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| Carbon Capture and Utilisation Demonstration (CCUD), Phase 3B – Construction & Demonstration |
| Application Form |
|   |
| July 2019 |

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| CCUD, Phase 3b – Construction & Demonstration |
| Application Form |
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| Important: please fill in this form using the CCUD, Phase 3B – Construction & Demonstration Guidance Notes. |
| Proposal Details |

| Summary Information |
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| Name of Business |       |
| Project Title |       |
| Estimated Start Date |       |
| Project Duration | 0 mths |
| Total Project Costs | £ 0.00 |
| Company contribution (if applicable) | £ 0.00  |
| BEIS Grant applied for | £ 0.00 |
| Grant funding requested as percentage of total funding. |      % |

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| Contact Details |
| Title | Choose an item. | Name |       |
| Position |            |
| Email |       |
| Telephone |       | Mobile |       |
| Organisation name |       |
| Address |       |
|   |       |
| . |       |
| . |       |
| Town/City |       |
| Postcode |       |
| Business Type | Choose an item. |
| Business Details  |
| Number of employees (including directors) |       |
| Business Registration Number |       |
| Turnover (in most recent annual accounts) | £ 0.00 | as at |       |
| **Balance Sheet Total** (total assets net of depreciation) | £ 0.00 | as at |       |
| Business maturity | Choose an item. |
| Does the business have a parent company?(If yes, please provide details in Parent Company section below). | Choose an item. |
| Is the business able to recover VAT? | Choose an item. |
| How has the business been funded? (Choose all that apply) |
|       | No Funding |       | Founders (including bank loans) |       | Friends and Family |       | Financial Support from Public sector\* e.g. grants |
|       | Angel Investment |       | Venture Capital |       | Private Equity |       | Stock Market Floatation |

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| Which article are you applying under?  | Choose an article |

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| Year |       | R&D Spend |  £ 0.00 | Operating Expenses |  0.00 |

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| **If you are applying under Article 25, is this a Collaborative Application?** **\*If yes, then please complete separate Partner Details Form for each partner and provide a Heads of Terms for the collaboration agreement.** | Choose an item. |
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| Parent Company Details (if applicable) |
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| Organisation name |       |
| Address |            |
|  |  |
| Postcode |       |
| Number of employees (including directors) | 0 |
| Turnover (in most recent annual accounts) | £ 0.00  | as at |       |
| **Balance Sheet Total** (total assets net of depreciation) | £ 0.00 | as at |       |
| Business Registration Number |       |
| Company maturity | Choose an item. |

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| Project Description and Company Status (this should be a brief introductory description of the company and specific project to set the scene for the assessors) |
| *(Maximum 3 pages)*      |

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| Project Motivation |
| 1. What are your main aims and expectations for involvement in the CCU Demonstration Programme?
2. Describe what work has been done to date in terms of decarbonization activities at the site.
3. How does this programme fit with short, medium and long term future business plans?
4. What are the proposed sources of investment for the project in Phase 3? What level of support is required from BEIS at each stage to ensure the viability of your future developments and not only for this project?
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| *(max 4 pages)*      |

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| 1. Source CO2 and Export Route Information
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| 1. Provide a description of the base industrial process that the carbon capture plant will be applied to, including whether this is a new-build plant or will carbon capture be retro-fitted to an existing facility.
2. How much carbon dioxide will be captured from the process (both as a proportion of the total CO2 in the feed stream, and as an annual mass of CO2 product from the process)?
3. What export route has been identified for the product carbon dioxide stream? Provide details of the destination, product specification, means of transportation and expected sales value per tonne of CO2.
4. What is the proposed utilisation pathway, and what arrangements are in place for the sale or usage of the captured CO2
5. How will the proposed plant impact the safety and health of on-site personnel and the general public? Has a HAZOP or HAZID or as a minimum a SIL or LOPA report assessment been carried out?
6. What is the potential impact on the environment? Provide a copy of the project’s Environmental Impact Assessment and describe how any recommended mitigation measures are being addressed. This should include any deviations from existing Environmental Impact Assessments for existing processes caused by implementing the CCU process.
7. What discussions have been held with external stakeholders, such as the Environment Agency and Local Authority? What approvals have been gained for installation of the carbon capture and utilisation plant and what is still outstanding? Describe the timeline and activities required to gain all necessary approvals.
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| *(max 7 pages)*       |

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| CO­2­ Utilisation Pathway |
| 1. Where will the captured CO2 be stored, and how will it be transported from the capture process and to the end user?
2. What product specification is required from the CO2 for the intended utilization pathway? Is further purification necessary?

What is the CO2 end user’s process, how much CO2 is required per year, and are there any formal agreements or contracts signed with them (if an external company)? |
| *(max 3 pages)*       |

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| Technology Selection and Engineering |
| 1. What specific process technology is proposed for removal of carbon dioxide from the process stream? Where this is a licensed technology, describe the basis of your current and future relationship with the technology provider, including any firm agreements for supplying the technology. If the technology is proprietary, please include information about how the technology would function.
2. What previous projects have used the proposed technology? Describe the scale, period of operation and source of CO2 for existing installations using this technology. What limitations to plant capacity / train size exist for this technology?
3. Has a specific engineering contractor been selected for delivery of the project in Phase 3? If not, provide a plan and timeline for selecting your EPC contractor, including how they will be procured. If they have been selected, describe the basis of your current and future relationship with your EPC contractor.
4. What guarantees is the technology provider (or EPC contractor) offering for performance of the technology?
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| *(max 4 pages)*       |

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| 1. Specific Project Deliverables Required
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| 1. Process Flow Diagrams for the new process.
2. Process Description and range of expected operating conditions.
3. Material Balance around the carbon capture (and utilisation) process, clearly showing flow rates, composition and operating conditions for key streams.
4. Sized equipment list for any new or modified equipment.
5. Plot Layout, clearly showing connections to existing systems and access routes for construction and operational traffic.
6. Tie-in Schedule, indicating location, method of tie-in and planned schedules.
7. Summary of utility and electrical power demands.
8. Summary of solid wastes, effluent streams and gaseous emissions, including proposed disposal or treatment routes.
9. If available, Material Safety Data Sheets for any materials that are toxic or harmful to the environment.
10. Single Line Diagram.
11. Description of control and monitoring system, including Control System architecture diagram. How will this interface with the existing plant control and monitoring system?
12. Capital cost estimate to AACE Class II or equivalent. Estimate to be broken down to show costs for equipment items, bulk materials, engineering, construction contracts, land costs and owner costs. Please include the Estimate Methodology used, stating clearly the basis for material take-offs and any assumptions used. Capital cost estimate accuracy to be advised.
13. Fixed and variable operating costs, including number of personnel and costs for utilities and services.
14. Economic assessment, showing planned period of operation, costs, sales value and internal hurdle rate (discount rate).
15. Financial Investment Decision, EPC award, Mechanical Completion, Ready for Start-up, Commercial Operations Date and any other key milestones / decision gates.
16. Technical / Commercial Risk Assessment and Mitigation Plan.
17. HAZOP or HAZID or as a minimum SIL or LOPA for proposed process, where possible. If this has not been carried out, an assessment of the health and safety risks of the process should be provided, even if this is incomplete or brief.
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*(max 10 pages)*

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| 1. Project schedule and risks
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| 1. Provide a schedule for implementation of the project, including construction activities, any key internal milestones / decision gates, and approval gates for external agencies.
2. Please include an illustrative schedule for how Phase 3 will be implemented, including activities, milestones and timing
3. What main risks exist for the project and how does the bidder intend to manage these? Please complete a project risk register, showing both the likelihood and potential impacts of individual risks, and giving clear mitigation strategies to manage them.
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| *(max 3 pages)*       |

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| **Risk** | **Likelihood****L/M/H** | **Impact****L/M/H** | **Mitigation** | **Mitigated risk assessment****Red/Amber/Green** |
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| 1. Project finances
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| 1. Please complete a finance form for your proposed project and use this section to explain the proposed costs of your project.
2. Please describe and explain the costs of your project.
3. Justify how the proposed costs represent fair market value and how the total budget represents good value for money. Explain how this project would represent good value for public funding
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| *(max 3 pages)*       |

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| Project FundingYou must also complete the CCUD, Phase 3B – Construction & Demonstration Finance Form |
| **Project Finance Summary –** This summary information should match that calculated on the Finance Form |
| Total company contribution | £       |
| Source of company contribution |       |
| Amount of BEIS grant applied for | £       |
| Other public-sector funding applied for | £       |
| Total project value | £       |
| Project Start Date | Click here to enter a date |
| Project End Date | Click here to enter a date |

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| 1. Project Team
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| 1. Describe the companies that are involved in the project and their level of involvement during FEED, EPC and operation of the facility. Provide organisation charts to show the nature of the relationships during each phase, including a project management structure.
2. Which companies are making a financial investment in the facility? What are the relative proportions of ownership for each? (if relevant)
3. What proportion of the investment capital will be provided by loans from financial institutions (or other sources)? Please provide details of lenders. What rights do the lenders have with respect to the project? If such lenders have been sought, please include information about the current status of the funding.
4. Where the carbon capture and utilisation plant will be operated as a separate entity, describe the nature of the contract between the host site and the CCU plant operator.
5. What level of BEIS support is required during Phase 3 to ensure the viability of your development?
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| *(max 4 pages)*       |

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| Please insert any further information in the appendices immediately following this page or alternatively provide as attachments to the email submission. All additional information should be appropriately referenced within the application form text so that assessors can readily refer to it. If information is not appropriately referenced it will not be considered during the assessment process. |
| **Signature of Lead Consortium Member** |
| **Please ensure a suitable representative from the company or lead organisation for a collaboration checks and signs this application before returning it to BEIS.** |

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| **Name of organisation** |  |
| **Signature** |  |
| **Name of Signatory** **(please print)**  |  |
| **Position in organisation** |  |
| **Date** |  |

**Please refer to the CCUD, Phase 3B Construction & Demonstration Guidance Notes for where to email your completed application form**.

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