

Appendix A3: Technical Due Diligence for CCS Technologies

1. Scope

CCS Technologies

This section sets out guidance for assessing the project sponsor's response, taking information from application forms B, C and E. The project will be assessed through a review of the project sponsor's responses to the application form together with an analysis of the required supporting documentation.

The project proposal must demonstrate that the project:

- has taken full account of the impacts of the technology and processes associated with the plant, infrastructure and utilities proposed for the project with reference to the category indicated in the application;
- has an understanding of how the proposed technologies and processes will be integrated;
- is based on sound design and construction techniques with regard to safety, reliability and technical performance;
- is expected to operate as intended and appears likely to meet its proposed output; and
- is technically viable.

The responses given will be used by the EIB to reach an overall conclusion on the credibility of the technical aspects of the proposal and hence, the deliverability of the project. This overall conclusion will take the form of a qualitative judgement by the EIB on the reasonableness and deliverability of the project.

Issues for the Commission to consider: *(This should contain a summary of the main issues, if any, which arise from the EIB's due diligence review and which should be included in the project's evaluation report)*

Assessor judgement: *(This should summarise the overall assessment of the project following completion of the due diligence).*

Assessor:

Date:

App. Form Ref.	Due Diligence Prompt
B/C	Does the information provided demonstrate that the project falls into the sub-category indicated in its application? Does it meet the definition for the sub category in Part A.I of Annex I of the NER300 Decision?
B	Does the information provided support the assertion that the project meets the minimum size threshold for the sub-category in Part A.I of Annex I of the NER300 Decision?
B	<p>Does the information provided demonstrate that the project sponsor has taken full account of the impacts of the technology and processes associated with the plant, infrastructure and utilities proposed for the project? For example:</p> <ul style="list-style-type: none"> • has the project sponsor demonstrated an understanding of how the proposed technologies and processes will be integrated? • have changes in scale compared to previous testing or experience of the technology been taken into account?
B/E	<p>Does the information provide evidence that the project sponsor understands:</p> <ul style="list-style-type: none"> • where novel technology is employed in the project and the approach taken to mitigate any risks associated with its use? • where project infrastructure may be oversized and the approach to be taken with this infrastructure? • (if applicable) the technology associated with Enhanced Hydrocarbon Recovery (EHR) and the solution to be employed in the project? • if considering pre-combustion capture technology, the technology associated with syngas generation and the solution to be employed in the project?
B/E	Confirm that the project will be based on sound design and construction techniques with regard to safety, reliability and technical performance. Considering the project proposal as a whole, does it provide assurances that the standards for the proposed design and construction of the project are appropriate?

App. Form Ref.	Due Diligence Prompt
B	<p>Confirm whether the project is expected to operate as intended and appears likely to meet its proposed output, based on the proposed design and the evidence provided in relation to previous testing and experience with the technology. The assessment should consider questions such as:</p> <ul style="list-style-type: none"> • is the capture plant design capable of capturing at least 85% of the CO₂ of the flue gases during steady-state operation to which capture is applied? • does the capacity and the stated capture rate match the projected CO₂ storage? • is the information provided on the selected geological reservoir sufficient to deem it a viable CO₂ storage site of required properties, including capacity and sufficient injectivity, and allowing for safe and effective storage?
B	<p>Confirm whether on the basis of the proposed design, operating and maintenance and the evidence provided showing previous testing and experience, each section of the project appears likely to be reliable. The assessment should consider, for example:</p> <ul style="list-style-type: none"> • does the project sponsor understand the technology associated with the CO₂ capture/separation, compression/ conditioning and transport/ storage processes and can the solution be employed in the project? • has the project taken into account integration of the various parts of the CCS chain? • has the project sponsor demonstrated that they have aimed to maximise heat integration between the plant and the capture facility, taking into consideration operational and economic constraints? • has the project sponsor identified the full utility requirements, including waste handling, required and emitted by the project?
B	<p>If applicable, confirm whether existing assets are suitable for reuse.</p>

2. Implementation

CCS Technologies

This section sets out guidance for assessing the project sponsor's responses, taking information from application forms B and D. The project sponsor will be assessed through a review of their responses to the application form together with an analysis of the supporting documentation.

The project needs to demonstrate that:

- the project programme's sequence of activities by which the project is expected to achieve its operational phase is reasonable and realistic;
- the project management organisation and capability supports the project programme;
- permitting and environmental issues are sufficiently addressed; and
- the project has identified processes in place for quality assurance and health and safety which support the project programme.

The responses given will be used to assist the EIB in reaching an overall conclusion on the credibility of the sponsor's application and hence, the deliverability of the project. This overall conclusion will take the form of a qualitative judgement from the EIB on the reasonableness and deliverability of the sponsor's project.

Issues for the Commission to consider: *(This should contain a summary of the main issues, if any, which arise from the EIB's due diligence review and which should be included in the project's evaluation report)*

Assessor judgement: *(This should summarise the overall assessment of the project following completion of the due diligence).*

Assessor:

Date:

App. Form Ref.	Due Diligence Prompt
B	Does the evidence provided by the project sponsor on the current state of the project and phase of design (i.e. feasibility, FEED, etc.) support project delivery as foreseen in the project programme?
B	Is the work completed to date sufficient for this phase of design? For example, are there gaps in the work carried out to date that result in uncertainty about the ability to achieve the operational phase as foreseen in the project programme?
B	Confirm submission of a project programme.
B	<p>Does the resolution of the tasks and activities set out in the project programme submitted by the project sponsor give comfort that there is sufficient understanding of the project's complexity? For example:</p> <ul style="list-style-type: none"> • are there appropriate links where one task will rely on progress in another? • does it include the likely requirements of all aspects of the project (e.g. including supply chain, procurement, consents and financing)?
B	Are the programmes complete in terms of required activities to deliver the project? For example, are there tasks missing from the programme that could materially affect the delivery timetable?
B	<p>Is the project schedule considered to be realistic and achievable (linked to a feasible time frame)? For example:</p> <ul style="list-style-type: none"> • do task durations, particularly for tasks on the critical path, appear realistic given the nature and complexity of the work? • has sufficient time been allowed to account for weather and ground conditions risk in the construction phase? • are critical decision points and milestones identified? Are they considered likely to be achieved on time? • has allowance been made for commissioning, particularly of novel technologies, and has a suitable “ramp-up” period of reduced output been included in the initial operations phase?

App. Form Ref.	Due Diligence Prompt
B	Are the time lines associated with the procurement and delivery of major capital components considered to be realistic?
B	Does the procurement and resource plan support the time lines set out in the project program for delivery of major capital components?
B	Confirm whether the Project investment decision is programmed within 24 months of Award Decision.
B	Do the activities within the project programme support the achievement of the project investment decision within 24 months?
B/D	Confirm whether all relevant national permits are anticipated within 24 months of Award Decision? Are critical activities to achieve this identified?
B	Are the consents dependent upon developing regulatory and legal frameworks and how are these likely to impact the achievement of the project programme for delivery?
B	To what extent do the proposed project management structure, key management personnel expertise and track record in respective areas support the delivery of the project?
B	Are technology commercialisation, business management and financial management areas addressed in the project management structure? Do the proposals in these areas support the delivery of the pProject?
B	Does the resource plan support achieving the operational phase as foreseen in the project programme, having regard to the complexity of the project and its current state of development?
B	Do the proposed quality management processes and procedures support the delivery of the project? Do they appear sufficiently robust and in line with good industry practice such that they will facilitate delivery of the project?

App. Form Ref.	Due Diligence Prompt
B	Do the health and safety processes, procedures and plans support the delivery of the project? Do they appear sufficiently robust and in line with good industry practice, such that they will facilitate delivery of the project?
A4 Governance	
B	<p>The project sponsor is required to provide details of a proposed senior management structure including senior project management and integration roles and include brief CVs of key staff who will be responsible for the project.</p> <p>When assessing the project sponsor's response, the EIB should consider the following criteria:</p> <ul style="list-style-type: none"> • Does the structure provided identify the key positions and lines of communication with explanation of communication and methodology of the structure to provide confidence that the proposed project will be successfully developed and delivered? • Has the project sponsor provided CVs for key individuals with appropriate levels of qualifications, management experience and sufficient relevant experience in a project of similar type to that proposed?
B	<p>The project sponsor is required to provide details of external advisors (legal, financial and technical) including the extent to which they intend to use them.</p> <p>When assessing the project sponsor's response, the EIB should consider whether recognised advisors are identified in each area or a good argument/comments relating to alternative arrangements are provided.</p>
B	<p>If applicable, the project sponsor and funding partners are required to provide details of having worked together on projects which are comparable in the last 5 years.</p> <p>When assessing the project sponsor's response, the EIB should consider whether the examples provided by the project sponsor are relevant and of an appropriate scale compared to the proposed project. The examples should also include references to collaboration between multiple entities within the consortium or SPV and evidence of successful delivery should be provided.</p>

App. Form Ref.	Due Diligence Prompt
B	<p>Where the project sponsor entities or funding partners do not have experience of working successfully together, then the project sponsor should provide details of projects which are comparable or otherwise relevant situations where they have worked successfully with other organisations within the last 5 years.</p> <p>When assessing the project sponsor’s response, the EIB should consider whether the project sponsor has provided relevant examples of appropriate scale providing evidence of collaboration between multiple entities with evidence of successful delivery.</p>
B	<p>The Project Sponsor is required to provide an approach to implementing appropriate governance structures and aligning the interests of a number of organisations to delivery projects.</p> <p>When assessing the project sponsor’s response, the EIB should consider whether the proposed approach identifies key components of appropriate governance structures and of aligning the interests of a number of organisations to deliver projects with appropriate and relevant examples.</p>
B	<p>The project sponsor is required to provide an approach to ensuring overall responsibility for delivery is retained in light of their proposed project delivery structure.</p> <p>When assessing the project sponsor’s response, the EIB should consider whether the proposed approach identifies key components for retaining overall responsibility for delivery notwithstanding the fact that significant roles may be undertaken by other parties.</p>
B	<p>The project sponsor is required to provide an approach to ensuring that effective supply chain management procedures will be in place throughout the project.</p> <p>When assessing the project sponsor’s response, the EIB should consider whether the proposed approach identifies key components required for effective supply chain management.</p>

3. Environmental Impact

The Project needs to demonstrate that:

A3.1 Relevant Environmental Assessment

- the project sponsor has suitable previous experience in undertaking environmental work;
- all potential environmental effects (and resulting impacts) relating to the various project phases (construction, operation and decommissioning) have been identified, assessed and mitigated ;
- the selected project site (or sites where there are multiple sites related to the project) is feasible for its proposed purpose;
- constraints associated with the use of the project site for its proposed purpose have been identified and mitigated; and
- all required environmental work (including environmental studies / assessments / modelling) will be completed in sufficient time to ensure that commercial operation starts as anticipated in the project programme.

A3.2 Relevant National Permits

- all relevant national permits for the project are in place and in line with the relevant requirements under national and EC legislation; and/or
- the relevant national permits procedures are underway and the process is sufficiently advanced to ensure that commercial operation of the project starts as anticipated in in the project programme.

Issues for the Commission to consider: *(This should contain a summary of the main issues, if any, which arise from the EIB's due diligence review and which should be included in the project's evaluation report)*

Assessor judgement: *(This should summarise the overall assessment of the project following completion of the due diligence – see below for example).*

Assessor to provide information about:

- any gaps in the understanding of potential environmental impacts relating to the various project phases and how this affects the feasibility of the project site for its proposed purpose;
- any details of the actions, including further environmental studies/assessments/modelling ,which will need to be undertaken to close the gaps in the understanding of potential environmental impacts relating to the various project phases;
- any difficulties in undertaking the required environmental work (including environmental studies/assessments/modelling) to support the relevant permit applications detailed in Table D.2 in application form D.

Assessor to provide information about:

- any outstanding permits for the project to be issued;
- details of likely dates any outstanding permits will be issued;
- any difficulties identified with obtaining outstanding permits.

Assessor :

Date :

A3.1 Relevant Environmental Assessment	
Due Diligence Prompt	
D.1	Does the project sponsor have suitable previous experience in undertaking environmental work?
D.1	Are there any gaps in the understanding of potential environmental impacts relating to the various project phases such that it affects the feasibility of the project site for its proposed purpose?
D.1	Have all actions (including further environmental studies/assessments /modelling which will need to be undertaken to close the gaps in the understanding of potential environmental impacts relating to the various project phase which may affect the feasibility of the project site for its proposed purpose) been identified?
D.2	Is the required environmental work to support the relevant permit applications appropriate, and are the timetables for completion consistent with the relevant permit application details in Table A3.2?
A3.2 Relevant National Permits	
D.2 / SF B	Have all relevant national permits required for the construction and operation of the project under all applicable or anticipated EU and national legislation been identified?
D.2	Have all relevant national permits been issued?
D.2	What outstanding permits are to be issued and probability/timing of expected permit approval?
D.2 / SF B	Are there any issues with non-transposition of legislation in respect of permitting requirements for a type of project?

Please refer to the following for background (note that social assessment is not part of the assessment). In case of doubt as to the consistency of any principle contained in the following documents with the requirements of the NER 300, please refer to the Commission.

EIB Statement of Environmental and Social Principles and Standards (Press release):

<http://www.eib.org/infocentre/press/news/all/eib-statement-of-environmental-and-social-principles-and-standards.htm>

EIB Statement of Environmental and Social Principles and Standards:

http://www.eib.org/attachments/strategies/eib_statement_esps_en.pdf

EIB Transparency Policy:

<http://www.eib.org/infocentre/publications/all/eib-transparency-policy.htm>

General guidance documents:

Environmental and Social Practices Handbook:

<http://www.eib.org/infocentre/publications/all/environmental-and-social-practices-handbook.htm>

Sourcebook on EU Environmental Law:

<http://www.eib.org/infocentre/publications/all/sourcebook-on-eu-environmental-law.htm>

4. Costs

CCS Technologies

This section sets out guidance for assessing the project sponsor's responses, taking information from application forms B and C. The project sponsor will be assessed through a review of their responses to the application form together with an analysis of the required supporting documentation.

The project needs to demonstrate that:

- Project costs have been correctly allocated between investment costs, operational costs and benefits and non-Article 3 investment costs, non-Article 3 operational costs and benefits.
- The project information supports the operational performance assertions for CO₂ stored.

The responses given will be used to assist the EIB in reaching an overall conclusion on the credibility of the sponsor's application and hence, the deliverability of the project. This overall conclusion will take the form of a qualitative judgement from the EIB on the reasonableness and deliverability of the sponsor's project.

Issues for the Commission to consider: *(This should contain a summary of the main issues, if any, which arise from the EIB's due diligence review and which should be included in the project's evaluation report)*

Assessor judgement: *(This should summarise the overall assessment of the project following completion of the due diligence).*

Assessor:

| Date:

App form ref.	Due Diligence Prompt
C	Confirm that the project has submitted information in accordance with the application form.
B/C	Are the costs associated with the following areas correctly allocated between investment costs and on non-Article 3 investment costs: plant, capture (or separation) and compression plant, transportation, injection and Wells, if applicable, EHR?
B/C	Are the costs associated with the following areas correctly allocated between operational costs and benefits and non-Article 3 operational costs and benefits: plant, capture (or separation) and compression plant, transportation, injection and Wells, if applicable, EHR?
B/C	Where oversizing is considered within the project, have the costs included in application form 11 been prepared on the basis of <u>no</u> oversizing?
C	Has the project sponsor confirmed who will take responsibility for cost deviations or, alternatively, that contracted prices are being used?
C	Confirm whether the project sponsor has appropriately estimated costs commensurate with the phase and type of project and that the cost breakdown detail is appropriate to the amount of funding requested. For example, do the costs appear to be in line with current market costs for similar items?
C	Confirm that the costs detailed have been supported with a clear indication of their status (under contract, budgetary estimates etc) and that supporting information has been provided to justify these costs. Where costs are not under contract, has an adequate explanation been provided of how cost deviations will be managed? Do the contingencies allowed for appear appropriate given the level of cost uncertainty?

5. Risk

CCS Technologies

This section sets out guidance for assessing the project sponsor's responses, taking information from application forms B, C, D and E. The project sponsor will be assessed through a review of their responses to the application form together with an analysis of the required supporting documentation.

The project sponsor needs to demonstrate that:

- It has taken account of, and has categorised, the technical, commercial and financial risks.

The responses given will be used by the EIB to reach an overall conclusion on the credibility of the sponsor's application and hence, the deliverability of the project. This overall conclusion will take the form of a qualitative judgement by the EIB on the reasonableness and deliverability of the project.

Issues for the Commission to consider: *(This should contain a summary of the main issues, if any, which arise from the EIB's due diligence review and which should be included in the project's evaluation report)*

Assessor judgement: *(This should summarise the overall assessment of the project following completion of the due diligence).*

Assessor:

Date:

App. Form Ref.	Due Diligence Prompt
B/E/B4	<p>Does the information provide evidence that the project sponsor understands the key risks associated with construction, project design, operation and decommissioning in the following areas:</p> <ul style="list-style-type: none"> • Power plant or if applicable, syngas plant design? • Capture (or separation) plant design? • Compression plant design? • Transportation? • Injection installation and Wells design? • Storage site? • If applicable, EHR? • Ongoing monitoring, measurement and verification of the CCS chain; in particular the storage site, and including mitigation and remediation measures in case of unexpected or undesired events? • Operation of the integrated plant, CCS and, where applicable, EHR chain?
C/E	Does the information provided demonstrate that the project sponsor has taken account of the financial risks associated with the delivery and funding of this project?
C/E	Does the information provided demonstrate that the project sponsor has taken account of the management, procurement and other commercial risks associated with the delivery of this project?
D/E	Does the information provided demonstrate that the project sponsor has taken account of the consenting risks and uncertainties associated with the delivery of this project?
E	Does the information provided demonstrate that the project sponsor has taken account of the health and safety risks associated with the delivery of this project?
E	Does the information provided demonstrate that the project sponsor has taken account of the ownership and split of the risks?
B/E	Does the information provided demonstrate that the project sponsor has identified appropriate mitigating actions?

App. Form Ref.	Due Diligence Prompt
B/E	Does the information provided demonstrate that the project sponsor has tasks and activities in the programme that will deliver the mitigation?
E	Confirm whether the risk register appears reasonable having regard to the complexity of the project and achieving the proposed start date.

6. Operation

CCS Technologies

This section sets out guidance for assessing the project sponsor's responses, taking information from application forms B and C. The project sponsor will be assessed through a review of their responses to the application form together with an analysis of the required supporting documentation.

The project must demonstrate that:

- the anticipated operating regime is realistic and therefore its expected output is likely to be achieved.
- the project operating plan supports the CO₂ storage profile.

The responses given will be used by the EIB to reach an overall conclusion on the credibility of the sponsor's application and hence, the deliverability of the project. This overall conclusion will take the form of a qualitative judgement from the EIB on the reasonableness and deliverability of the sponsor's project.

Issues for the Commission to consider: *(This should contain a summary of the main issues, if any, which arise from the EIB's due diligence review and which should be included in the project's evaluation report)*

Assessor judgement: *(This should summarise the overall assessment of the project following completion of the due diligence).*

Assessor:

| Date:

App. Form Ref	Due Diligence Prompt
B	Confirm whether the project sponsor has submitted a comprehensive operating plan.
B/C	<p>Confirm whether the plant's reliability data appear reasonable, based on:</p> <ul style="list-style-type: none"> • Design proposed; • Data provided on previous testing carried out; • Operation and maintenance plan; and • Operating assumptions and sensitivities.
B	<p>Confirm whether the plant's output by year appears reasonable, based on:</p> <ul style="list-style-type: none"> • Design proposed; • Data provided on previous testing carried out; • Operation and maintenance plan; and • Operating assumptions and sensitivities.
B	<p>Has the project sponsor taken into account the requirements for maintenance and the potential for forced outages relating to the:</p> <ul style="list-style-type: none"> • Power plant or, if applicable, syngas plant? • Capture (or separation) plant? • Compression plant? • Transportation? • Injection installation and Wells? • Storage site? • If applicable, EHR? • The operational inter-dependencies of all parts of the CCS Chain?

App. Form Ref	Due Diligence Prompt
B	Are there any operational circumstances where the capture rate falls below the 85% level? To what extent does the information provide evidence that this only occurs during a controllable event linked to transient or other intermittent operational events?
B	Has the project sponsor considered flexible operation, minimum and maximum operating conditions? Have potential situations where the CCS Chain may not be required to operate due to flexibility response or market pressures on the power plant been considered?
C/B	To what extent are the operational factors identified in the information provided taken into account in the CO ₂ Storage profile?
C/B	Does the information provide evidence how the CO ₂ profile has been calculated?