De Minimis Assessment

Title of Measure	Offshore Hydrogen Regulation Consultation
Estimated Net Present Value (NPV)	**-£2,752,000**
Equivalent Annual Net Direct Costs to Business (EANDCB)	**£320,000**

Policy Overview

Low-carbon hydrogen is expected to play a significant role in the UK's transition to being a Net Zero economy. Currently there is no legislation for providing regulatory consent for businesses wanting to construct or maintain offshore hydrogen pipelines and storage. Secondary legislation under the Petroleum Act 1998 allows the North Sea Transition Authority (NSTA) to issue Pipeline Works Authorisation (PWAs) for offshore pipelines serving oil, natural gas and carbon dioxide, but not hydrogen. Secondary legislation under the Energy Act 2008 provides for a licensing regime that governs gas importation and storage activities. Offshore gas storage activities require a licence from the NSTA under the Offshore Gas Storage and Unloading (Licensing) Regulations 2009 (the Gas Storage Regulations) (SI 2009/2813). However, the definition of 'gas' within section 2(4) of the Energy Act 2008 does not include hydrogen. Therefore, the Gas Storage Regulations do not cover hydrogen.

The Offshore Hydrogen Regulation Consultation proposes to use powers conferred by section 24(2A) and 25(7)(b) of the Petroleum Act 1998. This would bring offshore hydrogen pipelines within the scope of Part 3 of that Act and would require an authorisation (PWA) for their construction and/or use. This legislative change would grant the NSTA powers to issue PWAs for the construction and use of offshore hydrogen pipelines and also enable the Offshore Petroleum Regulator for Environment & Decommissioning (OPRED) to administer the offshore hydrogen pipeline decommissioning regulatory regime. By requiring hydrogen pipelines to be covered under the NSTA's consenting regime, the provisions of the Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001 ("the Habitats Regulations") would apply.

The Offshore Hydrogen Regulation Consultation also proposes to use powers conferred by section 2(4)(e) of the Energy Act 2008 to designate hydrogen as a gas under section 2(4) of Energy Act 2009. This will enable the NSTA to issue offshore licences for any activities listed under section 2(3) of that Act, including offshore hydrogen storage and bring offshore hydrogen pipelines and storage in scope of OPRED's Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020 and the Habitats Regulations.

Direct Costs to Business

We estimate the EANDCB to be £320,000 over the 10-year appraisal period of 2023-2032 for the minded-to position in the consultation. The costs to businesses could begin at the earliest in late 2023.

We assume for simplicity and the purpose of the analysis that the legislation is unchanged after introduction in 2023 and throughout the 10-year assessment period. As the hydrogen economy does not currently exist, there is some uncertainty around the timing of any future changes - the UK Hydrogen Strategy roadmap outlines that long-term regulatory policy and activity is needed for hydrogen in the late 2020s and into the 2030s as the hydrogen market develops.

These cost estimates are indicative, based on assumptions about the hydrogen market which does not currently exist, limiting analytical possibilities. Accordingly, there is some uncertainty about the true nature of costs.

These estimates reflect a scenario, based on current pipeline data, where two offshore hydrogen projects require a PWA in 2023 and 2024. From 2025 onwards, it is assumed that four hydrogen projects per year all require a PWA and two projects per year also require a hydrogen storage licence. There is significant uncertainty associated with these numbers.

Costs to business for making applications seeking regulatory approvals
Businesses currently pay a fee of approx. £3,000 to the NSTA to process a PWA application and approx. £9,000 to process a gas storage application.

They incur a fee of approx. £50,000 to OPRED for considering and determining the environmental assessments and for OPRED to undertake a Habitats Regulations Assessment for each application.

Businesses also pay a fee of approx. £100,000 to OPRED on submission of a pipeline decommissioning programme and £100,000-£125,000 on submission of an installation decommissioning programme. This fee charged depends on OPRED's costs in relation to the review, consideration and issuing a decision regarding the proposals set out in the decommissioning programme. The decommissioning programme is submitted, and the fee incurred towards the end of the project lifetime.

Hydrogen projects will need to complete work (and incur costs) to apply for regulatory consent, including preparing PWA and gas storage applications, preparing environmental assessments in support of a PWA or gas storage application, and preparing decommissioning programmes. These costs are not included in this assessment. The proposed legislation does not introduce new obligations that businesses need to meet, meaning business would need to do this work and incur costs

regardless. These powers just ensure regulatory consent can be applied for. Additionally, no familiarisation costs are included as the proposed change to legislation makes hydrogen activities consistent with the existing oil, gas and CCUS (carbon capture, use and storage) regime.

NSTA costs

In the short to medium term, we expect that additional NSTA costs will be recouped from government. On the basis that in the Carbon Capture and Storage (CCS) model NSTA costs were recouped from government for approximately the first 5 years, we assume here that additional NSTA costs will be recouped from government for the first 5 years, and all costs will be met by business in the last 5 years of the assessment period. However, the decision whether to recoup costs from business for hydrogen PWAs and storage licences, and the timeframes involved for this decision, are highly uncertain and will depend on the how the hydrogen economy develops.

For this reason, the NSTA costs in the last 5 years of the assessment period (2028-2032) are detailed in this section 'direct costs to business', and the NSTA costs in the first 5 years of the assessment period (2023-2027) are detailed in the section 'wider impacts and transfers'.

NSTA expect years 2028 to 2032 to be implementation phase (annual costs). Transport and storage costs in the implementation phase cover ongoing stewardship activity. For hydrogen storage more significant IT (transition costs) spend may be needed if a new platform is required, alongside stewardship activity.

		Implementation/Annual costs				
Year		**2028**	**2029**	**2030**	**2031**	**2032**
Hydrogen transport	***FTE***	2	2	2	2	2
	Admin cost	£200k	£200k	£200k	£200k	£200k
	Programme cost	£0	£0	£0	£0	£0

[table 1: NSTA transport costs 2028-2032]

		Implementation/Annual costs				
Year		**2028**	**2029**	**2030**	**2031**	**2032**
Hydrogen storage	***FTE***	3	3	4	4	4
	Admin cost	£300k	£300k	£400k	£400k	£400k
	Programme cost	£50k	£50k	£500K	£500K	£0

[table 2: NSTA storage costs 2028-2032]

These costs were summed, converted into present value terms, annualised and discounted at a rate of 3.5% to give the EANDCB in 2019 prices at £320,000.

Wider Impacts and Transfers

Cost to government

As described above, we assume costs are recovered over the first 5 years of this assessment period (2023-2027) from government.

NSTA expect years 2023 and 2024 to be a transition/set-up phase, and subsequent years to be implementation (annual costs). Set-up costs consist of admin resource to develop and put in place new processes and guidance, administer PWAs and storage licences, and include some IT enhancements needed to enable existing PWA portal to process hydrogen PWA applications. Costs in the implementation phase cover ongoing stewardship activity.

The total costs for transport and storage are £205,000 per year in 2023 rising to £400,000 per year in 2027.

		Set up/Transition		**Implementation/Annual costs**		
Year		**2023**	**2024**	**2025**	**2026**	**2027**
Hydrogen transport	***FTE***	1	1	2	2	2
	Admin cost	£100k	£100k	£200k	£200k	£200k
	Programme cost	£5k	£0	£0	£0	£0

[table 3: NSTA transport costs 2023-2027]

		Set up/Transition		**Implementation/Annual costs**		
Year		**2023**	**2024**	**2025**	**2026**	**2027**
Hydrogen storage	***FTE***	1	1	1	2	2
	Admin cost	£100k	£100k	£100k	£200k	£200k
	Programme cost	£0	£0	£0	£0	£0

[table 4: NSTA storage costs 2023-2027]

In addition to recouped NSTA costs, government will incur the cost for OPRED administering decommissioning powers relating to hydrogen pipelines and installations. While some of this cost will be covered by the fees businesses pay to OPRED described above, we expect the remaining additional cost of administration to be approx. £30,000 per year for decommissioning administration. This includes the cost of reviewing relevant applications such as PWAs and the subsequent administrative cost of issuing S29 notices under part IV of the Petroleum Act. Assumptions used are consistent with the scenario of up to 6 pipeline or installation S29 notices being issued each year. Based on existing powers, this is currently described as a ‘cost to government’. However, in the 2022 energy bill OPRED are seeking to charge for all services provided

to industry under Part IV of the Petroleum Act 1998, which would mean that the costs to OPRED noted here would be covered mostly by industry and therefore become a cost to business.

Wider benefits

The measures in the Offshore Hydrogen Regulation Consultation create an offshore hydrogen regulatory framework to enable UK first-of-a-kind hydrogen projects to proceed in taking financial investment decisions.

There are currently two proof-of-concept projects - both part-funded by the government's Low Carbon Hydrogen Supply 2 fund - which intend to build offshore hydrogen production facilities and pipe (sub-sea) hydrogen onshore. They cannot make financial investment decisions to progress their projects until this measure is passed.

We have not monetised the costs and benefits of those projects as the funding for the Low Carbon Hydrogen Supply 2 competition has already been accounted for. However, the wider impact of not passing this measure is that this funding, totalling £17.9m for the two projects, is blocked and the project benefits are not realised.

Expected benefits from these projects include:

- Contributing to the hydrogen production target to deploy up to 10GW production capacity by 2030 (subject to value for money and affordability), set out in the UK Hydrogen Strategy and the British Energy Security Strategy
- Helping to achieve the UK Net Zero target by 2030, through provision of low-carbon hydrogen production, which will be particularly important in supporting 'hard to electrify' UK industrial sectors
- Supporting job/skills creation within the United Kingdom and supporting local energy supply chains
- Supporting the growth of the hydrogen economy
    - Future offshore hydrogen production projects will have increased confidence to progress from seeing first-of-a-kind projects supported by the legislative change
    - Increased hydrogen production will incentivise deployment of hydrogen demand
    - Novel technologies will increase market competition
    - Future offshore hydrogen production project can learn from proof-of-concept projects

In the longer-term we expect that more projects may want to build offshore hydrogen pipelines and storage facilities as part of the hydrogen economy, and will benefit from this change in legislation. But since the hydrogen economy does not currently exist, we don't know how many projects there might be, when they would want to build, or their scale.

In addition, we expect the wider implications of this legislative change will include supporting the UK build its role in leading international innovation in hydrogen, and that, internationally, the UK is seen as an attractive place to invest in hydrogen.

Extending the scope of the existing regulatory regime will ensure that environmental impacts of first-of-a-kind projects are taken into account. It will also ensure that the decommissioning of hydrogen pipelines and storage installations will be consistent with the current oil and gas and CCUS regime. This regime aims to achieve effective and balanced decommissioning solutions, which are consistent with international obligations and have a proper regard for safety, the environment, other legitimate users of the sea, economic and social considerations as well as technical feasibility.

Impacts on International Trade and Investment

The size and nature of trade in hydrogen is highly uncertain given the present immaturity of the market, though it seems unlikely that there will be significant international hydrogen trade before 2030 given infrastructure lead-in times and technical barriers. Therefore, on grounds of simplicity and proportionality, we did not monetise trade and investment impacts of the measure.

Impacts on Small Businesses

We do not expect disproportionate costs on small businesses. Given cost, scale and technical barriers, we anticipate that builders of hydrogen offshore pipelines will be relatively larger businesses rather than smaller ones.

Family Test

We do not expect any impacts on families, as this measure is focused on businesses rather than individuals and households. Households will not build offshore pipelines or storage facilities and will not directly interact with those businesses who do; therefore, households and families will not be affected by this measure.

Public Sector Equality Duty (PSED) Test

We do not expect any impacts on those with protected characteristics. There are no disproportionate impacts currently identified for any of the PSED groups which include: Age, Marriage/Civil Partnership, Religion or Belief, Sex, Gender Reassignment or Sexual Orientation PCGs, Disability, Race and Pregnant/Maternity PCGs. This measure impacts directly on businesses rather than individuals and is focused on production and use of a good (hydrogen) which will not be consumed by individuals.

Review Provision

There is not expected to be a significant annualised net impact on business: this measure will have less than +/- £5 million net annualised impact. Therefore, we think it appropriate and proportionate for the scope of the review provision to align with the regulation as amended (rather than purely the effect of the amendment).

Statutory Review Provision	Yes ☐ No ☒
Non-Statutory Review Provision	Yes ☐ No ☐
Ministerial Statement	Yes ☐ No ☐
Review period (if applicable)	