Department for
Energy Security
& Net Zero

CCUS Track-1 Expansion

HyNet Application Guidance

Closing date: 28 March 2024

December 2023 (revised January 2024)

Any enquiries regarding this publication should be sent to us at:
CCUST1x@energysecurity.gov.uk

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Acronyms

Table 1 – Acronyms

Acronym	Definition
ACT	Advanced Conversion Technologies
APRi	Availability Payment Rates
ATR	Autothermal Methane Reformer
ATT	Advanced Thermal Treatment
BAT	Best Available Technique
BECCS	Bioenergy with Carbon Capture & Storage
CaaS	Capture as a Service
CaaSCo	Capture as a Service Company
CapEx	Capital Expenditure
CCSA	Carbon Capture and Storage Association
CfD	Contract for Difference
CHP	Combined Heat and Power
CHPQA	Combined Heat and Power Quality Assurance
CO_2	Carbon Dioxide
COD	Commercial Operation Date
DACCS	Direct Air Carbon Capture & Storage
DevEx	Development Expenditure

DESNZ	Department for Energy Security and Net Zero (formerly a part of BEIS)
DfT	Department for Transport
DPA	Dispatchable Power Agreement
DPA 2018	Data Protection Act 2018
EA	Environment Agency
ECC	East Coast Cluster
EfW	Energy from Waste
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
FPO 2005	Financial Services and Markets Act 2000 (Financial Promotion) Order 2005
FSMA 2000	Financial Services and Markets Act 2000
GDPR	UK General Data Protection Regulation
GGR	Greenhouse Gas Removal
GHG	Greenhouse Gases
HEC	Hydrogen Emissions Calculator
HMG	His Majesty's Government

HWI	Hazardous Waste Incinerators
ICC	Industrial Carbon Capture
IDHRS	Industrial Decarbonisation and Hydrogen Revenue Support
IPA	Infrastructure Project Authority
LCA	Lifecycle Analysis
LCCC	Low Carbon Contracts Company
LCHS	Low Carbon Hydrogen Standard
LCHA	Low Carbon Hydrogen Agreement
MCDA	Multi-Criteria Decision Analysis
MoU	Memorandum of Understanding
MRV	Monitoring, Reporting and Verification
$MtCO_2$	Megatonnes of CO_2
Mtpa	Megatonnes per annum
MWe	Megawatt electric
MWh or MW	Mega-Watts per hour or Mega-Watts
NDA	Non-Disclosure Agreement
NDC	Net Dependable Capacity
NEP	Northern Endurance Partnership
NPT	Non-Pipeline Transportation
OCP	Operational Conditions Precedent

OGA	Oil and Gas Authority
OpEx	Operating Expenditure
OPRED	Offshore Petroleum Regulator for Environment and Decommissioning
pBECCS	Power Bioenergy with Carbon Capture and Storage
PCC	Post-Combustion Capture
PNL	Project Negotiation List
RAG	Red, Amber or Green (RAG rating)
RED	Renewable Energy Directive
RO	Renewables Obligation
RTFO	Renewable Transport Fuel Obligation
SAF	Sustainable Aviation Fuel
SIC	Standard Industry Classification
SMEs	Small and Medium-Sized Enterprises
SMR	Steam Methane Reformer
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)
TRL	Technology Readiness Level

UKGI	United Kingdom Government Investments
UKIB	United Kingdom Investment Bank
VfM	Value for Money

Definitions

Table 2 – Definitions

Term	Definition
Applicant	Legal entity that intends to apply for support, and will be taken through to negotiations if successful (see also Project Representative).
Business Model(s)	Contract mechanisms to support the implementation and operation of CCUS Clusters.
Capture as a Service (CaaS)	Service provided by a third party to capture emissions on behalf of an industrial emitter(s).
CaaSCo	A company offering to capture emissions on behalf of an industrial emitter(s).
CaaS Group	The industrial emitters and the CaaSCo involved in CaaS.
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 plant is confirmed to meet the Operational Conditions Precedent (OCPs) 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 emitters 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.
Engineered Greenhouse Gas Removal (GGR)	Projects that ultimately achieve atmospheric CO_2 removal and require geological storage (CCS) to do so (achieving 'negative emissions'). For the purpose of the Application Guidance, this includes Projects such as DACCS and BECCS, and excludes engineered

	GGR Projects that do not require CCS access, such as enhanced weathering.
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.
gCO_2e/MJ_{LHV}	Units of carbon dioxide equivalents per megajoule of hydrogen using lower heating values.
Hydrogen Production	CCUS-enabled hydrogen production.
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.
Offtaker (hydrogen)	In the context of the Track-1 Expansion process, an offtaker is both the end user of low carbon hydrogen and, where relevant, any intermediary party who may purchase and resell hydrogen to end users. Where there is an intermediary party or where end users do not purchase hydrogen directly from producers, information and evidence of both end users and the intermediary need to be included in the submission form and templates.
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, road, rail, and inland waterway transportation.
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 Track-1 Expansion process.

Project Representative	Legal entity responsible for accessing the submission Portal and submitting the Project Plan and associated Annexes to DESNZ. The Project Representative is expected to be from the primary, or partner, organisation responsible for Project development. For Capture-as-a-Service (CaaS) this must be a CaaS Group Lead. Project Representative may be the same person as the Applicant.
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.
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 • pipeline 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.
Unsupported Project	This has the meaning given to it in Chapter 3.3.

Chapter 1: Introduction

1.1 Background and Purpose of the Application Guidance

In March 2023, HMG announced which CCUS Projects would be taken through to negotiations to connect to the HyNet and East Coast Cluster (ECC) as part of Track-1, Phase 2 Cluster Sequencing Process.[1] In September this year, HMG updated the CCUS market on proposed plans for Track-1 Expansion (T1x) for both ECC and HyNet through existing stakeholder forums and a Carbon Capture and Storage Association (CCSA) hosted session. Feedback received from industry stakeholders as well as lessons learned from the Track-1 Phase 2 Cluster Sequencing Process have been used to develop the process outlined in the Application Guidance. In addition, the latest transport and storage (T&S) capacity data has been considered to inform the timelines around T1x for HyNet and ECC.

This Application Guidance outlines the CCUS T1x HyNet Process and accompanies the opening of an application window for Projects to apply to expand the HyNet cluster, contributing to our ambition of capturing and storing 20-30Mt CO_2 per year. The first two chapters of the Application Guidance outline the application and assessment process and timelines of the T1x HyNet Process (Chapters 1 and 2), and a chapter on general considerations for all Applicants (Chapter 3). This is followed by separate chapters detailing the application requirements for each CCUS sector, aligned with the CCUS Business Models: Power CCUS in Chapter 4; Industrial Carbon Capture (ICC), including Waste ICC in Chapter 5; Hydrogen in Chapter 6; Greenhouse Gas Removals (GGRs) in Chapter 7; and Power Bioenergy with Carbon Capture and Storage (pBECCS) in Chapter 8. The final chapter outlines the shortlisting and cluster integration process, to decide the final T1x HyNet Project Negotiation List (PNL) to continue into the due diligence and negotiations stages, ahead of a Final Project List to expand the HyNet Cluster.

1.2 HyNet T&S Capacity Availability

The latest information on transport and storage (T&S) availability timelines in the Track-1 clusters are important to design the capture project selection processes and timelines for Track-1 expansion. Additionally, during a series of industry engagement sessions in September this year, interested projects requested clarity on the transport and storage capacity.

It is important that HMG has a clear view of the demand for T&S capacity (i.e. potential Projects) alongside when capacity becomes available. This ensures the T&S network is optimised when selecting Projects, and the final combination of Projects represent the best value for money for taxpayers and consumers. It is also important that the eligibility criteria for potential users of the network reflect the likely timelines of storage capacity availability, in particular the latest commercial operation date (COD), by which Projects should connect to the network and begin storing their captured carbon.

[1] https://www.gov.uk/government/publications/cluster-sequencing-phase-2-eligible-Projects-power-ccus-hydrogen-and-icc

In Autumn, HMG initiated discussions on Track-1 expansion with the Transport and Storage Companies (T&S Cos) to confirm transport and storage capacity availability timelines, and how this may inform the appropriate selection timeline.

HyNet T&S Capacity and Operational Dates

HyNet's initial T&S capacity is expected to be ~4.5 Mtpa from c.2027. Subject to negotiations with projects detailed in the Project Negotiation List in March 2023, the Track-1 Phase 2 Cluster Sequencing Process is likely to fill the majority, but not all, of this T&S storage capacity.

Therefore, the T1x HyNet Process intends to fill the remaining T&S capacity system, which, subject to final negotiations with Track-1 Phase 2 Projects, is expected to be between 1.3 Mtpa and 1.5Mtpa from 2028. HMG may take through projects into Track-1 expansion negotiations that exceed the available capacity to provide contingency in the scenario that some projects do not proceed further in either Track-1 Phase 2 negotiations or future Track-1 expansion negotiations. See Chapter 9 for more information on the shortlisting and negotiations process.

1.3 T1x HyNet Objectives and Design Principles

Track-1 Expansion HyNet

Track-1 Phase 2 HyNet Projects are expected to connect and store their CO_2, subject to conclusion of negotiations, as part of the initial deployment of the HyNet cluster. The T1x HyNet Process will look to fill the spare T&S capacity in HyNet as soon as possible. Additionally, in selecting which Projects will connect to and expand the Track-1 HyNet cluster, the T1x HyNet Process will decide which Projects gain access to T&S capacity and, where required, which Projects receive revenue support through the following CCUS Business Models[2]:

- Dispatchable Power Agreement – Power CCUS[3]
- Industrial Carbon Capture (ICC) and Waste ICC
- Low Carbon Hydrogen Agreement – Hydrogen Production
- Greenhouse Gas Removals (GGRs)
- Power Bioenergy with Carbon Capture and Storage (pBECCS)

Information for Projects unsupported by CCUS Business Model contracts can be found in Chapter 3.

T1x HyNet Objectives

- Identify Projects to connect to HyNet and fill the available storage and network capacity anticipated to be available by 2030, supporting HMG's ambition to capture and store 20-30 Mtpa of CO_2 by 2030.

[2] https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models
[3] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1117566/ccus-dispatchable-power-agreement-business-model-summary.pdf

- Select Projects that are good value for money both individually and collectively on a cluster basis.
- Ensure the T&S system is efficiently utilised so that it minimises the impact on T&S development through efficient Project assessment and negotiations and continue to appraise T&S availability timelines.
- Continue to support a range of sectors to support economy wide decarbonisation.
- Support the wider strategic objectives of the Department, such as Net Zero, energy security, securing investment and delivering green jobs.
- Streamline the selection process, building on lessons learned from the Track-1 Cluster Sequencing Process.

1.4 T1x HyNet Timeline and Key Dates

Table 3 – Indicative Dates for Track-1 Expansion HyNet Process

Please see Chapter 2 for all key dates for Applicants.

Date	T1x HyNet Process stage
30 March 2023	HMG announced plan to expand the Track-1 clusters and launch a T1x process this year.
25 September 2023	T1x Market Update hosted by the CCSA
December 2023	T1x Launch T1x HyNet Expression of Interest Window opens – Applicants will be required to provide a mandatory Expression of Interest (EOI) by 2 February 2024.
5 January 2024	Deadline to register to attend Application Window Engagement sessions
10 January 2024	T1x HyNet Application Window Engagement Session 1
2 February 2024	Deadline for submitting mandatory EOI Submission
3 February 2024	T1x Hynet Application Window opens – Applicants will be required to provide an application by 28 March 2024.
6 February 2024	T1x HyNet Application Window Engagement Session 2 (by invite only for Applicants who have submitted an EOI)

28 March 2024	T1x HyNet Application Window closes
April 2024	Eligibility Check (~3 weeks) – after which Projects will be notified if they have passed.
Spring / Summer 2024	Deliverability Assessment and Assurance Check (~8 weeks)
Summer 2024	Shortlisting
	Detailed Cost Data deadline (date TBC) and Final Value for Money (VfM) analysis
From Autumn 2024	T1x HyNet Project Negotiation List (PNL) published
From Autumn 2024	Final Due Diligence and Negotiations
Around 2026	Final Investment Decision (FID)
By end of 2030	Latest Commercial Operation Date (COD)

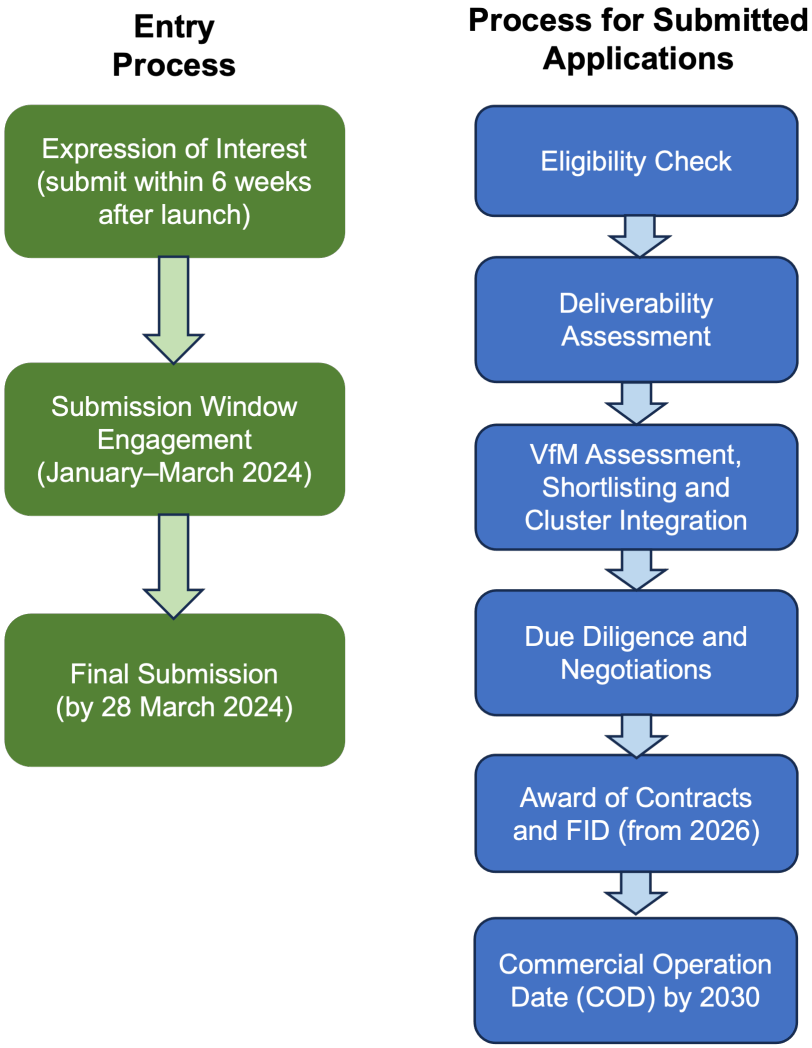
Chapter 2: Track-1 Expansion Process

This chapter outlines the T1x HyNet Process to select which Applicants will proceed to negotiations for access to HyNet transport and storage (T&S) and, where required, CCUS Business Model support. Following experience and feedback from the Track-1 Phase 2 Cluster Sequencing Process, the T1x HyNet Process has been streamlined, particularly the assessment criteria (Chapters 4-8).

The detailed breakdown of each process step and requirements that Applicants need to meet are set out in the relevant sector chapter for an Applicant's Project (Chapter 4-8). Applicants should carefully consider the eligibility criteria for each sector before determining which chapter's guidance to follow, in addition to this chapter, when completing their application form.

2.1 Process Overview

The process has been designed to be as simple and efficient as possible while still providing HMG with the relevant evidence to determine if a Project should go through to due diligence and negotiations, and to collect data essential for further CCUS policy development and modelling.



2.2 Entry Process

The entry process for T1x HyNet consists of three key stages:

- Expression of Interest (EOI) submission
- Application window engagement and clarification process
- Application submission

Applicants wishing to apply must select a Project Representative who will be provided access to the online SharePoint submission portal and will be responsible for submitting all the relevant Project information.

EOI Submission

The Project Representative must submit an Expression of Interest (EOI), available on the Gov.uk landing page, to DESNZ on behalf of the Applicant and their Project (or Projects for CaaS submissions) by 23:59 on 2 February 2024, to be considered for the T1x HyNet Process. Applicants should check their Project meets the relevant eligibility criteria – found in the relevant sector chapter (Chapters 4-8) – before returning the EOI.

On submission of an EOI, DESNZ will acknowledge receipt and provide the Project Representative with access to the SharePoint submission portal and discuss Non-Disclosure Agreements (NDAs) which will need to be signed ahead of submitting an application (see below for further information on NDAs). Acknowledgment of receipt does not constitute any judgement or opinion by DESNZ that the Project meets the applicable eligibility criteria. Only on submission of the application forms will DESNZ consider the eligibility of a Project.

Although under no obligation to do so, DESNZ reserves the right to permit an Applicant to submit an application where an EOI was submitted after the deadline in its absolute discretion. Applicants that wish to participate in T1x but have not submitted an EOI by 2 February 2024 should contact DESNZ immediately.

The Project Representative must submit the EOI on behalf of its Project (or Projects for CaaS submissions) by emailing it to CCUST1x@energysecurity.gov.uk.

Non-Disclosure Agreements

The Applicant, as the entity responsible for information submission, will be required to enter into an NDA with DESNZ. This NDA will help to ensure that comprehensive and credible supporting information can be effectively provided throughout the assessment process. Where a Project is supported by a consortium / joint venture (or where a CaaS Group is applying), DESNZ expects the Project Representative (for a CaaS Group, the CaaS Group Lead) to have adequate data sharing agreements between Project partners (or CaaS Projects) in place.

The NDA will set parameters for HMG's use of confidential information provided as part of the application submissions and throughout the T1x HyNet Process taking into consideration the Secretary of State's statutory obligations including under the Freedom of Information Act 2000 (FOIA 2000), the Data Protection Act 2018 (DPA 2018), UK General Data Protection Regulation (GDPR) and the Environmental Information Regulations 2004 (EIR 2004).

The NDAs will also include requirements for Projects to share information and documentation that may be reasonably required with the HyNet T&S Co to inform expansion discussions and support Final Investment Decisions (FIDs) across the HyNet cluster.

NDAs may also be required to be entered into with other Project partners and the Applicant where necessary, for example, to facilitate information sharing. DESNZ will advise the Project Representative if such additional NDAs are required.

Anti-Competitive Behaviour

The Competition Act 1998 (and other legislation) prohibits anti-competitive behaviour such as collusion (including bid-rigging).

The NDA will also set out various requirements in relation to anti-competitive behaviour, for example, for the Project Representative to take steps to ensure there is no risk of actual or potential collusion.

In particular, the NDA will require the Project Representative of a CaaS Group (the CaaS Group Lead) to take appropriate measures to prevent anti-competitive behaviour. We expect the Projects within the CaaS group to put in place their own arrangements for information sharing across the group, where it is anticipated that the CaaS Group lead will collate the information, and that information relating to an emitter within a CaaS group must only be passed from each emitter to the CaaSCo and not be shared by a CaaSCo with other emitters.

Application Window Engagement and Clarification Process

Engagement Sessions

To support Applicants in preparing application submissions that meet the T1x eligibility criteria, DESNZ intends to carry out engagement sessions to ensure Applicants have a clear understanding of HMG's objectives and criteria, and how to accurately fill out the application forms.

The first session on Wednesday 10 January 2024 will run through the application process and eligibility criteria. Please use the link on the Gov.uk T1x landing page to sign up to this session. Note this session will be recorded and the recording shared on Gov.uk.

A second session will be run on Tuesday 6 February 2024, by invite only, for Applicants who have submitted an Expression of Interest.

Clarification Process

To ensure forms are completed accurately, Applicants may submit clarification questions on the process by emailing CCUST1x@energysecurity.gov.uk. In the email, Applicants should, if applicable, explain which sector the query refers to (Power, Industrial, Waste, Hydrogen, GGR or pBECCS) and why the question has been raised so the context is clear. The question should clearly identify the document and/or text for which clarification is being sought.

In most instances, DESNZ expects to publish the question and the response provided on Gov.uk, except in circumstances where the Applicant sending the question has requested that the question and response is treated as confidential (further details below). DESNZ will not publish the name of the organisation and/or person submitting the question. This principle is also applicable to any questions raised in the submission engagement sessions which are not

specific to the individual Applicant concerned. DESNZ aims to respond to questions within 1-2 weeks of receipt. DESNZ will notify the Applicant if a response is likely to take longer.

An Applicant may request, at the time of submitting a question, that DESNZ treats a clarification question and its response as confidential. DESNZ will advise the Applicant in advance of providing the answer if it considers that all or any part of the question cannot be treated as confidential, at which time the Project may either withdraw the question or accept that the question and its response will be treated (in whole or part), as non-confidential.

The deadline for the submission of clarification questions is 23:59 on 17 March 2024, ahead of the submission window closing on 28 March 2024.

It remains the responsibility of the Project Representative to submit the information required by this Application Guidance within the application window. Any failure on the part of DESNZ to respond to a clarification question will not entitle the Project Representative to any extension to the application period.

Please note that responses to clarification questions received over the Christmas and New Year holiday period are anticipated to take longer than 1-2 weeks to provide.

2.3 Overview of Process for Submitted Applications

Eligibility Check

All Applicants will need to meet the eligibility criteria set out in the Application Guidance for their relevant sector. Applicants that pass the eligibility check will then proceed to the deliverability assessment. Applicants who fail to provide sufficient evidence to demonstrate they meet the eligibility criteria will not progress further. DESNZ expects to let Applicants know the outcome of the eligibility check in spring 2024.

Deliverability Assessment

All eligible Projects will progress to the deliverability assessment. In this stage, the deliverability of each Project will be rated Red, Amber or Green (RAG). Projects that are assessed as Amber or Green will progress to the shortlisting and cluster integration stage. Projects that are assessed ‘Red’ will not progress.

DESNZ intends to let Projects know the outcome of the deliverability assessment in the summer.

More information on how deliverability is assessed and what evidence is required in the application is included in the relevant sector chapter (Chapters 4-8).

Additional Information: Costs and Economic Benefits

Alongside evidence submitted to assess deliverability, Applicants must submit initial cost and economic benefits data for their proposed Project. This data will not be considered when assessing Projects against the eligibility criteria and will also not be considered 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. In the

Autumn Statement the government announced the £960m Green Industries Growth Accelerator to accelerate advanced manufacturing in key net zero sectors, including CCUS. GIGA is expected to support long term jobs in the supply chain, drive economic growth and bolster UK exports, while removing bottlenecks from the supply chain. We encourage projects to collaborate with supply chains towards these priorities.

Initial cost data provided on application will inform part of the cost element of the shortlisting and cluster integration process and so will be considered alongside other factors to support decision making at that stage. It will also be used for internal modelling and policy development and, along with detailed cost data provided at a later stage, inform value for money (VfM) analysis, for more information on the shortlisting and cluster integration process, see Chapter 9. Applicants that fail to provide the completed initial cost and economic benefits forms as part of their initial application will not be considered to have submitted a valid application and so will not progress in the process.

Costs

The initial cost data that Applicants must submit includes capital expenditure (CapEx), operational expenditure (OpEx) and development expenditure (DevEx) as accurately as possible. If Projects pass the deliverability assessment, they will be required to submit detailed cost data to support DESNZ VfM analysis.

More detail on cost information collection for each sector and what it will be used for can be found in the sector specific Chapters 4-8.

Economic Benefits

Recent events, including the war in Ukraine and the COVID-19 pandemic, have underlined the need to think about supply chain resilience, and the exposure Projects may have to risks such as the use of forced labour, poor employment practices in supply chains, the sudden unavailability of equipment, or problems accessing key materials in the construction phase and the operations phases. We will be seeking detail on what processes Projects have in place to mitigate risks to the supply chain. HMG intends to see evidence that Projects have appropriate systems in place to deal with the risks outlined above.

New entrants and small and medium-sized enterprises (SMEs), wherever they are from, can help bring disruptive practices, ideas, and products to the supply chain. The economic benefits form seeks to understand whether and how Projects are engaging with new entrants. Additionally, the need to invest in the skills to support the deployment of the CCUS sector will be important to ensure the right people have access to the growing range of opportunities, and to ensure the sustainability of the sector’s rapid growth.

Therefore, HMG is asking Projects to provide high-level information or a summary of plans they have developed on supply chain, skills and wider economic benefits through the forms provided in Annex D so that DESNZ can understand how the CCUS sector is preparing to manage supply chain challenges and build the skills to support the sector. The information Projects provide through Annex D will not be assessed or used as part of the shortlisting and cluster integration process to select which Projects go through to negotiation. However, it will be mandatory for Projects to submit a completed economic benefits form (Annex D) and a failure to do so as part of their initial Application will mean a Project is not considered to have submitted a valid application and so will not progress in the process.

If Applicants are shortlisted to go through to negotiations and/or offered access to the T&S network, HMG may ask the Applicant to submit or publish more detailed plans on supply chains, skills and economic benefits.

Shortlisting, Due Diligence and Negotiations

Projects that pass deliverability assessment will be taken through to shortlisting and cluster integration. This is where combinations of Projects in the HyNet cluster will be assessed against a number of factors. The final combination of Projects selected following the shortlisting and cluster integration process will be known as the Project Negotiation List (PNL). This list of Projects will proceed to due diligence and negotiations.

More details on the shortlisting, due diligence and negotiation stages of the T1x HyNet process can be found in Chapter 9.

2.4 Application Structure

Following the closure of the Expression of Interest window at 23:59 on 2 February 2024, the Application Window will open at 00:01 on 3 February 2024 and will close at 23:59 on 28 March 2024. Note that applications will not be accepted prior to the Expression of Interest window closing and the Application Window commencing.

Applications must be submitted by the Project Representative via the SharePoint portal during the Application Window. Applications submitted outside of the Application Window (including, for the avoidance of doubt applications submitted during the Expression of Interest window) will not be considered. Full details and further guidance on the materials which should be included in applications are set out in the following chapters of this Application Guidance: Chapter 4 for Power CCUS, Chapter 5 for ICC including Waste ICC, Chapter 6 for Hydrogen, Chapter 7 for GGRs and Chapter 8 for pBECCS.

To apply to the T1x HyNet Process, the Project Representative must provide completed copies of each of the relevant forms, along with supporting evidence where required. After submitting, Project Representatives will be notified via email to confirm that the application has been received.

The forms required are:

- Annex A: Project Plan, for the relevant sector (Annexes A1-A5)
- Annex B: Initial Cost Data
- Annex C: Financial Statement
- Annex D: Economic Benefits
- Annex E: Environment Agency Guidance

Annex A: Project Plan and Supporting Documentation

Project Plan templates for Power CCUS, ICC, Waste ICC, Hydrogen, GGRs and pBECCS can be found on the T1x Gov.uk landing page at **Annex A**.

The above Project Plan templates consist of a series of key questions relating to the details of the Project submission. The relevant Project Plan (and associated supporting documentation which is outlined in the relevant Project Plan template) will form the primary basis for the eligibility check and the initial deliverability assessment.

The intention in designing the Project Plan has been to avoid making the process unnecessarily onerous for Projects, and to allow for references to supporting documentation, rather than reproduction of information, wherever possible. This supporting documentation should be concise and referenced within the Project Plan and submitted alongside it, via the online submission portal.

We encourage Applicants to be aware of the word limits attached to each question in the Project Plan. Any information provided above the word limits will be removed before information is provided to assessors and will not be considered as part of your submission.

Annex B: Initial Cost Information Form

An Initial Cost Information form, for Power CCUS, ICC and Waste ICC, Hydrogen, GGRs and pBECCS and can be found on the T1x Gov.uk landing page at **Annex B**.

The Initial Cost Information forms require Applicants to input a range of information regarding the lifetime costs of their Projects. Along with information provided in the Project Plan, this template is used to capture the projected cost estimates for all Projects, as well as their level of cost maturity. This data will not be used as an assessment criterion during the eligibility and deliverability assessments. However, this initial cost data will be factored into the cluster-wide considerations at the shortlisting and cluster integration stage to inform our decision making, alongside other criteria (see Chapter 9). It will also support DESNZ internal cost modelling and policy development. It is mandatory that Applicants complete and submit an Initial Cost Data form (Annex B), and failure to do so will see Applicants removed from the process.

To note: the detailed cost submission that Applicants submit, post-shortlisting and cluster integration, in summer 2024 (if their Projects are deemed eligible and deliverable) will be used to support Value for Money (VfM) analysis and, alongside other evidence, will determine if a Project should or should not proceed to negotiations. More information on the detailed cost submission is expected to be shared by spring 2024, alongside the results of the eligibility check.

Annex C: Financial Statement

Financial Statement forms for Power CCUS, ICC, Waste ICC, Hydrogen, GGRs and pBECCS can be found in **Annex C.**

The Financial Statement forms require Applicants to input a range of financial information including income statements and forecasts to allow HMG to assess the financial status and resilience of the Applicant. These figures should be supported by relevant accounting notes and documentation. This will be used in the deliverability assessment and due diligence.

Annex D: Economic Benefits Form

Economic Benefits forms for Power CCUS, ICC, Waste ICC, Hydrogen, GGRs and pBECCS can be found at **Annex D.**

This seeks 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).

Annex E: Environment Agency Guidance

The Environment Agency (EA) Guidance for Power CCUS, ICC, Waste ICC, Hydrogen, GGRs and pBECCS can be found in **Annex E**.

The deliverability assessment will look for evidence that Applicants have applied for and/or secured any relevant planning consents and environmental permits. The EA Guidance provides some environmental considerations likely to be relevant to Projects and steps they may need to take in relation to obtaining permits and consents. The EA Guidance aids the Applicant to identify key environmental risks associated with their proposal and demonstrate awareness of potential control measures and environmental standards and regulations for the areas of risk that may be relevant to Applicants' proposals.

2.5 Key Dates

Table 4 – Key Dates for Applicants

Date	Communications and information sharing between Applicant and HMG
December 2023	Expression of Interest (EOI) and clarification window opens.
5 January 2024	Deadline to register to attend Application Window Engagement sessions.
2 February 2024	Deadline to submit EOI if intending to submit application.
3 February 2024	Application window opens and applications may be submitted – applications received before this date will not be accepted.
17 March 2024	Deadline to submit any final clarification questions.
28 March 2024	Deadline to submit Final Application to include A) Project plan, B) cost information, C) financial statements and D) economic benefits forms – forms can be found on the T1x Gov.uk landing page in Annexes A-D.
May 2024	Applicants told if they are deemed eligible according to the eligibility criteria. Ineligible Projects will not continue in the process. Eligible Projects will be given further details on the Detailed Cost form to be completed in Summer 2024.

July 2024	Applicants told if they have passed the deliverability assessment. Projects assessed as Red in the deliverability assessment will not continue in the process.
August 2024	Submit Detailed Cost form (date to be confirmed).
From Autumn 2024 (TBC)	T1x HyNet Project Negotiation List published.

2.6 Important Note

Without prejudice to any other rights reserved in this Application Guidance, HMG reserves the right to discontinue discussions with an Applicant at any point. In particular, HMG may discontinue the application process with a particular Applicant where:

- the Applicant seeks to renegotiate elements of its application which would mean that it no longer satisfies HMG's eligibility criteria; or
- the Applicant seeks to renegotiate elements of its application which would have an adverse effect on HMG's assessment of its submission at any stage of this T1x HyNet Process; or
- the Applicant does not comply, or is not able to demonstrate during the negotiation stage that it will be able to comply, with the plans set out in its application and/or at any other stage of this T1x HyNet Process; or
- the Applicant does not comply with the requirements in relation to adherence to the principles and/or terms of the relevant CCUS Business Model at any stage of this T1x HyNet Process, where the Applicant has requested CCUS Business Model support; or
- HMG is unable to verify information contained within that Applicant's submissions which is relevant to the eligibility criteria, the Deliverability Assessment or HMG's assessment of the Project at any other stage of this T1x HyNet Process; or
- HMG has otherwise determined in accordance with the rules provided to Projects during any stage of this T1x HyNet Process, or subsequent negotiation stage that the relevant Project will not be offered financial support, where the Applicant has requested CCUS Business Model support; or
- HMG's discussions with the relevant T&S Co are delayed, aborted, or discontinued.

As regards the previous point, Applicants are advised that HMG may, in its absolute and sole discretion, choose to discontinue engagement with the HyNet T&S Co and any associated capture Projects at any time. However, examples of the circumstances in which HMG envisages exercising such discretion include, but are not limited to, HMG becoming aware that:

- the Track-1 cluster is no longer deliverable within the necessary timeframes. Reasons for this conclusion might include discovery of a severe technical or commercial flaw which significantly impedes the deliverability of the cluster; or

- some or all of the benefits described in that Track-1 cluster's submission are unattainable – for example if cost projections substantially increase, or if projected CO_2 capture volumes fall; or
- HMG affordability envelopes are not sufficient to support the delivery of a Track-1 Cluster Plan within the Track-1 timescales.

Ultimately, the decision on whether to alter or cancel the T1x HyNet Process will be discretionary and will sit with ministers and all decisions remain subject to matters including, but not limited to, the passage of necessary legislation, development of the overall regulatory framework, compliance with applicable subsidy control requirements, government affordability envelopes and value for money and balance sheet considerations.

Applicants should also note that being invited to participate in any stage of this T1x HyNet Process does not mean that support will be offered or that access to the HyNet T&S Network will be enabled. The Secretary of State reserves the right to cancel or amend this T1x HyNet Process, including any envisaged stage and any document issued pursuant to it, at any point and for any reason with no liability on her part. In particular, the Secretary of State is not liable for any costs resulting from any amendment or cancellation of, or delay to, the process, nor for any costs resulting from an applicant expressing an interest in this T1x HyNet Process, preparing a submission in this T1x HyNet Process, or discussing or negotiating any proposed support mechanisms.

The proposed terms of any support which may be offered to any Project following this T1x HyNet Process, including the form of the Business Models, are not final and remain subject to further development by HMG in consultation with relevant regulators and the Devolved Administrations, including in the light of the development and Parliamentary approval of any necessary legislative amendments, and completion of necessary contractual documentation in a way which is considered consistent with subsidy control principles.

It is expected that details of support offered to Projects, with the exception of commercially sensitive information, may be published following the completion of any negotiations and awards.

The process will primarily be executed by DESNZ and its technical, commercial, and legal advisors. Support and expertise will also be drawn from across Whitehall including HM Treasury, the Infrastructure Project Authority (IPA) and UK Government Investments (UKGI) as well as from its various Partner Organisations including: Ofgem, Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) and the Oil and Gas Authority (OGA).

DESNZ may also share information provided by Projects (including information within the applications or EOIs) with other parts of HMG for the purposes of policy development and facilitating coordination in certain areas if relevant, for example, CCUS supply chains. In addition, this information may be aggregated and anonymised for the purposes of engagement with external audiences.

Chapter 3: Further Considerations

This chapter outlines further considerations for the T1x HyNet Process related to: previous applications; users who do not need Business Model support; the role of the transport and storage company (T&S Co); the Economic Regulatory Regime (ERR); discontinuation considerations; and possible HMG support through the UK Infrastructure Bank (UKIB).

3.1 Previous Applications

Projects that were unsuccessful in Phase 2 of the Track-1 Cluster Sequencing Process will not be fast tracked or prioritised in the T1x HyNet Process and will, therefore, need to complete the application forms detailed in the previous chapter (Annexes A-D).

If Applicants would like supporting evidence from their previous application (information and/or documents contained within those applications) assessed they will need to resubmit it as part of their application to the T1x HyNet Process, following the process detailed in the Chapter 2.

3.2 Consideration of Information Outside a Project's Submission

HMG may, but is not required to, use publicly available information about the entities involved in the application during the assessment process for the purpose of cross-checking the information provided and seeking to redress any omissions. HMG reserves the right to take relevant information related to any entities listed in the application from other Project submissions into account when assessing a Project, and to contact such third parties to confirm information in the applications, for the purpose of cross-checking the information provided in the applications to ensure consistency and fairness of the assessment of Projects.

3.3 Projects Unsupported by CCUS Business Models

HMG welcomes applications to the T1x HyNet Process from Applicants who wish to connect their Project to the CO_2 T&S network without any subsidy support through a CCUS Business Model (though they may have received, or expect to receive, support relevant to their Project from other public sources). In this Application Guidance, we refer to such Projects as "Unsupported Projects" – a number of potential Applicants have indicated to DESNZ that they may be in this position.

A Project which needs any support through a CCUS Business Model, whether in relation to:

- the costs of establishing their Project,
- the costs of operating their Project during its lifetime,
- the ongoing costs of connection to the CO_2 T&S Network,
- the management of any Cross Chain risks,

- or any other form of support provided by a CCUS Business Model,

is **not** considered an Unsupported Project for the purposes of the T1x HyNet Process, even if it does not need **all** of the support available through the relevant CCUS Business Model.

More information on the specific CCUS Business Models can be found in Chapters 4-8, with links to additional documentation.

How Unsupported Projects Apply

To ensure that access to the CO_2 T&S Network is only available to Projects that deliver DESNZ's T1x HyNet Process objectives set out in Chapter 1, an Unsupported Project will still need to demonstrate that it meets the eligibility criteria for one of the relevant sectors set out in:

Chapter 4 – Power CCUS

Chapter 5 – Industrial Carbon Capture (ICC) and Waste ICC

Chapter 6 – Hydrogen

Chapter 7 – Greenhouse Gas Removals (GGRs)

Chapter 8 – Power Bioenergy with Carbon Capture and Storage (pBECCS)

and must provide the same information as required for a Project of that type. For the avoidance of doubt, this will also include the provision of the Cost and Economic Benefits data in Annexes B and D.

Applicants intending to apply as an Unsupported Project must indicate in their EOI form which sector they are applying under and confirm that they only require access to the CO_2 T&S network and do not require any CCUS Business Model support.

How Unsupported Projects Are Assessed

An Unsupported Project will be considered against the applicable eligibility criteria in the same way as any other Project.

An Unsupported Project that meets the applicable eligibility criteria will progress to the deliverability assessment. An Unsupported Project will be considered against the same deliverability assessment, and given a RAG rating in the same way, as other Projects, but should, in particular, set out clearly in its Project Plan in Annex A the alternative means by which it will finance its activities, including if it has received or expects to be in receipt of support (and, if so, the extent of that support) from any other public sources in connection with the Project.

If DESNZ determines as part of the deliverability assessment that an Unsupported Project would not – without receiving some or all of the support available under the applicable CCUS Business Model – be deliverable, it would receive a Red rating (e.g. because DESNZ determines that the other sources of support that the Applicant expects to receive would not be sufficient to meet the costs that the Project will likely incur) and DESNZ reserves the right to:

- Remove the Project from the T1x HyNet Process; or

- If DESNZ determines that the Project's deliverability rating would have – had it sought support through the applicable CCUS Business Model in its initial application – been Amber or Green, permit the Project to progress to the shortlisting and cluster integration stage (with the intention of considering whether such support could be provided).

DESNZ further reserves the right to require the Project to provide any information necessary to assist DESNZ in this regard.

Accommodating Unsupported Projects at later stages of the T1x HyNet Process, including within the shortlisting and cluster integration, and due diligence and negotiations stage, and accommodating such Projects within the HyNet Cluster following the conclusion of the T1x HyNet Process may require DESNZ to further develop the T1x HyNet Process and/or make changes to the wider regulatory framework, including to the Network Codes. DESNZ is also considering whether, notwithstanding that an Unsupported Project would not be party to a CCUS Business Model contract, any other contractual arrangements would need to be put in place to ensure delivery by Projects against the plans in their submission.

Additionally, if DESNZ considers that a Project which applied as an Unsupported Project may require some, or all, of the support offered through a CCUS Business Model, amendments to the CCUS Business Models (and/or the contracts which give effect to them) may be required – for example, the scope and nature of the support available through the CCUS Business Model may need to be reduced to reflect the Project's receipt of funding from other public sources. If such changes (or anything else required to accommodate an unsupported Project within the T1x HyNet Process) cannot be delivered in a way which DESNZ considers satisfactory (including in a way that is consistent with applicable subsidy control requirements, and delivers value for money for the consumer and the taxpayer), and consistent with the T1x objectives, DESNZ reserves the right to remove the Project from the T1x HyNet Process or otherwise pause or terminate any ongoing discussions or negotiations with it.

All Projects are reminded that any offer of HMG support remains subject to compliance with applicable subsidy control requirements, and the other matters set out elsewhere in this Application Guidance.

3.4 Non-Pipeline Transport

For this selection process, Projects requiring Non-Pipeline Transport (NPT) will not be eligible. Although HMG recognises the importance of NPT in meeting Net Zero, DESNZ believes greater clarity is needed on the commercial, technical and regulatory framework for NPT, including adapting existing CCUS Business Models; establishing the basis for risk allocation; and establishing the key NPT infrastructure needed to deliver credible NPT value chains. To support industry in their work and provide greater clarity on the government's position regarding NPT deployment, HMG will shortly publish its initial proposals on how it envisages NPT will be delivered in the UK. We anticipate NPT projects being eligible to apply for emitter selection processes that open from 2025 onwards, to help meet the stated ambitions. Further detail on this will be provided in due course.

3.5 T&S Co Involvement

We expect Applicants, in completing their application, to have engaged with the HyNet T&S Co to understand how feasibly they could connect to the network and any connection

requirements. During the deliverability assessment, DESNZ will work with the T&S Co, where appropriate, to understand how projects could be incorporated into the T&S network and understand any wider network impacts or issues.

For example, they may:

- advise DESNZ on how Projects may be incorporated into their T&S Networks; and/or
- share information with DESNZ across a range of issues, including the management of risks and costs.

DESNZ are working with the T&S Co to finalise the process for this engagement to ensure that it is consistent with the objectives of the T1x process and is done in a fair and open way.

3.6 Government Support via the UK Infrastructure Bank

DESNZ has been working with the UK Infrastructure Bank (UKIB)[4], an HMG owned policy bank with a mission to partner with the private and public sectors to increase infrastructure investment across the United Kingdom. In September 2023, the bank published a series of strategy updates on how it will tackle financing problems in different sectors, including CCUS, over the next 12-24 months to help amplify HMG policy[5]. In its unique position between market and HMG, UKIB can play a leading role in overcoming barriers to investment. DESNZ encourages all potential Applicants to consider discussing their financing needs with UKIB alongside discussions with other sources of capital.

If an Applicant would like to discuss potential UKIB funding, please email projects@ukib.org.uk. Assessment of Project proposals for UKIB funding will be considered independently through UKIB's investment processes and any offer of funding will be subject to completion of satisfactory due diligence, compliance with applicable subsidy control requirements and legal documentation.

The information contained in this Application Guidance relating to financing opportunities with the UKIB may be considered a financial promotion.

This Application Guidance is solely intended for, made to or directed at high net worth companies, investment professionals or any other persons to whom this communication may lawfully be communicated to within the UK (as per Article 49 of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 ("FPO").

The content of this document has not been approved by an authorised person within the meaning of the Financial Services and Markets Act 2000 (FSMA").

Recipients of this document should obtain independent advice as considered appropriate by the recipient in relation to any financing opportunities referred to in this communication.

[4] UK Infrastructure Bank Limited (UKIB) is not a banking institution and does not operate as such. UKIB is exempt from the requirement to be authorised to do so under the Financial Services and Markets Act 2000 (Exemptions) Order 2001 and while UKIB may conduct regulated activities in the course of the provision of its services, UKIB is not authorised or regulated by the Prudential Regulation Authority (PRA) or the Financial Conduct Authority (FCA).

[5] https://www.ukib.org.uk/sites/default/files/2023-09/UKIB-Strategy-Update-CCUS.pdf

High Net Worth Companies

A high net worth company is one of the following: (i) a company which has, or is in a group with a company which has, at least 20 members and share capital or net assets of £500,000, or fewer than 20 members but share capital or net assets of £5m, or (ii) an unincorporated association or partnership with net assets of £5m, or (iii) a trust with cash and investments in accordance with Article 49 of the FPO of at least £10m.

Investment Professionals

The term investment professional is defined in Article 19 FPO and includes someone who is either: (i) an authorised person or exempt person within the meaning of the FSMA (provided the exempt person is exempt relation to the financing activities this communication refers to); or (ii) someone whose ordinary business activities involve that person in financing activities this communication refers to It also includes governments and local authorities in the UK or elsewhere.

3.7 The Enduring Economic Regulatory Regime

Part 1 of the Energy Act 2023[6] establishes a framework of economic licensing and regulation of carbon dioxide transport and storage activities, establishing Ofgem as the independent economic regulator and setting out Ofgem's statutory mandate, duties, and functions in relation to carbon dioxide transport and storage.

Subject to the successful completion of negotiations for Track-1 and the statutory licence award process, HyNet will be issued a transport and storage economic licence. After this has been issued, the Transport and Storage company will be operating under the regulatory regime enshrined in the Energy Act 2023 and subject to the conditions of the economic licence granted under the provisions of the Act which will be regulated by Ofgem.

As part of the T1x HyNet Process, HMG are working with Ofgem to refine the process to ensure a smooth transition to the new regulatory regime while the selection process for HyNet is ongoing.

Chapter 4: Power CCUS

4.1 Support Package

Where support is required, Projects that are selected following successful assessment and negotiations are expected to receive a Dispatchable Power Agreement (DPA), which is proposed to be funded through the Electricity Supplier Obligation. For further details as to the design of the Power CCUS Business Model[7] please refer to the Business Model updates[8]. Applicants should familiarise themselves with the DPA and the contractual requirements that

[6] Energy Act 2023 here: https://bills.parliament.uk/bills/3311
[7] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1117539/dpa-consultation-government-response.pdf
[8] https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models#full-publication-update-history

need to be fulfilled. However, it is important to note that we may make some changes to the DPA to clarify policy positions and would engage with industry on these in due course.

Participating in any stage of this T1x HyNet Process, including the due diligence and negotiation stage, does not mean a DPA will be offered or access to the T&S Network enabled. Any decision to offer support or select a project to access the T&S Network is discretionary and would remain always subject to matters including, but not limited to, the passage of necessary legislation, development of the overall regulatory framework, compliance with applicable subsidy control requirements, HMG affordability envelopes, HMG being satisfied that the Project resents VfM for the consumer and the taxpayer, consideration of any balance sheet implications, all relevant statutory and other consents being obtained, and the successful completion of any due diligence and negotiations.

DESNZ reserves the right to pause or terminate negotiations at any time. More information about the due diligence and negotiations stage is set out in Chapter 9.

If a Power CCUS Project does not require any support provided by this Business Model and only requires access to the transport and storage (T&S) network, then please refer to 'Projects Unsupported by CCUS Business Models' in Chapter 3 for more details, and the eligibility and assessment criteria set out below.

4.2 Eligibility Criteria

This section includes the proposed eligibility criteria that all Applicants must meet in order to progress to the deliverability assessment.

Table 5 – Power CCUS Central Eligibility Criteria

Central Eligibility Criteria	Description
Applicant	The Applicant must be incorporated and registered in the UK.
Transport and Storage (T&S) Connection	Must be able to demonstrate direct, onshore, pipeline access to the HyNet T&S Network, with no intermediate non-pipeline transportation of CO_2. However, we recognise the potential contribution that Projects connected through non-pipeline transportation (NPT) could make to our decarbonisation ambitions and will continue to monitor whether NPT can be supported in any further expansion.
Commercial Operation Date (COD)	Must be able to be operational* no later than the end of December 2030. This criterion has been set to align with HMG's ambition to capture 20-30MtCO_2 per year across the economy by 2030.

*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).

Note that similar contractual arrangements and/or performance requirements may need to be put in place for Unsupported Projects to ensure their delivery against the plans in their submission.

The eligibility criteria set out in the individual capture technology sections (i.e. sector specific eligibility criteria) have been specifically developed for this CCUS Track-1 Expansion (T1x) HyNet Process. Only those Applicants that meet the relevant sector eligibility criteria will be evaluated further and be capable of progressing to the Deliverability Assessment.

Power CCUS

In addition to the central eligibility criteria listed in above table, Power CCUS Applicants must also satisfy the Power CCUS specific eligibility criteria listed in the table below.

Table 6 – Power CCUS Specific Eligibility Criteria

Power CCUS Eligibility Criteria	Detail
Location	Projects are required to be located onshore in Great Britain to ensure that they are compliant with the technical and commercial parameters of the DPA. Projects in Northern Ireland are not eligible for support in this T1x HyNet Process because electricity policy is devolved, and Northern Ireland has a separate electricity market from Great Britain.
Technology / Configurations	The Power CCUS plant must be a thermal generation with natural gas as the primary fuel input. The Power CCUS plant could be: • 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). The Power CCUS plant must be one of the following technology types:

<table>
<tr><td></td><td>• 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.

The DPA does not set out a specific threshold for electricity and heat outputs. Instead, Projects will be assessed on the basis of their electricity output, as determined by the Net Dependable Capacity (NDC) which does not include heat output, or electricity output that is not provided to the national transmission or regional distribution networks (e.g. private wire output).</td></tr>
<tr><td>Minimum Capture Rate</td><td>The Project must be designed to achieve at least 90% capture rate.

This capture rate percentage is the designed annual average and therefore includes periods of 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 should be calculated by using:

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

<table><tr><td>Term</td><td>Definition</td></tr><tr><td>CO_2exp</td><td>Total projected annual flow of CO_2 into the T&S Network</td></tr><tr><td>CO_2gen</td><td>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).</td></tr></table></td></tr>
</table>

	This information should be confirmed within the Heat and Material Balance or Process Basis of Design of the plant, which should be provided as part of the application.
Minimum Output	Must be able to generate and export at least 100 megawatts of low-carbon electricity (100 MWe) to the electricity grid. We are aiming to bring forward commercial scale power CCUS plants that can make a significant contribution to decarbonising the electricity system.
Financing	Must demonstrate that they will have the appropriate financial support to become operational. Applicants must show information about their financing plan and the status of their discussions with the financiers. HMG recognises the support offered will likely be conditional upon the outcome of negotiations.
Grid Connection Date	Power CCUS Projects should demonstrate their ability to connect to the grid by the end of December 2030, in the form of a firm connection offer or a grid connection queue position that will allow connection by 2030. If grid connection queue position is indicating a post-2030 position, Applicants should demonstrate a credible strategy is in place to bring this date forward to 2030.

4.3 Deliverability Assessment

The deliverability assessment will consider the Applicant's suitability to meet the strategic and technical requirements of the power CCUS programme. It will consider Project's capability to successfully provide dispatchable, low-carbon mid-merit power to the electricity system in line with the intentions of the dispatchable power agreement and be commercially operational by the end of 2030. It will also consider the necessary CO_2 transport and storage infrastructure.

DESNZ will assign a deliverability rating based on HMG's confidence that the Project can credibly be commercially operational and capably delivered by the end of 2030.

This assessment will consider the:

- Credibility of the presented Project schedule,
- Organisational and technical maturity of the Project,
- The Project's risk management approach,
- The financial health of the organisation executing the Project,
- The viability of the T&S connection, and
- The ability of the Project to connect to the electricity system and the gas grid.

Evidence

In assessing against this criterion, Applicants will be credited for providing clear and credible evidence of the following in particular:

- A description of the Project, including but not limited to process description(s), CO_2 capture quantities anticipated; CO_2 capture rate, energy efficiency, any associated emissions, operational life, and supply chain engagement.
- A description of how the Project maximises value to the electricity system, including locational considerations such as network constraints.
- Ability of Project organisations to access the proper level of resource and capability necessary to deliver the Project. Specifically, the following may be taken as evidence of this:
    - Key contracts in place with core suppliers – or, at a minimum, meaningful engagement with – prospective suppliers.
    - Evidence of engagement with technology licensors.
    - Demonstration of the Applicant organisation's competence to manage and coordinate a Project of this scale and complexity.
    - Assessment of capability and capacity of supply chains to deliver required materials, goods, and skills.
- An integrated Project schedule, fully logic-linked, that incorporates activity durations which are judged to be within reason, for example in comparison to similar activities undertaken on other Projects and taking into account any applicable processes, such as acquiring any necessary planning permissions or for procuring suppliers. The critical path and relevant lead times should be clearly identified with float incorporated as required.
- Progress to date against the stated Project schedule, with documentation and engineering information provided to demonstrate that the capture Project is progressing to plan.
- Progress in applying for and/or securing grid connection agreements for the electricity and gas grids; if not yet secured, this should be properly accounted for in the Project schedule.
- Progress in applying for and/or securing any planning consents and environmental permits; if not yet secured, this should be properly accounted for in the Project schedule. Accurate identification of the critical planning and consent stages, including planning consents, environmental permitting and abstraction licensing, with these properly accounted for in the Project schedule.
- Detailed registers in place to accurately identify key risks, with mitigations populated. The Project should demonstrate where mitigations are already in place and present a clear implementation plan where they are not.
- Financing arrangements and plans for progressing the Project and the status of key commercial agreements that will be needed to realise the Project, and for Applicants applying as Unsupported Projects, demonstration that alternative sources of support

(from public sources or otherwise) will be sufficient to give DESNZ confidence in the Project's deliverability and, in particular, its ability to meet those costs / liabilities associated with the Project that might otherwise be supported through the DPA. The assessment will seek to determine the credibility of the financing plans and schedules, how funding gaps are settled and if this is in line with the Project's requirements.

- Business plans for the organisations involved and details of how the Project fits with each individual organisation/company's overall strategic ambition as well as information relating to financial health of each individual organisation/company. This information must be supported by the Financial Statement from (Annex C).
- A description of the proposed connection between the Project and the T&S network, including but not limited to battery limits of the Project; the intended interface point; any intermediate pipework or infrastructure required and how the Project will meet the required specifications for the CO_2 entering the system.
- Demonstration that the Project understands the suitability of the store and transport network to accommodate intermittent CO_2 flows to enable dispatchable operation. Evidence of engagement, and any agreements in place, with the relevant T&S Co should also be described and provided.

Rating

In light of the responses and supporting evidence provided (and DESNZ reserves the right to, in its absolute discretion, request clarification or further information from Applicants on any aspect of their submission, including with respect to technical, legal, financial and/or commercial matters), assessors will assign a final rating to the Project by reviewing the deliverability assessment in aggregate, considering all information provided by the Project as well as its credibility. The rating categories for this criterion are defined as follows:

Table 7 – Power CCUS Deliverability Rating

Rating	Description
Red (R)	Evidence and responses provided in relation to one or more relevant questions are missing or incomplete. Little to no confidence in the ability of the Project to be operational by December 2030, or in its ability to deliver more generally[9] or in the operability of the proposed T&S Connection.
Amber (A)	All relevant questions are fully answered (i.e. no missing answers), and a reasonable level of supporting evidence is provided. Responses and supporting information give a reasonable level of confidence in the ability of the Project to deploy by December 2030, and in its ability to deliver more generally, and in the operability of the proposed T&S connection.

[9] While delivery assumptions might be more uncertain for less mature Projects (e.g. those at pre-FEED stage), it is expected that they may be in a position to receive a score above a RAG rating of Red provided that sufficient evidence and responses are provided in the Project Plan and uncertainties are adequately reflected in the submitted risk registers, costs, Projects schedule, emissions reduction and other contingencies.

	However, there may be reservations regarding the credibility of some supporting information, or the Project's capability in certain delivery areas.
Green (G)	Comprehensive responses given to all relevant questions, with clear and credible evidence provided to demonstrate delivery capability. Responses and supporting evidence give a high degree of confidence in the ability of the Project to deploy by December 2030, and in its ability to deliver more generally, and the operability of the proposed T&S connection.

Projects rated Amber and Green will progress into the shortlisting and cluster integration stage (please refer to Chapter 9 for more details). Projects rated Red will not progress further in this T1x HyNet Process.

4.4 Cost and Economic Benefits

Initial Cost Information Collection

When submitting their application, all Applicants will be required to provide initial data on the expected costs of their proposed Project. Providing this data is mandatory – those that fail to provide cost data by the end of the application window will not be considered to have submitted a valid application and will not be considered further in the process.

This data will not be used as an assessment criterion during the eligibility and deliverability assessments. However, this initial cost data will be factored into the cluster-wide considerations at the shortlisting and cluster integration stage to inform our decision making, alongside other criteria (see Chapter 9). This data will also be helpful to inform internal HMG modelling and to understand the cost maturity of each Project. We acknowledge that cost estimates will be at differing levels of maturity for each Project at this stage, but all effort should be made to provide as accurate as possible cost information during the application stage.

Applicants will need to complete an Initial Cost Information form (Annex B), which includes providing details of DevEx, CapEx (with and without contingency) and OpEx (fixed and variable) throughout all phases of the Project lifespan, and which fiscal year it falls within. Power CCUS projects seeking support under a Dispatchable Power Agreement will also need to provide their expected Availability Payment Rates (APRi). Cost data should be provided in real rather than nominal prices. Real prices exclude the impact inflation has on prices over time, whereas nominal prices refer to the absolute money amount in each year. Projects should specify the base year their cost data relates to. This should be the year the cost estimate was received or created.

Detailed Cost Data Collection: Summer 2024

Applicants whose proposed Project passes the eligibility check and the minimum deliverability threshold, will be required to provide updated and more detailed cost data, expected by summer 2024. To give Applicants time to develop this detailed cost information, Projects that pass eligibility will be given a deadline to provide this information, noting that they will still need to meet the deliverability threshold to be able to submit this detailed data. This data is likely to go through a series of assurance checks to ensure the data is accurate and valid. This data,

including its accuracy and level of maturity, will be used to inform HMG's value for money (VfM) analysis ahead of finalising which Projects will go through to due diligence and negotiations. More information on this stage of the process is expected to be shared alongside outcomes of the eligibility check in spring 2024.

Other Cost Considerations: Network Costs

The cost impact on the CO_2 T&S network, such as T&S extension costs, will also be factored into the wider shortlisting and cluster integration process. This will use information provided from the T&S Cos, and assured by HMG, to understand how a Project or combination of Projects impact the overall costs of a cluster and may therefore impact the cluster VfM. More information on the role of the T&S Co is set out in Chapter 3.

Power Projects Specific Cost Considerations: APRi Level

The Availability Payment Rate (APRi), measured in £/MW/Settlement unit, is the term which defines the size of the Availability Payment that will be made to the Project, as adjusted by the net dependable capacity, availability of power generation and the capture rate of the Project.

For power Projects, Applicants are required to submit an APRi estimate reflective of the current status of the Project, which should be expressed as the £/MW/Settlement Unit. This is the APRi that they would hope to receive if they were awarded a DPA. Projects should provide a detailed breakdown of the elements they have considered to develop their APRi estimate, and the assumptions and calculations that fed into their estimate.

To calculate their APRi estimates, Projects should use the information published to date on the Availability Payment, including in our DPA Business Model updates.

The final APRi for a Project will be agreed as part of the negotiation process between that Project and the government if it passes the assessment stage.

When determining the value of the APRi submitted for assessment, some of the elements Projects may wish to consider include:

- The anticipated costs associated with the Project, in particular its DevEx, CapEx and fixed OpEx.
- The confidence interval associated with these cost estimates.
- The anticipated weighted average cost of capital for the Project and assumptions as to how the Project will be financed.
- The average capture rate the Project will operate at in market conditions, including assumptions for reductions in capture rate while starting up and shutting down operations due to market conditions.
- The anticipated availability of low carbon generation, which is the percentage of time the Project would anticipate being available to dispatch power across the DPA term length, including assumptions for generation outages, derating events and shutdowns for maintenance.
- Projections for market revenues and other sources of income for the Project, including those projected post-DPA term, and assumptions that are used to derive these projections.

Economic Benefits

See Chapter 2 for details.

Chapter 5: Industrial Carbon Capture (ICC) and Waste ICC

5.1 Support Package

Where support is required, Projects that are selected following successful assessment and negotiations are expected to receive support through an ICC contract or Waste ICC contract, funded through the Industrial Decarbonisation and Hydrogen Revenue Support (IDHRS) scheme. Subject, in particular, to affordability and subsidy control considerations we are considering if support could be given by an element of capital co-funding, where this would improve value for money (VfM).

Applicants can submit one application for the T1x HyNet Process to be considered for Business Model support, comprising revenue support through the ICC or Waste ICC contracts and, if applicable, CapEx co-funding[10].

Participating in any stage of this T1x HyNet Process, including the due diligence and negotiation stage does not mean an ICC or Waste ICC Contract, or any capital co-funding will be offered, or access to the T&S Network enabled. Any decision to offer support or select a Project to access the T&S Network is discretionary and would remain always subject to matters including, but not limited to, the passage of necessary legislation, development of the overall regulatory framework, compliance with applicable subsidy control requirements, HMG affordability envelopes, HMG being satisfied that the Project resents VfM for the consumer and the taxpayer, consideration of any balance sheet implications, all relevant statutory and other consents being obtained, and successful completion of any due diligence and negotiations.

DESNZ reserves the right to pause or terminate negotiations at any time. More information about the due diligence and negotiations stage is set out in Chapter 9.

Further details on the ICC Business Model can be found in the previous ICC Business Model publications.[11] Applicants should familiarise themselves with the ICC and Waste ICC Contracts and the contractual requirements that need to be fulfilled. However, it is important to note that we may make some changes to these to reflect policy positions and would engage with industry on these in due course.

Support may need to be adjusted in consideration of other revenues a Project may be in receipt of. Revenues as a result of any support scheme[12] or subsidy may be factored into any support provided through the ICC or Waste ICC Business Model. DESNZ are considering how business model support may be adjusted and aim to publish a high-level update on proposed changes early next year.

[10] Capture-as-a-service (CaaS) Projects will be assessed as one single Project. Section 5.2 provides further detail on how we intend to evaluate CaaS group Projects.
[11] The ICC business model publications can be found at: https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models
[12] An example of this could be if the Sustainable Aviation Fuel (SAF) Mandate is designed to provide support to CCUS, a waste management Project producing SAF ('Waste-to-SAF') may receive adjusted support from the Waste ICC Business Model. For more details on the SAF Mandate please see https://www.gov.uk/government/consultations/pathway-to-net-zero-aviation-developing-the-uk-sustainable-aviation-fuel-mandate

If a Project does not require any support provided by this Business Model and only requires access to the transport and storage (T&S) network, then please refer to 'Projects Unsupported by CCUS Business Models' in Chapter 3 for more details, and the eligibility and assessment criteria set out below.

5.2 CaaS Submission Structure

Each CaaS[13] Project must identify a CaaS Group Lead which should be the representative for the CaaS Group, responsible for submitting the Industrial Capture Project Plan and associated annexes. We expect the CaaS Group Lead to be the CaaSCo (Capture as a Service provider) and submit on behalf of all entities, including the emitters, in the CaaS Group.

The CaaS Group Lead should submit only one submission to DESNZ on behalf of the Projects in the group, including completed copies of each of the relevant submission forms detailed earlier in Chapter 2.

CaaS Group Leads submitting on behalf of the CaaS Group are reminded that care must be taken to ensure that any commercial information passing between the CaaS Group Lead and CaaS Group entities relates solely to the preparation of a T1x Hynet application and any other information provided by one party to the other must be provided on a strictly 'need to know' basis. For reasons of commercial sensitivity, CaaS Group entities can submit information separately from the main submission for defined sections of the Industrial Capture Project Plan, as outlined in Annex A2. Further detail on information sharing-arrangements and anti-competitive behaviour considerations is detailed in Chapter 2.

The Industrial Capture Project Plan will set out what additional information is required from the CaaSCo in order to assess the CaaS Group as a whole. All CaaS Group entities will be individually assessed according to the relevant criteria. The CaaS Group will receive a single RAG rating as detailed later in this chapter in section 5.4.

It is the responsibility of all CaaS Group entities to ensure there is sufficient information across any and all submissions made to fulfil the requirements of the assessment.

The information provided should not duplicate emissions, costs or benefits to reduce the risk of assessors double counting evidence. The CaaS Group Lead should state where evidence is attributed to an emitter in the CaaS Group or where evidence represents the CaaS Group as a whole. Requests for clarification may be made to facilitate interpretation of the bid(s). If assessors interpret or infer duplication of information, DESNZ may contact the CaaS Group Lead to clarify the evidence that has been submitted.

Individual emitters applying in a CaaS Group will only be considered as part of the entire CaaS Group. A submission received from an individual emitter in addition to its submission as part of the CaaS Group will not be considered. All emitters associated with a CaaS Group must individually be an eligible industrial capture Project. There will be no recourse option to reconfigure the CaaS Group if one of the CaaS Group entities demonstrates ineligibility, or failure to achieve minimum deliverability rating. In this scenario the CaaS Group will not be

[13] A company may offer 'Capture as a Service' (CaaS) on behalf of an industrial emitter(s) to capture the emissions, please see the May 2021 and October 2021 ICC Business Model publications for further details.

further assessed. DESNZ will not reconsider the CaaS Group with the remaining industrial emitters or accept additional or re-submissions of industrial emitters to that CaaS Group.

For a CaaS Group to be eligible for the T1x HyNet Process, the application must demonstrate that:

- emitters connect to the CaaS Co. by pipeline, with no intermediate non-pipeline transport; and
- all CO_2 pipeline transport prior to the T&S delivery point falls entirely outside the prohibition on carrying out carbon storage activities under Part 1 of the Energy Act 2023, by demonstrating that all CO_2 pipeline transport prior to the T&S delivery point[14] does not fall within this definition of a licensable activity[15].

Note on exemptions: while DESNZ has recently concluded a Call for Evidence on exemptions from the requirement to hold a carbon dioxide transport and storage licence, exemptions policy remains subject to development and the need for a licence exemption cannot be relied upon at this stage for the purposes of Track-1 expansion.

The number of CaaS Group entities may mean that an increase to the word count limit is needed to ensure quality submissions. Further details on CaaS word count adjustments can be found in the Industrial Capture Project Plan (Annex A2).

5.3 Eligibility Criteria

This section includes the proposed eligibility criteria that ICC and Waste ICC Applicants must meet to progress to the assessment stage. Please refer to Annex A2 for the justification required for each eligibility criteria.

Table 8 – ICC & Waste ICC Central Eligibility Criteria

Central Eligibility Criteria	Description
Applicant	The Applicant must be incorporated and registered in the UK.
Transport and Storage Connection	Must be able to demonstrate direct, onshore, pipeline access to the HyNet T&S Network, with no intermediate non-pipeline transportation of CO_2. However, we recognise the potential contribution that Projects connected through non-pipeline transportation (NPT) could make to our decarbonisation ambitions and will continue to monitor whether NPT can be supported in any further expansion.

[14] T&S delivery point means the point(s) of connection of the Capture Plant to the T&S Network
[15] Providing a service of transporting CO_2 by a pipeline or system of pipes is classified as a licensable activity under section 2 of the Energy Act 2023.

Commercial Operation Date (COD)	Must be able to be operational* no later than the end of December 2030. This criterion has been set to align with HMG's ambition to capture 20-30MtCO_2 per year across the economy by 2030.

*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).

Note that similar contractual arrangements and/or performance requirements may need to be put in place for Unsupported Projects to ensure their delivery against the plans in their submission.

The eligibility criteria set out in the individual capture technology sections (sector eligibility criteria) have been specifically developed for this T1x HyNet Process. Only those Applicants that meet the relevant eligibility criteria will be evaluated further and be capable of being shortlisted to participate in the negotiation/due diligence stage.

5.3.1 Industrial Carbon Capture (ICC)

In addition to the central eligibility criteria listed in the central eligibility section, ICC Applicants, which include Waste ICC Applicants, must also satisfy the ICC specific eligibility criteria listed in the table below in respect to their Project. Further information on these criteria is set out in this section.

Capture as a Service (CaaS) Projects can be eligible for support. Specific eligibility criteria may apply to individual emitters, the CaaSCo or the CaaS group as a whole, as detailed below.

Table 9 – ICC & Waste ICC Specific Eligibility Criteria

ICC Eligibility Criteria	Detail
Location	Must be located onshore in the UK.
Industrial facility	Must meet the definition of an industrial facility.
CCUS technology	Must deploy an eligible CCUS technology.
Minimum capture rate	Must be designed to meet a minimum capture rate of at least 85%.

Industrial Sector specific criteria	Must meet specific eligibility criteria for Projects in the Oil and Gas, CCUS-Enabled Hydrogen, Waste Management and CHP industrial sectors only
Capture as a Service (CaaS)	CaaS Projects will be eligible for support. Eligibility criteria may apply to individual emitters, the CaaSCo or the CaaS Group as a whole. Emitters applying in a CaaS Group will only be considered as part of the entire CaaS Group. As was the case under Track-1, Business Model contracts would be entered into by each emitter within the CaaS Group.

Must meet the definition of an industrial facility

For the purpose of this criterion, an 'industrial facility' is defined as a:

- facility
- part of a facility (which can include an industrial process or collection of industrial process(es))

which manufactures products, treats materials and/or provides services for use in or as part of an industrial process or collection of industrial process(es) and falls within one or more eligible industrial sectors, set out below.

Industrial sectors in scope of the ICC sector are Combined Heat and Power (CHP) and those sectors that fall within the Standard Industry Classification (SIC) codes 5 to 33 and 38 (excluding 24.46).

This includes (but is not limited to) oil and gas (such as crude oil processing, natural gas processing, refining), iron and steel, cement, lime, chemicals (such as fertilisers and hydrogen), waste management, food and drink, non-metallic minerals, paper and pulp, and nonferrous metals.

Projects which could reasonably be classified under the eligible SIC codes but are registered with a non-eligible SIC code may also be eligible and can provide evidence for eligibility during the application process[16].

However, Applicants should note that there may be cases where a Project that falls within an eligible industrial sector is out of scope owing to the application of industrial sector-specific criteria. These are:

- Offshore operations for oil and gas (such as the extraction of oil and gas from offshore platforms);

[16] We reserve the right to determine if a Project could reasonably be classified under an eligible SIC code.

- New build CCUS-enabled hydrogen production facilities (see Chapter 5 for details on eligibility for the hydrogen production sector); and
- CHP and waste management Projects that do not meet the industrial sector-specific criteria set out below.

Please refer to the industrial sector-specific criteria set out further below in this Chapter for more details of the specific eligibility criteria for oil and gas, CCUS-enabled hydrogen, waste management and CHP Projects.

For CaaS Groups, each emitter within the Group must all individually meet the definition of an industrial facility as set out above. All emissions to be captured by a capture plant within a Capture as a Service Company (CaaSCo) Project must be generated by an eligible industrial facility.

Must Deploy an Eligible CCUS Technology

CCUS Technologies in Scope

With the exception of new build CCUS-enabled hydrogen production, both existing industrial facilities retrofitting carbon capture and new industrial facilities built with carbon capture technology intrinsic to the process are in scope. In the case of new industrial facilities, only costs related to the capture element of a new facility will be eligible to receive ICC Business Model support.

Full-scale carbon capture and modular carbon capture, and all carbon capture configurations (including pre- and post-combustion, oxyfuel and emerging technologies), are in scope.

CCUS Technologies Out of Scope

Industrial carbon capture and usage (CCU) Projects are out of scope. Projects that are looking to implement a combination of CCS and CCU are within scope. However, these Projects will only be eligible for ICC Business Model support in relation to the captured CO_2 emissions directed to the T&S Network and will not be supported for captured CO_2 directed to utilisation.

Projects that utilise Direct Air Carbon Capture and Storage (DACCS) are out of scope for the ICC sector.

A Project in receipt of ICC Business Model support will not be eligible to apply for the Greenhouse Gas Removal (GGR) Business Model support over the duration of the ICC Contract term. This is because, although the ICC Business Model is not intended to provide supplementary support to incentivise negative emissions, if any negative emissions occur as a consequence of utilising sustainable biomass feedstocks in that installation (e.g. biogenic waste in an Energy from Waste plant), then support for the costs of the capture plant would already have been provided. More information on next steps for GGR Projects can be found in Chapter 7.

For CaaS Groups, this criterion regarding CCUS technology deployment eligibility only applies specifically to the CaaSCo.

Minimum Capture Rate

The CO_2 capture rate refers to the technology efficiency of the capture plant and is defined as the percentage of CO_2 emissions captured from the specific emissions stream(s) intended to be routed to the capture plant (upstream of any capture plant bypass).

Projects must be able to demonstrate the ability to meet a minimum estimated CO_2 capture rate of at least 85%. In the event that the Project does not require a new build CO_2 separation plant (i.e. pre-combustion capture is an integral part of the process plant design), the CO_2 capture rate will be defined based on the CO_2 content of streams that are inputted to what is considered to be the capture plant[17], as defined by the ICC and Waste ICC Contracts, (which may, for example, consist of CO_2 conditioning, compression and metering where pre-combustion capture is already integral to the process plant). Higher capture rates will be viewed more favourably during the shortlisting and cluster integration process.

Although a minimum capture rate of 85% is required to meet the ICC eligibility criteria, to receive environmental permits from the Environment Agency (EA), Projects will be required to demonstrate that they intend to meet the EA's Best Available Techniques (BAT) or provide rationale explaining why BAT cannot be achieved. BAT for post-combustion capture (PCC) from the flue gases of power and CHP plants fuelled by natural gas and biomass currently states Projects should aim to achieve a design CO_2 capture rate of at least 95%, although operationally this can vary, up or down. The EA are currently preparing guidance for Industrial CCUS.

For CaaS Groups, this criterion only applies specifically to the CaaSCo.

Must meet specific eligibility criteria for Projects in the Oil and Gas, CCUS-Enabled Hydrogen, and CHP sectors only

Oil and Gas

Onshore operations for oil and gas are in scope for the ICC sector. This refers to up-, mid- and downstream onshore operations in the oil and gas sector, such as crude oil processing, the refining of waste oils and natural gas processing and refining.

Offshore operations in the oil and gas sector, such as the extraction of oil and gas from offshore platforms, are not eligible to apply under the ICC sector.

CCUS-enabled Hydrogen

Retrofitting CCUS in existing 'grey' hydrogen facilities[18] is in scope of the ICC sector. This is because hydrogen production in existing facilities has already proven to be commercially viable and, if needed, ICC Business Model support will only cover the costs of retrofitting carbon capture to an existing hydrogen production facility. Therefore, existing hydrogen facilities retrofitting CCUS will only be able to apply under the ICC sector and will be ineligible to apply under the hydrogen production sector.

New build CCUS-enabled hydrogen production facilities are out of scope of the ICC sector but may be eligible to apply to T1x HyNet via the hydrogen production sector. See Chapter 6, for further details on hydrogen production eligibility. For the purpose of this document, HMG is defining 'New-Build CCS-enabled hydrogen production plant" as a new facility or part of a facility built for the specific purpose of producing hydrogen with CCS, where this requires the

[17] The capture plant as defined in the ICC/ Waste ICC contract is the part of the installation which is designed, developed, constructed, commissioned, operated and maintained for the specific purpose of capturing, conditioning, monitoring, metering and exporting CO_2 produced by the Industrial Installation (including all necessary interfaces and any other facilities or equipment required up to the CO_2 T&S Network Delivery Point(s)) which complies with the Delivery CO_2 Quality Standards and includes all associated infrastructure required to integrate such installation within the Project.

18 The production of hydrogen from the reformation of natural gas. This does not include any processes that produce hydrogen as a by-product or intermediate product.

installation of new hydrogen production technology. This includes full new build facilities and existing facilities looking to add additional hydrogen capacity by the installing, or by the installation of new hydrogen production technology. For existing hydrogen facilities looking to add additional hydrogen capacity by extending, refurbishing or debottlenecking an existing hydrogen production technology (e.g., an existing reformer), only facilities seeking to upgrade existing technology and install CCS are in scope for the ICC sector. Under the ICC Business Model, only costs related to the CCS installation are eligible for support. Projects with industrial processes that produce hydrogen as a by-product or intermediate product will be considered eligible if they meet the wider eligibility criteria conditions and industrial sector-specific criteria (if applicable) set out in the rest of the eligibility criteria section and will not be treated as a new build CCUS-enabled hydrogen Project.

Projects will not be required to meet the UK Low Carbon Hydrogen Standard to apply under the ICC sector.

Combined Heat and Power

In order for an existing or proposed industrial CHP facility to be eligible, the facility must meet the general eligibility criteria for ICC sector set out above. In certain cases, it must also provide at least 70% of its energy output[19] to industrial facilities. The intention is for ICC Projects to only be eligible in circumstances in which the CHP facility (including where the CHP facility is owned by a different entity (i.e. a standalone CHP)) is primarily used by industrial facilities.

CHP-only Projects i.e., ICC Projects that are deploying CCUS and capturing emissions from a CHP facility only and not combining flue gas streams with other industrial process(es)[20], need to supply a minimum of 70% of its energy output to one or more industrial facilities[21] to be eligible to apply under the ICC sector.

CHP-included Projects, i.e., ICC Projects that are deploying CCUS to both a CHP facility, including a CHP facility providing power to the capture plant, and an industrial process(es) whereby the CHP facility's flue gas stream is combined with other industrial process(es)' streams, will not be subject to the 70% energy output criterion. Please note that, in such cases, a separate submission in respect of the CHP facility is not required, because the wider industrial facility with the CHP is considered a single Project. As such, the CHP facility should be included as part of the submission of the Project that its flue gas stream will be combined with and directed to the capture plant.

For CHP-included Projects, all emissions routed to the capture plant must arise from eligible industrial facilities. Projects looking to apply CCUS to a CHP facility as well as a non-industrial process(es) are out of scope of the ICC sector.

All CHP Projects (including where the CHP is combining flue gas streams with those from the wider industrial facility) will be required to hold a valid Combined Heat and Power Quality

[19] Energy output refers to the heat and electricity output. The heat and electricity outputs are not required to both individually meet the 70% threshold.
[20] Please note that this does not refer to the combination of multiple emitters' flue gas streams in a CaaS Group, but the combination of flue gas streams within the wider industrial facility.
[21] For the purpose of CHP only, we define an 'industrial facility' as a facility or part of a facility that is classified under SIC codes 5 to 33 (excluding 24.46). Capture plants that are solely capturing emissions from the CHP facility are also an eligible end-use of the energy output, but only where energy output from the CHP is also provided to other eligible industrial facilities.

Assurance (CHPQA)[22] certificate at the commencement of CCUS operations and every year for the duration of contract.

Please note that the industrial sector-specific eligibility criteria for CHP facilities do not apply to waste management facilities with a CHP facility attached. Please refer to the waste management eligibility criteria (section 5.3.2) for further details.

For CaaS Groups, each emitter within the Group must all individually meet these criteria, if applicable.

5.3.2 Waste Management

In order for a waste management facility to be eligible for the Waste ICC sector, the facility must meet the general eligibility criteria for the ICC sector set out above (section 5.3.1), and it must also:

- process an eligible waste feedstock;
- be classed as an eligible waste management technology; and
- be classed as 'energy recovery' (for specified waste management technology types).

Further details on these criteria are provided below.

For CaaS Groups, individual industrial capture Projects within the Group must all individually meet these criteria, if applicable.

Must process an eligible waste feedstock

Facilities must process at least one of the following feedstocks:

- Municipal Waste[23];
- Commercial and Industrial Waste[24];
- Clinical Waste[25]; and/or
- Hazardous Waste[26]

The feedstock used must be appropriate for use in the waste management facility type in line with the priority order of the Waste Hierarchy[27] and environmental permit expectations.

The project must plan to use a feedstock composition which will generate under 90% biogenic CO_2. We are considering whether or not the Business Model will include any contractual consequences if projects generate ≥ 90% biogenic CO_2.

If a project is planning to use a feedstock composition which will consistently produce ≥ 90% biogenic CO_2 then the project should apply under the Greenhouse Gas Removal (GGR) sector

[22] This criterion is subject to any potential future policy change on the CHPQA programme
[23] Household waste and waste of a similar composition from other sources
[24] Waste from commercial and industrial activities
[25] Waste produced from healthcare or similar activities
[26] Waste containing substances harmful to humans or the environment such as chemicals or asbestos: https://www.gov.uk/dispose-hazardous-waste
[27] The Waste Hierarchy can be viewed here: https://www.legislation.gov.uk/uksi/2011/988/contents/made

(see Chapter 7) instead of the Waste ICC sector (subject to meeting all other GGR sector criteria).

Must be classed as an eligible waste management technology

In order to be eligible under the Waste ICC sector, the facility must be classed as an eligible waste management technology. Eligible waste management technologies are:

- **Energy from Waste (EfW) Facilities:** Waste incineration or combustion with energy recovery in the form of heat and/or electricity. Existing facilities using these technologies with no form of energy recovery currently will be asked to set out credible plans for becoming energy recovery facilities (by the time of CCUS operations) to be eligible for support.
- **Advanced Thermal Treatment (ATT) or Advanced Conversion Technologies (ACT):** Using gasification or pyrolysis for the conversion of waste into either useful energy (i.e. electricity or heat), chemicals or fuel (excluding new build hydrogen production facilities[28]).
- **Hazardous Waste Incinerators (HWI):** The incineration of hazardous waste.

Types of waste technology not eligible for support include:

- Incineration or combustion of eligible waste without credible plans for energy recovery; and
- Advanced Biological Treatment (i.e. anaerobic digestion).

Must be classed as 'energy recovery' (for specified waste management technology types)

With the exception of HWIs[29] and chemical recycling facilities[30], only the waste management technologies in the 'Energy Recovery' category of the Waste Hierarchy will be eligible.

5.4 Deliverability Assessment

DESNZ will assign a deliverability rating based on HMG's confidence that the Project can credibly be commercially operational and capably delivered by the end of 2030.

This assessment will consider the:

- Credibility of the presented Project schedule,

[28] New build waste-to-hydrogen facilities should apply to the hydrogen sector within the Track-1 expansion process (Chapter 6). For the purpose of this document, HMG is defining 'New-Build CCS-enabled hydrogen production plant" as a new facility or part of a facility built for the specific purpose of producing hydrogen with CCS, where this requires the installation of new hydrogen production technology. This includes full new build facilities and existing facilities looking to add additional hydrogen capacity by the installing, or by the installation of new hydrogen production technology.

[29] Energy recovery from HWI facilities may present as a challenge due to a variety of reasons, such as the requirement for as much heat to be utilised for the process as possible, and therefore, these facilities are not required to have energy recovery to be eligible.

[30] Some ATT/ACT facilities may be classed as chemical/non-mechanical recycling, which is part of the higher priority 'Recycling' category of the Waste Hierarchy, therefore these facilities do not require energy recovery.

- Organisational and technical maturity of the Project,
- Project's risk management approach,
- Financial health of the organisation executing the Project, and
- Viability of the T&S connection.

Evidence

In assessing against this criterion, Applicants will be credited for providing clear and credible evidence of the following in particular:

- A description of the Project, including but not limited to process description(s); CO_2 capture quantities anticipated; CO_2 capture rate; energy efficiency, any associated emissions; operational life; and supply chain engagement.
- Ability of Project organisations to access the proper level of resource and capability necessary to deliver the Project. Specifically, the following may be taken as evidence of this:
    - Key contracts in place with core suppliers – or, at a minimum, meaningful engagement with – prospective suppliers.
    - Evidence of engagement with technology licensors.
    - Demonstration of the Project organisation's competence to manage and coordinate a Project of this scale and complexity.
    - Assessment of capability and capacity of supply chains to deliver required materials, goods, and skills.
- An integrated Project schedule, fully logic-linked, that incorporates activity durations which are judged to be within reason, for example in comparison to similar activities undertaken on other Projects and taking into account any applicable processes, such as acquiring any necessary planning permissions or for procuring suppliers. The critical path and relevant lead times should be clearly identified with float incorporated as required.
- Progress to date against the stated Project schedule, with documentation and engineering information provided to demonstrate that the capture Project is progressing to plan.
- Progress in applying for and/or securing any planning consents and environmental permits; if not yet secured, this should be properly accounted for in the Project schedule. Accurate identification of the critical planning and consent stages, including planning consents, environmental permitting and abstraction licensing, with these properly accounted for in the Project schedule.
- Detailed registers in place to accurately identify key risks, with mitigations populated. The Project should demonstrate where mitigations are already in place and present a clear implementation plan where they are not.
- Financing arrangements and plans for progressing the Project and the status of key commercial agreements needed to realise the Project, and for Applicants applying as

Unsupported Projects, demonstration that alternative sources of support (from public sources or otherwise) will be sufficient to give DESNZ confidence in the Project's deliverability and, in particular, its ability to meet those costs / liabilities associated with the Project that might otherwise be supported through an ICC Business Model. The assessment will seek to determine the credibility of the financing plans and schedules, how funding gaps are settled and if this is in line with the Project's requirements.

- Business plans for the organisations involved and details of how the Project fits with each individual organisation/company's overall strategic ambition as well as information relating to financial health of each individual organisation/company. This information must be supported by the Financial Statement Template (Annex C).
- A description of the proposed connection between the Project and the T&S network, including but not limited to battery limits of the Project; the intended interface point; any intermediate pipework or infrastructure required and how the Project will meet the required specifications for the CO_2 entering the system. Evidence of engagement, and any agreements in place, with the relevant T&S Co should also be described and provided.

Rating

In light of the responses and supporting evidence provided (and DESNZ reserves the right to, in its absolute discretion, request clarification or further information from Applicants on any aspect of their Submission, including with respect to technical, legal, financial and/or commercial matters), assessors will assign a final rating to the Project by reviewing the deliverability assessment in aggregate, considering all information provided by the Project as well as its credibility. The rating categories for this criterion are defined as follows:

Table 10 – ICC & Waste ICC Deliverability Rating

Rating	Description
Red (R)	Evidence and responses provided in relation to one or more relevant questions are missing or incomplete. Little to no confidence in the ability of the Project to deploy by December 2030, or in its ability to deliver more generally or in the operability of the proposed T&S Connection.
Amber (A)	All relevant questions are fully answered (i.e. no missing answers), and a reasonable level of supporting evidence is provided. Responses and supporting information give a reasonable level of confidence in the ability of the Project to deploy by December 2030, and in its ability to deliver more generally, and in the operability of the proposed T&S connection. However, there may be reservations regarding the credibility of some supporting information, or the Project's capability in certain delivery areas.
Green (G)	Comprehensive responses given to all relevant questions, with clear and credible evidence provided to demonstrate delivery capability.

	Responses and supporting evidence give a high degree of confidence in the ability of the Project to deploy by December 2030, and in its ability to deliver more generally, and the operability of the proposed T&S connection.

Projects rated Amber and Green will progress into the shortlisting and cluster integration stage (please refer to Chapter 9 for more details). Projects rated Red will not progress further in this T1x HyNet Process.

5.5 Cost and Economic Benefits

Initial Cost Information Collection

When submitting their application, all Applicants will be required to provide initial data on the expected costs of their proposed Project. Providing this data is mandatory – those that fail to provide cost data by the end of the application window will not be considered to have submitted a valid application and will not be considered further in the process.

This data will not be used as an assessment criterion during the eligibility and deliverability assessments. However, this initial cost data will be factored into the cluster-wide considerations at the shortlisting and cluster integration stage to inform our decision making, alongside other criteria (see Chapter 9). This data will also be helpful to inform internal HMG modelling and to understand the cost maturity of each Project. We acknowledge that cost estimates will be at differing levels of maturity for each Project at this stage, but all effort should be made to provide as accurate as possible cost information during the application stage.

Applicants will need to complete an Initial Cost Information form (Annex B), which includes providing details of DevEx, CapEx (with and without contingency) and OpEx (fixed and variable) throughout all phases of the Project lifespan, and which fiscal year it falls within. Cost data should be provided in real rather than nominal prices. Real prices exclude the impact inflation has on prices over time, whereas nominal prices refer to the absolute money amount in each year. Projects should specify the base year their cost data relates to. This should be the year the cost estimate was received or created.

Detailed Cost Data Collection: Summer 2024

Applicants whose proposed Project passes the eligibility check and the minimum deliverability threshold, will be required to provide updated and more detailed cost data, expected by summer 2024. To give Applicants time to develop this detailed cost information, Projects that pass eligibility will be given a deadline to provide this information, noting that they will still need to meet the deliverability threshold to be able to submit this detailed data. This data is likely to go through a series of assurance checks to ensure the data is accurate and valid. This data, including its accuracy and level of maturity, will be used to inform HMG's value for money (VfM) analysis ahead of finalising which Projects will go through to due diligence and negotiations. More information on this stage of the process is expected to be shared alongside outcomes of the eligibility check in spring 2024.

Other Cost Considerations: Network Costs

The cost impact on the CO_2 T&S network, such as T&S extension costs, will also be factored into the wider shortlisting and cluster integration process. This will use information provided from the T&S Cos, and assured by HMG, to understand how a Project or combination of Projects impact the overall costs of a cluster and may therefore impact the cluster VfM. More information on the role of the T&S Co is set out in Chapter 3.

Economic Benefits

See Chapter 2 for details.

Chapter 6: Hydrogen

6.1 Support Package

Where support is required, Projects that are selected following successful assessment and negotiations are expected to receive revenue support from the Industrial Decarbonisation and Hydrogen Revenue Support (IDHRS) scheme via the Hydrogen Production Business Model (HPBM). The HPBM will provide price support through a variable premium model, with volume support provided indirectly via a sliding scale approach. Support through the HPBM may include revenue support for limited hydrogen transport and storage (T&S). More specifically, this could include:

- The CapEx, but not OpEx, costs associated with limited hydrogen transport infrastructure, and
- The CapEx and/or OpEx costs associated with limited storage infrastructure.

As set out in the consultation response titled Hydrogen transport and storage infrastructure: minded-to positions published in August 2023[31], Government intends to introduce dedicated subsidy schemes for hydrogen transport and storage, and will finalise the design of transport and storage business models by 2025. Government has published Market Engagement documents for both the transport and storage business models alongside this document – the Market Engagement documents set out further details about the proposed allocation processes for each model and the timings for the first allocation round.

HMG published the draft Low Carbon Hydrogen Agreement (LCHA), the contract that underpins the HPBM, in August 2023[32]. The LCHA is a private law contract between a hydrogen production counterparty[33] and an eligible low carbon hydrogen producer. Applicants should familiarise themselves with the LCHA and the contractual requirements that need to be fulfilled. However, it is important to note that we may make some changes to the LCHA to reflect policy positions and would engage with industry on these in due course.

Subject to affordability and subsidy control considerations we are considering if support could include an element of capital co-funding, where this would improve VfM. Projects will submit one application for T1x HyNet Process selection to be considered for HP Business Model support, comprising revenue support through the LCHA and, if applicable, CapEx co-funding.

Participating in any stage of this T1x HyNet Process, including the due diligence and negotiation stage does not mean an LCHA, or any capital co-funding will be offered, or access to the T&S Network enabled. Any decision to offer support or select a Project to access the T&S Network is discretionary and would remain always subject to matters including, but not limited to, the passage of necessary legislation, development of the overall regulatory framework, compliance with applicable subsidy control requirements, HMG affordability envelopes, HMG being satisfied that the Project resents VfM for the consumer and the

[31] DESNZ (2023) Hydrogen transport and storage infrastructure: minded-to positions
[32] DESNZ (2023) Low Carbon Hydrogen Agreement
[33] Government anticipates that the Low Carbon Contracts Company (LCCC) will be the counterparty for the HPBM, subject to successful completion of administrative arrangements.

taxpayer, consideration of any balance sheet implications, all relevant statutory and other consents being obtained, and successful completion of any due diligence and negotiations.

DESNZ reserves the right to pause or terminate negotiations at any time. More information about the due diligence and negotiations stage is set out in Chapter 9.

HPBM support is available for non-CCS-enabled low carbon hydrogen Projects outside of the Cluster Sequencing Process, via the Hydrogen Allocation Rounds (HARs). To receive support via HARs Projects will be required to meet the specific eligibility and evaluation requirements of those rounds.

If a Project does not require any support provided by this Business Model and only requires access to the transport and storage (T&S) network, then please refer to 'Projects Unsupported by CCUS Business Models' in Chapter 3 for more details, and the eligibility and assessment criteria set out below.

6.2 Eligibility Criteria

This section includes the proposed eligibility criteria that all Applicants must meet in order to progress to the deliverability assessment.

Table 11 – Hydrogen Central Eligibility Criteria

Central Eligibility Criteria	Description
Applicant	The Applicant must be incorporated and registered in the UK.
Transport and Storage Connection	Must be able to demonstrate direct, onshore, pipeline access to the HyNet T&S Network, with no intermediate non-pipeline transportation of CO_2. However, we recognise the potential contribution that Projects connected through non-pipeline transportation (NPT) could make to our decarbonisation ambitions and will continue to monitor whether NPT can be supported in any further expansion.
Commercial Operation Date (COD)	Must be able to be operational* no later than the end of December 2030. This criterion has been set to align with HMG's ambition to capture 20-30MtCO_2 per year across the economy by 2030.

*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).

Note that similar contractual arrangements and/or performance requirements may need to be put in place for Unsupported Projects to ensure their delivery against the plans in their submission.

The eligibility criteria set out in the individual capture technology Chapters 4-8 (i.e. sector specific eligibility criteria) have been specifically developed for this T1x HyNet Process. Only those Applicants that meet the relevant sector eligibility criteria will be evaluated further and be capable of being shortlisted to participate in the due diligence and negotiation stage.

The Operational Conditions Precedent

The Operational Conditions Precedent (OCPs) are a set of requirements a hydrogen producer must demonstrate to the LCHA Counterparty to prove that they have commissioned their facility and are ready for commercial operations. The OCP requirements are outlined in the LCHA Standard Terms and Conditions.

Please note that successful applicants will agree, in the Negotiations stage, a Target Commissioning Date and Target Commissioning Window within which the project is expecting to 'commission' the facility and fulfil the LCHA's Operational Conditions Precedent[34]. The latter must be fulfilled before a Start Date can be declared and payments can commence. If the Producer has not satisfied the Operational Conditions Precedent by the end of the Target Commissioning Window, the 15-year term of the LCHA will start to erode. However, payments will not commence unless and until the Start Date occurs. The Longstop Date is the last day of a 12-month period following the final day of the Target Commissioning Window. If the Producer fails to satisfy the Operational Conditions Precedent by the Longstop Date, the LCHA Counterparty has a right to terminate the LCHA.

Projects will also need to meet the Initial Conditions Precedent set out in the LCHA, and which require the Producers to meet certain legal and regulatory requirements and conditions as soon as reasonably practicable and by no later than 20 days after the contract signature.

Hydrogen

In addition to the central eligibility criteria listed in the above table, Applicants for the hydrogen sector must also satisfy the hydrogen specific eligibility criteria listed in the table below in order to progress to the deliverability assessment.

Table 12 – Hydrogen Specific Eligibility Criteria

Hydrogen Eligibility Criteria	Detail
Location	Project must be located in the UK.

[34] As set out in the LCHA, the Target Commissioning Window means the 12-month period commencing on a date to be agreed on a project-by-project basis. The Target Commissioning Date means will be a date falling within the Target Commissioning Window and will be agreed a project-by-project basis.

Eligible Facility	New-build CCS-enabled hydrogen production plant, excluding Biomass-to-Hydrogen plants[35]. Waste-to-Hydrogen Projects must meet additional waste feedstock specific criteria.
Offtakers	Project detailed within application has identified and engaged with at least one qualifying offtaker.
Technology readiness	Using core production technology that has been tested in a commercial environment, with a Technology Readiness Level (TRL) of 7 or more. TRL 7 is defined as 'Integrated Pilot System Demonstrated: Prototype near or at planned operational system, requiring demonstration of an actual system prototype in an operational environment'.
Compliance with the Low Carbon Hydrogen Standard	Capable of meeting the requirements of the Low Carbon Hydrogen Standard (LCHS)[36]
Financing	Projects which enter the assessment stage must have the appropriate support to reach operation. Projects must be able to show information about their financing plan and the status of discussions with financiers.

Eligible Facility

In order to apply under the hydrogen sector, Projects must be a new-build CCS-enabled hydrogen production plant. For the purpose of this document, government is defining 'New-Build CCS-enabled hydrogen production plant" as a new facility or part of a facility built for the specific purpose of producing hydrogen with CCS, where this requires the installation of new hydrogen production technology such as a new reformer or reactor. This includes full new build facilities and existing facilities looking to add additional hydrogen capacity by the installation of new hydrogen production technology. Existing hydrogen facilities adding CCS should apply via the ICC sector (see Chapter 5). This includes existing hydrogen facilities adding CCS alongside new hydrogen production capacity, where this new capacity is achieved by upgrading existing facilities, such as reformers.

Biomass-to-Hydrogen plants (where Projects use feedstock which produces ≥ 90% biogenic CO_2) are not eligible to apply under the hydrogen sector and should apply instead under the Greenhouse Gas Removal (GGR) sector (subject to meeting all other GGR sector criteria).

[35] Biomass-to-hydrogen plants are defined as Projects generating ≥ 90% biogenic CO_2. This means a minimum of 90% of the CO_2 generated from the feedstock shall be of biogenic origin

[36] UK Low Carbon Hydrogen Standard, Version 3, December 2023 https://www.gov.uk/government/publications/uk-low-carbon-hydrogen-standard-emissions-reporting-and-sustainability-criteria

As set out in section 6.1, support is available for eligible non-CCS-enabled low carbon hydrogen production Projects outside of the T1x HyNet Process, via the Hydrogen Allocation Rounds. Further information on these rounds and how to apply can be found on Gov.uk.

In order for a Waste-to-Hydrogen Project to be eligible for the hydrogen sector, the facility must be using gasification or pyrolysis to convert an eligible waste feedstock into hydrogen:

Eligible waste feedstocks

Facilities must process at least one of the following feedstocks:

- Municipal Waste,[37]
- Commercial and Industrial Waste,[38]
- Clinical Waste,[39] and/or
- Hazardous Waste.[40]

The waste feedstock used must be appropriate for use in the waste management facility type in line with the priority order of the Waste Hierarchy[41] and environmental permit expectations.

The project must plan to use a feedstock composition which will generate under 90% biogenic CO_2. We are considering whether or not the Business Model will include any contractual consequences if projects generate ≥ 90% biogenic CO_2.

If a project is planning to use a feedstock composition which will produce ≥ 90% biogenic CO_2 at all times then the project should apply under the Greenhouse Gas Removal (GGR) sector (see Chapter 7) instead of the hydrogen sector (subject to meeting all other GGR sector criteria).

Qualifying Offtakers

Hydrogen producers looking to apply need to have identified and engaged with at least one qualifying offtaker for their hydrogen. This is to give assurance that, if the Project were to receive funding, it is sufficiently developed in concept to deploy and deliver carbon savings. Volumes sold to non-qualifying offtakers will not be eligible for ongoing HPBM financial support.

For the purpose of the Application Guidance any offtaker of low carbon hydrogen is a "qualifying offtaker" except where:

- their planned end use of the hydrogen is for hydrogen blending into the gas network,
- the hydrogen is to be exported, and/or

[37] Household waste and waste of a similar composition from other sources
[38] Waste from commercial and industrial activities
[39] Waste produced from healthcare or similar activities
[40] Waste containing substances harmful to humans or the environment such as chemicals or asbestos: https://www.gov.uk/dispose-hazardous-waste
[41] The Waste Hierarchy can be viewed here: https://www.legislation.gov.uk/uksi/2011/988/contents/made

- the offtaker is a risk-taking intermediary. For the purpose of determining eligibility, a risk-taking intermediary is defined as a person that purchases hydrogen for the purpose of resale.

Applicants will be required to provide details of their proposed offtakers and provide an agreement or evidence of progress towards an agreement with potential qualifying offtakers. This could be shown, for example, by a memorandum of understanding (MoU) or letter of intent between the hydrogen producer and proposed offtaker if available.

Volumes sold to non-qualifying offtakers are not considered eligible for ongoing HPBM financial support. However, in the future Government will consider the treatment of hydrogen for domestic heating, which may require the use of risk-taking intermediaries, to enable these to be supplied by HPBM-subsidised CCS-enabled hydrogen. This would be subject to strategic decisions in 2026, which will determine the role hydrogen will play in heating in the future.

Government sees potential strategic value in supporting blending of up to 20% hydrogen by volume into GB gas distribution networks in certain scenarios and circumstances that align with the strategic role of blending. It is important that blending does not 'crowd out' other offtakers of hydrogen who require it to decarbonise by targeting blending where it has potential to reduce costs. We must await the outcome of the safety assessment to ensure blending is safe, following which government will review the strategic policy decision and take a decision on whether to enable blending. This will consider any implications from the safety assessment on blending's feasibility and economic case. Due to this, blending is considered a non-qualifying offtaker for this allocation round. Please note, as set out in the Strategic Policy Decision on Hydrogen Blending into GB Gas Distribution Networks[42], we will consider how any project that is awarded an LCHA for Track 1 expansion may be able to request a change to their contract to the Government appointed counterparty, aligned with our strategic position on blending, if a positive decision is taken to enable blending.

Technology Readiness

To be eligible to apply Projects must be using core production technology that has been tested in a commercial environment, with a Technology Readiness Level (TRL) of 7 or more. In this context, the core production technology refers to for example:

- The autothermal methane reformer (ATR) or steam methane reformer (SMR) (for fossil fuel feedstocks); or
- The gasifier or pyrolysis reactor (for waste feedstocks).

For the purpose of the Application Guidance, HMG is defining TRL 7 as 'Integrated Pilot System Demonstrated: Prototype near or at planned operational system, requiring demonstration of an actual system prototype in an operational environment'. The table below sets out definitions of Technology Readiness Levels 1 to 9 for reference. Projects are required to explain how the proposed production technology meets this requirement using the TRL definitions listed below.

Table 13 – Hydrogen Definitions of Technology Readiness Levels

Definitions of Technology Readiness Levels 1 to 9

[42] Hydrogen blending in GB distribution networks: strategic decision https://www.gov.uk/government/publications/hydrogen-blending-in-gb-distribution-networks-strategic-decision

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 is initiated. This includes analytical studies 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.
Demonstration	
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.

Compliance with the Low Carbon Hydrogen Standard

Prospective hydrogen producers looking to apply will need to demonstrate how their projects are capable of meeting the requirements of the UK Low Carbon Hydrogen Standard (LCHS), Version 3, December 2023. This criterion will help ensure that hydrogen production applying under the Hydrogen sector is sufficiently low carbon. Specifically, the LCHS establishes a threshold for greenhouse gas emissions allowed in the production process for hydrogen to be considered low carbon, and a methodology for calculating these emissions. The standard sets a single threshold for absolute emissions at point of production at 20 $gCO_2e/MJLHV$[43] of hydrogen. The LCHS also sets Biomass Requirements– these are Sustainability Criteria, the Minimum Waste and Residue Requirement, and reporting on estimated indirect land-use change emissions. These requirements are intended to mitigate against negative environmental and social consequences that can arise from the sourcing of biomass used as a feedstock. Please see the LCHS, Version 3, December 2023 for further details of its requirements.

Successful Projects may be required to comply with an updated version of the LCHS, if there are any updates made between application stage and contract award. Producers will not be required to comply with amendments to the LCHS after contract award, except for amendments to the LCHS Data Annex [44].

Projects will be required to complete and upload the Hydrogen Emissions Calculator (HEC) and provide the projected $gCO_2e/MJLHV$ of their hydrogen, demonstrating that the Project is likely to meet the LCHS including the emissions threshold of $20gCO_2e/MJLHV\ H_2$ (leeway of $+0.5\ gCO_2e/MJLHV\ H_2$) and any relevant Biomass Requirements. The calculator will confirm based on the data submitted whether the Project is likely to be compliant with the LCHS.

Projects must also provide a Fugitive Hydrogen Emission Risk Reduction Plan demonstrating how fugitive hydrogen emissions at the production plant will be minimised. Projects will have to detail the sources of emissions and their expected rate of fugitive hydrogen losses in kgH/year with justifications of estimates, measurement, and monitoring in place.

Financing

Projects will be asked to show information about their financing plan and the status of discussions with financiers (if relevant). This could be shown, for example, by a letter from the board of equity partners/funder which sets out their intention to commit to financing the Project, letters of support from financiers and/or confirmation of the ability to fund from existing liquidity.

Government recognises that some projects may want support through both the HPBM and the RTFO. Producers in receipt of HPBM support will be allowed to participate in the RTFO. Volumes produced will be allowed to be claimed under the RTFO, subject to meeting the RTFO's eligibility criteria, but claiming under both the HPBM and RTFO for the same volumes

[43] This is expressed in units of carbon dioxide equivalents per megajoule of hydrogen using lower heating values ($gCO_2e/MJLHV$).
[44] Producers will be required to apply the most recent version of the LCHS Data Annex to determine their emissions, in accordance with LCHS requirements.

of hydrogen will not be permitted. Specific reporting, monitoring and enforcement arrangements guarding against producers claiming under both schemes for the same costs can be found in the LCHA.

If your Project relies on Renewable Transport Fuel Obligation (RTFO) support from the Department for Transport (DfT), you must upload evidence that confirms that the portion of fuel being claimed against the RTFO may be eligible for RTFO support. At a minimum, this must be documentation outlining how the Project meets the requirements of the RTFO, but can also include evidence of early engagement with the RTFO Administrator regarding the Project (e.g. email chains) or a provisional letter from the RTFO Administrator outlining the Project should, in-principle, be eligible for an application for Renewable Transport Fuel Certificates (RTFCs) depending on the stage of the Project.

6.3 Deliverability Assessment

The deliverability assessment will consider the Applicant's capability and capacity to deliver compliant low carbon hydrogen successfully, and be commercially operational by the end of 2030. Importantly, it will consider their plans to deliver the hydrogen production plant as well as arrangements with their planned off-takers and the viability of those off-takers. It will also consider the necessary hydrogen and CO_2 transport and storage infrastructure.

DESNZ will assign a deliverability rating based on performance against two key factors:

- HMG's confidence that the CCS-enabled hydrogen plant can credibly be commercially operational and capably delivered by the end of 2030. This assessment will consider:
    - Credibility of the presented Project schedule,
    - Organisational and technical maturity of the Project,
    - The Project's risk management approach,
    - The financial health of the organisation executing the Project, and
    - The viability of the CO_2 T&S connection.
- HMG's confidence that the CCS enabled hydrogen plant has commercial and technical arrangements in place with a viable off-taker or off-takers for most of their hydrogen volumes, and that at least one of these viable off-takers is a qualifying offtaker.

Evidence

In assessing performance against those two key factors, Applicants will be credited for providing clear and credible evidence of the following in particular:

- Operational plant schedule demonstrating Low Carbon Hydrogen Standard-compliant hydrogen volumes availability and likely demand profile of proposed offtakers, demonstrating alignment between supply and demand and describing any mitigation measures included to deal with inconsistencies, such as mis-aligned maintenance outages.
- An agreement or evidence of progress towards an agreement with and to connect to hydrogen offtakers, including at least one qualifying offtaker. We recognise that the level

of commitment in place between an early-stage Project and its partners may naturally vary depending on the Project's stage of development so any evidence of formal and informal agreements would be welcome.

- Clear adherence to safety regulations, and identification and mitigation of any residual safety risks such that they are as low as reasonably possible across all components of the hydrogen plant and offtakers.
- A description of the Project, including but not limited to process description(s), CO_2 capture quantities anticipated; CO_2 capture rate, energy efficiency, any associated emissions, operational life, and supply chain engagement.
- Clear plan identifying how the hydrogen plant relates to its off-takers and the role of any hydrogen distribution and storage infrastructure, and how the producer plans to operate the plant day to day by outlining their operational philosophy.
- Ability of Project organisations to access the proper level of resource and capability necessary to deliver the Project.
- An integrated Project schedule, fully logic-linked, that incorporates activity durations which are judged to be within reason, for example in comparison to similar activities undertaken on other Projects. The Project schedule should take into account any applicable processes, such as acquiring any necessary planning permissions or for procuring suppliers. The critical path and relevant lead times should be clearly identified with float incorporated as required. This Project schedule should also demonstrate interdependencies with proposed off-takers' plans to take the proposed hydrogen volumes.
- Progress to date against the stated Project schedule, with documentation and engineering information provided to demonstrate that the Project and its proposed offtakers are progressing in line with the presented plan.
- Accurate identification of the critical planning and consent stages, including planning consents, environmental permitting and abstraction licensing, with these properly accounted for in the Project schedule.
- Progress in applying for and/or securing any planning consents and environmental permits; if not yet secured, this should be properly accounted for in the Project schedule.
- Detailed registers in place to accurately identify key risks, with mitigations populated. The Project should demonstrate where mitigations are already in place and present a clear implementation plan where they are not.
- Business plans for the organisations involved and details of how the Project fits with each individual organisation/company's overall strategic ambition as well as information relating to financial health of each individual organisation/company. This information must be supported by the Financial Statement form (Annex C3).
- Financing arrangements and plans for progressing the Project and the status of key commercial agreements needed to realise the Project, and for Applicants applying as Unsupported Projects, demonstration that alternative sources of support (from public sources or otherwise) will be sufficient to give DESNZ confidence in the Project's deliverability and, in particular, its ability to meet those costs / liabilities associated with

the Project that might otherwise be supported through the LCHA. The assessment will seek to determine the credibility of the financing plans and schedules, how funding gaps are settled and if this is in line with the Project's requirements. A description of the proposed pipeline connection between the Project and the CO_2 T&S network, including but not limited to battery limits of the Project; the intended interface point; any intermediate pipework or infrastructure required and how the Project will meet the required specifications for the CO_2 entering the system. Evidence of engagement, and any agreements in place, with the relevant T&S Co should also be described and provided.

- The Hydrogen Project Plan form (Annex A3) includes further prompts as to the specific pieces of supporting evidence which may be beneficial in supporting the Project to perform well in the deliverability assessment. Submissions forms that must be completed are detailed earlier in Chapter 2.
- Where evidence is provided within large documents, specific relevant sections and/or page numbers should be clearly identified. All additional evidence documents should be clearly referenced.

Rating

In light of the responses and supporting evidence provided (and DESNZ reserves the right to, in its absolute discretion, request clarification or further information from Applicants on any aspect of their Submission, including with respect to technical, legal, financial and/or commercial matters), assessors will assign a final rating to the Project by reviewing the deliverability assessment in aggregate, considering all information provided by the Project as well as its credibility. The rating categories for this criterion are defined as follows:

Table 14 – Hydrogen Deliverability Rating

Rating	Description
Red (R)	Evidence and responses provided in relation to one or more relevant questions are missing or incomplete. Little to no confidence in the ability of the Project to deploy by December 2030, or in its ability to deliver more generally[45] or in the operability of the proposed CO_2 T&S Connection. *• Limited to no evidence of viable commercial or technical arrangements with offtakers of hydrogen, and/or no viable qualifying off-taker.* *• Limited to no confidence that proposed offtakers for at least 50% of hydrogen volumes are commercially or technically viable.*
Amber (A)	All relevant questions are fully answered (i.e. no missing answers), and a reasonable level of supporting evidence is provided.

[45] While delivery assumptions might be more uncertain for less mature Projects (e.g. those at pre-FEED stage), it is expected that they may be in a position to receive a score above Red (R) provided that sufficient evidence and responses are provided in the Project Plan and uncertainties are adequately reflected in the submitted risk registers, costs, Projects schedule, emissions reduction and other contingencies.

	Responses and supporting information give a reasonable level of confidence in the ability of the Project to deploy by December 2030, and in its ability to deliver more generally, and in the operability of the proposed CO_2 T&S connection. There may be reservations regarding the credibility of some supporting information, or the Project's capability in certain delivery areas, however, adequate mitigation efforts may allay these concerns. • *Some evidence of commercial and technical arrangements with offtakers, including at least one qualifying offtaker, but limited in concept or plan. Further development may allay concerns.* • *Some confidence that proposed offtakers for 50% or above of hydrogen volumes will be purchased and utilised by commercially or technically viable offtakers.*
Green (G)	Comprehensive responses given to all relevant questions, with clear and credible evidence provided to demonstrate delivery capability. Responses and supporting evidence give a high degree of confidence in the ability of the Project to deploy by December 2030, and in its ability to deliver more generally, and the operability of the proposed CO_2 T&S connection. •*Evidence of commercial and technical arrangements with offtakers for most (75% and above) of the planned hydrogen volumes, including at least one qualifying offtaker.* •*Good degree of confidence that those offtakers are technically and commercially viable.*

Projects rated Amber and Green will progress into the shortlisting and cluster integration stage (please refer to Chapter 9 for more details). Projects rated Red will not progress further in this T1x HyNet Process.

6.4 Cost and Economic Benefits

Initial Cost Information Collection

When submitting their application, all Applicants will be required to provide initial data on the expected costs of their proposed Project. Providing this data is mandatory – those that fail to provide cost data by the end of the application window will not be considered to have submitted a valid application and will not be considered further in the process.

This data will not be used as an assessment criterion during the eligibility and deliverability assessments. However, this initial cost data will be factored into the cluster-wide considerations at the shortlisting and cluster integration stage to inform our decision making, alongside other criteria (see Chapter 9). This data will also be helpful to inform internal HMG modelling and to understand the cost maturity of each Project. We acknowledge that cost estimates will be at differing levels of maturity for each Project at this stage, but all effort should be made to provide as accurate as possible cost information during the application stage.

Applicants will need to complete an Initial Cost Information form (Annex B), which includes providing details of DevEx, CapEx (with and without contingency) and OpEx (fixed and variable) throughout all phases of the Project lifespan, and which fiscal year it falls within. Cost data should be provided in real rather than nominal prices. Real prices exclude the impact inflation has on prices over time, whereas nominal prices refer to the absolute money amount in each year. Projects should specify the base year their cost data relates to. This should be the year the cost estimate was received or created.

Detailed Cost Data Collection: Summer 2024

Applicants whose proposed Project passes the eligibility check and the minimum deliverability threshold, will be required to provide updated and more detailed cost data, expected by summer 2024. To give Applicants time to develop this detailed cost information, Projects that pass eligibility will be given a deadline to provide this information, noting that they will still need to meet the deliverability threshold to be able to submit this detailed data. This data is likely to go through a series of assurance checks to ensure the data is accurate and valid. This data, including its accuracy and level of maturity, will be used to inform HMG's value for money (VfM) analysis ahead of finalising which Projects will go through to due diligence and negotiations. More information on this stage of the process is expected to be shared alongside outcomes of the eligibility check in spring 2024.

Other Cost Considerations: Network Costs

The cost impact on the CO_2 T&S network, such as T&S extension costs, will also be factored in the wider shortlisting and cluster integration process. This will use information provided from the T&S Cos, and assured by HMG, to understand how a Project or combination of Projects impact the overall costs of a cluster and may therefore impact the cluster VfM. More information on the role of the T&S Co is set out in Chapter 3.

Economic Benefits

See Chapter 2 for details.

Chapter 7: Greenhouse Gas Removals

7.1 Support Package

Where support is required, Projects that are selected following successful assessment and negotiations are expected to receive support through the Greenhouse Gas Removals (GGR) Business Model.

The purpose of the GGR Business Model is to attract private investment in a variety of GGR technologies and accelerate commercial deployment by providing revenue support for negative emissions. This is necessary to overcome current barriers to investment linked to high capital requirements and the absence of a mature and reliable negative emissions market.

The HMG response to the GGR Business Model consultation[46], published in June 2023, confirmed HMG's intention to design the Business Model based on a 'contract for difference' (CfD) structure, where the payment is determined by the difference between a 'Strike Price' reflecting the cost of producing negative emissions and a 'Reference Price' reflecting the market value. The key priorities for the model are to provide revenue certainty for developers, stimulate the market for negative emissions, and maximise value for money (VfM) for HMG.

Since publishing the consultation response, DESNZ has continued to work closely with key stakeholders to develop positions on the core design elements of the Business Model. This has included constructive engagement through the GGR Business Model Expert Group, as well as wider engagement with Project developers, trade associations, academics and other interested stakeholders.

A GGR Business Model update, which outlines the HMG's latest positions on the design, and a draft indicative Heads of Terms has been published alongside this Application Guidance[47].

Participating in any stage of this T1x HyNet Process, including the due diligence and negotiation stage does not mean any support through the GGR Business Model will be offered, or access to the T&S Network enabled. Any decision to offer support or select a Project to access the T&S Network is discretionary and would remain always subject to matters including, but not limited to, the passage of necessary legislation, development of the overall regulatory framework, compliance with applicable subsidy control requirements, HMG affordability envelopes, HMG being satisfied that the Project resents VfM for the consumer and the taxpayer, consideration of any balance sheet implications, all relevant statutory and other consents being obtained, and successful completion of any due diligence and negotiations.

DESNZ reserves the right to pause or terminate negotiations at any time. More information about the due diligence and negotiations stage is set out in Chapter 9.

If a Project does not require any support provided by this Business Model and only requires access to the transport and storage (T&S) network, then please refer to 'Projects Unsupported by CCUS Business Models' in Chapter 3 for more details.

[46] https://www.gov.uk/government/consultations/greenhouse-gas-removals-ggr-business-models
[47] https://www.gov.uk/government/publications/greenhouse-gas-removals-ggr-business-model

7.2 Eligibility Criteria

This section includes the eligibility criteria that all Applicants must meet to progress to the deliverability assessment.

Table 15 – GGR Central Eligibility Criteria

Central Eligibility Criteria	Description
Applicant	The Applicant must be incorporated and registered in the UK.
Transport and Storage (T&S) Connection	Must be able to demonstrate direct, onshore, pipeline access to the HyNet T&S Network, with no intermediate non-pipeline transportation of CO_2. However, we recognise the potential contribution that Projects connected through non-pipeline transportation (NPT) could make to our decarbonisation ambitions and will continue to monitor whether NPT can be supported in any further expansion.
Commercial Operation Date (COD)	Must be able to be operational* no later than the end of December 2030. This criterion has been set to align with HMG's ambition to capture 20-30MtCO_2 per year across the economy by 2030.

*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).

Note that similar contractual arrangements and/or performance requirements may need to be put in place for Unsupported Projects to ensure their delivery against the plans in their submission.

The eligibility criteria set out in the individual capture technology Chapter 4-8 (i.e., sector specific eligibility criteria) have been specifically developed for this CCUS Track-1 Expansion (T1x) HyNet Process. Only those Applicants that meet the relevant sector eligibility criteria will be evaluated further and be capable of being shortlisted to participate in the due diligence and negotiation stage.

Greenhouse Gas Removal Eligibility Criteria

In addition to the central eligibility criteria listed in the table above, GGR Applicants must also satisfy the GGR specific eligibility criteria listed in the table below.

Our eligibility criteria apply to all CCS-enabled GGRs Projects, including BECCS and DACCS, with some specific BECCS eligibility requirements. If a pBECCS Project is generating over 100MW the Project should apply under the pBECCS business model (see Chapter 8 eligibility criteria) for support instead of the Greenhouse Gas Removal (GGR) business model (subject to meeting all other pBECCS sector criteria). If a Project plans to use a waste stream which will produce less than 90% biogenic CO_2 then the Project should apply under the Waste ICC business model (see Chapter 5 eligibility) instead of the Greenhouse Gas Removal business model (subject to meeting all other Waste ICC sector criteria).

Table 16 – GGR Specific Eligibility Criteria

GGR Eligibility Criteria	Detail
Location	For BECCS projects that produce electricity, they must be located onshore in Great Britain. All other GGR projects are subject to the central location criteria.
Must provide net negative emissions (applies to all GGR technologies, including DACCS)	Projects must achieve permanent atmospheric CO_2 removal through geological storage. For a Project to be considered 'net-negative' it must remove more greenhouse gases (GHGs) from the atmosphere than it creates throughout its entire supply chain (both domestic and international). Further details of how this should be demonstrated through lifecycle analysis (LCA) and proposed methodology including monitoring, reporting and verification (MRV) plans for the Project are included in Annex A4.
Must have a minimum net negative contribution of 0.05 Mtpa CO_2 to storage (applies to all GGR technologies, including DACCS)	Through the GGR sector, we are initially aiming to bring forward Projects that can make a significant contribution towards our policy ambition of delivering at least 5 Mtpa of engineered removals by 2030, potentially rising to approximately 23 Mtpa by 2035. To maximise the potential for achieving these ambitions, Projects must therefore meet a minimum scale to be considered.
The Project must not have applied for and cannot receive support under another carbon capture Business Model in this application window (applies to all	In this application window, the Project must not have applied for or be in receipt of support under another Business Model or support scheme to support the costs of building and operating a carbon capture plant; for example, under the pBECCS Business

GGR technologies, including DACCS)	Model, Industrial Carbon Capture Business Model, or Waste ICC Business Model. This does not exclude applications from Projects that may be (or expect to be) in receipt of subsidies for Project costs that are unrelated to carbon capture and storage.
Bioenergy Carbon Capture and Storage (BECCS) Projects must have a minimum projected capture rate of 90%.	Must be designed to achieve a minimum of a 90% capture rate when the plant is operating at full load. Calculate it using: Capture rate (%) $$\text{Capture rate (\%)} = \frac{\text{CO}_{2\text{exp}}}{\text{CO}_{2\text{gen}}}$$ Where: $\text{CO}_{2\text{exp}}$ = total flow of CO_2 into the T&S network during an hour of operation at full load. $\text{CO}_{2\text{gen}}$ = total flow of CO_2 in streams intended to be routed to the capture plant during an hour of operation at full load
For BECCS Projects, must use eligible feedstock (minimum 90% biogenic CO_2 generation).	A minimum of 90% of the CO_2 generated from the feedstock shall be of biogenic origin and to be eligible it must meet relevant sustainability requirements. This is consistent with definition of “biomass” used in previous subsidy schemes such as the Renewables Obligation and will ensure a high level of negative emissions.
BECCS Projects must have an efficiently produced, valuable co-product	For BECCS, net-negative emissions are associated with the conversion of biogenic feedstock to a valuable product, e.g. electrical power, hydrogen, ammonia, methanol, aviation fuel, steam or other low carbon fuels. The intention is not that the biomass is merely converted to CO_2 for sequestration, with no or minimal associated product. This is a policy position set out in the Biomass Strategy principles for BECCS deployment, which state that BECCS should provide valuable, low carbon co-products or services alongside GGRs to achieve efficient use of sustainable biomass The Project must demonstrate how it maximises production efficiency (including the host plant, the

	capture plant and all associated facilities). This will not be assessed against a set threshold.
For hydrogen BECCS Projects where biomass (>90% biogenic feedstock) is used to produce hydrogen as an ancillary service, the following eligibility criteria will also apply.	Compliance with the Low Carbon Hydrogen Standard (for further information see details in Chapter 6 eligibility criteria). Qualifying hydrogen offtakers (for further information see details in Chapter 6 eligibility criteria).

Biomass Sustainability

The Biomass Strategy[48] reiterated HMG's firm commitment to the sustainable use of biomass. HMG only supports biomass uses across the economy that demonstrates compliance with the relevant sustainability criteria that currently exist under different sectoral schemes. Building on this, the Strategy made a commitment to consult on the development of a UK cross-sector sustainability framework for biomass use, which would ensure minimum standards and better alignment between sectors, and to strengthen the existing criteria based on up-to-date evidence.

Bioenergy with Carbon Capture and Storage (BECCS) Projects will be required to comply with the relevant sustainability criteria. Biomass sustainability criteria for the power BECCS and GGR business models are currently in development. Concurrently, the consultation on the cross-sector sustainability framework, in line with the actions set out in the Biomass Strategy, is also being developed to ensure alignment as far as possible. These will include sector-specific sustainability criteria that must also be met (e.g., Greenhouse Gas (GHG) thresholds that are dependent on technology or BECCS route). These criteria will be based on the latest evidence and will draw on current and emerging criteria for biomass sustainability for different end use sectors (e.g., Low Carbon Hydrogen Standard (LCHS), RTFO, CfD) and international practice (e.g., EU's Renewable Electricity Directives[49] RED II and RED III) and will be subject to consultation.

7.3 Deliverability Assessment

The deliverability assessment will consider the Project's capability and capacity to deliver negative emissions successfully and be commercially operational by the end of 2030.

DESNZ will assign a deliverability rating based on performance against these key factors:

- HMG's confidence that the GGR plant is able to complete the relevant Operational Conditions Precedent and is capable of exporting captured CO_2 emissions to the T&S for permanent storage. This assessment will consider:
- Credibility of the presented Project schedule,

[48] Biomass Strategy 2023
[49] Renewable Energy Directives

- Organisational and technical maturity of the Project,
- The Project's risk management approach,
- The financial health of the organisation executing the Project, and
- The viability of the T&S connection.
- HMG's confidence that the GGR plant can credibly produce negative emissions after accounting for end to end GHG emissions. This assessment will consider:
- Lifecycle analysis (LCA), and
- Monitoring, reporting and verification (MRV) protocol.
- Where Hydrogen is produced as an ancillary service, HMG's confidence that the plant has commercial and technical arrangements in place with a viable off-taker or off-takers for most of their hydrogen volumes.

Evidence

In assessing against this criterion, Applicants will be credited for providing clear and credible evidence of the following in particular:

- A description of the Project, including but not limited to process description(s), CO_2 capture quantities anticipated; CO_2 capture rate, energy efficiency and any associated emissions, operational life, and supply chain engagement.
- Ability of Project organisations to access the proper level of resource and capability necessary to deliver the Project. Specifically, the following may be taken as evidence of this:
    - Key contracts in place with core suppliers – or, at a minimum, meaningful engagement with – prospective suppliers.
    - Evidence of engagement with technology licensors.
    - Demonstration of the Project organisation's competence to manage and coordinate a Project of this scale and complexity.
    - Assessment of capability and capacity of supply chains to deliver required materials, goods, and skills.
    - Lifecycle analysis (LCA) and a monitoring, reporting and verification (MRV) protocol for the Project. Further details of how this should be demonstrated are included in Annex A4.
- An integrated Project schedule, fully logic-linked, that incorporates activity durations which are judged to be within reason, for example in comparison to similar activities undertaken on other Projects and taking into account any applicable processes, such as acquiring any necessary planning permissions or for procuring suppliers. The critical path and relevant lead times should be clearly identified with float incorporated as required.

- Progress to date against the stated Project schedule, with documentation and engineering information provided to demonstrate that the capture Project is progressing to plan.
- Accurate identification of the critical planning and consent stages, including planning consents, environmental permitting and abstraction licensing, with these properly accounted for in the Project schedule.Progress in applying for and/or securing any planning consents and environmental permits; if not yet secured, this should be properly accounted for in the Project schedule.
- Detailed registers in place to accurately identify key risks, with mitigations populated. The Project should demonstrate where mitigations are already in place and present a clear implementation plan where they are not.
- If hydrogen is produced as an ancillary service, a clear plan identifying how the hydrogen plant relates to its off-takers and the role of any hydrogen distribution and storage infrastructure, and how the producer plans to operate the plant day to day by outlining their operational philosophy.
- For BECCS Projects any biomass feedstock used will need to meet sustainability criteria. Outline if Project meets existing sustainability criteria from other government subsidy schemes e.g., Low Carbon Hydrogen Standard, Renewable Transport Fuel Obligation.
- Business plans for the organisations involved and details of how the Project fits with each individual organisation/company's overall strategic ambition as well as information relating to financial health of each individual organisation/company. This information must be supported by the Financial Statement Template (Annex C4).
- Financing arrangements and plans for progressing the Project and the status of key commercial agreements needed to realise the Project, and for Applicants applying as Unsupported Projects, demonstration that alternative sources of support (from public sources or otherwise) will be sufficient to give DESNZ confidence in the Project's deliverability and, in particular, its ability to meet those costs / liabilities associated with the Project that might otherwise be supported through the GGR Business Model. The assessment will seek to determine the credibility of the financing plans and schedules, how funding gaps are settled and if this is in line with the Project's requirements.
- A description of the proposed connection between the Project and the T&S network, including but not limited to battery limits of the Project; the intended interface point; any intermediate pipework or infrastructure required and how the Project will meet the required specifications for the CO_2 entering the system. Evidence of engagement, and any agreements in place, with the relevant T&S Co should also be described and provided.

Rating

Considering the responses and supporting evidence provided (and DESNZ reserves the right to, in its absolute discretion, request clarification or further information from Applicants on any aspect of their Submission, including with respect to technical, legal, financial and/or commercial matters), assessors will assign a final rating to the Project by reviewing the deliverability assessment in aggregate, considering all information provided by the Project as well as its credibility. The rating categories for this criterion are defined as follows:

Table 17 – GGR Deliverability Rating

Rating	Description
Red (R)	Evidence and responses provided in relation to one or more relevant questions are missing or incomplete. Little to no confidence in the ability of the Project to deploy by December 2030, or in its ability to deliver more generally[50] or in the operability of the proposed T&S Connection. *Further information provided in Annex A4. Evidence and responses provided in relation to LCA and MRV protocol are missing or incomplete.* *Little to no confidence in the ability of the Project to deliver 0.05 Mtpa of removals (net negativity), or in its understanding of MRV best practice or ability to deliver on the protocol proposal.*
Amber (A)	All relevant questions are fully answered (i.e. no missing answers), and a reasonable level of supporting evidence is provided. Responses and supporting information give a reasonable level of confidence in the ability of the Project to deploy by December 2030, and in its ability to deliver more generally, and in the operability of the proposed T&S connection. However, there may be reservations regarding the credibility of some supporting information, or the Project's capability in certain delivery areas. Further information provided in Annex A4. LCA is detailed and system boundaries are justified, and a reasonable level of supporting evidence is provided to demonstrate delivery at or above 0.05 Mtpa removals (net negativity). Associated methodology and MRV plan is reasonably detailed and shows an understanding of what is required over the lifetime of the Project. However, there may be reservations regarding the credibility of some supporting information, or the Project's assessment of the LCA or understanding of or ability to carry out the MRV proposal or gaps compared to best practice.
Green (G)	Comprehensive responses given to all relevant questions, with clear and credible evidence provided to demonstrate delivery capability. Responses and supporting evidence give a high degree of confidence in the ability of the Project to deploy by December 2030, and in its ability to deliver more generally, and the operability of the proposed T&S connection. Further information in Annex A4. Comprehensive LCA, with clear and credible evidence provided to demonstrate capability of delivering above 0.05 Mtpa

[50] While delivery assumptions might be more uncertain for less mature Projects (e.g., those at pre-FEED stage), it is expected that they may be able to receive a score above Red (R) provided that sufficient evidence and responses are provided in the Project Plan and uncertainties are adequately reflected in the submitted risk registers, costs, Projects schedule, emissions reduction and other contingencies.

	removals (net negativity). A detailed associated MRV proposal with a good to excellent understanding of what is required for MRV during the Project lifetime. Responses and supporting evidence give and confidence in justification of the system boundaries used for the LCA, leakage and uncertainty management and in the Project's ability and understanding of what is required for MRV as well as an ambition to meet best practice methodologies.

Projects rated Amber and Green will progress into the shortlisting and cluster integration stage (please refer to Chapter 9 for more details). Projects rated Red will not progress further in this T1x HyNet Process.

7.4 Cost and Economic Benefits

Initial Cost Information Collection

When submitting their application, all Applicants will be required to provide initial data on the expected costs of their proposed Project. Providing this data is mandatory – those that fail to provide cost data by the end of the application window will not be considered to have submitted a valid application and will not be considered further in the process.

This data will not be used as an assessment criterion during the eligibility and deliverability assessments. However, this initial cost data will be factored into the cluster-wide considerations at the shortlisting and cluster integration stage to inform our decision making, alongside other criteria (see Chapter 9). This data will also be helpful to inform internal HMG modelling and to understand the cost maturity of each Project. We acknowledge that cost estimates will be at differing levels of maturity for each Project at this stage, but all effort should be made to provide as accurate as possible cost information during the application stage.

Applicants will need to complete an Initial Cost Information form (Annex B), which includes providing details of DevEx, CapEx (with and without contingency) and OpEx (fixed and variable) throughout all phases of the Project lifespan, and which fiscal year it falls within. Cost data should be provided in real rather than nominal prices. Real prices exclude the impact inflation has on prices over time, whereas nominal prices refer to the absolute money amount in each year. Projects should specify the base year their cost data relates to. This should be the year the cost estimate was received or created.

Detailed Cost Data Collection: Summer 2024

Applicants whose proposed Project passes the eligibility check and the minimum deliverability threshold, will be required to provide updated and more detailed cost data, expected by summer 2024. To give Applicants time to develop this detailed cost information, Projects that pass eligibility will be given a deadline to provide this information, noting that they will still need to meet the deliverability threshold to be able to submit this detailed data. This data is likely to go through a series of assurance checks to ensure the data is accurate and valid. This data, including its accuracy and level of maturity, will be used to inform HMG's value for money (VfM) analysis ahead of finalising which Projects will go through to due diligence and negotiations. More information on this stage of the process is expected to be shared alongside outcomes of the eligibility check in spring 2024.

Other Cost Considerations: Network Costs

The cost impact on the CO_2 T&S network, such as T&S extension costs, will also be factored in the wider cluster shortlisting and cluster integration process. This will use information provided from the T&S Cos, and assured by HMG, to understand how a Project or combination of Projects impact the overall costs of a cluster and may therefore impact the cluster VfM. More information on the role of the T&S Co is set out in Chapter 3.

Economic Benefits

See Chapter 2 for details.

Chapter 8: Power BECCS

8.1 Support Package

Where support is required, Projects that are selected following successful assessment and negotiations are expected to receive support through the Power Bioenergy with Carbon Capture and Storage (pBECCS) Business Model.

The pBECCS Business Model Consultation response[51] indicates HMG's minded-to position and full contract terms will be available prior to the conclusion of negotiations.

A pBECCS Business Model update, which outlines HMG's latest positions on Business Model design, has been published alongside this Application Guidance. This Business Model support is for Projects capable of generating and exporting a minimum of 100 Mwe (Megawatts electricity) to the electricity grid. Through the pBECCS Business Model we are aiming to bring forward Projects that can deliver on our policy objectives of both negative emissions and low-carbon power to the electricity system.

Participating in any stage of this T1x HyNet Process, including the due diligence and negotiation stage does not mean any support through the pBECCS Business Model will be offered, or access to the T&S Network enabled. Any decision to offer support or select a Project to access the T&S Network is discretionary and would remain always subject to matters including, but not limited to, the passage of necessary legislation, development of the overall regulatory framework, compliance with applicable subsidy control requirements, HMG affordability envelopes, HMG being satisfied that the Project represents value for money (VfM) for the consumer and the taxpayer, consideration of any balance sheet implications, all relevant statutory and other consents being obtained, and successful completion of any due diligence and negotiations.

DESNZ reserves the right to pause or terminate negotiations at any time. More information about the due diligence and negotiations stage is set out in Chapter 9.

If a Project does not require any support provided by this Business Model and only requires access to the transport and storage (T&S) network, then please refer to 'Projects Unsupported by CCUS Business Models' in Chapter 3 for more details.

8.2 Eligibility Criteria

This section includes the proposed eligibility criteria that all Applicants must meet in order to progress to the deliverability assessment.

Table 18 – pBECCS Central Eligibility Criteria

Central Eligibility Criteria	Description

[51] Consultation Response: Business model for power bioenergy with carbon capture and storage (pBECCS)

Applicant	The Applicant must be incorporated and registered in the UK.
Transport and Storage (T&S) Connection	Must be able to demonstrate direct, onshore, pipeline access to the HyNet T&S Network, with no intermediate non-pipeline transportation (NPT) of Carbon dioxide (CO_2). However, we recognise the potential contribution that Projects connected through non-pipeline transportation (NPT) could make to our decarbonisation ambitions and will continue to monitor whether NPT can be supported in any further expansion.
Commercial Operation Date (COD)	Must be able to be operational* no later than the end of December 2030. This criterion has been set to align with HMG's ambition to capture 20-30 Megatonnes of CO_2($MtCO_2$) per year across the economy by 2030.

*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).

Note that similar contractual arrangements and/or performance requirements may need to be put in place for Unsupported Projects to ensure their delivery against the plans in their submission.

The eligibility criteria set out in the individual capture technology Chapters 4-8 (i.e. sector specific eligibility criteria) have been specifically developed for this CCUS Track-1 Expansion (T1x) HyNet Process. Only those Applicants that meet the relevant sector eligibility criteria will be evaluated further and be capable of being shortlisted to participate in the due diligence and negotiation stage.

Power BECCS

In addition to the central eligibility criteria listed in the table above, pBECCS Applicants must also satisfy the pBECCS specific eligibility criteria listed in the table below. pBECCS Projects are also subject to the UK's biomass sustainability criteria.

Biomass Sustainability

The Biomass Strategy reiterated HMG's firm commitment to the sustainable use of biomass. HMG only supports biomass uses across the economy that demonstrates compliance with the relevant sustainability criteria that currently exist under different sectoral schemes. Building on this, the Strategy made a commitment to consult on the development of a UK cross-sector sustainability framework for biomass use, which would ensure minimum standards and better alignment between sectors, and to strengthen the existing criteria based on up-to-date evidence. pBECCS Projects will be required to comply with sustainability criteria.

Bioenergy with Carbon Capture and Storage (BECCS) Projects will be required to comply with the relevant sustainability criteria. Biomass sustainability criteria for the power BECCS and GGR business models are currently in development. Concurrently, the consultation on the cross-sector sustainability framework, in line with the actions set out in the Biomass Strategy, is also being developed to ensure alignment as far as possible. These will include sector-specific sustainability criteria that must also be met (e.g., Greenhouse Gas (GHG) thresholds that are dependent on technology or BECCS route). These criteria will be based on the latest evidence and will draw on current and emerging criteria for biomass sustainability for different end use sectors (e.g., Low Carbon Hydrogen Standard (LCHS), RTFO, CfD) and international practice (e.g., EU's Renewable Electricity Directives RED II and RED III) and will be subject to consultation.

Table 19 – pBECCS Specific Eligibility Criteria

pBECCS Eligibility Criteria	Detail
Location	Projects are required to be located onshore in Great Britain to ensure that they are compliant with the technical and commercial parameters of the pBECCS Business Model. Projects in Northern Ireland are not eligible for support in this T1x HyNet Process because electricity policy is devolved, and Northern Ireland has a separate electricity market from Great Britain.
Technology / Configurations	The pBECCS plant must be a thermal generation with sustainable biomass as the primary fuel input. The pBECCS plant could be: • 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). The pBECCS plant must be one of the following technology types: • Post-combustion,

	• Pre-combustion (on-site), or • Oxy-fuelled combustion.
Minimum Capture Rate	Must be designed to achieve a minimum of a 90% capture rate when the plant is operating at full load. Calculate it using: Capture rate (%) $$\text{Capture rate (\%)} = \frac{\text{CO}_{2\text{exp}}}{\text{CO}_{2\text{gen}}}$$ Where: $\text{CO}_{2\text{exp}}$ = total flow of CO_2 into the T&S network during an hour of operation at full load. $\text{CO}_{2\text{gen}}$ = total flow of CO_2 in streams intended to be routed to the capture plant during an hour of operation at full load
Minimum Output	Must be able to generate and export at least 100 megawatts (MW) of low-carbon electricity (100 Mwe) to the electricity grid. Through the pBECCS sector, we are aiming to bring forward commercial scale pBECCS plants that can make a significant contribution to decarbonising the electricity system.
Negative Emissions	Projects must achieve permanent atmospheric CO_2 removal through geological storage. For a Project to be credibly 'net-negative' it must remove more greenhouse gases (GHGs) from the atmosphere than it creates throughout its entire supply chain (both domestic and international).
Feedstock	A minimum of 90% of the CO_2 generated from the feedstock shall be of biogenic origin and to be eligible it must meet relevant sustainability requirements. This is consistent with definition of "biomass" used in previous subsidy schemes such as the Renewables Obligation (RO) and will ensure a high level of negative emissions.
Subsidy	Projects must not be receiving government subsidy or support for the same power generation and/or negative emissions upon target deployment date.
CCUS Subsidy	In this application window, the Project must not have applied for or be in receipt of support under another Business Model or support scheme to support the costs of building and operating a carbon capture plant, for example, under the Greenhouse Gas Removals Business Model or Industrial Carbon Capture Business Model.

8.3 Deliverability Assessment

The deliverability assessment will consider the Project's capability and capacity to deliver compliant low carbon pBECCS successfully and be commercially operational by the end of 2030.

DESNZ will assign a deliverability rating based on performance against two key factors:

- HMG's confidence that the pBECCS plant can credibly be commercially operational and capably delivered by the end of 2030. This assessment will consider:
- Credibility of the presented Project schedule,
- Organisational and technical maturity of the Project,
- The Project's risk management approach,
- The financial health of the organisation executing the Project, and
- The viability of the T&S connection.
- HMG's confidence that the pBECCS plant can credibly produce negative emissions after accounting for end-to-end GHG emissions. This assessment will consider:
- Lifecycle analysis (LCA), and
- Monitoring, reporting and verification (MRV) protocol

Evidence

In assessing against this criterion, Applicants will be credited for providing clear and credible evidence of the following in particular:

- A description of the Project, including but not limited to process description(s), CO_2 capture quantities anticipated; CO_2 capture rate, energy efficiency, any associated emissions, operational life, and supply chain engagement.
- Ability of Project organisations to access the proper level of resource and capability necessary to deliver the Project. Specifically, the following may be taken as evidence of this:
    - Key contracts in place with core suppliers – or, at a minimum, meaningful engagement with – prospective suppliers.
    - Evidence of engagement with technology licensors.
    - Demonstration of the Project organisation's competence to manage and coordinate a Project of this scale and complexity.
    - Assessment of capability and capacity of supply chains to deliver required materials, goods, and skills.

  - Lifecycle analysis (LCA) and a monitoring, reporting and verification (MRV) protocol for the Project. Further details of how this should be demonstrated are included in Annex A5.
  - Projects using biomass feedstocks will need to meet sustainability criteria. Outline if Project meets existing biomass sustainability criteria from other HMG subsidy schemes e.g. LCHS, RTFO.

- An integrated Project schedule, fully logic-linked, that incorporates activity durations which are judged to be within reason, for example in comparison to similar activities undertaken on other Projects and taking into account any applicable processes, such as acquiring any necessary planning permissions or for procuring suppliers. The critical path and relevant lead times should be clearly identified with float incorporated as required.
- Progress to date against the stated Project schedule, with documentation and engineering information provided to demonstrate that the capture Project is progressing to plan.
- Progress in applying for and/or securing any planning consents and environmental permits; if not yet secured, this should be properly accounted for in the Project schedule. Accurate identification of the critical planning and consent stages, including planning consents, environmental permitting and abstraction licensing, with these properly accounted for in the Project schedule.
- Detailed registers in place to accurately identify key risks, with mitigations populated. The Project should demonstrate where mitigations are already in place and present a clear implementation plan where they are not.
- Financing arrangements and plans for progressing the Project and the status of key commercial agreements needed to realise the Project, and for Applicants applying as Unsupported Projects, demonstration that alternative sources of support (from public sources or otherwise) will be sufficient to give DESNZ confidence in the Project's deliverability and, in particular, its ability to meet those costs / liabilities associated with the Project that might otherwise be supported through the pBECCS Business Model. The assessment will seek to determine the credibility of the financing plans and schedules, how funding gaps are settled and if this is in line with the Project's requirements.
- Business plans for the organisations involved and details of how the Project fits with each individual organisation/company's overall strategic ambition as well as information relating to financial health of each individual organisation/company. This information must be supported by the Financial Statement Template (Annex C5).
- A description of the proposed connection between the Project and the T&S network, including but not limited to battery limits of the Project; the intended interface point; any intermediate pipework or infrastructure required and how the Project will meet the required specifications for the CO_2 entering the system. Evidence of engagement, and any agreements in place, with the relevant T&S Co should also be described and provided.

Rating

In light of the responses and supporting evidence provided (and DESNZ reserves the right to, in its absolute discretion, request clarification or further information from Applicants on any aspect of their Submission, including with respect to technical, legal, financial and/or commercial matters), assessors will assign a final rating to the Project by reviewing the deliverability assessment in aggregate, considering all information provided by the Project as well as its credibility. The rating categories for this criterion are defined as follows:

Table 20 – pBECCS Deliverability Rating

Rating	Description
Red (R)	Evidence and responses provided in relation to one or more relevant questions are missing or incomplete. Further information provided in Annex A4. Evidence and responses provided in relation to LCA and MRV protocol are missing or incomplete. Little to no confidence in the ability of the Project to deploy by December 2030, or in its ability to deliver more generally or in the operability of the proposed T&S Connection.
Amber (A)	All relevant questions are fully answered (i.e. no missing answers), and a reasonable level of supporting evidence is provided. Responses and supporting information give a reasonable level of confidence in the ability of the Project to deploy by December 2030, and in its ability to deliver more generally, and in the operability of the proposed T&S connection. However, there may be reservations regarding the credibility of some supporting information, or the Project's capability in certain delivery areas. Further information provided in Annex A4. LCA is detailed and system boundaries are justified, and a reasonable level of supporting evidence is provided to demonstrate net negativity. Associated methodology and MRV plan is reasonably detailed and shows an understanding of what is required over the lifetime of the Project. However, there may be reservations regarding the credibility of some supporting information, or the Project's assessment of the LCA or understanding of or ability to carry out the MRV proposal or gaps compared to best practice.
Green (G)	Comprehensive responses given to all relevant questions, with clear and credible evidence provided to demonstrate delivery capability. Responses and supporting evidence give a high degree of confidence in the ability of the Project to deploy by December 2030, and in its ability to deliver more generally, and the operability of the proposed T&S connection. Further information in Annex A4. Comprehensive LCA, with clear and credible evidence provided to demonstrate capability of net negativity. A detailed associated

	MRV proposal with a good to excellent understanding of what is required for MRV during the Project lifetime. Responses and supporting evidence give and confidence in justification of the system boundaries used for the LCA, leakage and uncertainty management and in the Project's ability and understanding of what is required for MRV as well as an ambition to meet best practice methodologies.

Projects rated Amber and Green will progress into the shortlisting and cluster integration stage (please refer to Chapter 9 for more details). Projects rated Red will not progress further in this T1x HyNet Process.

8.4 Cost and Economic Benefits

Initial Cost Information Collection

When submitting their application, all Applicants will be required to provide initial data on the expected costs of their proposed Project. Providing this data is mandatory – those that fail to provide cost data by the end of the application window will not be considered to have submitted a valid application and will not be considered further in the process.

This data will not be used as an assessment criterion during the eligibility and deliverability assessments. However, this initial cost data will be factored into the cluster-wide considerations at the shortlisting and cluster integration stage to inform our decision making, alongside other criteria (see Chapter 9). This data will also be helpful to inform internal HMG modelling and to understand the cost maturity of each Project. We acknowledge that cost estimates will be at differing levels of maturity for each Project at this stage, but all effort should be made to provide as accurate as possible cost information during the application stage.

Applicants will need to complete an Initial Cost Information form (Annex B), which includes providing details of Development Expenditure (DevEx), Capital Expenditure (CapEx) (with and without contingency) and Operating Expenditure (OpEx) (fixed and variable) throughout all phases of the Project lifespan, and which fiscal year it falls within. Cost data should be provided in real rather than nominal prices. Real prices exclude the impact inflation has on prices over time, whereas nominal prices refer to the absolute money amount in each year. Projects should specify the base year their cost data relates to. This should be the year the cost estimate was received or created.

Detailed Cost Data Collection: Summer 2024

Applicants whose proposed Project passes the eligibility check and the minimum deliverability threshold, will be required to provide updated and more detailed cost data, expected by summer 2024. To give Applicants time to develop this detailed cost information, Projects that pass eligibility will be given a deadline to provide this information, noting that they will still need to meet the deliverability threshold to be able to submit this detailed data. This data is likely to go through a series of assurance checks to ensure the data is accurate and valid. This data, including its accuracy and level of maturity, will be used to inform HMG's value for money (VfM) analysis ahead of finalising which Projects will go through to due diligence and

negotiations. More information on this stage of the process is expected to be shared alongside outcomes of the eligibility check in spring 2024.

Other Cost Considerations: Network Costs

The cost impact on the CO_2 T&S network, such as T&S extension costs, will also be factored in the wider shortlisting and cluster integration process. This will use information provided from the T&S Cos, and assured by HMG, to understand how a Project or combination of Projects impact the overall costs of a cluster and may therefore impact the cluster VfM. More information on the role of the T&S Co is set out in Chapter 3.

Economic Benefits

See Chapter 2 for details.

Chapter 9: Shortlisting, Due Diligence and Negotiations

Shortlisting and Cluster Integration

Following the deliverability assessment, Projects rated Amber and Green will progress into the shortlisting and cluster integration stage. Whereas the deliverability assessment will assess Projects on their individual merits, the shortlisting and cluster integration stage will assess combinations of Projects to deliver the best cluster-wide outcomes. This will consider combinations of Projects at a cluster level and within the context of the planned Track-1 HyNet T&S system, subject to negotiations, to ensure the final selection best meets DESNZ's stated T1x HyNet objectives (see Chapter 1). The shortlisting and cluster integration process will use multi-criteria decision analysis (MCDA) to identify and assess a mix of both monetary and non-monetary factors in relation to each cluster expansion scenario and its constituent Projects. MCDA is an HMT Green Book Compliant method[52] for assessing options.

The outcome of the shortlisting and cluster integration stage will be the HyNet Track-1 Expansion Project Negotiation List (PNL), expected from autumn 2024.

Shortlisting and Cluster Integration Process Overview

The shortlisting and cluster integration process will commence once the deliverability RAG ratings have been finalised. Amber and Green rated Projects will progress into the shortlisting and cluster integration stage.

Where the number of Amber and Green Projects exceeds the expected T&S capacity available in HyNet, combinations of Projects, known as 'cluster expansion scenarios', will be generated for analysis. Where the number of Amber and Green Projects does not exceed the T&S capacity, or if there is only one Amber or Green Projects, an assessment will still take place to determine the extent to which that scenario or Project meets the T1x HyNet objectives and represents good value for money (VfM). An "undercapacity" scenario following the deliverability assessment does not guarantee that any or all of those Projects will be shortlisted within the HyNet Track-1 Expansion Project Negotiation List. If DESNZ considers that no 'cluster expansion scenario' delivers on its objectives it reserves the right to cancel or amend the T1x HyNet Process.

Cluster expansion scenarios will then be considered within an MCDA process. This process will score the scenarios against several factors. An initial non-exhaustive list of factors can be found below. These scores will then be combined to produce an initial ranking of cluster expansion scenarios. HMG will then consider the top ranked scenario(s), the need for contingency and replaceability, and decide the shortlist of Projects to go through to detailed due diligence and negotiations from autumn 2024. A Project being on the Project Negotiation List (PNL) does not imply availability of funding for any or all of the Projects on the list. The PNL reflects the outcome of the deliverability assessment and shortlisting and cluster

[52] https://www.gov.uk/government/publications/green-book-supplementary-guidance-multi-criteria-decision-Aanalysis

integration process. DESNZ reserves the right to include Projects on the PNL which, together, exceed the expected T&S capacity for the HyNet cluster.

Possible Factors to Assess Cluster Expansion Scenarios

The factors below are not final or exhaustive and we expect them to evolve in response to updated information, for example on T&S capacity, CCUS and Carbon Budgets analysis and Track-1 negotiations progress. Similarly, the weightings will be determined nearer the time of shortlisting and cluster integration based on the latest relevant information. Note that not all factors will be given equal weighting.

- **Deliverability:** the combined deliverability of the expanded cluster, including Projects' assessed deliverability, the deliverability of the expanded T&S network, and system operability.
- **Costs:** initial cluster costs considering initial Project costs (provided via Initial Cost Information form), Track-1 costs, expansion T&S costs, and any other relevant cost information.
- **Optimisation of available T&S network capacity:** filling as much of the available capacity on the transport and storage network as possible.
- **Strategic priorities:** suitability of the expansion scenario to best deliver the strategic objectives of HMG, for example: CCUS and sector ambitions, meeting Carbon Budgets, and security of supply.

The shortlisting and cluster integration process, and any factors considered within it, will be designed to deliver on the T1x objectives, and will need to generate 'cluster expansion scenarios' consistent with affordability envelopes, balance sheet considerations and compliance with applicable subsidy control requirements.

Due Diligence and Negotiations

Objectives of the Due Diligence and Negotiations Stage

Applicants are reminded that HMG is continuing to develop the processes applicable to the due diligence stage of this process, which follows shortlisting and cluster integration. In particular, HMG reserves the right to make changes to the processes described in this Application Guidance. Details of the processes and applicable timelines will be communicated in any invitation to participate in the due diligence and negotiations stage.

At the due diligence stage, projects seeking support for a CCUS Business Model will be required to confirm their agreement in principle to the standard terms and conditions of the relevant Business Model contract (where published). Before submitting their applications, projects should consider the published information about the Business Models carefully to understand the nature of the support that they would receive and the scope of the obligations to which they would be subject under a CCUS Business Model.

Due Diligence

The due diligence process will be carried out in parallel with a process of further engagement with the HyNet T&S Co. In this context, HMG recognises that changes to this process will have implications for HyNet T&S Co.

HMG reserves the right to review any aspect of an application and to request any information it requires to carry out due diligence of applications. In particular, Applicants should note this stage is an opportunity for HMG to confirm and verify any aspect of applications and to seek updated information from Applicants as Projects achieve and progress towards important milestones.

HMG reserves the right to:

- invite more Projects to participate in this stage than the number of Projects that it intends to offer financial support to, in order to maintain competitive tension throughout the process; and
- request additional information from Applicants on any aspects of their applications, including with respect to technical, legal, financial and commercial matters.

Invitation to Participate in Negotiations and Due Diligence

HMG will issue a formal invitation to participate in due diligence and negotiations to any successful Applicants. That invitation will set out:

- details of any further information requirements, including any additional technical, legal, financial and commercial information Applicants will be required to provide to support their applications;
- instructions in relation to the submission of that further information;
- instructions and information in relation to the conduct of any discussions that may be carried out between HMG and Applicants; and
- any other relevant information about the due diligence and negotiations stage.

Negotiations

Participating in any stage of this T1x HyNet Process, including the due diligence and negotiation stage does not mean any support through a CCUS Business Model will be offered, or access to the T&S Network enabled. Any decision to offer support or select a Project to access the T&S Network is discretionary and would remain always subject to matters including, but not limited to, the passage of necessary legislation, development of the overall regulatory framework, compliance with applicable subsidy control requirements, HMG affordability envelopes, HMG being satisfied that the Project represents VfM for the consumer and the taxpayer, consideration of any balance sheet implications, all relevant statutory and other consents being obtained, and successful completion of any due diligence and negotiations.

DESNZ reserves the right to pause or terminate negotiations at any time.

This Application Guidance is available from:
https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-december-2023-statement

If you need a version of the Application Guidance in a more accessible format, please email alt.formats@beis.gov.uk. Please tell us what format you need. It will help us if you say what assistive technology you use.