farm, | Correct. In simple terms, the existing private road and bridge will be used by construction traffic to take access from the A18 through to the Applicant's site. |

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| comprising surfacing works and signage, and creation of on and off-slips; and<br>2. Work No. 9B: the maintenance and improvement of the existing private tracks connecting the existing junctions with the A18 to the west of Pilfrey Farm with Work No. 9A via two existing private bridge crossings of the Hatfield Waste Drain, including the replacement, widening, improvement and maintenance of the westernmost existing private bridge crossing, surfacing, drainage and strengthening works, barriers and enclosures. | |
| Network Rail understand that the proposed works provide for the following:<br><br>1. the routing of construction traffic (including HGVs and abnormal loads) over the railway using the existing North Pilfrey Bridge ("the Bridge") in connection with the construction of the Proposed Development (Work Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9A, 10, 11);<br>2. the potential resurfacing, maintenance or improvement of the existing track passing over the North Pilfrey Bridge but no replacement, rebuilding or widening of the bridge or its parapets; and<br>3. the continued use of a compound to the south of the railway which benefits from an existing planning permission with North Lincolnshire Council reference PA/2018/1950, dated 23 November 2018, defined as the 'Pilfrey laydown planning permission' in the draft DCO (APP-005). | 1. Correct<br><br>2. It is important to note that the track in question is a private road that is maintained and used solely by SSE and the freehold of the bridge is held by Network Rail, Environment Agency and C&RT.<br><br>3. The compound comprises Plot 25 as described in the Book of Reference which refers to "Temporary use of 106657.31 square metres of agricultural land and drains…".<br><br>This is owned freehold by Mr Belton Wright and Network Rail do not have any interest in, under or over this plot nor do they benefit from any covenants controlling or restricting the use thereof. |

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| **Role of Network Rail**<br><br>Network Rail is a statutory undertaker responsible for maintaining and operating the country's railway infrastructure and associated estate.<br><br>Network Rail owns and operates Great Britain's railway network and has statutory and regulatory obligations in respect of it.<br><br>Network Rail's role in relation to the DCO process derives from the PA 2008 and secondary legislation made under the same. | Noted |
| Network Rail is a consultee under sections 42 and 56 of the PA 2008, meaning applicants must consult with Network Rail before submitting a DCO application and once an application has been accepted for examination.<br><br>Network Rail has registered as an interested party in the DCO examination process by submitting a Relevant Representation to the Planning Inspectorate ('PINS'). | Noted |
| Due to the DCO seeking to authorise work either above or adjacent to Network Rail's operational railway and works which may impede Network Rail's ability to ensure the safe, efficient and economical operation of the railway network, Network Rail requires certain standard protections for the benefit of the operational railway and to manage this interface. Network Rail's requirements for the protection of its operational railway and associated railway infrastructure are set out in further detail in this representation. | Noted |
| **Existing Agreement** | It is understood that Network Rail and the Applicant disagree as to the effect of the existing Lease, but the Applicant |

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| There is an existing lease of easement in relation to the Bridge between Network Rail and SSE PLC. However, this agreement would need to be varied in order to allow the bridge to be used for the Project. | has yet to be informed as to Network Rail's interpretation thereof.<br><br>The Applicant wishes to remove any potential for dispute in this regard and has sought to engage with Network Rail to this end with compulsory purchase powers only intended to be exercised as a matter of last resort.<br><br>The Environment Agency and C&RT also own the freehold of the bridge such that there are three separate freeholders in total. |
| The existing agreement is currently being reviewed alongside the draft Heads of Terms by Network Rail to ascertain whether a variation can be undertaken or a new agreement will be needed and also to confirm what protections are required to ensure the safe operation of the railway. | The Lease of Easement is between SSE PLC and Network Rail. As such, SSE PLC will remain as Grantee responsible for the maintenance of the bridge and meeting the Grantee's responsibilities pursuant to that lease.<br><br>To the extent that any amendment might be required, Network Rail's consent may be required to permit SSE PLC to grant the Applicant rights to use the bridge for the purposes set out in the dDCO.<br><br>Notwithstanding this point, SSE PLC's duties and obligations to Network Rail as set out in the existing lease will remain. |
| **Concerns over the Use of the Bridge for the Project**<br><br>Network Rail are currently fully assessing the impact of such variation on the railway and would make the following initial comments:<br><br>meaning of 'improvement':<br><br>1. It is noted that the proposed works provide for the "potential resurfacing, maintenance or improvement of the existing track | 1. Noted<br><br>2. The Applicant considers that the current bridge structure is suitable for the proposed works. In this regard, the bridge is rated for SV196 loading in accordance with BS EN1991-2. In addition, a full survey was undertaken last summer and the bridge is in excellent condition such that no structural (i.e. foundations, pillars etc) works are envisaged and improvement |

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| passing over the North Pilfrey Bridge but no replacement, rebuilding or widening of the bridge or its parapets".<br>2. Network Rail would welcome clarity as to what would constitute 'improvement' to ensure that the full potential impact on the railway can be assessed. | works are likely to be limited to surfacing, improved guard rails and any other protective measures considered to be appropriate.<br><br>It should be noted that the bridge was successfully used without any issue for the whole of the construction phase of Keadby 2 power station.<br><br>However, engineering discussions with Network Rail have not yet sufficiently progressed to the extent that the Applicant can state with certainty that no works at all would be appropriate. As such, the Applicant is seeking the ability to address any matters that may subsequently require addressing in order to secure the proposed use. |
| any impacts of increased use:<br><br>1. any increased use of the Bridge must be carefully assessed to ensure that there is no adverse impact on the railway. | 1. The Applicant awaits Network Rail's engagement in this regard but is unaware of any potential impact. The bridge has recently been used for the construction of Keadby 2 power station which is broadly comparable to the usage proposed for this development. |
| any mitigation measures required to prevent falling material;<br><br>1. It is imperative for the safe operation of the railway that any works required to the bridge are carried out in such a way as to ensure that no material falls on to the railway.<br>2. Network Rail would like to understand what measures will be put in place during any required works to the Bridge to ensure that | 1. Any works undertaken would follow a risk assessment and implementation of measures to prevent materials falling from the bridge onto Network Rail land or any other parties' land.<br><br>2. Extensive bridge repairs are not envisaged as the bridge is in excellent condition. |
| how the cable will be affixed to the bridge, the impacts of this and any | 1. The Applicant is currently of the opinion that a cable may be required |

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| required mitigation measures or asset protection agreements:<br><br>1. it is understood that as part of the proposed works for the Project, a cable will need to be laid across the Bridge.<br>2. Network Rail would like to understand how it is proposed that this cable will be affixed to the Bridge, any impacts of this on the railway and any mitigation measures which will be required for the carrying out of the works and how any such measures will be secured. | having considered alternative options to avoid the use of the bridge.<br><br>2. The cable would be fixed within the existing lease demise following discussions with Network Rail's engineers. The Applicant would be pleased for the opportunity to engage directly with Network Rail's engineers to agree a method statement that satisfies their concerns, should cable installation be required. The proposed works will be minor in nature. |
| the appropriate level of public liability insurance will be required:<br><br>1. Network Rail will require the Promoter to obtain and maintain an appropriate level of public liability insurance for the works. | Noted |
| any weight restrictions required:<br><br>1. Network Rail are assessing whether any weight restrictions on vehicles using the Bridge are required in order to ensure the safety of the railway. | 1. As set out above, the bridge is rated BS EN 1991-2 and is in excellent condition such that it is more than adequate for the proposed loads. The bridge has recently been used for the construction of Keadby 2 power station which is broadly comparable to the usage proposed for this development and the same weighted vehicles will be used. |
| any traffic management over the bridge which needs be identified:<br><br>1. Network Rail are assessing whether any traffic management measures will be required in relation to the Bridge to ensure the safety of the railway. | 1. Noted and awaited. However, no such arrangements were required for the Keadby 2 power station construction and similarly none are envisaged here |
| **Other Impacts of the Application on the Railway** | Noted |

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| Network Rail are also currently assessing other potential impacts of the DCO and the Project on the railway. | |
| the potential increased risk of trespass:<br><br>1. the presence of construction compounds and works in proximity to the railway increases the risk of trespass and suitable mitigation measures will be required to manage this risk. | 1. There is no public access to the bridge or surrounding land other than by crossing land that is under the direct control and occupation by the Applicant and is appropriately fenced and maintained.<br><br>In this regard, there are only two routes to the bridge – 1) across a private track from the A18 past a manned security hut or 2) from the Applicant's own fenced land to the north over which the Applicant has appropriate security controls including CCTV.<br><br>Consequently, the risk of trespass is negligible and no greater than at present.<br><br>In addition, there are no works proposed in proximity of the railway. |
| any risk associated with unloading / loading in areas adjacent to railway infrastructure including any crane operations, piling operations and increased vibration:<br><br>1. the construction works themselves pose a risk to the stability and integrity of the railway and appropriate mitigation measures will be required. | 1. As can be seen from the Order Plans, Plot 25, which is to be used for construction laydown, is located a significant distance from the railway and no potential risk of effect on the railway can be identified.<br><br>All construction work will be carried out on land located far to the north of the railway. As with the laydown area this is sufficiently far away to have no potential impact on the railway. |
| any indirect impact on the Chapel Lane Level Crossing:<br><br>1. Network Rail are currently assessing whether the Project will have any indirect impact on this level crossing. | 1. The level crossing is not included within the dDCO and the Applicant has no intention of using or interfering with the level crossing.<br><br>Access to the level crossing from both the north and south sides is over a |

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| any other operations which could impact on the safety of the railway. | private road over which the Applicant neither benefits from, nor is seeking, any right of access. The Applicant is unable to access the level crossing.<br><br>The level crossing is used only by private individuals and leads to a dead end. This will remain the case throughout and after the proposed development has been implemented.<br><br>The Applicant considers that there will no direct or indirect impact on this level crossing. |
| **Powers sought in the DCO**<br><br>Network Rail objects to the powers contained in articles 20 (statutory authority to override easements and other rights), 22 (compulsory acquisition of rights etc.), 23 (private rights), 28 (temporary use of land for carrying out the authorised development, 29 (temporary use of land for maintaining the authorised development) and 33 (statutory authority to override easements and other rights) of the draft DCO authorising the Promoter to compulsory acquire rights in or over land, or temporarily use land, which forms part of Network Rail's operational railway land and which Network Rail relies upon for the carrying out of its statutory undertaking. | The Applicant understand that Network Rail is seeking exemption from the exercise of compulsory purchase powers on the grounds that the bridge comprises "operational land" which they rely upon for the carrying out of its statutory undertaking .<br><br>It is the intention of the Applicant to reach agreement on the basis that it would not then be necessary to exercise compulsory purchase powers. However, no terms have yet been agreed.<br><br>In any event, the bridge is not operational land and its existence or otherwise has no relevance to Network Rail's statutory undertaking.<br><br>Network Rail do not occupy the bridge and they will not be deprived from occupation or the use thereof by the Applicant taking access across the bridge.<br><br>Network Rail has not challenged the Applicant's position in this regard.<br><br>It should be pointed out that Network Rail only own the freehold in a single section of the bridge with the remaining |

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| | sections owned by the Environment Agency and C&RT. |
| Any temporary use of or entry upon Network Rail's operational railway can only be granted with Network Rail's consent as any such use of the railway must be in accordance with the statutory requirements imposed on Network Rail as operator of the railway network and all requirements necessary to ensure the safe operation of the railway. | The Applicant is not seeking any powers, nor does it intend to take any temporary or permanent use or entry over any part of Network Rail's operational railway. |
| Any acquisition of permanent rights could only be granted with Network Rail's consent and would require an easement agreed with Network Rail. It would also need to go through Network Rail's land clearance process as required by Network Rail's Network Licence. | SSE PLC already own the bridge pursuant to the existing Lease of Easement.<br><br>The Applicant has offered terms to Network Rail (29 November 2021 Heads of Terms) but, in the absence of agreement requires the ability to exercise compulsory purchase powers as a matter of last resort.<br><br>Land Clearance forms were submitted to Network Rail on 18 March 2021.A response is still awaited. |
| Network Rail are currently reviewing whether there are any other rights over the DCO Land which would need to be retained. Any existing rights which Network Rail have over the land would need to be retained and cannot be subject to extinguishment under the Order. | The Applicant has undertaken detailed investigations of the entirety of the land required in order to implement the proposed development and Network Rail has not been identified as having any rights or interests.<br><br>The Applicant requested that Network Rail confirm their position in this regard on 13 September 2021 and a response is awaited.<br><br>Heads of Terms were provided to Network Rail on 29 November 2021. These included a proposed mechanism by which any, as yet unidentified, rights would be dealt with thereby protecting |

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| | Network Rail's position in this regard. A response is awaited. |
| **Protective Provisions and associated agreements**<br><br>Network Rail notes that the Promoter has not included Protective Provisions for the protection of Network Rail in the draft DCO.<br><br>The inclusion of Network Rail's standard form Protective Provisions in both TWAOs and DCOs is well precedented and includes, for example, protections for compulsory purchase of Network Rail's land and interests and processes for approving works on or affecting the railway. Network Rail requires its standard form Protective Provisions in the DCO. | The Applicant would be willing to discuss and agree Protective Provisions for the protection of operational land. However, the Applicant does not accept that plots 28 and 29 comprise operational land and there is no operational land included within the dDCO.<br><br>Similarly, no works are proposed to take place in respect of Network Rail's operational land and all work, such as may be necessary, will be within land owned and controlled by SSE PLC.<br><br>Network Rail is, in effect, seeking the exemption of land that is not operational land from the exercise of compulsory purchase powers.<br><br>Unless and until terms can be agreed in respect of plots 28 and 29 such that it would not be necessary to exercise compulsory purchase powers as a matter of last resort, the Applicant is unable to agree to the exclusion of these plots from compulsory purchase.<br><br>To exclude these plots from the exercise of compulsory purchase powers would put the development at risk and allow Network Rail to bypass the "no scheme world" principle of the Compensation Code to secure a ransom position which would not be available to the Environment Agency and C&RT. |
| In addition to protective provisions for the benefit of Network Rail being included in the Order, Network Rail also requires the Promoter to enter into an asset protection agreement to ensure the appropriate and necessary | The dDCO does not provide for the acquisition or occupation of any operational land whatsoever. Similarly, as set out in the dDCO and supporting documents there are no works proposed in the vicinity of any |

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| technical, engineering and safety requirements for working on or near Network Rail's operational railway are applied to the DCO Scheme. | operational land that can reasonably be considered to impact in any way on operational land.<br><br>In the event that Network Rail are able to advise the Applicant as to where they consider this not to be the case and provide full details thereof, the Applicant fully intends to discuss and agree appropriate measures. |
| Network Rail will also require the Promoter to enter into a Framework Agreement and any required property agreements and asset protection agreements. | The Applicant is prepared to agree terms in respect of agreements to the extent that they are necessary and appropriate.<br><br>However, the Applicant cannot accept restrictions on its ability to acquire rights in respect of any land that is not Network Rail operational land, the effect of which would be to ransom the development or otherwise create an impediment. |
| Network Rail has shared a copy of its preferred protective provisions and a draft Framework Agreement with the Promoter's solicitor and are waiting for confirmation as to whether the Promoter will include the protective provisions in the DCO and enter into the Framework Agreement. | The Applicant forwarded draft Heads of Terms to Network Rail on 29 November 2021 and remains hopeful that agreement can be reached such that it will not be necessary to rely upon compulsory purchase powers.<br><br>However, until and unless such agreement is reached the Applicant is unable to agree to Network Rail's terms as to do so would create an impediment by reserving to Network Rail the right to excuse the bridge from the exercise of compulsory purchase. |

# 7.0 APPLICANT'S COMMENTS ON CLIENT EARTH'S WRITTEN REPRESENTATION

### Table 7.1: Applicant's Comments on Client Earth's Written Representation

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| At the outset ClientEarth notes that the Applicant has not contested the principle of including conditions in the DCO to ensure (i) a minimum carbon dioxide capture rate during commercial operation of the generating capacity, and (ii) that all captured carbon dioxide is sent to the proposed offshore geological site for permanent storage (see paras 9.1.4-5, Document Ref. 9.1, REP1-021). The Applicant has instead contested the precise scope or wording of the proposed conditions (despite the fact that ClientEarth's representation did not set out detailed drafting to be included in the DCO). | ClientEarth misunderstands or misrepresents the Applicant's response to its relevant representation (paragraphs 9.1.4 and 9.1.5) [**REP1-021**]. It is important that the Examining Authority appreciates the Applicant's true position and the examination is not misled by ClientEarth's misstating of the Applicant's position.<br><br>The Applicant's submissions into examination are technically founded and generally written in a straightforward way to be transparent and understandable to a varied audience. The Applicant explained at paragraph 9.1.4 of **REP1-021**, a range of technical aspects of the Proposed Development and then stated "as such, the Applicant cannot amend the wording of the draft DCO Requirement 33 to state that 'at least 90% of the total carbon emissions generated will be captured at all times during its commercial operation'. The Environmental Permit and the Dispatchable Power Agreement (DPA) would control the capture rate and how this is to be delivered, measured and monitored, including any limited operating exceptions in unabated mode.<br><br>The reference to the detailed wording ("at least 90%...") is simply a reflection of the case put forward by ClientEarth.<br><br>On any reasonable reading, it is not an acceptance of the principle. It plainly constitutes an objection to the entire principle of setting a minimum capture rate or otherwise controlling the capture |

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| | rate in the DCO. It is stated in strong terms ("cannot") so is an objection, and covers the principle rather than precise wording (i.e. the duplication of the Environmental Permit regime).<br><br>Similarly, the Applicant wrote at paragraph 9.1.5 of **REP1-021** "the operators of [the East Coast Cluster] will intend to inject the captured carbon into the Endurance saline aquifer in the North Sea (…) The [carbon dioxide storage licence will regulate the permanent storage of the carbon dioxide. The storage site is not operated by the Applicant. As such, the Applicant cannot amend the wording of the draft DCO Requirement 33."<br><br>Again, on any reasonable reading, that constitutes an objection to the principle of requiring that all captured carbon dioxide is conveyed to the offshore geological site for permanent storage, because it uses strong terms ("cannot") so is an objection, and covers the principles (i.e. the ownership/control reasons) rather than the precise wording.<br><br>To be clear, therefore, the Applicant does object to the principle of (i) a minimum carbon dioxide capture rate during commercial operation of the generating capacity, and (ii) that all captured carbon dioxide is sent to the proposed offshore geological site for permanent storage for the reasons set out in the Applicant's Response to the Examining Authority's First Written Questions [**REP2-006**] in particular questions 1.1.2 and 1.5.2.<br><br>Whether and how capture rates and conveyance to offshore storage are controlled in the DCO rest on factual considerations of whether the planning |

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| | legal tests (necessity, reasonableness, appropriateness, precision, relevance to planning, and enforceability) are met.<br><br>This in turn requires a factual understanding of how these technologies are being developed and how they will be controlled and incentivised in a range of government regimes and commercial mechanisms outside of planning, all of which are still in development and evolving in parallel with the examination and after its close.<br><br>The Examination needs to grapple with these issues. The effect of ClientEarth's misrepresentation could be to bypass this necessary analysis and it is important that the Examination is not derailed in this regard by ClientEarth's error.<br><br>The Applicant has provided information on the above topics in the Applicant's Response to the Examining Authority's First Written Questions [**REP2-006**] and will continue to provide information on these topics as required.<br><br>ClientEarth's position is contrary to the following parties, who have both reported to examination their satisfaction with R33, including in response to ExQ1 specific questions on whether these meet the planning tests:<br><br>- The relevant planning authority. In their Responses to the ExA's Written<br><br>Questions [**REP2-015**] they state "With regards to proposed R33 (CCP) NLC are of the opinion that this Requirement is adequate to link the development to the prospective CO2 gathering network. The Requirement is considered to meet the relevant tests" and "NLC are of the opinion that R33 is necessary and relevant to both planning and the |

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| | development being permitted. This is because the carbon capture element of the proposed development and low carbon energy production is an essential part of the development and forms a fundamental part of the justification for a new gas fired power station. This Requirement is needed to ensure that the new power station is not developed without the carbon capture infrastructure and as such is considered to be reasonable.<br><br>For the most part R33 appears both precise and enforceable." [A subsidiary point is made about the carbon storage licence element of the requirement potentially being open to interpretation, which the Applicant is responding to by introducing defined terms in discussion with NGCL].<br><br>- The Environment Agency. In SoCG submitted at Deadline 3 it is stated "A Carbon Capture Statement is included as **APP-037**. It is agreed that this adequately explains the carbon capture related infrastructure proposed and demonstrates that the Applicant has set aside enough land to accommodate the carbon capture plant (CCP). It is also agreed that Requirement 33 (Carbon capture plant) of the draft DCO [**REP2-003**] adequately secures the requirement for other consents, licences and permits to facilitate operation of the carbon capture related infrastructure including connections into the National Grid Carbon Gathering Network".<br><br>Given NLC's role in enforcing and discharging requirements and EA's role in regulating and enforcing the Environmental Permitting regime, we consider their responses on these matters to be significant. Generally in |

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| | planning, decision makers should give great or considerable weight to the advice of statutory consultees or provide cogent and compelling reasons for doing something different (see Visao Ltd v The Secretary of State for Housing, Communities And Local Government [2019] EWHC 276 (Admin)).<br><br>There is ample precedent for DCOs for thermal power stations which do not monitor and control emissions through the DCO. This includes the Eggborough CCGT where the ExA acknowledged in section 4.7 of the Planning Inspectorate published recommendation report dated 27 June 2018 that the use of Selective Catalytic Reduction to reduce the level of nitrogen dioxide emissions entering the atmosphere would be determined by the Environment Agency as part of their Environmental Permit regime.<br><br>Paragraph 4.10.3 of NPS EN-1 is clear that "*in considering an application for development consent, the Secretary of State should focus on whether the development itself is an acceptable use of the land, and on the impacts of that use, rather than the control of processes, emissions or discharges themselves. The Secretary of State should work on the assumption that the relevant pollution control regime and other environmental regulatory regimes, including those on land drainage, water abstraction and biodiversity, will be properly applied and enforced by the relevant regulator. It should act to complement but not seek to duplicate them*." |
| The Applicant has also not suggested that the current DCO conditions, including in draft Requirement 33, are intended to secure a minimum carbon | It is plain that R33 as drafted does not control capture rates or commit the |

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| dioxide capture rate or that all capture carbon dioxide is sent to the proposed offshore geological site for permanent storage. | Applicant to conveying all capture carbon dioxide to offshore storage.<br><br>The reasons for this are explained in further detail in the Applicant's Response to the Examining Authority's First Written Questions [**REP2-006**] (in particular Q1.1.2, Q1.5.2) and include the fact that capture rates are controlled by the Environmental Permit and other mechanisms such as the Dispatchable Power Agreement, and that the Applicant can only operationally control the conveyance of the captured carbon dioxide to NGCL's carbon transport pipeline, not its onward conveyance offshore.<br><br>The above facts do not represent any implicit concession or agreement to any other point. |
| ClientEarth therefore maintains that its proposed DCO conditions are necessary and reasonable to secure these core aspects of the Applicant's proposal; however, ClientEarth is happy to suggest possible clarifications as to the precise scope of its proposed conditions to address the concerns raised by the Applicant at Deadline 1. In the Annex to this document, ClientEarth has suggested drafting for its proposed conditions (in underline) to illustrate the way in which the Applicant's concerns may be accommodated in the precise wording and scope of the conditions. | No proper argument has been made out for necessity or reasonableness in the points made thus far in the Written Representation, and indeed the argument appears to rest on the misrepresentation of the Applicant's position.<br><br>As noted above a range of substantial and factual reasons for the Applicant's position are set out in our responses to questions 1.1.2 and 1.5.2 of Applicant's Response to the Examining Authority's First Written Questions [**REP2-006**], and the ClientEarth position on the achievement of the planning tests by R33 is contrary to that of relevant statutory consultees. |
| In respect of ClientEarth's proposed condition to ensure a minimum capture rate during commercial operation:<br><br>a. ClientEarth acknowledges the Applicant's clarification that a | a. Noted.<br><br>b. This fails at least three of the planning legal tests: enforceability (such a requirement would not be enforceable as relevant data would not be available |

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| capture rate of 90% may not be possible at all times of operation – for example during start up – and that the environmental permit to be issued by the Environment Agency will "control the capture rate and how this is to be delivered, measured and monitored, including any limited operating exceptions."<br>b. However, it is not clear why such limited operating exceptions cannot be reflected and incorporated in a DCO condition. For example, a condition can require a minimum 90% capture rate during commercial operation "subject to any specified operating exceptions or lower capture rates in any environmental permit in place for the authorised development" – such an approach (as per the Annex) would be acceptable to ClientEarth.<br>c. In this context, ClientEarth is also not aware of any indication, much less assurance, that the project's environmental permit will require that the project's generating capacity is operated only when the project's carbon capture infrastructure is also in operation (at a particular capture rate or otherwise). Rather the environmental permit will regulate the operation of the capture and related infrastructure when such infrastructure is in operation. It is therefore of critical importance that these aspects of the Proposed Development – which underpin its planning merits – are secured by the terms of the DCO. | to the relevant planning authority who would also need to acquaint with the operating exceptions in the Environmental Permit hosted elsewhere and understand different terminology and interpret against different case law); necessity (it explicitly duplicates the application and enforcement of existing regimes, Environmental Permitting under the Environmental Permitting Regulations and emissions trading under the UK ETS, which is enforced under separate legislation – the Greenhouse Gas Emissions Trading Scheme Order 2020 – with associated civil penalties); and precision (it is not possible for the reader of the DCO to know what the operating exceptions are, where to read these, and how to interpret and apply these). NPS EN-1 paragraph 4.10.3 is clear that the DCO should not duplicate the application or enforcement of other regulatory regimes.<br><br>c. There are a number of mechanisms which together ensure the generating station will only be operated in conjunction with the carbon capture plant. Firstly, R33(3) prevents the generating station from being brought into commercial use without the carbon capture and compression plant also being brought into commercial use. Secondly, all commercial operation of the Proposed Development will be regulated by a Dispatchable Power Agreement, which (as explained in our responses to questions 1.1.2 and 1.5.2 of Applicant's Response to the Examining Authority's First Written Questions [**REP2-006**]) includes penalties for unabated operation outside of operating exceptions and incentivises higher capture rates. It would be inappropriate for the DCO to duplicate |

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| | this commercial regime given that it is still under development. We would supplement this answer by adding:<br><br>• a "minimum projected capture rate of 90%" is stipulated for government funding – see page 32 of the Cluster Sequencing for Carbon Capture Usage and Storage Deployment: Phase-2 Guidance by BEIS, November 2021 which is attached at Appendix 1 of this document. In particular: "*Each Project is required to have a projected capture rate of at least 90% to be eligible for the Phase-2 evaluation process, so these residual emissions should be significantly less than the most efficient unabated closed cycle gas turbines currently available and Projects with the lowest carbon intensity will score the highest*."; and<br><br>• the UK Emissions Trading Scheme (ETS) will carry out yearly external auditing and verification of the carbon dioxide capture and transport. |
| In respect of ClientEarth's proposed condition to ensure the permanent storage of all captured carbon dioxide at the proposed geological site (as opposed to e.g. its commercial use and consequent emission to the atmosphere):<br><br>a. ClientEarth agrees that the precise requirement placed on the Applicant in the DCO should be to take steps that are within the Applicant's control.<br>b. Accordingly, ClientEarth would welcome this proposed condition | a. Agreed.<br><br>b. The statement in (b) contradicts the point made in (a) because the Applicant does not control the onshore pipeline, or the offshore pipeline, which are the two parts of the chain that separate (physically, by many kilometres, as well as operationally, in terms of pressurisation levels and other operating characteristics) the Proposed Development from the geological store. It is not possible for the Applicant (an emitter) to control the supply or conveyance of carbon dioxide to the |

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| | specifying that the Applicant must “supply” (or similar) all of the carbon dioxide captured on the site to the proposed offshore geological site for permanent storage (e.g. as per the Annex). | geological store; only to supply (along with many other emitters) into NGCL’s carbon transport pipeline, who will supply carbon dioxide into the offshore pipeline. NGCL will in turn (along with other participants in the East Coast Cluster such as Net Zero Teesside, and associated offshore pipeline(s)) supply carbon dioxide into the geological store. There are a number of mechanisms which together ensure that the captured carbon dioxide (at the rate that is achieved in compliance with the DPA, the Cluster Sequencing for Carbon Capture Usage and Storage Deployment, and the Environmental Permit) will be transferred into the NGCL pipeline. Firstly, R33(3) prevents the generating station from being brought into commercial use without the carbon capture and compression plant also being brought into commercial use. Secondly, article 6 of the draft DCO gives NGCL the benefit of developing and operating Work 7B (part of the carbon capture and compression plant), providing it with all necessary powers over the lifetime of the Proposed Development. Thirdly Schedule 1 provides for “outlet metering” equipment to allow measurement of the carbon dioxide, drafting which recognizes that commercial arrangements are required, but which at present are to be established by government and will have an assigned regulator. Fourthly the UK Emissions Trading Scheme (ETS) will carry out yearly external auditing and verification of the carbon dioxide capture and transport. There are substantial reasons why there cannot be an overriding legal duty (i.e. a term of the DCO) that simply binds the Applicant to supplying all captured |

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| | carbon dioxide to the NGCL pipeline at all times which we will outline below.<br><br>• The operation of high pressure gas pipelines requires considerable safety measures and operating exceptions (e.g. safety venting, depressurization systems) that cannot be fully described in a DCO (which cannot be updated over the Proposed Development's lifetime).<br><br>• Codes, Standards and Regulations will govern each participant in the carbon dioxide emission, capture, transport and storage chain, but at present these are to be established by government and will have an assigned regulator.<br><br>• In this context such a control would be duplicative (unnecessary/unreasonable) and unworkable (unenforceable), failing the planning tests and contravening NPS EN-1, 4.10.3. |
| In summary, ClientEarth is of the view that the concerns cited by the Applicant can be readily accommodated in ClientEarth's proposed conditions, which remain necessary and reasonable in light of the Applicant's response. As noted, the Applicant appears to accept that the current draft DCO conditions do not secure the capture and permanent storage of produced carbon dioxide that is assumed in the Application; the Applicant also does not appear to object in principle to the inclusion of conditions securing these aspects of the proposal, subject to clarifying their precise scope. | The Applicant disagrees.<br><br>No proper argument has been made out as to the compliance with all planning legal tests for the requirement wording proposed by ClientEarth and the Applicant has set out a wide range of referenced factual matters set out here and in the Applicant's responses to questions 1.1.2 and 1.5.2 of Applicant's Response to the Examining Authority's First Written Questions [**REP2-006**].<br><br>It is factually incorrect to state that the Applicant does not object to the principle of DCO controls over capture rate – which duplicate permitting and other regimes - and conveyance of carbon to the offshore store – which is demonstrably outside the operational |

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| | and physical control of the Applicant. The Applicant clearly set out its opposition to the principle of these controls in paragraphs 9.1.4-5 of **REP1-021**, which comprised the Applicant's concise response to the (outline) Relevant Representation.<br><br>Accordingly, ClientEarth's statements that "the Applicant appears to accept that the current draft DCO conditions do not secure the capture and permanent storage of produced carbon dioxide that is assumed in the Application; the Applicant also does not appear to object in principle to the inclusion of conditions" are a misrepresentation of the Applicant's position. |
| ClientEarth would be happy to provide further comment or clarification in relation to these issues in writing or at a hearing should this assist the Examining Authority. | The Applicant considers that the Written Representation, insofar as it contains two statements that are misrepresentations, was materially unclear. The Applicant has incurred modest additional costs to correct the record to aid an efficient examination. |

# APPENDIX 1: CLUSTER SEQUENCING FOR CARBON CAPTURE USAGE AND STORAGE DEPLOYMENT: PHASE-2 GUIDANCE BY BEIS, NOVEMBER 2021

Department for
Business, Energy
& Industrial Strategy

# Cluster Sequencing for Carbon Capture Usage and Storage Deployment: Phase-2

## Background and Guidance for Submissions

November 2021

# Contents

# List of Acronyms

| Acronym | Definition |
|---|---|
| BECCS | Bioenergy with Carbon Capture & Storage |
| CaaS | Capture as a Service |
| CaaSCo | Capture as a Service Company |
| CAPEX | Capital Expenditure |
| $CO_2$ | Carbon dioxide |
| $CO_2e$ | Carbon dioxide equivalent |
| COD | Commercial Operation Date |
| DAC | Direct Air Capture |
| DCO | Development Consent Order |
| DEVEX | Development Expenditure |
| DPA | Dispatchable Power Agreement |
| FEED | Front-End Engineering Design |
| FID | Final Investment Decision |
| GGR | Greenhouse Gas Removal (technology) [1] |
| IDHRS | Industrial Decarbonisation and Hydrogen Revenue Support |
| ICC | Industrial Carbon Capture |
| MoU | Memorandum of Understanding |
| MWh or MW | Mega-Watt Hour or Mega-Watt |
| OCP | Operational Conditions Precedent |
| OPEX | Operating Expenditure |
| T&S | Transport and Storage (system) |
| T&Sco | Transport and Storage Company |

[1] Check Definitions section.

# Definitions

| Term | Definition |
|---|---|
| Applicant | Party / legal entity that intends to apply for support, is responsible for submitting the Project Plan and associated Annexes to BEIS and will be taken through to negotiations if successful (see also Project Representative). |
| Balancing Mechanism | A tool used by the System Operator to balance electricity supply and demand. The BM is used to either increase or decrease generation. |
| Business Model(s) | Contract mechanisms to support the implementation and operation of CCUS Clusters. |
| CaaSCo | Capture-as-a-Service Company that arranges to capture the emissions of another company as a service. |
| CaaS Group | A group of industrial facilities operating CCUS in tandem with a CaaSCo. |
| CaaS Group Lead | The representative for the CaaS Group, responsible for submitting the Project Plan and associated Annexes to BEIS. |
| CCS & CCUS | Carbon Capture and Storage & Carbon Capture, Usage and Storage |
| Cluster | T&S Network (incorporating the onshore and offshore network and offshore storage facility) and an associated first phase of carbon capture Projects. |
| Cluster Integration Check | A review to ensure that the risk profile, resilience and affordability of a Cluster, including the costs of extending the T&S network to each Project, remain satisfactory. |
| Cluster Lead | Party responsible for submitting the Cluster Plan to BEIS in Phase-1. It should be the entity primarily responsible for the T&S Network. |
| Cluster Plan | The documents completed and submitted by the Cluster Lead as part of Phase-1. Consisting of a series of key questions relating to the detail of the cluster submission and formed the primary basis for scoring the evaluation criteria. As part of the Cluster Plan, there were a number of associated Annexes. |

| Term | Definition |
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| $CO_2e$ | Carbon Dioxide equivalent. The amount of carbon dioxide emission that would cause the same radiative forcing, over a given time horizon, as an emitted amount of greenhouse gases (GHG). As calculated using global warming potential (GWP) values for a 100 year time horizon, relevant to reporting under UNFCCC, published by the IPCC in its Fourth Assessment Report (AR4). |
| Cost of Connection | The costs incurred by the Project to deliver $CO_2$ compliant with the T&S specification (pressure, phase and composition) to the Project boundary limit. This would include any compression/pumping and $CO_2$ treatment required but does not include the costs of extending the T&S network to the Project. |
| Cross Chain | All elements of the cluster including development, delivery and operation of all Emitters as well as Onshore, Offshore and storage infrastructure. |
| DACCS | Direct Air Carbon Capture and Storage |
| Direct Economic Benefits | Benefits relating directly to the developer's own activity, and/or the activity of primary contractors. |
| Embedded Emissions | Emissions associated with the manufacture, supply and construction of the capture plant. |
| Emitter | Facility including carbon dioxide emission source(s) targeted for abatement. |
| Engineered Greenhouse Gas Reduction (GGR) | Projects that ultimately achieve atmospheric $CO_2$ removal through geological storage. This includes DACCS and BECCS Projects, and excludes other engineering-based Projects such as enhanced weathering. |
| Heads of Terms | Preliminary and indicative draft contract terms. They provide a framework of the principal terms and conditions that will or are expected to be included in the contract agreement between the successful Project and BEIS or their selected counterparty. |
| Hydrogen Production | CCUS-enabled hydrogen production. |

| Term | Definition |
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| Indirect Economic Benefits | Benefits relating to the remaining CCUS supply chain, outside of the developer and its primary contractors. |
| Induced Economic Benefits | The wider economic benefits that are brought about by the development and operation of the Project in that local area. |
| I-SEM | Integrated Single Electricity Market (Republic of Ireland and Northern Ireland) |
| Levelised Cost of Abatement | Calculation to consider overall lifetime costs of the Project and the overall carbon abatement in the proposed Project Plan. |
| Operational Conditions Precedent | Conditions that must be satisfied, or waived, in order for payments under the Contract to commence. |
| Offshore | The offshore element of the $CO_2$ transportation network up to the point where $CO_2$ enters the geological storage. *Note: This excludes shipping transportation.* |
| Offtaker (hydrogen) | In the context of the Phase-2 submission process, an offtaker is both the end user of low carbon hydrogen and, where relevant, any intermediary party who may purchase and resell hydrogen to end users. Where there is an intermediary party or where end users do not purchase hydrogen directly from producers, information and evidence of both end users and the intermediary need to be included in the submission form and templates. |
| Onshore | The onshore element of the $CO_2$ transportation network which may include intermediate $CO_2$ storage for T&S operational purposes. *Note: This excludes non-pipeline transportation.* |
| Project | The Power, Industrial Carbon Capture or Hydrogen production development that will be assessed via the Project Plan and associated Annexes as part of Phase-2. |
| Project Plan | The Project Plan and associated Annexes are documents that the Project Representative will need to complete and submit to BEIS as part of Phase-2 of the CCUS Cluster Sequencing Process. Consisting of a series of key |

| Term | Definition |
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| | questions relating to the detail of the Project submission, it will form the basis for scoring the evaluation criteria. There is a separate version of the Project Plan for each capture application (Power CCUS Project Plan, Industrial Capture Project Plan and Hydrogen Project Plan). |
| Project Representative | Party responsible accessing the submission Portal and submitting the Project Plan and associated Annexes to BEIS. This is expected to be the organisation responsible for Project development which must be a legal entity. |
| Storage | Geological store for the captured $CO_2$ from the end of the injection well. |
| Submission | The total submission submitted by the Project including the Project Plan and associated Annexes. |
| SuperPlace | A pioneering world-leading hub, characterised by renewable energy, CCUS and hydrogen coming together at the forefront of technological development. |
| Transfer points | Points on and within the Transport and Storage system where there is a commercial boundary, and the 'custody transfer' of the $CO_2$ is passed from one operational entity to another. |
| Transport & Storage Network (T&S Network) | The network consisting (wholly or mainly) of:<br>• pipelines used for the transportation of carbon dioxide from one capture plant to a storage facility or to or from any $CO_2$ pipeline network; or<br>• routes used for the transportation of carbon dioxide from one capture plant to a storage facility or to or from any $CO_2$ pipeline network; and<br>• storage facilities for the permanent storage of carbon dioxide. |

# Section 1: Introduction and Key Information

## 1.1 Background and Introduction

In November 2020, government published the Ten Point Plan for a Green Industrial Revolution[2], with commitments focused on driving innovation, boosting export opportunities, and generating green jobs and growth across the country to level up regions of the UK. In doing so, the government has set its agenda for a clean, resilient and sustainable economic recovery, as the UK builds back from the impacts of COVID-19. To build on this, government published the Net Zero Strategy[3] earlier this year to set out a long-term plan to deliver our decarbonisation ambitions.

The Ten Point Plan established a commitment to deploy Carbon Capture, Usage and Storage (CCUS) in two industrial clusters by the mid-2020s, and a further two clusters by 2030 and the Net Zero Strategy goes further by setting out an ambition to capture 20-30Mt$CO_2$ per year across the economy by 2030. Also set out in the Ten Point Plan, is the ambition for 5GW of low carbon hydrogen production capacity by 2030 as well as for a possible hydrogen heated town by the end of the decade.

In February this year, BEIS published a consultation[4] seeking input on a potential approach to determine a natural sequence for locations to deploy CCUS in order to meet this commitment. In May, we published a government response to this consultation, alongside launching Phase-1 of the CCUS Cluster Sequencing Process[5]. In October we announced the Track-1 clusters and an additional reserve cluster with more information in Section 1.2.

The purpose of Phase-1 was to identify at least two $CO_2$ transport and storage organisations ("T&SCos") whose readiness suggests they are most naturally suited to deployment of a $CO_2$ transport and storage network ("T&S Network") in the mid-2020s, as part of our efforts to identify and support a logical sequence of deployment for CCUS Projects in the UK. We refer to these initial T&SCos and T&S Networks as ‘Track-1’ or ‘Track-1 Clusters’.

Phase-2 of the process focuses on individual Projects across capture applications (industry, power, hydrogen) which could connect to a Track-1 or Reserve T&S Cluster. This document sets out the details of Phase-2 of the Cluster Sequencing Process and provides guidance and supporting information for individual Projects seeking to enter the process by making a submission aligned to their Project core concept.

The document also includes information for Greenhouse Gas Removal (GGR) Projects such as Bioenergy Carbon Capture and Storage (BECCS) and Direct Air Capture (DAC) that could feasibly connect to Track-1 T&S Networks. Due to the unique opportunity offered by GGRs,

[2] https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution/title
[3] https://www.gov.uk/government/publications/net-zero-strategy
[4] https://www.gov.uk/government/consultations/carbon-capture-usage-and-storage-market-engagement-on-cluster-sequencing
[5] https://www.gov.uk/government/publications/cluster-sequencing-for-carbon-capture-usage-and-storage-ccus-deployment-phase-1-expressions-of-interest

and the need for appropriate Business Models, we do not intend for GGR Projects to apply for the same Phase-2 process, as set out in the remainder of this document. Instead, Section 6 outlines a separate process including Business Model development that aims to run in parallel with the Phase-2 process. Initially, we intend to run an Expression of Interest (EoI) for GGR Projects which has been published alongside this document.

Projects selected in Phase-2 to connect to Track-1 T&S Networks will have the first opportunity to be considered to receive any necessary support under the government's CCUS Programme.

This support includes:

- The £1bn CCS Infrastructure Fund (CIF), which will primarily support capital expenditure on T&S Networks and industrial carbon capture Projects. Being sequenced onto Track-1 does not guarantee that CIF funding will be awarded CIF funding will be allocated through the negotiations process in line with the approaches outlined in the ICC and T&S Business Models detailed below. Any decision to award CIF funding would be subject to the conditions set out in Section 1.6 below and government being comfortable that CIF funding represents value for money for the consumer and the taxpayer in the context of other government support mechanisms.
- CCUS business models as a support mechanism for T&S, power and industrial carbon capture, as well as a business model for low carbon hydrogen. Further details on the support for T&S[6], power CCUS[7], industrial carbon capture[8] and hydrogen[9] Projects via these business models were set out earlier this year, including provisional Heads of Terms (HoTs) for power[10] and industrial carbon capture[11]. In addition, government published an update on the DPA and ICC business models in parallel with this publication. Support for industrial carbon capture and hydrogen will be funded by our new Industrial Decarbonisation and Hydrogen Revenue Support (IDHRS) scheme.

By commencing Phase-2 of the Cluster Sequencing Process, we hope to build on the significant recent steps that government has taken to progress CCUS development, including the following (set out below for information only):

- Publishing the National Infrastructure Strategy in November 2020[12]
- Publishing the Energy White Paper in December 2020[13]

[6] https://www.gov.uk/Government/publications/carbon-capture-usage-and-storage-ccus-business-models
[7] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1023071/dpa-business-model-october-2021.pdf
[8] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1023095/icc-business-model-october-2021.pdf
[9] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1011469/Consultation_on_a_business_model_for_low_carbon_hydrogen.pdf
[10] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1023072/dpa-provisional-heads-terms-october-2021-annex-a.pdf
[11] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1023454/icc-front-end-agreement-october-2021-annex-a.pdf
[12] https://www.gov.uk/government/publications/national-infrastructure-strategy
[13] https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future

- Confirming Front End Engineering Design (FEED) funding for clusters under the Industrial Decarbonisation Challenge, in March 2021[14]
- Publishing a consultation on the CCUS Cluster Sequencing Process in February 2021 with a government response published in May 2021[15].
- Launching Phase-1 of the CCUS Cluster Sequencing Process in May 2021 with a call for cluster submissions[16].
- Publishing 'CCUS Supply Chains: a roadmap to maximise the UK's potential' in May 2021 which sets out how government and industry can work together to "harness the power of a strong, industrialised UK CCUS supply chain, whilst ensuring that the CCUS sector as a whole remains investible, cost effective and focused on delivery".[17]
- In August, alongside the UK's first-ever Hydrogen Strategy we published three consultations on: the design for a Hydrogen Business Model[18]; proposed design of the Net Zero Hydrogen Fund (NZHF)[19]; and a UK Low Carbon Hydrogen Standard[20]. These consultations closed to stakeholder responses on 25 October. Government will look to publish responses to these consultations in due course.
- Publishing the Net Zero Strategy (NZS) in October 2021[21]. The NZS announced the Industrial Decarbonisation and Hydrogen Revenue Support (IDHRS) scheme. The IDHRS will fund the allocation of the hydrogen business model contracts to both electrolytic and CCUS-enabled Projects from 2023, resulting in up to 1.5 GW of low carbon hydrogen contracts awarded to Projects over the next few years. The Net Zero Strategy sets out that we will be announcing a funding envelope in 2022 to deliver up to 3 $MtCO_2$/yr of industrial carbon capture by the mid-2020s through the Industrial Carbon Capture Business Model. The Net Zero Strategy also states that: "Subject to costs falling, we also committing to further allocation rounds for all types of eligible low carbon hydrogen production and industrial carbon capture from 2025."
- To further inform policy and associated legislative proposals to underpin the T&S business model, we also published on 2 August consultations on the duties and functions of the economic regulator for $CO_2$ transport and storage[22], and on the government's proposals for a decommissioning regime for CCUS[23], both were open for

[14] [redacted]
[15] https://www.gov.uk/government/consultations/carbon-capture-usage-and-storage-market-engagement-on-cluster-sequencing#download-the-full-outcome
[16] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/986007/ccus-cluster-sequencing-phase-1-guidance-for-submissions.pdf
[17] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/984308/ccus-supply-chains-roadmap.pdf
[18] https://www.gov.uk/government/consultations/design-of-a-business-model-for-low-carbon-hydrogen
[19] https://www.gov.uk/government/consultations/designing-the-net-zero-hydrogen-fund
[20] https://www.gov.uk/government/consultations/designing-a-uk-low-carbon-hydrogen-standard
[21] https://www.gov.uk/government/publications/net-zero-strategy
[22] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1007774/ccus-economic-regulator-consultation.pdf
[23] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1007773/ccus-decommissioning-consultation.pdf

responses until 26 September. We will look to publish a response to those consultations in due course.

- Launching Phase-2 of the Industrial Energy Transformation Fund in September 2021[24]. The fund will support industrial sites to undertake studies into carbon capture technologies, and to provide grants towards the capital costs of deploying these technologies.

## 1.2 Track-1 Cluster Announcement

Alongside the government's Net Zero Strategy we announced the Clusters that have been selected to participate as Track-1 Clusters; these are Hynet and the East Coast Cluster. We now intend to commence a new stage of engagement with the T&SCos of these Clusters in accordance with Section 2.5 of this document. Projects that wish to apply for support as part of Phase-2 must be able to connect to one of the Phase-1 Track-1 Clusters.

The delivery of at least two CCUS clusters by the mid-2020s is not the extent of our ambition, and more information on future plans can be found in Section 1.8.

**Reserve Cluster**

We also announced the Scottish Cluster as a reserve cluster if a back-up is needed. A reserve cluster is one which met the eligibility criteria and performed to a good standard against the evaluation criteria in Phase-1. As such, we will continue to engage with the Scottish Cluster throughout the Phase-2 process, to help it continue its development and planning. This means that if government chooses to discontinue engagement with a cluster in Track-1, we can engage with this reserve cluster instead.

By naming a reserve cluster, government retains the flexibility to alter the provisional Track-1 sequencing decision under certain circumstances.

Government may choose to discontinue engagement with a cluster in Track-1 and in such circumstances reserves the right to engage with the reserve cluster instead. Some key circumstances in which this situation might arise are described in further detail in Section 1.6, below.

Projects intending to connect to the Scottish Cluster ("Reserve Cluster Projects") are invited to apply in Phase-2 but must note that there is no guarantee the reserve cluster will be sequenced. References to Track-1 clusters in the eligibility criteria (including, but not limited to, Sections 1.2, 2.3, 2.4, 3.2, 4.3 and 5.2 and the relevant Annexes) should be read as inclusive of the reserve cluster in order to facilitate Submissions from Reserve Cluster Projects being reviewed in the Phase-2 process. Please note that allowing Reserve Cluster Projects to apply

[24] https://www.gov.uk/government/publications/industrial-energy-transformation-fund-ietf-phase-2-autumn-2021

in this Phase-2 process does not in any way guarantee that Reserve Cluster Projects will become eligible for support at any point.

As stated above, Reserve Cluster Projects are invited to apply in Phase-2 and should not expect any further opportunities to apply for Phase-2 in the event that the reserve cluster is sequenced. However, if Government chooses to discontinue engagement with a cluster in Track-1 at any stage of the CCUS Cluster Sequencing Process or the subsequent negotiations stage, it reserves the right to make any changes it may consider necessary to the CCUS Cluster Sequencing Process and to issue updated guidance.

## 1.3 Objectives

The considerations set out in this document apply to the process that would take place for Projects that meet the eligibility and evaluation criteria outlined in this document through to negotiations with government and are part of the first tranche of Projects that can connect to Track-1 clusters.

As this document and associated annexes represent the second phase of the CCUS Cluster Sequencing Process, the objectives listed in Section 1.3 of the Phase-1 guidance document, which aim to realise several key benefits of CCUS deployment, such as improving investor confidence and willingness to commit to CCUS Projects by demonstrating the effectiveness of the technology and commercial frameworks are still applicable.

In addition, there are some further objectives for Phase-2, including those for individual capture technologies:

- Supporting a range of CCUS Projects and technologies across Track-1 clusters through broad and aligned support packages to deliver optimum Project combinations in line with investment decision timelines.
- Stimulating new Projects to come forward via an ‘open’ approach to Phase-2. Through this we aim to improve the diversity of Projects to help prove technological concepts and improve cost certainty via increased competitive tension.
- Supporting the development of initial industrial CCUS Projects from a range of heavy emitting sectors across industry to help deliver low carbon industrial facilities. Selected Projects are intended to put us on the path to meet our ambition of capturing and storing 6Mt$CO_2$ of industrial emissions per year by 2030, and 9Mt$CO_2$ by 2035 as set out in the Net Zero Strategy[25] and in line with our 2050 Net Zero target.
- Supporting hydrogen Projects which help enable at-scale low carbon Hydrogen Production for use across the economy. Projects selected are intended to put us on the

[25] The Industrial Decarbonisation Strategy set out the ambition to capture 3Mt$CO_2$ of industrial emissions per year by 2030 but to put us on the pathway for delivery of carbon budget 6 this ambition has increased to deliver 6Mt$CO_2$ of industrial emissions per year by 2030, and 9Mt$CO_2$ by 2035.
https://www.gov.uk/government/publications/net-zero-strategy

path to 5GW low-carbon hydrogen production capacity by 2030, and help deliver the aims set out in the Hydrogen Strategy and hydrogen milestones in the 10 Point Plan.

- Supporting power Projects which will put us on the path to at least one operational power CCUS in the mid-2020s and deliver firm low carbon power generation capacity to balance renewable intermittency, maintain security of supply and keep total system costs low.
- Minimising impact on T&S development through efficient Project evaluation and negotiations and by selecting Projects which put us on the path to ensure the T&S Network is optimally utilised across all operational phases.

Earlier this year, government accepted the Climate Change Committee's Sixth Carbon Budget recommendation and set in law the world's most ambitious climate change target, cutting emissions by 78% by 2035 compared to 1990 levels. This is a significant step in the UK's global climate leadership and CCUS and hydrogen will be critical to meeting these important commitments.

## 1.4 Process Overview

The Cluster Sequencing Process will be executed across two phases:

- In Phase-1, government received submissions from $CO_2$ transport and storage organisations, and provisionally sequenced those which are most suited to deployment in the mid-2020s onto Track-1 in accordance with government's stated objectives.
- In Phase-2, government will receive submissions from individual Projects across capture submissions (industry, power, hydrogen) to connect to the Track-1 T&S Networks. Phase-2 will provisionally conclude following Project shortlisting and the announcement of projects that will enter negotiations for possible support.

We viewed it necessary to conduct the Phase-1 evaluation at the cluster level to reflect the inherent interdependency of the CCUS chain. Meanwhile, we have confirmed that the Phase-2 submission process will be open to all prospective power, Industrial Carbon Capture (ICC) or Hydrogen Projects which could feasibly connect to one of the Track-1 T&S Networks provisionally sequenced onto Track-1, regardless of whether they featured on the submission made by that T&SCo. This allows for the opportunity to improve on those submissions and achieve potentially improved value for money outcomes.

We have also retained the option for capture Projects to change T&S Networks in Phase-2. For example, while a capture Project could appear on only one Cluster Plan in Phase-1, if that capture Project's original T&S Network is not sequenced onto Track-1 but the Applicant considers that it could viably connect to a T&S Network that has been sequenced onto Track-1, the Phase-2 submission could be submitted for that Track-1 T&S Network instead. More information on Projects switching T&S Networks is found in Section 2.4.

Phase-1 launched on 7 May, with the publication of the Phase-1 guidance document and associated annexes.

This document sets out the full details of the Phase-2 process for potential Applicants ("Applicants") wishing to connect to those Track-1 T&S Networks. Section 1.5 sets out a provisional timeline for Phase-2, while Section 2 provides guidance on the submission process. Sections 3-5 provide more information for specific submissions (Power, ICC and Hydrogen). The next steps for GGR Projects are outlined in Section 6. Finally, Section 7 outlines the next steps for Projects taken through into negotiations.

To assist with Project submissions, Cluster Leads are expected to provide any necessary information to prospective Applicants wishing to connect to their respective T&S Network. Projects should factor this process into their timeline to ensure submission ahead of the deadline below.

## 1.5 Phase-2 Timeline

Table 1 sets out the timeline on which we intend to execute Phase-2 of the Cluster Sequencing Process as well as some of the key dates for Phase-1. Please note that these timelines are indicative, and government reserves the right to alter these timelines at any stage in the process.

Reflecting the latest information, including the data received in Phase-1 submissions, government has amended the CCUS phases to a sequential approach. We do not expect this timing change to impact our ability to bring forward at least 2 clusters by the mid-2020s.

Revisions to the provisional Phase-2 timeline as set out in the Phase-1 guidance document include:

- Introduction of an Expression of Interest (EoI) window which opens in parallel with the launch of Phase-2 and closes at 23:59 on 3 December 2021. This allows Projects that are interested in applying to identify themselves, engage with BEIS during the submission window and is intended to facilitate the Non-Disclosure Agreement (NDA) process ahead of submission close. More information on these processes can be found in Section 2.2.
- We moved the launch of the call for Phase-2 capture Projects to 8 November 2021 and the submission window close to 23:59 on 21 January 2022. This move to a sequential process allowed for the Track-1 T&S Network announcement ahead of the launch of Phase-2.
- In the Phase-1 Launch Document we set out that particular capture Projects could progress to negotiations *shortly after the submission deadline*. However, we now expect to announce which Projects are being progressed into the negotiation phase from May 2022.

An indicative timeline is provided below. BEIS reserves the right to amend the dates at its absolute discretion for whatever reason.

We expect formal support decisions to be made from Q2 2023, although this depends on the progress of commercial negotiations.

**Table 1: Phase-2 Cluster Sequencing Timeline**

| Milestone | Date |
|---|---|
| Phase-2 Launch – Expression of Interest and call for capture Projects capable of connecting to the Track-1 and reserve cluster T&S Networks | w/c 8 November 2021 |
| Phase-2 - Expression of Interest window closes | 3 December 2021 |
| Phase-2 Engagement sessions | w/c 6 December 2021<br>w/c 10 January 2022 |
| Phase-2 submission deadline | 21 January 2022 |
| Phase-2 submission evaluation period | 24 January – May 2022 |
| Phase-2 decision – shortlisted Applicants are invited to participate in negotiation/due diligence stage | From May 2022 |
| Decision in relation to allocation of support and Project offers allowing FID to take place | From Q2 2023 |

## 1.6 General Considerations

Without prejudice to any other rights reserved in this document, government reserves the right to discontinue discussions with an Applicant at any point. In particular, government may discontinue discussions with a particular Applicant where:

- the Applicant seeks to renegotiate elements of its Submission which would mean that it no longer satisfies government's eligibility criteria; or
- the Applicant seeks to renegotiate elements of its Submission which would have an adverse effect on the score awarded to the Submission at any stage of the Phase-2 process; or
- the Applicant does not comply or is not able to demonstrate during the negotiation stage, that it will be able to comply with the plans set out in its Submission (including in relation to its supply chain) and/or under any of the evaluation criteria; or

- the Applicant does not comply with the requirements in relation to adherence to the principles and/or terms of the relevant Business Model at any stage of this Phase-2 process or negotiations stage; or
- Government is unable to verify information contained within that Applicant's submission which is relevant to the eligibility criteria and/or the score awarded at any stage of this Phase-2 process; or
- Government has otherwise determined in accordance with the rules provided to Applicants during any stage of this Phase-2 process or subsequent negotiations stage that the relevant Project will not be awarded financial support; or
- Government's discussions with the relevant Track-1 T&SCo are delayed, aborted or discontinued.

As regards the previous point, Applicants are advised that government may choose to discontinue engagement with a Track-1 T&SCo and any associated emitters at any time. The exercise of that discretion will be at government's absolute and sole discretion. However, examples of the circumstances in which government envisages exercising such discretion include, but are not limited to government becoming aware that:

- the Track-1 cluster is no longer deliverable within the necessary timeframes. Reasons for this conclusion might include discovery of a severe technical or commercial flaw which significantly impedes the deliverability of the cluster.
- some or all of the benefits described in that Track-1 cluster's Phase-1 submission are unattainable – for example if cost projections substantially increase, or if projected $CO_2$ capture volumes fall.
- Government affordability envelopes are not sufficient to support the delivery of a Track-1 Cluster Plan within the Track-1 timescales.

Ultimately, the decision on whether to alter Track-1 will be discretionary and will sit with ministers.

Applicants should also note that being invited to participate in any stage of this Phase-2 process does not mean that support will be awarded. The Secretary of State reserves the right to cancel, amend or vary the Cluster Sequencing Process, including any envisaged stage and any document issued pursuant to it, at any point and for any reason with no liability on his part. In particular, the Secretary of State is not liable for any costs resulting from any amendment or cancellation of, or delay to, the process, nor for any costs resulting from an Applicant expressing an interest in this Phase-2 process, preparing a submission in this Phase-2 process or discussing or negotiating any proposed support mechanisms.

The proposed terms of any support which may be offered to any Project following this Phase-2 process, including the form of the Business Models, are not final and remain subject to further development by government in consultation with relevant regulators and the Devolved Administrations, including in the light of the development and Parliamentary approval of any necessary legislative amendments, and completion of necessary contractual documentation in a way which is considered consistent with subsidy control principles.

It is expected that details of support offered for Projects with the exception of commercially sensitive information, may be published following the completion of negotiations and awards.

The process will primarily be executed by BEIS and its technical, commercial, and legal advisors. Support and expertise will also be drawn from across Whitehall including HM Treasury, the Infrastructure Project Authority (IPA) and UK Government Investments (UKGI) as well as from its various Partner Organisations including OFGEM, Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) and the Oil and Gas Authority (OGA).

The department may also share information provided by Projects (including information within the Submissions or EOIs) with other parts of government for the purposes of policy development and facilitating coordination in certain areas if relevant, for example, CCUS supply chains. In addition, this information may be aggregated and anonymised for the purposes of engagement with external audiences.

## 1.7 Interactions with Other Government Support

Section 1.1 outlines support which may be offered following Phase-2 of the CCUS Cluster Sequencing Process for Power, Industrial Carbon Capture and Hydrogen production Projects. This includes Business Models for each submission to provide operational support and encourage private investment, and the CIF which will provide capital support towards the T&S Network and ICC Projects.

In addition to the CIF, government is also providing capital support through the Industrial Energy Transformation Fund (IETF) and the Net Zero Hydrogen Fund (NZHF).

Any negotiations to allocate support to Projects may need to adjust for allocations of capital and revenue support funding received from other government support schemes where relevant.

### Industrial Energy Transformation Fund

The £315m Industrial Energy Transformation Fund (IETF), announced in the 2018 Budget, is designed to help businesses with high energy use to cut their energy bills and carbon emissions through investing in energy efficiency and low-carbon technologies.

Phase-1 of the IETF supports the deployment of energy efficiency Projects as well as energy efficiency and decarbonisation studies and has supported FEED studies for deep decarbonisation Projects, including CCUS technologies.

In Phase-2, launched in September, the IETF expands the Phase-1 offer to include capital funding for deep decarbonisation deployment, including CCUS technologies. Phase-2 is allocated across four competition windows, worth a combined £220m, with the first £60m window running between 27 September 2021 and 6 December 2021.

Any assessment of Projects for IETF funding decisions are for IETF purposes only and will not be used for decisions made as part of the CCUS Cluster Sequencing Process. Companies cannot receive government support from multiple sources (i.e. from both CIF and IETF) for the same eligible costs and this will be reviewed within due diligence processes.

### Net Zero Hydrogen Fund

The Net Zero Hydrogen Fund (NZHF) will support at-scale deployment of low carbon hydrogen production during the 2020s. We recently ran a public consultation on the design of the NZHF which closed in October. We expect to publish a response to this consultation in due course.

Hydrogen Projects that are successful as part of Phase-2 of the CCUS Cluster Sequencing Process may be eligible for NZHF support.

## 1.8 Future Ambitions and Track-2

Through our legally binding commitment to reach net zero emissions by 2050, the UK government has made clear its commitment to decarbonising the economy.

We are also clear on the key role that CCUS must play in enabling this transition; the Climate Change Committee (CCC) state that CCUS is a necessity if we are to reach net zero by 2050.The Cluster Sequencing Process described in the Phase-2 and Phase-1 documents, including the package of available support outlined above, represent the next step in pursuing this aim.

We have committed to support four clusters by 2030 at the latest. Government is also clear that in order to reach net zero all industrial clusters will need to decarbonise, and CCUS will play a key role in enabling this.

Having identified the clusters most suited to deployment in the mid-2020s, we will continue to work with industry to map and support a logical sequence for future CCUS deployment which balances the needs of CCUS developers with strategic government objectives. On which government recently published an update on Track-2[26].

With this in mind, we would further emphasise that Track-1 and Track-2 are both seen as key components of the overall Cluster Sequencing Process, and that the Track-1 sequencing decision will not impact upon government's long-term commitment to CCUS deployment in any given cluster.

[26] https://www.gov.uk/government/publications/cluster-sequencing-for-carbon-capture-usage-and-storage-ccus-deployment-phase-1-expressions-of-interest/1-november-2021-update-carbon-capture-usage-and-storage-ccus-track-2

# Section 2: General Submission Guidance

## 2.1 Submission Structure

This submission guidance applies to Power, Industrial Carbon Capture and Hydrogen Projects only. For GGR Projects, details of the separate Expression of Interest process are set out in Section 6.

Projects wishing to apply must select a Project Representative who will be provided access to the online submission portal and will be responsible for submitting all the relevant Project information. The Project Representative is expected to be from the primary, or partner, organisation responsible for Project development which must be a legal entity. For Capture-as-a-Service (CaaS) this is expected to be the CaaS Group Lead.

Project Representatives must provide completed copies of each of the relevant submission forms found on the Phase-2 landing page, along with supporting evidence where required, to be considered under the Phase-2 process. The five forms required are as follows:

- **Annex A – Power CCUS Project Plan (A1), Industrial Capture Project Plan (A2), Hydrogen Project Plan (A3)**: these documents consist of a series of key questions relating to the details of the Project submission. The relevant Project Plan (and associated supporting documentation) will form the primary basis for scoring under the deliverability, emissions reduction and learning and innovation criteria, and will supplement the two templates described below in assessing against the economic benefits and cost criteria. Our intention in designing the Project Plans is to avoid making the process unnecessarily onerous for Projects, and to allow for references to supporting documentation, rather than reproduction of information, wherever possible. This supporting documentation should be concise and referenced within the Project Plan and submitted alongside it, via the online submission portal.
- **Annex B – Economic Benefits Template**: this document requires Projects to provide a range of key data inputs, which are used to assess a submission's potential for generating economic benefits such as number and quality of jobs and transparency of supply chain procurement process. This template together with the relevant section of the Project plan forms the primary basis of evaluation against the economic benefits criterion.
- **Annex C – Power Cost Model (C1), Industrial Carbon Capture Cost and Emissions Template (C2), Hydrogen Cost and Emissions Template (C3)**: these documents require Applicants to input a range of information regarding the lifetime costs of their Projects. Along with information provided in the Project Plan, this template is used to calculate a combined Levelised Cost of Abatement (LCOA) for industrial carbon capture, Levelised Cost of Hydrogen (LCOH) for hydrogen Projects and to capture information underpinning the Availability Payment Rate (APRi) bid for power CCUS. These are the primary metrics for evaluation against the cost considerations criterion. For industrial

carbon capture and hydrogen, the Annex C also includes a tab for emissions reduction metrics.

- **Annex D – Financial Statements Template:** this document requires Applicants to input a range of financial information including income statements and forecasts to allow government to assess the financial status and resilience of the Applicant. These figures should be supported by relevant accounting notes and documentation.
- **Annex E – Power References matrix (E1), Industrial Capture References matrix (E2) Hydrogen References matrix (E3)**: this document enables Projects to cross-reference the additional evidence and documents provided with the questions in the Project Plan. This will help to ensure all relevant documents are being considered within the evaluation.

We would encourage Applicants to be aware of the word limits attached to each question in the Project Plan. Any information provided above the word limits will be removed before information is provided to assessors and will not count towards the score.

The relevant components must be uploaded by the Project Representative through the online submission portal. In addition, the Project Representative is required to provide a range of further information directly via the portal, including:

- Corporate information relating to the Project and its parent company/companies (if applicable).
- Project details including outline, employment and timescale.
- Declarations in relation to:
    - Compliance of the Project with equalities obligations.
    - Applicability of either mandatory or discretionary exclusions to the Project Representative
    - The accuracy of any and all information contained within the submission.

Please note that all information requests within the portal should be taken as relating only to the Project Representative, unless clearly indicated otherwise.

After submitting, Applicants will be notified via email to confirm that the submission has been received by BEIS.

BEIS reserves the right to take any piece of information provided in any section of the submission into account in relation to any component of the Phase-2 scoring to which it is pertinent, including shortlisting considerations.

Information submitted may also be used in Project negotiations as outlined in Section 7.

## 2.2 Entry Process

The entry process for Phase-2 of the Cluster Sequencing Process consists of 3 key stages, as set out in the timeline above:

- Expression of Interest
- Submission Window Engagement
- Final Submission

### Expressions of Interest and Non-Disclosure Agreements

To be considered under Phase-2 of the Cluster Sequencing Process, the Project Representative should submit an Expression of Interest (EoI) to BEIS on behalf of their Project (or Projects for CaaS submissions) by 23:59 on 3 December. Submitting an EoI by this date will allow Projects access to the engagement sessions listed below and ensure Non-Disclosure Agreements (NDAs) can be discussed and signed ahead of the submission window close. The EoI template can be found on the Phase-2 Cluster Sequencing landing page.

A separate EoI process for GGRs is provided in Annex F and described in Section 6.

Projects should ensure they meet the relevant eligibility criteria (Power, Industrial or Hydrogen, found below) before returning the EoI. Once BEIS receives the EoI, we will provide the Project Representative access to the online submission portal as detailed above.

The Project Representative, as the entity responsible for information submission, will be required to enter into an NDA with BEIS. This NDA will help to ensure that comprehensive and credible supporting information can be effectively provided throughout the evaluation process. The NDA will set parameters for government's use of potentially sensitive information provided as part of the Submissions taking into consideration the Secretary of State's statutory obligations (including under the Freedom of Information Act 2000 (FOIA), the Data Protection Act 2018 (DPA), General Data Protection Regulation (GDPR) and the Environmental Information Regulations 2004 (EIR)).

The NDA will also set out criteria that the Project/CaaS Group will be expected to follow in respect of information-sharing arrangements that they must put in place with Project partners, as further detailed in the section on Anti-Competitive Behaviour, below.

Although under no obligation to do so, BEIS reserves the right to process EoIs received after the above deadline at its absolute discretion. Projects that wish to participate in Phase-2 but have not submitted an EoI by this date should contact BEIS immediately.

### Submission Window Engagement

In order to support Projects in preparing submissions that fit the Phase-2 evaluation criteria BEIS intends to carry out engagement sessions, to ensure Projects have a clear understanding of government's criteria and objectives in Phase-2 of the Cluster Sequencing Process.

Invitations for these sessions will be extended to all Applicants which submit an EoI, as above; indicative dates for the engagement sessions as follows:

- Week commencing 6 December 2021
- Week commencing 10 January 2022

These dates should be treated as indicative at this stage; BEIS will issue invitations to each of the Project Representatives confirming the date once EoIs have been submitted. Project Representatives may in turn forward the meeting invite onto relevant Project partners (subject to compliance with the section on Anti-Competitive Behaviour, below). We expect the sessions to focus on general and submission (Power, Industrial, Hydrogen) specific queries.

In addition to these engagement sessions, Projects may submit clarification questions on the process by emailing one of the email addresses, depending on the topic of the question:

- Questions relating to power Projects - powerccusphase2@beis.gov.uk
- Questions relating to hydrogen Projects - hydrogenccusphase2@beis.gov.uk
- Questions relating to industrial Projects - industrialccusphase2@beis.gov.uk

In the email, you should explain why the question has been raised so the context is clear. The question should clearly identify the document and text for which clarification is being sought. You should also only email questions to the relevant address to prevent any delays in a response. If you have questions covering more than one area, you should send these as separate emails.

BEIS will publish the question and the response provided, except in circumstances where the Project sending the question has requested that the question and response is treated as confidential (further details below). This principle is also applicable to any questions raised in the submission engagement sessions which are not specific to the individual Project concerned.

A Project may request, at the time of submitting a question, that BEIS treats a clarification question and its response as confidential. BEIS will advise the Project in advance of providing the answer if it considers that all or any part of the question cannot be treated as confidential, at which time the Project may either withdraw the question or accept that the question and its response will be treated (in whole or part), as non-confidential.

The deadline for the submission of clarification questions is 23:59 on 13 January 2022, ahead of the submission window closing on 21 January.

## Final Submission

As per the timeline set out in Section 1.5 of this document, finalised submissions must be submitted on the online portal by the Project Representative to BEIS by 23:59 on Friday 21 January 2022. Full details and further guidance on the materials which should be included in final submissions are set out in Sections 3 (Power), 4 (Industrial Carbon Capture) and 5 (Hydrogen) of this document.

BEIS may issue supplementary questions in relation to the information submitted. BEIS reserves the right to consider a response to any supplementary question at its absolute discretion. Unless specified otherwise, Projects will have three working days to respond to these requests. For any reason, including, but not limited to, if an answer is not received within the time limit, BEIS reserves the right not to consider the answer to a supplementary question in its evaluation.

## Anti-Competitive Behaviour

The Competition Act 1998 prohibits anti-competitive behaviour such as collusion (including bid-rigging).

In Phase-1 we set out several obligations on Cluster Leads to ensure that confidential information was collated, stored and only shared in a way intended to minimise the risk of anti-competitive behaviour. The details of these obligations can be found in Section 2.1 of the Phase-1 Guidance Document.

Accordingly, Cluster Leads each entered into an NDA with BEIS confirming their obligations which apply throughout this process, including but not limited to mitigating anti-competitive behaviour and managing conflicts of interest. Notably, the NDA required that individuals that have received Confidential Information as part of Phase-1 must not be involved in the preparation of proposals as part of Phase-2 of the CCUS Cluster Sequencing Process.

The NDA between BEIS and each Cluster Lead also requires the Cluster Leads to provide prospective Phase-2 Applicants wishing to connect to the Cluster Lead's T&S Network with the information and documentation reasonably required for the purposes of preparing a submission at Phase-2. This includes both Projects that formed part of the Cluster Lead's original Cluster Plan as part of Phase-1 as well as Projects that did not form part of the Cluster Lead's original Cluster Plan.

As outlined above, Project Representatives will be required to enter into NDAs, to help to ensure that they can share accurate and timely information about the Project, including updating data where applicable, with BEIS. Projects bidding as a consortium are expected to nominate a Project Representative which can act on behalf of the Project and BEIS expects such Projects to have adequate data sharing agreements between Project partners in place.

Phase-2 NDAs will also include requirements for Projects to share information and documentation that may be reasonably required with the relevant Cluster Lead to inform discussions and align Final Investment Decisions across the Cluster.

Phase-2 NDAs entered into with CaaS groups are also expected to require CaaS groups to take appropriate measures to prevent anti-competitive behaviour. We expect the parties and Projects within the CaaS group to put in place their own arrangements for information sharing across the group, where it is anticipated that the CaaS Group Lead (the CaaSCo) will collate the information, and that information relating to an emitter within a CaaS group must only be passed 'up' to the CaaSCo and not be shared by a CaaSCo with other emitters.

### Process Evaluation

BEIS may also contact the Project Representative at a later point to request feedback on its experience of the submission process for evaluation purposes. Any information collected for this purpose will be collected and stored in line with General Data Protection Regulation (GDPR) principles.

## 2.3 Eligibility and Evaluation

The eligibility criteria set out in the individual capture technology sections have been specifically developed for Phase-2 of CCUS Cluster Sequencing Process. Only those Projects that meet the relevant eligibility criteria will be evaluated further and be capable of being shortlisted to participate in the negotiation/due diligence stage.

For Phase-2, we intend to apply the same five categories of evaluation criteria as set out in Phase-1: Deliverability, Emissions Reduction, Cost Considerations, Economic Benefits, and Learning & Innovation; with refinements around sub-criteria and weightings to better represent individual capture submissions (Power, Industrial and Hydrogen). Projects' overall scores will be calculated using their final scores against each criterion, which will then be combined according to the associated weightings, as set out in the individual capture technology sections. Projects will then be ranked comparatively within capture applications.

Projects will next be assessed against individual shortlisting considerations and selected for negotiations based on their final ranking. These shortlisting factors and how they will be applied is described in the relevant submission section below. The selected Projects will then be taken forward to negotiations and due diligence as outlined in Section 7, noting that government will look to publish more detail on this part of the process in due course.

The considerations set out in this document apply to the final allocation process that would take place for eligible Projects that are shortlisted through the evaluation criteria outlined in this document as part of the first tranche of Projects that can connect to Track-1 clusters. For Track-2 and any potential expansion of Track-1 clusters, we will consider reviewing the eligibility criteria. This might include, for example, amending the minimum operational start date to support Projects that will be deployed to later than the mid-2020s.

## 2.4 Non-Cluster Plan Projects and Projects changing Clusters

As outlined in the Phase-1 Guidance Document, we have confirmed the position set out in the consultation, that the Phase-2 process will be open to all prospective capture Projects which could viably connect, via pipeline or non-pipeline transport, to one of the T&S Networks provisionally sequenced onto Track-1, regardless of whether they featured on the relevant T&SCo's Phase-1 submission.

In line with Section 5 of the February Consultation we have retained the option for capture Projects to change T&S Network at Phase-2. Specifically, whilst a capture Project could

appear on only one Cluster Plan in Phase-1, if that capture Project's original T&S Network is not named onto Track-1 but the developer considers that it could feasibly connect to a T&S Network that has been sequenced onto Track-1, the Phase-2 submission could be submitted for that Track-1 T&S Network instead. Noting, for the avoidance of doubt, that each Project must select a single T&S Network in their Submission, as set out in the relevant submission section below.

As noted above, the Phase-1 NDA with each Cluster Lead sets out that the T&SCo must provide prospective Phase-2 Applicants wishing to connect to its T&S Network with the information and documentation reasonably required for facilitating the CCUS Cluster Sequencing Process and implementing the CCUS business models. We expect Projects to contact Cluster Leads directly.

## 2.5 T&SCo process overview

In October 2021, government announced which T&SCos had been provisionally sequenced onto Track-1.

The Track-1 T&SCos will be required to develop their proposals. In this regard, discussions with the Track-1 T&SCos will be progressing in parallel with this Phase-2 process and the negotiations/due diligence stage. However, please refer to Sections 1.2 and 1.6 of this document which note that government may choose to discontinue engagement with a Track-1 T&SCo at any time in its absolute and sole discretion and set out examples of the circumstances in which that discretion may be exercised.

The Department envisages that there will be a period of definition and due diligence, whereby the Track 1 T&SCos will engage with government on a variety of technical and commercial issues as plans for the T&S infrastructure progress.  A significant amount of collaboration and coordination is expected during this period. During this period, the T&SCo would be expected to be able:

- to advise on how Projects, which may or may not be part of its original Cluster Plan, may be incorporated.
- to demonstrate commitment to FEED and to optimise the design of the T&S infrastructure;
- to move forward with all the regulatory processes and consents needed to realise the T&S infrastructure;
- to agree a programme of work through to FID, taking account of government processes; and
- to share new information across a wide range of issues, including the management of risk, costs and respond to requests for information from advisers as due diligence commences.

During this period, government will also continue to progress the development of the T&S Business Model (the TRI model). Early consideration with regards to the nature of support to be provided from the CCS Infrastructure Fund may commence during this period. At the end of this period and aligned with May 2022 Phase 2 milestone, it is intended that there will be a review of progress of the development of the T&S Business Model and engagement with Track 1 T&SCos.

Following this it is contemplated that a detailed period of engagement on the key terms within the T&S Economic Licence and other documentation will begin with the Track-1 T&SCos. This exercise will build upon the TRI model updates published to date.

Key terms will need to be agreed on the economic licence, the government Support Package and the CCS Infrastructure Funding Agreement. In addition, there are likely to be other commercial agreements to be finalised. The Track-1 T&SCos will need to agree key terms with Projects and the counterparty to emitter contracts.

Separately, the Track-1 T&SCos will need to have in place certain regulatory approvals and consents before key terms can be finalised[27]. The overall length of this engagement with Track-1 T&SCos will be determined as part of the discussions to agree a programme of work through to FID, taking account of government processes. Engagement will conclude once the necessary clearances ahead of FID and financial close have been obtained.

The conclusion of the process would be without prejudice to any planning decision that needs to be taken by the Secretary of State. Any future decision to offer any economic licence and contract to the Track-1 T&SCos will also be subject to value for money considerations, interactions with this Phase-2 process and the negotiations/due diligence stage, affordability constraints, compliance with subsidy control rules and fiscal policy with regards to UK balance sheet treatment. Projects must also obtain all the necessary regulatory approvals and consents.

Further details on the process of concluding terms with the Track-1 T&SCos will be made available alongside future T&S Business Model publications.

## 2.6 General Considerations

### Credibility and Consistency of Information

In seeking to identify Projects which are most suited to deployment in the mid-2020s, BEIS will place significant emphasis on the credibility and consistency of information provided. This will also be taken as evidence of the maturity of submissions.

With this in mind, we would advise Project Representatives to ensure that all Projections made in their Project Plan and wider submission (including deployment dates, capture volumes, and

[27] This could include, for example, a decommissioning plan as proposed in the recent consultation, subject to any required legislative process.

cost profiles) are robust and properly supported by the accompanying documentation that they submit. Across each of the evaluation criteria set out in Sections 3, 4 and 5 of this document, Projects should provide supporting information and evidence which demonstrates the credibility of Projections made in their submission. The onus will be on the Project Representative to demonstrate to BEIS the credibility of information in a way that the Project considers to be most appropriate; this may be, for example, through evidence of board sign off and/or letters of intent.

Applicants must consider their obligations under competition law before agreeing to share any information that could amount to competitively sensitive information; and Applicants will not be penalised in the scoring for refusing to share information in circumstances in which the sharing of that information could give rise to a breach of competition law.

Furthermore, as the Department has published Business Models or intends to publish Business Models as soon as practicable, as detailed in Section 1.1, which have been discussed with expert stakeholders from industry and which set out how the Department intends to provide support to Projects, including the split of liabilities and the expected costs to be borne by the public and private sectors, it is expected that the Project Representative shall reflect this in the information and cost proposals it puts forward in its submission accordingly.

# Section 3: Power Submission and Evaluation

## 3.1 Support Package

Projects that are selected following successful evaluation and negotiations are expected to receive a Dispatchable Power Agreement (DPA), which will be funded through consumer subsidies. For further details as to the design of the Power CCUS Business Model please refer to the Business Model updates.[28]

Entering a negotiation does not mean that a DPA will be awarded. Any decision to award support would only be made subject to the successful completion of any negotiation and due diligence. Any negotiation would only conclude successfully once government has satisfied itself of the desirability of the Project through a value for money evaluation. BEIS reserves the right to pause or terminate these negotiations at any time.

Funding would not be committed unless at least: all subsidy control requirements have been met, government is comfortable with any balance sheet implications, all relevant statutory consents have been complete, and government is comfortable that the Project represents value for money for the consumer and the taxpayer. BEIS may direct the Low Carbon Contracts Company (LCCC) to enter into one or more DPA. BEIS shall reserve the right to interrupt or terminate these negotiations at any time.

Projects which pass the Power eligibility criteria evaluation will be scored against the Power evaluation criteria. We will then consider how Projects perform in combination by performing an affordability check and assessing Projects against the shortlisting factors. The highest-ranking Projects at this stage will then be placed on a shortlist to progress to the negotiation/due diligence stage. The negotiation/due diligence stage will be closed out with a Best and Final Offers (BAFO) submission, which—subject to Cluster Integration Check—will inform the final decisions to allocate financial support (more information on this process is set out in Section 7).

## 3.2 Eligibility Criteria

The eligibility criteria set out below have been specifically developed for Phase-2 of CCUS Cluster Sequencing Process. Only eligible Projects will progress onto the evaluation stage.

[28] Available at: https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models

Project Representatives are required to declare during the submission process that their Project meets the eligibility criteria set out below. Eligibility, and supporting evidence, will then be checked prior to the evaluation process.

During the evaluation process we will perform additional checks on the credibility of the evidence provided and the robustness of any calculations involved, and Projects which fail to provide sufficient evidence in respect of their satisfaction of the eligibility criteria will not progress further into the evaluation process.

We reserve the right to adjust the delivery and milestone dates in the eligibility criteria if a significant number of Projects are delayed such that we are unable to deliver CCUS programme strategic objectives.

For Phase-2 Project selection, power Projects will be considered eligible if they meet the following criteria:

**Located onshore in GB**

Projects are required to be located onshore in Great Britain to ensure that they are compliant with the technical and commercial parameters of the Power CCUS Business Model.

Projects in Northern Ireland are not eligible for support in this phase of the process because electricity policy is devolved, and Northern Ireland has a separate electricity market from Great Britain. We have engaged the Northern Ireland Executive to scope out the desirability and feasibility of supporting power Projects in Northern Ireland in future, noting challenges around funding, legislation, and the impact on the I-SEM (potentially including subsidy control).

**Have one of the eligible configurations**

The power CCUS plant must be natural gas fuelled thermal generation.

The power CCUS plant could be:

- new build (where both generation and capture units are constructed); or
- retrofit (where CCUS technology is applied to an existing generating station, which could range from adding a capture unit, through to repowering the generating station and adding a capture unit). The award of support to retrofit CCUS is subject to the outcome of a consultation (which closed on 8 September 2021) and implementation of the necessary regulatory amendments.[29]

The power CCUS plant must be one of the following technology types:

- Post-combustion.

[29] Consultation page available at: https://www.gov.uk/government/consultations/carbon-capture-usage-and-storage-amendments-to-contracts-for-difference-regulations

- Pre-combustion (on-site).[30]
- Oxy-fuelled combustion.

**Have a minimum abated capacity of 100MWe**

Through the Power CCUS Business Model, we are aiming to bring forward commercial scale power CCUS plants that are able to make a significant contribution to electricity system decarbonisation. Therefore, Projects must be able to generate and export at least 100 megawatts of low-carbon electricity (100 MWe) to the electricity grid to be eligible.

**Have access to a $CO_2$ transport solution and Track-1 or reserve cluster $CO_2$ storage site**

The Phase-2 process is open to Projects across Great Britain regardless of geographic location and proximity to a T&S network. Projects are expected to demonstrate they have a $CO_2$ transport solution and access to a Track-1 or reserve cluster $CO_2$ store. To demonstrate access, Projects should have a provisional agreement, or evidence of progress towards an agreement, with their preferred Track-1 or reserve cluster $CO_2$ store and $CO_2$ transportation provider, and clear integration plans.

**Have a minimum Projected capture rate of 90%**

Projects must be designed to achieve a minimum of a 90% capture rate when the plant is operating at full load. Capture rate calculations should include any associated on-site $CO_2$ emissions required for the provision of energy input to the capture process (where applicable). Operating at full load means a full load of combustion gas to deliver the BM (Balancing Mechanism) unit as defined in the Balancing and Settlement Code.

Capture rate should be calculated by using:

$$Capture\ Rate\ (\%) = \frac{CO_{2_{exp}}}{CO_{2_{gen}}}$$

Where the terms are set out in Table 2 below.

**Table 2: Definitions of terms in Capture Rate calculation**

| Term | Definition |
|---|---|
| $CO_{2_{exp}}$ | Total projected flow of $CO_2$ into the T&S Network during an hour of operation at full load. |
| $CO_{2_{gen}}$ | Total projected generation of $CO_2$ during an hour of operation at full load, including any associated combustion sources required |

[30] Power CCUS Projects with pre-combustion carbon capture are only eligible if the pre-combustion power generation and capture plant are located on the same site and are owned and operated by the same organisation.

| Term | Definition |
|---|---|
| | for the provision of energy input into the capture process (where appropriate). |

This information should be confirmed within the Heat and Material Balance or Process Basis of Design of the plant, which should be provided as part of the submission.

**Demonstrated access to finance**

To ensure Projects which enter the evaluation stage have the appropriate support to reach operation, Projects must be able to show information about their financing plan and the status of discussions with financiers. This could be shown, for example, by a letter from the board of equity partners which commits to financing the Project and/or letters of support from financiers. Government recognises that the support offered will likely be conditional upon the outcome of negotiations.

**Show that the Project is able to be operational no later than December 2027**

This criterion has been proposed to align with government commitment to deploy CCUS in the UK in the 2020s, with at least two clusters by the mid-2020s and at least one power CCUS Project operational by the mid-2020's. December 2027 is intended as a backstop date and having a credible earlier operational date will count favourably towards the Project evaluation stage.

**Have commenced pre-FEED studies or be ready to commence pre-FEED no later than the end of December 2022.**

To ensure Projects are at an appropriate stage to align with operational dates of December 2027 or earlier, Projects must at a minimum be at pre-FEED stage or ready to commence pre-FEED no later than December 2022. This must be set out in a Project execution plan as part of the Project Plan.

We recognise that there are different processes for developing a capital-intensive Project and different methods of describing the design stages and stage-gates to pass through. However, the definition of pre-FEED for the purposes of eligibility for the Power CCUS Business Model is as follows:

- Pre-FEED is the stage in which a Project undergoes feasibility studies with further definition around cost estimates and technology specification to prove Project feasibility and provide a basis to enter into the FEED stage. This stage may also be referred to as Front End Loading (FEL) 2. It is expected that during the Pre-FEED stage the following activities will be undertaken:
    - The technical concept is defined evaluating viable options with respect to technical, efficient energy utilisation, HSE, and economical aspects and recommending the most feasible option for further development during FEED.

- Determining the preliminary plant configuration and battery limit conditions.
- Investigation and selection of equipment and potential providers.
- Review and recommendation of $CO_2$ capture technologies.
- Evaluation of utility requirements.
- An initial risk register is developed.
- A preliminary cost estimate and schedule are prepared for delivering the Project.

Pre-FEED is preceded by a screening / options appraisal stage (FEL 1) which takes the Project from a statement of intent through to potential options being considered with a recommendation of the preferred option to be taken forward.

Pre-FEED is followed by FEED (FEL 3) in which the design and cost estimate are defined to a level sufficient for a financial investment decision to be taken and the implementation stage to commence.

Note that we would expect Projects with earlier operational dates to be further ahead with their FEED studies and this will be considered as part of Project evaluation.

**Show that the Project will be able to have relevant consents in place no later than December 2024**

Applicants are required to show that planning consents and applicable agreements have been obtained or demonstrate a proposed process and timetable that allows sufficient time for planning consents and applicable agreements for connecting to gas and electricity networks to be obtained in advance of entry into a potential DPA. Applicants are required to show that any applicable agreements for connecting to the gas and electricity networks can be executed on or before the start of the Target Commissioning Window for the installation. This will be considered in further detail at the assessment stage. Timetabling should factor in the expiration of any challenge period for the consents, and we reserve the right to delay or prevent entry into a DPA where a valid challenge has been brought within the relevant time period.

## 3.3 Evaluation Criteria

### Approach to Scoring

This section sets out the evaluation criteria which will be used in assessing the power CCUS submissions for Phase-2. Projects will be allocated a score against each of the criteria. This is explained below.

Where scores for a criterion are determined at least partially via qualitative evaluation – that is, for Deliverability, Economic Benefits, Cost Considerations and Learning and Innovation – we have provided a set of scoring descriptors to indicate how performance against the criterion results in the score awarded.

Scores will be allocated based on the assessment of the relevant evidence against the scoring tables outlined below. If evidence provided for a criterion is assessed to fall between or across more than one scoring descriptor then the Project will receive the score which most closely represents the overall evidence provided against that criterion.

## Weightings

Table 3 below sets out the weightings allocated to each of the Phase-2 evaluation criteria for power CCUS projects. The headline criteria and weightings are unchanged from Phase-1.

**Table 3: Power CCUS Phase-2 Evaluation Criteria**

| Criterion | Weighting |
|---|---|
| Deliverability | 30% |
| Emissions Reduction | 25% |
| Economic Benefits | 20% |
| Cost Considerations | 15% |
| Learning and Innovation | 10% |

Power CCUS Projects' overall scores will be calculated using their final scores against each criterion, which are then combined according to the associated weightings set out above.

### Minimum Scoring

Projects will be assessed against the deliverability criterion and need to achieve a minimum score of 2 (as defined in Table 4 – Deliverability, below) to be shortlisted to participate in the negotiation/due diligence stage. Projects that do not achieve a minimum of 2 for this criterion will not progress any further in the Phase-2 Cluster Sequencing Process. This is to ensure only viable Projects are shortlisted.

### Deliverability (30%)

The deliverability criterion will consider the Project's capability and capacity to deliver successfully and the time at which the Project will come online.

The primary tool for assessing against the deliverability criterion will be the Project's adjusted Commercial Operation Date (COD). We define the COD as the date the plant is confirmed to meet the Operational Conditions Precedent (OCP) and the Project begins operating and transporting captured $CO_2$ emissions to permanent storage. In order to determine the adjusted COD, the COD stated in the Project Plan will be assessed by BEIS and its advisors and

adjusted according to our level of confidence in this date. In determining the level of adjustment required, assessors will consider the credibility of the Project submission, with the onus on the applicant to provide sufficient supporting information to demonstrate its credibility. In this way, the adjusted COD acts as a combined measure of deliverability and maturity on the one hand, and pace on the other.

By considering the adjusted COD along with a more general evaluation of the Project's deliverability profile, we will assign a deliverability score based on performance against three key factors:

- Government's confidence that the Project is capable of delivering by December 2027 at the latest, such that a Project will score higher if we have a greater level of confidence in delivery in this period.
- The Project's pace of delivery, such that a Project with an adjusted COD in, for example, 2025 will score higher than a Project with an adjusted COD in, for example, 2027 all else being equal.
- The Project's suitability to meet the strategic and technical requirements of the power CCUS programme and provide dispatchable, low-carbon mid-merit power to the electricity system. The factors we will consider are:
    - How the Project has been, or will be, designed to add dispatchable, low-carbon power generation capacity to the electricity system. In particular, how the Project has been designed to react to market conditions (i.e., start-up and shut-down) quickly while minimising residual carbon emissions, especially emissions which are not fed into the capture plant.
    - The ability of the Project to connect to the electricity system and the gas grid.

In assessing against this criterion, Projects will be credited for providing clear and credible evidence of the following in particular:

- The capability and the organisational structure of the Project Representative and the other companies developing the Project.
- The preliminary basis of technical design or similar. This evidence should contain a high-level description which details the technical proposal for the Project.
- An integrated Project Plan with strong schedule logic that incorporates activity durations which are judged to be within reason, for example in comparison to similar activities undertaken on other Projects and considering any applicable processes, such as acquiring any necessary planning permissions or procuring suppliers. The critical path and relevant lead times should be clearly identified with floats incorporated as required.
- Progress to date against the stated Project Plan, with documentation and engineering information provided to demonstrate that the Project is progressing to plan.

- Progress in applying for and/or securing grid connection agreements for the electricity and gas grids; if not yet secured, this should be properly accounted for in the Project schedule.
- Accurate identification of the critical planning and consent stages, including environmental permitting and abstraction licensing, with these properly accounted for in the Project schedule.
- Financing arrangements for progressing the Project and the status of key commercial agreements needed to realise the Project, with these properly accounted for in the Project schedule.
- An agreement or evidence of progress towards an agreement to connect to an appropriate T&S Network. We recognise that the level of commitment in place between Projects and T&SCos may naturally vary depending on the Projects and T&SCos stages of development. However, relevant evidence could include:
    - A letter of support from a T&S provider(s).
    - Memoranda of Understanding, connection agreements or draft Heads of Terms with the T&S provider(s).
- Business plans for the organisations involved and details of how the Project fits with the company's overall strategic ambition as well as information relating to financial health. This information should be supported by the Financial Statement Template (Annex D).
- Detailed registers in place to identify key risks, with mitigations populated and pre- and post-mitigation scores. The Project should demonstrate where mitigations are already in place and present a clear implementation plan where they are not. This should take account of cyber risks to both the Project and the resilience of the infrastructure once commissioned, demonstrating secure by design principles. The Project should also provide evidence of the steps taken to identify and assess cyber risks and the mitigations that will be put in place to ensure strong cyber resilience.
- Clear adherence to safety regulations, and identification and mitigation of any residual safety risks such that they are as low as reasonably possible across all components of the Project.
- Ability of Project organisations to access the proper level of resource and capability necessary to deliver their Project. Specifically, the following may be taken as evidence of this:
    - Key contracts in place with core suppliers – or, at a minimum, substantial engagement with prospective suppliers.
    - Evidence of engagement with technology licensors.
    - Demonstration of the Project Representative's competence to manage and coordinate a programme of the scale and complexity of a Project.
    - Evaluation of capability and capacity of supply chains to deliver required materials, goods, and skills.

The Project Plan includes further prompts as to the specific pieces of supporting evidence which may be beneficial in supporting the Project to perform well against the deliverability criterion.

In light of the responses and supporting evidence provided, assessors will assign a final score to the Project by reviewing both the corrected COD and general deliverability evaluation in aggregate, considering all information provided by the Project as well as its credibility. The scoring categories for this criterion are defined as follows

**Table 4: Scoring Categories – Deliverability**

| Score | Description |
|---|---|
| Low (1) | • Evidence and responses provided in relation to one or more relevant questions are missing or incomplete.<br>• Little to no confidence in the ability of the Project to deploy by December 2027 at the latest and meet our strategic and technical requirements, or in its delivery capability more generally.[31] |
| Low-Medium (2) | • Adequate responses given to all relevant questions, with some level of supporting evidence provided.<br>• Some possibility that the Project may be capable of deployment by December 2027 at the latest and meet our strategic and technical requirements, but limited confidence or certainty that this is attainable. |
| Medium (3) | • All relevant questions are fully answered and a reasonable level of supporting evidence is provided.<br>• Responses and supporting information give a reasonable level of confidence in the ability of the Project to deploy by December 2027 at the latest and meet our strategic and technical requirements.<br>• However, there may be reservations regarding the credibility of some supporting information, or the Project's capability in certain delivery areas. |

[31] While delivery assumptions might be more uncertain for less mature Projects (e.g. those at pre-FEED stage), it is expected that they may be in a position to receive a score above Low (1) provided that sufficient evidence and responses are provided in the Project Plan and uncertainties are adequately reflected in the submitted risk registers, costs, Projects schedule, emissions reduction and other contingencies.

| Score | Description |
|---|---|
| Medium-High (4) | • Comprehensive responses given to all relevant questions and a reasonable level of largely credible supporting evidence is provided.<br>• Responses and supporting information give a strong level of confidence in the ability of the Project to deliver by December 2027 at the latest and meet our strategic and technical requirements, but potentially less confidence in its ability to deliver at pace within that window. |
| High (5) | • Comprehensive responses given to all relevant questions, with clear and credible evidence provided to demonstrate delivery capability.<br>• Responses and supporting evidence give a high degree of confidence in the ability of the Project to support a COD by December 2027 at the latest, meet our strategic and technical requirements, and to deliver at pace within that window. |

### Emissions Reduction (25%)

The emissions reduction criterion will assess the potential offered by each Project to decarbonise the electricity system by adding low carbon, dispatchable electricity capacity to the energy mix.

Projects will be assessed based on the residual carbon dioxide equivalent that is emitted into the atmosphere per kilowatt-hour of electricity produced, Loss Adjusted Metered Electricity Output, while running at a steady state during reference conditions. This measure is called the "carbon intensity" of the electricity produced, and is calculated as:

$$Carbon\ Intensity\ = \frac{CO_2e\ generated\ per\ hour\ (g) - \ CO_2e\ captured\ per\ hour\ (g)}{Electricity\ output\ per\ hour\ (kWh)}$$

Each Project is required to have a projected capture rate of at least 90% to be eligible for the Phase-2 evaluation process, so these residual emissions should be significantly less than the most efficient unabated closed cycle gas turbines currently available and Projects with the lowest carbon intensity will score the highest.

Projects will be scored based on Table 5, which have been calculated using a baseline plant of a H Class CCGT which has a carbon intensity of 327.2g$CO_2$e/kWh.[32]

[32] Data Table 2a of the Green Book supplementary guidance: valuation of energy use and greenhouse gas emissions for appraisal (https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal), updated on 15 July 2021, sets out that natural gas has a carbon intensity of

**Table 5: Scoring Categories – Emissions Reduction**

| Score | Carbon Intensity (% of baseline) | Carbon Intensity* (gCO2e/kWh) |
|---|---|---|
| 5 | 0.00% ≤ x < 2.50% | 0.0 ≤ x < 8.2 |
| 4.5 | 2.50% ≤ x < 5.00% | 8.2 ≤ x < 16.4 |
| 4 | 5.00% ≤ x < 7.50% | 16.4 ≤ x < 24.5 |
| 3.5 | 7.50% ≤ x < 10.0% | 24.5 ≤ x < 32.7 |
| 3 | 10.0% ≤ x < 12.5% | 32.7 ≤ x < 40.9 |
| 2.5 | 12.5% ≤ x < 15.0% | 40.9 ≤ x < 49.1 |
| 2 | 15.0% ≤ x < 17.5% | 49.1 ≤ x < 57.3 |
| 1.5 | 17.5% ≤ x < 20.0% | 57.3 ≤ x < 65.4 |
| 1 | 20.0% ≤ x < 22.5% | 65.4 ≤ x < 73.6 |
| 0.5 | 22.5% ≤ x | 73.6 ≤ x |

* The carbon intensity figures in $gCO_2e/kWh$ have been provided for representative purposes only and are rounded to one decimal place; the thresholds presented as a percentage of the baseline plant will be used for assessing Projects.

## Economic Benefits (20%)

This criterion aims to assess the potential contribution that the Project can make to the government's objective of supporting clean, resilient and sustainable economic growth as we build back from the impacts of Covid-19. Projects should look to demonstrate the contribution the power CCUS Project can make to the UK economy and government's levelling up agenda.

183.87gCO2e per kWh of gross calorific value. The Electricity Generation Costs 2020 report (https://www.gov.uk/government/publications/beis-electricity-generation-costs-2020) published in August 2020 set out the efficiency for a H Class CCGT as 56.2% on a higher heat value (HHV) basis. To establish our baseline carbon intensity, we have calculated 183.87 ÷ 56.2% to give a carbon intensity for a H-Class CCGT of 327.1708gCO2e/kWh.

Evaluation against this criterion will be undertaken on the basis of information provided through the Economic Benefits Template (Annex B) and answers provided within the Project Plan alongside any associated supporting documentation.

Projects will be assessed against the economic benefits criterion with reference to four key factors:

- Number and quality of jobs
- Transparency of supply chain procurement process
- Investment in CCUS skills
- Wider economic benefits

*Number and quality of jobs*

This will consider the number of direct and indirect jobs the Project can create and safeguard as well as when these jobs will be realised and where they are located, and the overall wage premium generated by these jobs. The template will consider the salaries of these jobs as a contribution to GVA, with the data being evaluated using standard Green Book appraisal methods (refer to Annex B for completion of this section).

*Transparency of supply chain procurement processes*

Projects will need to demonstrate how they will make their procurement strategies as transparent as possible. For example, identifying supply chain opportunities, advertising them as early as possible, and beginning meaningful engagement with CCUS supply chain companies.

*Investment in CCUS skills*

We welcome evidence that demonstrates where Projects are individually or collectively investing in training programmes to develop skills in CCUS, for example in apprenticeships and retraining programmes, and the skill level of jobs. We will evaluate the wage uplift generated via plans for future upskilling, to the extent that these factors support the delivery of the Project, via standard Green Book appraisal methods. We ask that Projects provide detail on these programmes and how they will target impacts to regions, local communities and at a national level, as well as how they will support retraining workforces transitioning from other sectors (refer to Annex B for completion of this section).

*Wider economic benefits*

In line with the commitments made in the Ten Point Plan, which set out the government's objective to drive local and regional growth to level up across the UK, Projects should ensure their responses address their contribution to economic growth within the local area, in line with the following key strategic priorities:

- Synergies with other decarbonisation programmes and potential to be a SuperPlace. This could be demonstrated through, for example, the mapping of a broader

decarbonisation pathway for the region, identifying the economic benefits and opportunities of decarbonisation, as well as the development of skills required to realise these benefits.

- Regeneration and community renewal: Projects should consider how they can contribute to improving and widening the economic benefits associated with their development and impact on local communities. This could include but is not limited to, for example, impacts on air quality, increased attractiveness to other businesses, local transport links or land value. Projects should provide evidence of any wider economic benefits that they deem to be relevant. Any engagement with local communities or institutions that has taken place, or will take place, in support of these plans will be seen as beneficial.
- Equality, diversity and inclusion: Projects should consider how they can ensure the diversity and inclusivity of their workforce, as well as how to incorporate hiring practices which do not disadvantage those with protected characteristics.

In light of the responses and supporting evidence provided, assessors will assign a final score considering all information provided by the Project, as well as its credibility. The scoring categories for this criterion are defined as follows:

**Table 6: Scoring Categories – Economic Benefits**

| Score | Description |
|---|---|
| Low (1) | • The Project submission demonstrates only minimal levels of economic benefit or no economic benefit at all.<br>• Limited evidence provided which gives little to no confidence in the ability of the Project to implement and realise the expected plans (if any) and any consequential economic benefits. |
| Low-Medium (2) | • The Project submission demonstrates limited levels of economic benefit.<br>• Supporting evidence around economic benefits may be limited in places but gives some confidence in the ability of the Project to implement and realise the expected plans and economic benefits. |
| Medium (3) | • The Project submission demonstrates a reasonable level of economic benefit.<br>• Range of supporting evidence provided, giving confidence in the ability of the Project to implement and realise the expected plans and economic benefits. |

| Score | Description |
|---|---|
| Medium-High (4) | • The Project submission demonstrates a high level of economic benefit.<br>• Good level of supporting evidence provided throughout, giving a good degree of confidence in the ability of the Project to implement and realise its Projected plans and economic benefits. |
| High (5) | • The Project submission demonstrates a very high level of economic benefit.<br>• Comprehensive and highly credible supporting evidence gives a high degree of confidence in the ability of the Project to implement and realise its plans and economic benefits. |

## Cost Considerations (15%)

Projects will be assessed based on their APRi bid, which should be expressed as the £/MW/Settlement Unit that they would hope to receive if they were awarded a DPA.

To calculate their APRi bids, Projects should use the information published to date on the Availability Payment, including in our DPA Business Model updates.[33]

We will assess Projects against this criterion by considering their APRi, including detailed information provided in the Cost Considerations Template (Annex C1) and the Power CCUS Project Plan (Annex A1), alongside any associated supporting documentation. Projects should provide a detailed breakdown of the elements they have considered to develop their APRi bid, and the assumptions and calculations that fed into their bid. We will use the detailed information and supporting evidence provided to assess the confidence we have in the APRi bid, which will inform the scoring as below. Annex C1 is a template that will aid evaluation, but Projects may wish to adapt and/or supplement it to improve the confidence in the APRi bid. This may include, but is not limited to, providing their own Project cost model.

The annexes will also capture information on the term length that the Project is proposing, but this will not be used to assess cost.

*Determining APRi bids*

The Availability Payment Rate (APRi), measured in £/MW/Settlement unit, is the term which defines the size of the Availability Payment that will be made to the Project, as adjusted by the net dependable capacity,[34] availability of power generation and the capture rate of the Project.

[33] https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models
[34] As defined in the DPA business model update published in October, available here: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1023071/dpa-business-model-october-2021.pdf

The final APRi for a Project will be agreed as part of the negotiation process between that Project and the government if it passes the evaluation stage.

When determining the value of the APRi submitted for evaluation, some of the elements Projects may wish to consider include:

- The anticipated costs associated with the Project, in particular its DEVEX, CAPEX and fixed OPEX.
- The confidence interval associated with these cost estimates.
- The anticipated weighted average cost of capital for the Project and assumptions as to how the Project will be financed.
- The average capture rate the Project will operate at in market conditions, including assumptions for reductions in capture rate while starting up and shutting down operations due to market conditions.
- The anticipated availability of low carbon generation, which is the percentage of the term length of a DPA that the Project would anticipate being available to dispatch power, including assumptions for generation outages, derating events and shutdowns for maintenance.
- Projections for market revenues and other sources of income for the Project, including those Projected post-DPA term, and assumptions that are used to derive these Projections.

A detailed breakdown of these elements, including rationale for assumptions and supporting evidence, where relevant, should be provided in the Power CCUS Project Plan (Annex A1) and Cost Considerations Template (Annex C1). More information about the Availability Payment is available in the Business Model updates released in December, May and October.

Government will then use the APRi bid together with the detailed information and supporting evidence provided as the primary tools for assessing the cost considerations criterion. The scoring categories for this criterion are defined as follows:

**Table 7: Scoring Categories – Cost Considerations**

| Score | Description |
|---|---|
| Low (1) | • APRi bid is high cost relative to other eligible Projects (defined as in highest 30%) and we have moderate or low confidence in the Project's cost estimates and contingencies.[35]<br><br>OR |

[35] While assumptions might be more uncertain for less mature Projects (e.g. those at pre-FEED stage), they could be assessed as moderate confidence if appropriate evidence and responses are provided in the Project Plan and uncertainties are adequately reflected in the APRi calculation, confidence intervals and contingencies.

| Score | Description |
|---|---|
| | • APRi bid is competitive with other eligible Projects (defined as between 30th and 70th percentile) and we have low confidence in the Project's cost estimates and contingencies. |
| Low-Medium (2) | • APRi bid is low cost relative to other eligible Projects (defined as in lowest 30%) and we have low confidence in the Project's cost estimates and contingencies.<br>OR<br>• APRi bid is high cost relative to other eligible Projects (defined as in highest 30%) and we have high confidence in the Project's cost estimates and contingencies. |
| Medium (3) | • APRi bid is competitive with other eligible Projects (defined as between 30th and 70th percentile) and we have moderate confidence in the Project's cost estimates and contingencies. |
| Medium-High (4) | • APRi bid is low cost relative to other eligible Projects (defined as in lowest 30%) and we have moderate confidence in the Project's cost estimates and contingencies.<br>OR<br>• APRi bid is competitive with other eligible Projects (defined as between 30th and 70th percentile) and we have a high confidence in the Project's cost estimates and contingencies. |
| High (5) | • APRi bid is low cost relative to other eligible Projects (defined as in lowest 30%) and we have high confidence in the Project's cost estimates and contingencies. |

### Learning and Innovation (10%)

The creation and sharing of knowledge from early CCUS deployment will be a crucial step in de-risking and enabling cost reduction for future CCUS Projects. The sharing of information will also promote innovations and collaboration both within and between Projects. Within this criterion government will be looking for a Project to demonstrate:

- That it will deliver replicability benefits, including having plans in place to reduce future costs of power CCUS Projects. In particular, Projects which contribute to moving a

technology, or multiple technologies, from one technical readiness level (TRL) or commercial readiness level (CRL) to another.

- That it will contribute to the development of innovative technologies.
- That it will generate and share knowledge. Government will be considering both the Key Knowledge Deliverables (KKDs) that will be generated and shared as well as the plans the Project has in place to proactively disseminate this knowledge in a way to benefit future Projects. This may include working with government, research institutions, universities, Local Enterprise Partnerships, Higher Education Colleges, and businesses to maximise impact. In particular, we would like to see evidence of:
    - Open Technology, where the operator has the appropriate rights in relation to the installed technologies to work with third parties such as researchers and suppliers to adjust and develop the capture technology over the lifetime of the plant. By being able to develop adjustments during the lifetime of the plant, further learning and innovation can be realised, and costs can be reduced.
    - Open Access, where few or no restrictions on sharing information and learnings from the Project apply, and those that do are limited in scope.
    - A commitment to knowledge sharing.

Previous government CCUS funding allocations have resulted in important information sharing through KKDs. We would expect a similar level of information sharing as in previous funding allocation rounds.[36] The onus will be on the Project to describe what KKDs it will produce and which ones it will be willing to share (either in full or redacted as appropriate).

We are not prescribing a specific level of information sharing, but Projects willing to share more information, especially key information that will produce greatest learning, and proactively work to maximise the benefits of information shared, will be advantaged through the scoring. However, we acknowledge that some Projects will be unable to share some proprietary information about their Project, and Projects will not be penalised for not sharing this proprietary information.

Projects should consider their obligations under competition law before agreeing to share any information that could amount to commercially sensitive information. Projects will not be penalised in the scoring for refusing to share information in circumstances in which the sharing of that information could give rise to a breach of competition law.

**Table 8: Scoring Categories – Learning and Innovation**

| Score | Description |
|---|---|
| Low (1) | • Low confidence in the Project's ability to deliver innovation, meaningful learnings and cost reductions. |

[36] More detail on previous allocation rounds can be found here: https://www.gov.uk/government/collections/carbon-capture-and-storage-knowledge-sharing

| Score | Description |
|---|---|
| | • Little or no willingness to share information. |
| Low-Medium (2) | • Some confidence in the Project's ability to deliver innovation, meaningful learnings and cost reductions.<br>• Some willingness and/or commitment(s) to share information. |
| Medium (3) | • Good confidence in the Project's ability to deliver innovation, meaningful learnings and cost reductions.<br>• Moderate commitment(s) to share information. |
| Medium-High (4) | • Good confidence in the Project's ability to deliver substantial innovation, meaningful learnings and cost reductions.<br>• Strong commitment(s) to share information. |
| High (5) | • High confidence in the Project's ability to deliver substantial innovation, meaningful learnings and cost reductions.<br>• Very strong commitment(s) to share information. |

## 3.4 Shortlisting Process

After the evaluation process, Projects will be ranked by total Project score from lowest to highest. We will then longlist Projects for further consideration on the basis of their ranking. We will then identify a shortlist of the highest ranking Projects with regard to the bounds of our affordability constraint, considering the need to drive competitive tension and accounting for Projects potentially leaving the process or negotiations breaking down.

Following the approach in Phase-1, we will then step back to consider how plants perform in combination. In the course of this process, evaluation rankings will remain the key determinant of which Projects are shortlisted, but a lower ranking Project on the longlist may replace a higher ranking one on the shortlist in specific circumstances. Only the lowest ranked shortlisted Project could be replaced, and only then if the next highest ranked longlisted Project performs better on a shortlisting scorecard.

The shortlisting factors which will be considered on the scorecard are as follows:

- **Capacity added to the system**: Power CCUS is vital to support the decarbonisation of the UK's energy mix and to reach net zero. Within our affordability envelope, and subject to the value for money of each Project, government will seek to maximise the total low carbon dispatchable power added to the system.

- **Constraints on the electricity system**: if multiple Projects come forward in one location this could cause or exacerbate congestion on the electricity system and plants may not be able to dispatch power when the electricity system as a whole requires it. It will be necessary for government to assess the shortlisting of Projects to ensure that constraints on the electricity system are accounted for and where possible mitigated.
- **Diversity of technologies**: a key objective of deploying power CCUS is to generate a wide range of learnings and improve cost certainty for future rounds of CCUS deployment. Having a diverse set of power CCUS technologies in Track-1 will maximise the proportion of future Projects which are able to benefit from these learnings.

It is important to note that these shortlisting considerations are not absolute requirements, but considerations that will be assessed qualitatively in the shortlisting scorecard following the evaluation process. Projects shortlisted in Phase-2 will progress to the negotiation/due diligence phase, which is detailed in Section 7.

# Section 4: Industrial Carbon Capture Submission and Evaluation

## 4.1 Support Package

Projects that are selected for Track-1 following evaluation and negotiations are expected to receive ICC Business Model support through:

- An element of capital co-funding through the CCS Infrastructure Fund (CIF), where relevant.
- An Industrial Carbon Capture Contract to provide revenue support through the Industrial Decarbonisation and Hydrogen Revenue Support (IDHRS) scheme.

Projects will submit one submission for Phase-2 selection to be considered for capex co-funding from the CIF and business model revenue support through the industrial carbon capture contract, funded by the IDHRS[37]. Information submitted will be used to inform the negotiations stage in respect of CIF and IDHRS support. We may ask for further information as part of our due diligence process for approving CIF grants and IDHRS support.

Entering a bilateral negotiation does not mean that any funding or contract will be awarded. Any negotiations to allocate CIF and/or IDHRS may need to adjust for allocations of capital and revenue support funding received from other government support schemes where relevant. Any decision to award support would only be made subject to the successful completion of any negotiation and due diligence. Any negotiation would only conclude successfully once government has satisfied itself of the desirability of the Project through a value for money evaluation. BEIS reserves the right to pause or terminate these negotiations at any time (more information on this process is set out in Section 7).

Any decision to award support at any stage of this process will only be made subject to government being comfortable with: the application of subsidy control requirements, any balance sheet implications, the status of any relevant statutory consents and that the Project represents value for money for the consumer and the taxpayer and is deliverable.

Further details on the business model can be found in the October Industrial Carbon Capture Business Model update published earlier this year[38].

[37] Capture-as-a-service (CaaS) Projects will be assessed as one single Project. Section 4.2 provides further detail on how we intend to evaluate CaaS group Projects.
[38] The ICC Business Model publications can be found at: https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models

## 4.2 CaaS Submission Structure

Each Capture as a Service (CaaS)[39] Project must identify a CaaS Group Lead which should be the representative for the CaaS Group, responsible for submitting the Industrial Capture Project Plan and associated annexes. We expect the CaaS Group Lead to be the CaaSCo (Capture as a Service provider) and submit on behalf of the capture Projects in the CaaS Group.

The CaaS Group Lead should submit only one submission to BEIS on behalf of the Projects in the group, including completed copies of each of the relevant submission forms detailed earlier in Section 2.1.

CaaS Group Leads submitting on behalf of the CaaS Group are reminded that care must be taken to ensure that any commercial information passing between the CaaS Group Lead and CaaS Group entities relates solely to the preparation of a Phase-2 Cluster Sequencing submission and any other information provided by one party to the other must be provided on a strictly 'need to know' basis. For reasons of commercial sensitivity, CaaS Group entities can submit information separately from the main submission for defined sections of the Industrial Capture Project Plan, as outlined in Annex A2. Further detail on information sharing-arrangements and anti-competitive behaviour considerations is detailed in Section 2.2.

The Industrial Capture Project Plan will set out what additional information is required from the CaaSCo in order to assess the CaaS Group as a whole. All CaaS Group entities will be individually assessed according to the relevant criteria. Given the interdependencies and shared viability, the CaaS Group criterion scores will be an aggregated score of the individual entities across the Group, except for cost which is both assessed and scored as a group. The CaaS Group will receive a single overall score which will be calculated using the finalised CaaS Group scores determined against each criterion and then be combined according to their associated weightings. Further detail on these weightings can be found in in Section 4.4.

It is the responsibility of both the CaaSCo and CaaS Group capture Projects to ensure there is sufficient information across any and all submissions made to fulfil the requirements of the evaluation.

The information provided should, to the best ability of the CaaS Group Lead, not duplicate emissions, costs or benefits to reduce the risk of assessors double counting evidence. The CaaS Group Lead should state where evidence is attributed to an individual capture Project in the CaaS Group or where evidence represents the CaaS Group as a whole. Requests for clarification may be made to facilitate interpretation of the bid(s). If assessors interpret or infer duplication of information, BEIS may contact the CaaS Group Lead to clarify the evidence that has been submitted.

Individual capture Projects applying in a CaaS Group will only be considered as part of the entire CaaS Group. A submission received from an industrial capture Project in addition to its

[39] A company may offer 'Capture as a Service' (CaaS) on behalf of an industrial emitter(s) to capture the emissions as a service, please see the May and October ICC Business Model publications for further details.

submission as part of the CaaS Group will not be considered. There will be no recourse option to reconfigure the CaaS Group if one of the CaaS Group entities demonstrates ineligibility, or failure to achieve minimum deliverability or emissions reduction criteria scores. In this scenario the CaaS Group will not be further assessed. BEIS will not reconsider the CaaS Group with the remaining capture Projects or accept additional or re-submissions of individual capture Projects to that CaaS Group.

The number of CaaS Group entities may mean that an increase to the word count limit is needed to ensure quality submissions. Further details on CaaS word count adjustments can be found in the Industrial Capture Project Plan (Annex A2).

## 4.3 Eligibility Criteria

The eligibility criteria set out below have been specifically developed for Industrial Capture Projects entering Phase-2 of the CCUS Cluster Sequencing Process.

Projects will be asked to self-declare eligibility through the online portal and will only be invited to submit upon successful completion of this stage. After the submission window closes, each Project will go through an initial eligibility check to make sure that the evidence submitted demonstrates that the Project is consistent with the eligibility criteria. Applicants will be notified via email if they have been successful or unsuccessful after the eligibility stage. Only eligible Projects will progress to the next stage where they will be assessed against the evaluation criteria.

We reserve the right to adjust the delivery and milestone dates in the eligibility criteria if a significant number of Projects are delayed such that we are unable to deliver CCUS programme strategic objectives.

For Phase-2 Industrial Carbon Capture Project selection, Applicants will be considered eligible if they meet the following criteria:

- Must be located in the UK.
- Must have access to a $CO_2$ transport solution and Track-1 or reserve cluster $CO_2$ storage site.
- Must show that it is able to be operational[40] no later than the end of December 2027.
- Must have commenced pre-FEED studies or be ready to commence pre-FEED no later than the end of December 2022.
- Must meet the definition of an industrial facility.
- Must deploy an eligible CCUS technology.
- Must be able to demonstrate the ability to meet high capture rates of at least 85%[41].

[40] We define operational as when there is continuous export of $CO_2$ volumes into the store.
[41] We define capture rate as the percentage of $CO_2$ emissions captured from the specific emissions stream that the capture technology is applied to.

- For Projects in the Oil and Gas, CCUS-Enabled Hydrogen, Waste Management or Combined Heat and Power (CHP) sectors, the Project must meet specific eligibility criteria.

Further details on each of these criteria are set out below.

For CaaS submissions, in order to progress to the next stage of the evaluation, the CaaS Group treated as a single Project will need to meet all the above eligibility criteria. The specific treatment of criteria for CaaS submissions would be addressed in their respective sections.

## Must be located in the UK

This criterion has been set to reflect UK government's commitment across the UK to support decarbonisation in line with our 2050 net zero target and Sixth Carbon Budget obligations.

For CaaS Groups, this criterion applies to individual capture Projects and the CaaSCo.

## Must have access to a $CO_2$ transport solution and Track-1 or reserve cluster $CO_2$ storage site

The Phase-2 process is open to submissions from Projects across the UK regardless of geographic location and proximity to a Track-1 or reserve T&S Network. Projects are required to demonstrate they have a $CO_2$ transport solution and access to a Track-1 or reserve cluster $CO_2$ storage site. To demonstrate access, Projects should have an agreement or evidence of progress towards an agreement with their preferred Track-1 or reserve cluster $CO_2$ store and $CO_2$ transportation provider, with clear plans on how they will integrate with a $CO_2$ store.

The eligibility check will review if the evidence submitted in the Industrial Capture Project Plan demonstrates that the Project is consistent with this eligibility criterion. In the evaluation stage, the deliverability criterion will assess whether the provisional agreements and integration plans credibly align with the rest of the evidence submitted in the Industrial Capture Project Plan at a more detailed level.

For CaaS Groups, this criterion only applies specifically to the CaaSCo. individual capture Projects must have infrastructure in place for transport of emissions from the industrial facility to the CaaSCo.

## Must show that the Project is able to be operational no later than the end of December 2027

This criterion has been set to align with the government's commitment to deploy CCUS in the UK in the 2020s, with at least two clusters to be operational by the mid-2020s and supports ambitions to abate 6Mt$CO_2$ of industrial emissions per year by 2030, and 9Mt$CO_2$ by 2035 as set out in the Net Zero Strategy. Note that this is intended as a backstop date; having a credible earlier operational date will count favourably towards the Project in the evaluation of the deliverability at the evaluation stage.

The eligibility check will review if the evidence submitted in the Industrial Capture Project Plan demonstrates that the Project is consistent with this eligibility criterion. In the evaluation stage, the deliverability criterion will assess the operational timelines at a more detailed level.

This date covers the operation of carbon capture technologies in existing industrial facilities retrofitting carbon capture and new facilities built with carbon capture.

For CaaS Groups, this date refers to the CaaSCo's earliest commercial capture of the first Industrial Capture Project emissions and transfer to storage. Further details on how operational dates are defined is provided in Section 4.4.

### Must have commenced pre-FEED studies or ready to commence pre-FEED no later than the end of December 2022

To ensure Projects are at an appropriate stage to align with operational dates of December 2027 or earlier, Projects must at a minimum be at pre-FEED stage or ready to commence pre-FEED no later than December 2022. This must be set out in a Project execution plan as part of the Project Plan.

We recognise that there are different processes for developing a capital-intensive Project and different methods of describing the design stages and stage-gates to pass through. However, the definition of pre-FEED for the purposes of eligibility for the ICC business model is as follows:

- Pre-FEED is the stage in which a Project undergoes feasibility studies with further definition around cost estimates and technology specification to prove Project feasibility and provide a basis to enter into the FEED stage. This stage may also be referred to as Front End Loading (FEL) 2. It is expected that during the Pre-FEED stage the following activities will be undertaken:
    - The technical concept is defined evaluating viable options with respect to technical, efficient energy utilisation, HSE, and economical aspects and recommending the most feasible option for further development during FEED.
    - Determining the preliminary plant configuration and battery limit conditions.
    - Investigation and selection of equipment and potential providers.
    - Review and recommendation of $CO_2$ capture technologies.
    - Evaluation of utility requirements.
    - An initial risk register is developed.
    - A preliminary cost estimate and schedule are prepared for delivering the Project.

Pre-FEED is preceded by a screening / options appraisal stage (FEL 1) which takes the Project from a statement of intent through to potential options being considered with a recommendation of the preferred option to be taken forward.

Pre-FEED is followed by FEED (FEL 3) in which the design and cost estimate are defined to a level sufficient for a financial investment decision to be taken and the implementation stage to commence.

Note that we would expect Projects with earlier operational dates to be further ahead with their FEED studies and this will be considered as part of Project evaluation.

For CaaS Groups, this criterion applies individual industrial capture Projects and the CaaSCo.

## Must meet the definition of an industrial facility

For the purpose of this criterion, an 'industrial facility' is defined as a:

- facility;
- part of a facility (which can include an industrial process or collection of industrial process(es));

which manufactures products, treats materials and/or provides services for use in or as part of an industrial process or collection of industrial process(es) and falls within one or more eligible sectors, set out below.

### Eligible sectors

We have set out which sectors are in scope for the ICC business model support for the first ICC Contract allocation round under Phase-2 of the Cluster Sequencing Process. However, please note that eligibility is also subject to relevant Projects meeting sector specific criteria set out below.

Sectors in scope for the ICC business model support are Combined Heat and Power (CHP) and those sectors that fall within the Standard Industry Classification (SIC) codes 5 to 33 and 38 (excluding 24.46). This includes (but is not limited to) oil and gas (such as crude oil processing, natural gas processing, refining), iron and steel, cement, lime, chemicals (such as fertilisers and hydrogen), waste management, food and drink, non-metallic minerals, paper and pulp, and nonferrous metals.

However, Projects should note that there may be cases where a Project that falls within an eligible sector is out of scope owing to the application of sector-specific criteria. These are:

- Offshore operations for oil and gas (such as the extraction of oil and gas from offshore platforms); and
- New build CCUS-enabled hydrogen production facilities (refer to Section 5 for details on eligibility for a hydrogen business model); and
- CHP and waste management Projects that do not meet the sector-specific criteria set out below.

Please refer to the sector-specific criteria set out further below for more details of the specific eligibility criteria for oil and gas, CCUS-enabled hydrogen, waste management and CHP Projects.

The eligibility check will review if the evidence submitted in the Industrial Capture Project Plan demonstrates that the Project is an eligible type of industrial facility. Examples of evidence Applicants could use to demonstrate they meet the definition of an industrial facility include: the facility's SIC code(s) and/or process design basis, demonstrated via an official document (such as planning permissions or environmental permits) that describes the purpose of the facility. However, it is recognised that the type of documentation available will not be uniform across all facilities. Therefore, BEIS may accept alternative evidence that sufficiently demonstrates that the Project meets this criterion.

For CaaS Groups, individual industrial capture Projects within the Group must all individually meet the definition of an industrial facility as set out above.

## Must deploy an eligible CCUS technology

### Technologies in scope

With the exception of new build CCUS-enabled hydrogen production, both existing industrial facilities retrofitting carbon capture and new industrial facilities built with carbon capture technology intrinsic to the process are in scope. In the case of new industrial facilities, only costs related to the capture element of a new facility will be in scope to receive ICC business model support.

Both full-scale carbon capture and modular carbon capture are in scope and all carbon capture configurations (including pre- and post-combustion, oxyfuel and emerging technologies) are eligible.

### Technologies out of scope

Industrial carbon capture and utilisation (CCU) Projects are out of scope of the Phase-2 Cluster Sequencing Process[42]. Projects that are looking to implement a combination of CCS and CCU, are within scope of the Phase-2 Cluster Sequencing Process. However, these Projects will only be eligible for ICC business model support in relation to the captured $CO_2$ emissions directed to the T&S Network and will not be supported for captured $CO_2$ directed to utilisation.

Projects that utilise Direct Air Carbon Capture and Storage (DACCS) and other GGR technologies are out of scope for ICC business model support. A project in receipt of ICC business model support may not be eligible to apply for potential future GGR business model support over the duration of the ICC Contract term. This is because, although the ICC business model is not intended to provide supplementary support to incentivise negative emissions, if any negative emissions occur as a consequence of utilising sustainable biomass feedstocks in that installation (e.g. biogenic waste in an Energy from Waste plant), then support for the costs

[42] Please see the October 2021 ICC Business Model update for further details. We will keep this position under review for future ICC allocation rounds as the evidence base for CCU is developed. In the meantime, Projects demonstrating or deploying CCU may be able to apply for government funding under the Industrial Energy Transformation Fund (IETF), CCUS Innovation 2.0 or future rounds of the BEIS Energy Entrepreneurs Fund.

of the capture plant would already have been provided. More information on next steps for GGR Projects can be found in Section 6.

For CaaS Groups, this criterion regarding CCUS technology deployment eligibility only applies specifically to the CaaSCo.

## Must achieve high capture rates of at least 85%

Projects must be able to demonstrate the ability to meet a minimum $CO_2$ capture rate of at least 85% for both new build and retrofit facilities[43]. We define $CO_2$ capture rate (technology efficiency) as the percentage of $CO_2$ emissions captured from the specific emissions streams that the capture technology is applied to[44],[45].

In the event that the emitter does not require a new build capture plant (i.e. pre-combustion capture is part of the process plant design), the $CO_2$ capture rate will still be defined as the technological efficiency of the plant.

The minimum of 85% $CO_2$ capture rate refers to the minimum capture rate which must be demonstrated in the Project's submission. This will be evaluated initially as part of the eligibility evaluation and at a more detailed level as part of the emissions reduction criterion. Furthermore, this $CO_2$ capture rate must subsequently be demonstrated as part of the OCPs under the ICC Contract. For more detail on ICC OCPs please see the October 2021 ICC Business Model update.

Note that whilst 85% represents a minimum $CO_2$ capture rate; having a credible higher proposed $CO_2$ capture rate will count favourably towards the Project in the evaluation stage (refer to Section 4.4 for further detail on how the capture rate is scored within the Emissions Reduction evaluation criterion). Incentivising higher $CO_2$ capture rates will reduce residual emissions and drive our net-zero policy objectives.

The eligibility check will review if the evidence submitted in the Industrial Capture Project Plan demonstrates that the Project is consistent with this eligibility criterion. In the evaluation stage, the emissions reduction criterion will assess capture rates at a more detailed level.

For CaaS Groups, this criterion only applies specifically to the CaaSCo.

[43] Please note that we are still considering any interactions this may have with a requirement for the Project to meet any future UK Low Carbon Hydrogen Standard in order to secure support, which is subject to consultation. All Industrial Carbon Capture Projects are required to meet the at least the 85% minimum capture rate requirements set out in the ICC Business Model.

[44] $CO_2$ capture rate does not refer to the percentage of captured emissions from the whole site, otherwise known as application rate, or the additional emissions created by providing heat and power to the capture plant; it only refers to the technology efficiency of the capture plant itself.

[45] This calculation will only take into consideration how effective the capture facility is at capturing $CO_2$, and not whether it is injected to the T&S network or used for other purposes i.e. legal obligations to supply the food and drink industry.

## Must meet specific eligibility criteria for Projects in the Oil and Gas, CCUS-Enabled Hydrogen, Waste Management and CHP sectors only

In addition to eligibility criteria listed above, oil and gas, CCUS-enabled hydrogen, waste management and CHP Projects implementing carbon capture must meet the sector-specific criteria set out below.

The eligibility check will review if the evidence submitted in the Industrial Capture Project Plan demonstrates that the Project is consistent with the eligibility criterion.

For CaaS Groups, the technical requirements set out in this criterion apply to individual industrial capture Projects that are in the oil and gas, CCUS-enabled hydrogen, waste management and CHP sectors only.

### Oil and Gas

Onshore operations for oil and gas are in scope for ICC business model support. This refers to up-, mid- and downstream onshore operations in the oil and gas sector, such as crude oil processing, natural gas processing and refining. However, offshore operations in the oil and gas sector, such as the extraction of oil and gas from offshore platforms, are not eligible for ICC business model support.

### CCUS-Enabled Hydrogen

Whilst retrofitting CCUS in existing 'grey' hydrogen facilities[46] is within the scope of ICC business model support, new build CCUS-enabled hydrogen production facilities are out of scope. This is because hydrogen production in existing facilities has already proven to be commercially viable and ICC business model support will cover retrofitting a capture component. Therefore, existing hydrogen facilities retrofitting CCUS will only be able to apply to the ICC Business Model for support and will be ineligible to apply for support under the Hydrogen Business Model. However, the Hydrogen Business Model will cover new build CCUS-enabled hydrogen production plants where commercial viability is less established. See Section 5 for further details. Projects with industrial processes that produce hydrogen as a by-product or intermediate product, will be considered eligible for ICC business model support if they meet the wider eligibility criteria conditions and sector-specific criteria (if applicable) set out in the rest of the eligibility criteria section and will not be treated as a CCUS-enabled hydrogen Project.

The government consulted on options for a UK Low Carbon Hydrogen Standard that hydrogen projects (including retrofit CCUS-enabled hydrogen and industrial processes that produce hydrogen as a by-product) applying for ICC business model support may need to meet in order to receive funding support. This position depends on the outcome of the consultation and future decisions on compliance requirements with a final UK Low Carbon Hydrogen Standard for retrofit CCUS-enabled Projects and Projects with industrial processes that produce hydrogen as a by-product. If a decision is made to require these Projects to comply with a final

[46]The production of hydrogen from the reformation of natural gas, this does not include any processes that produce hydrogen as a by-product or intermediate product.

UK Low Carbon Hydrogen Standard in order to receive ICC business model support and Projects are taken through to negotiations that may not initially meet that standard, there may be scope to negotiate additional provisions for Projects to be able to meet the UK Low Carbon Hydrogen Standard.

### Waste Management

In order for a waste management facility to be eligible for Phase-2, the facility must meet the general eligibility criteria for ICC business model support set out above, and it must also:

- Have a minimum of 20 years of remaining operational life; and
- Be classed as an eligible waste technology; and
- Have high efficiency ratings (for specified waste management technology types).

Further details on these criteria are provided below.

#### Must have a minimum of 20 years of remaining operational life

The waste management facility (either existing or new build) must have at least 20 years of remaining operational life (from the expected operational date of the CCUS plant), to ensure that we are only supporting plants that are still expecting to be operational after the ICC Contract term.

This evidence must include documentation showing the original design life of the waste management facility and the date when the plant is expected to come online. For design life extensions, it must also include evidence to demonstrate (i.e. funding evidence) that the design life of the plant can be extended through refurbishments already made or planned, including any proof of commitments or rectification work.

The eligibility check will review if the evidence submitted in the Industrial Capture Project Plan demonstrates that the Project is consistent with this eligibility criterion. In the evaluation stage, the deliverability criterion will assess the evidence submitted in the Industrial Capture Project Plan at a more detailed level, including evidence on how feasible any new build facility is.

#### Must be classed as an eligible waste management technology

In order to be eligible for ICC business model support under Phase-2 Cluster Sequencing, the facility must be classed as an eligible waste management technology. Eligible waste management technologies are:

- **Energy from Waste (EfW):** The incineration or combustion (with energy recovery[47]) of Municipal Solid Waste (MSW)[48] and/or Clinical Waste (CW)[49]. Existing MSW and/or CW incineration or combustion facilities with no form of energy recovery currently will be

[47] The conversion of waste into usable electricity and/or heat only.
[48] Domestic and/or commercial waste.
[49] Waste produced from healthcare or similar activities.

asked to set out credible plans for applying energy recovery (by the time of CCUS operations) in order to be eligible for support.

- **Advanced Thermal Treatment (ATT) or Advanced Conversion Technologies (ACT):** Using gasification or pyrolysis for the conversion of waste into either useful energy (i.e. electricity or heat), chemicals or fuel. These facilities are not required to have energy recovery in order to be eligible; however, if the facility has energy recovery, it must meet the efficiency requirement stated below.
- **Hazardous Waste Incinerators (HWI):** The incineration of hazardous waste[50] (here, hazardous waste does not include CW). Energy recovery from HWI facilities may present as a challenge due to a variety of reasons, such as the requirement for as much heat to be utilised for the process as possible, and therefore, these facilities are not required to have energy recovery in order to be eligible.

Any other types of waste technology are not eligible for support, including:

- Incineration or combustion of MSW and CW without plans for energy recovery; and
- Advanced Biological Treatment (i.e. Anaerobic Digestion).

## Must have high efficiency ratings (for specified waste management technology types)

Government intends to provide support only to the most efficient waste management technologies to ensure we are supporting facilities that maximise the energy value of waste, aligning with the government's Resources and Waste Strategy for England. Table 9 below sets out details of the required efficiency, i.e. Recovery Operation (R1)[51],[52], for various technology types.

**Table 9: Efficiency requirements for waste management technologies.**

| | EfW (Incineration/combustion of MSW and/or CW with energy recovery) | ATT/ACT | | | HWI |
|---|---|---|---|---|---|
| | | Gasification to energy (electricity and/or heat) only | Gasification to molecule (chemicals or fuels) | Pyrolysis | |
| Efficiency Rating | R1 | R1 | Not applicable | | |

[50] Often using High Temperature Incinerators for waste containing substances harmful to humans or the environment such as chemicals or asbestos: https://www.gov.uk/dispose-hazardous-waste
[51] More detail on R1 status can be found at: https://www.gov.uk/guidance/waste-incinerator-plant-apply-for-ri-status
[52] R1 requirement refers to the efficiency of the plant before the CCUS facility has been installed only and does not take into consideration any requirement from the capture plant.

A Project in receipt of ICC Business Model support may not be eligible to apply for potential future GGR business model support over the duration of the ICC Contract term. Although the ICC Contract is not intended to provide supplementary support to incentivise negative emissions, if any negative emissions occur as a consequence of utilising sustainable biomass feedstocks in that installation (e.g. biogenic waste in an EfW plant), then support for the costs of the capture plant would already have been provided.

### Combined Heat and Power

In order for a current or proposed industrial CHP facility to be eligible for Phase-2, the facility must meet the general eligibility criteria for ICC business model support set out above, and it must also provide at least 70% of its energy output[53] to industrial facilities. Further details on this criterion are provided below. The intention is for the ICC Business Model to only provide support in circumstances in which the CHP facility (including where the CHP facility is owned by a different entity (i.e. a standalone CHP)) is primarily used by industrial facilities.

In cases where a CHP facility is embedded in an industrial process(es) and thereby its flue gas stream is combined with other industrial process(es)' streams directed to the capture plant[54], the CHP facility as part of the wider industrial facility is eligible for support, but the CHP facility would not be subject to the 70% criterion. Please note that, in such cases, the CHP facility will not need to submit its own submission to BEIS, since the wider industrial facility with the CHP is considered a single Project as its flue gas streams will be combined and directed to the capture plant as one stream. As such, the CHP facility should be included as part of the submission of the Project that its flue gas stream will be combined with. Projects looking to apply CCUS to a CHP facility as well as a non-industrial process(es) are out of scope for ICC Business Model support.

In the October ICC Business Model update, BEIS set out that CHP facilities must also be certified under the CHP Quality Assurance (CHPQA) scheme or show plans to be certified at the time of CCUS operations (with an appropriate time period to be allowed for the certification process) in order to be eligible. The CHPQA scheme assesses CHP sites on the basis of their energy efficiency and environmental performance and is used to ensure that the associated fiscal benefits are in line with environmental performance[55].

However, whilst we still want to ensure support will only be provided to the most energy-efficient CHP facilities, further work has shown that there may be cases where it is not appropriate to assess CHPQA certification at the eligibility stage. Instead, we are minded to require that full CHPQA certification[56] be demonstrated by the time of CCUS operations. For

[53] Energy output refers to the heat and electricity output. We do not require that the heat and electricity output must both individually meet the 70% threshold, only that at least 70% of the energy output of the CHP plant must be directed to industrial facilities.
[54] Please note that this does not refer to the combination of multiple emitters' flue gas streams in a CaaS Group, but the combination of flue gas streams within the wider industrial facility.
[55] Further details on the CHPQA scheme can be found at: https://www.gov.uk/guidance/combined-heat-power-quality-assurance-programme.
[56] Here, we define that a facility is fully certified under the CHPQA scheme if it qualifies as GQCHP for all their inputs, outputs and capacity. For the threshold criteria for Good Quality CHP, please refer to Guidance Note 10, which can be found here: https://www.gov.uk/guidance/chpqa-guidance-notes

example, the Project must present a valid certificate to the Counterparty in order to trigger support, where a valid certificate is an F3 certificate in the case of a proposed CHP facility with less than one month of operational data, or an F4 certificate in the case where the CHP is existing and is in normal operation. We will confirm with further details in the next business model update.

Please note that the sector-specific eligibility criteria for CHP facilities do not apply to waste management facilities with a CHP facility attached. Please refer to the waste management eligibility criteria for further details.

### Must provide at least 70% of energy output to industrial facilities

In order for an industrial CHP facility to be eligible for support, it will need to supply a minimum threshold of 70% of its energy output to industrial facilities, unless the CHP facility's flue gas stream is combined with other industrial process(es)' streams directed to the capture plant[57]. For CHP output only, we define an 'industrial facility'[58] as a facility or part of a facility that is classified under SIC codes 5 to 33 (excluding 24.46). Capture plants that are solely capturing emissions from the CHP facility are also an eligible end-use of the energy output, where energy output is also provided to industrial facilities[59].

In cases where a CHP facility does not provide at least 70% of its energy output to industrial facilities, there may be other government subsidy/revenue support schemes that are more suitable forms of support. For example, if the majority of electricity generated from the plant is sold to the grid, which results in less than 70% of overall energy output to industrial facilities, a DPA may be the most appropriate business model to support the deployment of CCUS, subject to the CHP facility being able to satisfy the separate eligibility criteria for the award of a DPA. Please refer to Section 3 for further details.

Applicants will be asked to provide evidence that at least 70% of the energy output of the CHP facility is, or will be by the time of CCUS operations (for new build or otherwise), utilised by industrial facilities. Such evidence could include the capacity of the CHP facility, identifying end user(s), information on the type of industrial activity taking place at the site of the end user(s), details of the amount of heat and electricity used by the identified end users in relation to the total output of the CHP facility and contracts, provisional agreements or invoices for energy use.

[57] Please note that this does not refer to the combination of multiple emitters' flue gas streams in a CaaS Group, but the combination of flue gas streams within the wider industrial facility.
[58] The 'industrial facility' definition provided here is for the purpose of the CHP energy output only. Please refer to eligibility criteria above for the full definition of industrial facility.
[59] We have only referred to a CHP facility's dedicated capture plant here because a CHP facility that supplies the capture plant with energy to capture emissions from industrial facilities (as well as its own emissions, i.e. combining emissions streams) will not be subject to the 70% criterion.

# 4.4 Evaluation Criteria

## General Considerations

This section sets out the evaluation criteria which will be used in assessing the Industrial Carbon Capture submissions for Phase-2. The objective of Phase-2 for Industrial Carbon Capture Projects is to select which Projects will go through to negotiation to potentially receive revenue through the Industrial Carbon Capture Contract and capex co-funding support through a Grant Funding Agreement. The evaluation process has been designed to select Projects going through to negotiations that align with the following objectives:

- Commercial and technical viability
- Demonstrate value for money
- Contribute to government ambition of capturing and storing 6Mt$CO_2$ of industrial emissions per year by 2030 and 9Mt$CO_2$ by 2035 as set out in the Net Zero Strategy[60] and ultimately Net Zero by 2050.
- Supports a diverse set of industrial sectors to provide the broadest support to UK industry and maximise learning and innovation potential in order to achieve net zero ambitions.

## Approach to Scoring

Projects will be allocated a score out of 5 against each of the criteria according to the weightings explained below.

Where the Projects' scores against a particular criterion are determined at least partially via qualitative evaluation – that is, for Deliverability, Emission Reduction, Economic Benefits, and Learning and Innovation – we have provided a set of scoring definitions to indicate how particular levels of performance against those criteria map onto particular scores.

Scores will be allocated based on the assessment of the relevant evidence against the scoring tables outlined below. If evidence provided for a criterion is assessed to fall between or across more than one scoring descriptor then the Project will receive the score which most closely represents the overall evidence provided against that criterion. In addition to this process, there are further details on the scoring process for the Deliverability and Emissions Reduction criteria, please see the additional scoring guidance relating to these criteria within their respective sections below.

Table 10: Industrial CCUS Phase-2 Evaluation Criteria

| Criterion | Weighting |
|---|---|

[60] https://www.gov.uk/government/publications/net-zero-strategy

| | |
|---|---|
| Deliverability | 30% |
| Emissions Reduction | 25% |
| Economic Benefits | 20% |
| Cost Considerations | 15% |
| Learning and Innovation | 10% |

Projects' overall scores will be calculated using their finalised scores against each criterion, which will then be combined according to their associated weightings as set out in the table above. Similarly, for CaaS submissions both the Industrial Capture Project and the CaaSCo will be individually assessed according to the relevant criteria. Given the interdependencies and shared viability, the CaaS Group criterion scores will be an aggregated score of the individual entities across the group, except for cost which is both assessed and scored as a group. The CaaS Group will receive a single overall score which will be calculated using the finalised CaaS Group scores determined against each criterion and then be combined according to their associated weightings.

Once a Project or CaaS Group has been fully assessed and given an overall score, a shortlisting process will be used to determine which Projects will be invited to participate in the negotiations/due diligence stage. Further details in relation to the process are provided in Section 4.5

## Minimum Scoring

Projects will be assessed against deliverability and emissions reduction criteria and need to achieve a minimum score of 2. Projects that do not achieve a minimum score of 2 for each of those criteria will not progress any further in Phase-2 of the Cluster Sequencing Process.

Any individual capture Project or CaaSCo that does not achieve the minimum scores for both deliverability and emissions reduction criteria will result in the entire CaaS Group Project being ruled out of the evaluation.

## Deliverability (30%)

The deliverability criterion will consider the industrial carbon capture Project and (where applicable) the CaasCo's capability and capacity to deliver its Project successfully and the timeline on which the Project will come online.

The primary tool for assessing against the deliverability criterion will be the Project's adjusted Commercial Operation Date (COD). For the purpose of this assessment, the COD means the

first date when continuous export of $CO_2$ emitter volumes into the store begins[61] (for CaaS Group Projects this would be when first continuous $CO_2$ exports from the CaaSCo into the store begins[62]), where this injection is confirmed to meet the Operational Conditions Precedent (OCPs).

In order to determine the adjusted COD, the COD stated in the Industrial Capture Project Plan will be assessed by BEIS together with our advisors and adjusted according to our level of confidence in this date. In determining the level of adjustment required, assessors will consider the credibility of the submission, with the onus on the Applicant to provide sufficient supporting information to demonstrate this credibility. In this way, the adjusted COD acts as a combined measure of deliverability on the one hand, and pace on the other.

By considering the adjusted COD along with a more general evaluation of the Project's deliverability profile, we will assign a deliverability score based on performance against two key factors:

- Government's confidence that the Project is capable of deploying no later than the end of December 2027, such that a Project will score higher the greater the level of confidence in delivery in this period.
- The Project's pace of delivery within the mid-2020s, such that a Project with an adjusted COD in, for example, 2024 will count more favourably than a Project with an adjusted COD in, for example, 2026.

In assessing against this criterion, the credibility of the following evidence in particular will be considered:

- The capability to deliver and the organisational structure of the Industrial capture Project representative and, for CaaS, the companies involved in the group.
- An integrated Project plan with strong schedule logic that incorporates activity durations which are judged to be within reason, for example in comparison to similar activities undertaken on other Projects and taking into account any applicable processes, such as acquiring any necessary planning permissions or for procuring suppliers. The critical path and relevant lead times should be clearly identified with floats incorporated as required.
- Progress to date against the stated Project plan, with documentation and engineering information provided to demonstrate that the capture Project is progressing to plan.

61 The COD must reflect the date upon which OCPs are fulfilled in order for the store to accept continuous $CO_2$ export from the Project. OCPs are conditions that must be satisfied, or waived, in order for contractual payments to commence. The minded-to-positions on OCPs for the ICC Business Model contract are published in the ICC October Business Model update and Projects should refer to these in establishing their COD date for the purpose of this assessment. https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models

62 For the purpose of this assessment, CaaS groups must consider their COD as the date upon which their first emitter is able to export continuous $CO_2$ emitter volumes into the store on the basis of it having met the OCPs as provisionally set out in the October Business Model update.

- Progress in applying for and/or securing any permits; if not yet secured, this should be properly accounted for in the Project schedule.

  Accurate identification of the critical planning and consent stages, including environmental permitting and abstraction licensing, with these properly accounted for in the Project schedule[63].

- Financing arrangements for progressing the Project and the status of key commercial agreements needed to realise the Project.
    - The evaluation will not seek to determine and score Projects on their stated capex co-funding levels (other than the extent set out below) but evaluate the credibility of the capex schedule, how funding gaps are settled and if this is in line with the Project's requirements. This information will be used to inform future negotiations in respect of capital and business model revenue support.
    - Any capex co-funding grant would be less than 50% of the total capital costs of the Project. Projects are required to take these capex co-funding limits into account when preparing their submissions. This limit will be considered as part of the assessment of the credibility of stated capex co-funding grant required from the Project.
- An agreement or evidence of progress towards an agreement to connect to a Track-1 or reserve cluster $CO_2$ storage site and $CO_2$ transport solution. We recognise that the level of commitment in place between an early-stage Project and its partners may naturally vary depending on the Project's stage of development so any evidence of agreements would be welcome. For example, this could be:
    - A letter of intent or provisional agreement with the T&S provider(s);
    - Memoranda of Understanding, collaboration agreements or draft Heads of Terms being in place between the Projects and the T&S provider(s).
- Business plans for the organisations involved and details of how the Project fits with the company's overall strategic ambition as well as information relating to financial health. This information should be supported by the Financial Statement Template (Annex D).
- Detailed registers in place to accurately identify key risks, and with mitigations populated. The Project should demonstrate where mitigations are already in place and present a clear implementation plan where they are not. This should take account of cyber risks to both the Project and the resilience of the infrastructure once commissioned, demonstrating secure by design principles. The Project should also provide evidence of the steps taken to identify and assess cyber risks and to identify mitigations to ensure strong cyber resilience.
- Clear adherence to safety regulations, and identification and mitigation of any residual safety risks such that they are as low as reasonably possible across all components of the Project.

[63] We reserve the right to delay or prevent entry into a contract where a valid planning approval or permit consent challenge has been brought which could undermine the ability of the Project to achieve its COD.

- Ability of Project organisations to access the proper level of resource and capability necessary to deliver the Industrial Capture Project. Specifically, the following may be taken as evidence of this:
    - Key contracts in place with core suppliers – or, at a minimum, meaningful engagement with - prospective suppliers.
    - Evidence of engagement with technology licensors.
    - Demonstration of the Project organisation's competence to manage and coordinate a Project of this scale and complexity.
    - Evaluation of capability and capacity of supply chains to deliver required materials, goods, and skills.
- Additional information required from CaaS Projects:
    - Commercial agreements between individual industrial capture Projects and the CaaSCo.
    - Evidence of engineering studies and designs specifically for the CaaSCo arrangements, aside from the capture plant, and associated interconnecting infrastructure design.
    - Plans for initial CaaS Group structure that including indications of minimum capture Project requirements and volume for CaaS Group viability
- Additional information required from Waste Management Projects:
    - Evidence that the facility has a minimum of 20 years operational life remaining (from the expected COD of the carbon capture plant).

The Industrial Capture Project Plan includes further prompts as to the specific pieces of supporting evidence which may be beneficial in supporting the Project to perform well against the deliverability criterion.

In light of the responses and supporting evidence provided, assessors will assign a deliverability score to the Project by reviewing both the adjusted COD and general deliverability evaluation in aggregate, considering all information provided by the Project as well as its credibility and consistency.

Deliverability minimum score - Projects that do not sufficiently demonstrate commercial or technical viability to deliver the Project before the end of December 2027 will not be able to score the minimum score of 2 or above and will be removed from further evaluation, shortlisting considerations or negotiations. This additional level of scrutiny is to ensure only Projects assessed to be viable are considered and progressed through to negotiations.

The scoring categories for this criterion are defined as follows.

**Table 11: Scoring Categories – Deliverability**

For interpreting these categories in the context of CaaS Group submissions, the term 'Project' would refer to the entire aggregate Group submission, with the descriptors referring to the Group in aggregate or the entity(s) within the Group most appropriate to fulfil or evidence the criterion.

| Score | Description |
|---|---|
| Low (1) | • Evidence and responses provided in relation to one or more relevant components of the Industrial Capture Project Plan are missing or incomplete.<br>• Little to no confidence in the ability of the Project to deploy no later than the end of December 2027, or in its delivery capability more generally[64]. Little to no evidence of commercial arrangements with other relevant companies. |
| Low-Medium (2) | • Adequate responses given to all relevant questions, with some level of supporting evidence provided. Adequate responses and supporting information to give confidence in the ability of the Project to deploy no later than the end of 2027. Adequate evidence of commercial arrangements with other relevant companies.<br>• However, there may be reservations regarding the credibility of some supporting information, or the Project's capability in certain delivery areas. |
| Medium (3) | • Comprehensive responses given to all relevant questions in the Industrial Capture Project Plan and are supported by a reasonable level of largely credible supporting evidence.<br>• All relevant questions in the Industrial Capture Project Plan are fully answered and a reasonable level of supporting evidence provided.<br>• Responses and supporting information give a reasonable level of confidence in the ability of the Project to deploy no later than the end of December 2027.Evidence of commercial arrangements with other relevant companies is reasonable. |

64 While delivery assumptions might be more uncertain for less mature Projects (e.g. those at pre-FEED stage), it is expected that they may be in a position to receive a score above Low (1) provided that sufficient evidence and responses are provided in the Project Plan and uncertainties are adequately reflected in the submitted risk registers, costs, Projects schedule, emissions reduction and other contingencies.

| | |
|---|---|
| Medium-High (4) | • Comprehensive responses given to all relevant questions in the Industrial Capture Project Plan and are supported by a reasonable level of largely credible supporting evidence.<br>• Responses and supporting information give a strong level of confidence in the ability of the Project to deploy no later than the end of December 2027, but potentially less confidence in its ability to deliver at pace within that window. Good level of evidence of commercial arrangements with other relevant companies. |
| High (5) | • Comprehensive responses given to all relevant questions in the Industrial Capture Project Plan, with clear and credible evidence provided to demonstrate delivery capability.<br>• Responses and supporting evidence give a high degree of confidence in the ability of the Project to deploy no later than the end of December 2027, and to deliver at pace within that window.<br>• Strong level of evidence of commercial arrangements with other relevant companies. |

## Emissions Reduction (25%)

The emissions reduction criterion will assess the potential offered by each Project to generate reductions in $CO_2$ emissions in line with government ambitions. There will be an assessment of the credibility of evidence throughout the evaluation of this criterion. We further divide and sub-weight this into three sub-criteria:

- Emissions reduction effectiveness (50%)
- Total $CO_2$ emissions reduction (40%)
- Potential for future $CO_2$ emissions reduction (10%)

To assess the credibility of evidence submitted for this criterion, Projects will be asked to include references to the project risk register and set out the key uncertainties in the emissions profile or risks that could reduce capture volumes and otherwise affect any submitted evidence in the Industrial Capture Project Plan.

Projects are asked to provide responses and supporting evidence for the Emissions Reduction criteria in the Industrial Capture Project Plan (Annex A2) and to include quantitative emissions metrics and emission capture profiles (emissions captured and stored) for their capture plant(s) up to 2050 (or lifetime period if earlier), in the Cost considerations and Emissions Reduction template (Annex C2).

## Emissions reduction effectiveness

Projects will be asked to provide details and supporting evidence of the Industrial Capture Project's or CaaSCo's effectiveness in reducing $CO_2$ emissions of the wider industrial facility or CaaS Group. The following areas will be considered:

- $CO_2$ capture rate of the capture plant (the percentage of $CO_2$ emissions captured from the specific emissions stream(s) that the capture technology is applied to) (%).
- $CO_2$ capture rate of the capture plant when including $CO_2$ emissions from additional fuel used for the supply of heat and/or power to the capture plant and associated equipment including compression/pumping/liquefaction and any other associated operations performed at the capture plant site, together with indirect emissions associated with imported heat and electrical power supplied to the capture plant (%).
- Application rate ($CO_2$ emissions captured from the specific emissions stream(s) that the capture technology is applied to, as a percentage of total $CO_2$ emissions across the whole site) (%). CaaS Groups should provide the application rates for each Project in the group.
- Energy performance of the capture plant and energy penalty of the capture plant, including compression/pumping/liquefaction and any other associated operations performed at the capture plant site (i.e. electrical and thermal energy consumption per tonne of $CO_2$ captured (MWh/tonne of $CO_2$)).
- $CO_2$ emissions intensity associated with the operation of the industrial facility per tonne of product prior to the installation of carbon capture. CaaS Groups should report $CO_2$ emissions intensity for each Project in the group prior to the installation of the CaaSCo carbon capture facility.
- $CO_2$ emissions intensity associated with the operation of the industrial facility per tonne of product following the installation of carbon capture. CaaS Groups should report $CO_2$ emissions intensity per tonne of input $CO_2$ ($CO_2$/tonne of product[65]) for the CaaSCo and $CO_2$ emissions intensity for each Project in the group.
- Embedded emissions associated with the construction of the capture plant (tonnes $CO_2$) and processes the Project is using to reduce embedded emissions during construction of the capture plant.
- Emissions reduction strategy to demonstrate that the Industrial Capture Project is part of a whole-site strategy. This may include methods on how the industrial facility will deploy other emissions reduction technology, such as fuel switching using e.g. hydrogen and/or electrification and other technology, across other emissions streams across the site to reduce $CO_2$ and $CO_2$ equivalents of greenhouse gases. This strategy could also set out why CCUS is being deployed on certain emissions streams and the emissions impact of

[65] For waste management Projects this term is the equivalent of volume of $CO_2$ per tonne of waste consumed/combusted; for CHP projects it is volume of $CO_2$ per MWh of thermal energy/electricity produced; for fuel producers it is volume of $CO_2$ per tonne of fuel produced. For all other Projects it is volume of $CO_2$ per tonne of product produced.

the industrial site without the proposed carbon capture facility installed, confirming that it is the most appropriate decarbonisation method.

$CO_2$ capture rate minimum score – Projects that do not sufficiently demonstrate an ability to deliver a minimum 85% $CO_2$ capture rate[66] will be unable to achieve the minimum score of 2 for this sub-criterion and not be considered further in this Phase-2 Cluster Sequencing Process. This additional level of scrutiny of the $CO_2$ capture rate is important to incentivise the development of innovative and ambitious capture technologies which will contribute to government's net zero targets; reduce the residual emissions which are not subject to a decarbonisation strategy and determine an achievable expected $CO_2$ capture rate to refer to as part of any potential business model contract. In addition, a credible higher proposed $CO_2$ capture rate will count favourably towards the Project in this evaluation stage.

**Table 12: Scoring Categories – Emissions Reduction Effectiveness**

Note that in the table below, capture rate refers to the percentage of $CO_2$ emissions captured from the specific emissions stream(s) that the capture technology is applied to.

For interpreting the below categories in the context of CaaS Group submissions, the term 'Project' would refer to the entire aggregate Group submission, with the descriptors referring to the Group in aggregate or the entity(s) within the Group most appropriate to fulfil or evidence the criterion.

| Score | Description |
|---|---|
| Low (1) | • Responses and evidence provided in relation to one or more relevant components of the Industrial Capture Project Plan are missing or incomplete.<br>• Insufficient confidence in Project's ability to deliver on minimum $CO_2$ capture rate (85%).<br>• The Project has no or very limited insight into the technological efficiency and effectiveness of CCUS deployment and wider emissions reduction on the site. If carbon capture is not being applied to all emissions across the industrial site, there is no consideration given to other emissions reduction strategies and how they could be deployed across other emission streams across the site. No justification of why CCUS is being deployed on certain emissions streams and why it is the most effective decarbonisation method. |

[66] This capture rate refers to the percentage of $CO_2$ emissions captured from the specific emissions stream that the capture technology is applied to.

| | |
|---|---|
| Low-Medium (2) | • Reasonable confidence in Project's ability to deliver on minimum $CO_2$ capture rate (85%).<br>• The Project has some insight into the technological efficiency and effectiveness of CCUS deployment and wider emissions reduction on the site. If carbon capture is not being applied to all emissions across the industrial site, there is very little consideration given to other emissions reduction strategies and how they could be deployed across other emission streams across the site. Limited justification of why CCUS is being deployed on certain emissions streams and why it is the most effective decarbonisation method. |
| Medium (3) | • High confidence in Project's ability to deliver on minimum $CO_2$ capture rate (85%), and proposed capture rate is higher than the minimum $CO_2$ capture rate (proposed capture rate is between 86-89%).<br>• The Project has good insight into the technological efficiency and effectiveness of CCUS deployment and wider emissions reduction on the site. If carbon capture is not being applied to all emissions across the industrial site, there is a good understanding of the impact of other emissions reduction strategies and how they could be deployed across other emission streams across the site. Some justification as to why CCUS is being deployed on certain emissions streams and why it is the most effective decarbonisation method. |
| Medium-High (4) | • High confidence in achievement of proposed $CO_2$ capture rate, and proposed $CO_2$ capture rate is higher than the minimum eligible $CO_2$ capture rate (proposed capture rate is between 90-94%).<br>• The Project has optimised some of their CCUS deployment and wider emissions reduction on the site. If carbon capture is not being applied to all emissions across the industrial site, the Project has started to consider other emissions reduction strategies in detail and how they could be deployed across other emission streams across the site. Strong justification as to why CCUS is being deployed on certain emissions streams and why it is the most effective decarbonisation method. |
| High (5) | • High confidence in achievement of proposed $CO_2$ capture rate, and proposed $CO_2$ capture rate is higher than the minimum eligible $CO_2$ capture rate (proposed capture rate is 95% or above).<br>• The Project has fully optimised their CCUS deployment and wider emissions reduction on the site. If carbon capture is not being applied to all emissions across the industrial site, robust consideration has been given to other emissions reduction strategies and how they |

| | |
|---|---|
| | could be deployed across other emission streams across the site. Robust and detailed justification as to why CCUS is being deployed on certain emissions streams and why it is the most effective decarbonisation method. |

## Total $CO_2$ emissions reduction

For this criterion, Projects will be evaluated on the emissions reduced over a 15-year period to assess the extent to which Projects can contribute to government's net zero targets (6Mt$CO_2$ of industrial emissions captured and stored per year by 2030, 9Mt$CO_2$ by 2035, and net-zero by 2050). This will include:

- $CO_2$ emission capture and storage profiles or their capture plants over a 15-year period.
- $CO_2$ emissions associated with the energy consumption of the capture plant.
- $CO_2$ emissions associated with the transport of the captured $CO_2$ from the industrial facility to the store. This should include direct and indirect emissions associated with compression/pumping/liquefaction and any other associated operations. Where these emissions result from fuel or electricity consumption of the T&S, Projects should include a breakdown of the electrical and thermal energy consumption (MWh). This should include an explanatory note setting out how these emissions and energy consumption data have been determined, and the process by which the emissions and energy consumption are designed to be as low as reasonably possible. If these emissions cannot be included, then the note should explain why this is the case.
- Qualitative consideration of the negative emissions delivered through the use of biogenic content, for example in fuels or through other methods.

The Project's $CO_2$ emissions reduction levels will be subject to credibility evaluation.

**Table 13: Scoring Categories – Total $CO_2$ Emissions Reduction**

For interpreting these categories in the context of CaaS Group submissions, the term 'Project' would refer to the entire aggregate Group submission, with the descriptors referring to Group's aggregate emissions reductions.

| Score | Description |
|---|---|
| Low (1) | • Responses and evidence provided in relation to one or more relevant components of the Industrial Capture Project Plan are missing or incomplete.<br>• Low confidence in the proposed volume of $CO_2$ captured and stored over the length of the contract. The Project will make a low |

| | |
|---|---|
| | contribution to government targets (including 6Mt$CO_2$ of industrial emissions captured and stored per year by 2030, 9Mt$CO_2$ by 2035, and/or pathways towards net-zero by 2050). |
| Low-Medium (2) | • Responses and supporting information give some confidence in the proposed volume of $CO_2$ captured and stored over the length of the contract. The Project may contribute to government targets (including 6Mt$CO_2$ of industrial emissions captured and stored per year by 2030, 9Mt$CO_2$ by 2035, and/or pathways towards net-zero by 2050) but limited certainty that this is attainable. |
| Medium (3) | • Responses and supporting information give a reasonable level of confidence that the proposed volume of $CO_2$ captured and stored over the length of the contract will contribute to government targets (including 6Mt$CO_2$ of industrial emissions captured and stored per year by 2030, 9Mt$CO_2$ by 2035, and/or pathways towards net-zero by 2050). |
| Medium-High (4) | • Responses and supporting information give a strong level of confidence that the proposed volume of $CO_2$ captured and stored over the length of the contract will meaningfully contribute to government targets (including 6Mt$CO_2$ of industrial emissions captured and stored per year by 2030, 9Mt$CO_2$ by 2035, and/or pathways towards net-zero by 2050). |
| High (5) | • Clear and credible evidence provided to demonstrate that the proposed volume of $CO_2$ captured and stored over the length of the contract will contribute significantly to government targets (including 6Mt$CO_2$ of industrial emissions captured and stored per year by 2030, 9Mt$CO_2$ by 2035, and/or pathways towards net-zero by 2050). |

## Potential for future $CO_2$ emissions reduction

It is important for government to consider the potential future expansion of the Project and the Project's potential for future $CO_2$ emissions reduction, considered necessary and appropriate through CCUS, as in order to reach the net zero target we will require a significant increase in the level of decarbonisation as we approach 2050. Projects are required to present longer-term projections for emissions reduction (emissions captured and stored) beyond the 15-year contract duration. Whilst evaluation against this component of the emissions criterion will primarily be qualitative, Projects are required to give a projection of their long-term abatement (emissions captured and stored) potential in annual capture and stored volumes. Projects are also required to include a qualitative account of their plans to develop future capture capacity.

CaaS Groups are required to provide projections of their long-term abatements and accounts of their plans to develop future capture and storage capacity during and beyond the length of the 15-year contract, including emissions from anticipated additional emitters joining the CaaS Group at a later stage in the 15-year period.

As with other criteria, BEIS will make an evaluation of the credibility of the Project's projected long-term abatement (emissions captured and stored) volumes and plans to develop future capture capacity, which will be factored into the scoring process.

**Table 14: Scoring Categories – Potential for future $CO_2$ emissions reduction**

For interpreting the below categories in the context of CaaS Group submissions, the term 'Project' would refer to the entire aggregate Group submission, with the descriptors assessing the potential for emissions reductions in aggregate for the whole Group.

| Score | Description |
|---|---|
| Low (1) | • Responses and evidence provided in relation to one or more relevant components of the Industrial Capture Project Plan are missing or incomplete.<br>• Low confidence in the proposed volume of $CO_2$ captured and stored beyond the length of the contract, the Project will make a low contribution to government targets (net-zero by 2050). |
| Low-Medium (2) | • Responses and supporting information give some confidence in the proposed volume of $CO_2$ captured and stored beyond the length of the contract, the Project may contribute to government targets (net-zero by 2050) but limited certainty that this is attainable. |
| Medium (3) | • Responses and supporting information give a reasonable level of confidence in the proposed volume of $CO_2$ captured and stored beyond the length of the contract and will provide reasonable demonstration that it will contribute to government targets (net-zero by 2050). |
| Medium-High (4) | • Responses and supporting information give a strong level of confidence that the proposed volume of $CO_2$ captured and stored beyond the length of the contract will meaningfully contribute to government targets (net-zero by 2050). |
| High (5) | • Clear and credible evidence provided to demonstrate that the proposed volume of $CO_2$ captured and stored beyond the length of the contract will contribute significantly to government targets (net-zero by 2050). |

## Economic Benefits (20%)

This criterion aims to assess the potential contribution that the Project can make to the government's objective of supporting clean, resilient and sustainable economic growth as we build back from the impacts of Covid-19. Projects should look to demonstrate the contribution the Project can make to the UK economy and the government's levelling up agenda.

- Evaluation against this criterion will be undertaken on the basis of information provided through the Economic Benefits Template (Annex B) and answers provided within the Industrial Capture Project Plan alongside any associated supporting documentation.
- The economic benefits template is structured to allow Projects to provide data for both the direct and indirect jobs they expect to provide through Project development and operations. For a CaaS group submission, data on economic benefits provided by Projects should be separated between the CaaSCo and each Industrial Capture Project site. As with other criteria, the onus will be on the Project to provide sufficient supporting information and justification for any assumptions made, and assessors will be instructed to score accordingly.

Projects will be assessed against the economic benefits criterion with reference to four key factors:

- Number and quality of jobs
- Transparency of supply chain procurement process
- Investment in CCUS skills
- Wider economic benefits

### Number and quality of jobs

This will consider the number of direct and indirect jobs the Project can create and safeguard as well as when these jobs will be realised and where they are located, and the overall wage premium generated by these jobs. The template will also consider the salaries of these jobs as a contribution to GVA, with the data will be evaluated using standard Green Book appraisal methods (refer to Annex B for completion of this section).

### Transparency of supply chain procurement processes

Projects will need to demonstrate how they will make their procurement strategies as transparent as possible. For example, identifying supply chain opportunities, advertising them as early as possible, and beginning meaningful engagement with CCUS supply chain companies.

### Investment in CCUS skills

We welcome evidence that demonstrates where capture Projects are individually or collaborating with other Projects to invest in training programmes to develop skills in CCUS, for example in apprenticeships and retraining programmes, and the skill level of jobs. We will evaluate the wage uplift generated via plans for future upskilling, to the extent that these factors support the delivery of the Project, via standard Green Book appraisal methods (refer to

Annex B for completion of this section). We ask that Projects provide detail on time and duration of these programmes and specifically how they will support retraining workforces transitioning from other sectors – locally, regionally, and nationally.

### Wider economic benefits

In line with the commitments made in the Ten Point Plan and the government objective to drive local and regional growth to level up across the UK, Projects should ensure their responses address their contribution to economic growth within the local area, in line with the following key strategic priorities:

- Synergies with other decarbonisation programmes and potential to contribute to the development of a 'SuperPlace[67]': A SuperPlace will support (and enable) the growth of the new hydrogen and CCUS industries at scale and combine clean industry with transport and power, or through the mapping of a broader decarbonisation pathway for the region, identifying the economic benefits and opportunities of decarbonisation, as well as the development of skills required to realise these benefits.
- Regeneration and community renewal: Projects should consider how they can contribute to improving and widening the economic benefits associated with their development and operation to local communities. This could include but is not limited to, for example, impacts on air quality, increased attractiveness to other businesses, local transport links or land value. Projects should provide evidence of any wider economic benefits that they deem to be relevant. Any engagement with local communities or institutions that has taken place, or will take place, in support of these plans will be seen as beneficial.
- Equality and inclusion: Projects should consider how they can ensure the diversity and inclusivity of their workforce, as well as how to incorporate hiring practices which do not disadvantage those with protected characteristics.

The economic benefits criterion will be scored in aggregate, where all relevant information provided by the Projects across both the Industrial Capture Project Plan and Economic Benefits template can be considered and contribute to a score out of 5. Scoring categories for this criterion are defined below.

**Table 15: Scoring Categories – Economic Benefits**

For interpreting the below categories in the context of CaaS Group submissions, the term 'Project' would refer to the entire aggregate Group submission; as for generic model submissions, this criterion will be scored in aggregate and consider the benefits accruing to all members of the Group.

| Score | Description |
|---|---|
| Low (1) | • The Project submission demonstrate only minimal levels of economic benefit or no economic benefit at all. |

[67] https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution/title

| Score | Description |
|---|---|
| | • Limited evidence provided which gives little to no confidence in the ability of the Project to implement and realise the expected plans (if any) and any consequential economic benefits. |
| Low-Medium (2) | • The Project submission demonstrates limited levels of economic benefit.<br>• Supporting evidence around economic benefits may be limited in places but gives some confidence in the ability of the Project to implement and realise the expected plans and economic benefits. |
| Medium (3) | • The Project submission demonstrates a reasonable level of economic benefit.<br>• Range of supporting evidence provided, giving confidence in the ability of the Project to implement and realise the expected plans and economic benefits. |
| Medium-High (4) | • The Project submission demonstrates a high level of economic benefit.<br>• Good level of supporting evidence provided throughout, giving a good degree of confidence in the ability of the Project to implement and realise its Projected plans and economic benefits. |
| High (5) | • The Project submission demonstrates a very high level of economic benefit.<br>• Comprehensive and highly credible supporting evidence gives a high degree of confidence in the ability of the Project to implement and realise its plans and economic benefits. |

## Cost Considerations (15%)

Through the cost considerations criterion, BEIS will determine a Levelised Cost of Abatement (LCOA). This will be calculated using the costs of the capture plant and the overall $CO_2$ abatement over the lifetime of the plant. Evidence related to this criterion should be inputted within the LCOA template (Annex C2).

This will be calculated using two steps:

- A robustness check of the cost estimates provided.

- A calculation of the LCOA, adjusting for robustness.

### Robustness check of cost estimates

The robustness check will be an evaluation performed by technical advisers to BEIS of the cost information provided by Projects. This evaluation will only assess the robustness of the methodology to produce cost information and will be based on the AACE cost estimate classification system.[68] The conclusion will inform the LCOA calculation.

### Levelised Cost of Abatement calculation

Following the robustness check, the LCOA calculation will be performed on the basis of the summated costs (as adjusted for robustness) and carbon abatement of the Project.

The LCOA will be calculated by the formula:

LCOA = PV (Lifetime Costs of Capture Plant in £)/NPV (Lifetime $CO_2$ Abatement in tonnes)

Lifetime costs of the plant shall cover development costs, capital costs, operational costs, including replacement costs and Cost of Connection, which includes processes associated with delivering $CO_2$ that is compliant with the T&S specification, such as compression, pumping and liquefaction, on an annual basis across the complete construction and operational period of the plant and up until 2050.

The NPV of the Project's lifetime $CO_2$ abatement will be calculated using the volumes inputted by the Project as part of the Emissions Reduction criterion, as described above.

For CaaS Projects, cost will be considered as a calculation of the CaaS Group's total Project costs (as adjusted for robustness) and $CO_2$ abatement, over the lifetime of the Project, in line with the approach of treating CaaS Groups as a single Project during evaluation. Lifetime costs of the capture plants and CaaSCo should cover the same costs on an annual basis across the complete construction and operational period of the CaaS Group and up until 2050 requested for Project's as above.

The CaaS Group LCOA will be calculated by the formula:

LCOA = PV (Lifetime Costs of CaaS Group in £)/NPV (Lifetime $CO_2$ Abatement of CaaS Group in tonnes)

The LCOA model is expressed through the Cost Template (Annex C2), which must be filled out by Projects as part of their submission. Further details and instructions are included within the template. Annex C2 includes references to a 3.5% discount rate; this is a societal discount rate that has been used as a modelling assumption. It is not a reflection of the financing cost that we think will be achieved.

[68] [redacted]

The cost considerations criterion will be scored proportionally, with the Project with the lowest LCOA scoring a 5 and all other Projects scored relative to that based on their respective LCOA values:

Cost score for Project X = 5 × (Lowest LCOA of all Projects)/ (Project LCOA for X)

## Learning and Innovation (10%)

The creation and sharing of knowledge from early industrial CCUS deployment will be a crucial step in de-risking and enabling cost reduction for future CCUS Projects. The sharing of information will also promote innovations and collaboration both within and between Projects. Within this criterion government will be looking for a Project to demonstrate:

- That it will develop plans to innovate and contribute to scale up of CCUS deployment to support wider industrial decarbonisation. Evidence may include:
    - Application of carbon capture in a novel sector.
    - Demonstration of CCUS application of a particular industrial site or sector where there are currently no other plans for similar demonstration across UK/internationally taking place.
    - Ability to unlock or add to synergies with other decarbonisation innovation programmes e.g. use of low carbon materials in Project supply chain.
- That it will contribute to the innovation in CCUS deployment and technologies. Evidence may include:
    - Ability to support innovation in novel CCUS technology increasing its technology readiness level (TRL).
    - Technology Maturation Plan (TMP) to define which areas of technology will be matured as part of this Project, what the approach consists of and how risks will be managed.
    - R&D (Research and Development) plan covering technology de-risking activities the Project can expect to be doing during pre-FEED and/or FEED, into commissioning and through the Project lifetime.
    - Ability to support development of commercial innovation in how CCUS is deployed e.g. Capture as a Service.
    - Ability to increase efficiencies and cost reductions.
    - Incorporation of non-pipeline transport/shipping of $CO_2$ and integration with dispersed sites.
- That it will deliver replicability benefits, including having plans in place to reduce future costs of Industrial CCUS Projects.
- That it will generate and share knowledge. Here, government will be considering both the Key Knowledge Deliverables (KKDs) that will be generated and shared as well as the plans the Project has in place to proactively disseminate this knowledge in a way to

benefit future Projects. This may include working with government, research institutions, universities, Local Enterprise Partnerships, higher education colleges, and businesses to maximise impact. In particular, we would like to see evidence of a commitment to:

  - Open Technology, where the operator has the appropriate rights in relation to the installed technologies to work with third parties such as researchers and suppliers to adjust and develop the capture technology over the lifetime of the plant. By being able to develop adjustments during the lifetime of the plant, further learning and innovation can be realised, and costs can be reduced.
  - Open Access, where few or no restrictions on sharing information and learnings from the Project apply, and those that do are limited in scope.
  - A commitment to knowledge sharing.

- Government will assess the range of technologies that would be developed under each Project submission, on the basis that a wider range of technologies will naturally support a broader set of learnings for future rounds of deployment.
- Previous government CCUS funding allocations have resulted in important information sharing through KKDs. We would expect a similar level of information sharing as in previous funding allocation rounds[69]. The onus will be on the Project to describe what KKDs it will produce and which ones it will be willing to share (either in full or redacted as appropriate).

We are not prescribing a specific level of information sharing, but Projects willing to share more information, especially key information that will produce greatest learning, and proactively work to maximise the benefits of information shared, will be advantaged through the scoring. However, we acknowledge that some Projects will be unable to share some proprietary information about their Project, and Projects will not be penalised for not sharing this proprietary information.

Applicants should consider their obligations under competition law before agreeing to share any information that could amount to commercially sensitive information. Projects will not be penalised in the scoring for refusing to share information in circumstances in which the sharing of that information could give rise to a breach of competition law.

**Table 16: Scoring Categories – Learning and Innovation**

For interpreting the below categories in the context of CaaS Group submissions, the term ‘Project’ would refer to the entire aggregate Group submission, with the descriptors referring to the Group in aggregate or the entity(s) within the Group most appropriate to fulfil or evidence the criterion.

[69] https://www.gov.uk/government/collections/carbon-capture-and-storage-knowledge-sharing

| Score | Description |
|---|---|
| Low (1) | • Low confidence in the Project's ability to deliver innovation, meaningful learnings and cost reductions.<br>• Little or no willingness to share information. |
| Low-Medium (2) | • Some confidence in the Project's ability to deliver innovation, meaningful learnings and cost reductions.<br>• Some willingness and/or commitment(s) to share information. |
| Medium (3) | • Good confidence in the Project's ability to deliver innovation, meaningful learnings and cost reductions<br>• Moderate commitment(s) to share information. |
| Medium-High (4) | • Good confidence in the Project's ability to deliver substantial innovation, meaningful learnings and cost reductions<br>• Strong commitment(s) to share information. |
| High (5) | • High confidence in the Project's ability to deliver substantial innovation, meaningful learnings and cost reductions<br>• Very strong commitment(s) to share information. |

## 4.5 Shortlisting Process

The ICC Shortlisting Process will help determine which Projects will be taken through to negotiations.

Government has a stated objective of supporting the development of initial Industrial CCUS Projects from a range of sectors that the shortlisting process reflects. The basis of this Shortlisting Process will be a consideration of the overall Project score, sector and cluster they plan to connect to whilst bearing in mind the overall affordability envelope for ICC Projects. Specifically, we will:

- Take through the highest scoring Project in each chosen cluster.
- Take through any additional Projects in the rank order of their overall Project score as long as there are no more than 'S' number of Projects from the same sector across the Track-1 Clusters. If there are already 'S' Projects from the same sector, the next highest ranked Project from a different sector will be selected. This use of 'S' will demonstrate sector diversity. The value of 'S' will be determined based on our shortlisting constraint, see below.

- Continue to take through Projects within the bounds of our shortlisting constraint. We will shortlist a number of Projects with regard to the bounds of our affordability constraint, considering the need to drive competitive tension and accounting for Projects potentially leaving the process or negotiations breaking down.

In addition, Applicants should note:

- ‘S’ is the maximum number of Projects from the same sector across the Track-1 Clusters to ensure we support a diversity of ICC Projects. This is to support wider deployment of CCUS across a range of industrial sectors and maximise decarbonisation across UK industry.
- If after having followed this process, the shortlisting constraint is not reached, we will retain the option but not the obligation, to include Projects in rank order that were removed due to the sector diversity objective.
- For "S", CaaS capture groups will be considered as their own sector when assessing sectoral diversity.

Projects shortlisted in Phase-2 will progress to the negotiation/due diligence phase, which is detailed in Section 7.

# Section 5: Hydrogen Submission and Evaluation

## 5.1 Support Package

Government plans to select which new CCUS-enabled hydrogen Projects go through to negotiations for support through the Phase-2 Cluster Sequencing Process. Projects that are selected through Phase-2 and are then successful following the negotiations are expected to receive revenue support from the IDHRS scheme via the Hydrogen Business Model. The Hydrogen Business Model aims to facilitate the deployment of low carbon hydrogen production by overcoming the existing higher cost of low carbon hydrogen compared to high carbon alternatives.

In August, we published a consultation[70] setting out our proposal for a contractual business model for hydrogen producers in the form of a 'variable premium' price support mechanism with a sliding scale. In the consultation we explain why we think this position would best manage the volume and price risks that hydrogen producers currently face, and how we propose to set a reference price. More details on the possible options for other design aspects such as contract length and volume scaling as well as compatibility with other revenue support policies can also be found in the consultation document.

The consultation document and the Net Zero Strategy also sets out our proposed approach for Projects who wish to receive Hydrogen Business Model support but not eligible for this Phase-2 process (such as electrolytic Projects). The Net Zero Strategy states that the IDHRS will provide up to £100 million to award contracts of up to 250 MW of electrolytic hydrogen production capacity in 2023 with further allocation in 2024. We are minded to launch the first of these allocation rounds in 2022.

Alongside the Hydrogen Business Model consultation, a number of other relevant hydrogen documents were published and are referred to throughout this document. These are:

- **The Hydrogen Strategy**– setting out government's vision for a Hydrogen Economy with a hydrogen roadmap setting out the steps to achieve this[71].
- **The UK Low Carbon Hydrogen Standard consultation**– seeking views on options for a UK low carbon hydrogen standard that Projects applying for hydrogen business model support are intended to meet to receive revenue support. The consultation is now closed but we encourage all Projects applying through this Phase-2 process to read the consultation and consider the options carefully[72].

[70] https://www.gov.uk/government/consultations/design-of-a-business-model-for-low-carbon-hydrogen
[71] https://www.gov.uk/government/publications/uk-hydrogen-strategy
[72] https://www.gov.uk/government/consultations/designing-a-uk-low-carbon-hydrogen-standard

- **The Net Zero Hydrogen Fund (NZHF) consultation** – setting out the proposed policy design framework for the NZHF, a fund of up to £240 million to support low carbon hydrogen production Projects between 2022 and 2025[73].

It is important to note that the outcomes of the various hydrogen consultations will contribute to the final requirements hydrogen producers selected to go through to negotiations will need to meet before concluding negotiations for the Hydrogen Business Model. For example, we set out in the UK Low Carbon Hydrogen Standard and Hydrogen Business Model consultations our intention to require hydrogen producers to meet the requirements of a final low carbon hydrogen standard in order to secure Government funding support. We expect to finalise the design of the standard ahead of the negotiations commencing. If a decision is made to require Projects to comply with a final UK Low Carbon Hydrogen Standard in order to receive hydrogen business model support and Projects are taken through to negotiations who may not initially meet the final low carbon hydrogen standard, there may be scope to negotiate additional provisions for Projects to be able to meet the low carbon hydrogen standard.

Projects applying for IDHRS via the Hydrogen Business Model may also benefit from capital co-funding from the NZHF. We therefore propose that Projects that require a hydrogen specific business model should be allowed to apply for NZHF capital co-funding, subject to meeting the relevant eligibility criteria. For the NZHF, we propose to run a series of competitions at intervals, which may be in conjunction with other government support mechanisms.

### Negotiations and awards

Entering a bilateral negotiation does not mean that any funding or contract will be awarded. Any decision to award support would only be made subject to the successful completion of any negotiation and due diligence. Any negotiation would only conclude successfully once government has satisfied itself of the desirability of the Project through a value for money evaluation. BEIS reserves the right to pause or terminate these negotiations at any time (more information on this process is set out in Section 7).

Funding would not be committed unless: all subsidy control requirements have been met, government is comfortable with any balance sheet implications, the Project represents value for money and all relevant statutory consents have been complete. It is also our intention that the Project will meet the low carbon hydrogen standard (as noted above).

## 5.2 Eligibility Criteria

Projects will be asked to self-declare eligibility through the online portal and will only be invited to submit their submission upon successful completion of this stage. After this step, each Project will go through an initial eligibility check to make sure that the evidence submitted demonstrates that the Project meets the eligibility criteria. Applicants will be notified via email if

[73] https://www.gov.uk/government/consultations/designing-the-net-zero-hydrogen-fund

they have been successful or unsuccessful after the eligibility stage. Only eligible Projects will progress to the next stage where they will be assessed against the evaluation criteria.

We reserve the right to adjust the delivery and milestone dates in the eligibility criteria if a significant number of Projects are delayed such that we are unable to deliver CCUS programme strategic objectives.

The eligibility criteria set out below have been specifically developed for those applying to Phase-2 of the CCUS Cluster Sequencing Process for the Hydrogen Business Model. Projects who apply must:

- Be located in the UK
- Have access to a $CO_2$ transport solution and access to a Track-1 or reserve cluster $CO_2$ storage site
- Must be operational no later than the end of December 2027
- Have commenced pre-FEED or be ready to commence pre-FEED no later than the end of December 2022
- Be a new build CCUS-enabled hydrogen production plant
- Have identified an offtaker or multiple offtakers

More information on each criteria are included below.

## Located in the UK

This criterion reflects government's commitment across the UK to support decarbonisation in line with our 2050 net zero target and Carbon Budget 6 obligations.

## Have access to a $CO_2$ transport solution and access to a Track-1 or reserve cluster $CO_2$ store

The Phase-2 process is open to submissions across the UK regardless of geographic location and proximity to a Track-1 or reserve cluster. Projects are expected to demonstrate they have a $CO_2$ transport solution and access to a Track-1 or reserve cluster $CO_2$ store. To demonstrate access, Projects should have an agreement or evidence of progress towards an agreement with their preferred $CO_2$ store and $CO_2$ transportation provider, with clear plans on how they will access a $CO_2$ store.

## Operational no later than the end of December 2027

This criterion has been proposed to align with the government's commitment to deploy CCUS in the UK in the 2020s, with at least two clusters to be operational by the mid-2020s. Operational in the context of new build hydrogen plants means the date when hydrogen production begins alongside the ongoing export of $CO_2$ volumes into the T&S. Note that this is intended as a backstop date; having an earlier operational date could count favourably towards the Project evaluation stage.

## Have commenced pre-FEED or be ready to commence pre-FEED no later than the end of December 2022

To ensure Projects are at an appropriate stage to align with operational dates of December 2027 or earlier, Projects must at a minimum be at pre-FEED stage or ready to commence pre-FEED no later than December 2022. This must be set out in a Project execution plan as part of the Project Plan.

We recognise that there are different processes for developing a capital-intensive Project and different methods of describing the design stages and stage-gates to pass through. However, the definition of pre-FEED for the purposes of eligibility for the Hydrogen business model is as follows:

- Pre-FEED is the stage in which a Project undergoes feasibility studies with further definition around cost estimates and technology specification to prove Project feasibility and provide a basis to enter into the FEED stage. This stage may also be referred to as Front End Loading (FEL) 2. It is expected that during the Pre-FEED stage the following activities will be undertaken:
    - The technical concept is defined evaluating viable options with respect to technical, efficient energy utilisation, HSE, and economical aspects and recommending the most feasible option for further development during FEED.
    - Determining the preliminary plant configuration and battery limit conditions.
    - Investigation and selection of equipment and potential providers.
    - Review and recommendation of $CO_2$ capture technologies.
    - Evaluation of utility requirements.
    - An initial risk register is developed.
    - A preliminary cost estimate and schedule are prepared for delivering the Project.

Pre-FEED is preceded by a screening / options appraisal stage (FEL 1) which takes the Project from a statement of intent through to potential options being considered with a recommendation of the preferred option to be taken forward.

Pre-FEED is followed by FEED (FEL 3) in which the design and cost estimate are defined to a level sufficient for a financial investment decision to be taken and the implementation stage to commence.

Note that we would expect Projects with earlier operational dates to be further ahead with their FEED studies and this will be considered as part of Project evaluation.

## Be a new build CCUS-enabled hydrogen production plant

For this allocation process, only new build CCUS-enabled hydrogen production plants will be eligible to apply for revenue support via the Hydrogen Business Model[74]. Existing hydrogen producers looking to retrofit using CCUS technology may be eligible to apply for revenue support via the Industrial Carbon Capture (ICC) Business Model, as set out in section 4. This is because the ICC Business Model has been developed with the aim of making it commercially viable for existing industrial facilities to decarbonise, including existing production of 'grey' hydrogen. The Hydrogen Business Model aims to make the production of new low carbon hydrogen viable so that it can compete against the high carbon alternative – either as fuel or feedstock.

Further information on options being considered for a UK low carbon hydrogen standard, and how it may apply to Projects seeking BEIS support, can be found in the consultation on a UK low carbon hydrogen standard[75].

## Has identified an offtaker or multiple offtakers

Hydrogen producers looking to apply for support will need to have identified at least one offtaker for their hydrogen. This is to give assurance that the Project is sufficiently developed in concept if it were to receive funding. For clarity, in the context of the Phase-2 submission process, an offtaker is both the end user of low carbon hydrogen and, where relevant, any intermediary party who may purchase and resell hydrogen to end users.

To demonstrate this, Projects should have an agreement or evidence of progress towards an agreement, as well details in the Project execution plan. At the evaluation stage further checks will be undertaken regarding the robustness of the offtaker(s) and any offtaker agreements. For this Phase-2 process, all uses of hydrogen that lead to a reduction in carbon emissions against a counterfactual will be counted as a valid offtaker.

### Gas blending as an offtaker

Under current health and safety regulations (the Gas Safety (Management) Regulations 1996 (GSMR)), the amount of hydrogen allowed in the existing gas network is no greater than 0.1% by volume. For a greater amount of up to 20% by volume for blending of hydrogen, this would require Health and Safety Executive (HSE) to grant an exemption to the existing hydrogen limit. Such an exemption would only be granted if it was shown the health and safety of people likely to be affected by the exemption would not be prejudiced in consequence of it.

HSE is currently considering how a review of GSMR can be taken forward which would allow the existing hydrogen limit to be amended to allow for potentially up to 20% by volume hydrogen blends (without the need for an exemption). Any such change would have to be safe, with the safety evidence being presented to HSE for evaluation before any change could be made to the regulations. Due to the current timelines for ongoing safety trials, the earliest this

[74] We are minded to set out a separate allocation process for new non-CCUS enabled hydrogen producers, to be introduced in 2022.
[75] https://www.gov.uk/government/consultations/designing-a-uk-low-carbon-hydrogen-standard

can occur is Q4 2023. A decision to go ahead with hydrogen blending is also contingent on an economic assessment to understand whether the additional network and system costs incurred as a result of blending represent value for money. This is currently being led by BEIS, and is targeted for completion in 2023, in parallel to the conclusion of the safety and operability trials.

Hydrogen producers planning to blend hydrogen into the existing gas network are still able to apply for support through this Phase-2 process. However, a decision on if and how to support gas blending will be subject to the gas blending policy decisions outlined above and the final design of the Hydrogen Business Model.

When considering projects with gas blending as an offtaker and how credible their plans are as part of the 'deliverability' criterion outlined as part of the evaluation criteria (5.3), we will take into account that policy decisions on gas blending have not yet been taken. Given current regulatory restrictions and uncertainties on blending into the existing gas grid (above 0.1% by volume), we consider that projects with gas blending as an offtaker could only score the minimum score of 2 if they sufficiently account for the current uncertainties in their planning and risk register (and they meet the other requirements for scoring a 3 or higher).

## 5.3 Evaluation Criteria

### General considerations

This section sets out the evaluation criteria which will be used in assessing the hydrogen submissions for Phase-2. The objective of Phase-2 for hydrogen Projects is to select which Projects will go through to negotiations to potentially receive revenue support via the Hydrogen Business Model. Projects going through to negotiations will need to demonstrate through the evaluation process that they are:

- Commercially and technically viable
- Value for money
- Strategically aligned to low carbon hydrogen and CCUS policy

To evaluate which Projects should receive the hydrogen business model, we are asking Projects to primarily focus their submissions on their installed hydrogen capacity by 2027. Under the Market Development & Learning criterion Projects will be able to detail plans beyond the 2027 installed hydrogen capacity to demonstrate growth potential. However, any questions answered for the Deliverability criterion should not include any capacity expansion plans beyond 2027.

The process for allocating revenue support to any potential future increase in capacity is likely to be confirmed following the government's response to the hydrogen business model consultation and ahead of commencement of negotiations.

A hydrogen Project's offtaker plans will also feature across the evaluation criteria, particularly in Deliverability, Emissions Reduction and Cost Considerations. We recognise that in the

absence of an established low carbon hydrogen market and shared hydrogen infrastructure, an offtaker of hydrogen plays a crucial role in determining whether a hydrogen plant is viable. We have therefore asked for evidence relating to offtakers, and the transportation and storage of hydrogen from production plant to offtakers, where appropriate throughout the submission form and other templates. Note: In the context of the Phase-2 submission process, we define 'offtaker' as both the end user of low carbon hydrogen and, where relevant, any intermediary party who may purchase and resell hydrogen to end users. Where these are two entities, we expect Projects to detail both in the appropriate sections.

## Approach to scoring

Projects will be allocated a score out of 5 against each of the criteria according to the weightings explained below.

Where the Projects' scores against a particular criterion are determined at least partially via qualitative evaluation – that is, for Deliverability, Economic Benefits, and Market Development and Learning – we have provided a set of scoring definitions to indicate how particular levels of performance against those criteria map onto particular scores.

Scores will be allocated based on the assessment of the relevant evidence against the scoring tables outlined below. If evidence provided for a criterion is assessed to fall between or across more than one scoring descriptor then the Project will receive the score which most closely represents the overall evidence provided against that criterion.

## Weightings

The table below sets out the weightings allocated to each of the Phase-2 evaluation criteria for new build hydrogen Projects. The headline criteria are unchanged from Phase-1, with the exception of the final criterion which now also includes hydrogen market development in addition to learning and innovation.

| Criterion | Weighting |
|---|---|
| Deliverability | 30% |
| Emissions Reduction | 20% |
| Economic Benefits | 20% |
| Cost Considerations | 15% |
| Market Development and Learning | 15% |

Projects' overall scores will be calculated using their finalised scores against each criterion, which will then be combined according to their associated weightings as set out in the table above.

Once a Project has been fully assessed and given an overall score, shortlisting factors will be applied to determine if it will be taken through to negotiations. More information can be found in section 5.4 on selecting Projects for negotiations.

## Minimum Scoring

Projects will need to achieve a minimum score of 2 when assessed under Deliverability to have the opportunity to be considered for negotiations. Those who do not achieve a minimum of 2 under Deliverability will not progress any further in the phase-2 allocation process. This is to ensure only reasonably viable Projects are considered for negotiations.

## Deliverability (30%)

The Deliverability criterion will consider the Project's capability and capacity to deliver successfully and be operational by end of 2027. Importantly, it will consider their plans to deliver the hydrogen production plant as well as arrangements with their planned off-takers and those offtakers' viability. It will also consider the necessary hydrogen and $CO_2$ transport and storage infrastructure.

We will assign a Deliverability score based on performance against two key factors:

- Government's confidence that the hydrogen plant can credibly be operational and capably deliver by the end of 2027.
- Government's confidence that the hydrogen plant has commercial and technical arrangements in place with viable off-takers for most (75% or above) of their hydrogen volumes.

In assessing against this criterion, Projects will be credited for providing clear and credible evidence of the following:

- The capability and the organisational structure of the hydrogen production plant representative and any relevant consortium partners
- Clear plan identifying how the hydrogen plant relates to its offtakers and the role of any hydrogen distribution and storage, and how the producers plan to operate the plant day to day by outlining their operational philosophy.
- An integrated Project plan with strong schedule logic that incorporates activity durations which are judged to be reasonable, for example in comparison to similar activities undertaken on other Projects and taking into account any applicable processes, such as acquiring any necessary planning permissions or for procuring suppliers. The critical path and relevant lead times should be clearly identified with floats incorporated as required. This Project plan should also demonstrate

interdependencies with proposed off-takers' plans to take the proposed hydrogen volumes.

- Operational plant schedule demonstrating hydrogen volumes availability and likely demand profile of proposed offtakers, demonstrating alignment between supply and demand and describing any mitigation measures included to deal with inconsistencies, such as mis-aligned maintenance outages.
- Progress to date against the stated Project plan, with documentation and engineering information provided to demonstrate that the Project and its proposed offtakers are on track. This includes deliverables provided that are commensurate with the declared status of the Project development.
- Accurate identification of the critical planning and consent stages, with these properly accounted for in the Project schedule. We welcome seeing similar evidence for proposed offtakers where possible.
- Financing arrangements for progressing the Project and the status of key commercial agreements needed to realise the Project.
- Business plans for the organisations involved and details of how the Project fits with the company's overall strategic ambition as well as information relating to financial health. This information should be supported by evidence inputted into the Financial Statement template (Annex D).

- An agreement or evidence of progress towards an agreement to connect to a Track-1 or reserve cluster $CO_2$ storage site and $CO_2$ transport solution. We recognise that the level of commitment in place between an early-stage Project and its partners may naturally vary depending on the Project's stage of development so any evidence of formal and informal agreements would be welcome. For example, this could be:
    - A letter of intent or provisional agreement with the T&S provider(s).
    - Memoranda of Understanding, collaboration agreements or draft Heads of Terms being in place between the Projects and the T&S provider(s).
- An agreement or evidence of progress towards an agreement with and to connect to hydrogen offtakers. For example, this could be:
    - A letter of intent or provisional agreement with offtakers.
    - Memoranda of Understanding, collaboration agreements or draft Heads of Terms being in place between the hydrogen producer and its proposed offtakers.
    - We recognise that the level of commitment in place between an early-stage Project and its partners may naturally vary depending on the Project's stage of development so any evidence of formal and informal agreements would be welcome.
- For the organisations involved in the Project, we expect to see those organisations' business plans and how the hydrogen production plant fits with the organisation's overall strategic ambition, as well as information relating to financial health. We welcome seeing similar evidence for proposed offtakers where possible.

- Detailed registers in place to accurately identify key risks, and with mitigations populated. The Project should demonstrate where mitigations are already in place and present a clear implementation plan where they are not. This should take account of cyber risks to both the Project and the resilience of the infrastructure once commissioned, demonstrating secure by design principles. The Project should also provide evidence of the steps taken to identify and assess cyber risks and the mitigations that will be put in place to ensure strong cyber resilience.
- Clear adherence to safety regulations, and identification and mitigation of any residual safety risks such that they are as low as reasonably possible across all components of the hydrogen plant and offtakers.
- Ability of the Project organisations to access the proper level of resource and capability necessary to deliver the hydrogen production plant. Specifically, the following may be taken as evidence of this:
    - Key contracts in place with core suppliers of equipment and services – or, at a minimum, substantial engagement with prospective suppliers.
    - Evidence of engagement with technology licensors.
    - Demonstration of the Project organisation's competence to manage and coordinate a Project of this scale and complexity.
    - Evaluation of capability and capacity of supply chains to deliver required materials, goods, and skills for the construction and operation of the hydrogen production plant. We welcome seeing similar evidence for proposed offtakers.

The Hydrogen Plan includes further prompts as to the specific pieces of supporting evidence which may be beneficial in supporting the Project to perform well against the deliverability criterion. Submissions forms that should be completed are detailed earlier in section 2.1.

### Deliverability minimum score

As stated above, Projects that do not sufficiently demonstrate commercial or technical viability to deliver the Project before the end of December 2027 will not be able to score at or above the minimum score threshold of 2 and will be removed from further evaluation against the other criteria. This additional level of scrutiny is to ensure only viable Projects are considered and progressed through to negotiations.

In light of the responses and supporting evidence provided, assessors will assign a final score considering all information provided by the Project as well as its credibility. The scoring categories for this criterion are defined as follows:

**Table 17: Scoring Categories – Deliverability**

| Score | Description |
|---|---|
| Low (1) | • Responses and evidence in relation to one or more questions in the submission form are missing or incomplete. |

| Score | Description |
|---|---|
| | • Little to no confidence in the Project being operational by the end of 2027 or in its delivery capability more generally.<br>• Little to no evidence of viable commercial or technical arrangements with offtakers of hydrogen.<br>• Little to no confidence that proposed offtakers for at least 50% of hydrogen volumes are commercially or technically viable. |
| Low-Medium<br>(2) | • Adequate responses given to all questions in the submission form, with some level of supporting evidence provided.<br>• Supporting information provides adequate confidence in the Project being operational by the end of 2027.<br>• However, there may be reservations regarding the credibility of some supporting information, or in the Project's capability in certain delivery areas.<br>• Some evidence of commercial and technical arrangements with offtakers, but limited in concept or plan.<br>• Some confidence that proposed offtakers for 50% or above of hydrogen volumes are commercially or technically viable. |
| Medium (3) | • All questions in the submission form are fully answered, with a reasonable level of supporting evidence provided.<br>• Supporting information provides a reasonable degree of confidence in the ability of the Project to be operational by the end of 2027.<br>• However, there may be reservations regarding the credibility of some supporting information, or the developers' capability in certain delivery areas.<br>• Evidence of commercial and technical arrangements with offtakers for at least 50% of the hydrogen volumes, and confidence that those offtakers are commercially and technically viable. |
| Medium-High<br>(4) | • Comprehensive responses given to all relevant questions in the submission form, with a strong level of supporting evidence provided.<br>• Supporting information provides a high degree of confidence in the capability of the hydrogen developer to deliver an operational hydrogen plant by the end of 2027. |

| Score | Description |
|---|---|
| | • Evidence of commercial and technical arrangements with offtakers for most (75% and above) of the planned hydrogen volumes.<br>• Good degree of confidence that those offtakers are technically and commercially viable. |
| High (5) | • Comprehensive responses are given to all questions in the submission form, with clear and credible evidence provided to demonstrate delivery capability.<br>• Supporting evidence provides a high degree of confidence in the ability of the hydrogen developer to deliver an operational hydrogen plant by the end of 2027.<br>• Strong evidence of commercial and technical arrangements with all offtakers, and high degree of confidence that all offtakers are technically and commercially viable. |

## Emissions Reduction (20%)

The emissions reduction criterion will assess the potential offered by each Project to generate reductions in $CO_2e$ emissions[76]. We further divide and sub-weight this into two sub-criteria:

- $CO_2e$ intensity of hydrogen (60%)
- Average total emissions reduction (40%)

Projects will be scored relatively for each sub criteria against other Projects and the score from both sub-criteria will be averaged out to give a total score out of 5 for emissions reduction, relative to other Projects. The credibility of a hydrogen plant's offtakers from evidence provided under the 'Deliverability' criterion will also be considered as part of both sub-criteria.

### $CO_2e$ intensity of hydrogen

Projects will be asked to provide details of the $CO_2e$ emissions intensity of the hydrogen produced. This will consider capture rates of the hydrogen plant, the emissions impact from the compression, transportation, and storage of the $CO_2$, as well as the emissions intensity of the hydrogen production, including upstream emissions. More details can be found in the Cost Considerations and Emissions Reduction template (Annex C3).

The $CO_2e$ intensity of hydrogen will be calculated as follows:

[76] Emissions of each greenhouse gas (carbon dioxide, methane, nitrous oxide, fluorinated gases) are expressed in terms of carbon dioxide equivalent ($CO_2e$), recognising the different global warming potentials (GWP) of the different gases.

*$CO_2e$ intensity of hydrogen (g $CO_2e$/kg $H_2$)= a + b + c*

Where:

a = Upstream supply $CO_2e$ intensity (g $CO_2e$ /kg$H_2$)

b = $CO_2e$ intensity associated with hydrogen production (g $CO_2e$ /kg$H_2$)

c = $CO_2e$ intensity associated with $CO_2$ transportation (g $CO_2e$ /kg$H_2$)

## Average total emissions reduction

Average total emissions reduced will be considered using an average of $CO_2e$ emissions reduced per annum over the plant's first 15 years of operation. To calculate this, Projects will be asked to provide quantitative hydrogen production and offtake profiles, and details on what high carbon counterfactual their offtakers would be replacing by using low carbon hydrogen. This will allow us to assess the overall decarbonisation impact of a hydrogen Project.

The average total emissions reduction will be calculated as follows:

*Average total emissions reduction (Mt $CO_2e$/year) = (d – (a+ b + c)) * e*

Where:

d = $CO_2e$ intensity associated with fuels displaced in end use sectors (g $CO_2e$/kg$H_2$)

e = total hydrogen production, measured annual average over 15 years (kg$H_2$)

To assess both sub-criteria under emissions reduction, Projects will need to complete the Cost Considerations and Emissions Reduction template (Annex C3) where they will need to provide:

- The $CO_2e$ emissions intensity associated with the production of hydrogen. This includes upstream emissions of natural gas supply, and emissions associated with the transport of the captured $CO_2$ from the hydrogen plant to the store. This should include direct and indirect emissions associated with compressions/ pumping/ liquefaction and any other associated operations such as shipping and storage. Where these emissions result from fuel or electricity consumption of the T&S, Projects should include a breakdown of the electrical and thermal energy consumption (MWh). This should include an explanatory note setting out how these emissions and energy consumption data have been determined, and the process by which the emissions and energy consumption are designed to be as low as reasonably possible.
- The gross capture rate of the hydrogen production plant
- The thermal and electrical conversion efficiency of the plant
- The expected output of the plant and expected hydrogen demand from offtakers
- The emissions associated with counterfactual fuel(s) being displaced by offtakers of hydrogen

The emissions reduction calculations will be done using the information submitted in the Cost Considerations and Emissions Reduction template (Annex C3).

**Economic Benefits (20%)**

This criterion aims to assess the potential contribution that the Project can make to the government's objective of supporting clean, resilient and sustainable economic growth as we build back from the impacts of Covid-19. Projects should also look to demonstrate the contribution the hydrogen production plant can make to the UK economy and government's levelling up agenda.

- Evaluation against this criterion will be undertaken on the basis of information provided through the Economic Benefits Template (Annex B) and answers provided within the Hydrogen Plan, alongside any associated supporting documentation.
- The economic benefits template is structured to allow Projects to provide data for both the direct and indirect jobs they expect to provide through Project development and operations. As with other criteria, the onus will be on the Project to provide sufficient supporting information and justification for any assumptions made, and assessors will be instructed to score accordingly.

Projects will be assessed against the economic benefits criterion with reference to four key factors:

- Number and quality of jobs
- Transparency of supply chain procurement process
- Investment in hydrogen skills
- Wider economic benefits

### Number and quality of jobs

This will consider the number of direct and indirect jobs the Project can create and safeguard, as well as when these jobs will be realised and where they are located, and the overall wage premium generated by these jobs. The template will consider the salaries of these jobs as a contribution to GVA, with the data being evaluated using standard Green Book appraisal methods (refer to Annex B for completion of this section).

### Transparency of supply chain procurement processes

Projects will need to demonstrate how they will make their procurement strategies as transparent as possible. For example, identifying supply chain opportunities, advertising them as early as possible, and beginning meaningful engagement with hydrogen supply chain companies.

### Investment in hydrogen skills

We welcome evidence that demonstrates that Projects are investing in training programmes to develop skills in hydrogen, for example in apprenticeships and retraining programmes. We will evaluate the wage uplift generated via plans for future upskilling, to the extent that these

factors support the delivery of the Project, via standard Green Book appraisal methods. Projects should provide detail on the start dates and duration of these programmes and how they will target impacts to regions, local communities and at a national level, as well as how they will support retraining workforces transitioning from other sectors (refer to Annex B for completion of this section).

### Wider economic benefits

In line with the commitments made in the Ten Point Plan and the government objective to drive local and regional growth to level up across the UK, Projects should ensure their responses address their contribution to economic growth within the local area, in line with the following key strategic priorities:

- Synergies with other decarbonisation programmes and potential to be a 'SuperPlace': This could be demonstrated through, for example, the hydrogen produced in clusters as an energy vector in that local area being used for a heating in a community trial or Town Pilot, or through the mapping of a broader decarbonisation pathway for the region, identifying the economic benefits and opportunities of decarbonisation, as well as the development of skills required to realise these benefits.
- Regeneration and community renewal: Projects should consider how they can contribute to improving and widening the economic benefits associated with their development and operation to local communities. This could include but is not limited to, for example, impacts on air quality, increased attractiveness to other businesses, local transport links or land value. Projects should provide evidence of any wider economic benefits that they deem to be relevant. Any engagement with local communities or institutions that has taken place, or will take place, in support of these plans will be seen as beneficial.
- Equality, diversity and inclusion: Projects should consider how they can ensure the diversity and inclusivity of their workforce, as well as how to incorporate hiring practices which do not disadvantage those with protected characteristics.

In light of the responses and supporting evidence provided, assessors will assign a final score considering all relevant information provided by the Project in the Hydrogen Plan and the Economic Benefits template, as well as its credibility. The scoring categories for this criterion are defined as follows:

**Table 18: Scoring Categories – Economic Benefits**

| Score | Description |
|---|---|
| Low (1) | • The Project submissions demonstrate only minimal levels of economic benefit or no economic benefit at all.<br>• Limited evidence provided which gives little to no confidence in the ability of Project to implement and realise the expected plans (if any) and any consequential economic benefits. |

| Score | Description |
|---|---|
| Low-Medium (2) | • The Project submission demonstrates limited levels of economic benefit.<br>• Supporting evidence around economic benefits may be limited in places but gives some confidence in the ability of the Project to implement and realise the expected plans and economic benefits. |
| Medium (3) | • The Project submission demonstrates a reasonable level of economic benefit.<br>• Range of supporting evidence provided, giving confidence in the ability of the Project to implement and realise the expected plans and economic benefits. |
| Medium-High (4) | • The Project submission demonstrates a high level of economic benefit.<br>• Good level of supporting evidence provided throughout, giving a good degree of confidence in the ability of the Project to implement and realise its Projected plans and economic benefits. |
| High (5) | • The Project submission demonstrates a very high level of economic benefit.<br>• Comprehensive and highly credible supporting evidence gives a high degree of confidence in the ability of the Project to realise its plans and economic benefits. |

## Cost Considerations (15%)

Through the cost considerations criterion, BEIS will determine a Levelised Cost of Hydrogen delivered (LCOH). In this context, 'delivered' includes the cost of production and delivery of hydrogen to an offtaker. The LCOH will be calculated by summing the costs up until 2050 of the hydrogen production plant, including the cost of storing and distributing the hydrogen to offtakers, and dividing it by the sum of the total hydrogen produced by the plant up until 2050[77].

This will be calculated using two steps:

- A robustness check of the cost estimates provided.
- A calculation of the LCOH, adjusting for robustness.

[77] On the basis of the hydrogen capacity installed by the end of the 2027, as explained in section 5.3.

### Robustness check of cost estimates

The robustness check will be an evaluation of the cost information provided by Projects. This evaluation will only assess the robustness of the methodology to produce cost information and will be based on the AACE cost estimate classification system.[78] The conclusion will inform the LCOH calculation.

### Levelised Cost of Hydrogen calculation

The LCOH will be calculated by the formula:

$$\frac{\text{PV (costs up until 2050)}}{\text{NPV (hydrogen production up until 2050)}}$$

The 'present value of costs up until 2050' (PV) will cover development costs, capital costs, and operational costs, including replacement costs, on an annual basis across the complete construction and operational period which could be up until 2050, and as adjusted according to the conclusion of the robustness check. Hydrogen Projects will be required to include the latest estimated hydrogen distribution and storage costs, and an estimate of the Cost of Connection to the $CO_2$ transport and storage network (including processes associated with delivering $CO_2$ that is compliant with the T&S specification, such as compression, pumping and liquefaction).

The 'net present value of hydrogen production up until 2050' (NPV) will be the total hydrogen expected to be produced by the Project up until 2050, as described above, net of any hydrogen that is used during the production process itself.

The cost considerations criterion will be scored relatively to other Projects, with the Project with the lowest LCOH scoring a 10 and all other Projects scored relative to that based on their respective LCOH values.

The data for the LCOH model will be collected in the Cost Considerations and Emissions Reduction Template (Annex C3) and must be filled out by Projects as part of their submission. Further details and instructions are included within the template.

## Market Development and Learning (15%)

Hydrogen Projects applying through the CCUS Cluster Sequencing Process could be some of the first plants producing low carbon hydrogen at scale in the UK. The Market Development and Learning criterion therefore asks Projects to demonstrate how their hydrogen production plans and associated infrastructure contribute to the development of a hydrogen market. Similar to other capture technologies, we also want Projects to demonstrate how they will create and share knowledge from early hydrogen deployment and promote innovations.

[78] [redacted]

Unlike the other hydrogen criteria, in this criterion we will be considering Projects' plans for a hydrogen production plant's development before and after 2027.

For **Market Development**, we ask that Projects provide evidence on how their plans help realise aspects of a Hydrogen Economy which are set out in the UK Hydrogen Strategy and the Prime Minister's 10 Point Plan for a Green Industrial Revolution. We ask that Projects demonstrate:

- Longer-term plans to increase production volumes beyond those specified in previous criteria (up to 2027), contributing to the UK's ambition for installed capacity of low carbon hydrogen of 5GW by 2030.
- Plans for the development of and integration into wider hydrogen network infrastructure (including storage) to enable supply of hydrogen to a range of offtakers, including from different sectors and for different applications. This could include engagement and planning done to date with existing gas network operators or plans to develop new private hydrogen networks.
- Any other contribution their Project makes to the development of the hydrogen economy. For example, supporting trials of hydrogen use to unlock deployment such as a hydrogen-heated town, fostering public and consumer awareness and acceptance of hydrogen, demonstrating the business case for private investment in the UK's hydrogen economy.

For **Learning**, we will be looking for a Project to demonstrate:

- That it will deliver replicability benefits, including having plans in place to reduce future costs of CCUS-enabled hydrogen Projects. In particular, Projects which contribute to moving a technology, or multiple technologies, from one technical readiness level (TRL) or commercial readiness level (CRL) to another.
- That it will contribute to the development of innovative technologies.
- That it will generate and share knowledge. Here, government will be considering both the Key Knowledge Deliverables (KKDs) that will be generated and shared as well as the plans the Project has in place to disseminate this knowledge in a way to benefit future Projects. This may include working with government, research institutions, universities, Local Enterprise Partnerships, Higher Education Colleges, and businesses to maximise impact. In particular, request evidence of:
    - Open Technology, where the operator has the appropriate rights in relation to the installed technologies to work with third parties such as researchers and suppliers to adjust and develop the capture technology over the lifetime of the plant. By being able to develop adjustments during the lifetime of the plant, further learning and innovation can be realised, and costs can be reduced.
    - Open Access, where few or no restrictions on sharing information and learnings from the Project apply, and those that do are limited in scope.

- A commitment to knowledge sharing.

Previous government CCUS funding allocations have resulted in important information sharing through KKDs. We would expect a similar level of information sharing as in previous funding allocation rounds. The onus will be on the Project to describe what KKDs it will produce and which ones it will be willing to share (either in full or redacted as appropriate).[79]

Evaluation of this criterion will consider the details of the proposal, robustness of plans, the credibility of evidence and overall confidence in proposed outcomes. Where proposed outcomes constitute a longer-term ambition rather than a deliverable for the initial capacity (built by 2027), proposals should demonstrate how far advanced these ambitions are, along with evidence for how the initial installed capacity will help in realising these.

Projects should consider their obligations under competition law before agreeing to share any information that could amount to commercially sensitive information. Projects will not be penalised in the scoring for refusing to share information in circumstances in which the sharing of that information could give rise to a breach of competition law.

This criterion will be scored out of 5 against the following scoring categories:

**Table 19: Scoring Categories – Market Development and Learning**

| Score | Description |
|---|---|
| Low (1) | • Longer term plans are at an early concept phase, with little to no credible evidence demonstrating how the proposed Project and its longer-term ambitions could enable the development of a Hydrogen Economy.<br>• Low confidence in the Project's ability to deliver innovation, meaningful learnings and cost reductions.<br>• Little or no willingness to share information. |
| Low-Medium (2) | • Limited demonstration of progress to date on longer term plans. Proposal partially demonstrates how the initial Project, and its longer-term ambition could enable the development of a Hydrogen Economy.<br>• Some confidence in the Project's ability to deliver innovation, meaningful learnings and cost reductions.<br>• Some willingness and/or commitment(s) to share information. |
| Medium (3) | • Information provided for longer term plans indicate reasonable progress. |

[79] More detail on previous allocation rounds can be found here: https://www.gov.uk/government/collections/carbon-capture-and-storage-knowledge-sharing

| Score | Description |
|---|---|
| | • Reasonable level of credible evidence demonstrating how the Project's initial phase and the longer-term ambition will enable the development of a Hydrogen Economy.<br>• Good confidence in the Project's ability to deliver innovation, meaningful learnings and cost reductions.<br>• Moderate commitment(s) to share information. |
| Medium-High (4) | • Information setting out longer term ambition indicates good progress and plans are well thought through.<br>• Good demonstration of how the Project's initial phase and the longer-term ambition will enable a range of factors to help develop a Hydrogen Economy.<br>• Good confidence in the Project's ability to deliver substantial innovation, meaningful learnings and cost reductions.<br>• Strong commitment(s) to share information. |
| High (5) | • Information on longer term ambitions demonstrates comprehensive plans and shows significant progress to date.<br>• The proposal provides a robust and highly credible evidence base demonstrating its specific role in enabling a range of factors to develop a Hydrogen Economy.<br>• High confidence in the Project's ability to deliver substantial innovation, meaningful learnings and cost reductions.<br>• Very strong commitment(s) to share information. |

## 5.4 Shortlisting Process

The Hydrogen shortlisting process will help determine which Projects will be taken through to negotiations. The basis of this shortlisting process will be a consideration of the overall Project score and cluster they plan to connect to whilst bearing in mind the overall affordability envelope for Hydrogen Projects. Specifically, we will:

- Take through the highest scoring hydrogen Project in each chosen Track 1 cluster.
- Take through any additional Projects in the rank order of their overall Project scores.

- We will shortlist a number of Projects with regard to the bounds of our affordability constraint, considering the need to drive competitive tension and accounting for Projects potentially leaving the process or negotiations breaking down.

# Section 6: Greenhouse Gas Removal Technologies

## 6.1 Background

The UK Government (HMG) is committed to decisive action to cut emissions across the economy, to achieve our target of net zero emissions by 2050. To complement these efforts the Climate Change Committee has been clear[80] that Greenhouse Gas Removal (GGR) methods will be required to compensate for residual emissions occurring in sectors that are most difficult to decarbonise completely. GGR Projects that require geological carbon storage, and hence would need access to the CCS clusters, include (but are not limited to) technologies such as bioenergy with carbon capture and storage (BECCS) and direct air carbon capture and storage (DACCS)- which are both commonly termed 'engineered' GGR technologies.

The UK will take a leading role in GGR policy development and deployment, and will work to enable the development of engineered GGR technologies in the mid 2020's. The Net Zero Strategy[81] outlined an ambition to deploy at least 5Mt$CO_2$/yr of engineered removals by 2030, in line with CCC and National Infrastructure Commission assessments[82]. In line with this ambition, we intend to develop business model support to potentially enable engineered GGRs to participate in Track 1.

Our long-term approach to engineered GGR technologies, in line with our approach to Power, ICC and Hydrogen, is to have a technology-neutral, market driven, competitive framework. However, we recognise that this may take some years to develop and mature. There may be a need for bespoke commercial frameworks to enable near-term deployment, however these are at an early stage of development.

Some preliminary research has been undertaken to consider what potential commercial frameworks could recognise the value of negative emissions from power BECCS. The final report[83] provides specific advice on how to structure a commercial framework that meets typical criteria, such as ensuring that 'value for money' is achieved, as well as:

- Incentivising operators to continually reduce supply chain carbon intensity.

[80] CCC (2019) Net Zero – The UK's contribution to stopping global warming
[81] https://www.gov.uk/government/publications/net-zero-strategy
[82] [redacted] &
[83] https://www.gov.uk/government/publications/investable-commercial-frameworks-for-power-beccs

- Rewarding verified negative emissions, rather than simply stored carbon.
- To be feasible to implement in the 2020s, using existing frameworks where possible.

We will seek feedback on the published report. Building on this, we have also commenced research investigating potential business models for DACCS and other 'first of a kind' (FOAK) GGRs, which will report early next year. The Net Zero Strategy, outlined our intention to consult on preferred GGR business models in early 2022.

## 6.2 Expression of interest for GGRs

Due to the current status of business model development, we will not be inviting engineered GGR Projects[84] to apply for the Phase-2 Project selection process as set out elsewhere in this document. We recognise however that GGRs were considered as part of the CCUS Cluster Sequencing Process, including their ability to connect to Track 1 clusters along Track 1 timescales.

In this context BEIS is seeking to understand the scale of potential GGR Projects. As part of the Phase-2 launch BEIS is inviting eligible GGR Projects (as defined below) to partake in a separate Expression of Interest (EoI) process for GGRs. An EoI form is listed in Annex F. The EoI is open to eligible GGR Projects with an interest in requesting access to Track 1 (as well as those with access to the reserve cluster, as per the eligibility criteria below). As a next step, the EoI will be used to inform the design of a potential separate evaluation and selection process as a GGR specific part of Phase-2.

The EoI includes questions designed to assess the type, scale and $CO_2$ emission reduction potential of the GGR Project. It also seeks feedback on the published business model report, mentioned above. Eventually, any decision to award support to GGR Projects seeking to connect to Track 1 clusters, would only be made subject to the development of a suitable business model and successful evaluation of eligible Projects, as well as completion of any negotiation and due diligence, taking into account a value for money evaluation. Any future BECCS Projects would be required to meet stringent sustainability requirements for the production and use of biomass, as will be set out following the publication of the full Biomass Strategy in 2022. Similarly, the carbon intensity of energy services and other utilities required for DACCS operations will be a key consideration.

Responses to the EoI are welcome from GGR Projects, which meet the eligibility criteria listed below:

### The Project must be located in the UK

This criterion has been proposed to reflect UK government's commitment across the UK to support decarbonisation in line with net zero.

[84] Participation in this stage of the Cluster Sequencing Process is restricted to engineered GGR projects that ultimately achieve atmospheric CO2 removal through geological storage. This principally limits eligibility to DACCS and BECCS, and excludes other engineering-based projects such as enhanced weathering.

## The Project must meet the definition of an engineered GGR Project using geological storage for captured $CO_2$

GGR Projects like BECCS and DACCS, which must have the principal aim of permanent atmospheric $CO_2$ removal through geological storage. Projects must have plans to deliver greenhouse gas removal through geological storage, alongside any plans for utilisation of $CO_2$[85]. For a GGR approach to be credibly 'net-negative' it must remove more GHGs from the atmosphere than it creates along its entire supply chain (both domestic and international) and store them for an effective period of time.

## The Project must have access to a Track 1 or reserve cluster carbon transport solution and storage site

GGR Projects should be located within the UK regardless of geographic location and proximity to a Track 1 or reserve cluster T&S network. To demonstrate access, Projects should have a provisional agreement with their preferred carbon store and transportation provider, with clear plans on how they will integrate with this infrastructure.

## The Project must not be considered under another carbon capture business model

The GGR Project must not be considered under another business model to support the costs of building and operating a carbon capture plant, for example, under the Industrial CCUS business model. This is because the costs of the capture plant would already have been provided for, even if negative emissions occur as a consequence of utilising sustainable biomass feedstocks in that installation (e.g. biogenic waste in an energy from waste plant).

[85] It is recognised that some forms of Carbon Capture and Utilisation (CCU) such as the production of sustainable aviation fuels (SAF) are key transitional elements of engineered GGR project's business plans.

# Section 7: Negotiation/due diligence phase, BAFO and selection decision

## 7.1 Shortlisting for negotiation/due diligence stage

Government reserves the right at its absolute discretion to limit the number of Projects which will be shortlisted to participate in the negotiation/due diligence stage after applying the processes set out in Sections 3, 4 and 5 of this document. In summary, when deciding which Projects will be shortlisted to participate in the negotiation/due diligence stage, government intends to have regard to:

- the number of Submissions received in respect of each Business Model;
- the ranking of Submissions in respect of each Business Model based on the scores awarded by applying the evaluation criteria set out in Sections 3, 4 and 5 of this document;
- a Cluster Integration Check, which may be relevant, for example, in circumstances in which the potential Projects shortlisted lead to a significant change to the Track-1 T&S Co's submitted Cluster Plan in Phase-1; and
- any affordability, value for money, balance sheet and subsidy control constraints.

## 7.2 Outline of negotiation/due diligence phase

After the evaluation of Submissions and shortlisting, in line with HMG business case approvals processes, government envisages that there will be a period of negotiation/due diligence, when shortlisted Projects will engage with the Department on a variety of technical and commercial issues such as:

- progress on plans for the infrastructure being delivered by the Track-1 T&SCo; and
- the details of the Business Models.

A significant amount of collaboration and coordination is expected during this period. In particular, the shortlisted Projects would be expected, amongst other things, to be able:

- to demonstrate how their Projects may be incorporated within the relevant T&SCo's Cluster Plans;
- to demonstrate their commitment to achieving FEED and optimising the design of their Projects;
- to move forward with all the regulatory processes and consents needed to realise their Projects;

- to agree a programme of work through to FID, taking account of government processes;
- to share new information across a wide range of issues, including the management of risk; and
- to respond to requests for information from advisers as due diligence commences.

## 7.3 Timetabling of shortlisted Projects

Government anticipates that each Track-1 T&SCo would have its own timetable, for example, in respect of achieving FID. For this reason, government may set bespoke timetables for carrying out negotiation/due diligence by reference to each of the Track-1 T&SCos.

In order to arrive at the lists of Projects to be awarded financial support, capture technology specific negotiation/due diligence processes will apply to each Business Model. An overview of the processes that government intends to follow with respect to each Business Model is set out below.

Government also anticipates that Submissions will relate to Projects with different levels of maturity and/or development timescales. Given that the maturity of Projects is expected to have a bearing on the effectiveness of any negotiations and due diligence, government may prioritise the shortlisted Projects by reference to maturity considerations. However, whether that decision is taken will be subject to a number of considerations, including the number of shortlisted Projects and the applicable development timescales. In particular, in respect of the Power Business Model and the Industrial Carbon Capture Model, government is considering a two stage approach. This could involve dividing the shortlisted Projects into groups based on maturity and, in particular, having regard to the alignment of Projects' proposed FID dates with the relevant T&SCo's timetable for the achievement of FID.

The Hydrogen Business Model is due to be published in 2022. However, government intends to follow a separate timetable for the allocation of financial support for Hydrogen Projects.

## 7.4 The objectives of the negotiation/due diligence stage

Applicants are reminded that government is continuing to develop the processes applicable to the negotiation/due diligence stage of this process, which follows Phase-2. In particular, government reserves the right to make changes to the processes described in this document. Details of the processes and applicable timelines will be communicated in the invitation to participate in the negotiations and due diligence stage.

The negotiation/due diligence process is being carried out in parallel with a process of further engagement with the Track-1 T&SCos. In this context, government recognises that changes to this process will have implications for the Track-1 T&SCos.

Government reserves the right to negotiate any aspect of a Submission and to request any information it requires to carry out due diligence of Submissions. In particular, Applicants should note that the objectives of the negotiation/due diligence stage are two-fold:

- first, this stage is an opportunity for government to negotiate improvements from its perspective to the technical and commercial terms of Submissions; and
- second, as part of an ongoing due diligence process, this stage is also an opportunity for government to confirm and verify any aspect of Submissions and to seek updated information from Applicants as Projects achieve important milestones.

Government reserves the right:

- to invite more Projects to participate in this stage than the number of Projects that it intends to offer financial support in order to maintain competitive tension throughout the process; and
- to request additional information from Applicants on some aspects of their Submissions, including with respect to technical, legal, financial and commercial matters.

The decision in relation to how many Projects will be invited to participate in this stage will be taken by reference to:

- Government's affordability, value for money, balance sheet and subsidy control constraints; and
- the number of Projects that have expressed interest.

## 7.5 The invitation to participate in negotiations and due diligence

Government will issue a formal invitation to participate in negotiations and due diligence to the relevant Applicants. That invitation will set out:

- details of any initial submission requirements, including any additional technical, legal, financial and commercial information Applicants will be required to provide to support their Submissions;
- instructions in relation to the submission of that further information;
- instructions and information in relation to the conduct of any discussions that may be carried out between government and Applicants; and
- any other relevant information about the negotiation/due diligence stage.

## 7.6 The scope of negotiations

The scope of the negotiations is expected to vary across the Business Models, having regard to the differences in the Heads of Terms applicable to each Business Model. The draft Heads of Terms for the Power Business Model and Industrial Carbon Capture Business Model were published in October 2021[86]. The draft Heads of Terms for the Hydrogen Business Model are being developed and an updated draft is due to be provided during the course of 2022.

Government also intends to carry out negotiations in a way that ensures that the terms of Submissions are consistent with government's negotiations with the relevant T&SCo. This is an important consideration due to the significant inter-dependencies between T&S Networks and the Projects wishing to connect to T&S Networks.

Further details of the scope of any negotiations will be communicated in the invitation to participate in the negotiation/due diligence stage.

## 7.7 Power, Industrial Carbon Capture and Hydrogen Submissions – structure of negotiation/due diligence stage

Depending on the number of shortlisted Submissions, the shortlist may be further sub-divided into multiple groups for each Business Model. The decision on whether a Submission is allocated to a particular group is anticipated to be taken by reference to evidence as to the maturity level of Projects.

Under this process, government reserves the right:

- to adopt different timetables for the conduct of negotiations and due diligence depending on the Track-1 T&SCo to which the Project is seeking to connect;
- to conduct negotiations and due diligence with Projects allocated to one group ahead of conducting negotiations/due diligence with Projects allocated to another group;
- to move Projects between groups if there are changes in circumstances, for example, changes to a Project's timetable for achieving key milestones; and
- to evaluate certain information by reference to the Track-1 T&SCo to which the Project is seeking to connect.

## 7.8 BAFO Submissions

Government intends to close the negotiation/due diligence stage by seeking best and final offer submissions ("BAFO Submissions"), which will be evaluated in accordance with the criteria set

[86] https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models

out in the invitation to submit a BAFO Submission. Government's evaluation of BAFO Submissions will include an assessment of the cost to extend the T&S network to the Project.

Without prejudice to the disclaimers set out at Section 1.6, government reserves the right to discontinue negotiations with any Applicant that does not accept the terms and conditions for submission as set out in the invitation to submit a BAFO.

Government reserves the right not to invite BAFO Submissions in accordance with a common timetable. In particular, government reserves the right to adopt different timetables:

- for each Business Model; and
- within each Business Model, in circumstances in which Projects have been divided into groups.

During the period from the date on which BAFO Submissions are made to the announcement of selection decision, government also intends to carry out further due diligence ahead of announcing any decision to allocate financial support to a particular Project. That due diligence is anticipated to cover technical, legal, financial and commercial compliance matters. In addition, the Department anticipates carrying out a Cluster Integration Check at this stage in the context of the relevant T&SCo to ensure that the risk profile, resilience and affordability of the Track-1 Cluster Plans, taking into account any subsequent evolution of those plans, and the cost of extending the T&S network to each Project, remain satisfactory.

## 7.9 Announcement of selection decision

Following the evaluation of BAFO Submissions, government intends to announce the list of Projects it intends to provide financial support.

Any decision to award support at any stage of this process will be subject to government first satisfying itself as to compliance with relevant technical, legal, financial, commercial or policy requirements, including:

- compliance with applicable subsidy control requirements;
- any balance sheet requirements;
- value for money requirements;
- verification of compliance with the applicable eligibility requirements; and
- a further Cluster Integration Check.

Any decision to award support under this process will also be subject to conditions being satisfied, including:

- Applicants demonstrating sufficient progress towards satisfying pre-contract signature requirements (e.g., obtaining any necessary planning and environmental consents);
- Applicants agreeing final terms with government;

- Applicants agreeing final terms with the relevant Track-1 T&SCos; and
- Government agreeing final terms with the relevant T&SCos.

Applicants that submitted BAFO Submissions but are not selected may be placed on a reserve list.

This publication is available from: https://www.gov.uk/government/publications/cluster-sequencing-for-carbon-capture-usage-and-storage-ccus-deployment-phase-2

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