

Title: Impact Assessment on the introduction of new primary enabling powers for carbon storage information and samples IA No: DESNZ018(F)-23-CCUS RPC Reference No: N/A Lead department or agency: Department for Energy Security and Net Zro Other departments or agencies: North Sea Transition Authority	Impact Assessment (IA)
	Date: 16/05/2023
	Stage: Final
	Source of intervention: Domestic
	Type of measure: Primary legislation
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Summary: Intervention and Options	RPC Opinion: N/A

Cost of Preferred (or more likely) Option (in 2020 prices)

Total Net Present Social Value	Business Net Present Value	Net cost to business per year	Business Impact Target Status
£m NIL	£m NIL	£m Nil	Qualifying provision

What is the problem under consideration? Why is government action or intervention necessary?

The Energy Act 2008 ('EA08') established a licensing framework for the storage of carbon dioxide (CO₂), putting in place necessary requirements and controls to ensure the secure storage of CO₂. Government's ambitions for a UK Carbon Capture, Usage and Storage ('CCUS') industry have significantly increased since the EA08 was designed, and enhanced powers are now needed to ensure that the North Sea Transition Authority (the 'NSTA') can require the retention, reporting and disclosure of relevant information for carrying out its regulatory functions and to enable the most effective exploitation of the UK's natural carbon storage assets.

What are the policy objectives of the action or intervention and the intended effects?

While there is existing secondary legislation that enables the NSTA to place conditions on carbon storage licensees through their licence terms and conditions, this does not provide sufficient sanctioning powers to comprehensively require licensees to retain and report detailed information generated during carbon storage operations, nor for that data to be disclosed after a period of confidentiality, particularly in relation to existing licences which have already been granted. The requirement for an Information Samples Plan and Information and Samples Coordinator that is provided for petroleum-related information under the Energy Act 2016 ('EA16') does not currently apply to carbon storage licences.

To be brought forward as amendments to the Energy Bill 2022, these proposed provisions will enable the Secretary of State to set out in secondary legislation the requirements for carbon storages licensees to retain and report carbon storage related information and samples, and for this data to be publicly disclosed, after an appropriate period of confidentiality.

Reflecting the existing powers that the NSTA has in respect of petroleum licensees, these will further support its regulatory functions by ensuring that important information and samples collected from carbon storage activities, relating to how carbon storage sites and projects have been appraised, constructed, completed, plugged, or permanently abandoned, is retained. Requiring the reporting of information to the NSTA will allow it to be securely stored in an appropriate, supporting format to reduce the risk of data loss and enable its continued access into the future, for an increased understanding of the evolving carbon storage landscape. Public disclosure of relevant CO₂ storage information, subject to the appropriate safeguards, will facilitate improved knowledge across the CCUS industry, allowing for the development of best practices and sharing of lessons learnt. This is intended to help minimise potential wasted exploration and appraisal costs and time, for example: by informing the suitability or leakage potential of sites which have similar geological characteristics and increasing understanding of viable storage sites..

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Do nothing: rely on licence terms and conditions to require licensees to report data and information generated during carbon storage operations. The requirement for Information Samples Plan and Information and Samples Coordinator does not currently apply to carbon storage licences.

Policy option (preferred option): new primary powers to enable secondary legislation to introduce obligations on carbon storage licensees to retain and report carbon storage related data, and for this data and information to be subsequently disclosed by the NSTA; and introduce the requirement for Information Samples Plan and have an Information and Samples Coordinator for carbon storage licences.

Will the policy be reviewed? It will not be reviewed. **If applicable, set review date:** N/A

Is this measure likely to impact on international trade and investment?

No

Are any of these organisations in scope?

Micro Yes

Small Yes

Medium Yes

Large Yes

What is the CO₂ equivalent change in greenhouse gas emissions?
(Million tonnes CO₂ equivalent)

Traded: NIL

Non-traded: NIL

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible:



Date:

16/05/2023

Summary: Analysis & Evidence

Policy Option 1

Description: Introduce new primary enabling powers for carbon storage information and samples

FULL ECONOMIC ASSESSMENT

Price Base Year NA	PV Base Year NA	Time Period Years NA	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	High: Optional	Best Estimate: NIL

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low			
High			
Best Estimate	NIL	NIL	NIL

Description and scale of key monetised costs by 'main affected groups'

The proposed enabling primary legislation by itself will have no impact. The likely secondary legislation is likely to have no or very low costs.

Other key non-monetised costs by 'main affected groups'

The proposed enabling primary legislation by itself will have no impact. The likely secondary legislation is likely to have no or very low non monetised costs.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low			
High			
Best Estimate	NIL	NIL	NIL

Description and scale of key monetised benefits by 'main affected groups'

The proposed enabling primary legislation by itself will have no benefits.

Other key non-monetised benefits by 'main affected groups'

Retaining, reporting and disclosing information and samples in the oil and gas sector under the NSTA's existing powers for petroleum licences has been widely regarded as valuable by industry as it enables the use of information and samples collected by others to stimulate collaboration and competition and thereby progress the industry more quickly than it would without this sharing of information.

The likely secondary legislation will introduce clearly identifiable retention obligations, (i.e., what needs to be retained by whom and for how long) which will reduce ongoing storage costs for carbon storage licensees, whereas relying on licence terms (open to wide interpretation) results in a potentially open-ended obligation to retain information.

Carbon storage licences will return to the State once storage sites have been closed for a designated period and government is liable for any future leakage after that point. It is, therefore, in the public interest that the NSTA has sufficient statutory powers to ensure relevant data is retained and reported by storage licensees; that this information is capable of being shared with the Secretary of State, to whom responsibility will be transferred post closure; and that measures are also able to be put in place to mitigate the risk of loss of data associated with the transfer of information and samples at the time of a licence transfer or change of control of the carbon storage licensee.

The requirement for Information Samples Plans and Information and Samples Co-ordinators, at defined licence events, helps ensure that the risks of loss associated with the transfer of information and samples at the time of a licence event are reduced and to ensure it is either retained, reported to the NSTA, or transferred to another licensee.

Key assumptions/sensitivities/risks	Discount rate (%)	NA
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BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m: NIL	Score for Business Impact Target (qualifying provisions only) £m: NIL
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Costs:	NIL	Benefits: NIL	Net: NIL	
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Evidence Base

Problem under consideration

1. The EA08 established a licensing framework for the storage of CO₂, putting in place necessary requirements and controls to ensure the safe and secure storage of CO₂, with the NSTA¹ the Carbon Storage Licensing Authority. Government's ambitions for a UK CCUS industry have significantly increased since the EA08 was designed, and enhanced powers are now needed to ensure that the NSTA can require the retention, reporting and disclosure of relevant information for carrying out its regulatory functions and to enable the most effective exploitation of the UK's natural carbon storage assets.
2. Government ambition to accelerate the deployment of CCUS at scale was set out in the Net Zero Strategy and restated in the British Energy Security Strategy. CCUS and CCUS-enabled hydrogen is vital to transforming sectors such as steel, cement, and chemicals sectors, which are energy intensive and lack viable alternatives to decarbonize. Power CCUS will help ensure the security of electricity supplies by providing dispatchable low carbon generation, enabling the utilisation of our North Sea reserves to reduce the UK's reliance on imported fossil fuels, whilst offering a sizeable export opportunity, to drive new North Sea investment.
3. There are currently powers in the EA16 which has enabled the creation of secondary legislation to require the reporting of petroleum related information and samples by petroleum licensees (and other '*Relevant Persons*' as defined in the EA16), and to disclose the reported information and samples publicly following a pre-defined confidentiality period.
4. While there is existing secondary legislation that enables the NSTA to place conditions on carbon storage licensees through the licence terms and conditions, this does not provide sufficient powers to comprehensively require licensees to retain and report detailed information generated during carbon storage operations, nor for that data to be disclosed after period of confidentiality, particularly in relation to existing licences which have already been granted. The requirement for Information Samples Plan and Information and Samples Coordinator does not currently apply to carbon storage licences. Without powers to specify the types of data and information that carbon storage licensees retain, report from the time it is created, it is possible that this data will not be retained, may not get reported to the NSTA if required and may eventually be lost or unusable.
5. The proposed primary powers in the Energy Bill will enable the Department for Energy Security and Net Zero to introduce new secondary legislation setting out new requirements applicable to carbon storage licensees that will align with the regulations² applicable to petroleum licensees.

Policy Objectives

6. Carbon storage is a critical activity needed to support the government's 2050 Net Zero goals and ambition to capture and store 20-30Mt of CO₂ per year by the 2030s. This policy will support the speedy development of this nascent industry by:
 - a. requiring carbon storages licensees to retain and report carbon storage related data;
 - b. enabling that data to be disclosed, after an appropriate period of confidentiality;
 - c. introducing the requirement for Information Samples Plans ('**ISPs**') at defined licence events; and
 - d. having an Information and Samples Coordinator ('**ISCs**') for carbon dioxide appraisal and storage licences ('**Carbon Storage licence**').

¹ The business name of the Oil and Gas Authority

² <https://www.legislation.gov.uk/uksi/2018/514/contents/made> and <https://www.legislation.gov.uk/uksi/2018/898/contents/made>

7. As detailed in a January 2023³ consultation, the proposed new secondary legislation will ensure the data held by the existing six licensees on the UK Continental Shelf ('UKCS'), and the data that will be created by any future licences, will be retained and reported and disclosed after a specified confidentiality period. Without these powers it is possible that this data will not be retained, may not get reported to the NSTA if required and may eventually be lost or unusable.
8. Disclosure of carbon storage information and samples after a predefined confidentiality period will be advantageous to the carbon storage and petroleum industries and all those with an interest in UKCS subsurface data. Such disclosure will add to the existing common body of information and samples from petroleum that has been curated by the NSTA, that will allow all parties in those industries to be able to use information and samples collected by others to progress the industry quicker than it would without the sharing of information and samples. For example, it will be valuable in informing the suitability (or leakage potential) of sites which have similar geological characteristics. Public access to information and samples acquired in pursuit of petroleum or carbon storage licences is of mutual benefit to both types of licensees and of value to other users of the UKCS.
9. An ISP helps ensure that the risks of loss associated with the transfer of information and samples at the time of certain licence events are reduced and to check that all reporting obligations will be fulfilled. Well prepared and executed ISPs are therefore critical for continuing safe operations.

Description of options considered

10. The policy options considered in this impact assessment are:

Option 0 (counterfactual): do nothing – rely on licence terms and conditions for data powers.

Option 1 (preferred option): new powers via the Energy Bill to enable the Department for Energy Security and Net Zero to introduce secondary legislation requiring carbon storage licensees to retain and report carbon storage related data, and for this data and information to be subsequently disclosed by the NSTA; and introduce the requirement for ISPs at defined licence events, and to appoint ISCs for carbon storage licences.

11. While the direct impacts of the acquisition of the primary powers via the Energy Bill are expected to be zero, this assessment considers, to the extent possible, the impact when the powers are applied through likely secondary legislation.

Option 0 (counterfactual)

12. In this impact assessment, the costs and benefits of new powers (option 1) are estimated against a counterfactual where no policy is introduced.

Option 1 (preferred option)

13. While there is existing secondary legislation that enables the NSTA to place conditions on carbon storage licence holders via the licence terms and conditions, this suite of legislation does not provide sufficient powers for the NSTA to comprehensively require carbon storage licensees to retain and report information and data generated during carbon storage operations, nor for that data to be disclosed after an appropriate period of confidentiality, particularly in relation to existing licences which have already been granted.
14. Therefore, government is proposing to introduce specific requirements, through secondary legislation under the primary powers being sought, as was done in the EA16 for existing and new petroleum licences.

³ <https://www.nstauthority.co.uk/news-publications/consultations/2023/consultation-on-new-carbon-storage-data-powers/>

15. The likely secondary legislation will set out the detailed requirements on carbon storage licence holders for data retention, reporting and disclosure which would be much more detailed than generalised terms normally set out in licence terms and conditions, and will align with the regulations⁴ applicable to petroleum licensees. There is currently no power to require ISPs or to have ISCs for carbon storage licences.
16. Without policy invention to create new powers to specify the types of information and samples that carbon storage licensees are required to retain and subsequently report once it's created, it is possible that this data will not be automatically retained by the licensee, meaning it may not get reported to the NSTA, even if required, and may eventually be lost or unusable.
17. Additional policy detail building on these primary powers will be set out in further engagement, which will then inform the detailed design of secondary legislation. At this stage however, given that detail of policy implementation is still in development, the assessment outlines the likely nature and magnitude of costs and in a high-level qualitative manner.

Non-monetised costs and benefits of each option (including administrative burden)

18. These provisions would enable the regulator – the NSTA – to require the retention, reporting and disclosure of certain information and samples from carbon storage licensees. The policy is subject to further development with greater detail to be provided in secondary legislation, including the nature of the information that will be required to be retained, and the length of confidentiality period before information can be publicly disclosed. Therefore, it is not possible to fully quantify the costs and benefits from these measures until this policy detail is developed.
19. The non-monetised costs and benefits considered here are discussed at a high level with a focus on identifying the potential impacts and their distribution. Where possible, we have attempted to indicate the potential scale of some costs by referencing experience and feedback from other similar interventions (i.e., existing requirements on petroleum licensees). However, due to the very early stage of policy design around these measures, there is a large amount of uncertainty associated with these illustrative impacts. This will be reviewed for any secondary stage impact assessments.

Costs

20. Under the preferred policy option, the new requirements will apply to the six existing carbon storage licensees, and those that will be created by the new carbon storage licences expected to be awarded from the 2022 carbon storage licensing round, and any future licensing rounds to achieve the government's 2050 Net Zero ambition and the UK's Net Zero Strategy ambition to capture and store 20-30Mt of CO₂ per year by the 2030s. There is a very broad range of estimates of the carbon storage licences that will be required for the 2050 storage target to be met.
21. Under the preferred policy option, carbon storage licensees will be required to retain and report information they generate during carbon storage activities. Whilst this will introduce specific requirements upon carbon storage licence holders, the importance of retaining, reporting and disclosing information and samples in the oil and gas sector under the NSTA's existing powers has been widely regarded as valuable by industry. The availability of licence information via NSTA systems has supported industry, academia and government in appraisal and understanding of the UKCS. Examples of disclosed petroleum licence information supporting other UKCS users include de-risking offshore wind developments; identifying potential sites for geological storage of hydrogen and natural gas; as well

⁴ <https://www.legislation.gov.uk/uksi/2018/514/contents/made> and <https://www.legislation.gov.uk/uksi/2018/898/contents/made>

assisting applicants to the 2022 carbon storage licensing round – which was clearly demonstrated by 20 times increase in downloads from the National Data Repository⁵ on the day the carbon storage licensing round was announced⁶. This view was also borne out by the supportive responses received to the NSTA’s consultation which unanimously supported the proposals.

22. Carbon storage licensees already have established data management procedures for efficiently retaining the information and samples that they have created or acquired for operational purposes. Any information reported by licensees to the NSTA can be reported free of charge through the National Data Repository’s online portal. The cost of retaining and reporting this information to the NSTA is not likely to add to their existing costs. The likely secondary legislation will instead provide increased clarity compared with current obligations in the licence terms and conditions on which types of information and samples should be retained by licensees and when the requirements to retain samples ends. Any data storage requirements will be lifted when such information is reported to the NSTA.
23. Carbon storage licensees will face familiarisation costs to ensure they are aware of the new proposed regulations and subsequent guidance. Though it is anticipated that these will be a minimal cost to businesses.
24. The NSTA expects that ISPs should be no more onerous than the existing plans made to facilitate the transfer of information and samples between two parties, who are following commonly accepted industry best practice. Therefore, the NSTA expects that the burden on industry on account of an ISP will be minimal, as licensees are already required to hold and transfer data under their licence obligations. The likely secondary legislation will provide increased clarity compared with current obligations in the licence terms and conditions on which types of information and samples should be retained and when the requirements to retain samples ends. It may even reduce costs by removing the need for data storage costs as these will be lifted when such information is reported to the NSTA.
25. It is also anticipated that there will be no additional burden on account of naming ISCs as they are expected to be named from within the organisation and companies are not expected to appoint any specially designated personnel for this role.
26. The costs on the public sector will be limited to the time taken to prepare the secondary regulations and associated guidance. There will be an impact on the NSTA where it utilises the primary powers being sought to require retained information and samples to be reported to it, in handling and storing that which is provided.
27. The NSTA expects that the cost of hosting the additional information and samples from the nascent carbon storage industry will be nugatory as the National Data Repository is an established cloud native data repository and has unlimited excess capacity to host the additional information generated by licensees during carbon storage operations.

Benefits

28. Under the existing legislation, carbon storage licences return to the State once storage sites have been closed for a designated period⁷ with government then liable for any future leakage after that point. It is therefore in the public interest that the NSTA has sufficient statutory powers to ensure relevant data is retained and reported by storage licensees as part of the process of the NSTA determining whether to issue a storage permit and during storage operations and the ongoing monitoring of permitted operations; that this information is capable of being shared with the Secretary of State, to whom responsibility will be transferred post closure; and that measures are also able to be put in place to mitigate the

⁵ <https://www.nstauthority.co.uk/data-centre/national-data-repository-ndr/>

⁶ <https://www.nstauthority.co.uk/news-publications/news/2022/bids-invited-in-uk-s-first-ever-carbon-storage-licensing-round/>

⁷ Currently 20 years and subject to the other conditions set out in The Storage of Carbon Dioxide (Termination of Licences) Regulations 2011.

risk of loss of data associated with the transfer of information and samples at the time of a licence transfer or change of control of the carbon storage licensee.

29. Petroleum data and samples currently gathered by the NSTA under the powers in the EA16 and associated secondary legislation is being shared across the energy sector via the National Data Repository and the NSTA Data Centre. This information, which currently includes data on roughly 12,000 well bores and 5,000 seismic surveys, is supporting the development of offshore projects and enabling them to become operational as soon as possible, and enabling the use of information and samples collected during carbon storage operations by others will progress this nascent industry quicker than it would without this sharing of information.
30. Disclosure of carbon storage information and samples after a pre-defined confidentiality period will be advantageous to the carbon storage and petroleum industries and all those with an interest in UKCS subsurface data – including the renewables sector and extractive industries. Such disclosure will function as a common body of information and samples that will allow all parties in those industries to be able to use information and samples collected by carbon storage licensees to progress the industry quicker than it would without the sharing of information and samples. Anyone with an interest in petroleum-related information may register to search, view, and download disclosed information, free of charge, or to order data for delivery on media, on an 'at cost' basis. Public access to information and samples acquired in pursuit of carbon storage licences is of mutual benefit to all users of the UKCS.
31. Carbon storage licensees will likely be subject to new obligations to retain and report information, which they have created or acquired during carbon storage operations. The likely secondary legislation will provide increased clarity compared with current obligations in the licence terms and conditions. Clearly defined retention obligations, (i.e., setting out what needs to be retained by whom and for how long) benefits licensees by reducing their ongoing storage costs, whereas relying on licence terms (open to wide interpretation) results in a potentially open-ended obligation to retain information. Once information is reported to the NSTA, via the National Data Repository, a licensee's data storage requirements would be lifted.
32. Replicating the existing EA16 powers for carbon storage licensing would provide for a pre-defined confidentiality period (to be defined in secondary legislation) during which data reported to the NSTA is not able to be publicly disclosed, providing protection for commercially valuable or sensitive information.
33. The likely secondary legislation will enable data collected throughout the entire lifecycle of a licence to be disclosed to potential licensees; this will be valuable in informing the suitability (or leakage potential) of sites which have similar geological characteristics. Disclosure of carbon storage information and samples after a predefined confidentiality period will be advantageous to the carbon storage and petroleum industries and all those with an interest in UKCS subsurface data. Such disclosure will function as a common body of information and samples that will allow all parties in those industries to be able to use information and samples collected by others to progress the industry quicker than it would without the sharing of information and samples. Public access to information and samples acquired in pursuit of petroleum or carbon storage licences is of mutual benefit to both types of licensees and of value to other users of the UKCS.
34. The likely secondary legislation will also introduce a requirement for ISPs and ISCs for carbon storage licensees broadly in line with the requirements for petroleum licensees and other Relevant Persons, as defined in the EA16. An ISP helps ensure that the risks of loss associated with the transfer of information and samples at the time of a licence event are reduced and to check that all reporting obligations will be fulfilled. These requirements have been invaluable in ensuring greater access to timely and transparent data under petroleum licences necessary for a competitive market.

Impact on small and micro businesses

35. This primary legislation is expected to have no impact by itself, therefore its estimated impact on small and micro businesses is zero. Secondary legislation may create very small administrative and familiarisation costs for businesses and an assessment of these impacts would be conducted at that stage.
36. There is no impact on charities or voluntary bodies.

Equalities Impact Assessment

37. The Public Sector Equality Duty (PSED), set out in section 149 of the Equality Act 2010, requires public bodies to pay due regard to the need to:
- Eliminate unlawful discrimination, harassment and victimisation and other conduct prohibited by the Act.
 - Advance equality of opportunity between people who share a protected characteristic and those who do not.
 - Foster good relations between people who share a protected characteristic and those who do not.
38. Primary legislation relating to the retention and reporting of carbon dioxide storage information and samples is not expected to have any impact by itself on protected characteristic groups. This assessment will be kept under review. A separate PSED assessment would need to be undertaken for subsequent secondary legislation that would set out the detailed requirements for information retention and disclosure, and for any potential amendments to financial penalty provisions.
39. It can be noted that these provisions indirectly support the CCUS industry where a PSED assessment more appropriately lies and was completed in 2022. The CCUS PSED Impact Assessment primarily used ONS industry data for oil and gas (06.10/06.20) as a reasonable proxy for the CCUS sector, given the lack of existing data on the CCUS sector (as a new industry) and the transferability of skills and people we expect to see from this sector into the coming decade. A summary of analysis from the CCUS PSED Impact Assessment is below:
- This data indicated that women are underrepresented in the oil and gas sector in the UK, with just 23% of the 178,000 people employed across the sector being women.
 - In the energy and water industry, it is observed that there are significant disparities on ethnicity – with ONS data from 2020 – 2021 showing that over 92% of the more than 500,000 employees in the industry being white. In the electricity, gas, steam, and air conditioning supply sector more specifically, the number of employees not identifying as white was just 7.4%.
 - Across a range of comparable trades there were found to be inequities by age. Only about 32.5% of those employed in engineering for example were under 35, while about 34% of those working in refuse and salvage (assumed comparable to future EfW projects) were below 35. The picture is a little more favourable in elementary process plant occupations (assumed comparable with future ICC projects), where about 42% of those employed are under 35. These figures compare with those for the gas manufacturing sector, where about 38% of the workforce are recorded as under 35 by the ONS.
 - While this data, which was used as a proxy, indicates that there are disparities in the workforce from an age, sex and race perspective, these disparities are neither attributable to nor exacerbated by the CCUS programme. Based on this analysis, it was judged that the CCUS programme will have a neutral impact across the three limbs of the PSED.

Monitoring and Evaluation

This policy will help data to be retained, reported to the NSTA, and publicly disclosed which will support the regulation of carbon storage, utilisation of the UKCS and can be used to monitor and evaluate the effectiveness of future CCUS policies. The proposed primary legislation by itself is expected to have no impact. Therefore, no monitoring and evaluation plan has been developed for the proposed primary legislation. There may be impacts from secondary legislation. A monitoring and evaluation plan will be considered at the point secondary legislation is introduced.