



Department for
Business, Energy
& Industrial Strategy

Energy Security Bill Policy Statement

Carbon Dioxide (CO₂) Transport
and Storage, Hydrogen and Industrial Carbon
Capture Business Model support

August 2022



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Summary

The Energy Security Bill was introduced into Parliament on 6 July 2022. This Bill will deliver a cleaner, more affordable and more secure energy system for the long term. It builds on the ambitious commitments in the British Energy Security Strategy to invest in homegrown energy and maintain the diversity and resilience of the UK's energy supply.

The Energy Security Bill makes provisions to enable business models for low carbon hydrogen production and carbon capture from commercial and industrial activities to be brought forward to provide investors with the long-term revenue certainty they need to establish and scale up deployment of these industries.

This policy statement specifically concerns:

- the hydrogen business model which is being developed to help overcome one of the key barriers to deploying low carbon hydrogen: the higher cost of low carbon hydrogen compared to high carbon counterfactual fuels;
- the industrial carbon capture (ICC) business models, which are being developed to help incentivise the deployment of carbon capture technology for industrial and commercial activities which are hard to decarbonise, including:
 - the ICC business model which focuses on Carbon Capture, Usage and Storage (CCUS) in conventional industries such as chemicals, refining, and cement.
 - the waste ICC business model which is tailored to meet the specific needs of CCUS in waste management processes.
- the carbon dioxide (CO₂) transport and storage business model contracts, which complement the framework of economic regulation for the transportation and storage of CO₂, and are intended to secure the investment needed to deploy CCUS at scale.

The ICC and hydrogen business models are designed to work in complement with the establishment of the CO₂ transport and storage regulatory investment model.

Revenue Support Counterparties

This statement describes the objectives and intended policy for counterparties to the hydrogen production and carbon capture revenue support contracts, and CO₂ transport and storage revenue support agreement. These are regarding the hydrogen and ICC business models, and CO₂ transport and storage business model.

The delivery mechanism for the hydrogen and ICC business models is intended to be private law contracts between eligible low carbon hydrogen producers or carbon capture entities and hydrogen production or carbon capture counterparties respectively. Similarly, initial licensed CO₂ transport and storage companies are expected to be supported by a revenue support agreement, again a contractual arrangement to be entered into by a counterparty.

The Government intends to designate these counterparties by notice and bring into force the necessary regulations to be able to enter into initial contracts as soon as Parliamentary time allows after commencement of the relevant provisions in the Bill. The Government plans to consult on these regulations by early 2023.

Background

The consultation on the design of a business model for low carbon hydrogen¹, published in August 2021, set out and sought views on the Government's preferred design of a low carbon hydrogen business model as well as views on ways of funding the business model. The Government response, published in April 2022, confirmed that the Government would proceed with delivering the hydrogen business model through a contractual mechanism, with wide support from respondents. One of the reasons cited by respondents was that a private law contract is a well-understood delivery mechanism and is best suited to provide investor certainty and lower costs of capital.

The consultation on business models for Carbon Capture Usage and Storage (CCUS)², published in July 2019, set out options on business models for carbon capture from industry and power emitters, and for CO₂ transport and storage. The Government response to the consultation, published in August 2020, confirmed the preferred model for ICC to be delivered through a private law contract. It also identified preference for an economic regulation model for CO₂ transport and storage. Since the 2019 consultation, Government has continued to develop policy, taking into account views from industry stakeholders, and published business model updates³ which include proposals for a revenue support mechanism for CO₂ transport and storage network operators.

The CO₂ transport and storage business model is designed to allow a CO₂ transport and storage company to receive an 'allowed revenue' for constructing and operating the

¹ <https://www.gov.uk/government/consultations/design-of-a-business-model-for-low-carbon-hydrogen>

² <https://www.gov.uk/government/consultations/carbon-capture-usage-and-storage-ccus-business-models>

³ <https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models>

transport and storage network. This allowed revenue is recovered by charging fees to users of the network (emitters). The allowed revenue and charges are approved by the economic regulator. There are expected to be some periods where the transport and storage company will not be able to recover the full allowed revenue from user charges. Government is proposing a revenue support mechanism to address this risk and to support the establishment of initial transport and storage networks. In circumstances where a revenue support agreement is offered, payments would be made by the counterparty, under the revenue support agreement, to the transport and storage company.

The contractual model for the hydrogen and ICC business models, and CO₂ transport and storage revenue support agreements, will require a counterparty to manage the contracts. This approach is consistent with other policy interventions such as the Contracts for Difference scheme⁴, the Government's main mechanism for supporting low carbon electricity generation.

Policy Design and Objectives

The Government aims to finalise the hydrogen and ICC business models this year, with a view to allocating the first revenue support contracts from 2023. Initial hydrogen and ICC projects seeking business model support would enter into a contract with a counterparty on terms the Government has agreed with the relevant low carbon hydrogen producer or carbon capture entity.

To enable initial hydrogen production and carbon capture revenue support contracts to be entered into from 2023 with a revenue support counterparty, a hydrogen production counterparty and a carbon capture counterparty need to be designated. Secondary legislation must also be in place to determine the meaning of "eligible" in relation to a low carbon hydrogen producer and carbon capture entity and to make any relevant provisions to enable such initial contracts to be entered into.

The Government anticipates that the Low Carbon Contracts Company Ltd (LCCC)⁵, who are the existing counterparty for Contracts for Difference and the planned counterparty for the Dispatchable Power Agreement, will be the counterparty for the Low Carbon Hydrogen Agreement (the contract underpinning the hydrogen business model) and both the Industrial Carbon Capture and Waste Industrial Carbon Capture Agreements (the "ICC Contracts"); subject to successful completion of administrative and legislative arrangements. LCCC has experience in similar types of contract management from its role as counterparty to Contracts for Difference.

LCCC is expected to be designated by notice using the powers in sections 61(1) and 63(1), which would be published as required under section 75(3).

The counterparty for the CO₂ transport and storage revenue support contract would be designated by the Secretary of State pursuant to section 59(1). This designation would take

⁴ <https://www.gov.uk/government/publications/contracts-for-difference/contract-for-difference>

⁵ <https://www.lowcarboncontracts.uk/>

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place in advance of the first revenue support contract being entered into by the counterparty and a holder of an economic licence (a CO₂ transport and storage company), which is expected at the same time that any licence is granted pursuant to section 7.

The powers in sections 79 and 80 in relation to transfer schemes for the transfer of contracts and other property, rights and liabilities to a replacement counterparty to ensure scheme continuity would only be exercised in the event there was a change of hydrogen production counterparty, carbon capture counterparty or transport and storage counterparty.

We will be considering how to ensure the counterparty can meet its liabilities under revenue support contracts and circumstances in which, and the period for which, a person who has ceased to be a hydrogen production counterparty, carbon capture counterparty or transport and storage counterparty is to continue to be treated as such.

We may consult on the regulations to be made under sections 58(5), 75(4) and 76 once the policy position has been developed with the aim of providing early investors and developers the confidence they need to invest.

The Government intends to use the powers in sections 61(3) and 63(3) to define “eligible low carbon hydrogen producer” and “eligible carbon capture entity” respectively. These regulations are intended to enable support for successful projects in the cluster sequencing process⁶ and the 2022 allocation round for electrolytic hydrogen projects⁷, as well as future allocation rounds to deliver our ambitions in the British Energy Security Strategy and Net Zero Strategy. The Department for Business, Energy and Industrial Strategy plans to consult on these regulations by early 2023. The Contracts for Difference (Definition of Eligible Generator) Regulations 2014⁸ provide an indication of what these regulations could look like.

The Government intends to use the powers in sections 60(3), 62(2) and 64(2) to set out more detail in regulations on the Secretary of State’s power to direct a hydrogen production counterparty, carbon capture counterparty or transport and storage counterparty to offer to contract with eligible persons. The Department for Business, Energy and Industrial Strategy plans to consult on these regulations by early 2023. Part 10 of the Contracts for Difference (Allocation) Regulations 2014⁹ provides an indication of what these regulations could look like.

The powers in section 60(1) enable Secretary of State to direct the T&S counterparty to offer a contract to either a T&S licence holder or a potential licence holder. Subject to negotiations and Parliamentary approval, the first licences are expected to be granted pursuant to section 7 of the Bill to allow for construction to commence by the mid-2020s. Any associated revenue support agreements are expected to be entered into at the time that the licences are granted.

⁶ <https://www.gov.uk/government/publications/cluster-sequencing-for-carbon-capture-usage-and-storage-ccus-deployment-phase-2>

⁷ <https://www.gov.uk/government/publications/hydrogen-business-model-and-net-zero-hydrogen-fund-electrolytic-allocation-round-2022>

⁸ <https://www.legislation.gov.uk/uksi/2014/2010/contents/made>

⁹ <https://www.legislation.gov.uk/uksi/2014/2011/contents/made>

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The powers in sections 62(1) and 64(1), enable the Secretary of State to direct the counterparty to offer to contract with eligible low carbon hydrogen producers and carbon capture entities. These are expected to be first exercised in relation to the successful projects coming through the 2022 electrolytic hydrogen allocation round and ongoing CCUS cluster sequencing process.

Government will monitor whether to make further regulations in respect of revenue support counterparties, for example to ensure the effective management of revenue support contracts. When regulations relating to competitive allocation or the hydrogen levy are brought forward, Government intends for these to complement existing regulations to help deliver a coherent and transparent regulatory framework.

Competitive Allocation

This statement describes the objectives and intended policy for the provisions that enable more competitive allocation of hydrogen production and carbon capture revenue support contracts, as regards the Low Carbon Hydrogen Agreements (LCHA) and both the Industrial Carbon Capture and the Waste Industrial Carbon Capture Agreements (the “ICC Contracts”).

For LCHAs, the Government intends to lay regulations establishing the process in 2024 following consultation.

For ICC Contracts, we will consider how to evolve our approach towards more competitive allocation processes once market conditions allow.

Background

First business model contracts for:

- Electrolytic hydrogen projects are expected to be allocated via the ongoing 2022 Hydrogen Business Model and Net Zero Hydrogen Fund Electrolytic Allocation Round.
- CCUS enabled hydrogen, ICC and Waste ICC projects are expected to be allocated via the ongoing cluster sequencing process.

However, in the medium term, both LCHA and ICC Contracts are expected to move towards a more competitive allocation process.

In the consultation on the design of a business model for low carbon hydrogen¹⁰, we sought views on the most appropriate allocation mechanism for the LCHA, both in the near term (for projects outside the CCUS cluster sequencing process) and longer term (for all technologies/projects). Respondents were in support of a transition to a more competitive process, citing benefits such as value for money, the potential for significant reductions in technology costs and supply chain improvements.

Our ambition is to move to price-based competitive allocation of LCHAs from 2025, as soon as legislation and market conditions allow.

Policy Design and Objectives

Transitioning to a more competitive allocation process to allocate business model support is expected to provide greater value for money to taxpayers and consumers (as appropriate).

We are considering a number of approaches, including an auction similar to the Contracts for Difference allocation process, which is seen as a key driver for reductions in the capital cost of

¹⁰ <https://www.gov.uk/government/consultations/design-of-a-business-model-for-low-carbon-hydrogen>

offshore windfarms. By increasing competition between projects we would expect to see similar reductions in technology costs for hydrogen and ICC projects.

Following an appraisal of the options, Government intends to appoint an allocation body to administer the competitive allocation process in respect of each business model. The allocation body may be different for LCHA and ICC Contracts. The allocation body is expected to be appointed by regulations using the power set out in section 68. Those regulations may also make provision with regard to the cessation of an appointment.

The allocation body may be required to give allocation notifications to notify a hydrogen production or carbon capture counterparty of an allocation decision. Further detail on how the allocation notification process would work is expected to be set out in regulations made using powers in section 70.

The Government intends to also use the powers given through: section 69 to enable Secretary of State to issue and publish standard terms and conditions which may be revised in accordance with regulations and may be different for different categories of LCHA and ICC contract; section 71 to establish in regulations an allocation process and to confer a power on the Secretary of State to detail the rules of an allocation process in allocation frameworks; section 72 to make regulations setting out further provisions about the counterparty's duty to offer contracts following allocation; section 73 to make regulations setting out further provisions about agreements to modify standard terms.

For the hydrogen business model, work is underway on the possible design of a more competitive allocation process. We will consult before making regulations using the powers in sections 69-74, which we aim to be in force by 2025, subject to Parliamentary time.

Hydrogen Levy

This statement describes the objectives and policy intent of provisions that enable the Secretary of State to make regulations establishing a new hydrogen levy and the appointment and functions of a hydrogen levy administrator.

The Government anticipates public engagement on options for the detailed levy design in 2023 and the details of the new levy mechanism are to be set out in secondary legislation.

Background

The hydrogen business model will initially be taxpayer funded, with up to £100 million of taxpayer funding allocated for initial electrolytic hydrogen projects at the last Spending Review. The Net Zero Strategy announced that, from 2025 at the latest, the business model will be levy funded, subject to consultation and legislation being in place. We do not expect the levy to have impacts on consumer bills before 2025.

In addition, the hydrogen business model is designed to enable the level of subsidy to reduce over time; as the value of low carbon hydrogen in the market increases, the producer can sell low carbon hydrogen for a higher price and the subsidy paid through the business model is able to reduce.

The department has already responded¹¹ to initial views from stakeholders on approaches to funding the business model, as part of the wider consultation on the design of a low carbon hydrogen business model. We anticipate public engagement on options for the detailed levy design in 2023.

Policy Design and Objectives

The provisions in the Energy Security Bill will not introduce this levy; they will only enable Government to introduce the levy later, through secondary legislation. We intend that the levy will, at least initially, operate in a similar way to existing levy schemes – where revenue support is funded through supplier obligations, with suppliers passing costs onto energy bills. This approach has been used in the electricity sector to support the deployment of low carbon electricity through Contracts for Difference, and in the gas sector through the Green Gas Support Scheme via the Green Gas Levy. These funding mechanisms are well understood by the private sector, and we consider that establishing a similar levy through secondary legislation would provide investors and developers with the confidence they need to invest.

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1067504/low-carbon-hydrogen-business-model-government-response.pdf

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The levy administrator will carry out functions such as the calculation and collection of levy payments. An initial decision on who should serve as the levy administrator is not likely to be taken until 2023. Prior to the appointment of the levy administrator, the Government plans to conduct internal assessments relating to their experience, capacity and resource, in order to determine their suitability for this role. We do not intend for decisions on the appointment of the administrator to be subject to consultation.

The powers in the Energy Security Bill provide options for where the levy might be placed in the energy supply chain – enabling regulations to make provision requiring one or more descriptions of gas suppliers, electricity suppliers, and/or gas shippers to pay the levy. The types of market participants required to pay the levy may need to change in the future, to accommodate changes to the energy market as we progress towards our net zero target.

We are not minded to apply the levy to gas shippers in the near term; this option has been included to allow for a greater range of options for a future levy design, enabling the levy to be adapted in response to potential changes to the energy market. In the near term and over the coming years, therefore, we expect that the obligation to pay the hydrogen levy would only apply to energy suppliers, for example electricity or gas suppliers, or a combination of the two.

The detailed levy design will take into account wider Government priorities and policies, as well as considerations related to the affordability of domestic and non-domestic energy bills.

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