

# CCUS: A Summary of BEIS' Cluster Sequencing for Carbon Capture Usage and Storage Deployment: Phase-1

by Kirsti Massie and Katie Trim

This month the UK Government issued an updated timetable and submissions guidance for cluster sequencing for Carbon Capture Usage and Storage (CCUS) deployment. With this paper came a number of updates across its CCUS programme including:

- [the CCS Infrastructure Fund \(CIF\)](#);
- [the Industrial CCUS Business Models](#);
- [Power CCUS Business Models](#);
- [T&S Business Models](#); and
- [CCUS Supply Chains: a roadmap to maximise the UK's potential](#).

A "cluster" is defined as a transport and storage (T&S) network and associated first phase of at least two CO<sub>2</sub> capture projects

## Cluster Sequencing

**Tracks: Track-1 (*targeting mid 2020s deployment*) and Track-2 (*targeting deployment by 2027*)**

The UK government (the "Government") is looking to identify at least two CCUS clusters that are best placed to deploy in the mid-2020s. These two identified clusters will be sequenced as Track-1 clusters. Reserve clusters meeting the required eligibility criteria and performing well against the evaluation criteria may also be identified and invited to join Track-1 where Government funds allow or if one or more of the initially identified Track-1 clusters is unable to progress.

The results of the Track-1 applications are expected in October 2021. Successful Track-1 clusters will be eligible to be considered for support under: (i) the CCS Infrastructure Fund (CIF) (focused on providing capex support to T&S networks and industrial carbon capture projects); and (ii) the various CCUS business models including T&S, industrial carbon capture (ICC), power and hydrogen<sup>1</sup>.

Following the announcement of Track-1 clusters in October 2021, an update will be published in respect of the timetable for identifying Track-2 clusters. Government will aim to conclude negotiations with projects within Track-2 clusters in time to enable them to take final investment decisions from 2024 to then be operational from 2027.

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<sup>1</sup> Note: An update to the proposed hydrogen business model is expected later this year.

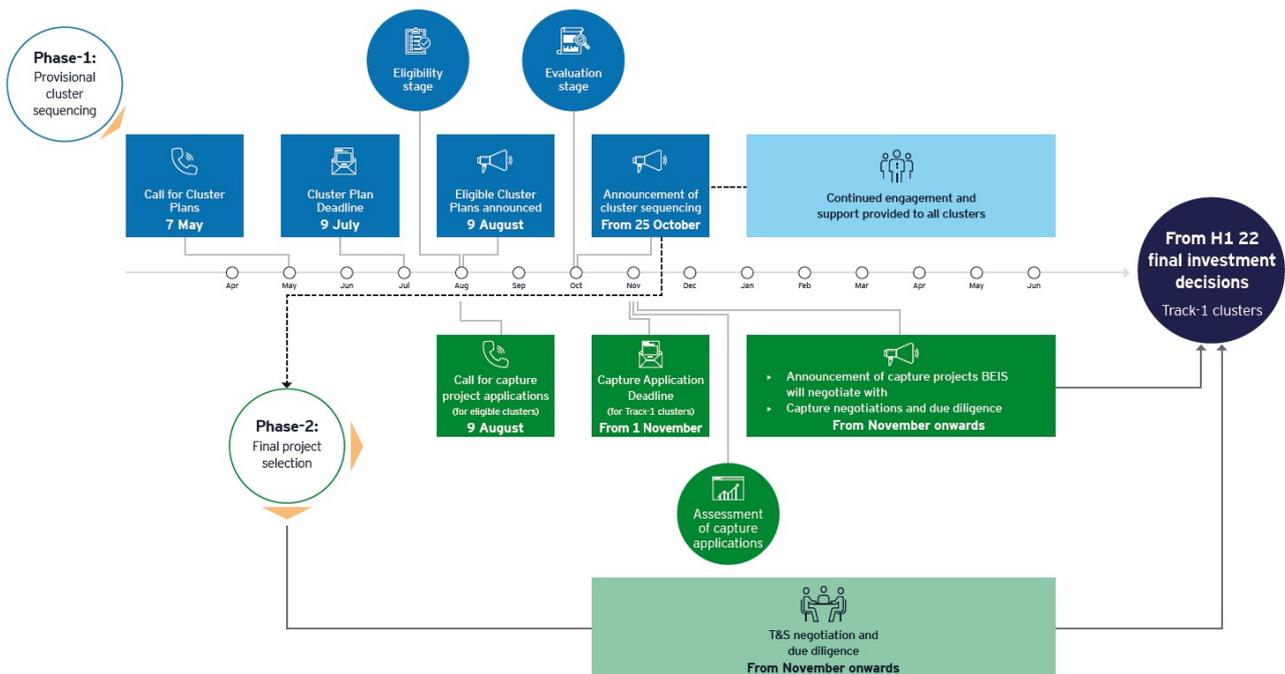
## Phases: Phase-1 (cluster plan submission) and Phase-2 (capture project applications)

Each Track will progress in two Phases. Phase-1 will see submissions accepted from cluster organisations (each identifying a Cluster Lead which is to be the entity primarily responsible for the cluster's T&S network) and it will be on the basis of these submissions that selected clusters will provisionally be sequenced onto Track-1. The deadline for Phase-1 cluster expressions of interest is 21 May 2021, with a deadline of 9 July 2021 for finalised Phase-1 submissions.

Phase-2 will allow individual projects across industry, power and hydrogen (whether or not included in the relevant cluster plan submitted for Phase-1) to submit applications to connect to the Track-1 clusters. The Government will select individual projects to enter into negotiations for support under the relevant business models. It is envisaged that Phase-2 engagement will kick off following announcement of the eligible Cluster Plans identified from Phase-1 to be announced on 9 August 2021.

Although Phase-2 allows applications from individual projects, the guidance acknowledges that mature projects which demonstrate they are fully integrated with the T&S network and integral to a cluster are likely to perform well against the Phase-2 selection criteria. Projects not on the Phase-1 Cluster Plan and looking to take advantage of the Phase 2 process must demonstrate that they will not impact timelines and offer better value for money than projects included in the Phase-1 plan. As outlined in the February consultation, a capture project included in a Phase-1 plan that is not named on Track-1 that believes it could connect to an alternative cluster that has been sequenced to Track-1 may submit a Phase-2 application for that cluster instead.

Figure 1: Phase 1 Cluster Sequencing Timeline



## Eligibility and Support

### Phase 1 – Clusters

The guidance provides that the Cluster Lead must submit an expression of interest to BEIS on behalf of its cluster and demonstrate there is a formal collaboration (e.g. an MoU or consortium/partnership agreement) between cluster organisations. Each Cluster Lead may make only one submission to BEIS and each capture project should feature in only one Cluster Plan submission.

A cluster must demonstrate it can meet (and its submission will be assessed against) the following criteria: (i) it can be operational by 2030; (ii) it is located in the UK; and (iii) it meets the definition of a CCUS cluster (being a T&S network and an associated first phase of at least two CO<sub>2</sub> capture projects).

The evaluation criteria outlined in the consultation phase remains unchanged (Deliverability (30%); Emissions Reduction Potential (25%); Economic Benefits (20%); Cost Considerations (15%); Learning and Innovation (10%)). The guidance confirms consideration will be given to how the cluster measures against these criteria in combination.

### Phase 2

Once the Government has announced the clusters which have been assessed as eligible for consideration in Phase 1, Phase 2 applications will commence.

#### (a) T&S

Although each Cluster Plan will include only one T&S submission, the guidance confirms there will still be a Phase-2 for T&S projects during which detailed due diligence would be completed and financial support requirements agreed.

##### (i) Eligibility

The T&S Project will require a Storage Licence and Storage Permit and the relevant planning and consents for the T&S network. Obtaining these or demonstrating a credible plan to do so will 'count favourably' towards the cluster in the sequencing process.

##### (ii) Support

Track-1 clusters' T&S networks would be eligible for consideration for: (i) an economic licence granting the licensee a regulated revenue stream; (ii) access to the CIF (e.g. to reduce the potential revenue gap for T&S projects (being the difference between calculated allowed revenue and the revenue the T&S company can collect from early users for their proportionate use of the network)); and (iii) a Government Support Package for high impact risks unlikely to be borne by the private sector e.g. escape/ leakage.

#### (b) ICC

##### (i) Eligibility

To be eligible for Phase-2 selection, an ICC project must: (i) be located in the UK; (ii) meet the definition of an industrial facility; (iii) have access to a carbon transport solution and storage site; (iv) have commenced pre-FEED studies or be ready to commence pre-FEED no later than the end of December 2022; (v) be operational no later than the end of December 2027; and (vi) meet a range of technical eligibility criteria.

*The guidance provides for which sectors are in and out of scope, however, it is worth noting that existing 'grey' hydrogen facilities will be in scope for the ICC business model, however, business models for low carbon hydrogen will cover new build CCUS-enabled hydrogen (which will not be in-scope for the ICC business model). The current 'minded-to' position for: (i) EfW, is to support only existing/committed energy efficient waste management (with energy recovery) under the ICC business model; and (ii) CHP, is to support only the most efficient CHP facilities (e.g. those under the CHPQA programme) used by eligible industrial processes, under the ICC business model.*

**(ii) Support**

Selected Track-1 projects may be eligible for: (i) an element of capital co-funding through CIF; and (ii) an Industrial Carbon Capture Contract funded from the exchequer.

**(c) Power**

**(i) Eligibility**

To be eligible for Phase-2 selection, a power project must: (i) be located in the UK; (ii) have an eligible configuration (gas-fired thermal, either new build or retrofit and either post-combustion, pre-combustion (on-site) or Oxy-fuelled combustion; (iii) have a minimum abated capacity of 100MW; (iv) have access to a carbon transport solution and storage site; (v) have a minimum projected capture rate of 90%; (vi) confirmed access to finance; (vii) be able to undertake pre-FEED or ready to commence pre-FEED no later than December 2022; (viii) demonstrate it will have relevant consents by 2024; and (ix) demonstrate it can be operational by December 2027).

**(ii) Support**

Selected power projects are eligible to receive a Dispatchable Power Agreement funded through consumer subsidies.

**(d) Hydrogen**

**(i) Eligibility**

To be eligible for Phase-2 selection, a hydrogen projects must: (i) be located in the UK; (ii) be a new CCUS-enabled hydrogen production plant; (iii) have access to a carbon transport solution and storage site; (iv) be at pre-FEED stage or ready to commence pre-FEED no later than the end of December 2022; (v) be expected to be operational by no later than the end of December 2027; (vi) have identified off-taker(s).

**(ii) Support**

Selected Track-1 projects may be eligible for revenue support through the hydrogen business model and may also apply for capital co-funding through the Net Zero Hydrogen Fund. A updated hydrogen business model is expected to be published later this year.

**(e) Bioenergy with Carbon Capture and Storage (BECCS)**

The guidance acknowledges that the BECCS model is at an earlier stage than the other models considered in the context of CCUS and notes that a final report will be published later this year. In general, the acknowledged long-term aim is to have a technology-neutral market driven, competitive framework but it is recognised that support could be needed ahead of a more comprehensive framework being in place.

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