



Department for
Business, Energy
& Industrial Strategy

Carbon Capture Usage and Storage: Market Engagement on Cluster Sequencing

A consultation seeking views on a potential approach to allocating CCUS Programme support.

Closing date: 10 March 2021



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

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General information

Why we are consulting

The purpose of this consultation is to seek views on a possible approach to sequencing the deployment of carbon capture, usage and storage (CCUS) clusters. We wish to receive further thoughts on approaches to cluster sequencing through the consultation process, with a view to developing and refining our proposals in conjunction with interested stakeholders

Proposals will necessarily be reviewed in light of consultation responses as well as ongoing policy developments, subsidy control rules and the timetable for development of any necessary supporting legislation. Nothing in this document creates any basis for any form of expectation or reliance. Government reserves the right to discontinue any proposed process at any time.

Consultation details

Issued: 10 February 2021

Respond by: 10 March 2021

Enquiries to:

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Tel: (+44) 20 7215 8532

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Consultation reference: Carbon Capture, Usage and Storage – Market Engagement on Cluster Sequencing

Audiences:

The Government anticipates that this consultation will be of interest to any stakeholder with an interest in the development of CCUS policy. This may include:

- Investors and developers involved in potential CCUS projects
- The industrial and energy sectors more widely
- NGOs and other organisations with an interest in climate and energy

However, any organisation or individual is welcome to respond.

Territorial extent:

This consultation proposes a method of allocating support to proposals relating to the energy markets in Great Britain as well as to support industrial carbon capture. Responsibility for energy markets in Northern Ireland lies with the Northern Ireland Executive's Department for the Economy. Depending on the specific industrial process in question, some matters covered by this consultation may be devolved to Scotland, Wales and Northern Ireland. In general, we anticipate that the process of identifying clusters to support will be carried out across the UK, however the Government continues to discuss and refine its proposals in discussion with the devolved administrations and, in light of those discussions, may modify its processes to reflect devolved responsibilities.

How to respond

Your response will be most useful if it is framed in direct response to the questions posed, and with evidence in support wherever possible. Further comments and wider evidence are also welcome. When responding, please state whether you are responding as an individual or representing the views of an organisation.

We encourage respondents to make use of the online e-consultation wherever possible when submitting responses as this is the Government's preferred method of receiving responses. However, responses in writing or via email will also be accepted. Should you wish to submit your main response via the e-consultation platform and provide supporting information via hard copy or email, please be clear that this is part of the same consultation response.

Respond online at: <https://beisgovuk.citizenspace.com/clean-electricity/carbon-capture-usage-and-storage-market-engagement>

or

Email to: clustersequencingconsultation@beis.gov.uk

Write to:

Carbon Capture Usage and Storage Policy Team
Department for Business, Energy and Industrial Strategy
3rd Floor, Spur
1 Victoria Street
London
SW1H 0ET

Confidentiality and data protection

Information you provide in response to this consultation, including personal information, may be disclosed in accordance with UK legislation (the Freedom of Information Act 2000, the Data Protection Act 2018 and the Environmental Information Regulations 2004).

If you want the information that you provide to be treated as confidential please tell us, but be aware that we cannot guarantee confidentiality in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not be regarded by us as a confidentiality request.

We will process your personal data in accordance with all applicable data protection laws. See our [privacy policy](#).

We will summarise all responses and publish this summary on [GOV.UK](#). The summary will include a list of names or organisations that responded, but not people's personal names, addresses or other contact details.

Quality assurance

This consultation has been carried out in accordance with the government's [consultation principles](#).

If you have any complaints about the way this consultation has been conducted, please email: beis.bru@beis.gov.uk.

Executive Summary

The Prime Minister's Ten Point Plan announced a commitment to deploy two carbon capture clusters by the mid-2020s and a further two clusters by 2030. This document builds on that important announcement and the December update on carbon capture usage and storage (CCUS) business models, to set out a possible approach for determining the deployment sequence of carbon capture clusters to achieve the Ten Point Plan commitment. The proposed approach would prioritise two clusters for deployment in the mid-2020s through a two-phase process that is set out below. However, we are mindful that there are other approaches that could be taken; we welcome views on these alternatives and will continue to test and refine the sequencing approach through the consultation process. The two-phase process that we have proposed is as follows:

- **Phase-1 Provisional Cluster Sequencing** – this phase would sequence clusters, with two clusters provisionally named onto Track-1. Track-1 is the term we use for the clusters that would be supported to deployment in the mid-2020s. Phase-1, as per our indicative timetable, would begin in April and conclude in October 2021.
- **Phase-2 Final Project Selection** – this phase would determine which individual projects within, or that could feasibly connect to, the cluster locations identified in Phase-1, would receive CCUS programme support, and allocate this support to them. Phase-2, as per our indicative timetable, would begin in August 2021.

This proposed two-phase process would focus on sequencing two clusters to be deployed in the mid-2020s; we refer to these clusters as Track-1. However, this is not the full extent of our ambition – we have publicly committed to a further two clusters by 2030 and we know that we will need all clusters to decarbonise if we are to reach net zero. Therefore, when announcing the two Track-1 clusters in October 2021, we would also: bring forward details of a future process to sequence Track-2 clusters, name a set of reserve clusters and continue to engage with potential Track-2 clusters. Further details on this can be found in Section 2.

Phase-1 – Provisional Cluster Sequencing

Phase-1 would sequence two clusters onto Track-1. To enter Phase-1 a cluster would need to identify a Cluster Lead and this Cluster Lead would be required to submit a Cluster Plan to BEIS. This Cluster Plan would be required to set out the transport and storage (T&S) proposal and a first phase of carbon capture projects. Phase-1 would have two stages: eligibility and evaluation.

- **Cluster Eligibility** – the eligibility stage would screen Cluster Plans for eligibility against three criteria. It is expected that the results of the eligibility stage would be announced in August 2021 and only eligible clusters would progress to the evaluation stage. Refer to Section 3 for further details.
- **Cluster Evaluation** - in the evaluation stage Cluster Plans would be assessed against five weighted evaluation criteria. The two highest performing clusters would be

sequenced onto Track-1 with the results expected to be announced in October 2021. Further details on the evaluation process and criteria can be found in Section 4.

No funding would be allocated at this point; the Phase-1 cluster decision would be provisional and fully reversible. Projects within these cluster locations would have the first opportunity to negotiate with government.

Phase-2 – Final Project Selection

Phase-2 would determine which individual projects within, or able to connect to, the cluster locations sequenced onto Track-1 will be selected and allocate support to these projects. The successful completion of Phase-2 within a cluster would also finalise the previously provisional cluster sequencing decision. The Phase-2 process would be different for each CCUS application (T&S, power, industry, hydrogen).

For T&S the project would have been determined by Phase-1 Cluster Sequencing as there would be, by definition, only one T&S proposal included in each Phase-1 Cluster Plan. Therefore, for T&S, Phase-2 would be composed of negotiation and due diligence only.

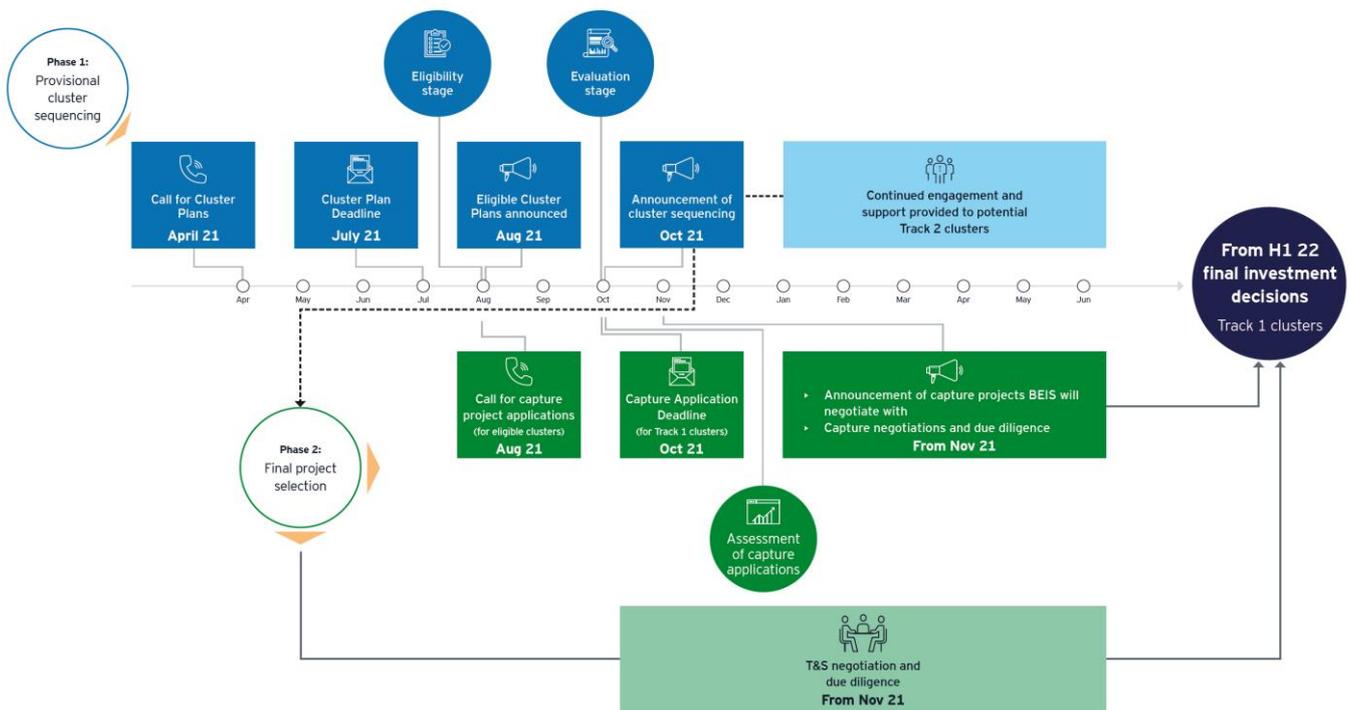
For capture projects this would be an open process where individual projects, able to connect to clusters sequenced onto Track-1, would be invited to submit applications to BEIS in October, following the announcement of the Phase-1 decision. Whilst the allocation processes would be adapted for each application (power, industry, hydrogen) the aim would be for support to be agreed through a process whereby BEIS would negotiate with and perform due diligence on capture projects for a limited number of contracts.

These Phase-2 processes would be open to all capture projects that could feasibly connect to the cluster location, not just those included on the Phase-1 Cluster Plan submitted by the Cluster Lead. All projects, including those represented on the Phase-1 Cluster Plan, would be required to submit a project level application in October. The Call for these applications would be expected in August, alongside the announcement of Phase-1 cluster eligibility. Further detail on Phase-2 is set out in Section 5.

Why We Are Consulting

Through this consultation, we are seeking views on sequencing the deployment of CCUS clusters. This document seeks views on a proposal for doing so, based on five overarching evaluation criteria that are set out in Section 4. These have been developed recognising the different characteristics of potential clusters and the need to balance deployment against factors such as cluster maturity, cost reduction potential and economic benefits. We ask specific questions in relation to the approach set out in the document, but also welcome views on any alternative proposals that recognise the complexity of deploying multiple CCUS clusters and the constraints (such as technical maturity, complexity of projects and required level of subsidy support) associated with doing so.

Figure 1: A Summary of the Proposed Two-Phased Cluster Sequencing Process.



Glossary of terms

Track-1 – the two clusters that are expected to be deployed by the mid-2020s.

Track-2 – the two additional clusters, beyond those deployed in the mid-2020s, that are expected to be deployed by 2030. Note, however, that this is not the extent of our ambition as all clusters will need to decarbonise to achieve net zero.

Phase-1 – the first phase of the process which would provisionally sequence clusters onto Track-1. No funding would be awarded at this point.

Phase-2 – the second phase of the process which would determine which projects, within the cluster locations sequenced onto Track-1 in Phase-1, would receive support, and allocate support to these projects.

Cluster Eligibility – the first stage of the Phase-1 Cluster Sequencing Process which would determine whether Cluster Plans are eligible to proceed to the evaluation stage.

Cluster Evaluation – the second stage of the Phase-1 Cluster Sequencing Process which would evaluate the performance of eligible Cluster Plans against a set of evaluation criteria to determine which clusters would be sequenced onto Track-1.

Cluster Plan – a plan that sets out the T&S proposal and a first phase of carbon capture projects. The capture projects could be any combination of capture applications provided

there are a minimum of two. This Plan would be submitted by the Cluster Lead to BEIS and would form the basis of the assessment for Phase-1 Provisional Cluster Sequencing.

Cluster Lead – responsible for submitting the Cluster Plan to BEIS. Likely to be the entity primarily responsible for the T&S proposal.

The proposals

Section 1: Introduction

A Green Industrial Revolution

The Covid-19 pandemic has had an unprecedented impact on our lives and on the economy, both here in the UK and across the world. It is now more important than ever, as the UK looks to a future recovery from the impacts of Covid-19, that we focus on building a clean, resilient, and sustainable economy. This is why, in November, the Prime Minister committed to a green industrial revolution, focused on driving innovation, creating opportunities for exports, and generating green jobs and growth across the country to level up regions of the UK.

We face a pivotal moment where action on climate change must be taken. In 2019 the UK became the first major economy to place a commitment to net zero greenhouse gas emissions by 2050 into law. In the lead up to our 2021 presidencies of both COP26 and the G7, it is important that the UK continues to demonstrate global leadership on tackling climate change, and, by taking a leading stance, encourages other nations to follow.

Further to the environmental benefits, a green industrial revolution will provide large-scale economic benefits to the UK. It can support up to 250,000 well-paid, green jobs by 2030, with additional high-skilled jobs being created in the lead-up to 2050. Furthermore, as the UK becomes a world leader in low carbon technologies and deployment, it will stimulate export opportunities across the country and help to level up regions of the UK.

Importance of CCUS

The Intergovernmental Panel on Climate Change (IPCC) estimates that, to keep temperatures from rising by more than 1.5°C this century, CO₂ emissions will need to be reduced globally by between 40 – 60% by 2030 compared to 2010¹.

The UK has already made significant progress in reducing CO₂ emissions. According to the Climate Change Committee (CCC), between 1990 and 2018 greenhouse gas emissions from the UK economy fell by 40% whilst the UK economy grew by 75%². However, we must accelerate the rate of CO₂ reduction if we are to eradicate our contribution to climate change and reach the 2050 net zero commitment.

Carbon Capture Usage and Storage (CCUS) will play a major role in this. The CCC state that CCUS is essential for reaching net zero: a necessity not an option. They advise that multiple CCUS clusters will need to be operational by the mid-2020s to enable the UK to reach net zero

¹ [Intergovernmental Panel on Climate Change: Global Warming of 1.5°C](#)

² [Committee on Climate Change Progress Report to Parliament 2019](#)

by 2050³. The various CCUS applications each can play a different, but crucial, role in eradicating the UK's contribution to climate change.

- By capturing and permanently storing industrial emissions CCUS can transform our industries into zero carbon global leaders, enabling key sectors to be competitive in a global economy, and attracting investment in new industrial facilities. This is significant given that manufacturing and refining are major contributors to UK carbon emissions, accounting for 16% of total annual emissions.
- In the power sector, thermal generating stations with CCUS can deliver non-weather-dependent low carbon electricity to balance renewable intermittency, maintain security of supply and keep total system costs low.
- Low carbon hydrogen could transform the UK's energy system. It could offer significant flexibility and optionality in hard to decarbonise sectors. However, some current hydrogen production methods, such as methane reformation and biomass gasification, create CO₂ as a by-product. CCUS could help solve this by capturing the CO₂ before it is emitted into the atmosphere.
- CCUS will also have a role to play for some of the most scalable greenhouse gas removal (GGR) technologies, such as bioenergy with CCS (BECCS) and direct air carbon capture with storage (DACCS). These technologies actively remove CO₂ from the atmosphere and are reliant on CCUS infrastructure for the transport and storage of the CO₂ they capture. The Climate Change Committee (CCC) have been clear that to achieve net zero, these technologies will be required to balance residual emissions from some of the most difficult to decarbonise sectors.

CCUS also provides significant economic opportunities. Our geography means that the UK has one of the greatest CO₂ storage potentials of any country in the world. It is estimated that the UK Continental Shelf could safely store 78 billion tonnes of CO₂, which is the equivalent of 200 years of the UK's annual CO₂ emissions⁴. Unlocking this potential through the development of CO₂ transport and storage networks could generate strategic national assets that could, as well as storing our own emissions, store internationally imported CO₂; a market which, according to government commissioned analysis, could be worth up to £14 billion by 2050⁵.

Overall, it is estimated that CCUS could support up to 50,000 jobs by 2030⁶. Importantly, many of these jobs will be well-paid and highly skilled and will be concentrated in the UK's industrial regions. Investing in these areas can help to transform the UK's industrial heartlands, revitalising and levelling up the local economy. This will be particularly important as the UK looks to start a green industrial revolution and begins to recover from Covid-19.

³ [Committee on Climate Change Report on Net Zero: The UK's Contribution to Stopping Global Warming](#)

⁴ Pale Blue Dot: Progressing Development of the UK's Strategic Carbon Dioxide Storage Resource (2016)

⁵ Energy Technologies Institute LLP, taking stock of UK CO₂ storage, 2017, [https://www.eti.co.uk/insights/taking-stock-of-UK-CO₂-storage](https://www.eti.co.uk/insights/taking-stock-of-UK-CO2-storage)

⁶ BEIS internal analysis based on the published EINAs (2019). The figures include jobs supported through power, industry and transport and storage related roles. They exclude jobs supported through CCUS hydrogen production.

Increase in ambition

At the 2020 Spring Budget, the Chancellor announced a CCS Infrastructure Fund (CIF) of at least £800 million, to establish CCUS in at least two sites, one by the mid-2020s and a second by 2030. However, in recognition of the vital role CCUS can play in meeting our net zero target we have increased this commitment. We are now, as announced in the Prime Minister's Ten Point Plan speech, committed to supporting the deployment of two carbon capture clusters by the mid-2020s and a further two clusters by 2030. Our vision is that CCUS will enable these locations to be transformed into SuperPlaces – low carbon hubs of technological development where CCUS, renewables and hydrogen congregate. We also have an ambition to capture 10 million tonnes of CO₂ per annum and to have 5 GW of low carbon hydrogen capacity by 2030.

This increase in ambition will be supported by:

- An extra £200 million of funding to increase the CIF to £1 billion. The Fund is expected to support the deployment of two clusters by the mid-2020s, with another two clusters to be created by 2030.
- A £240 million Net Zero Hydrogen Production Fund (NZHF), which will support a twin-track approach of supporting both CCUS-enabled 'blue' and electrolytic 'green' hydrogen production facilities.
- CCUS business models for T&S, power, and industrial capture as well as business models for low carbon hydrogen. Work on the detail of these models continues to progress in collaboration with the sector.
- A revenue mechanism to bring through private sector investment into industrial carbon capture and hydrogen projects via our business models. Details of this revenue mechanism will be brought forward in 2021.

Support for power CCUS will be funded by consumer subsidies, as announced at the spring 2020 budget. Any power CCUS project will need to be in a location with access to a T&S network.

Progress so far

Since the Spring Budget announcement, we have taken significant steps towards being able to support the deployment of the first CCUS clusters in the UK. We have:

- Published the Government Response on potential business models for Carbon Capture Usage and Storage, in August 2020⁷.
- Published a further update on the business models for Carbon Capture Usage and Storage in December 2020 which set out the high-level design of the transport and storage, power, and industrial capture business models. A consultation on the Government's preferred hydrogen business models can be expected in Q2 2021⁸.

⁷ <https://www.gov.uk/government/consultations/carbon-capture-usage-and-storage-ccus-business-models>

⁸ <https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models>

- Increased the size of the UK Research and Innovation (UKRI) Industrial Decarbonisation Challenge (IDC) fund to over £200m to enable important development work to progress in more cluster locations.
- Published a call for evidence on greenhouse gas removals (GGRs) in December 2020 inviting stakeholder views on the role of government in stimulating the development and deployment of GGRs⁹.
- Launched the Direct Air Capture and other GGRs Innovation Programme which will allocate up to £70 million of funding seeking to support the development of GGR technologies to help them achieve commercialisation¹⁰.
- Published the Energy White Paper which sets out plans for how the UK will decarbonise our energy system and reach net zero by 2050¹¹.
- Published the National Infrastructure Strategy, setting out our plans to transform UK infrastructure to be able to achieve net zero by 2050¹².

This Document

As committed to in the Ten Point Plan, we are now bringing forward further detail on progressing deployment of CCUS in industrial clusters in the 2020s. We want to work closely with industry to determine the optimal process for sequencing CCUS deployment throughout this period. This document sets out:

- A potential two-phase process for allocating CCUS Programme support¹³ and a possible timeline on which we could execute this process. This is set out in Section 2.
- Considerations in relation to potential entry requirements and entry process for Phase-1 cluster sequencing. This is set out in Section 3.
- Detailed considerations for Phase-1 cluster sequencing, including the proposed evaluation criteria and the way in which these criteria could be compared. This is set out in Section 4.
- The direction of travel for Phase-2 of this process, including how we might approach allocating support to specific projects within clusters. This is set out in Section 5.

Whilst clusters and individual projects will consider their own proposals best placed for deployment, the different characteristics of potential clusters and of the importance of CCUS in achieving net zero means that we need to develop our understanding of how best to sequence the deployment of CCUS. Through the approach set out in this document, we aim to develop a

⁹ <https://www.gov.uk/government/consultations/greenhouse-gas-removals-call-for-evidence>

¹⁰ <https://www.gov.uk/government/publications/direct-air-capture-and-other-greenhouse-gas-removal-technologies-competition>

¹¹ <https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future>

¹² <https://www.gov.uk/government/publications/national-infrastructure-strategy>

¹³ By CCUS Programme support we refer to: the CCS Infrastructure Fund, T&S economic licence, Government Support Package for T&S, Dispatchable Power Agreement, Industrial CCS contract, H2 business model and Net Zero Hydrogen Fund. This support is outlined in further detail in Section 5.

greater understanding of the costs of deployment, and the contribution deployment can make to other factors such as economic benefits. Without this understanding, there is a risk that deployment occurs in a way that is not affordable or that potential benefits do not materialise. We are therefore consulting on a proposed process that can facilitate this ambitious timeline with a view to obtaining and considering feedback on our proposed approach.

Section 2: Overview of Two-Phase Approach

We are consulting on a possible approach to allocate CCUS Programme support for Track-1 clusters through a two-phase process:

- **Phase-1 – Provisional Cluster Sequencing**
- **Phase-2 – Final Project Selection**

Phase-1

The Phase-1 assessment would be at the CCUS cluster level. We propose defining a CCUS cluster as a T&S network and a first phase of carbon capture projects. This first phase of capture projects would need to consist of at least two projects and can be any combination of power, industrial capture, and hydrogen. We consider assessment at the CCUS cluster level, as opposed to running individual allocation rounds to specific applications, necessary to reflect the inherent interdependency between the different parts of the CCUS chain. This is best illustrated by highlighting the problems that would likely arise if government were to select early CCUS locations based only on the consideration of a single CCUS application. T&S is used here as an example, but the same would apply if sequencing were based only on any one capture application (power, industry, hydrogen). Specifically:

- If capture projects at the location are not considered, the location judged to have the best T&S proposal may not have any, or enough, viable capture proposals. This would increase the risk of a timing mismatch between the T&S infrastructure being available and capture projects being online.
- In the extreme, sequencing in this way could result in stranded T&S assets.
- Furthermore, even if there were sufficient viable capture projects at the selected location, unless all parts of the chain are considered, an optimal sequencing decision is unlikely to be made. If the cluster location were sequenced based only on the merits of the T&S project, it could be the case that the merits of the capture projects in an alternative location were such that, had government considered them, it would have made a different sequencing decision.

For these reasons, to enter the Phase-1 Cluster Sequencing Process, we propose that the cluster would be required to provide a Phase-1 Cluster Plan. The Cluster Plan would need to set out a T&S network proposal and an associated first phase of potential carbon capture projects that could connect to the network. This would enable government to evaluate which locations have the potential to offer the best value for money proposition, in the round, across the different components of the CCUS chain.

In Phase-1, cluster proposals would be assessed according to a set of criteria and two clusters would be sequenced onto Track-1 to be deployed by the mid-2020s. This cluster sequencing decision would be provisional with no funding committed at this stage. The benefit of being sequenced onto Track-1 is that projects in Track-1 clusters would have the first opportunity to negotiate, subject to due diligence, a potential package of support with government. Further

details on the Phase-1 process and the Phase-1 assessment criteria are set out in Section 3 and Section 4, respectively.

Two further clusters, Track-2, would then be deployed by 2030. We are currently minded not to finalise the composition of Track-2 through the process set out in this document. This is to encourage innovative proposals to continue to be brought forward across the decade. The rationale and trade-offs associated with this are discussed in further detail later in this section and we are interested in hearing stakeholder views on this point.

Phase-2

Phase-2 would allocate support to specific projects within those clusters that have been provisionally sequenced onto Track-1 in Phase-1. The design of the Phase-2 allocation process will be different for each application (T&S, power, industrial capture, hydrogen) with details of each provided in Section 5.

Importantly, whilst the Phase-1 Cluster Plan would have set out specific capture projects, Phase-2 Final Project Selection will not be restricted only to projects on this plan. Government would use Phase-2 to provide an opportunity for other capture projects in the selected cluster location, and potentially at remote sites, to come forward to compete against the emitters that have been included within the Phase-1 Cluster Plan, where there is scope for such competition. Developers of individual capture projects which are not included on a Phase-1 Cluster Plan, but are interested in entering in Phase-2, are encouraged to identify themselves to BEIS before the Phase-2 process formally opens (the consultation process can be used to do this).

The rationale for proposing to allow alternative projects to enter, is:

- That it provides a fair opportunity for all existing projects at the cluster location, whether affiliated with the cluster consortia or not, to participate in the project selection process. It also provides a potential opportunity for projects at remote sites to be considered. Taking this approach and clearly signalling it in this document could also stimulate new projects to come forwards, both within and outside of the cluster locations likely to be considered for Track-1.
- Whilst a counter to this might be that the second phase is unnecessary as the Cluster Lead will already have down-selected the best projects to include within the Phase-1 Cluster Plan, if such projects are reliant on support through the business models, the appropriate process will need to be carried out to confirm that such support is appropriately directed. Section 5 aims to provide forward visibility as to government's likely Phase-2 considerations, such that the Cluster Lead has the opportunity to put forward a plan that is less likely to require alterations in Phase-2.
- Multiple projects contesting for a limited number of contracts, at least where possible, also has the potential to drive better value for money outcomes for consumers and taxpayers.

The aim of the proposed two-phase process is to drive optimal outcomes for government, the sector, consumers, and taxpayers alike. Phase-1 is designed to ensure that the cluster location has the potential to offer a baseline value for money proposition across the full breath of CCUS applications; whereas Phase-2 seeks to optimise outcomes at that location, once selected.

As well as the optimisation of capture projects described above, Phase-2 would also involve detailed due diligence and negotiations between government and projects. This would be with the T&S projects sequenced through Phase-1 and capture projects prioritised through Phase-2. No support would be awarded to any project until full due diligence had been completed.

Indicative Timeline

A potential timeline on which we could execute this process is set out in Table 1. This timeline seeks to balance being able to facilitate the deployment of two clusters by the mid-2020s whilst also providing enough time to run a sufficiently robust process. It is intended to be indicative and will be subject to potential change following further engagement across government and through the consultation process.

Table 1: Indicative Cluster Sequencing Timeline

Indicative date	Milestone
10 February 2021	Cluster Sequencing Consultation published by BEIS
February	Industry engagement
10 March 2021	Cluster Sequencing Consultation closes
April 2021	Phase-1 Cluster Sequencing launched ¹⁴
July 2021	Deadline for Phase-1 Cluster Plans to be submitted to BEIS
August 2021	Phase-1 eligible clusters announced; and, Phase-2 Call to capture projects in eligible clusters ¹⁵
October 2021	BEIS announces the result of Phase-1 Cluster Sequencing
October 2021	Phase-2: deadline for capture project applications
From November 2021	Phase-2: project assessment, negotiation, and due diligence

¹⁴ We would also intend to publish our government response to this consultation alongside the launch document.

¹⁵ Note that potential projects should, ideally, let BEIS know of their interest in participating in this phase in the first half of 2021 to discuss the project details.

Rationale

We think it is important to run a robust and transparent process. We have therefore factored in the following stages for Phase-1 Cluster Sequencing:

- Engagement – we consider it important to engage with the sector on this process before executing it. This engagement is firstly through this document, but we will also be holding engagement sessions in late February to work collaboratively with stakeholders to develop the process further.
- Application window – we have timetabled a 10-week application window to give industry time to prepare submissions. We hope that this window, combined with the forward visibility provided by this document, will allow sufficient time for responses.
- Assessment period – we have timetabled a 12-week assessment window so that we can make an accurate and robust Phase-1 sequencing decision.

Following these stages, the Phase-1 Cluster Sequencing Process, if following this timeline, would conclude in October 2021.

Phase-2 Overlay

It is vital that early clusters can be ready to take final investment decisions in time to be operational in the mid-2020s, in line with the Ten Point Plan. This will enable CCUS to start making positive contributions to near term Carbon Budgets and the UK to start demonstrating leadership in this technology on the international stage. It will also enable industry to begin gathering the crucial learnings that will enable the CCUS to be deployed at scale in the 2030s.

It is therefore important that we maximise the time we have for project assessment, negotiations, and due diligence in Phase-2. To facilitate this, rather than run Phase-1 (Provisional Cluster Sequencing) and Phase-2 (Final Project Selection) sequentially, we are considering timetabling a partial overlay.

In August, shortly after Phase-1 Cluster Plans have been received, BEIS would announce which clusters had passed the eligibility stage (details in Section 3) and those eligible clusters would progress into the evaluation stage (details in Section 4). Alongside this announcement BEIS would publish a Call for capture projects across power, industrial carbon capture and hydrogen, within, or that could feasibly connect to, these eligible clusters. All capture projects that wish to be considered for support, including those that have been represented in the Phase-1 Cluster Plan, would be required to prepare and submit an application. As above, capture projects, particularly those not associated with a Phase-1 Cluster Plan, that are considering this as an option are encouraged to identify themselves to BEIS in advance of preparing a bid (through the consultation process).

These capture applications would be due in October shortly after the conclusion of Phase-1, when the Track-1 cluster decision is expected to be announced. Only projects with a credible

plan to connect to one of the clusters sequenced onto Track-1 should submit bids. We recognise a challenge here that, in some cases, work would have been completed to prepare capture applications for projects in locations where the corresponding cluster proposal is not subsequently sequenced onto Track-1. BEIS would not take responsibility for any work or resources expended on these applications, or indeed on any applications within the selection process, any expenditure would be at the risk of the companies involved. However:

- There will be future allocation rounds, for example for Track-2 clusters, in which parts or all the prepared information may be relevant.
- The developers of any project for which the first-choice cluster has not been sequenced onto Track-1, but where the project could feasibly connect to a Track-1 cluster, would still have an opportunity to apply in October. This is discussed further in Section 5.

Despite this challenge, BEIS considers that the overlay option could be the right balance between being able to move quickly whilst also allowing all projects, whether affiliated with cluster consortia or not, an opportunity to enter the process.

We have not set out a detailed timeline for Phase-2 of the process. This is because the length of Phase-2 will be determined by a range of factors, not all of which can be controlled by government. Final investment decisions could be from H1 2022 onwards but this is provided as an indicative date only and is also subject to progress in the development of the CCUS business models. Any process will not conclude until BEIS has satisfied itself that the relevant projects represent value for money and an outcome that is fair to both taxpayers and consumers has been reached. The length of the Phase-2 process will also be influenced by the timelines of the clusters that are selected to be on Track-1; for example, government may take longer to execute Phase-2 if it is not on the critical path of the development of the relevant clusters. Section 5 sets out our proposal for how project bids could be assessed in Phase-2.

Importance of Track-2

The primary focus of the proposed 2021 process is to identify potential Track-1 clusters. Track-1 clusters are the clusters that we intend to support to deployment in the mid-2020s. However, the deployment of two clusters by the mid-2020s is not the extent of our ambition. Specifically:

- We are committed to a further two clusters by 2030 as announced by the Prime Minister in the Ten Point Plan. We refer to these later clusters as Track-2.
- We are also aware that we will need more projects and clusters beyond 2030; all clusters will need to be decarbonised if we are to meet our legally binding commitment of net zero.

Supporting the deployment of further clusters, beyond those on Track-1, will:

- Be crucial to achieving our ambition of capturing and storing 10Mt of CO₂/year by 2030, a level of deployment supported by the CCC. It will also likely help meet our 5GW 2030 hydrogen ambition.

- Increase the range of CCUS applications, both of terms of storage types and capture applications, to maximise UK learning in CCUS. This learning will be crucial if we are to have the option to deploy at scale in the 2030s in line with the CCUS Action Plan.
- Maximise the UK's comparative advantage of ample storage capacity and engineering capability, an important step towards become a global leader in CCUS.
- Be vital to achieving the Industrial Clusters Mission, which has recently been increased to four low carbon industrial clusters by 2030 and at least one net zero cluster by 2040.

We have evaluated internally whether we should focus the Phase-1 Cluster Sequencing process on Track-1 clusters only, or whether to also use the process to identify Track-2 clusters. In considering this we are trading off:

- The importance of sending a strong signal to those that have performed well in the process to provide the confidence and motivation required to keep these clusters progressing at pace with their development work. This progress will be essential if we are to meet our public commitment to support four clusters to operations by 2030. This reasoning would lead us towards naming both Track-1 and Track-2.
- The importance of retaining optionality and not locking ourselves into a decision prematurely. A lot could change between now and 2030 and it is important that government is able to respond this change; the previous CCUS competition cancelled in 2015 was criticised for narrowing down options too early and it is important that we avoid this¹⁶. It is also important that clusters not developed enough to participate in the 2021 process to have an opportunity to participate in the future and, indeed, for new clusters to emerge. Government may wish to maximise the opportunity for innovation in the sector and allow a pipeline of clusters and projects to develop. This would lead us towards naming Track-1 clusters only and leaving the Track-2 decision to a later point.

Our current minded-to position, that we are hoping to test through this consultation, is a compromise position. This would be to name up to two reserve Track-1 clusters in October alongside those clusters sequenced onto Track-1. To be named as a reserve cluster, a cluster would need to have passed the eligibility and evaluation stages of the Phase-1 Cluster Sequencing Process. Publicly naming these reserve clusters would acknowledge their strong performance whilst also leaving open the opportunity for innovation in the sector by not finalising Track-2 clusters at this point.

The reserve clusters would also be crucial if negotiations were to falter or due diligence were to fail on a Track-1 cluster. Should this happen government may pause negotiations with a Track-1 cluster and negotiate with a reserve cluster instead; a process we refer to as 'reversing the Tracks'. Further detail on reversing the Tracks is included in Section 5.

To encourage continued progress within potential Track-2 clusters we:

¹⁶ National Audit Office report: carbon capture and storage the second competition for government support.

- Have increased the size of the UK Research and Innovation (UKRI) Industrial Decarbonisation Challenge (IDC) fund to over £200m to enable important development work to progress in more cluster locations.
- Will continue to engage with potential Track-2 clusters and projects throughout the early 2020s, to understand their path to maturity and when further intensified support might best be timed.
- Are committing to publishing an allocation process for Track-2 clusters in October, alongside the announcement of the successful Track-1 clusters. We are interested in hearing views on how we might best approach the allocation process for Track-2 through this consultation and the timing for when the process might commence.

Further, BEIS also reserves the right to name more than two clusters onto Track-1 to be supported to deployment in the mid 2020's. This would, of course, be subject to value for money considerations and affordability constraints.

It is also important to note that for any future Track-2 process we will consider relaxing the eligibility criteria that have been used within the Track-1 process. Specifically, we are unlikely to make it a requirement of entry that a cluster includes a storage proposal. This is because if we already have two stores operational by the time Track-2 clusters are deployed it may not be necessary for all clusters applying for a Track 2 process to have their own store, providing they have a credible storage solution. This might include, for example, shipping to a store already in operation.

Consultation Questions on Overview of Two-Phase Approach

1. **Do you have any comments on the two-phase process where provisional sequencing first takes place at the CCUS cluster level, followed by final selection at the individual project level?**
2. **Do you have any comments on the indicative timeline? Specifically, does the 10-week window give enough time for industry to gather and submit information for Phase-1 (further information on application information is included within Section 3)?**
3. **Do you have any concerns about the proposed overlay of Phase-2 (Final Project Selection) and Phase-1 (Provisional Cluster Sequencing)?**
4. **Do you agree that the process should focus on identifying clusters for Track-1? Does the commitment to bring forward details of a process to select clusters for Track-2 mitigate the risks associated with not naming the second Track in 2021?**
5. **What should the allocation process for Track-2 clusters look like? What factors will it be important for government to consider?**

Section 3: Entry into Phase-1

Phase-1 would provisionally sequence two CCUS clusters onto Track-1. This section sets out the proposed Phase-1 eligibility criteria and rationale behind these requirements. Cluster Plans that pass the eligibility stage would progress into the evaluation stage for which details are set out in Section 4.

Eligibility Criteria

We are considering proposing three Phase-1 eligibility criteria:

- The cluster must credibly demonstrate that it can be operational by 2030;
- The cluster must be in the United Kingdom; and
- The cluster must meet the definition of a CCUS cluster, which we define as a T&S network¹⁷ and an associated first phase of at least two carbon capture projects.

Operational by 2030

This eligibility criterion has been proposed because government is determined to deploy CCUS in the UK in the 2020s and we have a commitment to two clusters by the mid-2020s and a further two clusters by 2030. Deployment this decade is important for three key reasons:

- **Foundation for net zero:** It is estimated that 60-180 MtCO₂ per year need to be captured for the UK to meet its legally binding net zero commitment. CCUS projects have long lead times, so for the UK to be on track to meet this level of deployment we will need to be deploying CCUS at scale in the 2030s; and, in turn, if we are to deploy at scale in the 2030s we will need to de-risk, learn and gain cost certainty in the 2020s.
- **Near-term Carbon Budgets:** deploying CCUS in the 2020s can make an important contribution to near-term Carbon Budgets.
- **Maximising comparative advantage:** the UK's natural advantages of ample offshore storage capacity, engineering skills base and oil and gas supply chains make it well-placed to capture up to £10bn of a £200bn global CCUS market¹⁸. However, if we do not move quickly, in the 2020s, we will be left behind by other countries that are making material progress in CCUS such as Norway, the United States and the Netherlands.

To be clear, as stated previously in the document, we expect Track-1 clusters to be operational by the mid-2020s. However, we have not defined the end of the mid-2020s and included this as an eligibility criterion because:

- If we did not receive two Cluster Plans that could credibly deploy by the specified date, we might wish to have the option to consider a cluster with a later deployment date. We would need to have received such a Cluster Plan to be able to do this.

¹⁷ We in turn define a T&S network as a set of onshore pipelines, offshore pipelines and an associated offshore storage facility. The pipelines must be capable of transporting CO₂ to the storage site (for example a saline aquifer or depleted oil and gas field) that must be able to store this CO₂ safely and permanently.

¹⁸ Pale Blue Dot: Progressing Development of the UK's Strategic Carbon Dioxide Storage Resource (2016).

- Similarly, we are minded to name reserve clusters such that, if negotiations falter or due diligence on a Track-1 cluster fails, BEIS will have the option to reverse the Tracks. Further information on reversing the Tracks is set out in Section 5. We may wish to consider clusters with later deployment dates for these reserve list positions. We will need to have received such Cluster Plans to be able to do this.

Located in the United Kingdom

This criterion has been proposed to reflect the UK government's commitment to supporting decarbonisation across the UK. CCUS can support Scotland and Wales to meet their respective net zero targets of 2045 and 2050¹⁹.

We have not identified any industrial clusters or potential CCUS projects in Northern Ireland but would encourage any such projects or cluster to identify themselves through this consultation.

Meets the Definition of a CCUS Cluster

We are minded towards making meeting the definition of a CCUS cluster a requirement of entry to Phase-1 Provisional Cluster Sequencing. We define a CCUS cluster as a T&S network (incorporating the onshore and offshore network and offshore storage facility) and an associated first phase of carbon capture projects.

This would restrict entry only to those clusters that can demonstrate a coordinated, full chain proposal. This is to reflect the inherent interdependency between the different parts of the CCUS chain. An explanation of the importance of this interdependency is set out earlier in this document, in Section 2.

We are aware of some clusters that are developing decarbonisation plans that include carbon capture and hydrogen applications but do not contain a specific T&S network proposal. We are satisfied that these clusters are not eligible to be sequenced onto Track-1, because:

- Such a cluster, inherently, cannot be Cluster 1 – any capture projects or proposals in a cluster without a store, without other cluster locations with storage first being developed, would be entirely redundant.
- Importance of store resilience – we consider it important that the UK develops multiple storage locations. A single storage location would not offer resilience in the unlikely event of a permanent fault or, more likely, a temporary outage at the Cluster 1 store. It may therefore be unattractive for a cluster without a storage proposal to be named as Cluster 2.

We are likely to relax this definition when we come to determine the Track-2 clusters that will be deployed later in the 2020s. Furthermore, individual capture projects within such locations

¹⁹ Government continues to discuss and refine its proposals in discussion with the devolved administrations and, considering those discussions, may modify its processes to reflect devolved responsibilities.

may have the opportunity to bid into Phase-2 of the process; this is discussed further later in this section.

Entry Process

To enter the process, we would suggest that the CCUS cluster identifies a Cluster Lead. The purpose of the Lead will be to represent the cluster and give government a clear counterparty to coordinate with. It is our expectation that the most appropriate Cluster Lead is likely to be the entity primarily responsible for the T&S proposal and the party that will eventually hold the T&S licence. This should also encourage, even from this early stage, T&SCo to be responsible for identifying and coordinating customers for the network. Further details of what this role could entail are set out in the recent update on CCUS business models.²⁰

The Cluster Lead would be responsible for submitting the following materials to BEIS:

- Phase-1 Cluster Plan
- Supporting documents

Phase-1 Cluster Plan

The Phase-1 Cluster Plan submitted by the Cluster Lead would be required to set out the T&S network proposal and first phase of carbon capture projects that will connect to this network.

We are currently minded towards requiring the Cluster Lead (T&SCo) to collect the information required for the Phase-1 submission from the individual capture projects and to submit this information to BEIS alongside its own T&S proposal. The capture projects would have to submit their own information about their projects in Phase-2 (Final Project Selection). This Phase-2 submission would be more detailed for which further information is provided in Section 5.

We suggest that for the Cluster Lead to legitimately include an individual capture project within the first phase of the cluster plan:

- There must be evidence that the emitter can credibly be operational by 2027. Note that this is intended as a backstop date for individual emitters; having some emitters operational earlier than this date will count favourably towards the cluster in the evaluation stage.
- There must be commitment from each individual emitter. Our suggested level of commitment would be a signed Letter of Intent or Memorandum of Understanding (MoU) in place between the Cluster Lead and each emitter, at the point of entry into Phase-1. This is to protect against emitters being double counted in multiple cluster proposals and to offer level of comfort that the CO₂ volumes from these projects will materialise.

Whilst the Cluster Lead would be encouraged to highlight other potential future capture projects for future expansion, only emitters that meet these two requirements would count

²⁰ <https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models>

towards any quantitative metrics used to assess the cluster (evaluation criteria are discussed in Section 4).

The Cluster Plan should also set out how the CCUS cluster meets each of the five Phase-1 evaluation criteria (evaluation criteria details are set out in Section 4). A template and/or word limit for each criterion will likely be provided.

Supporting Documentation

To support and evidence the Cluster Plan the Cluster Lead would be required to submit a range of supporting documentation covering the T&S and the first phase capture projects proposed within the cluster. The purpose of the supporting documents will be to evidence the higher-level narrative set out in the Cluster Plan and is likely to require information such as:

- An integrated project plan and schedule that incorporates the T&S network proposal and first phase of carbon capture projects that will connect to this network. This plan would be sought to provide and evidence a high level of certainty in relation to the timing, cost out-turns and CO₂ abatement volumes proposed. A strong project plan would be internally consistent and integrated across the full reach of the proposed T&S network and the first phase of emitters. It would also be logic linked and include evidence showing where the resource is to be sourced. Any plan should be provided in an industry recognised software such as P6 or MS Project.
- Commercial documentation to evidence the status of the intra-cluster arrangements for the continued development and delivery of the project is in place. Our expectation is that this would be, at a minimum, at and agreed Heads of Terms level with Board level evidence of commitment to executing fully termed agreements.
- An integrated risk register in which risks would be fully detailed and clearly linked to project activities to support quantitative schedule and cost risk analysis if this is taken forward. Risks will also be identified to confirm where these are allocated (which entity holds the risk) and the extent to which agreement has been reached on this allocation.
- Verifiable technical documentation to support technical descriptions of the project and programme activities and agreed statements and scopes for future activities to complete any work in progress.
- Information relating to the Storage Licence to evidence geological storage development. We might expect this to include completed studies and subsurface characterisation reports, primary storage complex data, a storage development plan and supporting documents, Measuring Monitoring and Verification (MMV) plan, and details of the planning and consents regime.
- Evidence to support the preferred solution for the T&S network (onshore and offshore) and how this preferred solution is being progressed through FEED. This would include items such as: final concept selection with no key options outstanding; end to end flow assurance documentation consistent with the proposed options; metering approach, technologies and proposed accuracies consistent with the proposed range of operating conditions, CO₂ specifications and reporting requirements; preliminary major design

documents should be complete and at the first review stage; integration with the consents process; and, completed survey documentation.

- Technical study documents for emitter projects to evidence development progress showing the selected option, FEED scope and a project plan that is integrated with the wider cluster delivery plan.

The information provided would need to be complete, internally consistent, and clearly supported by documentary evidence for technical, commercial, financial and programme statements. As referenced in Section 1 we are keen to understand from clusters whether this level of information will be available in July 2021, the point at which cluster submissions are due.

Remote Sites

We are aware of several carbon capture and hydrogen proposals being developed within clusters that do not contain a storage proposal and a range of individual capture projects being developed at remote sites, outside of industrial clusters. Engaging such ventures in the CCUS selection process is vital to government because:

- We recognise that all major industrial clusters, including those without proximity to storage, will have to be decarbonised if we are to meet net zero by 2050.
- We wish to explore all available options, for example, projects at remote sites might have unique strategic value. We also think that having more participants in a process is beneficial for competitive tension, with the potential to drive value for money outcomes.

There are multiple options available for remote sites or clusters without stores to participate in the overall selection process:

- **Phase-2 Final Project Selection** - individual projects would be able to bid into Phase-2 of the selection process and contest in individual technology allocation rounds against projects that have been included within the Cluster Plan. However, these projects would be required to evidence a credible plan to transport and store their carbon with a Track-1 cluster.
- **Future Track-2 process** - as CO₂ storage will be operational through the successful competition of Track-1 clusters, it may not be necessary for all Track-2 clusters to have a CO₂ store. Therefore, clusters without storage could be eligible to enter a future selection process for Track-2 clusters. We expect to bring forward details of this process in October 2021 alongside the Track-1 sequencing announcement.

Furthermore, by supporting two clusters to deploy in the mid-2020s we will be paving the way for future projects and clusters to deploy in later years. This will be achieved by increasing technological knowledge to deliver cost certainty; de-risking and proving commercial viability; bringing about cost reductions; and developing the skill sets and supply chains to be able to scale at pace through the 2030s.

Shipping

We welcome capture project proposals that include shipping (or transportation by alternative means such as road or rail). However, at this stage, no additional support would be offered to such projects and they will be considered alongside capture projects connecting by pipeline. We will keep this under review and are open to discussing this through our consultation process.

Consultation Questions on Entry into Phase-1

- 6. Do you have any comments on the proposed eligibility criteria?**
- 7. Do you have any comments on the proposed requirement that an applicant has to meet the definition of a CCUS cluster to enter the process? Do you have any comments on the proposal to relax this requirement when considering Track-2 cluster?**
- 8. We are suggesting that the T&SCo take on the role of Cluster Lead. Are there any challenges associated with T&SCo being an effective Lead for the cluster?**
- 9. We state that there should be a level of commitment from a capture project for it to be included on the Cluster Plan. Is an MoU an appropriate and achievable form of commitment?**
- 10. What should government be doing to facilitate remote sites and shipping and when should government be doing this?**

Section 4: Phase-1 Cluster Sequencing Process

Section 3 outlined a possible approach for determining which cluster proposals would be eligible to enter Phase-1 and the steps that clusters would need to take to enter the process. This section, Section 4, sets out a possible approach for evaluating eligible clusters.

Evaluation Criteria

Under this proposal clusters would be evaluated against a set of five evaluation criteria. The aim of having a small number of evaluation criteria would be to ensure that the methodology is simple and can be easily understood by a range of stakeholders, irrespective of their level of technical background. If a cluster can demonstrate a strong performance against each of these criteria, it would build confidence that the cluster has the potential to offer good value for money. These criteria are set out at a high level as follows:

Table 2: Headline Evaluation Criteria for Phase-1 Cluster Sequencing

Criteria	Definition
Deliverability	The level of confidence we can have in the delivery plan put forward by the cluster and the date at which the cluster can, credibly, be operational ²¹ by.
Emissions Reduction	The contribution the cluster can make to the UK's emission reduction targets including Carbon Budgets and net zero.
Cost Considerations	The expected average cost of abatement and affordability of the cluster.
Economic Benefits	The contribution the cluster can make to the UK economy and the Government's levelling up agenda.
Learning and Innovation	The contribution the cluster can make to both future CCUS projects and wider decarbonisation initiatives by generating and disseminating knowledge across a range of technologies.

For each criterion, we have set out below why we consider it to be important to government alongside an indication of what a cluster would have to do to perform strongly against it. However, because of the relatively early stage we are at in the development of the sequencing process, full details as to how clusters performance will be assessed have not been included within this document. The metrics that will be used to determine cluster performance against each of the criteria will be developed over the coming months and further details would be provided in the April Launch document. The five criteria are each considered in turn below.

²¹ Defined as first injection of CO₂ into the offshore storage facility and then continuous operation from that point.

Deliverability

This criterion has been proposed to reflect our commitment to having two clusters operational by the mid-2020s. To perform well against this criterion a cluster would be expected to put forward a clear Phase-1 project execution plan and timeline. The greater our level of confidence in the cluster's delivery plan and the earlier the date that the cluster can, credibly, be operational by, the higher it would score under this criterion.

It is proposed that the credibility of the project plan and timeline would be assessed through an evaluation of:

- Offshore storage site characterisation.
- Development work of the T&S network and emitter projects performed to date.
- Storage licence and permit application stage.
- Planning and consents regime progress.
- Whether key contracts are in place for core suppliers.
- Indicative financing plans, including proposed ownership for each part of the chain. The financing plans for projects within the cluster will be important as the approach taken, could impact whether the cluster can feasibly be operational by the mid-2020s.
- Whether detailed risk registers are in place with mitigations populated and whether the proposed risk allocation coheres with that set out in the December business models update.
- Adherence to safety regulations and level and nature of any residual risk.
- Technical feasibility and integration of capture projects with a T&S network.
- Whether each part of the cluster (T&S, power, industrial and/or hydrogen) is equally developed with plans in place to manage and minimise timing mismatches.
- The organisational structure, competency and identification of skills shortages and plans to fill them.
- The capability and capacity to deliver locally and related economic benefits.

The mid-2020s date is important because:

- It facilitates the positive contribution CCUS clusters can make to near term Carbon Budgets.
- It enables jobs to be created at cluster locations, jobs that can make a vital contribution to the Covid-19 recovery.

- It provides an opportunity for the UK to capitalise on its comparative advantage²², to become a leader in CCUS.
- It would demonstrate that the technology works in a UK context, enabling future clusters and projects to learn from this early deployment.

Emissions Reduction Potential

This criterion has been proposed to reflect government's commitment to UK emission reductions targets, and in recognition of the essential role that CCUS will play in decarbonisation and the transition to net zero.

To perform well against this criterion, it is proposed that, the cluster would be expected to:

- Demonstrate that it can make a positive contribution to the UK's efforts to meet our net zero commitments (including, where relevant, the Scottish 2045 net zero commitment, the Welsh 2050 net zero commitment and any local emission reduction targets²³).
- Set out planned volumes within the Phase-1 Cluster Plan that contribute to near term Carbon Budgets.
- Demonstrate the credibility of early volumes, that these volumes will materialise and be retained through the contract period. This is important given that underutilisation risk, the risk that planned volumes do not materialise or fail within the contract period, is a key risk being mitigated and allocated through the T&S business model. Government would look favourably on proposals in which it can be confident in initial volumes and the sustainability of these volumes.
- Set out alternative emitters that could connect to the network instead of those emitters that have been included on the Cluster Plan. The diversity of potential emitters is another potential protection against underutilisation risk. Government would also look favourably upon cluster proposals in which the T&S network can be flexible to different users.
- Set out how the cluster proposal could develop, including a potential pipeline of future projects. This could be illustrated through projects in earlier phases of development, the size of the industrial region, or the potential to transport carbon (e.g. by ship) from other clusters or countries.
- Can make a material contribution to UK hydrogen ambitions of 1GW by 2025 and 5GW by 2030.
- Demonstrate that it can achieve synergies with other Government backed decarbonisation initiatives, facilitating emissions reduction within the cluster from other

²² By comparative advantage we mean the UK's natural advantages of ample offshore storage capacity, engineering skills base, and oil and gas supply chains make it well placed to capture up to £10bn of a £200bn global CCUS market.

²³ Government continues to discuss and refine its proposals in discussion with the devolved administrations and, in light of those discussions, may modify its processes to reflect devolved responsibilities.

projects, programmes, or sectors (for example, green hydrogen projects, the Hydrogen for Heat trials or green transport hubs).

- Have a low carbon intensity of infrastructure.

Cost considerations

This criterion has been proposed to ensure that the cost of delivering the first CCUS clusters is acceptable to the taxpayer and the consumer.

To perform well against this criterion the cluster would be expected to:

- Set out an attractive levelised cost of abatement across the Phase-1 Cluster Plan. The levelised cost of abatement methodology would be sufficiently sophisticated to consider financing plans; risk allocation, including any transitional arrangements; operating efficiency levels; operational flexibility; different useful economic lives (UEs) of the infrastructure; different levels of oversizing within Phase-1 proposals; and projected costs of future expansion.
- Provide an indication of the range of what a reasonable and fair return could be in the context of the risk allocation included in the business models update.
- Demonstrate that competition has, where possible, been built into procurement processes (e.g., for construction contracts).
- Instil confidence in government that Phase-1 volumes will materialise and be retained through the contract period; and demonstrate there is a diverse range of possible emitter projects in the cluster location, to mitigate against the risk of underutilisation or stranded assets.

It is also important to highlight that any cluster sequenced onto Track-1 must be affordable to government. Government has a commitment to two clusters by the mid-2020s and there will be a finite funding pot to support these clusters. This inherently means that whilst greater capacity and volumes are preferred, this can only be until a certain point; there has to be a limit on the size of the first phase of any one cluster if we are support two clusters by the mid-2020s. We cannot, however, describe an exact affordability limit because whether one potential Track-1 cluster of a certain size is affordable would be determined, at least in part, by the size of the other Track-1 cluster proposal (considerations around this and other portfolio factors are set out later in this section).

Given that Phase-1 Cluster Plan submissions would be prepared prior to the completion of development work, there will inherently be a degree of cost uncertainty within these Cluster Plans. Nevertheless, we are also aware that there will be a potential incentive for clusters and projects to understate costs to perform better in the Phase-1 assessment; this is a risk that we are monitoring closely. There are some existing mitigations that we shall be developing further in advance of the launch of the process, these include:

- The 12-week assessment period would be used for BEIS and its advisors to examine submissions, which would include scrutiny of cost data. BEIS would ensure that it has

the relevant capability, both from across government and external advisors, to thoroughly interrogate this data.

- BEIS is currently carrying out a cost benchmarking exercise including the development of notional clusters. Information within Phase-1 submissions would be compared against these notional clusters and any cost deviations thoroughly queried.
- BEIS will reserve the right to pause or abandon negotiations if it discovers that costs within the Phase-1 Plan have been materially or intentionally understated. In such a scenario BEIS may decide to reverse the Tracks and negotiate with a reserve cluster instead. Further detail on reversing the Track is provided in Section 5.

Economic Benefits

The Government is committed to maximising the economic opportunities of deploying CCUS in the UK. As the Prime Minister made clear, we will invest up to £1 billion to support the establishment of CCUS in four industrial clusters, creating ‘SuperPlaces’ in areas such as the North East, the Humber, North West, Scotland and Wales. This significant new public investment will mobilise competitiveness and productivity across the UK, harnessing this country’s extraordinary powers of invention to repair the economic damage of Covid-19 and build back better. It will support high-skilled high-paid jobs, enabling the transitioning of the UK workforce towards the new green economy.

In evaluating eligible clusters, Government is minded, therefore, to include specific criteria around economic benefits. To perform well against this criterion, the cluster would be expected to demonstrate how it:

- Could deliver economic growth in places across the UK and contribute to the country’s longer term industrial transformation to a green economy and, in particular, by creating and maximising opportunities for investment and growth in local economies in the UK.
- Will deliver and support high skilled, high paid jobs and, in particular develop a diverse workforce, and deliver training to employees to attain the skills needed for CCUS in ways that minimise skill shortages and increase productivity.
- Can synergise with other government decarbonisation programmes for example in renewables or green transport in order to become a ‘SuperPlace’.
- Intends to embed sustainable business practices, including how it intends to identify and resolve gaps in capability and productivity among international and UK supply chains.
- Anticipates reducing the carbon intensity of the project and emissions of other GHGs, for example through reducing carbon miles or accessing green finance.
- Intends to overcome the challenges it faces through investment in innovation and R&D.

Learning and Innovation

This criterion has been proposed as early CCUS clusters can potentially play an important role in de-risking and bringing about cost reductions in future CCUS clusters and projects. Building

this foundation will put the UK in a position to be able to scale CCUS at pace through the 2030s.

To perform well against this criterion the cluster would be expected to:

- Include a range of CCUS applications across a combination of power, industrial capture, and hydrogen within the Phase-1 Cluster Plan.
- Set out how these applications would contribute to wider government objectives. For example, where hydrogen production proposals are included demonstrate that the hydrogen produced can be used in a range of important sectors.
- Demonstrate how it can coordinate, synergise, and facilitate other decarbonisation initiatives and activities within the region (for example, but not limited to, green hydrogen projects, green transport hubs, low carbon products markets, or the Hydrogen for Heat trials).
- Set out innovative proposals with the potential to generate learnings and be replicated to unlock future CCUS projects.
- Have clear plans in place to disseminate knowledge within the cluster, to other clusters and projects and to government.

Criteria Weightings

As part of our commitment to a fair, objective, and transparent process when we launch Phase-1 in April we propose to set out clear weightings for each of the five evaluation criteria described above.

We have further analysis to perform to fine-tune the exact weightings and therefore have not included precise weightings within this document. We will be working through these between now and April with a range of cross-Whitehall stakeholders and our external advisors. Nevertheless, we want to provide as much clarity as possible to maximise the opportunity for clusters to be able to submit high-performing Cluster Plans. We have therefore set out a provisional set of weighting ranges for each of the evaluation criteria in Table 3 below.

Table 3: Provisional Ranking of Phase-1 Evaluation Criteria

Criteria	Range
Deliverability	30-40%
Emissions reduction	25-30%
Cost considerations	15-20%
Economic benefits	10-20%
Learning and innovation	10-15%

We are also likely to stipulate minimum thresholds of performance that the Cluster Plan must achieve against each of the five individual criteria. This might include rating each Cluster Plan high, medium, or low against each of the five evaluation criteria. It could be that a rating of at least medium is required against each of the criteria or, as an alternative, at least one high required with only one low rating allowed. We are considering options for this and expect that full details on the thresholds will be provided in the April Launch document.

Portfolio Selection

As well as considering how each cluster individually performs against the criteria, it may also be important for government to consider how Track-1 clusters might perform as pairing.

Government may consider portfolio factors such as:

- **Multiple stores** - there could be benefit in having Track-1 clusters that are planning to develop different storage sites. This could provide resilience so that, in the unlikely event of a serious technical problem with one store, there would still be another storage site in development. Similarly, even once operational, in the event of a temporary outage of one store there could be opportunities to move carbon, by road, rail or ship, to the other storage site. This would not be possible if we selected two Track-1 clusters that were sharing a single store. Nevertheless, this is not intended to be a requirement, it is just one factor that we may consider and trade off against other relevant factors. For example, it may be that economies of scale or other cost benefits mean that it is preferable to sequence two clusters sharing a single store onto Track 1.
- **Diverse stores** – as well as multiple stores, there could also be benefit in having different types of storage in the clusters on Track-1 such as one saline aquifer and one depleted oil and gas field. This is because there are significant differences when comparing the two types; for example, typically, saline aquifers are data poor and oil and gas fields data rich; oil and gas fields have had fluids produced, saline aquifers have not; and oil and gas fields often have infrastructure (platforms, wells, pipelines) that might be reused, saline aquifers have no infrastructure. Importantly, future stores are likely to be a mix of the two types, therefore, to maximise the replicability benefits for future clusters in the UK and the economic opportunity of the global market, it could be better to deploy one of each in the mid-2020s.
- **Diverse capture projects** – we would want to see a diverse range of capture project deployed in the mid-2020s on Track-1. This applies to both diversity of application (the mix of power, industrial capture, and hydrogen) and diversity within application. A mix of applications is important as each application would deliver different learning or replicability benefits for future projects and contribute to different strategic objectives for government. Diversity within application may also be important; for example, for industrial capture it would be important to support projects in a mix of industries to maximise both resilience and learning. Whilst these factors can be achieved, in part, through diversity of emitters within the individual cluster plan, it may also be helpful to consider this across the Track.

- **Affordability** – clusters on Track-1 would have to be affordable to government both in terms of their demands on capital and revenue envelopes. It may be that this can only be considered in combination, across the track.

These are not the only portfolio factors government could consider and we welcome views on these factors and other potential factors that we have not listed.

The importance of these combination or portfolio factors could mean that it would be a sub-optimal decision for government to simply pick the individually highest performing two clusters for Track-1. We are therefore considering how the evaluation process could be adjusted to enable government to balance the importance of selecting individually high performing clusters, of selecting a sensible combination and of setting out a clear and transparent process.

Decision-Making Process

The assessment for the above process would primarily be executed by BEIS and its technical, commercial, and legal advisors. Support and expertise would 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).

BEIS officials and their advisors would review Cluster Plans against the eligibility and evaluation criteria and engage with the Cluster Lead to understand further detail where required. Cluster Plans would be evaluated using the criteria, weightings and portfolio factors may also be considered. A recommendation would then be made, based on this assessment, to relevant ministers. The decision would ultimately be ministerial.

The Launch document, which we expect to be published in April, will provide further detail on the internal execution of this process including the schedule of engagement between BEIS and applicants.

Consultation Questions on Phase-1 Cluster Sequencing Process

11. **Do you have any comments on the proposed evaluation criteria?**
12. **Do you agree with weighting ranges proposed for the evaluation criteria?**
13. **Do you have any comments on the proposal to consider portfolio factors when selecting the Track 1 clusters? In particular, do you have any comments on the potential portfolio factors that the Government should have regard to?**

Section 5: Phase-2 Final Project Allocation

During Phase-2 government would make the final selection decision as to the projects that would be supported by government and would allocate specific support to these projects.

This process would take place within the cluster locations sequenced in Phase-1 and would be open to all projects that could feasibly connect to that location, irrespective of whether the project was included within the Phase-1 Cluster Plan or not. The rationale for this minded to position was set out earlier in this document, in Section 2.

Applications from individual capture projects that wish to be considered for support would likely be due in October, shortly after the Track-1 sequencing decision has been announced. We expect that a Call for applications will be put out in August to facilitate this. All capture projects, including those set out on the Phase-1 Cluster Plan, would have to submit applications to enter Phase-2. Further detail on this timeline is set out in Section 2.

This section sets out the direction of travel for the allocation process for each of the CCUS applications²⁴ in turn. However:

- The below information is indicative only and further policy development is required before this is executed from August 2021. However, we felt it would be helpful to set out a direction of travel for Phase-2 before CCUS clusters begin detailed preparation for entry into Phase-1. It would be helpful if any projects that are interested in entering Phase-2 but are not affiliated with a specific cluster, and therefore unlikely to appear on a Phase-1 Cluster Plan, discuss their projects with BEIS at the earliest opportunity in 2021 (through this consultation).
- The below considerations apply to the final allocation process that would take place within Track-1 clusters. Whilst it can be assumed that some of the same considerations will apply later in the 2020s for allocation to projects within Track-2 clusters, we expect that a greater degree of competition is likely to be feasible by that point. We therefore do not consider it helpful or necessary to cement the Track-2 allocation process now but will return to the sector on this topic in the future.
- Funding would not be committed unless: all subsidy control requirements have been met, government is comfortable with any balance sheet implications, all relevant statutory consents have been complete, and government is comfortable that the project represents value for money for the consumer and the taxpayer.

²⁴ The primary focus of the process set out in this document is to select Track-1 clusters that will be deployed in the mid-2020s. We have therefore not included a Phase-2 process for DACCs and BECCs. This will, however, be kept under review and is likely to change when we come to allocate support within Track-2 clusters.

Transport and Storage

Allocation

By definition, there would only be one T&S proposal included within each Cluster Plan. However, a 'Phase-2' would still be required for the Track-1 T&S projects, pursuant to which, government would conduct detailed due diligence and agree the specific amount of financing support required.

It is also important to highlight that BEIS sequencing the cluster onto Track-1 would not be sufficient to get the T&S proposal to the point of commercial operation. The T&S project lead will also require:

- A Storage Licence and Storage Permit – obtaining the licence and permit would be the responsibility of the T&S project lead. The T&S project having Storage Licence and Permit, or at least a credible plan to obtain these, would count favourably towards the cluster within the Phase-1 sequencing process.
- The relevant planning and consents for the T&S network - obtaining the relevant planning and consents would be the responsibility of the T&S project lead. Having these in place, or a credible route to doing so, would count favourably towards the cluster within the Phase-1 sequencing process.
- An economic licence – this licence would be awarded to the T&S project within the cluster locations sequenced in Phase-1. This award would be made after the cluster has been sequenced and will be subject to an assessment by the relevant regulator. This consultation does not outline the process for granting the economic licence and this topic will be covered through future updates on the T&S business model.

Support

It is expected that the Track-1 clusters' T&S proposals would be eligible to receive the following support:

- An economic licence that grants the licensee a regulated revenue stream (the 'Allowed Revenue') facilitated by the right to charge a regulated fee (the 'T&S fee') from completion of construction. Further details as to the design of the T&S business model can be found in the update on business models,²⁵ published in December.
- Access to the CIF, if required. One application of the Fund being considered is to reduce the potential revenue gap for T&SCo. By revenue gap we refer to difference between calculated allowed revenue and the revenue T&SCo can collect from early users for their proportionate use of the network. Further detail on this potential application can be found in the recent update on business models²⁶. This would be

²⁵ <https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models>

²⁶ <https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models>

traded off against other potential uses and be subject to further work on the design of the T&S business model.

- Government Support Package (if required) for specified low probability but high impact risks that the private sector would not be able to bear at an efficient price or indeed any price.

Entering a bilateral negotiation does not mean that any funding or licence will be awarded. Any decision to award support would only be made subject to the successful completion of any negotiation and due diligence. Any negotiation would only conclude successfully once government has satisfied itself of the desirability of the project through a robust and extensive value for money analysis. BEIS reserves the right to interrupt or terminate these negotiations at any time. The details of any support package offered would be published once negotiations have completed. Commercially sensitive information would be redacted.

As set out in Section 2 government would continue to engage with potential Track-2 clusters. This would include engagement with the T&S project and would be to understand when further intensified support might best be timed.

We will continue to give consideration of the ownership model of the T&SCo as consulted in summer 2019.

Power

Allocation

We are currently minded towards using bilateral negotiations as the mechanism to allocate and award initial power CCUS contract(s) by way of a direction in accordance with section 10 Energy Act 2013. Whilst, eventually, we expect Dispatchable Power Agreements (DPA) to be awarded through a deterministic competitive process, we currently do not think that this award process will be feasible for the first contract(s). Track-1 clusters are expected to be operational by the mid-2020s and the current view is that an insufficient number of power CCUS projects may be sufficiently developed to execute a full competition on this timeline. However, if enough sufficiently developed potential power CCUS projects were to come forward, we may reconsider a competitive process for the initial contract(s).

Whilst we do not consider a deterministic competitive process likely to be a feasible option at this stage, we are minded to open up the allocation process such that alternative power projects (i.e. those within an identified Track-1 cluster that were not included in the Phase-1 Cluster Plan) can be considered alongside any power project(s) within that plan. If multiple projects were sufficiently developed, Government would then look to run parallel negotiations with multiple power projects in identified Track-1 clusters.

Having identified one or more power projects, Government would:

- Negotiate limited areas of a DPA, focusing primarily on price, with other parts of the DPA remaining as fixed, as set out in the business model update.

- Drive improved value for money for the consumer, including where appropriate, by using competitive tension.
- Ensure the proposal(s) which provide greatest overall value for money within affordability constraints is(/are) taken forwards. It is important that government explores all options and that all projects have a fair opportunity to come forwards.

A set of qualification criteria would be used to screen and assess project applications prior to any negotiation. If a project passes this stage it would proceed into a bilateral negotiation and full due diligence. Some of the types of criteria and associated metrics government are considering for qualification are:

- Emissions reduction potential – projected capture rates (%).
- Dispatchability – capability to provide dispatchable generation capacity.
- Cost – affordability and DPA payment rates.
- Maturity of project – the stage of development and likely operation date.
- Learning and proof of concept – cost reduction and knowledge transfer strategy.
- Supporting industrial activity and jobs – projected contribution to employment and GVA, supply chain map.
- Local community engagement – level of engagement and level of support from local key stakeholders.

These criteria have not been finalised and this does not represent an exhaustive list. We will return to the sector to provide further detail on these criteria later in 2021.

The above assessment of allocation options relates only to initial allocation rounds in Track-1 clusters. The process for future allocation rounds, for example for projects in Track-2 clusters, will be established in due course, incorporating competition where practicable.

Support

Successful CCUS power projects are expected to receive a DPA which will be funded through consumer subsidies. For further details as to the design of the power CCUS business model please refer to the December update on business models.

Entering a negotiation does not mean that a DPA will be awarded. Any decision to award support would only be made subject to the successful completion of any negotiation and due diligence. Any negotiation will only conclude successfully once government has satisfied itself of the desirability of the project through a robust and extensive value for money analysis. BEIS may direct the LCCC to enter into one or more power contracts. BEIS reserves the right to interrupt or terminate these negotiations at any time.

Any DPA, including the agreed payment terms, will be published if offered. Commercially sensitive information will be redacted.

Industrial Capture

Allocation

We are currently minded towards using bilateral negotiations as the mechanism to allocate and award initial industrial carbon capture contract(s). Whilst, eventually, we expect these industrial capture contracts to be awarded through a deterministic competitive process, we currently do not think that this award process would be feasible for the first contract(s). Track-1 clusters are expected to be operational by the mid-2020's and the current view is that an insufficient number of industrial projects may be appropriately developed to execute a full deterministic competition on this timeline. Furthermore, projects may not be sufficiently mature for a price based competitive process, and government may wish to consider a range of strategic factors and gather information through the assessment. For these reasons we consider a negotiation to be more appropriate for selecting initial capture projects for Track-1 clusters.

However, whilst we do not consider a deterministic competitive process to be a feasible option at this stage, we are minded to open up the allocation process such that alternative projects from outside the Track-1 Cluster Plan can be considered alongside industrial capture project(s) included within that plan. If multiple projects were sufficiently developed, Government would then look, where possible, to run parallel bilateral negotiations with multiple projects, for a limited number of industrial carbon capture contracts.

We are minded towards parallel negotiations to:

- Ensure the proposal(s) which provide greatest overall value for money within affordability constraints is(/are) taken forwards. It is important that government explores all options and that all projects have a fair opportunity to come forwards.
- Drive improved value for money for the taxpayer, including where appropriate, using competitive tension.

A set of qualification criteria would be used to screen and assess project applications prior to any negotiation. If the project passes this stage, it would proceed into a bilateral negotiation and full due diligence. Some of the types of criteria and associated metrics government are considering for qualification are:

- Emissions reduction potential - projected capture rates (%) and projected volumes of CO₂ captured (Mt).
- Cost - affordability and average cost of abatement (£/tCO₂).
- Maturity of project – the stage of development and likely operation date.
- Learning and proof of concept - cost reduction and knowledge transfer strategy.
- Supporting industrial activity and jobs - projected contribution to employment and GVA, supply chain map.
- Local community engagement – level of engagement and level of support from local key stakeholders.

These criteria have not been finalised and do not represent an exhaustive list - it is intended only as a direction of travel. We will return to the sector to provide further detail on these criteria later in 2021.

The above assessment of allocation options relates only to initial allocation rounds in Track-1 clusters. In future allocation rounds, for example for projects in Track-2 clusters, we would expect to be able to move to a deterministic competitive process.

Support

Industrial carbon capture projects that are selected following assessment against the criteria would enter into negotiations with BEIS. If those negotiations are concluded positively (i.e. judged to be affordable and value for money), an industrial carbon capture project is expected to be supported through:

- Capex co-funding through the CIF (if required);
- An industrial carbon capture contract which will be funded from the exchequer, to support the deployment of industry carbon capture. Further details on the design of the industrial carbon capture contract can be found within the year end update on CCUS business models²⁷.

Entering a bilateral negotiation does not mean that any funding or contract will be awarded. Any decision to award support would only be made subject to the successful completion of any negotiation and due diligence. Any negotiation would only conclude successfully once government has satisfied itself of the desirability of the project through a robust and extensive value for money analysis. BEIS reserves the right to interrupt or terminate these negotiations at any time.

Any support, including the awarded strike price and the reference price, will be published if offered. Commercially sensitive information will be redacted.

Hydrogen

Work on the hydrogen business model is progressing at pace but the model is currently less developed than the equivalent carbon capture business models for power and industry. We will be consulting on the Government's preferred hydrogen business models by the end of Q2 2021. Therefore, allocation method and criteria have not been decided yet, but the process will be open to those hydrogen projects included within the cluster plan and any potential new hydrogen projects within, or that could feasibly connect to, the successful Track-1 clusters as part of the Phase-2 process.

We will return to the sector to provide further details on the hydrogen project allocation process and assessment criteria later in 2021.

Support

²⁷ <https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models>.

Hydrogen projects that are selected following assessment will enter negotiations with BEIS. If those negotiations are concluded positively (i.e., judged to be affordable and value for money), a hydrogen project could be supported through:

- Access to the Net Zero Hydrogen Production Fund²⁸ to support the scaling up and deployment of CCUS enabled low carbon hydrogen.
- A hydrogen business model which will provide ongoing revenue support and further details on the revenue mechanism to support hydrogen (and industrial carbon capture) projects will be set out in 2021. Further details regarding the design of this business model will be consulted on by the end of Q2 2021.

Entering a bilateral negotiation does not mean that any funding or contract will be awarded. Any decision to award support would only be made subject to the successful completion of any negotiation and due diligence. Any negotiation would only conclude successfully once government has satisfied itself of the desirability of the project through a robust and extensive value for money analysis. Any support will be published if offered. Commercially sensitive information will be redacted.

Reversal of the Tracks

If progress is not being made in Phase-2 with the projects in a Track-1 cluster, BEIS reserves the right to pause negotiations with that cluster. As well as pausing negotiations with the Track-1 cluster we are suggesting that BEIS could have the right, but not an obligation, to begin negotiations with a reserve list cluster instead. We refer to such a swap as reversing the Tracks.

Any reversal of the Tracks would only take place following a robust and transparent process through which BEIS would have to be able to demonstrate why the swap is taking place. The details of this process would be developed and shared as part of the formal launch of the Phase-1 process in April.

However, to give an indication, a reversal might be brought about in the case of one or more of the following scenarios:

- There is a material, adverse and unreasonable change in the costs, timelines, or specifications of a project between the information provided in the Phase-1 cluster plan submission and the information providing during Phase-2 negotiations.
- There is evidence that the performance of the cluster against the evaluation criteria has deteriorated to a level below that of a reserve list cluster.
- Negotiations between BEIS and the Track-1 cluster collapse and an agreement cannot be reached.

²⁸ Note the Net Zero Hydrogen Production Fund will also be available to Green Hydrogen projects outside cluster locations.

Note this would only apply whilst Phase-2 processes are still progressing; once a final investment decision has been taken contract terms would apply. Further information on any reversal process will be provided in the Phase-1 Launch document.

Projects Changing Cluster

As set out in Section 3 it is our expectation that the Cluster Lead, likely to be the T&SCo, would submit information both for its own T&S proposals and the capture projects that wish to connect with it in the first phase. Each capture project would only be allowed to appear on one Cluster Plan submission.

Section 2 set out that that, as proposed, Phase-2, final project selection, would begin with a Call going out to capture projects in eligible clusters in August. Capture projects would then prepare bids over the early Autumn and then submit them shortly after the Track-1 clusters had been announced in October. Project applications would be prepared at the developers own risk, if the corresponding cluster is not sequenced onto Track-1, BEIS would hold no responsibility for resources utilised on the bid.

However, if a capture project's original cluster is not named on Track-1 that does not necessarily mean that the capture project should not submit its application into the Phase-2 allocation process. If the projects original cluster is not named but the project developer believes it could feasibly connect to a one of the clusters that has been named on Track-1, for example if it is in relatively close proximity, it could submit its Phase-2 application to be considered for that cluster instead. A developer that thinks they may be likely to find themselves in this scenario may perhaps want to consider preparing multiple applications for their project based on different T&S solutions.

We are aware there could be challenges associated with this, but it is something that we would like to test through this consultation process.

Consultation Questions on Phase-2 Final Project Allocation

14. **Do you agree with the proposed approach for allocating the first power CCUS contract(s)?**
15. **Do you agree with the proposed approach allocating the first industrial carbon capture contracts?**
16. **If a developer has prepared a capture project bid and then the cluster it was planning to connect to is not sequenced onto Track-1, could it be feasible for the project to submit a revised bid to connect to a different cluster (i.e., one that was sequenced onto Track-1)?**
17. **Do you have any comments on the proposal to swap out a Track 1 cluster, to begin negotiations with a reserve list cluster instead? In particular, do you have**

any views on the feasibility of a reserve list cluster replacing one of the Track 1 clusters?

Next steps

The purpose of this consultation is to seek a broad range of views on the Government's proposed approach to CCUS cluster sequencing. We will use the responses to this consultation to help us continue our development of this process and to consider alternatives as appropriate, with a view to launching a sequencing process in April this year as per the indicative timeline set out in Section 2 of this consultation.

Any publication in April will incorporate Government's response to this consultation and will be accompanied by a summary of the responses received to this consultation.

This consultation is available from: www.gov.uk/beis

If you need a version of this document in a more accessible format, please email enquiries@beis.gov.uk. Please tell us what format you need. It will help us if you say what assistive technology you use.