Power BECCS submission Form

Introduction

In October 2021, government published the [Net Zero Strategy](https://www.gov.uk/government/publications/net-zero-strategy), which outlined the role that engineered greenhouse gas removal (GGR) technologies would need to play in supporting decarbonisation by 2050. The government is clear that the purpose of GGRs is to balance the residual emissions from sectors that are unlikely to achieve full decarbonisation by 2050 and will not be substitutes for ambitious mitigation to achieve net zero. GGR technologies are expected to deploy from 0 MtCO2 today to at least 5 MtCO2 per year by 2030 and to around 23 MtCO2 per year by 2035, with higher and lower deployment possible depending on sector-specific and wider economy developments.

Government is now seeking power BECCS projects that can deploy in line with Track-1 of the Cluster Sequencing Programme, to begin delivering on these targets. This project submission form has been published alongside Power BECCS Project Submission Guidance.

This document sets out the questions that capture Projects must answer as part of their power BECCS project submission. The information and relevant supporting evidence provided by capture Projects within the completed Project Plan will, alongside meeting eligibility criteria form the basis of the assessment to determine which capture Projects will join the shortlist for Track-1. This document is an Annex to the Power BECCS Project Submission Guidance Document and should be read alongside it. Please see the Power BECCS Project Submission 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 3.2 of that document apply equally here.

This project submission for power BECCS projects 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 powerbeccs@beis.gov.uk.

## Important information regarding this process

* **The deadline for finalised power BECCS project submissions is 23:59 on 19th October 2022.**
* **Projects who are planning to submit an application via this process must email** **powerbeccs@beis.gov.uk** **stating the intention to do so and who their project representative will be, so that the NDA process can commence (set out in Section 3.3 Submission process in the guidance document)**
* **Submissions should be sent via email to** **powerbeccs@beis.gov.uk** **with Annex 1 (Submission form), Annex 2 (Financial Statement template), Annex 3 (Reference Matrix) and any supporting documentation attached.**
* The assessment process will be run fairly, transparently, and objectively in accordance with the published project submission guidance.
* The information provided within this form will be used throughout the project submission process and the negotiations/due diligence phase. Entering a negotiation does not mean that power BECCS 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.
* BEIS will not be responsible for any costs incurred in the preparation of any submission.
* Projects will need to pass the eligibility criteria to be assessed on deliverability, as described in Power BECCS Project Submission Guidance Document.
* This document is divided into the following sections:
	+ Section 1: Applicant Information
	+ Section 2: Power BECCS Project Summary
	+ Section 3: Eligibility
	+ Section 4: Power BECCS project overview
	+ Section 5: Deliverability
* Section 2 and Section 4 are not applied to specific criteria or being directly assessed. This information is requested to provide BEIS with an overview of the project and an understanding of the wider project context, if relevant.
* Across the assessment, BEIS will place significant emphasis on the credibility and consistency of information provided.
* 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 Project Plan but should be provided once.
* 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 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.**

## 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 3.3 (Submission Process) of the Power BECCS Project Submission Guidance Document for additional detail on entry into non-disclosure agreements and Section 3.2 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.** |

## 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

Power BECCS Project Submission form

Please complete this form after reading the [Power BECCS Project Submission Guidance Document.](https://www.gov.uk/government/publications/cluster-sequencing-for-carbon-capture-usage-and-storage-ccus-deployment-power-bioenergy-with-ccs-beccs)

Due date: 23:59 on 19th October 2022

## 1. Applicant information

Please provide the contact information for the power BECCS project.

## 2. Power BECCS Project Summary

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

Please provide a concise summary description of the power BECCS Project. Respondents should include, but are not necessarily limited to:

* Details of the type of generating plant.
* The location of the power BECCS Project.
* A clear diagram / schematic of the power BECCS Project.

### 2.2 Power BECCS Project status and key metrics (250 words)

Please provide a concise description of the Power BECCS Project’s stage of development.

Please also fill in the metrics within the table below. Any additional graphs to summarise the captured CO₂ profile would be beneficial. Please provide information on how you have calculated these.

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| **Metric** | **Value** |
| Financial Investment Decision Date (m/y) |   |
| Commercial Operation Date (m/y) |   |
| Total CO2 stored volumes before 2050 (MtCO₂) |   |
| Net emissions stored per year (MtCO₂) |   |
| Capture Rate (if relevant) (% of CO2) |   |
| Overall capital costs to end of 2050 (£m) |   |
| Overall operational costs to end of 2050 (£m) |   |
| Levelised Cost of Removal to end of 2050 (£/MtCO₂) |  |

### 2.3 Regional context of power BECCS Project (300 words)

Please summarise the importance of existing and future industry to the region in terms of jobs and infrastructure. How does the power BECCS 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.

### 2.4 Documentation sign-off (250 words)

Please confirm the information and accompanying documentation provided within your submission has received appropriate level of internal sign off, such as Board level sign off. For those areas that do not have appropriate approvals, please highlight, and explain the reasoning within your responses, making sure to include any associated uncertainties.

## 3. Eligibility

**Eligibility Criteria are fully described in the Power BECCS Project Submission Guidance Document. In summary to be eligible a power BECCS Project must:**

* Be located onshore in GB
* Provide net-negative emissions
* Have one of the eligible configurations. The power BECCS plant must be one of the following technology types: post-combustion; pre-combustion; or oxy-fuelled combustion.
* Use an eligible feedstock
* Have a minimum abated capacity of 100MWe.
* Have access to a CO₂ transport solution and Track-1 or Reserve Cluster CO₂ storage site.
* Have a minimum projected capture rate of 90% at full load.
* Demonstrate access to finance.
* Show that the project is able to be operational no later than December 2027.
* Have commenced pre-FEED studies or be ready to commence pre-FEED no later than the end of December 2022.
* Show that the Project will be able to have relevant consents in place no later than December 2024.
* Must not be considered under another carbon capture business model.
* The project must not be receiving government subsidy for power generation upon target deployment date.

**Please confirm and evidence how the power BECCS Project meets the Eligibility Criteria and provide appropriate supporting evidence.**

## 4. Power BECCS Project Overview

### 4.1 Project Overview

### 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 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.

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| **References to supporting documentation for Section 4.1.1** |
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### 4.1.2 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) in relation to the organisational structure, referencing 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 4.1.2** |
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### 4.2 Power BECCS Project

### 4.2.1 Power BECCS Project Description (2000 words)

The description of the power BECCS 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 CO₂ stream for capture, proposed capture plant, CO₂ treatment, any storage, compression facilities.
2. Clear diagram(s) / schematic(s) of the power BECCS Project.
3. The location of the power BECCS Project. Is the power BECCS Project dependent on, integrated with, or does it provide support or products to other local industrial plant(s)?
4. Details of the transmission/distribution connection point, connection point to the T&S, water intake/cooling.
5. Maps showing the location of the power BECCS Project, including but not necessarily limited to its location in relation to the T&S, grid connection point, gas network connection point, and other relevant local industrial plant(s).
6. If the power plant is separate from the capture plant, is it in operation, construction or development?
7. When is FID programmed / anticipated for the total facility including power and capture elements of the plant?
8. The design life of the power BECCS Project, including the capture facility and overall plant life for any pre-existing plants.
9. The CO₂ capture efficiency and carbon intensity of power at full load, steady state operation.
10. The captured and uncaptured CO₂ sources across the whole operational site, including anticipated annual CO₂ volumes and the hourly CO₂ volumes during an hour of operation at full load. Please include the assumptions for load factor which inform the profile of captured volumes.
11. A process description of the proposed CO₂ capture technology, including details of power and thermal energy requirements during normal operation of the plant (including the extent to which this is a firm position).
12. To what extent the power BECCS Project is dependent on third party agreements (e.g., fuel supply, grid connection) to be able to confirm programme delivery dates and volume certainties.
13. Engineering work completed and the status of ongoing work.

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| **References to supporting documentation for Section 4.2.1** |
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## 5. Deliverability

The deliverability assessment will consider the applicant’s capability and capacity to deliver the Project successfully and the timeline on which the power BECCS Project will come online. The deliverability criterion will be used to score projects, as outlined in the guidance document, which will enable BEIS to rank projects.

### 5.1 Schedule: Level 1 integrated project schedule (1000 words)

Please provide an integrated Level 1 schedule for the power BECCS Project. This should show when the T&S will be available, when the power BECCS Project comes online, activities related to any expansion projects and any key milestones such as: planning consents, decisions gates, long lead equipment items, 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 BECCS 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.

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.

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.

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| **References to supporting documentation for Section 5.1** |
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### 5.2 Planning and Consents (750 words)

Please provide a description of the status of the planning and consents, including securing an environmental permit, for the 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 include a concise description of the arrangements for grid connection including the status of connection application, whether this is a new application or modification to existing, the generation licence, and any associated planning consent for the grid connection 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.

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| **References to supporting documentation for Section 5.2** |
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### 5.3 Project execution plan (1000 words)

In this section, please describe how the power BECCS 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 Project execution that apply novel construction / installation techniques.

Please provide a Preliminary Commissioning Plan, including any 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.

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| **References to supporting documentation for Section 5.3** |
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### 5.4 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.

Please provide a concise description of all the major risks to the power BECCS 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 also 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 Project innovation risks and mitigations – overlap with Learning and Innovation criterion.

Below are examples of key risks that may need to be considered in relation to the power BECCS Project (noting that this is not an exhaustive list of possible risks and that certain market and cross chain risks will be addressed in the power BECCS business model[[1]](#footnote-2)):

Development risks including

1. If existing assets (e.g., in a retrofit project) cannot be re-used after further assessment
2. Delays in obtaining DCOs, other consents and permits or any required licence or connection agreements

Construction and commissioning risks including

1. Contractor interfaces
2. Insolvency of key suppliers
3. Supply chain delays and delivery delays of critical equipment items
4. Workforce / Key skills availability
5. Commissioning dependencies including unavailability of downstream T&S

Operational risks including

1. Limited design and operational experience of type of plant
2. Underperformance of capture plant, increasing vented volumes of CO₂
3. Low availability/high downtime of capture plant, increasing vented volumes of CO₂ and resulting in greater intermittency
4. Low load factor for power plant
5. Delays or cancellations of downstream projects – stranded asset risk
6. Closure/bankruptcy of T&S – leaving capture plant as stranded asset

Overarching or general risks including

1. Covid-19/Pandemic/Epidemic external risks
2. Force majeure events
3. 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.

Please provide a 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 5.4** |
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### 5.5 Operating philosophy (750 words)

In this section, please explain who will be responsible for operating and maintaining the power BECCS Project – 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 power BECCS Project; the control philosophy of the power BECCS Project in coordination with the T&S; and how many roles are required to operate the power BECCS Project.

Please describe the levels of redundancy in the power BECCS Project design including the overall design availability.

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.

Supporting evidence for this section may include preliminary Process and Instrumentation diagrams, Process description, and process control philosophy.

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| **References to supporting documentation for Section 5.5** |
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### 5.6 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) during project execution, operation and post-cessation. This should include a description of the approach to developing and maintaining co-operation with key stakeholders to assure successful delivery. Reference to specific related activities in the Project schedule would be helpful.

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| **References to supporting documentation for Section 5.6** |
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### 5.7 Health, Safety and Environment

### 5.7.1 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 that has been performed or is planned to demonstrate that all residual Project 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 5.7.1** |
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### 5.7.2 Environmental (1000 words)

Please provide a concise description of the environmental impact of the power BECCS 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 power BECCS 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 5.7.2** |
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### 5.8 Supply chain

### 5.8.1 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 5.8.1** |
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### 5.8.2 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 and where there are key contracts in place. Please also provide a description of the current view of capability and capacity and how any associated challenges are going to be addressed. This should include information around feedstock such as: location of feedstock source, calculation of feedstock supply chain emissions and any long / short term contracts in place.

Please detail the extent to which technology licensors have 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 schedule would be helpful.

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| **References to supporting documentation for Section 5.8.2** |
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### 5.9 Financial and Commercial

This section aims to understand the financial and commercial health of all the companies involved in the development of the power BECCS Project and the proposed financing plan for the power BECCS Project. To support this assessment, please submit copies of the Financial Statement Template (Annex 2) and associated financial documents as requested in Annex 2 for each *Business plan and financial health – company level* response.

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

*Note: Each company participating in the development of the power BECCS Project must provide a response. Multiple responses may be necessary if the power BECCS Project is being developed in partnership.*

Please describe the following:

* Describe how your company business plans and industrial output have been impacted by events since the start of 2020.
* 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.)
* Describe how the Project aligns with the company’s overall strategic ambitions in the UK to 2030 and beyond.

With reference to the Annex 2 - Financial Statements Template, please provide copies of the latest five 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 each year up to FY 2027/28 for the following companies where applicable:

1. The company or companies operating the Project
2. The company or companies financing the Project (e.g., corporate sponsors or other third party equity providers)
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)

Where this information is not reasonably available for a third party equity provider, please provide alternative evidence of the robustness of the provider (e.g., evidence of the size of overall portfolio or fund).

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.

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| **References to supporting documentation for Section 5.9.1 A** |
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### 5.9.2 B - Business plan and financial health – company level (750 words)

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

Please see Section 5.9.1 A for further details.

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| **References to supporting documentation for Section 5.9.2 B** |
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### 5.9.3 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 5.9.1 A for further details.

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| **References to supporting documentation for Section 5.9.3 C** |
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### 5.9.4 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 5.9.1 A for further details.

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| **References to supporting documentation for Section 5.9.4 D** |
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### 5.9.5 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 5.9.1 A 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 5.9.5 E** |
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### 5.9.6 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. 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 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 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 5.9.6** |
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### 5.10 System Integration

### 5.10.1 Specification of capture gas (1000 words)

Please describe quality controls and required processing for the CO₂ entering the T&S system 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 and what measures are in place to prevent off-spec CO2 from entering the T&S network. Describe the safety systems that allow communication between the T&S and the power BECCS Project in the event of emergency and off-spec CO2 scenarios.

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 power BECCS Project and which components will have the greatest influence on these?

Have there been any pilot plant runs using the flue gas from the existing plant (if retrofit)? Or is there any pilot testing planned/proposed? Please provide details either of the outcome of any pilot testing, or the details of proposed runs.

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| **References to supporting documentation for Section 5.10.1** |
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### 5.10.2 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, flow rate and describe the CO2 metering system adopted for quality measurement of the CO2 entering the T&S network.

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 5.10.2** |
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### 5.10.3 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 5.10.3** |
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1. <https://www.gov.uk/government/consultations/business-model-for-power-bioenergy-with-carbon-capture-and-storage-power-beccs> [↑](#footnote-ref-2)