



Department for  
Energy Security  
& Net Zero

# Offshore Hydrogen Regulation: government response to consultation

Summary of responses received and government response to consultation on legislative proposals for offshore hydrogen pipelines and storage

September 2023



© Crown copyright 2023

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](https://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](mailto: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: [hydrogentransportandstorage@beis.gov.uk](mailto:hydrogentransportandstorage@beis.gov.uk)

---

# Contents

General Information _____	4
Chapter 1: Introduction _____	5
Consultation proposals: key regulators _____	6
Chapter 2: Offshore Hydrogen Pipeline Construction & Use and Decommissioning _____	7
Consultation position _____	7
Summary of consultation responses to question 1 _____	8
Summary of consultation responses to question 2 _____	11
Government response: questions 1 & 2 _____	13
Chapter 3: Offshore Hydrogen Storage Licensing and Decommissioning _____	16
Consultation position _____	16
Summary of consultation responses to question 3 _____	16
Summary of consultation responses to question 4 _____	19
Summary of consultation responses to question 5 _____	21
Government response: questions 3, 4 & 5 _____	23

# General Information

## Executive summary

In this publication, we summarise the responses received to each of the 5 questions in the Offshore Hydrogen Regulation consultation. Acknowledging the significant stakeholder support for the consultation proposals, the government will be proceeding with secondary legislation changes to implement these proposals.

The consultation was open from 24 April 2023 to 22 May 2023. We received 18 responses from stakeholders through the online response tool and by email. We held several stakeholder meetings to discuss the consultation, as well as a Q&A event, which were used to gauge initial views from stakeholders on the Offshore Hydrogen Regulation Consultation.

We have also been working with stakeholders through the Hydrogen Regulators Forum and directly with interested parties. This engagement has supported the development of offshore hydrogen regulation. The government is grateful to those who took the time to respond to our consultation and participate in our stakeholder engagement events.

We set out the progress that has been made in this government response and identify areas for further work.

## Working with the devolved administrations

DESNZ will continue to work with the devolved administrations as we develop offshore hydrogen regulation in order to ensure that the proposed policies take account of devolved responsibilities, and to understand the best way to optimise hydrogen project development across the whole of the UK.

## Analysis of responses received to the consultation

This government response outlines the consultation position, a summary of the responses to the consultation and the government's response, organised under each consultation question.

We have thematically analysed each response, based on the evidence provided during consultation. Responses which did not explicitly express their support or disapproval for the specific question were logged but classified as neither supportive nor non-supportive. When summarising responses to the consultation, all accompanying written text was analysed for each question. Where information provided by a respondent related to a different question, we have summarised it under that other question.

# Chapter 1: Introduction

Hydrogen can support the deep decarbonisation of the UK economy, particularly in ‘hard to electrify’ UK industrial sectors, and can provide greener, flexible energy across power, transport and potentially heat. Hydrogen produced in the UK will create new jobs across the country, and secure greater domestic energy security, lowering our reliance on energy imports. Analysis by the Department for Energy Security and Net Zero (DESNZ) for Carbon Budget 6 suggests 250-460TWh of hydrogen could be needed in 2050, making up 20-35 per cent of UK final energy consumption.

In 2021, the UK Government published the Net Zero Strategy, which sets out policies and proposals for decarbonising all sectors of the UK economy to meet our net zero ambitions by 2050. This supports the preceding publications of the Hydrogen Strategy, the Energy White Paper and the Prime Minister’s Ten Point Plan, along with other notable publications that set out the development of the UK hydrogen economy as a UK Government priority. Building on the Ten Point Plan and Hydrogen Strategy, the British Energy Security Strategy (BESS) doubled our 5GW low carbon hydrogen production capacity ambition to deliver up to 10GW by 2030, subject to affordability and value for money, with at least half of this coming from electrolytic hydrogen. In March 2023, the UK Government published Powering Up Britain. Powering up Britain brings together the Energy Security Plan, and Net Zero Growth Plan, and sets out how the UK Government will enhance our country’s energy security, seize the economic opportunities of the transition, and deliver on our net zero commitments. These strategies combine near-term pace and action with clear, long-term direction to unlock the innovation and investment critical to meeting our energy security and net zero ambitions.

Low carbon hydrogen is envisaged to be a crucial part of the UK’s future energy security. Specifically, hydrogen transport and storage infrastructure will be critical enablers for the necessary growth in the hydrogen economy required to meet our 10GW ambition, which could support over 12,000 jobs in hydrogen production, distribution, and storage by 2030.

The offshore hydrogen economy has the potential to utilise offshore energy infrastructure and the engineering expertise of workers from the oil and gas industry. Offshore hydrogen production could derive from offshore wind, with electrolytic hydrogen being produced offshore and piped onshore. Moreover, offshore hydrogen storage may be key to advancing the development of the hydrogen economy to achieve net zero by 2050. As technical and economic proposals for the future offshore hydrogen economy still require further investigation, the significance of offshore infrastructure in the early growth of the hydrogen economy remains to be proven. Nonetheless, it is important that Government supports research and development projects to enable innovative findings and consider the potentially large value of the offshore hydrogen economy, in our efforts to achieve net zero.

The purpose of the consultation is to propose certain amendments to the existing system of offshore pipeline and gas storage regulation that will enable first of a kind (FOAK) offshore hydrogen projects to be realised. The legislative amendments proposed do not cover onshore hydrogen regulation, nor offshore hydrogen production. Regulators have been analysing and

interpreting existing regulations, consolidating discussions and enhancing their understanding of how regulation needs to evolve to accommodate hydrogen. This has helped address previous regulatory uncertainties for how potential offshore hydrogen activities interact with existing complex electricity and gas regulation. Although outside the scope of this consultation, the offshore regulatory framework for hydrogen production is especially complex because offshore hydrogen production is likely to derive from and be co-located with offshore electricity sources, thus straddling different regulatory regimes and raising important devolution considerations. The initial approach set out in the Offshore Hydrogen Regulation consultation is required to create a regime to support FOAK projects, and can only be implemented after careful review of evidence and dialogue with industry and regulators, which is summarised in this government response. Continuous assessment of the suitability of the existing regime will be an ongoing process.

## Consultation proposals: key regulators

### North Sea Transition Authority

The North Sea Transition Authority (NSTA) is the regulator for the oil, gas and carbon storage industries. The NSTA is the business name of the Oil and Gas Authority, a company given functions under the Energy Act 2016. Under the Government's proposals, the Pipeline Works Authorisation (PWA) regime set out in the Petroleum Act 1998 will be extended to cover offshore hydrogen pipelines, thereby making the NSTA the relevant consenting authority for such infrastructure. The proposals also extend the licensing regime set out in Chapter 2 of the Energy Act 2008 to cover hydrogen, thereby enabling the NSTA to issue offshore hydrogen storage licences, among other things. It would also make the NSTA a consultee to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) on the costs of decommissioning and potential for repurposing of existing offshore infrastructure for both hydrogen pipeline transportation and storage.

### Offshore Petroleum Regulator for Environment and Decommissioning

OPRED is responsible for administering the Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020 ('the 2020 Offshore EIA Regulations') and the Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001 (as amended) ('Habitats Regulations'). The proposed regulatory changes would bring hydrogen pipelines and storage in scope of the 2020 Offshore EIA Regulations and the Habitats Regulations. There are no specific legislative changes proposed in respect of these environmental regulations. This does not preclude those regulations being reviewed as part of other workstreams.

# Chapter 2: Offshore Hydrogen Pipeline Construction & Use and Decommissioning

## Consultation position

The consultation set out that the current regulatory framework for offshore oil and gas pipeline construction and use is mostly governed by the Petroleum Act 1998. The NSTA is the UK regulator for authorising the construction and use of offshore oil and gas pipelines in the United Kingdom Continental Shelf (UKCS), under Part 3 of the Petroleum Act 1998. A PWA is required to construct and use new subsea pipelines in the UKCS and territorial seas.

As the NSTA has well established technical processes and expertise to regulate offshore oil and gas activities, DESNZ recognises the benefits of extending the current PWA regime administered by the NSTA to provide an operable regulatory regime for offshore hydrogen pipelines. The consultation proposed to make an order using the powers conferred by section 24 of the Petroleum Act 1998. This would bring offshore hydrogen pipelines within scope of Part 3 of the Petroleum Act 1998. The legislative change would grant the NSTA powers to issue PWAs for the construction and use of offshore hydrogen pipelines and would contribute to our initial approach to design parts of the offshore hydrogen regulatory framework.

If offshore hydrogen pipelines are covered by Part 3 of the Petroleum Act 1998, then under existing provisions, they would also fall within scope of the decommissioning provisions in Part 4 of that Act. This will enable OPRED to operate a functioning decommissioning regime for offshore hydrogen pipelines.

These proposals apply to the offshore areas of the United Kingdom - including relevant territorial seas and the UKCS.

## Summary of consultation responses to question 1

### Question 1:

Do you agree with Government’s approach to use the powers in Part 3, section 24 of the Petroleum Act 1998, to specify hydrogen pipelines to be covered by Part 3 of the Petroleum Act 1998. Please state “Yes” or “No” and your reasons why.

**Table 1: stakeholder response summary to question 1**

Response	Number of respondents
‘Yes’ - agreed with Government’s approach to use the powers in Part 3, section 24 of the Petroleum Act 1998, to specify hydrogen pipelines to be covered by Part 3 of the Petroleum Act 1998.	17
‘No’ - disagreed with Government’s approach to use the powers in Part 3, section 24 of the Petroleum Act 1998, to specify hydrogen pipelines to be covered by Part 3 of the Petroleum Act 1998.	0
‘Don’t know’	1

Eighteen responses submitted responses for question 1 (Table 1). Out of these 18 respondents, 17 (94.44%) respondents agreed with our proposals and 1 (5.56%) respondent provided the response ‘don’t know’. There was thus significant support among the respondents, as no response expressed disagreement with our proposal to specify hydrogen pipelines to be covered by Part 3 of the Petroleum Act 1998.

Sixteen respondents gave more than ten reasons to explain their agreement when responding to question 1, reflecting the value of the proposal, as well as the diversity of individuals and organisations who responded. The rationales for supporting proposals from respondents are organised into four themes and summarised below.

### Advantages of using existing oil and gas regulation/frameworks for hydrogen: familiarity, operability, and flexibility

Industry is familiar with existing regulation for other offshore energy activities, specifically the existing offshore oil and gas framework.

Eleven respondents stated the benefits of Government’s proposals to enable the NSTA to administer PWAs for offshore hydrogen pipelines, given the NSTA’s current responsibility for



offshore oil, gas and carbon dioxide pipelines, in addition to being well established and understood by industry and organisations. This would provide a consistent regulatory approach to similar processes for offshore transport. Another respondent also noted that lessons can evidently be learned from the oil and gas industry, and the approach taken pursuant to the Petroleum Act 1998 can effectively regulate offshore pipelines in a pragmatic manner.

One respondent noted that Government proposals provide a flexible approach to offshore hydrogen regulatory design and deliver an initial framework that can be developed and adapted to accommodate more large-scale hydrogen proposals, as the hydrogen economy develops.

### Support for early hydrogen projects

Seven respondents highlighted that the Government proposals for offshore hydrogen pipelines will provide regulatory certainty for offshore activities, providing timely clarity to project developers to develop FOAK projects, with one respondent noting that this will provide an overall rapid consenting approach. Another respondent noted that this consenting certainty will apply both to inshore (less than 12 nm) and offshore waters, at which point marine planning regimes can change. Under the Marine Scotland Act 2010, Scottish Ministers are responsible for marine licensing and enforcement in the Scottish inshore region (out to 12 nm). This includes the waters of every estuary, river or channel, so far as the tide flows at mean high water spring tide. Under the Marine and Coastal Access Act (MCAA) 2009, Scottish Ministers are also generally responsible for licensing and enforcement in the Scottish offshore region (12-200 nm), with exceptions for certain reserved matters. For clarity, marine licensing does not apply to offshore pipeline-related activities that are subject to the PWA regime.

Two respondents stressed that regulatory clarity is imperative for renewable hydrogen in relation to the scope of offshore assets covered in this proposal. Lack of legislation concerning offshore hydrogen consents currently means that hydrogen projects, depending on the purpose and/or delivery system, do not have a clear consenting route for some forms of offshore hydrogen development. In particular, one of the respondents stated that the current lack of clear regulation is delaying FOAK projects and jeopardising the growth of offshore hydrogen production.

### Utilising technical expertise of regulators: NSTA, OPRED and the Health and Safety Executive (HSE)

Six respondents highlighted that this regulatory approach would enable the utilisation of technical expertise from existing regulators, emphasising the valuable and primary role of the NSTA, OPRED and/or HSE for various reasons.

One respondent highlighted that technical expertise of these regulators would enable them to oversee combustible gas infrastructure. Another respondent stressed that a single pipeline regulator will provide one consenting umbrella, that will provide clarity to developers as it enables the NSTA to reuse current infrastructure, due to the NSTA's familiarity with as-built drawings and associated information. One respondent also pointed out that Government proposals for regulatory responsibility to sit with NSTA and OPRED, as well as the notable role

of HSE, will address capacity constraints within the marine planning authorities whilst flagging that capacity within NSTA, OPRED and HSE need to be appropriately supported to avoid consenting bottlenecks. Another respondent stressed that in order to accelerate hydrogen production at scale and meet Government ambitions, the process should be optimised for maximum efficiency and streamlined, either requiring fewer details so consent applications can be submitted earlier in the design process, or an accelerated application review process which is coordinated between regulatory bodies to allow projects to be completed quicker.

## Geographical consistency and co-ordination

Two respondents noted the value in a UK-wide regime, as this would avoid multiple consents, licences and regulators, providing a streamlined consenting process. One respondent considered that if multiple consents and licences are required, regulators should work together to maximise expertise and provide consolidated and consistent advice where possible. Two respondents also pointed out that proposals will enable coordination of environmental regulations with oil and gas.

Whilst agreeing with the proposals in the short-term, one respondent proposed that the Scottish Government are best placed to act as the regulator for hydrogen pipelines and storage in Scottish territorial waters (in both inshore and offshore regions) in the long term. The respondent stated this would allow for a streamlined fit-for-purpose regulatory regime as hydrogen production is a devolved matter. Other respondents pointed out that dual regulation should be avoided as far as possible, and a streamlined and coordinated approach should be agreed.

## Points of clarity and consideration raised

- One respondent asked for clarity on whether all hydrogen pipelines will need to be operated by a registered oil and gas/pipeline operator.
- Two respondent queried whether hydrogen pipelines will enable potential mixing of hydrogen with other gasses, with another respondent suggesting that proposals should also facilitate repurposing of existing pipelines for use with hydrogen and/or the ability to move hydrogen blends.
- One respondent requested clarity on the NSTA's role as a dispute settlement authority in relation to pipelines infrastructure access under the Energy Act 2011.
- Whilst supporting the proposals, one respondent highlighted that NSTA's interface with the Crown Estate in offshore production of (green) hydrogen - from offshore wind - and the approach taken by OPRED as the designated authority for Habitats Regulations Assessment (HRA) Appropriate Assessments, need to be proactively monitored.
- One respondent stated that proposals must work for 100% hydrogen interconnectors as well as production-to-shore, and interface with interconnectors across two countries will need to be resolved.
- One respondent noted that the proposed framework will be too cumbersome for FOAK projects and in order to accelerate hydrogen production at scale, the process needs to

be efficient, well-coordinated (between regulators) and streamlined as much as possible, to allow projects to be completed sooner. The respondent also suggested that a timely review of PWA and existing processes is needed to ensure that the proposal is proportionate for small-scale, near-shore hydrogen pipelines and offshore storage.

- One respondent emphasised that the relationship between the Marine and Coastal Access Act 2009 and Part 3 of the Petroleum Act 1998 should be clearly defined as it applies to hydrogen. Another respondent proposed that any power and communication cables associated with hydrogen pipelines would also be regulated by the NSTA under the PWA regime rather than under the MCAA 2009.

## Summary of consultation responses to question 2

### Question 2:

Do you agree with Government’s proposal to bring offshore hydrogen pipeline decommissioning under Part 4 of the Petroleum Act? Please state “Yes” or “No” and your reasons why.

**Table 2: stakeholder response summary to question 2**

Response	Number of respondents
‘Yes’ - agreed with Government’s proposal to bring offshore hydrogen pipeline decommissioning under Part 4 of the Petroleum Act	17
‘No’ - disagreed with Government’s proposal to bring offshore hydrogen pipeline decommissioning under Part 4 of the Petroleum Act	0
‘Don’t know’	1

Eighteen responses were received for question 2 (Table 2). Out of these 18 respondents, 17 (94.44%) respondents agreed with our proposals and one (5.56%) respondent provided the response ‘don’t know’. There was significant support among the respondents as no response expressed disagreement with our proposal to bring offshore hydrogen pipeline decommissioning under Part 4 of the Petroleum Act.

The rationales for supporting proposals from respondents are organised into 3 themes and summarised below.

## Proven and familiar framework that will ensure consistency with oil and gas decommissioning

Nine respondents noted the advantages regarding familiarity and consistency of using the existing oil and gas decommissioning regime. Seven of these respondents stated that the current pipeline decommissioning regime under Part 4 of the Petroleum Act 1998 and relevant environmental process and submissions associated with decommissioning of offshore pipelines is well understood by industry. The respondents argued that by extending this decommissioning regime to hydrogen, a straightforward approach will be provided to ensure hydrogen pipelines are properly regulated and licenced. Three respondents highlighted that this would provide consistent regulatory processes with existing oil and gas decommissioning regimes. Another respondent also pointed out that utilising existing legislation will facilitate life cycle planning by operators.

One respondent generally noted that the regulatory framework proposed for hydrogen pipelines and decommissioning is best suited to prove the necessary consenting mechanisms.

## Consistency across UKCS

One respondent stated that the proposals will provide a consistent decommissioning framework across all areas of the UKCS. The respondent also noted that the treatment of hydrogen would be consistent across Part 3 and Part 4 of the Petroleum Act 1998, in line with Government proposals.

## Utilising technical expertise of regulators: NSTA, OPRED and HSE

The environmental regulation and decommissioning of offshore oil and gas assets is the responsibility of the Secretary of State through OPRED. Three respondents identified that the proposals would leverage the existing technical expertise on pipelines decommissioning within OPRED. One respondent expanded on this, stating that technical expertise to oversee combustible gas infrastructure sits primarily with NSTA, OPRED and HSE.

## Points of clarity and considerations raised

- Two respondents requested clarity on whether there is a risk of dual decommissioning regulation under the Petroleum Act 1998 and the Energy Act 2004.
- Two respondents made recommendations for the financial assurance process for decommissioning of offshore installations and pipelines to be proportionate to the nature of activity. One respondent noted that this is necessary to avoid onerous obligations not commensurate with the relevant activity, thus creating project risks. Additionally, the respondent proposed that the operator due diligence requirements for hydrogen pipelines should also be commensurate with the scale of activity being undertaken. One respondent requested clarification of the responsibilities for pipeline decommissioning costs, as this would be useful for hydrogen project developers and investors. Another respondent suggested the consideration of reverse installation for new pipelines to reduce decommissioning cost burden.

- One respondent pointed out that for future hydrogen projects, pipeline decommissioning could be delayed if existing petroleum or natural gas pipelines are used under certain circumstances, such as blending.

## Government response: questions 1 & 2

We acknowledge the significant support for the proposals for offshore hydrogen pipeline construction & use and decommissioning. Taking this into account, in Autumn 2023, the Government plans to use the power in section 24(2A) of the Petroleum Act 1998 to extend the application of Part 3 of that Act to hydrogen pipelines. Under existing provisions, they would also fall within scope of the decommissioning provisions in Part 4 of that Act. These changes will enable the NSTA to grant PWAs for offshore hydrogen pipelines, and for OPRED to operate a functioning hydrogen pipeline decommissioning regime.

We plan to lay the secondary legislation required to effect this change in Autumn 2023, with it coming into force 21 calendar days after laying. However, these changes are subject to parliamentary timetables and relevant approval procedures. These changes will not preclude further amendments to existing regulation, or a more bespoke regulatory solution for hydrogen.

We believe that the existing regulatory system has sufficient flexibilities to enable it to provide workable and effective solutions for FOAK offshore hydrogen projects to progress, pending any longer-term reform. Both industry and the Government are keen to operationalise safe and viable projects urgently.

The NSTA has well established technical processes and expertise to regulate offshore oil and gas activities. Currently, offshore pipelines carrying oil, relative hydrocarbons, natural gas (including such gas as a liquid) and carbon dioxide are regulated by the NSTA. The offshore hydrogen economy has the potential to utilise offshore energy infrastructure and the engineering expertise of workers from the oil and gas industry, and thus coordination between different regulatory regimes will be crucial and is simplified through fewer regulators where possible.

DESNZ intends for these policy proposals to provide an initial approach to regulatory design for the offshore hydrogen economy, which will be operable for early projects and may be subject to further evolution. The legislative amendments proposed do not cover onshore hydrogen regulation, nor offshore hydrogen production.

We will continue to work closely with industry, governmental and/or regulatory bodies to take into account, where appropriate, the suggestions put forward by respondents as an integral part of our ongoing, long-term efforts to develop offshore hydrogen regulation for the UK hydrogen economy as it grows and evolves, with a view to introducing timely amendments where they are needed. In pursuit of this, we will continue to use the Hydrogen Regulators Forum and ongoing industry engagement to map out and prioritise regulatory areas to ensure efficiency and barriers to address.

## Hydrogen trade

There have been rapid developments in the creation of regional and global hydrogen markets to support greater trade in low carbon hydrogen, as well as associated hydrogen technologies and services across the value chain. The UK wants to play a key role in exporting hydrogen, including to continental Europe where we see increased hydrogen demand, alongside established energy trading and interconnection with the UK. In the longer term, we also recognise the role that imports could play in building supply chain resilience and supporting energy security as part of a diverse supply mix.

There are two main ways to transport hydrogen in order to trade it: using ships or via pipelines. Evidence suggests that for distances under 4000 km, pipelines are one of the most efficient transport routes.<sup>1</sup> These changes to the legislation will be an important step to enable the trade of hydrogen via pipelines, opening the UK to the opportunities of connecting hydrogen produced offshore to continental Europe, while maintaining sufficient supply for domestic use.

## HSE

DESNZ recognises it is imperative that essential health and safety measures are in place to protect people and the environment. HSE is the independent regulator for workplace health and safety within Great Britain. We are continuing to explore with HSE the applicability and suitability of health and safety regulations to offshore hydrogen projects in the territorial seas and UKCS area. We are not seeking to make any changes to health and safety regulation via the Offshore Hydrogen Regulation Consultation, but we and HSE will keep the need for any legislative changes under review.

## Offshore marine licences in Scotland

Guidance on consents and marine licences for offshore renewable energy projects within both Scottish Territorial Waters and Scottish Offshore Waters is available:

<https://www.gov.scot/publications/marine-scotland-consenting-licensing-manual-offshore-wind-wave-tidal-energy-applications/pages/3/>

## Hydrogen pipelines and PWA regime

The proposed legislative changes will enable the NSTA to be the UK regulator for authorising the construction and use of all offshore hydrogen pipelines, under the same regime as it currently authorises offshore oil and gas and carbon dioxide pipelines (the PWA regime). The NSTA anticipates that hydrogen pipeline applications can be processed via the existing PWA arrangements, with only minor modifications required to the system. The NSTA will implement these changes to accommodate hydrogen PWA applications.

---

<sup>1</sup> This depends on factors such as volumes and overall distance of the transport. Source: *Global Hydrogen Trade to Meet the 1.5°C Climate Goal: Technology Review of Hydrogen Carriers*, IRENA (2022). Accessed July 2023.

## Costs to industry

OPRED will be the UK regulator for the decommissioning of offshore hydrogen pipelines under the same regime that it currently operates for offshore oil and gas pipelines in the UKCS. The expectation is that owners of offshore hydrogen pipelines will be required to decommission the pipelines at the end of hydrogen production and transportation. Under the offshore oil and gas regime, the information requested by OPRED throughout the project lifecycle and as part of the decommissioning programme submission is proportionate to the scale of the project, and the environmental sensitivities in the area, and the intention is that it will remain so for Hydrogen projects. OPRED expect owners of offshore pipelines to have adequate financial planning arrangements in place to meet decommissioning liabilities. Further information regarding OPRED's policies and processes, which are anticipated to be applicable to hydrogen pipeline decommissioning, are set out in OPRED's Guidance Notes to Industry:

<https://www.gov.uk/guidance/oil-and-gas-decommissioning-of-offshore-installations-and-pipelines>

## Regulatory coordination

The Government recognises the importance of a coordinated regulatory approach across our energy and net-zero initiatives. We will continue to engage with industry to identify regulatory barriers to address. This will enable us to coordinate an efficient approach to designing and delivering suitable regulatory frameworks for the UK hydrogen economy as it grows and evolves.

## Regulatory regime

Project developers benefit from the same rules for pipeline authorisation for different parts of waters around Great Britain and Northern Ireland, with a single authorising body that is able to liaise with relevant regulators where other consents are required. This avoids extra regulatory processes and multiple consenting regimes for different parts of Great Britain. To help progress our shared ambition to expand the hydrogen economy across the UK, a UK-wide system of regulation of hydrogen pipelines and storage and a uniform pipeline authorisation progress will provide consistency for businesses and developers. The UK Government will continue to work closely with the devolved administrations to deliver a UK regulatory framework for hydrogen projects, which respects the devolution settlements.

## Chapter 3: Offshore Hydrogen Storage Licensing and Decommissioning

### Consultation position

As part of our initial approach to designing the offshore hydrogen economy, the consultation proposed to make legislation to designate hydrogen as a gas under section 2(4) of the Energy Act 2008. This will enable the NSTA to issue offshore licences for activities listed under section 2(3) of the act in respect of hydrogen, including hydrogen storage. Designation of hydrogen under section 2(4) of the Energy Act (2008) would also mean that an offshore installation involved in the activity of hydrogen storage would fall under the definition of “offshore installation” in section 44 of the Petroleum Act 1998. As a consequence, the installation would then be subject to the decommissioning regime in Part 4 of that Act. These proposals apply to the offshore areas of the United Kingdom – including its territorial seas and the United Kingdom Continental Shelf (UKCS).

### Summary of consultation responses to question 3

#### Question 3:

Do you agree with Government’s proposal to make a statutory instrument designating hydrogen as a gas under section 2(4) of the Energy Act 2008? Please state “Yes” or “No” and your reasons why.

**Table 3: stakeholder response summary to question 3**

Response	Number of respondents
‘Yes’ – agreed with Government’s proposal to make a statutory instrument designating hydrogen as a gas under section 2(4) of the Energy Act 2008	18
‘No’ – disagreed with Government’s proposal to make a statutory instrument designating hydrogen as a gas under section 2(4) of the Energy Act 2008	0
‘Don’t know’	0



Eighteen responses were received for question 3 (Table 3). There was unanimous agreement among the respondents as all (100%) respondents agreed with our proposals to designate hydrogen as a gas under section 2(4) of the Energy Act (2008). Rationale(s) for supporting proposals are organised into 4 themes and summarised below.

### Proven, familiar and operable framework that will ensure a consistent regulatory approach

Twelve respondents noted the advantages regarding familiarity, operability and consistency of using existing legislation for the purposes of offshore storage regulation. Three of these respondents stated that existing licensing powers will easily be adapted to include hydrogen and/or provide significant advancements whilst ensuring that appropriate safety measures are implemented.

One of the respondents highlighted that designating hydrogen as gas under section 2(4) of the Energy Act 2008 is the simplest and quickest way to enable the NSTA to issue offshore hydrogen storage licences and bring offshore hydrogen storage into an existing, established and well understood regulatory framework.

Additionally, one respondent generally stated that the regulatory framework identified is best suited to provide the necessary consenting mechanisms.

Another respondent noted that Government proposals will enable consistency as current hydrocarbon gas would extend to hydrogen.

Three respondents stressed that these proposals would provide consistency across the UKCS, including meeting the regulatory environmental standards.

### Hydrogen blending

One respondent noted that designating hydrogen under section 2(4) of the Energy Act 2008 would suit blended gas as well as 100% hydrogen.

### Technical expertise of NSTA, OPRED and HSE

Three respondents noted that these proposals would leverage the technical expertise of the NSTA, OPRED and/or HSE, with one respondent highlighting that the proposals will support hydrogen storage being captured under the Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020. One respondent also highlighted that the proposals would address some of the current capacity constraints within the marine regulators.

### Regulatory certainty to hydrogen projects

Three respondents noted the benefits of our proposals in providing regulatory clarity and certainty to offshore hydrogen storage for project developers. Two of these respondents noted these proposals would enable the realisation of FOAK projects. One of these respondents

recognised DESNZ's indication that regulations may need to evolve in future to accommodate more complex storage projects.

### Points of clarity and considerations raised

- Two respondents queried whether wind turbines involved in producing hydrogen would be classed as an 'offshore installation' and would be subject to the proposed storage licensing and decommissioning regime.
- Another respondent requested clarity on whether designating hydrogen as a gas under section 2(4) of the Energy Act 2008 would allow OPRED to use their expertise to support the environmental and decommissioning aspects of offshore hydrogen transportation and storage projects.
- One respondent requested clarity on the threshold for storage under government proposals and whether small scale operational storage can be licenced via a marine licence as part of the hydrogen production system regulation. The respondent also requested clarity on whether a wind turbine classifies as a "controlled place" under the Energy Act 2008.
- One respondent pointed out that storing hydrogen in depleted natural gas fields will lead to the unintended production of associated hydrocarbons, hence the Energy Act may require modification to reflect this complexity.
- One respondent noted that whilst no licence is needed solely to produce hydrogen, in section 7(3A) of the Gas Act, production must be "unbundled" from transport and supply and hence queried whether such requirements will be applied in the context of hydrogen transport and storage.
- One respondent proposed that any supporting infrastructure for hydrogen storage is consented under the Energy Act 2008 rather than the Marine and Coastal Access Act 2009.

## Summary of consultation responses to question 4

**Question 4:** Do you agree that hydrogen storage installations should be subject to decommissioning under Part 4 of the Petroleum Act 1998? Please state “Yes” or “No” and your reasons why.

**Table 4: stakeholder response summary to question 4**

Response	Number of respondents
‘Yes’ – agreed that hydrogen storage installations should be subject to decommissioning under Part 4 of the Petroleum Act 1998	18
‘No’ – disagreed that hydrogen storage installations should be subject to decommissioning under Part 4 of the Petroleum Act 1998	0
‘Don’t know’	0

Eighteen responses were submitted for question 4 (Table 4). There was unanimous agreement among the respondents as all (100%) respondents agreed that hydrogen storage installations should be subject to decommissioning under Part 4 of the Petroleum Act 1998.

Rationale(s) for supporting proposals are organised into 3 themes and summarised below.

### Advantages of using existing oil and gas regulation/frameworks: familiarity, operability, and consistency

Nine respondents stated the advantages of using existing oil and gas regulation/frameworks.

Two of these respondents noted that the existing oil and gas framework is proven to be effective, familiar and/or operable. Five of these respondents stated these Government proposals will ensure consistency with the existing decommissioning regime and associated environmental processes and submissions relating to other offshore structures which interact with the subsurface. One respondent generally highlighted that the regulatory framework identified is best suited to provide the necessary consenting mechanisms.

Two respondents noted the benefit of having a consistent regulatory approach across UKCS.

In another instance, one respondent generally stated the importance of decommissioning and environmental protection requirements.

## Regulatory certainty to hydrogen projects

Two respondents highlighted that these proposals would provide greater certainty regarding consenting requirements. One of these respondents specified that this certainty would support FOAK hydrogen projects and development of the hydrogen sector.

## Technical expertise of NSTA, OPRED and HSE

Three respondents stressed that these proposals would utilise the technical expertise of the NSTA, OPRED and/or HSE.

One of these respondents pointed out that the proposals would support hydrogen transportation/pipelines and storage being captured under the Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020. The respondents also stated that these proposals will address current capacity constraints within the marine regulators.

Another respondent stated the benefits of a consistent regulator in the case of changing of depleted hydrocarbon fields to hydrogen storage.

## Points of clarity and considerations raised

- One respondent welcomed clarity on how dual decommissioning will be avoided between an “offshore installation” under the Petroleum Act 1998 and a “renewable energy installation” under the Energy Act 2004.
- One respondent requested clarity on whether Government proposals apply to sub surface infrastructure. Additionally, another respondent noted that hydrogen storage installations will be of different scale and complexity than subsea and platform, hence decommissioning requirements should be proportionate and fit for purpose. The respondents also suggested that decommissioning required should be aligned to the requirement of the host structure and stated, for example, that requirements for a wind turbine are likely to be set by the Marine and Coastal Access Act 2009 and the Marine (Scotland) Act 2010.
- One respondent suggested that the costs for decommissioning should be incorporated into the cost of operation and original business case. Another respondent suggested that in order to ensure minimum liability to taxpayers, decommissioning should be designed into new offshore installations associated with hydrogen storage.
- Another respondent noted that the offshore hydrogen regime may require flexibility, given the novel consideration associated with hydrogen projects.
- Whilst supporting the proposals, one respondent highlighted that NSTA’s interface with the Crown Estate in offshore production of (green) hydrogen from offshore wind, and the approach taken by OPRED as the designated authority for Habitats Regulations Appropriate Assessments, need to be proactively monitored.

## Summary of consultation responses to question 5

**Question 5:** Are there additional issues with future offshore hydrogen storage regulation that need to be addressed? Please state “Yes” or “No” and your reasons why.

**Table 5: stakeholder response summary to question 5**

Response	Number of respondents
‘Yes’ – agreed that there are additional issues with future offshore hydrogen storage regulation that need to be addressed	14
‘No’ – disagreed that there are additional issues with future offshore hydrogen storage regulation that need to be addressed	2
‘Don’t know’	0

Sixteen responses were received for question 5 (Table 5). Out of these 16 respondents, 14 respondents expressed additional issues with Government proposals which may need to be addressed. These issues covered key regulatory areas, such as planning, environment and decommissioning of hydrogen production, transportation, and storage.

### Planning

Five respondents requested clarity and/or raised considerations for the Development Consent Order (DCO) process for hydrogen projects. One of these respondents suggested to gain learning from current planning routes when developing consent legislation. Respondents also suggested collaboration on decision-making between onshore planning and offshore regulatory regimes.

### Environmental considerations

Two respondents emphasised the importance of environmental considerations. One of these respondents stated that further clarity is required for offshore hydrogen projects on the need to obtain ‘vent consent’, a requirement under the Energy Act 1976 for inert gases and hydrocarbon gases which may be vented. Another respondent pointed out that currently there is limited knowledge on hydrogen leakage and emphasised the importance of reviewing the outcome of hydrogen leakage studies underway to inform regulations accordingly.

## Consent coordination with devolved administrations and stakeholders

Two respondents noted DESNZ's commitment to work with devolved administrations on policy development of offshore hydrogen regulation and stressed the importance of a co-ordinated and streamlined consenting process across the UK, avoiding dual regulation as much as possible. One of the respondents also requested clarification on how proposed changes will align with marine licence processes.

Another respondent emphasised that as a long-term approach, a single over-arching regulator is required for all forms of major offshore energy activities, irrespective of whether they are hydrogen or renewables.

Two respondents highlighted the important role of stakeholder engagement, with one respondent emphasising that a high degree of transparency and stakeholder involvement should be maintained through the consenting process if Government proceeds with their proposals.

## Hydrogen production

Two respondents stated that it should be clear that hydrogen production is not captured in the proposed regulatory changes. Another respondent stated that the decision-making on hydrogen production and transport elements needs to be closely aligned, ideally forming part of the same decision-making process.

## Hydrogen transportation

One respondent requested clarity on what constitutes as hydrogen transport during a projects stage to avoid gaps or overlaps in the consenting regime.

Another respondent noted that pipelines are not the only route to transport hydrogen and queried how other forms of transportation would be regulated. The respondents also noted that hydrogen can be transported in other forms, such as liquid hydrogen, methanol and ammonia and queried whether the current proposals would apply to these other forms of hydrogen.

## Storage

Five respondents requested clarity and/or provided future considerations for offshore hydrogen storage. One of the respondents suggested that above ground offshore hydrogen storage (i.e. on a facility) should remain within current marine infrastructure consenting (i.e. via the MCAA). Another respondent stated that a mechanism may need to be introduced to extract areas licenced for carbon dioxide storage for licensing as hydrogen storage.

Another respondent queried if it would be possible to apply for a gas storage licence in an area with an existing hydrocarbon licence. Furthermore, the same respondent also queried if it would be possible to apply for a storage licence in an area with an existing production licence if the intended storage depth/formation is separate to that being used for hydrocarbon production.

One respondent welcomed clarity on thresholds for storage and whether small-scale 'operational' storage is captured in the regulatory proposals.

## Government response: questions 3, 4 & 5

DESNZ wishes to use existing regulatory mechanisms to support effective regulation of storage elements of FOAK projects. We acknowledge the unanimous support for our proposal for offshore hydrogen storage and decommissioning, emphasising the significant value they bring. Taking this into account, in Autumn 2023, the Government intends to make legislation to designate hydrogen as a gas under section 2(4) of the Energy Act 2008. The government will also use the power in section 7(1) of the Energy Act 2008 to ensure the model clauses set out the Offshore Gas Storage and Unloading (Licensing) Regulations 2009 reflect this designation. This will enable the NSTA to issue offshore licences for activities listed under section 2(3) of that Act in respect of hydrogen, including offshore hydrogen storage, and will ensure the model clauses prescribed for such licences clearly apply to hydrogen.

The legislative changes made under the Petroleum Act 1998 and the Energy Act 2008 will be achieved through one single statutory instrument. While we plan to lay the legislation in Autumn 2023, with it coming into force 21 calendar days after laying, the changes are subject to parliamentary timetables and relevant approval procedures. These legislative changes do not pre-empt any future development of the offshore regulatory framework. The legislative amendments proposed do not cover onshore hydrogen regulation, nor offshore hydrogen production.

### Storage

Whether a potential NSTA hydrogen storage licence issued under the Energy Act 2008 will be needed (or not), will depend on the project specifics and design, and the NSTA would be the responsible authority to review the need for an offshore hydrogen storage licence. Early engagement with the NSTA is recommended to enquire about the need for a storage licence.

### Hydrogen transportation

Hydrogen may be transported by road as an alternative to transport by pipeline and is already regulated under the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (CDG 2009). These regulations apply the Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), to which the UK has been a signatory to since its introduction in 1957. CDG 2009 implements the international transport requirements for dangerous goods, which are set out in ADR, to regulate the national movement of dangerous goods. This includes hydrogen, whether it is carried as a compressed gas, cryogenic liquid, or even within a hydrogen carrier – of which methanol and ammonia are most common. The definition of a dangerous good is any substance that poses a disproportionate risk to health, safety, property, or the environment when transported.

## Planning

We will review the practical interactions between offshore transport and storage regulation and the DCO regime for hydrogen projects. In addition, we are working across Government and with the Planning Inspectorate to streamline the DCO process for all technologies.



This publication is available from: [www.gov.uk/government/consultations/proposals-for-offshore-hydrogen-regulation](https://www.gov.uk/government/consultations/proposals-for-offshore-hydrogen-regulation)

If you need a version of this document in a more accessible format, please email [alt.formats@energystrategy.gov.uk](mailto:alt.formats@energystrategy.gov.uk). Please tell us what format you need. It will help us if you say what assistive technology you use.