UK Government

Cluster Sequencing for Carbon Capture Usage and Storage Deployment: ECC Teesside Selection Process

Power CCUS Project Plan

February 2026

Any enquiries regarding this publication should be sent to us at: eccteessideselection@energysecurity.gov.uk

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Power CCUS Project Plan Introduction

The Department for Energy Security and Net Zero (DESNZ) is seeking to fully utilise the capacity of Track-1 Clusters through Build Out processes.

In February 2026, DESNZ launched the East Coast Cluster Teesside Selection Process, with the aim of filling the remaining transport and storage capacity expected to be available in 2032 and contributing to the growing CCUS sector, which is projected to support up to 50,000 jobs and £2.8bn of GVA (2022 prices) annually across the supply chain by 2050.

This document is an Annex to the ECC Teesside Selection Process Application Guidance. The publication of this form accompanies the opening of an application window for Projects and should be read alongside the ECC Teesside Selection Process Application Guidance Document to understand what projects are required to submit and why; the timelines for submitting clarification questions; timelines for submitting the final application forms; and further detail on the assessment process. Note that the caveats and reservations set out in Chapter 2 of the ECC Teesside Selection Process Application Guidance document apply equally here.

This document sets out the questions that Power CCUS projects should answer as part of the ECC Teesside Selection submission. The information and relevant supporting evidence provided by capture projects within the completed Project Plan will, alongside the Cost Assessment Form (Annex B), Financial Statement Form (Annex C), and the Economic Benefits Forms (Annexes D1 & D2), form the basis of the assessment to determine which capture projects are shortlisted. This document is an Annex to the ECC Teesside Selection Application Guidance document and should be read alongside it. Please see the Guidance document for further detail on the assessment process.

The ECC Teesside Selection CCUS Cluster Sequencing Process will be run by DESNZ. If applicants have any general questions about the submission process or about filling in any part of the submission documentation, please email queries to ECCTeessideSelection@energysecurity.gov.uk.

Important information regarding this process

The deadline for finalised ECC Teesside Selection submissions is 23:59 on 10 April-2026.

- The assessment process will be run fairly, transparently, and objectively in accordance with the published ECC Teesside Selection Process Application Guidance.
- The project shall ensure that it provides a clear response to every applicable question asked in this form. This should detail both the current status and/or plans with respect to project delivery.
- The information provided within this form will be used throughout the ECC Teesside Selection Process and the negotiations/due diligence phase. Entering a negotiation does not mean that a contract 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 ECC Teesside Selection Process Guidance Document.
- DESNZ will not be responsible for any costs incurred in the preparation of any submission, irrespective of whether the capture project is successful in the ECC Teesside Selection Process.
- Projects will need to satisfy the eligibility criteria to be considered in the Deliverability Assessment.
- Cost and Economic Benefits information will also be collected. As part of the deliverability assessment, cost information provided will be evaluated for credibility and will be checked for consistency against the commercial and financial information provided. It will then be used to inform value for money assessment. Economic Benefits data will not be considered when assessing Projects against the eligibility nor as part of the deliverability assessment. However, capturing the economic benefits of Net Zero is an important priority for UK government and to do this we need to develop robust, resilient, UK supply chains and these outcomes will also be considered within the Value for Money assessment and inform shortlisting. If Applicants proceed to negotiations, HMG may ask the Applicant to submit or publish more detailed plans on supply chains, skills and economic benefits.
- This document, the Power CCUS Project Plan, is divided into four sections:
    - Section 1, Applicant Information.
    - Section 2, Eligibility, information submitted in this section will be used to determine the initial eligibility of the Power CCUS Project.
    - Section 3, Power CCUS Project Overview, information submitted in this section will be used to improve DESNZ's understanding of the Project and may also be used to inform the Deliverability assessment and subsequent shortlisting process. Compliance with Eligibility criteria must be maintained.
    - Section 4, Deliverability, information submitted in this section will be used to assess the project against the Deliverability criteria set out in the ECC Teesside Selection Process Guidance document and subsequent shortlisting process. Compliance with Eligibility criteria must be maintained.

Information submitted in response to any part of this application may be used to assess the project against the outlined Eligibility and Deliverability criteria. Eligibility and Deliverability will be assessed continuously until FID. Responses in any section may also be used to inform value for money and affordability assessments, and also to evaluate the project's alignment with the CCUS programme and DESNZ's wider strategic goals when shortlisting.

- Alongside the Power CCUS Project Plan the assessment of the Project will be supported by the submission of several forms:
    - Annex B – Cost Assessment Form will be used to collect the cost data, limited financial information, and operational profiles for the Power CCUS Project.
    - Annex C - Financial Statement Form will be used to assess the financial and commercial health of participating companies within the Deliverability criterion. This form should be considered supplementary to the questions to assess the Project's deliverability. The figures included in the form should be supported by relevant accounting notes and documentation.
    - Annex D1 & D2 – Economic Benefits Forms seek to understand how key components and services required to deliver the Project will be sourced; how risks that may affect the supply of these key components may be mitigated; and how Projects are engaging with new entrants and small and medium-sized enterprises (SMEs).
- Across the assessment DESNZ will place significant emphasis on the credibility and consistency of information provided.
- Information provided in the Eligibility and Project Overview section, as well as subsequent engagement, will be used to inform the Deliverability assessment. 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 all the Project submissions have been individually assessed for eligibility and deliverability, DESNZ will carry out a shortlisting process with those projects that have met the required standard to progress. This is to ensure the overall outcome of the process meets the strategic objectives of the ECC Teesside Selection Process and meets the goals of the Department as a whole. The process used for this step is described in Chapter 10 of the ECC Teesside Selection Process Guidance Document.
- DESNZ 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.
- DESNZ 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 Power CCUS 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.

Any information provided above the word limits will be removed before information is provided to assessors and will not count towards the rating. Graphics and diagrams are welcomed and do not count toward the word count. 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.

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 (Application Process) of the ECC Teesside Selection Process Guidance Document for additional detail on entry into non-disclosure agreements and Chapter 3 (Further Considerations) for additional detail on parties involved in the ECC Teesside Selection Process.

All information provided by applicants may be disclosed in accordance with DESNZ's legal obligations (including under the Freedom of Information Act 2000 (FOIA), the Data Protection Act 2018, 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, Data Protection Act 2018, GDPR and EIR (including information on exemptions) can be found at: https://ico.org.uk/for-organisations/

To help DESNZ 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 the reason(s) information should not be disclosed by DESNZ 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, DESNZ 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.

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. *Boxes will expand to content.*

Glossary of terms

Table 1 – Acronyms

Acronym	Definition
ACT	Advanced Conversion Technologies
APRi	Availability Payment Rates
BECCS	Bioenergy with Carbon Capture & Storage
CapEx	Capital Expenditure
CHP	Combined Heat and Power
CO_2	Carbon Dioxide
COD	Commercial Operation Date
DevEx	Development Expenditure
DESNZ	Department for Energy Security and Net Zero (formerly a part of BEIS)
DPA	Dispatchable Power Agreement
EA	Environment Agency
EIR	The Environmental Information Regulations 2004
EOI	Expression of Interest
ERR	Economic Regulatory Regime
FEED	Front-End Engineering Design
FID	Final Investment Decision
FOIA 2000	The Freedom of Information Act 2000
GDPR	General Data Protection Regulation
HMG	His Majesty's Government
ICC	Industrial Carbon Capture
ktpa	Kilo-tonnes per annum
MoU	Memorandum of Understanding
$MtCO_2$	Megatonnes of CO_2

Mtpa	Megatonnes per annum
MWe	Megawatt electric
NISTA	National Infrastructure and Service Transformation Authority
OCP	Operational Conditions Precedent
OpEx	Operating Expenditure
pBECCS	Power Bioenergy with Carbon Capture and Storage
RAB	Regulated Asset Base
RED	Renewable Energy Directive
SIC	Standard Industry Classification
SIMOPs	Simultaneous Operations
SMEs	Small and Medium-Sized Enterprises
TAA	Transition Access Agreement
T1	Track-1
T1x	Track-1 Expansion
T&S	Transport and Storage Network
T&S Co	Transport and Storage Company is a licensed company operating and maintaining a T&S Network (T&S Operator)
tpa	Tonnes per annum
tph	Tonnes per hour
TRL	Technology Readiness Level (see definitions section for further information)
UKGI	United Kingdom Government Investments

Definitions

Table 2 – Definitions

Term	Definition
Applicant	Legal entity responsible for a project intending to apply for business model support or un-/semi-supported connection to the CO_2 T&S network and would be taken through to negotiations if successful.
Battery Limit	The geographic boundaries identifying scope of works for process units or the Project.
Business Model(s)	Contract mechanisms to support the implementation and operation of CCUS Clusters.
CCS or CCUS	Carbon Capture and Storage or Carbon Capture, Usage and Storage
Cluster	T&S Network (incorporating the onshore and offshore network and offshore storage facility) and associated capture Projects.
Commercial Operation Date (COD)	The date the project is confirmed to meet the Operational Conditions Precedent (OCP) and the Project begins operating and transporting captured CO_2 emissions to permanent storage.
Cross Chain	All elements of the cluster including development, delivery and operation of all capture projects as well as Onshore, Offshore and storage infrastructure.
Direct Economic Benefits	Benefits relating directly to the developer's own activity, and/or the activity of primary contractors.
Final Investment Decision (FID)	FID is the point in the project planning process when the decision to make major financial commitments is taken and contracts are signed for engineering, procurement, and construction.
Minimum CO_2 supply rate	The CO_2 flow below which the carbon capture plant cannot operate.
Design Capture Rate	The maximum instantaneous design capture rate, expected to be achievable by the facility for extended periods, i.e., during normal operation.
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.

Operational Conditions Precedent	The Operational Conditions Precedent (OCPs) are a set of requirements a Project must demonstrate to the appropriate counterparty to prove that they have commissioned their facility and are ready for commercial operations. The OCP requirements are outlined in the relevant business model Terms and Conditions.
Project	Power CCUS, ICC including Waste ICC, Hydrogen, GGRs or pBECCS production facility – including carbon dioxide emission source(s) targeted for abatement – development and its associated CO_2 capture facilities, that will be assessed in the ECC Teesside Selection Process.
Replacement Facility	A new build facility replacing an existing similar facility, making use of pre-existing external infrastructure. E.g., a new power station on the site of a decommissioned old station but using pre-existing gas and grid connections.
Retrofit Facility	Project where new carbon capture facilities are being added as an extension to a facility in operation at the time of construction.
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.
Technology Readiness Level	Technology readiness levels are an indication of the maturity stage of development of a technology on its way to being developed for an application or product. The section below defines TRLs 1 to 9. **Research and development** TRL 1 – Basic Research: Scientific research begins to be translated into applied research and development. TRL 2 – Applied Research: Basic physical principles are observed, practical applications of those characteristics can be 'invented' or identified. At this level, the application is still speculative: there is not experimental proof or detailed analysis to support the conjecture. **Applied research and development** TRL 3 – Critical Function or Proof of Concept Established: Active research and development are initiated. This includes analytical and laboratory studies to physically validate analytical predictions of separate elements of the technology. Examples include components that are not yet integrated or representative.

	TRL 4 – Laboratory Testing/Validation of Component(s)/Process(es): Basic technological components are integrated to establish that the pieces will work together. TRL 5 – Laboratory Testing of Integrated/Semi-Integrated System: The basic technological components are integrated with reasonably realistic supporting elements so it can be tested in a simulated environment. TRL 6 – Prototype System Verified: Representative model or prototype system is tested in a relevant environment. TRL 7 – Integrated Pilot System Demonstrated: Prototype near or at planned operational system, requiring demonstration of an actual system prototype in an operational environment. **Pre-commercial deployment** TRL 8 – System Incorporated in Commercial Design: Technology is proven to work - actual technology completed and qualified through test and demonstration. TRL 9 – System Proven and Ready for Full Commercial Deployment: Actual application of technology is in its final form - technology proven through successful operations.
Transport & Storage Network (T&S Network)	The network consisting (wholly or mainly) of: • pipelines used for the transportation of captured carbon dioxide from one capture plant to a storage facility or to or from any T&S Network; or • routes used for the transportation of captured carbon dioxide from one capture plant to a storage site or to or from any T&S Network; and • storage site for the geological storage of carbon dioxide.
Transition Access Agreement Users	This has the meaning given to it in Chapter 4 of the ECC Teesside Selection Process – Application Guidance.

Units

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

- Electrical Power: MWe.
- Thermal Power: MWth.
- Gas Power: MW – Gross Calorific Value basis.

- Gas calorific value: MJ/kg – Gross Calorific Value basis.

The below exceptions to SI units should be used due to industrial conventions.

- CO_2 flow rate: mass basis – tonnes per annum, (tpa, ktpa or Mtpa) for annual average or total annual flow rate. Instantaneous or peak flow rates should be provided in tonnes per hour (tph).
- Energy: Watt Hours (MWh, GWh)
- Temperature: Degrees Celsius (^oC)
- Gas Flow Rates: standard volume basis – Sm^3/h (kSm^3/h)

1. Applicant information

Contact information will be collected through the Expression of Interest process. Completed versions of this document, Cost Assessment Form (Annex B), Financial Statement Form (Annex C), and Economic Benefits Forms (Annexes D1 & D2) are to be uploaded to the individual SharePoint site alongside any supporting evidence.

2. Eligibility

Eligibility Criteria are fully described in the ECC Teesside Selection Process Guidance Document.

Eligibility will be checked against the evidence submitted within this section, Section 3, and Section 4. 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, the Deliverability Assessment.

Please confirm and evidence how the Power CCUS Project meets the Eligibility Criteria and provide appropriate supporting evidence for the following requirements.

The Applicant must be incorporated and registered in the UK. (250 words)

Supporting evidence is expected to include a UK company registration number demonstrating that the Applicant is incorporated and registered in the UK.

Evidence:

Document reference	Document name	Relevant page/section

Must be able to demonstrate direct, onshore, pipeline access to the Northern Endurance Partnership East Coast Cluster, with no intermediate non-pipeline transportation of CO_2. (250 words)

Evidence of access to a T&S Network should include as a minimum:

- an MOU with the T&S Co;
- a high-level pipeline connection study including routing of intermediate pipelines or pipework to connect to the T&S Network.

The connection study need not be detailed for this eligibility criterion but must identify onshore, direct, pipeline route options between the project site and connection point to the T&S

Network. Further detail, if available, would be beneficial for the Deliverability assessment question 4.8.

Evidence:

Document reference	Document name	Relevant page/section

Must be able to be operational no later than the end of December 2032. (250 words)

Supporting evidence is expected to include a project schedule.

We define operational as the Project being fully commissioned and able to export CO_2 emissions to the T&S Network. Note that at the assessment stage we will consider the Project's schedule and the suggested completion date, but if a Project progresses to negotiations and receives a Business Model contract, in order to demonstrate that the Project is operational and receive Business Model payments it will have to satisfy Operational Conditions Precedent (OCPs) or relevant performance requirements set out in the Business Model Terms and Conditions, and achieve its Commercial Operation Date (COD).

Evidence:

Document reference	Document name	Relevant page/section

Must be located onshore in Great Britain to ensure that they are compliant with the technical and commercial parameters of the DPA. (250 words)

Supporting evidence could include a site layout or map and proof that the facility is located above mean low tide (with the exemption of jetties or loading facilities).

Evidence:

Document reference	Document name	Relevant page/section

Must have an eligible Technology and configuration. (250 words)

The Project must be:

- A thermal generation plant with natural gas as the primary fuel input;
- 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).
- One of the following technology types:
    - Post-combustion,
    - Pre-combustion (on-site), or
    - Oxy-fuelled combustion.

Combined Heat and Power (CHP) projects must utilise any of the above technology configurations for the generation of power.

Supporting evidence would include a basis of design, process summary or other engineering study showing the technology and configuration.

Evidence:

Document reference	Document name	Relevant page/section

Must be designed to achieve a minimum annual capture rate of 90% (250 words)

This capture rate percentage is the designed annual average and therefore includes periods of transient operation, including start-up and shut-down. The designed capture rate % should take account of the plant's expected operation pattern, start up and shut down times, and design features. This approach will provide a projection of the Project's Achieved CO_2 Capture Rate (%) under a DPA.

Capture rate calculations should include any associated on-site CO_2 emissions required for the provision of energy into the power generation and capture process.

Capture rate (%) is defined as:

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

Where:

CO_{2exp} = total projected annual flow of CO_2 into the T&S network

CO_{2gen} = Total projected annual generation of CO_2, including any associated combustion sources required for the provision of energy input into the capture process (where appropriate).

Supporting evidence should include a process basis of design or heat and mass balance flow diagram or table, performance guarantee, or engineering study.

Evidence:

Document reference	Document name	Relevant page/section

Must be able to generate and export at least 100 megawatts of low-carbon electricity (100 MWe) to the electricity grid (250 words)

Regarding the ability to generate and export at least 100 MWe, please also refer to the definition of Net Dependable Capacity in the Dispatchable Power Agreement.

Supporting evidence could include a heat and mass balance, basis of design or engineering study showing the derivation of Net Dependable Capacity.

Evidence:

Document reference	Document name	Relevant page/section

Must demonstrate their ability to connect to the grid by the end of December 2032, in the form of a firm connection offer or a grid connection queue position that will allow connection by 2032. If grid connection queue position is indicating a post-2032 position, Applicants should demonstrate a credible strategy is in place to bring this date forward to 2032. (250 words)

Supporting evidence could include a connection offer, connection application with confirmation of queue position, or a strategy for bringing for the connection date forward to 2032.

Evidence:

Document reference	Document name	Relevant page/section

3. Power CCUS Project Overview

3.1 Project Overview

3.1.1 Power CCUS Project Description (2000 words)

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

1. Details of the type of generating plant, the source of the CO_2 stream(s) for capture, proposed capture plant, CO_2 treatment, any storage, compression facilities.
2. A Capture Process Description including CO_2 average and design mass flowrates and CO_2 specifications. As well as the proposed Capture technology type and provider (including the extent to which this is a firm position) or shortlist of providers.
3. Clear diagram(s) / schematic(s) of the CCUS Project.
4. Details of the Facility interface connections, transmission/distribution connection point, connection point to the CO_2 T&S Network, connection point to the gas network, water intake/cooling. Including whether the facility is dependent on, integrated with, or provides support or products to other local industrial plant(s)?
5. Maps showing the location of the Power CCUS Project, including but not necessarily limited to its location in relation to the CO_2 T&S Network, grid connection point, gas network connection point, and other relevant local industrial plant(s).
6. Utility supply requirements and agreements, including power and thermal energy requirements (including transient and normal operations), water and other utilities with proposed route to supply.
7. If the Power Plant is separate from the capture plant, is it in operation, construction or development.
8. Current state of development of the project (e.g., FEED, complete %) and when is FID anticipated for a) the underlying facility, if applicable, and b) the CCUS plant.
9. Include details of the Engineering work completed and the status of ongoing work for facilities in development.
10. The design life of the Power CCUS Project, including the capture facility and overall plant life for any pre-existing plants. Please provide any plans for life extension.
11. The CO_2 capture rate and carbon intensity of power at full capacity, steady state operation.
12. The anticipated annual CO_2 captured and the peak CO_2 mass flow during operation at full load. Please include the assumptions for load factor, planned and unplanned maintenance, start-up and shut-down times which inform the profile of captured CO_2.
13. The expected reliability and availability, and relevant studies e.g., RAM Analysis Report.
14. The design turndown capability of the facility.
15. To what extent the Power CCUS Project is dependent on third party agreements (e.g., fuel supply, grid connection) to be able to confirm programme delivery dates, capacity and flow rate certainties.

16. The proposed DPA term length, alongside a justification for the rationale behind this term length.
17. A projected lifetime CO_2 profile.

References to supporting documentation for Section 3.1		
Document reference	Document name	Relevant page/section

3.2 Power CCUS Project status and key metrics (250 words)

Please fill in the metrics within the table below. Any additional graphs to summarise the captured CO_2 profile would be beneficial. Please also refer to Annex B1 Initial Cost Information Form. Where metrics are repeated across annexes it is expected that the same figures and methodologies should be used.

Metric	**Value**
Final Investment Decision date	
Commercial Operation Date	
Plant Design Life (Carbon capture facility and overall if different for other plant facilities)	
Design/Typical CO_2 Rate to T&S Network. (tph)	
Peak CO_2 Rate to T&S Network. (tph)	
Expected average CO_2 Rate to T&S Network. (Mtpa)	

Project carbon intensity (gCO_2e/kWh)	
Overall capital costs (£m – real – define base year)	
Annual average operational costs (£m – real – define base year)	
Proposed DPA term length (years)	
APRi (£/MW/Settlement Unit)	
Net Dependable Capacity (MW)	
Expected Plant Availability (%)	
Annual Capture Rate (%)	
Design Capture Rate (%)	
Plant efficiency at full load (%)	

References to supporting documentation for Section 3.2		
Document reference	Document name	Relevant page/section

3.3 Maximising Value to the Electricity System (1500 words)

Please describe the locational value of the Power CCUS project for the electricity system and describe the grid constraints at the connection location. Evidence of a connection agreement, connection study or grid constraints assessment would be beneficial.

Please describe the key plant operating parameters to demonstrate the plant will supply low carbon, mid-merit, dispatchable power to the electricity grid.

These should include:

1. Net Dependable Capacity
2. Turndown ratio
3. Ramp rate
4. Minimum running time whilst maintaining the minimum average capture rate.
5. Start times - hot (<8 hrs offline), warm (>8 hrs, <48 offline) and cold (>48 hrs offline)

To support the stated Net Dependable Capacity, please provide a breakdown of auxiliary load consumers, including CO_2 compression. Supporting evidence may include the submission of the master equipment list or process flow diagrams showing associated equipment duties.

Please describe the capture rate during each transient and measures taken to improve transient performance of the power plant and capture plant together to the extent that this is known.

To confirm that the plant has been designed to provide dispatchable power, start and shutdown studies or similar to be provided as supporting evidence if available.

References to supporting documentation for Section 3.3		
Document reference	Document name	Relevant page/section

3.4 Expansion Phases

This section is to describe whether there is planned follow on development of Power CCUS at the site beyond the currently described project. Such projects would be assessed outside of this current ECC Teesside Selection Process, but it is useful to understand the context and intentions for the site.

3.4.1 Expansion of Power CCUS Project (500 words)

Please provide a concise description of additional stages of Power CCUS, where relevant, at the site whether this be multiple staged units or applying capture to additional CO_2 sources within the site. Please include a description of the uncertainty around these future phases in terms of execution, offtake market, CO_2 mass flow to the CO_2 T&S network, costs and capture efficiency. Additional support and access to the T&S network may be possible and available in the future for the additional phases described herein.

References to supporting documentation for Section 3.4.1		
Document reference	Document name	Relevant page/section

4. Deliverability

4.1 Organisational and Technical Maturity

4.1.1 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/group 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/group structure this will sit and the expected timing of its incorporation.

Please provide a capability statement, which shall include:

1. Relevant corporate experience, including if available:
   a) Ongoing plant operations.
   b) Recent major investments at process facilities (including EPC management),
   c) Managing joint ventures (including information sharing between partners)
   d) Experience navigating the UK regulatory regime.
2. Identification of personnel with key roles and responsibilities and their relevant experience.
3. 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.

References to supporting documentation for Section 4.1.1		
Document reference	Document name	Relevant page/section

4.1.2 Organisational structure and governance – project level (800 words)

Please describe the organisational structure at a project level including how the delivery of the Project will be managed. Where possible, provide evidence of the experience of key personnel which shall include CVs/Career statements for, but not necessarily limited to:

- Project manager / director
- Financial lead
- Lead engineer(s)
- Any construction, commissioning and operational lead(s)
- For retrofit projects the site manager(s)

Where capability gaps exist, please provide the approach to securing them. For key personnel that are not yet in post, as well as temporary workscopes/roles, please provide details of recruitment plans/strategies.

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 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.

Please describe the capability of the project developers and governance arrangements, including risk/cost acceptance decision making levels and escalation thresholds/processes.

References to supporting documentation for Section 4.1.2		
Document reference	Document name	Relevant page/section

4.1.3 Technical Maturity (750 words)

Please describe the level of project engineering definition providing the studies completed as evidence. With reference to the schedule describe the studies to be completed and where identified, who will complete them.

Please describe the project and provide supporting information detailing the following:

1. The location and layout of the project, clearly identifying related facilities and required third party connections;
2. Process description, including plans to meet CO_2 specifications, with schematics or process flow diagrams;
3. Engagement with the supply chain to date including technology providers / licensors, contractors (tier 1 contractors or beyond), equipment suppliers, consultants and external advisors, and planned future engagement;
4. Maturity of the supply chain for this type of project;
5. Access to intellectual property and demonstration of the technology at scale for both components and system with evidence of the operating record of the technology (e.g., duration in service);
6. The CO_2 capture quantities anticipated, capture rate, energy efficiency and any associated emissions;
7. For retrofit projects, the status and operation of any related facilities including remaining operational life and any planned life extension programmes;
8. The status of required land, access and third-party connections required to deliver the project such as electricity, fuel, or water. Note; there is a separate section covering the CO_2 T&S network connection.

Please describe the technology readiness level[1] (TRL) and commercial readiness index[2] (CRI) of the selected power generation and carbon capture technology with supporting evidence such as TRL or CRI justifications, reference projects and pilot/demonstration scale testing.

Supporting evidence could include engineering studies, drawings, calculations, assessment of supply chain capability and capacity, supply chain agreements, licensing agreements, technology references and operating records, TRL and CRI studies, land agreements, third-party connections agreements or applications.

References to supporting documentation for Section 4.1.3		
Document reference	Document name	Relevant page/section

4.2 Project Programme (1000 words)

Please provide an integrated schedule for the Power CCUS Project. This shall be at least Level 2 detail, fully logic linked, identify the critical path and include any float. This should show when the Power CCUS Project comes online, and any key milestones such as: planning, consents, decisions gates, long lead equipment items, gas and electricity grid connections, FID, COD, etc. This should also show progress to date against the stated Project schedule, with documentation and engineering information provided to demonstrate that the Power CCUS Project is progressing to plan.

The schedule must be provided in both pdf and native file format - Primavera P6 (XER) or MS Project (XML/MSP).

Please provide a concise description of the schedule's critical path with reference to important parts of the schedule that the critical path is dependent on.

Please describe the development of the project business plan and how this relates to other key activities in the programme including securing intellectual property rights, finance and supply chain.

[1] For the definition of TRL please refer to the Definitions in Table 2 of this document.
[2] For CRI definitions please refer to https://arena.gov.au/assets/2014/02/Commercial-Readiness-Index.pdf

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.

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. Describe how the values used were estimated, with reference to supply chain engagement, industry databases, or experience used.

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.

References to supporting documentation for Section 4.2		
Document reference	Document name	Relevant page/section

4.3 Planning and Consents (750 words)

With reference to the schedule, please provide a description of the planning and consents required for the Project and the route to securing those consents. This is expected to include planning consents and environmental permit(s). It would be beneficial to demonstrate evidence of engagement with the relevant planning and permitting authorities and their feedback, or expert advice on the most appropriate approach to planning and permitting. This should include engagement with advisory bodies which may influence planning and consenting processes (e.g., Natural England, NatureScot, etc.), not just the authorities and regulatory bodies themselves.

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 include a concise description of the arrangements for electrical and gas grid connections including the status of connection applications, whether these are new applications or modifications to existing, the generation licence, and any associated planning consent for the grid connections if separate to the Project planning consent.

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.

References to supporting documentation for Section 4.3		
Document reference	Document name	Relevant page/section

4.4 Risk Management (1000 words)

Please provide a concise description of all the major risks to the Power CCUS Project and how they are going to be mitigated. It would be beneficial to evidence the risk management approach with a risk management plan or reference to company procedures in compliance with industry standards such as ISO 31000. Additionally, provide a description of how significant residual risks will be escalated, tracked and managed (e.g., accept, transfer, insure, etc.).

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

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 (e.g., eliminate, reduce, transfer, insurance, etc.) and how they will be managed, (actions, individuals, dates) alongside estimated mitigation costs and post mitigation residual risks
- 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 Project innovation risks and mitigations

Below are examples of key risks that may need to be considered in relation to the Power CCUS Project (noting that this is not an exhaustive list of possible risks and that certain market and cross chain risks are addressed in the proposed DPA business model):[3]

Development risks including

1. If existing assets (e.g., in a retrofit project) cannot be re-used after further assessment.
2. Delays in obtaining planning consents and permits or any required licence, land access or connection agreements
3. Changes to CO_2 product quality specifications and/or any other conflict with the published CCS Network Code.

Construction and commissioning risks including

4. Contractor interfaces
5. Insolvency of key suppliers
6. Supply chain delays and delivery delays of critical equipment items
7. Workforce / key skills availability
8. Commissioning dependencies including unavailability of downstream T&S
9. For retrofits, SIMOPs with existing facilities.

Operational risks including

10. Limited design and operational experience of type of plant
11. Underperformance of capture plant, increasing vented volumes of CO_2
12. Higher than expected energy consumption, increasing Opex and reducing net export MW
13. For pre- or post-combustion capture, higher than expected solvent consumption, increasing Opex
14. High emissions of pollutants (e.g., nitrogen compounds)
15. Low availability/high downtime of capture plant, increasing vented volumes of CO_2 and resulting in greater intermittency
16. Low load factor for power plant
17. Delays or cancellations of downstream projects – stranded asset risk
18. Closure/bankruptcy of T&S network – leaving capture plant as stranded asset

Overarching or general risks including

[3] Applicants should refer to the DPA Business model updates published in December 2020, May 2021, October 2021 for more information on risks.

19. Force majeure events
20. Regulatory risks for new technology or processes, for example, hydrogen – natural gas blending or other novel processes

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.

A quantitative risk assessment for cost and schedule where available would be beneficial to evidence confidence in the estimates.

References to supporting documentation for Section 4.4		
Document reference	Document name	Relevant page/section

4.5 Project Controls & Cost Management

This section looks at the approaches and methods the project has and will be undertaking to control project development. Supporting Evidence would be expected in the project execution plan.

4.5.1 Change Control (500 words)

In this section, please describe how the Power Carbon Capture Project intends to execute the project stage gates.

Please provide a construction plan and a concise explanation of any aspects of the project execution that apply novel construction / installation techniques, as well as those units considered to be of greatest challenge.

Provide a preliminary commissioning Plan, including any risks and uncertainties identified for the commissioning & start-up phase of the Project. How is the project planning to ensure that equipment is robustly tested for service and ready for handover without unduly threatening integrity.

Demonstrate how operations and maintenance are inputting into the project execution, to ensure that the plant being developed is fit to operate for the contract lifespan, and appropriately considers human factors.

Additionally, please provide a concise description of the Management of Change process to be followed through project progression including how the following change (& no change) impacts will be assessed and considered:

- Impacts to Costs.
- Impacts to HSE Risks.
- Impacts to Schedule.

Along with how disputes might be resolved with stakeholders over changes or issues.

References to supporting documentation for Section 4.5.1.		
Document reference	Document name	Relevant page/section

4.5.2 Procurement Strategy (750 words)

Please provide a concise outline of the proposed approach to contracting strategy and procurement;

1. Proposed work package structure, with procurement and contracting structure(s).
2. Proposed approach for transparent and competitive procurement, demonstrating value for money throughout supply chain.
3. Proposed approach to managing and sharing construction risk throughout the supply chain (e.g., labour costs, weather risk, etc.)
4. The team structure which will efficiently procure and manage all contracts for the duration of the project.
5. The quality controls / assurance used to ensure deliverables of the required standard.

Supporting evidence for proposed approach might be included in the project execution plan, and contract map.

References to supporting documentation for Section 4.5.2.		
Document reference	Document name	Relevant page/section

4.5.3 Engineering for Value (500 words)

Please discuss the projects approach to rationalising the facility design and avoiding overengineering. Assurance should be provided that where more complex and costly options are pursued, these are appropriately justified, with reference to appropriate studies (e.g., reliability, safety / other risk, technology readiness). We would expect to see examples including:

- Process simplification workshops / studies,
- A Value Engineering or Opportunities Register (with appropriate action tracking),
- Rationalisation of non-standard equipment,
- Competitive engineering designs,
- Decision papers and methodology.

References to supporting documentation for Section 4.5.3		
Document reference	Document name	Relevant page/section

4.6 Financial and Commercial

This section aims to understand the financial and commercial health of all the companies involved in the development of the Power CCUS Project and the proposed financing plan for the Power CCUS Project.

Each company participating in the development of the Power CCUS Project must provide an individual response to this section. To support this assessment, please submit:

- A completed Financial Statement Form (Annex C), and
- Associated financial documents as requested in Annex C,
- for each company-level response on business plan and financial health.

These company-level responses should be submitted alongside the overarching Project Plan and financing plan.

4.6.1 A - Business plan and financial health – company level (750 words)

Note: Each company participating in the development of the Power CCUS Project must provide a response. Multiple responses (A, B, C, etc.) may be necessary if the Power CCUS Project is being developed in partnership.

Please describe the following:

- How your company business plans and industrial output have been impacted by recent significant events since the start of 2020, e.g., COVID-19 and Ukraine War supply chain shocks.
- What is the outlook for the company out to 2032? (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.)
- Describe how the Project aligns with the company's overall strategic ambitions in the UK to 2032 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 ten years 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. For the avoidance of doubt, the group parent should be regarded as the largest group in which the accounts of the companies operating and/or financing the Project are consolidated.

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

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.

References to supporting documentation for Section 4.6.1 A		
Document reference	Document name	Relevant page/section

4.6.2 B - Business plan and financial health – company level (750 words)

Note: Each company participating in the development of an individual T&S or project must provide a response. Multiple responses may be necessary where projects are being developed in partnership.

Please see Section 4.6.1 A for further details.

References to supporting documentation for Section 4.6.2 B		
Document reference	Document name	Relevant page/section

4.6.3 C - Business plan and financial health – company level (750 words)

Note: Each company participating in the development of an individual T&S or project must provide a response. Multiple responses may be necessary where projects are being developed in partnership.

Please see Section 4.6.1 A for further details.

References to supporting documentation for Section 4.6.3 C		
Document reference	Document name	Relevant page/section

4.6.4 D - Business plan and financial health – company level (750 words)

Note: Each company participating in the development of an individual T&S or project must provide a response. Multiple responses may be necessary where projects are being developed in partnership.

Please see Section 4.6.1 A for further details.

References to supporting documentation for Section 4.6.4 D		
Document reference	Document name	Relevant page/section

4.6.5 E - Business plan and financial health – company level (750 words)

Note: Each company participating in the development of an individual T&S or project must provide a response. Multiple responses may be necessary where projects are being developed in partnership.

Please see Section 4.6.1 A for further details. If additional entries are needed to cover all companies participating in the development, please insert new sections 4.5.6 F Company etc.

References to supporting documentation for Section 4.6.5 E		
Document reference	Document name	Relevant page/section

4.6.6 Financing plan – Project level (1000 words)

Note: In the event of multiple participants in a project, we would expect to see a single overarching financing plan and for it to be clear how each participant fits into that.

Please describe the proposed financing arrangements for progressing the Project. Applicants will be required to show a detailed & credible plan for how they intend to obtain the finances necessary to fund their project at its current expected cost. TAA Projects must provide details of sufficient alternative sources of support (e.g., public funding or private investment) and/or revenue, and provide supporting evidence.

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 and amount 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 provide any previous experience of bank launches and the current strategy of any future launch.

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. Please include demonstration of any (not necessarily committed) interest from providers of capital and any status of discussions. Supporting evidence may include letters of support, memoranda of understanding, letters of intent, or commercial agreements from financiers.

Evidence of risk mitigation for the financing process may include plans in the event of a change in market conditions or original funding plans e.g., scenario analysis completed on alternative funding routes.

References to supporting documentation for Section 4.6.6		
Document reference	Document name	Relevant page/section

4.6.7 CO_2 T&S Dependencies (1000 words)

Please explain the implications, both financial and deliverability, for your project from the following scenarios:

- T&S commissioning delay (3 months, 6 months, 1 year)
- T&S constraint leading to 50% registered capacity (1 month, 3 months, 6 months)
- T&S outage (3 months, 6 months, 1 year)
- Unplanned T&S closure / decommissioning (include any risk of stranded asset)

Evidence is expected to include inclusion of detailed items in the submitted risk register, aligned with the summaries above.

References to supporting documentation for Section 4.7.8		
Document reference	Document name	Relevant page/section

4.6.8 Transition Access Agreement (TAA) Dependencies (500 words) – TAA users ONLY

We are minded not to provide ongoing revenue support to TAA in relation to T&S Charges.

However, where T&S Charges support is essential for projects to sign a TAA, and that this need is clearly evidenced, DESNZ is considering providing limited support in relation to T&S Charges on a case-by-case basis.

Applicants seeking indicative T&S fees should contact the ECC T&S Co (NEP), directly. NEP can provide a range of indicative T&S fees to support your application

Under the RAB, where there is underutilisation of the network, CO_2 T&S charges are expected to increase proportionality, up to a mutualisation cap. Please provide implications, both financial and deliverability, for your projects in the following simplified scenarios:

- For 1/5/10 years T&S charges twice as high as expected
- For 1/5/10 years T&S charges four times higher than expected

Please clearly indicate tolerance for T&S charge variability and impact on project business model.

References to supporting documentation for Section 4.7.9		
Document reference	Document name	Relevant page/section

4.7 CO_2 T&S Network Connection (1000 words)

Please describe the connection between the Project and the CO_2 T&S Network. This should include:

- The battery limits of the Project, the intended interface point where responsibility for the connection is assumed, custody transfer of the captured CO_2 will take place, and the eventual ownership and operational boundaries;
- The intermediate pipework in private land or pipelines in public land to connect to the T&S, major crossings;
- Confirmation of familiarity with the published CCS Network Code and acknowledgement of the processes defined therein.
- Evidence of engagement with the CO_2 T&S Co, including agreements in place.
- Evidence of engagement with land holders and/or a plan to secure access rights.
- A schedule of T&S spur development.

The information to answer this section could come from collaboration with the CO_2 T&S Co or a high-level route options study by the applicant.

Please describe quality controls and required processing for the CO_2 entering the T&S system and how this meets the T&S specification. Please describe how the engineering solution is aligned to meet the T&S CO_2 specification (including impurity thresholds and measurement frequencies) and what measures are in place to detect off-spec CO_2 formation and prevent any from entering the T&S network.

Please describe the intended operating regime for the capture plant export to the CO_2 T&S network and any measures planned to manage intermittency or operability of the CO_2 T&S network. In evidence, please provide a table showing annual mass flow rate of CO_2 to the T&S and the expected CO_2 percentage (on a mass basis) in the CO_2 rich export stream.

Supporting evidence is expected to include:

- Evidence of engagement, and any agreements in place, with the relevant transport and storage company (T&S Co),
- Engineering or routing studies for the T&S connection,
- Annual mass flow rate of CO_2 and CO_2 percentage (mass basis) in the CO_2 rich export stream;
- Evidence of T&S CO_2 specification compliance
- Diagrams showing battery limits and the intended interface point,
- Any land agreements, and
- Any planned delivery schedule

References to supporting documentation for Section 4.7		
Document reference	Document name	Relevant page/section

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