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

Industrial Capture Project Plan



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industrialccusphase2@beis.gov.uk

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# Industrial Capture Project Plan Introduction

In November 2020, the Government published the Ten Point Plan for a Green Industrial Revolution[[1]](#footnote-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, 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[[2]](#footnote-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 20-30MtCO₂ per year across the economy by 2030. More specifically for the industrial sector, the Government ambition is to capture and store 6MtCO₂ of industrial emissions per year by 2030 and 9MtCO₂ by 2035 and ultimately Net Zero by 2050

In May this year, BEIS launched Phase-1 of the Cluster Sequencing Process to select Track-1 CCUS clusters and in October announced the Clusters that have been selected to participate as Track-1 Clusters; Hynet and East Coast Cluster. In addition, BEIS also announced the Scottish Cluster as a reserve cluster if a back-up is needed. In November BEIS launched Phase-2 of the Cluster Sequencing Process to select which Track-1 Projects will progress to negotiations and due diligence.

This document sets out the questions that capture Projects must answer as part of their Phase-2 submission. The information and relevant supporting evidence provided by capture Projects within the completed Project Plan will, alongside the Economic Benefits (Annex B), Cost Considerations and Emissions Reduction (Annex C) and Financial Statements (Annex D) templates, form the basis of the assessment to determine which capture Projects are selected. This document is an Annex to the Phase-2 Guidance Document and should be read alongside it. Please see the Phase-2 Guidance Document for further guidance on the assessment process, including how the information will be assessed and note that the caveats and reservations to that document set out in Section 1.5 of that document apply equally here.

The Phase-2 CCUS Cluster Sequencing Process will be run by the Department for Business, Energy and Industrial Strategy (BEIS). If applicants have any general questions about the submission process or about filling in any part of the submission documentation, please email queries to industrialccusphase2@beis.gov.uk.

## Important information regarding this process

* The deadline for finalised Phase-2 submissions is 23:59 on 21st January 2022.
* The assessment process will be run fairly, transparently, and objectively in accordance with the published Phase-2 guidance.
* The information provided within this form will be used throughout the Phase-2 process and the negotiations/due diligence phase. Entering a negotiation does not mean that an ICC business model funding support will be awarded. Any decision to award support would only be made subject to the successful completion of any negotiation and due diligence.
* Further timetable details for this process are set out in the Phase-2 Guidance Document.
* BEIS will not be responsible for any costs incurred in the preparation of any submission, irrespective of whether the capture Project is successful in the Phase-2 process.
* Projects will need to pass the eligibility criteria to be considered within the evaluation, as described in the Phase-2 Guidance Document.
* The evaluation will be based on five evaluation criteria with relative weightings of: Deliverability (30%), Emissions Reduction Potential (25%), Economic Benefits (20%), Costs (15%) and Learning and Innovation (10%).
* This document, the Industrial Capture Project Plan, is divided into nine sections:
	+ Section 1, Applicant Information.
	+ Section 2, Industrial Capture Project Summary; this information will provide background and context to assessors when reviewing the rest of the submission.
	+ Section 3, Eligibility, information submitted in this section will be used to determine eligibility of the Industrial Capture Project.
	+ Section 4, Industrial Capture Project Overview; information submitted in this section will be used to improve BEIS’ understanding of the Project.
	+ Sections 5-9 each focus on the information required to support one of each of the five evaluation criteria (listed in the bullet above).
* Section 2 and Section 4 do not apply to specific criteria, but BEIS may draw on information submitted in these sections to support the evaluation of any of the relevant assessment criteria.
* Alongside the Industrial Capture Project Plan the assessment of the Project will be supported by the submission of several templates:
* Annex B – Economic Benefits will be used to assess in more detail quantitative information associated with the assessment of Economic Benefits.
* Annex C2 – Cost and Emissions Reduction Template will be used to assess the Levelised Cost of Abatement (LCOA) for the Cost criteria and to input emissions reduction metrics and capture profiles for the Emission Reduction criteria.
* Annex D – Financial Statements Template will be used to support the assessment of the financial and commercial health of each company participating in the development of the Project. This template should be considered supplementary to the questions to assess the Project’s deliverability. The figures included in the template should be supported by relevant accounting notes and documentation.
* Across the assessment, BEIS will place significant emphasis on the credibility and consistency of information provided
* BEIS reserves the right to use information provided within the submission for any part of the Phase-2 assessment; such that information provided in one section, for example for a particular criterion, could be used to inform assessments against another criterion. This is to allow for consistency and credibility checks and not so answers can be continued in other sections. Any obvious continuation of answers will be removed.
* After the Industrial Carbon Capture Project submissions have been individually assessed, BEIS will carry out a Shortlisting Process of the Industrial Capture Projects to ensure they meet the government’s strategic objectives. The process used for this step is described in Section 4.5 of the Phase-2 Guidance Document.
* BEIS reserves the right not to accept any submission and reserves the right to cancel the process before it has completed or at any time before any support has been awarded.
* BEIS reserves the right not to consider a submission further if an applicant fails to disclose information requested.
* Each individual piece of supporting evidence can be referenced multiple times in the Industrial Capture Project Plan but should be uploaded only once to the portal.
* Please note that the word limit does not cover the references sections. This is so applicants can be specific as to where information can be found in any documents provided. If this section is used to continue answers, the words will be removed before the assessment. To aid with document referencing please also fill in the References Matrix Template provided in Annex E2.
* Any information provided above the word limits will be removed before information is provided to assessors and will not count towards the score. We will remove words in excess of the count from the end of the relevant question or section. This will be completed before the documentation is provided to assessors.

## Important information for CaaS submissions

* Capture as a Service (CaaS) Projects should have a CaaS Group Lead entity assigned, this party is responsible for submitting the Industrial Capture Project Plan to BEIS on behalf of the CaaS Group.
* All component members of a CaaS Group (and any potential separate submission(s)) will be assessed as a single CaaS Group Project submission against the evaluation criteria, given the interdependencies and shared viability.
* It is the responsibility of both the CaaSCo and CaaS Group capture Project to ensure there is sufficient information across any and all submissions made to fulfil the requirements of the assessment.
* The information provided should, to the best ability of the bidding parties, not duplicate emissions, costs or benefits. Requests for clarification may be made to ensure accurate and fair interpretations of the bid(s).
* If assessors interpret or infer duplication of information, BEIS will contact the CaaS Group Lead to clarify the evidence that has been submitted.
* Please see Section 4.2 of the Phase-2 Guidance document for further information on considerations related to the CaaS submission and assessment process.

CaaS Word Count Adjustments

* The number and difference of the involved entities in a CaaS Group may mean that an increase to the word count limit is needed to ensure quality submissions (for example, where information must be submitted in respect of every capture Project).
* In the areas below, the word count limits may be adjusted as defined for group submissions. This adjustment is intended only to provide sufficient space to make an adequate submission and does not represent any advantage accompanying a CaaS submission.
* We expect that these adjustments would be limited to these following sections if applicable, though we invite discussion where other areas of requisite additional detail arising from the CaaS model justifies alterations to submission word counts.

Sections where word count limits may be adjusted:

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| **Section** | **Question**  | **Word count adjustment** |
| Industrial Capture Project Summary | 2.2 Industrial Capture Project and Partners  | Using the base limit of 300 words, plus 50 words maximum for each Project in the CaaS Group. |
| 2.5 Documentation signoff  | Using the base limit of 250 words, plus 50 words maximum for each Project in the CaaS Group. |
| Industrial Capture Project Overview | 4.1 Capture Project | Using the base limit of 2000 words, plus 300 words maximum for each Project in the CaaS Group. |
| Deliverability | 5.2 Schedule | Using the base limit of 1000 words, plus 250 words maximum for each Project in the CaaS Group. |
| 5.3 Planning and Consents | Using the base limit of 500 words, plus 100 words maximum for each Project in the CaaS Group. |
| Emissions Reduction | 6.1 Emissions Reduction Effectiveness | Using the base limit of 1500 words, plus 300 words maximum for each Project in the CaaS Group.  |
| Learning and Innovation | 9.1 Development of Industrial CCUS Sector, 9.2, Cost Reduction, Replicability, and Innovation, 9.3 Knowledge Sharing Plan | Using the base limit of 750 words, plus 100 words maximum for each distinct industrial sector represented, if appropriate. |

Commercial sensitivity

For reasons of commercial sensitivity, individual partners in a CaaS Group may wish to submit information separately from the main submission.

In this case the CaaS Group bid should be submitted as standard and any named partner in the Group is entitled to submit their information as an annexed submission, clearly citing the CaaS Group to ensure effective consolidation, and adhering to the same word count limits.

We expect that these submissions would be limited to the following sections if applicable:

* 5.10 Financial and Commercial (Deliverability, Section 5):
* 5.10.1 Business plan and financial health – company level (750 words)
* 5.10.2 Financing plan – project level (1000 words)

We invite discussion where other areas of commercial sensitivity (or similar) might justify additional annexed submissions from.

## Disclosure of information

Reasons for decisions on submissions will be recorded at all stages for good administration and to ensure that there is a clear audit trail for all decisions. Administrative records will be maintained for all submissions irrespective of whether they are successful or not.

Please refer to Section 2.2 (Entry Process) of the Phase-2 Guidance Document for additional detail on entry into non-disclosure agreements and Section 1.6 for additional detail on parties involved in the Phase-2 process.

All information provided by applicants may be disclosed in accordance with BEIS’s legal 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) in the event that a request for information is received). More information on the FOIA, DPA, GDPR and EIR (including information on exemptions) can be found at: <https://ico.org.uk/for-organisations/>

To help BEIS deal with information requests and without prejudice to the paragraph above, in the box below, please set out the reasons why you consider any specific information should not be disclosed, including (if possible) by reference to the specific exemption contained in the relevant legislation (for example, because disclosure of the information would prejudice your commercial interests under section 43 of the FOIA), explaining why this is the case.

Where appropriate, please also state whether you consider your reasons for non-disclosure only apply for a particular time period. If we receive an information request, we will consider your views as stated on the submission form. However, BEIS will ultimately decide how to respond to an information request and whether any information should be withheld, subject to the Information Commissioner's Office decision in the event of the requestor appealing the decision.

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| Please detail what specific information, if any, within this submission should not be disclosed and the reasons why. Please include (if possible) reference to the specific exemption contained in the relevant legislation. |
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## Glossary of terms

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| Acronym | Meaning |
| ABEX | Abandonment Expenditure |
| BAFO | Best and Final Offer |
| CaaS | Capture as a Service |
| CaaSCo | Capture as a Service Company |
| CAPEX | Capital Expenditure |
| CCS | Carbon Capture and Storage |
| CCU | Carbon Capture and Utilisation  |
| CCUS | Carbon Capture, Utilisation and Storage |
| CHP | Combined Heat and Power |
| CO₂ | Carbon dioxide |
| CO₂e | CO₂ equivalent |
| COD | Commercial Operation Date |
| DCO | Development Consent Order |
| FEED | Front-End Engineering Design |
| FID | Final Investment Decision |
| HoT | Heads of Terms |
| ICC | Industrial Carbon Capture |
| JV | Joint Venture |
| LHV | Lower Heating Value |
| MJ/kg | Mega-joule per kilogram |
| MMV | Measurement, Monitoring and Verification |
| MoU | Memorandum of Understanding |
| MWh or MW | Mega-Watt Hour or Mega-Watt |
| OPEX | Operating Expenditure |
| T&S | Transport and Storage |
| T&SCo | Transport and Storage Company |

## Definitions

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| Term | Definition |
| Battery Limit | The geographic boundaries identifying scope of works for process units or the project. |
| Carbon Intensity | Kilograms of CO2 per tonne of product from the industrial facility or for CaaSCo this kilogram of CO2 per tonne of input CO2 |
| CO₂e | 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). |
| 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 Industrial Capture Project Plan to BEIS. |
| Cluster | Transportation and storage network (incorporating the onshore and offshore network and offshore storage facility) and an associated first early phase of carbon capture Projects. |
| Cluster Lead | Party responsible for submitting the Cluster Plan to BEIS. It should be the entity primarily responsible for the T&S network. |
| Commercial Operation Date | The first date when continuous export of CO₂ emitter volumes into the store begins[[3]](#footnote-4) (for CaaS Group Projects this would be when first continuous CO₂ exports from the CaaSCo into the store begins[[4]](#footnote-5)), where this injection is confirmed to meet the Operational Conditions Precedent (OCPs). Note: This should not be taken to represent the definition of the COD that will be used within the business model. |
| Cost of Connection | The costs incurred by the Project to deliver CO₂ compliant with the T&S specification (pressure, phase and composition) to the Project boundary limit. This would include any compression/pumping and CO₂ treatment required but does not include the costs of extending the T&S network to the project. |
| Cross Chain | All elements of the Project including development, delivery and operation in line with transport and storage infrastructure. |
| Eligible sectors (industrial carbon capture) | Sectors in scope of ICC business model support fall within the Standard Industry Classification (SIC) codes 5 to 33 and 38 (excluding 24.46) and Combined Heat and Power (CHP). 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, CHP, food and drink, non-metallic minerals, paper and pulp and nonferrous metals.For the avoidance of doubt, sectors that are out of scope include: offshore operations for oil and gas (e.g., extraction of oil and gas from offshore platforms), new build CCUS-enabled hydrogen production facilities and CHP and waste management Projects that do not meet the sector-specific criteria. |
| Embedded Emissions | Emissions associated with the construction of the capture plant. |
| Emitter | Facility including carbon dioxide emission source(s) targeted for abatement. |
| Industrial Capture Project  | An industrial facility including carbon dioxide emission source(s) targeted for abatement.For the purpose of this assessment, 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. For CaaS Group Projects, industrial capture Projects within the Group must all individually meet the definition of an industrial facility as set out above. |
| Levelised Cost of Abatement | Calculation to consider overall lifetime costs of the Project and the overall carbon abatement in the proposed Project Plan. Note: Please see Section 4.4 of the Phase-2 Guidance Document for further information. |
| Mitigation | Mitigation refers to actions taken to reduce the overall risk either pre- or post-event. |
| Storage | Geological store for the captured CO₂ from the end of the injection well. |
| Transport & Storage Network (T&S Network) | The network consisting (wholly or mainly) of: * pipelines used for the transportation of carbon dioxide from one capture plant to a storage facility or to or from any CO₂ pipeline network; or
* routes used for the transportation of carbon dioxide from one capture plant to a storage facility or to or from any CO₂ pipeline network; and
* storage facilities for the permanent storage of carbon dioxide.
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## Units

Where possible please use units of measurement defined by the International System of Units (SI) within your answers. For example:

* Carbon dioxide: Mt CO₂
* Electrical energy or Power: MWh and MW.
* Thermal energy or Power: MWh and MW.
* Gas energy or Power: MWh and/or MW – Gross Calorific Value basis.
* Gas calorific value: MJ/kg – Gross Calorific Value basis.

## Applicant information

Please provide the contact information for the Industrial Capture Project through the online application portal[[5]](#footnote-6). Completed versions of this document, the Economic Benefits Template (Annex B), Cost Considerations and Emissions Reduction Template (Annex C2) and Financial Statement Template (Annex D) are to be uploaded to the online portal alongside any supporting evidence and completed References Matrix (Annex E2).

## Industrial Capture Project Summary

### 2.1 High-level Project Description (300 words)

Please provide a concise summary description of the Industrial Capture or CaaS Group Project. Respondents should include, but are not necessarily limited to:

1. The source(s) of the CO₂ stream for capture, capture process, proposed capture plant technology, CO₂ treatment, any storage, compression facilities and connection point to the Transport and Storage (T&S).
2. Location of the Industrial Capture Project(s) and the location of the Project(s) in relation to the T&S.
3. A clear diagram / schematic of the Industrial Capture Project or CaaS Group Project.

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| References to supporting documentation for Section 2.1 |
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### 2.2 Industrial Capture Project and Partners (300 words)

Please summarise the organisational structure of the Industrial Capture Project, how the Industrial Capture Projects fits within your organisational group structure (if applicable) and relationships with partner organisations such as the CO₂ transport and storage provider(s), and CaaS Group organisations if relevant. Please include the status and details of agreements that exist between these organisations.

*Note: CaaS Groups have a word count adjustment for this question using the base limit of 300 words, plus 50 words maximum for each Project in the CaaS Group.*

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| References to supporting documentation for Section 2.2 |
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### 2.3 Capture Project Status and Key Metrics (250 words)

Please provide a concise description of the Industrial Capture Project’s stage of development (e.g., Feasibility Study. Pre-FEED, FEED). Please also fill in the metrics within the table provided. Any additional graphs to summarise the captured CO₂ profile would be beneficial.

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| Project Start Date | Value |
| Financial Investment Decision Date |  |
| Commercial Operation Date*For CaaS groups, please use the CaaSCo’s earliest commercial capture of the first industrial capture Project emissions.* |  |
| Total CO2 stored volumes before 2050 (MtCO₂) |  |
| Total CO2 emissions reduced over 15 years (MtCO2)*Emissions reduced should be considered vs the unabated existing plant (or the appropriate counter-factual plant if new-build)* |  |
| Industrial Capture Project Carbon Intensity (gCO₂/kgCO₂)*For CaaS groups, please include Carbon Intensity of all the industrial capture Projects and the CaaSCo.*  |  |
| Capture Rate |  |
| Overall capital costs to end of 2050 (£m) |  |
| Overall operational costs to end of 2050 (£m) |  |
| Levelised Cost of Abatement to end of 2050  |  |

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| References to supporting documentation for Section 2.3 |
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### 2.4 Regional context of Industrial Capture Project (300 words)

Please summarise the importance of existing and future industry to the region in terms of jobs and infrastructure. How does the Industrial Capture Project link into the local regional development plans? The response may include descriptions of historic, current and future planned activities related to regional initiatives and local developments.

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| References to supporting documentation for Section 2.4 |
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### 2.5 Documentation signoff (250 words)

Please confirm the information and accompanying documentation provided within your submission has received appropriate level of sign off, such as Board level sign off (or multiple sign offs if appropriate for CaaS Groups). For those areas that do not have appropriate Board level sign off, please highlight, and explain the reasoning within your responses, making sure to include any associated uncertainties.

*Note: CaaS Groups have a word count adjustment for this question using the base limit of 250 words, plus 50 words maximum for each Project in the CaaS Group.*

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| References to supporting documentation for Section 2.5 |
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## Eligibility

### Eligibility Criteria

Eligibility criteria are fully described in the Phase-2 Guidance Document[[6]](#footnote-7). In summary to be an eligible Industrial Capture Project it must:

* Be located in the UK.
* Have access to a CO₂ transport solution and Track-1 or reserve cluster CO₂ storage site.
* Be operational no later than the end of December 2027.
* Have commenced pre-FEED studies or be ready to commence pre-FEED no later than the end of December 2022.
* Meet the definition of an industrial facility.
* Deploy an eligible CCUS technology.
* Be able to demonstrate the ability to meet high capture rates of at least 85%.
* Meet specific eligibility criteria for Projects in the Oil and Gas, CCUS-Enabled Hydrogen, Waste Management or Combined Heat and Power (CHP) sectors. Please see additional evidence requirements below.

### Additional evidence requirements for Projects in the Oil and Gas, CCUS-enabled Hydrogen, Waste Management or CHP sectors only (250 words)

If the Industrial Capture Project is an oil and gas Project, applicants must provide the following:

* Evidence that the Project is at an onshore oil and gas facility. Such evidence could include a site layout or map and proof that the facility is above mean low tide (with the exemption of jetties or loading facilities).

If the Industrial Capture Project is a CCUS-enabled hydrogen Project, applicants must provide the following:

* Evidence that the Project is retrofitting CCUS onto an existing “grey” hydrogen facility. Such evidence could include proof that they are operational through executed fuel supply agreements, offtake agreements or environmental permits with an operational date in the past.

If the Industrial Capture Project is a waste management Project, applicants must provide the following:

* Evidence that the plant is an existing or new facility with a minimum of at least 20 years of remaining operating life (from CCUS operational date). This evidence must include documentation showing the original design life of the waste management facility plant 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.
* Evidence that the plant is an eligible waste management technology, i.e. Energy from Waste (EfW), Advanced Conversion Technology (ACT)/Advanced Thermal Treatment (ATT) and Hazardous Waste Incinerators (HWI). Evidence could include Basis of Design or Process Description.
* **For EfW and ACT/ATT (gasification to energy only)**, evidence that the plant is R1 rated. Evidence could include application forms or confirmation from the Environment Agency to prove R1 status.

If the Industrial Capture Project is a CHP Project, applicants must provide the following:

* Evidence that at least 70% of the energy output of the CHP facility is, or will be by the time CCUS operations (for new build or otherwise), utilised by industrial facilities[[7]](#footnote-8). This 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. Where the energy is, or will be, supplied to third-party customer(s), contracts, provisional agreements or invoices for energy use could be given; or, where there is common ownership between the CHP and the industrial user of the energy, internal records demonstrating heat/electricity consumption could be given. For a new facility, evidence could be supported by the design parameters of the facility, such as the heat and material balances indicating electrical demand and steam consumption. **Note**: this is not required for cases where the CHP facility’s flue gas stream is combined with other industrial process(es)’ streams directed to the capture plant.

Please confirm and evidence how the Industrial Capture Projects meets the eligibility criteria and provide appropriate supporting evidence. Eligibility will be checked against the evidence submitted within this section, Section 2, Section 4, Section 5 and Section 6. Applicants will be notified via email on whether or not they have met the eligibility criteria. Only eligible Projects will progress to the next stage where they will be assessed against the evaluation criteria.

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| References to supporting documentation for Section 3 |
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## Industrial Capture Project Overview

### 4.1 Capture Project

4.1 Industrial Capture Project Description (2000 words)

The description of the Industrial Capture Project should include reference to appropriate supporting information to include, but not limited to the following:

*Note: CaaS Groups have a word count adjustment for this question using the base limit of 2000 words, plus 300 words maximum for each Project in the CaaS Group.*

1. Is the industrial facility in operation, construction or development? If the industrial facility and/or capture plant is in development, at what stage is it at? When is FID and/or operating date programmed/anticipated for the industrial facility and/or capture plant? For CaaS Group Projects, please elaborate on each entity in the Group
2. The design life of the Industrial Capture Project, including the capture facility and overall plant life for any pre-existing plants.
3. Supporting evidence of engineering work completed and the status of ongoing work.
4. The CO2 capture volumes anticipated, capture rate, energy efficiency and any associated emissions for the Industrial Capture Project plant.
5. The captured and uncaptured CO2 sources across the whole industrial facility, including annual CO2 volumes.
6. A description of the capture process including any additional power / thermal energy requirements and the proposed technology type (including the extent to which this is a firm position).
7. The process design basis of the industrial facility. Projects may include any official documentation that describes the purpose of the facility, such as planning permissions or environmental permits. For CaaS Group Projects, please elaborate on each entity in the Group.
8. A concise description of the market for the industrial facility’s product(s) or services over the proposed CO2 capture operational period. For CaaS Group Projects, please elaborate on each entity in the Group.
9. A description of the extent to which the industrial facility’s product(s) or services will be used regionally within the cluster, within the UK or exported. For CaaS Group Projects, please elaborate on each entity in the Group.
10. To what extent the Industrial Capture Project is dependent on future market sales / off-takers or other agreements (e.g., fuel supply) to be able to confirm program delivery dates and volume certainties. For CaaS Group Projects, please elaborate on each entity in the Group.
11. Whether CO₂ export to CO₂ users (CCU) is expected alongside transport and storage. For Projects looking to implement a combination of CCU and CCS, please include the estimated percentage of CO₂ stored from the Project’s captured CO₂ volumes per year for the duration of the contract length.

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| Industrial facility’s SIC Code(s) (does not count toward word limit) |  |

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| References to supporting documentation for Section 4.1 |
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### 4.2 Capture-as-a-Service Project

4.2 Capture as a Service (CaaS) Project Description (500 words)

*Note: this section is specifically for ‘Capture as a Service’ Projects receiving CO2 volumes from multiple independent industrial facilities. Such Projects will be considered a group as one overall Industrial Capture Project.*

Please describe the CaaS organisational structure and describe the commercial arrangements between the relevant industrial facilities and the CaaS organisation (CaaSCo).

Please provide evidence of engineering studies addressing the CaaS requirements including the interconnecting infrastructure. Describe any minimum criteria for CaaS viability, such as minimum CO2 supply rate.

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| References to supporting documentation for Section 4.2 |
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## Deliverability

The deliverability criterion will consider the Industrial Capture Project’s capability and capacity to deliver the Project successfully and the timeline on which the Industrial Capture Project will come online. The deliverability criterion contributes 30% to the final Industrial Capture Project score.

By considering the adjusted COD along with a more general assessment 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 score higher than a Project with an adjusted COD in, for example, 2026.

Credibility is a critical factor within the assessment such that the information provided within this section will be used throughout the assessment of the specific criteria.

### 5.1 Organisational structures

5.1.1 Organisational structure – company level (750 words)

What is the company structure? Please provide a chart which positions the project vehicle within any wider company structure highlighting the following information for each entity within the structure:

1. Primary activity and location
2. Ownership (including details of any stock market listings)
3. Where within the company structure will key investment decisions be taken.
4. If a new legal entity is to be created for the purpose of this Project, where in the company structure this will sit and the expected timing of its incorporation.

Please provide a capability statement, which includes relevant corporate experience and identifies personnel with key roles and responsibilities. Please also provide brief details of the company’s approach to ensuring Corporate Governance best practice.

Please provide details of the ultimate beneficial owner of the corporate group, as well as the details of any shareholder (or group of related shareholders) owning more than 5% of the group’s equity capital.

For CaaS Groups please provide the proposed structure and information for each emitter company and each of the companies involved in the Industrial Capture Project.

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| References to supporting documentation for Section 5.1.1 |
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5.1.2 Organisational structure – Project level (750 words)

Please describe the organisational structure at a Project level including how the delivery of the Project will be managed and the experience of key personnel. Please describe the status of any commercial agreements between parties within the delivery structure alongside plans to progress future agreements, including key milestones and any dependencies.

Please describe the commercial arrangements with the T&S provider(s) and reference supporting documentation.

Please also provide details of any new legal entity to be created for the purpose of this Project. Where relevant please include any anticipated joint venture arrangements or agreements alongside the activities and associated timeline to finalise any joint venture arrangements.

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| References to supporting documentation for Section 5.1.2 |
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### 5.2 Schedule: Level 1 Integrated Project Schedule (1000 words)

Please provide an integrated Level 1 schedule for the Project. This should show when the T&S will be available, when the Industrial Capture Project comes online, activities related to any expansion Projects and any key milestones such as: planning, consents, decisions gates, FID, COD etc. This should also show progress to date against the stated project plan, and reference documentation and engineering information to demonstrate that the Project is progressing to plan.

Please provide a concise description of the schedule’s critical path with reference to important parts of the Level 2 plan that the critical path is dependent on. Please reference to a separate fully logic linked Schedule in native file format - Primavera P6 (XER) or MS Project (XML/MSP) which is required. This should be at least Level 2 detail, fully logic linked, integrated across the chain including critical path and float. Ideally this will be costed and resourced.

We recognise different Projects are at varying degrees of development, so please provide the greatest level of detail currently available that is supportable with evidence. If relevant, please cross-reference responses provided for 5.3 appropriately.

Please describe areas of uncertainty in the schedule: if possible, please present the Base schedule with uncertainty ranges around individual activities and identify the key risks that could expand these ranges further. Please also set out any assumptions made that are dependent on policy or regulatory milestones and how this could affect FID or COD.

Reference to separate ‘What if’ scenarios or Quantitative Schedule Risk Analysis of the schedules would be beneficial to increase confidence of deliverability within a given time. Reference to a commissioning plan and coordination of commissioning activities with the T&SCo would also be beneficial.

For CaaS Projects please also define key dates, milestones, risks, and uncertainties (as set out above) for each industrial facility providing emissions.

*Note: CaaS Groups have a word count adjustment for this question using the base limit of 1000 words, plus 250 words maximum for each Project in the CaaS Group.*

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| References to supporting documentation for Section 5.2 |
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### 5.3 Planning and Consents (750 words)

Please provide a description of the status of the planning and consents for the Industrial Capture Project.

Please ensure that you highlight areas of risk and uncertainty surrounding planning and consents that could increase the durations or require design modifications to achieve approvals.

Please describe how the plant will comply with environmental emissions requirements.

Reference to a separate Planning and Consents Register would be helpful, as would any evidence of engagement with statutory bodies or preparation work for applications. We would anticipate planning and consent risk being an intrinsic element of the Project risk register.

Waste management Projects must also provide evidence to demonstrate that the facility has a minimum of 20 years operational life remaining (from the expected COD of the carbon capture plant).

For CaaS Group Projects, please address planning requirements, risks, uncertainties and permitting requirement for each component industrial facility. An additional 250 words per industrial facility is allowed.

*Note: CaaS Groups have a word count adjustment for this question using the base limit of 500 words, plus 100 words maximum for each Project in the CaaS Group.*

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| References to supporting documentation for Section 5.3 |
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### 5.4 Project Execution Plan (1000 words)

In this section, please describe how the Industrial Capture Project intends to execute the Project including the development and engineering stages. This should concisely describe the envisaged contracting strategy and the governance structure. Please provide a concise explanation of any aspects of the Industrial Capture Project execution that apply novel construction / installation techniques.

Please provide a concise description of the Commissioning Plan and the key risks and uncertainties identified for the commissioning phase of the Project.

Please also highlight key risks and uncertainties for the execution phase and their potential to impact on Project CAPEX and schedule. For CaaS, please set out the key dates such as tie-ins and commissioning dates for each element of the group and the risks and uncertainties associated.

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| References to supporting documentation for Section 5.4 |
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### 5.5 Risk Management (1000 words)

In this section, please provide a concise description of the approach to Risk Management including the interactions with the T&S and other partners (e.g. CaaS group entities)

Please provide a concise description of all the major risks to the Industrial Capture Project and how are they going to be mitigated. It would be beneficial to evidence the risk management approach with a risk management plan.

The separation of construction and operation phase risks would be preferable*.*

Please summarise separate cluster-wide cross-chain risk and reference any collaboration with T&S risk register development.

Please set out how cyber security risks and digital resilience are addressed, including any business continuity management plans.

The risk registers should include:

* Risks for all elements of the Project and downstream chain risks, including interface risks and details on risk owners
* Mitigations and how they will be managed (e.g., eliminate, reduce, transfer, insurance, etc.) alongside estimated mitigation costs
* Identification of risks that cannot be transferred to contractors or insurers or others
* Probability estimates both pre and post mitigation
* Three-point (high, low and most likely) impact estimates for cost and schedule impacts for both pre and post mitigation
* Identification of any schedule activities that are impacted by the occurrence of each risk.
* Activity IDs included in the risk register
* Any significant residual safety risks
* Highlight Industrial Capture Project innovation risks and mitigations

Below are examples of some key risks that the Industrial Capture Project may need to consider (noting that this is not an exhaustive list of possible risk, and that certain market and cross chain risks are addressed in the proposed ICC Business Model)[[8]](#footnote-9):

* If existing assets cannot be re-used after further assessment
* Insolvency of key suppliers
* Project funding
* Contractor interfaces
* Delays or cancellations of downstream Projects – stranded asset risk
* Closure/bankruptcy of T&S – leaving capture plant as stranded asset
* Underperformance of capture plant, reducing volumes of CO₂ entering T&S
* Low availability/high downtime of capture plant, reducing volumes of CO₂ entering T&S and resulting in greater intermittency
* For CaaS groups, alignment of CaaS partners and operation with multiple feeds
* Covid-19/Pandemic/Epidemic external risks
* Force majeure events
* Limited design experience, codes and standards for a Project of this type
* Regulatory risks for new technology or novel processes
* Significant failure or damage of downstream chain during construction/commissioning
* Delays in obtaining planning consents or permits or rework necessary to achieve compliance
* Workforce availability
* Other details such as extended lead times for supply of equipment or technical issues

To increase our understanding of the Project and its’ credibility, the inclusion of an opportunity register alongside the risk register would be beneficial for the assessment.

Please provide Quantitative Risk Assessment for cost and schedule where available to evidence confidence in the estimates.

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| References to supporting documentation for Section 5.5 |
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### 5.6 Operating Philosophy (750 words)

In this section, please explain who will be responsible for operating and maintaining the capture plant and the wider Industrial Capture Project site – individually and as an integrated whole (where relevant).

This should include a description of who will be responsible for the operation and maintenance of the Industrial Capture Project; the control philosophy with the T&S; the extent to which any operations are to be contracted to a duty holder and how many roles are required to operate the Industrial Capture Project.

Please describe the levels of redundancy in the Industrial Capture Project design including the overall design availability and alignment of maintenance periods with the T&S and source plant of CO2 emissions.

Please provide a concise description of the assumptions that have been incorporated into the operating expenditure estimate. This should confirm the level of uncertainty related to these assumptions and the extent to which any specific risks identified could require additional CAPEX or OPEX during operations to manage.

Reference to specific activities in the Project programme to support the descriptions provided would be helpful.

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| References to supporting documentation for Section 5.6 |
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### 5.7 Stakeholder Engagement (750 words)

Please provide a description of how the Project is identifying and engaging with key stakeholders (such as adjacent property owners, local communities, local industries, fishing, or shipping industries) during Project execution, operation and post-cessation. This should include a description of the Industrial Capture Project’s approach to developing and maintaining co-operation with key stakeholders to assure successful delivery. Reference to specific related activities in the Project programme would be helpful.

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| References to supporting documentation for Section 5.7 |
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### 5.8 Health, Safety and Environment

5.8.1 Health and Safety (1500 words)

Please provide a concise description of the work that has been performed to identify and mitigate Health and Safety risks. Describe the work performed to demonstrate that all residual Project and Health and Safety risks to staff, contractors and the local population during Project development, execution, operational and post-cessation phases are as low as reasonably practicable. Supporting evidence of risk analyses or process hazard reviews would be beneficial.

Please also describe the systems, processes, and governance in place for Health & Safety Management. Please describe how the Project complies with CDM 2015 and other relevant safety regulations. If the Construction Phase Plan has not yet been developed, please provide any information you do have, e.g. from the design risk registers. Please detail the health and safety indicators monitored at Board level and their current status against targets.

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| References to supporting documentation for Section 5.8.1 |
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5.8.2 Environmental (1000 words)

Please provide a concise description of the environmental impact of the Industrial Capture Project during the Project execution, operational and post-cessation phases. Please also provide a concise description of the further work required to prepare the necessary Environmental Statement(s).

Please describe how the Industrial Capture Project will comply with environmental permit requirements and abstraction licensing and describe any uncertainties in the consenting process.

Please also describe the systems, processes, and governance in place for Environmental Management. Please detail the environmental indicators monitored at Board level and their current status against targets.

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| References to supporting documentation for Section 5.8.2 |
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### 5.9 Supply Chain

5.9.1 Supply chain planning (1000 words)

Please provide a concise explanation of the assessment of the supply chain, labour and skills needed to support the proposed delivery timescales for the Project and any identified gaps. This should include:

1. A description of the key uncertainties linked to the supply chain, the consequential uncertainty in Project costs and timelines, and when the uncertainty is expected to be resolved
2. A description of the key risks linked to the supply chain and how these will be managed
3. A description of the challenges anticipated and the associated potential mitigations / solutions to these
4. A description of the supply chain capacity and capability to support the Project

Reference to specific related activities in the Project programme would be helpful.

Please also confirm the Project developers will follow best practice in sourcing of labour and materials.

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| References to supporting documentation for Section 5.9.1 |
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5.9.2 Supply chain engagement (1000 words)

Please provide a concise explanation of the extent of the Supply Chain Engagement, including which parts of the supply chain have been engaged with. Please also provide a description of the current view of capability and capacity and how any associated challenges are going to be addressed.

Please detail the extent to which technology licensors been engaged with for items such as CO₂ compressors, carbon capture technologies and other long-lead items. Please describe what agreements been entered into with third parties and their scope; please also confirm what preliminary studies have been performed.

Reference to specific related activities in the Project programme would be helpful.

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| References to supporting documentation for Section 5.9.2 |
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### 5.10 Financial and Commercial

5.10.1a Business plan and financial health – company level (750 words)

This section aims to understand the financial and commercial health of all the companies involved in the development of the Project as well as understand the companies’ strategic objectives.

To support the assessment of the financial and commercial health of all the companies involved in the development of the Project please also submit a copy of the Financial Statement Template (Annex D) and associated financial documents as requested in the Annex D for each of the companies involved.

Note: Each company participating in the development of the *Industrial Capture* Project must provide a response. Multiple responses may be necessary where Projects are being developed in partnership, in which case each separate response will receive a 750 word limit.

Please describe the following:

1. Describe how your company business plans and industrial output have been impacted by events since the start of 2020
2. What is the outlook for the company out to 2030? (Your answer should include, but not be limited to, a description of, and rationale for, expected trends in revenue, overheads and profitability, plus a comparison of these to the historical period)
3. What is the outlook of the company out to 2030 without the proposed Industrial Capture Project?
4. Describe how the Project aligns with the company’s overall strategic ambitions in the UK to 2030 and beyond?

Please provide copies of the latest two sets of audited accounts, any accompanying reports, management accounts covering the remainder of the current financial year, and forecast financial accounts covering the remainder of the current financial year and a further five years (or 10 years in the case of the project) for the following companies where applicable:

1. The company or companies operating the Project
2. The company or companies financing the Project
3. The company or companies responsible for key investment decisions in relation to this Project
4. The group parent company or companies (e.g. consolidated accounts) and ultimate parent (if applicable)

In support of these accounts and reports for the above entities, please include key assumptions underlying forecasted information.

Please confirm that accounts for the above entities have not received a qualified audit report in any of the previous five years. Highlight any areas of material uncertainty raised by auditors in this period.

Please confirm if the corporate group currently has any financial obligation to HMG and provide details where applicable.

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| References to supporting documentation for Section 5.10.1a |
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5. 10.1b Business plan and financial health – company level (750 words)

Note: Each company participating in the development of the *Industrial Capture* Project must provide a response. Multiple responses may be necessary where Projects are being developed in partnership.

Please see Section 5.10.1a for further details.

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| References to supporting documentation for Section 5.10.1b |
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5. 10.1c Business plan and financial health – company level (750 words)

Note: Each company participating in the development of the *Industrial Capture* Project must provide a response. Multiple responses may be necessary where Projects are being developed in partnership.

Please see Section 5.10.1a for further details.

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| References to supporting documentation for Section 5.10.1c |
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5. 10.1d Business plan and financial health – company level (750 words)

Note: Each company participating in the development of the *Industrial Capture* Project must provide a response. Multiple responses may be necessary where Projects are being developed in partnership.

Please see Section 5.10.1a for further details.

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| References to supporting documentation for Section 5.10.1d |
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5.10.1e Business plan and financial health – company level (750 words)

Note: Each company participating in the development of the *Industrial Capture* Project must provide a response. Multiple responses may be necessary where Projects are being developed in partnership.

Please see Section 5.10.1a for further details. If additional rows are needed, please insert them into the table below.

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| References to supporting documentation for Section 5.10.1e |
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5.10.2a Financing plan – Project level (1000 words)

Note: Each CaaS Group entity participating in the development of a CaaS Group Project must provide a response.

Please describe the proposed financing arrangements for progressing the capture Project. Your response should distinguish between different stages of the Project and explain what is needed to achieve a final investment decision. Within your answer, please provide the timeline, dependencies, key risks and mitigations for the financing process. Please also detail the assumptions underpinning the financing plan including key ratios.

If the Project will be financed by intragroup financing or external debt arrangements that already exist, then please provide a summary of those arrangements. Your summary of the debt arrangements should reference any factors that are material to the financing e.g. headroom, duration, security, and covenants.

If new capital needs to be raised then set out the type of finance anticipated, the level of market engagement that has taken place, feedback received, as well as the activities and timescale needed to secure the financing.

Please include a CAPEX schedule and describe how funding gaps will be settled and if this is in line with the Project’s requirements under the business model. This should include rationale and supporting evidence on why the amount requested from HMG (capital co-funding grant) is not able to be raised by private sector investment.

For CCU/CCS combination Projects, please show the schedule for costs associated with capture and storage but not any costs associated solely with utilisation, as these will not be supported by business model funding.

Please summarise the status of key agreements needed to realise the project and the plans to finalise them e.g., shareholder/sponsor documents, loan and security documents, and project documents.

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| References to supporting documentation for Section 5.10.2a |
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5.10.2b Financing plan – Project level (1000 words)

Note: Each CaaS Group entity participating in the development of a CaaS Group Project must provide a response.

Please see Section 5.10.2a for further details.

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| References to supporting documentation for Section 5.10.2b |
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5.10.2c Financing plan – Project level (1000 words)

Note: Each CaaS Group entity participating in the development of a CaaS Group Project must provide a response.

Please see Section 5.10.2a for further details.

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| References to supporting documentation for Section 5.10.2c |
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5.10.2d Financing plan – Project level (1000 words)

Note: Each CaaS Group entity participating in the development of a CaaS Group Project must provide a response.

Please see Section 5.10.2a for further details.

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| References to supporting documentation for Section 5.10.2d |
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5.10.2e Financing plan – Project level (1000 words)

Note: Each CaaS Group entity participating in the development of a CaaS Group Project must provide a response.

Please see Section 5.10.2a for further details. If additional rows are needed, please insert them into the table below.

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| References to supporting documentation for Section 5.10.2e |
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### 5.11 System Integration

5.11.1 Specification of capture gas (1000 words)

Please describe quality controls and required processing for the CO₂ entering the T&S network and how this meets the T&S specification. This should include technical details of the phase envelope for this gas composition and a concise description of the impact of variation of this specification on the CO2 treatment and processing. Please describe how the engineering solution is aligned to meet the T&S CO2 specification.

To what extent is there uncertainty in the achievable specification for the costs presented to date? What would the cost / schedule impact of a tightening or loosening of the CO₂ entry specification be for the Project and which components will have the greatest influence on these?

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| References to supporting documentation for Section 5.11.1 |
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5.11.2 System operating parameters (1000 words)

Please provide a concise description of the key system operating parameters for the operational monitoring and quality control of the produced CO2. This should demonstrate the feasibility of the proposed system configuration with reference to control of composition, temperature, pressure, and flow rate.

This should include a description of the key risks and uncertainties associated with the operation including any limits on transient operation and emergency shutdown scenarios.

Reference to risks within the risk register would be helpful.

Supporting information should include preliminary process description and process basis of design.

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| References to supporting documentation for Section 5.11.2 |
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5.11.3 T&S Connection (1000 words)

With reference to agreements or discussions with the T&SCo, please describe the connection between the Project and the T&S. This should include:

* The work completed to date by the Project and the T&SCo, to understand the work required and anticipated costs to connect the T&S network and the Project, including the Cost of Connection, and the cost of extending the T&S network to the Project. Please include non-pipeline transport considerations such as shipping as required.
* The method of CO₂ transport, the intermediate pipework in private land or pipelines in public land to connect to the T&S, the battery limits of the project, the intended interface point where responsibility for the connection is assumed, and the eventual ownership and operational boundaries.

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| References to supporting documentation for Section 5.11.3 |
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5.11.4 CO₂ metering (500 words)

Please describe the CO₂ metering on entry to the T&S, explaining what the metering will be used for, the accuracy level(s), metering methodology and standards used. Please provide details of the CO₂ be metered for fiscal purposes and custody transfer, in addition, also provide details of any other metering points across the entire process i.e. at the inlet to the capture plant (if provided).

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| References to supporting documentation for Section 5.11.4 |
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## Emissions Reduction

The emissions reduction criterion will assess the potential offered by each Industrial Capture Project to generate reductions in CO₂ emissions. There will be an evaluation of the credibility of evidence throughout the assessment of this criteria. The emissions reduction criterion contributes 25% to the final Industrial Capture Project score.

We further divide and sub-weight this into three sub-criteria.

* Emissions reduction effectiveness (50%)
* Total CO2 emissions reduction (40%)
* Future emissions reduction potential (10%)

Projects are asked to provide responses and supporting evidence for the Emissions Reduction criteria below 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).

To assess the credibility of evidence submitted for this criterion, applicants 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.

### 6.1 Emissions Reduction Effectiveness (1500 words)

Please describe the following emissions metrics and use the template provided in Annex C2 to input the relevant figures:

1. CO2 capture rate of the capture plant (the percentage of CO2 emissions captured from the specific emissions stream(s) that the capture technology is applied to) (%)
2. CO₂ capture rate of the capture plant when including CO₂ 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 electrical power supplied to the capture plant (%)
3. Application rate (CO2 emissions captured from the specific stream(s) that the capture technology is applied to, as a percentage of total CO2 emissions on site) (%). CaaS Groups should provide the application rates for each Project in the group.
4. 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 CO₂ captured (MWh/tonne of CO₂)).
5. CO₂ 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 CO2 emissions intensity per tonne of input CO2 (CO2/tonne of product) for the CaaSCo and CO₂ emissions intensity for each Project in the group.
6. CO₂ emissions intensity associated with the operation of the industrial facility per tonne of product following the installation of carbon capture. CaaS Groups should report CO2 emissions intensity per tonne of input CO2 (CO2/tonne of product) for the CaaSCo and CO₂ emissions intensity for each Project in the group.
7. Embedded emissions associated with the construction of the capture plant (tonnes CO2) and processes which the Project is using to reduce embedded emissions during construction of the capture plant.

Projects must provide the following pieces of evidence in relation to capture rates:

* Process Basis of Design
* Heat and Mass Balances
* Process Flow Diagram
* Master equipment list
* Process Description
* Any generic performance data (lab scale, pilot scale or commercial scale)
* Any plant-specific performance data (lab scale or pilot scale)
* Any sector-specific performance data (lab scale, pilot scale or commercial scale)
* Reference Projects/plants

It would be beneficial to provide supporting evidence to demonstrate assumptions and the calculation basis for each metric.

1. Please describe the emissions reduction strategy for the industrial facility including whether other emissions reduction methods are being pursued such as fuel switching using e.g. hydrogen and/or electrification and other technology. Please describe how these methods will be deployed across other emission streams across the site including any impact this may have on reducing site CO2 and CO2 equivalents of greenhouse gases, demonstrating that the CCUS Project is part of a whole-site strategy. This strategy could also set out why CCUS is being deployed on certain emission streams and the emissions impact of the industrial site without the proposed carbon capture facility installed, confirming that it is the most appropriate decarbonisation method.

Please ensure the metrics stated here are consistent with the information in the Cost and Emissions Reduction template (Annex C2).

*Note: For CaaS Groups please state the emissions reduction strategy and the relevant metrics requested for each component industrial facility and the capture plant. CaaS Groups have a word count adjustment for this question using the base limit of 1500 words, plus 300 words maximum for each entity in the CaaS Group.*

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| References to supporting documentation for Section 6.1 |
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### 6.2 Total CO2 Emissions Reduction (750 words)

For all the evidence submitted for this criterion, please 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.

Please describe the following emissions and use the template provided in Annex C2 to input the relevant figures:

1. CO2 emission capture and storage profiles for their capture plants up to 2050 (or lifetime period), including total quantity of CO2 captured and stored per year and CO2 captured and stored over the maximum contract term length of 15 years.
2. CO2 emissions associated with the energy consumption of the capture plant. Projects should include a breakdown of the electrical and thermal energy consumption (MWh). This could 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.
3. CO₂ emissions associated with the transport of the captured CO₂ 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 could 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.
4. Within the capture and storage figures, please describe any negative emissions attributable to the capture Project with appropriate supporting evidence.

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| References to supporting documentation for Section 6.2 |
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### 6.3 Future Emissions Reduction Potential (500 words)

Please produce a forecast of additional quantity of CO2 capture and stored beyond the contract term setting out the uncertainty associated with this forecast use the template provided in Annex C2 to input the relevant figures.

CaaS Groups should 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.

Please describe plans for future expansion and innovation in production and application of capture technology. Please describe the uncertainty in these plans with reference to the longevity of the site and sector.

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| References to supporting documentation for Section 6.3 |
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## Economic Benefits

The economic benefits criterion aims to assess the potential contribution that the Industrial Capture 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. The economic benefits criterion contributes 20% to the final Industrial Capture Project score.

Assessment 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:

1. Number and quality of jobs
2. Transparency of supply chain procurement process
3. Investment in CCUS skills
4. Wider economic benefits

CaaS Group Projects should make clear how economic benefits described in this section are derived across each entity in the Group.

### 7.1 Number and Quality of Jobs (Template and 500 words)

The assessment of number and quality of jobs will be mostly considered through the information outlined in the Economic Benefits Template (Annex B); please complete the form to provide the jobs information.

Applicants should provide supplementary information and any clarifications or assumptions within the box below, referencing any supporting evidence.

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| References to supporting documentation for Section 7.1 |
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### 7.2 Transparency of Supply Chain Procurement Processes (750 words)

Please provide information on how you 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.

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| References to supporting documentation for Section 7.2 |
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### 7.3 Investment in CCUS Skills (Template and 750 words)

The assessment of investment in skills will be mostly considered through the information outlined in the Economic Benefits Template (Annex B); please complete the form to provide the skills information.

Please also provide evidence that demonstrates where consortium partners are individually or collectively investing in training programmes to develop skills in CCUS, for example in apprenticeships and retraining programmes. 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.

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| References to supporting documentation for Section 7.3 |
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### 7.4 Wider Economic Benefits (750 words)

Noting 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, please set out how the Project contributes to economic growth within the local area in line with the strategic priorities (for detail on strategic priorities, please refer to the economic benefits sub-section of Section 4.4 in the Phase-2 Guidance document.

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| References to supporting documentation for Section 7.4 |
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## Cost considerations

Through the cost considerations criterion, BEIS will seek to determine a Levelised Cost of Abatement (LCOA) for the Project. Please provide information within the Cost and Emissions Reduction template (Annex C2) and answer the question below.

The cost considerations criterion contributes 15% to the final Industrial Capture Project score.

### 8. Cost considerations (Template and 1000 words)

This section is focused on understanding the overall cost of the Project including the CO2 capture, treatment, compression, liquefaction (if applicable), remaining cost uncertainty and financing costs.

Please provide a summary of the Industrial Capture Project costs including expenditure to date, DEVEX, CAPEX, OPEX, replacement costs, including assumptions of financing/grants being able to be received. This should include the level of estimates, benchmarking, accuracy, contingency applied and any grants that have been awarded to date. OPEX should include fixed and variable OPEX including cost of energy inputs and reference to the price trends used if different to the Cost Considerations template pricing assumptions. Please clearly state where CAPEX and OPEX refer to the capture plant’s Cost of Connection which includes processes associated with delivering CO2 routed for storage is compliant with the T&S specification, such as, compression, pumping and liquefaction. Please also provide justification for any contingencies that have been applied or justification for not applying contingency. Supporting evidence and explanatory notes should be provided to allow understanding of the cost estimate and assumptions.

Cost will be considered as a calculation of the CaaS Groups’ total Project cost and CO2 abatement over the lifetime of the Project. CaaS Groups should provide total costs and CO2 abatement across the industrial facilities and capture plant.

For Projects implementing a combination of CCU and CCS, CAPEX and OPEX must only represent costs from capturing and storing CO2 (if such costs are shared with capture and utilisation, they may be included as long as they are required for capture and storage).

The Levelised Cost of Abatement Model within the Cost and Emissions Reduction template (Annex C2) must be populated and referenced in this section to enable evaluation and support the descriptions provided. Please provide detailed comments in Annex C2, or in supporting documentation, to explain the Project costs, cost certainty and contingencies, or any other cost information submitted. This should be done at a granular level. Projects must also provide their own cost model as supporting documentation.

Please describe the level of uncertainties and risks that have been identified that could affect the CAPEX and OPEX estimates (either as a cost increase or reduction). This should clarify which uncertainties and risks will be reduced or eliminated before FID. Providing specific references to the Project risk register(s) would be helpful.

Please provide a summary of the costs that have been assessed to cover the event where re-use assets are found to be unsuitable. This is likely to include a high-level cost estimate of a worst case where there is replacement with all new assets and the rationale for these costs (i.e., design basis, benefits etc). Please also provide a description of how this is addressed within the Risk Register.

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| References to supporting documentation for Section 8 |
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## Learning and Innovation

This criterion assesses the production and sharing of learnings from capture Project development which will be a crucial step in reducing future costs and de-risking Projects for future rounds of CCUS deployment. The sharing of information will also promote innovations and collaboration both within and between Projects. The learning and innovation criterion contributes 10% to the final Industrial Capture Project score.

CaaS groups should make clear from which component part the learning and innovation described in this section will be derived.

### 9.1 Development of the Industrial CCUS sector (750 words)

Highlight how the Project will further development and innovation of industrial carbon capture in the UK and globally. Describe plans to scale-up or replicate capture Projects on similar plant or other sites and ability to unlock or add to synergies with other decarbonisation innovation programme e.g. use of low carbon material in Project supply chains.

*Note: CaaS Groups have a word count adjustment for this question using the base limit of 750 words, plus 100 words maximum for each Project in the CaaS Group.*

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| References to supporting documentation for Section 9.1 |
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### 9.2 Cost reduction, Replicability, and Innovation (750 words)

This section is seeking information on the potential benefits to subsequent CCUS Projects. Describe the innovative aspects of the capture Project design (including any non-pipeline CO₂ transportation), what technology maturation is required for these innovations and what future cost reductions are expected from them. How replicable are these innovations for future CCUS Projects in the UK and globally?

Please explain if there are any subjects which could not be shared due to sensitivity around intellectual property.

*Note: CaaS Groups have a word count adjustment for this question using the base limit of 750 words, plus 100 words maximum for each Project in the CaaS Group.*

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| References to supporting documentation for Section 9.2 |
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### 9.3 Knowledge Sharing Plan (750 words)

Please how the Industrial Capture Project will generate, disseminate, and promote new knowledge and best practice, including how the Project will drive delivery partners to share information. These plans should describe how the Industrial Capture Project will share knowledge with different stakeholders including local and national institutions to ensure maximum benefit of the learnings gained.

Please also provide a list, or separate document, of the Key Knowledge Deliverables (KKD) that will be shared either in full or redacted as appropriate.

*Note: CaaS Groups have a word count adjustment for this question using the base limit of 750 words, plus 100 words maximum for each Project in the CaaS Group.*

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| References to supporting documentation for Section 9.3 |
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1. <https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution/title> [↑](#footnote-ref-2)
2. <https://www.gov.uk/government/publications/net-zero-strategy> [↑](#footnote-ref-3)
3. The COD must reflect the date upon which OCPs are fulfilled in order for the store to accept continuous CO₂ export from the Project. OCPs are conditions that must be satisfied, or waived, in order for the contractual payments to commence. The minded-to-position 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> [↑](#footnote-ref-4)
4. 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 CO₂ emitter volumes into the store on the basis of it having met the OCPs as provisionally set out in the October Business Model update. [↑](#footnote-ref-5)
5. The online application portal is the system set up to collect all of the relevant information, documents and supporting evidence from the Industrial Capture Project/CaaS Group Lead. [↑](#footnote-ref-6)
6. Please refer to the Phase-2 Guidance document for detailed definitions of the operational date, pre-FEED, industrial facility and eligible CCUS technology. [↑](#footnote-ref-7)
7. For CHP output only, we define an ‘industrial facility’ as a facility or part of a facility that is classified under Standard Industry Classification (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. [↑](#footnote-ref-8)
8. Applicants should refer to the ICC Business Model updates published for more information on risks. <https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models> [↑](#footnote-ref-9)