



Department for
Business, Energy
& Industrial Strategy

Consultation on proposals for the Duties and Functions of an Economic Regulator for Carbon Dioxide (CO₂) Transport and Storage Networks

Closing date: 26 September 2021

August 2021



© Crown copyright 2021

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit nationalarchives.gov.uk/doc/open-government-licence/version/3 or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or email: psi@nationalarchives.gsi.gov.uk.

Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.

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

Contents

General information	4
Why we are consulting	4
Consultation details	4
How to respond	6
Confidentiality and data protection	6
Quality assurance	7
The proposals	8
Next steps	8
Consultation questions	9
Introduction	10
The business model for CO ₂ transport and storage	10
Our proposed approach to the economic regulation of CO ₂ transport and storage	11
Identity of the economic regulator	12
The duties, powers and objectives of the economic regulator	13
Principal objective	14
Secondary objectives	15
The prevention of anti-competitive behaviour	17
Consultation questions:	17
Functions of the economic regulator	17
Functions of the economic regulator during the first regulatory period	19
Functions of the economic regulator during the enduring regulatory regime	19
Functions of the economic regulator throughout both the initial and enduring regulatory periods	20
The Transport and Storage economic licence	21
Enforcement of licence conditions	22
Non-pipeline transport	23
Scope for exemptions	23
Regulatory interfaces	24
Consultation questions:	25

General information

Why we are consulting

The purpose of this consultation is to seek views on proposed duties, powers, functions and objectives of an economic regulator for carbon dioxide (CO₂) transport and storage networks, to inform the continued development of carbon capture, usage and storage policy and legislative proposals.

This consultation follows consultation in 2019 on business models for Carbon Capture, Usage and Storage (CCUS), and the government response to that consultation which set out that an independent body is likely to be required to oversee the development of the CO₂ transport and storage network and support its deployment, given that the network will have natural monopoly characteristics similar to other regulated utilities.

Proposals in this document do not represent final policy and will necessarily be reviewed in light of consultation responses as well as ongoing policy developments. Nothing in this document creates any basis for any form of expectation or reliance.

Consultation details

Issued: 2nd August 2021

Respond by: 26th September 2021

Enquiries to:

Devina Banerjee
CCUS Transport & Storage
Department for Business, Energy and Industrial Strategy
3rd Floor
1 Victoria Street
London
SW1H 0ET

Email: ccustandsconsultations@beis.gov.uk

Consultation reference: Carbon Capture, Usage and Storage – Consultation on the Duties and Functions of the Economic Regulator for CO₂ Transport and Storage

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

- Regulatory bodies and authorities with an interest in CCUS

However, any organisation or individual is welcome to respond.

Territorial extent:

This consultation proposes duties and functions for an economic regulator of carbon dioxide transport and storage networks. These networks relate to energy markets, including by supporting carbon capture from electricity generation, as well as supporting industrial carbon capture. Regulation of energy markets in Great Britain is the responsibility of the Gas and Electricity Markets Authority. Responsibility for energy markets in Northern Ireland lies with the Northern Ireland Executive's Department for the Economy and regulated by the Utility Regulator. Other matters covered by this consultation may also be devolved to Scotland, Wales and Northern Ireland. The UK government is committed to supporting decarbonisation across the UK. As well as the UK-wide statutory commitment to reduce CO₂ emissions to 'net zero' by 2050¹, CCUS deployment can support Northern Ireland, Scotland and Wales in meeting their respective net zero targets². We will continue to engage with each of the devolved administrations to develop a co-ordinated approach to the delivery of CCUS across the UK including on the design of the regulatory regime for transport and storage, and, in light of those discussions, may modify the proposals to reflect devolved responsibilities.

¹ The Climate Change Act 2008 (2050 Target Amendment) Order 2019:
<https://www.legislation.gov.uk/ukdsi/2019/9780111187654>

² The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 sets targets to reduce Scotland's emissions of all greenhouse gases to net zero by 2045 at the latest. The Climate Change (Wales) Regulations 2021 introduces targets to achieve net zero emissions by 2050. A Climate Change Bill is currently in passage in the Northern Ireland Assembly.

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/ccus-economic-regulator-for-co2-transport-storage>

or

Email to: ccustandsconsultations@beis.gov.uk

Write to:

Devina Banerjee
CCUS Transport & Storage
Department for Business, Energy and Industrial Strategy
3rd Floor
1 Victoria Street
London
SW1H 0ET

When responding, please state whether you are responding as an individual or representing the views of an organisation.

Your response will be most useful if it is framed in direct response to the questions posed, though further comments and evidence are also welcome.

We will summarise all responses and publish this summary on [GOV.UK](https://www.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.

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.

The proposals

This consultation sets out proposals for the duties, powers, functions, and objectives for an economic regulator of CO₂ transport and storage, on which we invite views.

This follows consultation in 2019 on potential business models for Carbon Capture, Usage and Storage (CCUS) and the government response to that consultation, which set out government's proposal for a regulated network model for CO₂ transport and storage. With CO₂ transport and storage networks likely to be operated as regional monopolies which encompass a range of different network users and emitters operating under different commercial models, a regulated network model would enable the development of regional transport and storage networks that can provide certainty to both investors and the network users in terms of revenue flows, risk allocation and service provision.

The government response to the CCUS business models consultation also set out that under an economic regulation model, an independent body is likely to be required to oversee the development of the CO₂ transport and storage network, in line with government policy, defined in legislation where appropriate. We now set out in this consultation our proposals for the duties, powers, functions, and objectives for an independent economic regulator of CO₂ transport and storage.

As set out in this consultation document, it is government's view that Ofgem is the entity best suited to undertake the role of economic regulator for CO₂ transport and storage, taking into account responses to the 2019 consultation, government policy on the establishment of new public bodies, and considerations around proven track record in regulating similar asset types, alignment of strategic objectives, and speed of implementation in order to achieve government objectives to deploy CCUS by the mid-2020s and to meet statutory decarbonisation targets.

Next steps

The purpose of this consultation is to seek a broad range of views on the government's proposed approach to the duties and functions of the economic regulator for CO₂ transport and storage. We will use the responses to this consultation to help us continue our development of this policy and to consider alternatives as appropriate, and the development of associated legislative proposals. We intend to publish a response to this consultation which would be accompanied by a summary of the responses received to this consultation.

Consultation questions

- 1. Do you have views on our proposed approach to the duties and functions of the economic regulator for CO₂ transport and storage?**
- 2. Are there additional objectives and duties, to those considered here, to which the economic regulator should have regard in the exercise of its functions?**
- 3. Do you have views on the proposed functions for the economic regulator, and how roles and responsibilities evolve over time as the network matures?**
- 4. Do you have views on stakeholders who the economic regulator should be statutorily required to consult with on changes to the Economic Regulatory Regime?**
- 5. Do you have any views on the approach to issuing economic licences, including on the principle of allowing exemptions from the requirement for CO₂ transport and storage operators to hold an economic licence, and the conditions under which this might be appropriate?**
- 6. Do you have views on the approach to enforcement, including the appropriate penalties for breach of licence conditions or of other regulatory requirements?**
- 7. Do you have views on whether aspects of non-pipeline transportation should require an economic licence?**
- 8. Are there matters on which you consider the economic regulator should be expressly required to consult other authorities or regulatory bodies?**
- 9. Are there any barriers to co-operation or information sharing between regulatory bodies which may require further consideration, in order to facilitate an effective economic regulatory regime for CO₂ transport and storage?**

Introduction

1. Government has set in law the world's most ambitious climate change target to reduce emissions by 78% by 2035 compared to 1990 levels. Carbon Capture, Usage and Storage (CCUS) technologies will have a vital role to play in achieving these statutory decarbonisation targets. Developing CCUS infrastructure will contribute to the economic transformation of the UK's industrial regions, enhancing the long-term competitiveness of UK industry in a global net zero economy. CCUS will help decarbonise our most challenging sectors, provide low carbon power and a pathway to negative emissions.
2. As set out in the Prime Minister's "Ten Point Plan for a Green Industrial Revolution"³, government has committed to establish commercial models for CCUS that will attract the investment needed to capture 10Mt of carbon dioxide (CO₂) per year by 2030. The transport and storage network for CCUS will act as the enabling infrastructure for transporting carbon captured from a range of sources, including power plants, industrial facilities, low carbon hydrogen production and potentially direct air capture, and storing it deep underground where it cannot enter the atmosphere.
3. Successful implementation of a business model for CO₂ transport and storage (T&S) is crucial to facilitating the level of transport and storage capacity required to deliver the UK's CCUS ambitions and to meet statutory carbon emissions reduction targets.

The business model for CO₂ transport and storage

4. Government consulted on business models for CCUS in 2019⁴. The 2019 consultation set out a number of different business models under consideration for CO₂ Transport and Storage (T&S). Responses to the consultation indicated support for a regulated asset model, where a transport and storage company (T&SCo) would receive a licence from an economic regulator which grants it the right to charge a regulated price to users in exchange for delivering and operating the T&S network.
5. In our response to the consultation on business models for CCUS in August 2020⁵ we explained that, in order to prevent monopolistic disadvantages, we were minded to establish a regime whereby the charges for users of the T&S network would be set by an independent economic regulator who considers allowable expenses over a set period of time, to ensure costs are necessary and reasonable.

³ The Ten Point Plan for a Green Industrial Revolution (November 2020) <https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution/title#point-8-investing-in-carbon-capture-usage-and-storage>

⁴ Business Models for Carbon Capture, Usage and Storage: A consultation (July 2019) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/819648/ccus-business-models-consultation.pdf

⁵ Business Models for Carbon Capture, Usage and Storage: Government response (August 2020) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/936567/10_POINT_PLAN_BOOKLET.pdf

6. In December 2020, the government published the CO₂ Transport and Storage Regulatory Investment Model⁶ (the TRI Model) which further outlined our proposition for the economic regulatory regime as part of the T&S network funding model, including on potential duties, roles and responsibilities of the economic regulator. The update on the business model for CO₂ transport and storage published in May 2021⁷ set out in more detail the proposed role and responsibilities of the independent economic regulator during different phases over the T&S project lifecycle.

Our proposed approach to the economic regulation of CO₂ transport and storage

7. Our proposed business model for CO₂ Transport and Storage, the TRI Model, is based on an economic regulation funding model. This reflects the monopolistic characteristics of T&S networks, similar to other regulated utilities, and builds on the UK's strong track record of independent economic regulation that has delivered significant benefits in the utilities sectors. The regulatory model has been integral to attracting over £200 billion of private sector investment in the UK's infrastructure networks and driving higher standards for consumers⁸.
8. **The objectives for the design of the TRI model are:**
 - **attracting stable investment in the T&S network** by providing investors with a clear long-term revenue model;
 - **enabling low cost decarbonisation in multiple sectors**, and;
 - **providing sufficient flexibility for future market expansion.**
9. Our approach to design of the TRI model is informed by the Principles of Economic Regulation⁹ which set a framework for delivering clarity about the role of government and regulators. At the core of these principles is the importance of **stable, predictable and independent regulatory frameworks to provide vital consumer protections and to facilitate efficient investment and sustainable growth.**
10. In the UK, economic regulation across sectors has aimed to promote effective competition where possible and, where it is not meaningful to introduce competition, to provide a proxy for competition with protection of consumers' interests at its heart. Regulation has typically capped the prices that dominant companies can charge in order to promote efficiency and fairness, while providing them a return on their assets and

⁶ Carbon Capture, Usage and Storage: An update on business models (December 2020)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/946561/ccus-business-models-commercial-update.pdf

⁷ Transport and Storage business model: May 2021 update (May 2021)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/983903/ccus-transport-services-business-model-commercial-update.pdf

⁸ HM Treasury (November 2020) [National Infrastructure Strategy](#)

⁹ Principles for Economic Regulation (April 2011)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/31623/11-795-principles-for-economic-regulation.pdf

investments. In doing so, these regulators have delivered significant benefits to consumers.

11. In order to ensure the regulatory system is able to respond to the challenges of the 21st Century, the government commissioned the National Infrastructure Commission (NIC) to undertake a review of economic regulation¹⁰, to assess what changes might be necessary to existing regulatory frameworks to facilitate future investment needs, promote greater competition and increase innovation, and meet the needs of both current and future consumers.
12. The NIC published its report, Strategic Investment and Public Confidence, in October 2019. A detailed response to each of the NIC recommendations is set out in 'Response to the Regulation Study - Strategic investment and public confidence'¹¹, published alongside the government's National Infrastructure Strategy¹² in November 2020. The government's position will be expanded further in an overarching policy statement on economic regulation later in 2021. Our final approach to the economic regulation of T&S will be reflective of this policy position.
13. **As set out in the National Infrastructure Strategy, government is committed to taking a long-term approach to infrastructure investment to provide predictability and the required stability, as well as appropriate incentives to investors. This should also balance the needs of current consumers with those of future consumers.** These high level principles guide the proposals for the economic regulation of T&S set out in this consultation, on which we invite views.

Identity of the economic regulator

14. As set out above, the proposed TRI model for CO₂ T&S networks includes the independent regulation of charges for asset use pricing, promoting efficiency and fairness.
15. Our July 2019 consultation on the business models for CCUS recognised that the identity of the regulator for T&S could affect investor and consumer confidence in the regulatory arrangements. Several respondents to our July 2019 consultation expressed support for Ofgem¹³ to take on the role of the economic regulator for the T&S network, due to its proven track record, familiarity with investors and experience in regulating sectors with similar infrastructure.
16. **Taking into account the responses to the 2019 consultation and considerations around speed of implementation, proven track record in regulating similar asset types, and alignment of strategic objectives, we currently consider that Ofgem is**

¹⁰ Strategic Investment and Public Confidence (October 2019) <https://nic.org.uk/studies-reports/regulation/>

¹¹ Response to the Regulation Study - Strategic investment and public confidence (November 2020) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938044/Government_Response_to_the_Regulation_Study_Strategic_Investment_and_Public_Confidence_FINAL.pdf

¹² HM Treasury (November 2020) [National Infrastructure Strategy](#)

¹³ Ofgem is the office of the Gas and Electricity Markets Authority (GEMA), working for and giving effect to the executive decisions of GEMA. For ease of reference, this publication refers to Ofgem throughout.

the entity best suited to undertake the role of economic regulator for CO₂ T&S. A summary of these considerations is in the box below.

17. The appointment of Ofgem as the economic regulator for T&S would be consistent with government policy on the establishment of new public bodies¹⁴, that is, where a sufficiently similar activity is already being provided elsewhere, linking to an existing entity should be considered more appropriate than establishing a new entity.

Summary of considerations for determining the appropriate entity to economically regulate CO₂ Transport and Storage

Implementation: Using an existing regulator rather than setting up a new body would inherently be a quicker, cheaper and less complex approach. This would help minimise delays to meeting our target to achieve CCUS deployment by the mid-2020s and our net zero targets. This is also consistent with government policy on the establishment of new public bodies.

Familiarity: Investors' familiarity with Ofgem's track record as an economic regulator in the electricity and gas sector.

Competency: Ofgem currently has expertise, experience and a proven track record as the economic regulator of a range of asset types in the energy sector (such as the onshore gas network, offshore electricity transmission network and interconnectors). This experience can be directly applied to many facets of CCUS T&S regulation.

Alignment with CCUS objectives: Ofgem has existing decarbonisation strategies to support the UK's net zero emissions target at the lowest cost to consumers.

The duties, powers and objectives of the economic regulator

18. **Economic regulators are established by statute and legally bound to execute their duties.** In the conduct of its role and responsibilities, and in making its regulatory determinations, the economic regulator would be subject to statutory duties, powers, functions and objectives prescribed in legislation.
19. Through this statutory framework the aim is to establish a clear and predictable framework for independent regulatory decision making, to provide confidence to investors in making long-term investment decisions and ensure that transparent, fair, reasonable and non-discriminatory regulatory decisions are taken by the body with the expertise and capability to arbitrate between the required trade-offs.
20. We understand that the design of the regulator's duties and clarity of objectives is crucial to the conduct of both the regulator and those who are regulated or affected by regulatory decisions. It is therefore essential that economic regulators should have

¹⁴ Guidance on the establishment of public bodies <https://www.gov.uk/government/collections/public-bodies-information-for-departments>

clearly defined statutory responsibilities that are outcome-focused, with adequate discretion to select the tools that achieve these outcomes in the most effective manner.

21. As a further safeguard for investors, we envision that the decisions made by the economic regulator would be appealable under provisions consistent with the Gas and Electricity Acts to an appeals body, or to the Courts by way of a judicial review, depending on the circumstances.

Principal objective

22. To provide clarity of objectives for the regulator and to help monitor the regulator's performance, regulators in many sectors have been given a single overarching primary duty, typically to promote the interests of consumers; the end users of the regulated product or service. This can be achieved by ensuring the operation of well-functioning and contestable markets¹⁵ where appropriate or by designing a system of incentives and penalties that replicate as far as possible the outcomes of competitive markets.
23. This is the case with Ofgem whose principal objective is to protect the interests of existing and future consumers in relation to gas conveyed through pipes and electricity conveyed by distribution or transmission systems. All other statutory duties and objectives are subordinate to this primary duty.
24. **We believe it to be in the interests of investors, users, and the regime as a whole to replicate the structure of duties which Ofgem and government ministers already apply in the gas and electricity sectors.** In the gas and electricity sectors this involves a principal objective to protect the interests of existing and future consumers (including their interests in a reduction in greenhouse gases and in the security of supply). It also requires the economic regulator to have regard to the need to secure that licensees are able to finance their licensed activities. The economic regulator for these sectors also needs to consider the achievement of sustainable development and how regulatory decisions promote licensee behaviour which is efficient and economic.
25. This structure of duties has a long history in UK utility regulation, and is therefore well known by investors. Replicating this structure should reduce the overall cost of capital for investment in CCUS projects, and should work favourably for credit rating assessments (the so-called 'halo effect').
26. The principal aim of a T&S network¹⁶ is to transport CO₂ away from the source of the emissions for its safe and permanent storage¹⁷. Whereas the gas and electricity networks provide gas and electricity to consumers who use the gas and electricity, the

¹⁵ Defined by the OECD as a market in which the following conditions are satisfied: there are no barriers to entry or exit; all firms, both incumbent and potential entrants, have access to the same production technology; there is perfect information on prices, available to all consumers and firms; entrants can enter and exit before incumbents can adjust prices. In contrast to perfect competition, a contestable market may have any number of firms (including only one or a few) and these firms need not be price-takers. The analysis of contestable markets is designed for cases in which the existence of scale economies precludes a large number of competitors. See: <https://stats.oecd.org/glossary/detail.asp?ID=3178>

¹⁶ In the guidance for CCUS cluster sequencing deployment phase 1 we have defined 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.

¹⁷ BEIS policy on the utilisation of CO₂ remains in development

users of the T&S network will be putting CO₂ into the network to be transported for safe and permanent storage.

27. Given this distinction, we propose the principal duty for the economic regulator of T&S should be to protect the interests of existing and future users of the network, rather than to protect the interests of consumers. This is an adaptation of the principal duty that applies in the regulation of gas and electricity networks that, in our view, would provide greater clarity for both the regulator and those who are regulated. We consider 'users' to be those entities which are seeking to have their CO₂ conveyed to storage. We will consider further the potential for there to be additional users of the network who may wish to off-take CO₂ via the network for commercial or other uses.
28. We consider this approach would be suitable for our long term vision for CCUS networks which would have a substantial number of users. An objective to protect both current and future users requires a focus on the long-term financial viability of the networks themselves, given the importance of attracting the investment that will be needed to drive innovation and growth to meet future user needs.
29. A principal objective focused on users of the network is particularly appropriate given that a T&S network may have monopolistic characteristics. Whilst the protection of user interests is a foremost consideration, we consider that beneficial impacts would flow to electricity consumers and the general public who are the beneficiaries of low carbon products that are facilitated by the safe and efficient operation of the T&S infrastructure.
30. For the reasons set out above, **we consider that the principal objective for the economic regulator and government ministers in carrying out their respective functions should be protecting the interests of existing and future users of the CO₂ Transport and Storage network, including by promoting effective competition wherever appropriate.** This would both ensure that the role of the T&SCo is subject to appropriate checks and that the economic regulator balances near-term and future needs of users, in order to secure the long-term viability of the networks in what is currently a nascent industry.
31. We consider that the interests of network users should be considered holistically, including their interests in connecting to, and the efficient operation of, the network.
32. **The economic regulator would be required to carry out its functions in the manner it considers is best calculated to further the principal objective** wherever appropriate, by promoting effective competition between persons engaged in, or commercial activities connected with, the transport and storage of CO₂. **The economic regulator would also be required to carry out its functions in the manner it considers is best calculated to promote efficiency and economy.**

Secondary objectives

33. For reasons set out above we consider it to be in the interests of investors, users, and the regime as a whole to replicate the existing statutory objectives which already apply in the regulation of gas and electricity networks, where this is appropriate.
34. In carrying out their respective functions, and with the principal objective to protect the interests of existing and future users of the CO₂ T&S network, we propose that

government ministers and the economic regulator should have statutory obligations to also have regard to the following:

- **The ability of a licensed T&S network operator to be able to finance its licensed activities** to reflect the importance of attracting the investment needed to drive the innovation and growth that will be needed to meet future user needs.
- **The promotion of effective competition between persons engaged in, or commercial activities connected with, the transport and storage of CO₂**, to seek to emulate the benefits of competitive markets for users and operators, where appropriate.
- **The need to secure an efficient and economic T&S network**, to promote efficiency and fairness, while ensuring a return to regulated operators on their assets and investments.
- **The need to secure resilience of the T&S network**, to reflect the importance of quality and reliability of service to users.
- **The need to secure diverse and viable long-term CCUS solutions**, to reflect the nascent status of the CCUS industry and ensure decisions take account of long-term considerations.
- **The need to contribute to the achievement of sustainable development.**
- **Protecting the public from dangers associated with T&S activities.**
- **The effect on the environment of activities connected with T&S.**
- **The principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed**; and any other principles appearing to the economic regulator to represent the best regulatory practice.

35. The NIC review of economic regulation¹⁸ made recommendations relating to the statutory duties of regulators. We recognise that these recommendations, relating to decarbonisation and regulatory collaboration, would be relevant to the economic regulation of T&S. As set out in the response¹⁹, the government intends to consider the NIC recommendations on duties for economic regulators in the round as part of a forthcoming policy paper planned for publication later in 2021. The conclusion of this work, alongside views submitted in response to this consultation, will inform our final approach to the duties and objectives for the economic regulator for T&S.

36. Given the expected critical role of CCUS in delivering government's decarbonisation targets, it is particularly relevant to provide a specific focus for the economic regulator to make decisions with regard to statutory decarbonisation targets. This could take the form of a statutory objective, noting an equivalent duty for Ofgem under the Gas Act²⁰, or through strategic policy direction set by government.

¹⁸ Strategic Investment and Public Confidence (October 2019) <https://nic.org.uk/studies-reports/regulation/>

¹⁹ Response to the Regulation Study - Strategic investment and public confidence (November 2020)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938044/Government_Response_to_the_Regulation_Study_Strategic_Investment_and_Public_Confidence_FINAL.pdf

²⁰ The Gas Act requires 4AA (1AA) requires Ofgem to have regard to "their interests in the reduction of gas-supply emissions of targeted greenhouse gases"

- 37. As in other regulated sectors, we anticipate policy direction for CCUS to be directed by government, which could be, for example, through the use of Strategic Policy Statements, with day-to-day regulatory decisions made independently by the economic regulator, in line with its statutory duties and obligations.**
38. Strategic Policy Statements can be used to set the strategic priorities and policy outcomes for economic regulators, and are intended to complement a regulator's statutory duties. For example, both the Water Industry Act 1991 and the Energy Act 2013 provide powers for Strategy and Policy Statements to be designated. The regulator is statutorily required to have regard to the strategic priorities and outcomes when carrying out its regulatory functions and to carry out those functions in the way it considers is best calculated to further the delivery of the specified policy outcomes. We will consider further the most appropriate means for setting strategic priorities and policy for the economic regulation of T&S.

The prevention of anti-competitive behaviour

39. In addition to a statutory objective to promote effective competition between persons engaged in, or commercial activities connected with, the transport and storage of CO₂, it is our current view that the economic regulator should have concurrent powers to enforce competition law infringements in the T&S sector, as Ofgem has in the gas and electricity sectors.
40. The Competition Act 1998 prohibits anti-competitive behaviour and is enforced in the main by the Competition and Markets Authority (the CMA) but sectoral regulators, including Ofgem, have concurrent powers to apply the legislation in their sector.
41. Therefore, to ensure consistency of approach to the regulation of CO₂ T&S as in other regulated sectors, to promote competition for the benefit of users and to prevent anti-competitive behaviour both through facilitating use of competition powers and development of pro-competitive regulatory frameworks, as appropriate, our view is that concurrent powers should be available to the economic regulator to support the enforcement of competition law infringements relating to the transport and storage of CO₂ regardless, for example, of whether companies are licensed or unlicensed.

Consultation questions:

Q1. Do you have views on our proposed approach to the duties of the economic regulator for CO₂ transport and storage?

Q2. Are there additional objectives and duties, to those considered here, to which the economic regulator should have regard in the exercise of its functions?

Functions of the economic regulator

42. Under the proposed TRI business model, the economic regulator would grant an economic licence authorising the T&S company (T&SCo) to charge payment to users of

the T&S network in exchange for the provision of CO₂ transport and storage services. These charges would be set and regulated by the economic regulator as part of the Economic Regulatory Regime (ERR)²¹ to ensure costs are necessary and reasonable. Current thinking on the components of the ERR is described in the May 2021 update on the business model for T&S²². The economic regulator would also set out periodic price controls; a method of setting the amount of money (the Allowed Revenue²³) that can be earned by the T&S Co's over the length of a price control.

43. Our intention is that the economic regulator will fulfil an independent function to regulate T&S Co's and determine regulated returns for T&S Co. That is, the economic regulator will be politically independent and will make its regulatory decisions independently, so as to reduce any perceived risks associated with political changes and lobbying and to increase certainty and confidence for investors.
44. As set out in para 37 above, while policy direction for CCUS would continue to be directed by government, day-to-day regulatory decision-making would be made independently by the economic regulator and in line with the statutory duties and obligations.
45. Recognising the benefits of an evolving investment proposition as a T&S network moves through the phases of expansion and the CCUS market develops, we envisage a phased approach to an enduring regulatory regime, as set out in the May 2021 update on the business model for CO₂ Transport and Storage²⁴. This is illustrated in the graphic below. In the following section we set out how the role and functions of the economic regulator may evolve from the first regulatory period to the enduring regime.
46. In the conduct of its functions across all regulatory periods the economic regulator would be subject to its statutory duties and legal obligations.



Figure: An illustration of the indicative regulatory periods

²¹ BEIS (rather than the Economic Regulator) will determine the ERR for the first regulatory period, as detailed in para 48-49.

²² Transport and Storage business model: May 2021 update (May 2021)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/983903/ccus-transport-services-business-model-commercial-update.pdf

²³ Allowed revenue is defined in the Glossary

²⁴ Transport and Storage business model: May 2021 update (May 2021)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/983903/ccus-transport-services-business-model-commercial-update.pdf

Functions of the economic regulator during the first regulatory period

47. During the first regulatory period, we propose that government will determine the ERR, with the economic regulator's role to administer the regulatory regime on the terms established by government. Given that CCUS is a nascent industry, this will allow the government to coordinate the management of first-of-a-kind risks in establishing new T&S networks.

48. The economic regulator's functions during the first regulatory period would be:

- **Issuing economic licences to designated operators**, with government determining the terms and conditions for the initial licences which the economic regulator then issues. The economic regulator will assist government in the design of the revenue mechanism methodology, where T&SCo will collect its revenue through T&S fees paid by users of the T&S network, in consultation with industry.
- **Administering the economic licence**, to include monitoring the performance of T&SCo against agreed outputs, agreeing the allowed revenue (what returns are appropriate), and adapting the allowed revenue and other parameters in response to performance or unforeseen events as appropriate.
- **Making adjustments or re-determinations if required**, in the limited, pre-determined situations where some aspect of the first regulatory period needs to be re-determined or adjusted (e.g. where there is a significant change in events that would warrant an adjustment to the allowed costs and revenues of T&SCo). Before making such a decision, we would expect the economic regulator to consult with T&SCo, government and other relevant stakeholders (which may be set out as an express statutory requirement), and would need to ensure decisions are consistent with their statutory duties and legal obligations. The specific circumstances where aspects of the first regulatory period could be re-opened or adjusted would be set out in the economic licence.
- **Preparing for the enduring regulatory regime**. Before the end of the first regulatory period, the economic regulator would also need to complete the development and design of the second regulatory period.

Functions of the economic regulator during the enduring regulatory regime

49. From the second regulatory period onwards the economic regulator would assume full responsibility for calibrating the ERR framework applied to T&S infrastructure. This is our preferred long-term approach for the ERR as part of the enduring regime in a CCUS market led by the private sector in response to market signals.

50. The economic regulator's responsibilities in the enduring regulatory regime are expected to include:

- **Designing and administering operational price control reviews.**

- **Determining T&SCo's allowed revenue** based on an assessment of capex, opex, allowed WACC²⁵ and other components of allowed revenues such as decommissioning costs and taxes.
- **Determining the appropriate duration of the second and subsequent regulatory periods**, taking into consideration that the first regulatory period would finish at different points in time for each cluster's T&SCo (because construction would finish at different points in time for each of the clusters), the regulator may seek to set the length of future regulatory periods in a way that enables later regulatory periods to be concurrent for all of the T&SCos.
- **Setting, reviewing and adjusting tariff arrangements and methodologies where necessary**, including any potential adjustments around the charging methodology set by T&SCo to network users, which would require consultation with T&SCo and other stakeholders before a decision is made and would be conducted in a manner consistent with legal obligations and duties.
- **Adapting the ERR over time** to reflect the growth in the CCUS industry whilst providing clarity to investors and sufficient consultation on any changes. Before implementing certain changes to the ERR, such as to licence conditions or price controls, we expect that the economic regulator would be required to consult stakeholders on changes planned.

Functions of the economic regulator throughout both the initial and enduring regulatory periods

51. The economic regulator would have the following functions throughout both the first and subsequent regulatory periods:

- **Conducting any post-construction reviews of transport and storage costs** to determine allowed (economic and efficient) costs, including ex-post assessment of storage costs of the initial build and possibly ex-post assessments of future storage costs.
- **Determining and monitoring appropriate performance targets and associated financial rewards and penalties (incentives) for T&SCo**, as well as any uncertainty mechanisms to include to address risks faced by T&SCo. This could include alerting government and relevant parties (e.g. OGA, OPRED) to any concerns for T&SCo's financing of its activities, so that early consideration of the risks and issues can take place.
- **Considering and undertaking enforcement action where appropriate, to enforce the terms of the economic licence**, and, as a final step, deciding whether to revoke the economic licence (although we envisage that this would only occur in extreme circumstances and these limited, specific, revocation events would be set out in the economic licence prior to its award to T&SCo).
- **Oversight of network agreements and connection agreements**. Network codes and connection agreements would set out the terms for the transport and storage arrangements and procedures for users to connect to the network. The network codes

²⁵ Weighted Average Cost of Capital, see Glossary for full definition

would be developed either by the economic regulator with input from T&SCo, or by T&SCo with input from the regulator, but in either case we would expect that it would require the approval of the economic regulator. The economic regulator may also have oversight of connection agreement terms and conditions.

- **Functions related to licence changes.** As in other regulated sectors we would expect the economic regulator to have powers to modify licence conditions. This may include in the event of separation of corporate structures of the T&SCo, where functional separation within licences would be required. Relevant considerations and our current thinking on ownership structure are set out in the May 2021 T&S business model update.
- **Oversight responsibility for the management of accrued decommissioning funding,** related to the decommissioning element of the allowed revenue calculation. Further detail on this is set out in the parallel consultation on the proposals for establishing a CCUS decommissioning regime.

The Transport and Storage economic licence

52. As with our proposed approach to the duties and objectives for the economic regulator, where we propose to replicate the structure of duties as they already apply in the gas and electricity sectors; we also propose to replicate, where appropriate, the approach taken to economic licensing of the gas and electricity networks.

53. **An economic licence would authorise T&SCo to operate a T&S network and allow T&SCo to charge a regulated fee for transport and storage services. An economic licence would also impose certain obligations on T&SCo in the conduct of its activities.**

54. As set out in the December 2020 and May 2021 updates on the T&S business model there are certain obligations we envisage T&SCo would be required to fulfil. These include obligations relating to:

- development, construction, financing, operation, maintenance, expansion, and decommissioning of the T&S network;
- ownership of the onshore and offshore transportation network, and obtaining the licence and permit for the storage site, under the Energy Act 2008;
- operation of the T&S network to ensure the operational parameters are within specified limits, manage network access, perform network planning, and administrate sector specific tasks;
- review of the CO₂ metering and compositional analysis equipment installed by the users at the point of connection²⁶; and
- ensuring that the transportation and long-term storage of CO₂ is safe, efficient, and compliant with defined requirements.

²⁶ We are minded to adopt a similar approach to that used in other regulated networks. Given this, we consider that the T&S network user will be responsible for ensuring the CO₂ entering the transportation system meets the required quality specification.

55. Draft commercial principles²⁷ setting out the initial proposition for the basis of the provision of an economic licence by the economic regulator to a company licensed to provide transport and storage services under HMG's CCUS programme were published alongside the December 2020 CCUS business models update.
56. As subsequently detailed in the May 2021 update, and described in the preceding section, for the first regulatory period it is anticipated that the economic regulator will grant T&SCo's with an economic licence that reflects the initial settlement, the terms of which would be designated by government. For the enduring regime, consideration is being given to the process for the allocation of future licences.
57. The economic regulator would also be responsible for administering the economic licence. This would include monitoring of the performance of T&SCo against agreed outputs, as well as the tools (e.g. incentives and uncertainty mechanisms) to adapt allowed revenue and other parameters in response to performance or to protect both T&SCo and users from the impact of unforeseen events as appropriate, and enforcing the terms of the licence.
58. In line with existing regulatory practice, we would anticipate the costs of the enduring regulatory function to be recovered from the licensed companies that are regulated. In the gas and electricity sector, licensees must pay an annual licence fee, which covers Ofgem's costs for those sectors.
59. Before an operator can begin construction and operation under an economic licence, all other required permits and licences would need to be approved.

Enforcement of licence conditions

60. It is our expectation that, as in other regulated sectors, the economic regulator would be granted powers to monitor licensees to ensure that they comply with their licence conditions and to enforce the conditions of the licence. For example, under the existing gas and electricity legislative regimes, if the regulator (Ofgem) finds a breach of licence conditions or other regulatory requirements, it has the power to:
- Issue an enforcement order to require the relevant company to comply with its licence conditions.
 - Impose financial penalties, or require redress to be provided to consumers up to a specified maximum.
61. It is our view that equivalent enforcement powers for compliance with T&S economic regulation would be appropriate.
62. Breaches of T&S licence conditions may include:
- Non-compliance with connection or network codes.
 - Failure to meet specified requirements for the safe and efficient transport of CO₂.

²⁷ T&SCo licence: draft commercial principles (December 2020)
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/946568/ccus-business-models-annex-a-transport-storage-licence-commercial-principles.pdf

63. In the gas and electricity sectors the maximum financial penalty for breach of licence conditions or regulatory requirements is up to 10% of a company's annual turnover. Taking into account the sectoral differences between CCUS and other regulated utilities, in particular the different user base, we welcome views on the appropriate maximum financial penalty for the T&S sector.
64. As in other regulated sectors, we propose that the economic regulator would publish guidance on its policy and approach to enforcement, including the factors and circumstances which would be taken into account in decisions on whether to impose a financial penalty or require redress to be provided to users and in determining the amount of any financial penalty or redress. We would expect that the economic regulator would be required to consult on any significant changes to the enforcement policy or guidelines.
65. As set out in para 39-41 we would also expect the economic regulator to have powers to secure compliance with competition law, as in other regulated sectors.

Non-pipeline transport

66. As set out in the May 2021 T&S business model update, we consider that the capacity for T&S networks to be able to accept CO₂ from dispersed sites and international sources, either transported by ship, road or rail (non-pipeline transportation), will be vital for our long-term objectives for decarbonisation across the economy in line with our statutory emissions reduction targets.
67. We intend to develop the licence conditions and business model arrangements so that non-piped sources of CO₂ can be accommodated by the TRI model. We plan to publish more on our position on how we can best facilitate a role for non-pipeline transportation within the UK carbon network in the future. We invite views in this consultation on whether non-pipeline transport should be treated as part of a licensed network and therefore require an economic licence and be subject to similar economic regulation and requirements as pipeline transport, and to what extent should factors such as the scope for competition in the provision of non-pipeline transportation services and the appropriate balance of responsibilities for each stakeholder influence this decision.

Scope for exemptions

68. There may be circumstances in which an exemption from the obligation to hold an economic licence may be appropriate. This could be similar to the ability for the Secretary of State to grant exemptions under the Gas Act 1986. We envisage the exemptions conditions would be limited in scope, and all other planning and environmental permitting and other requirements would still hold. Further consideration would need to be given to the circumstances where an exemption may be appropriate, but could include, for example, transport networks under certain size limits.

Regulatory interfaces

69. There are a number of regulatory bodies and relevant authorities across the UK with a remit in respect of CCUS. Our proposed approach to the economic regulation of CO₂ T&S is for the economic regulator to be focused on the economic regulation of T&S network operators and the issue and oversight of the economic licensing regime. We will continue to work with the devolved administrations to explore the potential for an economic regulatory regime that is able to be implemented on a UK-wide basis.

70. The following existing functions relevant to CCUS are currently considered out of scope of the T&S economic regulator:

- **Verification of CO₂ storage, licensing of the UK's offshore carbon dioxide storage** (approved and issued storage permits are maintained on the carbon storage public register) and **licensing of exploration and development of the UK's offshore and onshore oil and gas resources**. This is carried out by the OGA and Scottish Ministers in respect of CCS installations in Scotland.
- **Decommissioning plans for offshore CCUS installations and structures, and the administration of the offshore environmental regulations in relation to CCUS**, led by the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED).
- **Regulating the operation of fossil fuel power stations and issuing permits for the operation of onshore carbon capture and storage equipment** to ensure the safety and protection of the environment and human health, the responsibility of the Environment Agency in England and Wales and the Scottish Environment Protection Agency (SEPA) in Scotland.
- **Acting as counterparty to the Contracts for Difference regime**, managed by the Low Carbon Contracts Company, and counterparty to contracts under the proposed CCUS business models.
- **Granting seabed rights to developers for certain cables and pipelines, injection wells, platforms and manifolds, storage sites and offshore facilities to develop CCUS**, which is the purview of the Crown Estate and the Crown Estate Scotland.
- **Ensuring the health and safety of workers and members of the public**, which is regulated and enforced by the Health Safety Executive (HSE) and the Health Safety Executive Northern Ireland (HSENI).
- **Consideration of planning approvals** for onshore development or compliance with marine planning and associated directives.

71. **Our current view is that in order to qualify for an economic licence, a T&SCo will be required to meet all other existing requirements by other licensing authorities, and before an operator can begin construction and operation under an economic licence, T&SCo would have the necessary other approvals in place.** This would include licences and permits as required under existing legislation relating to the storage of CO₂ and compliance with relevant planning, environmental and health and safety regulation.

72. We understand that in some circumstances this may require careful sequencing and there may be contemporaneous requirements by other licencing authorities. **It is our**

expectation that in carrying out its functions as economic regulator for T&S, the regulator would consult and cooperate with designated regulatory authorities and other relevant authorities to promote efficient outcomes in areas of common interest. This could include through the sharing of relevant information and data where this is appropriate and relevant to the conduct of each authorities' statutory responsibilities. We will give further consideration to appropriate structures to facilitate and implement this.

73. It is also our expectation that in respect of some decisions the economic regulator would consult with government. For example, this would include in relation to decisions which might have consequences for the proposed Government Support Package (GSP). The GSP is expected to be a contractual arrangement between government and T&SCo that would offer protection against specified remote high impact low probability risks, and provide a finite, limited response for these events²⁸. It is our expectation that an economic licence would be required for a T&SCo to be eligible to access the GSP, and we would anticipate the economic licence to define and reference certain GSP terms and conditions. Where any proposed modification of licence conditions, or other regulatory decision by the economic regulator, may have consequences for the GSP, we anticipate that the economic regulator would consult with government in this decision-making. Equally, where a devolved administration has provided financial support on specified terms, they may require prior consultation before the economic regulator in their jurisdiction takes any decisions.

Consultation questions:

Q3. Do you have views on the proposed functions for the economic regulator, and how roles and responsibilities evolve over time as the network matures?

Q4. Do you have views on stakeholders who the economic regulator should be statutorily required to consult with on changes to the Economic Regulatory Regime?

Q5. Do you have any views on the approach to issuing economic licences, including on the principle of allowing exemptions from the requirement for CO₂ transport and storage operators to hold an economic licence, and the conditions under which this might be appropriate?

Q6. Do you have views on the approach to enforcement, including the appropriate penalties for breach of licence conditions or of other regulatory requirements?

Q7. Do you have views on whether aspects of non-pipeline transportation should require an economic licence?

Q8. Are there matters on which you consider the economic regulator should be expressly required to consult other authorities or regulatory bodies?

Q9. Are there any barriers to co-operation or information sharing between regulatory bodies which may require further consideration, in order to facilitate an effective economic regulatory regime for CO₂ transport and storage?

²⁸ The May 2021 update on the business model for T&S set out our current thinking on the Government Support Package (GSP) and the defined, remote, high impact low probability risks that the GSP would offer protection to investors against.

This consultation is available from: www.gov.uk/government/consultations/carbon-capture-usage-and-storage-ccus-duties-and-functions-of-an-economic-regulator-for-co2-transport-and-storage

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.