

Legal Issues in Transportation and Storage of Hydrogen

All-Energy/Dcarbonise 2023



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Hydrogen H_2

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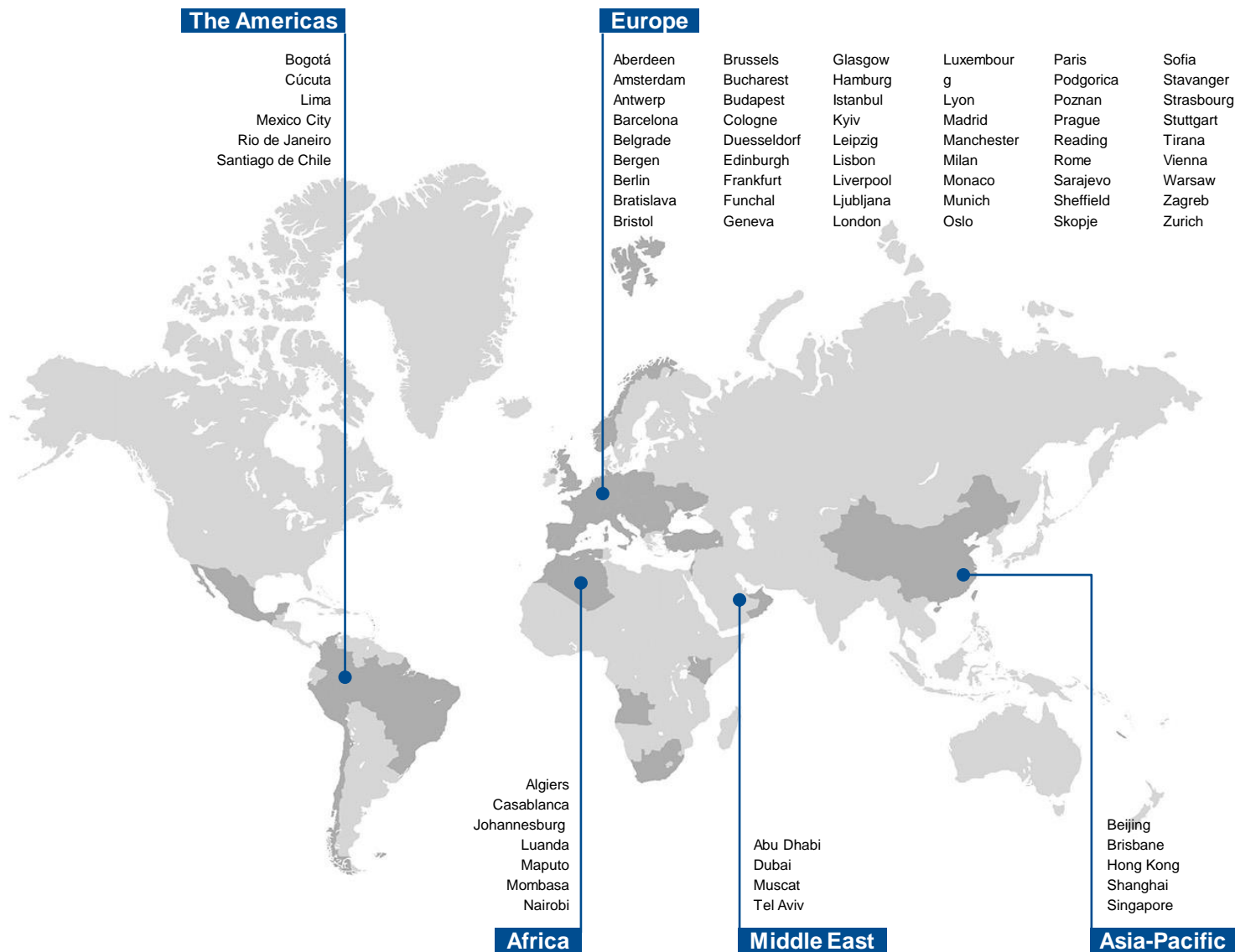
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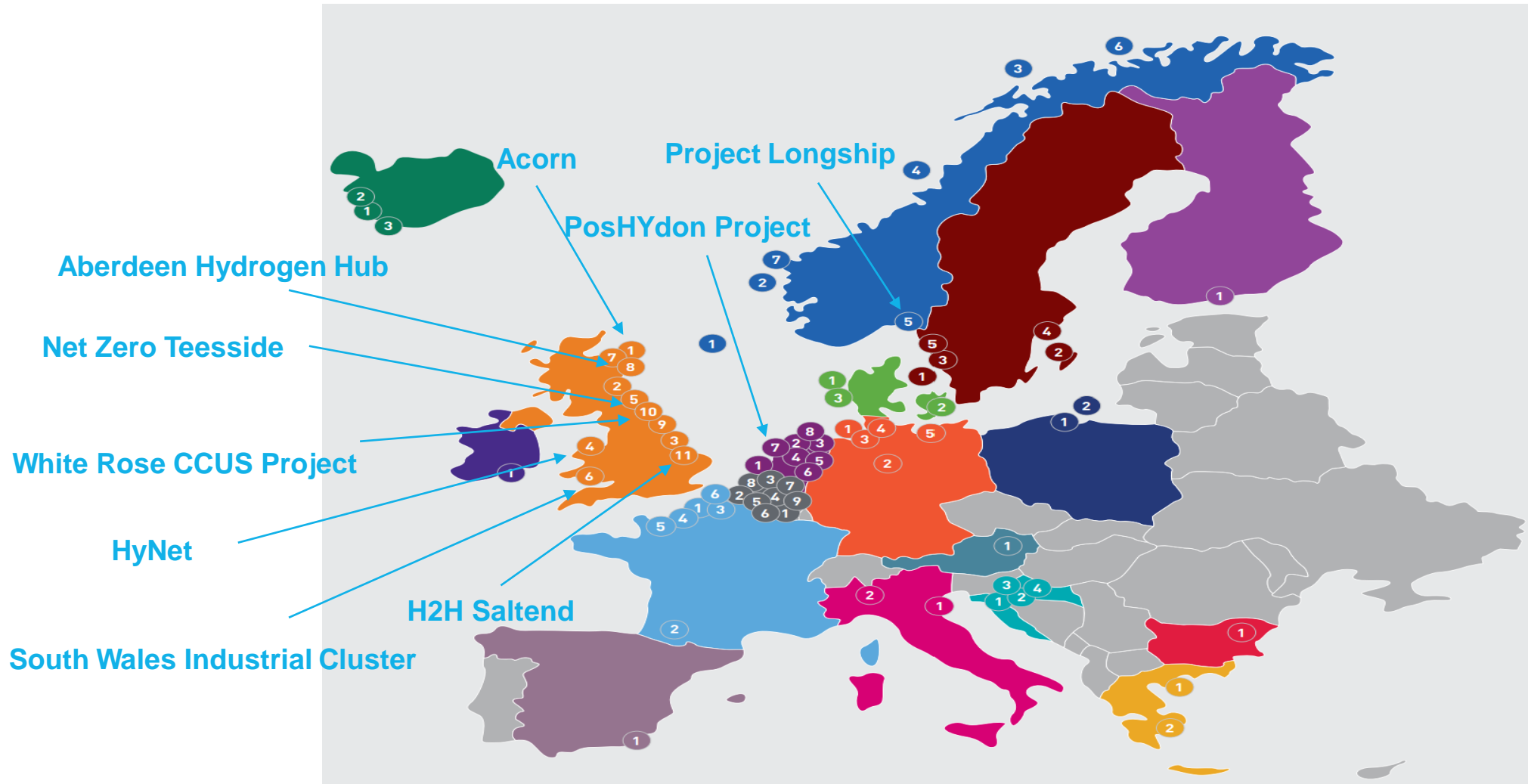
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Proposed Support for Hydrogen T&S

Business model design options for **large scale T&S**

- Consultation ran from 31 August – 22 November 2022, awaiting decision.
- Hydrogen is a “gas” for the purposes of the Gas Act 1986, regulatory requirements that apply to the transportation, shipping, supply and storage of natural gas may also apply to hydrogen.
- May result in amendments to the Gas Act 1986, Uniform Network Code, Energy Act 2008 and Gas Safety Management Regulations
- May establish new primary and secondary legislation such as a Hydrogen Network Code

Regulated returns	Regulated Asset Base with allowed revenue	Revenue cap and floor	
Contractual payment	Capacity Availability	Government offtake front stop/long term capacity booker	CfD
Other	Co-investment by Government	Long term financing arrangements (underground gas storage facilities only)	Merchant / counterfactual model
Obligations	Compulsory stock obligation (storage only)	All options being considered	
End user subsidies	End user subsidy (storage only)		



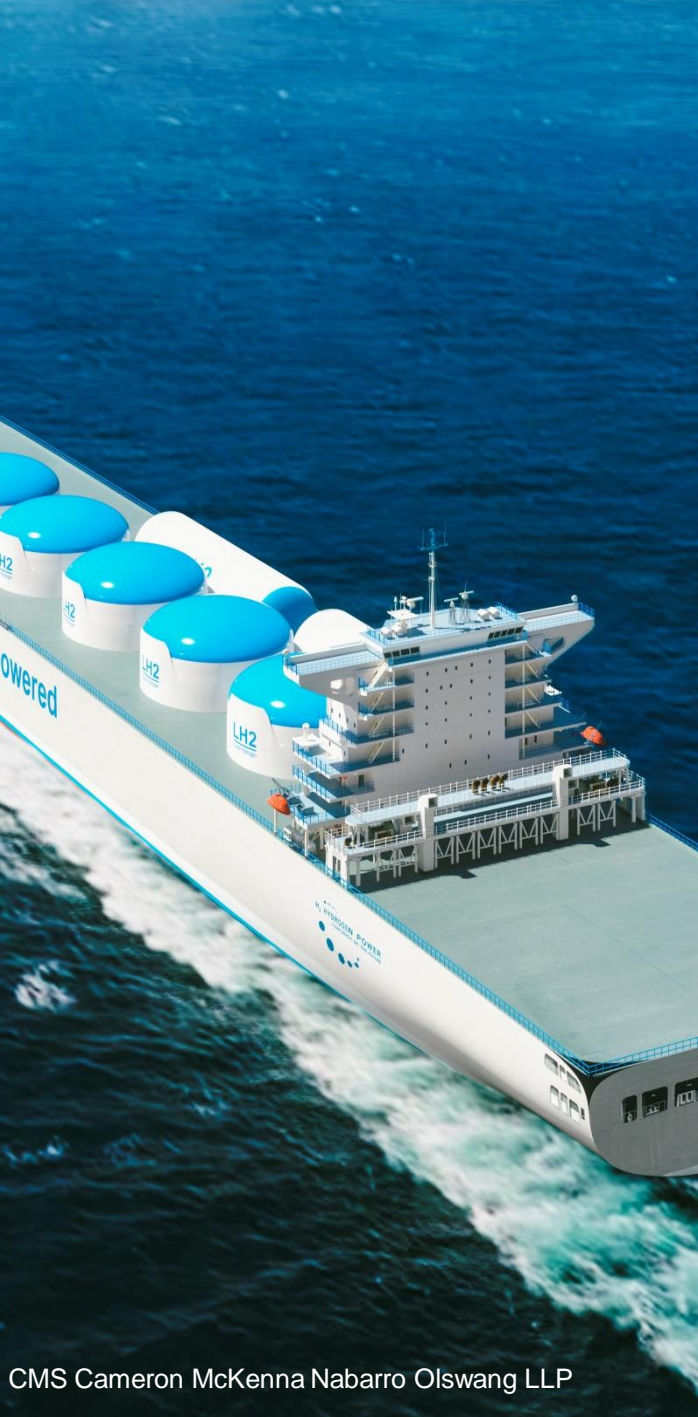
Support for Hydrogen Transport

Small-scale transport (as yet undefined) supported through HBM.

Key points to note:

- Must be owned (but not operated/constructed) by Producer
- Capex expenditure included in LCHA payment mechanism, but opex excluded

Road or Rail	<ul style="list-style-type: none">• Carried as a gas, liquid or through a carrier.• Suited to transport lower volumes over shorter distances, or medium distances with rail• Regulated through ADR• Transporting hydrogen 100km by road could cost up to £1.46/km, whereas transporting hydrogen 100km via a pipeline is expected to cost a maximum of £0.19/km
New or repurposed pipeline	<ul style="list-style-type: none">• Purpose-built to transport hydrogen or repurposed from existing natural gas pipelines to transport hydrogen.• Can carry a range of volumes over varying distances, most likely as a gas or through a carrier.• DESNZ consulting on models – TRI model under development
Sea	<ul style="list-style-type: none">• Most likely carried through a carrier.• Suited to transport higher volumes over long distances.• Likely to see the need for transport via sea for the international trade of hydrogen



Hydrogen Storage

- Initially covered by HBM in respect of “small-scale”
- BEIS’ initial view is to provide support to prospective owners of storage facilities, who would not benefit from the LCHA or the RTFO and would therefore have exposure to volume risk.
- Key regulatory considerations:
 - Gas Safety (Management) Regulations 1996
 - Pipeline Safety Regulations (1996)
 - COMAH

Types of hydrogen storage under consideration:

Depleted gas or oil fields

Salt caverns

Rock caverns

Aquifers

Containerised compressed H₂

Containerised liquified H₂

Hydrogen carriers

Metal hydrides



Legislative Proposals for Offshore Hydrogen T&S

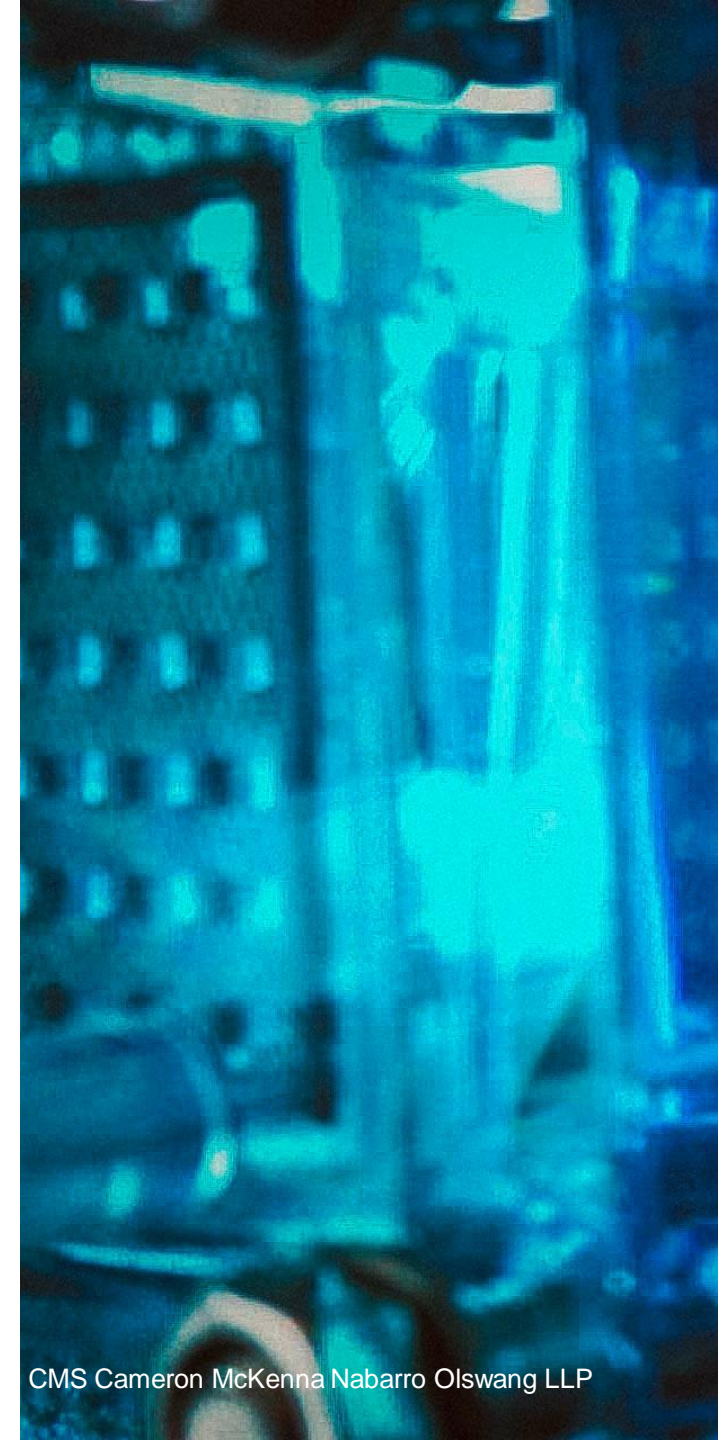
The Consultation focuses on two particular areas for legislative change:

- (1) the granting approval for the construction; and
- (2) the operation of offshore pipelines and the licensing of offshore hydrogen storage.

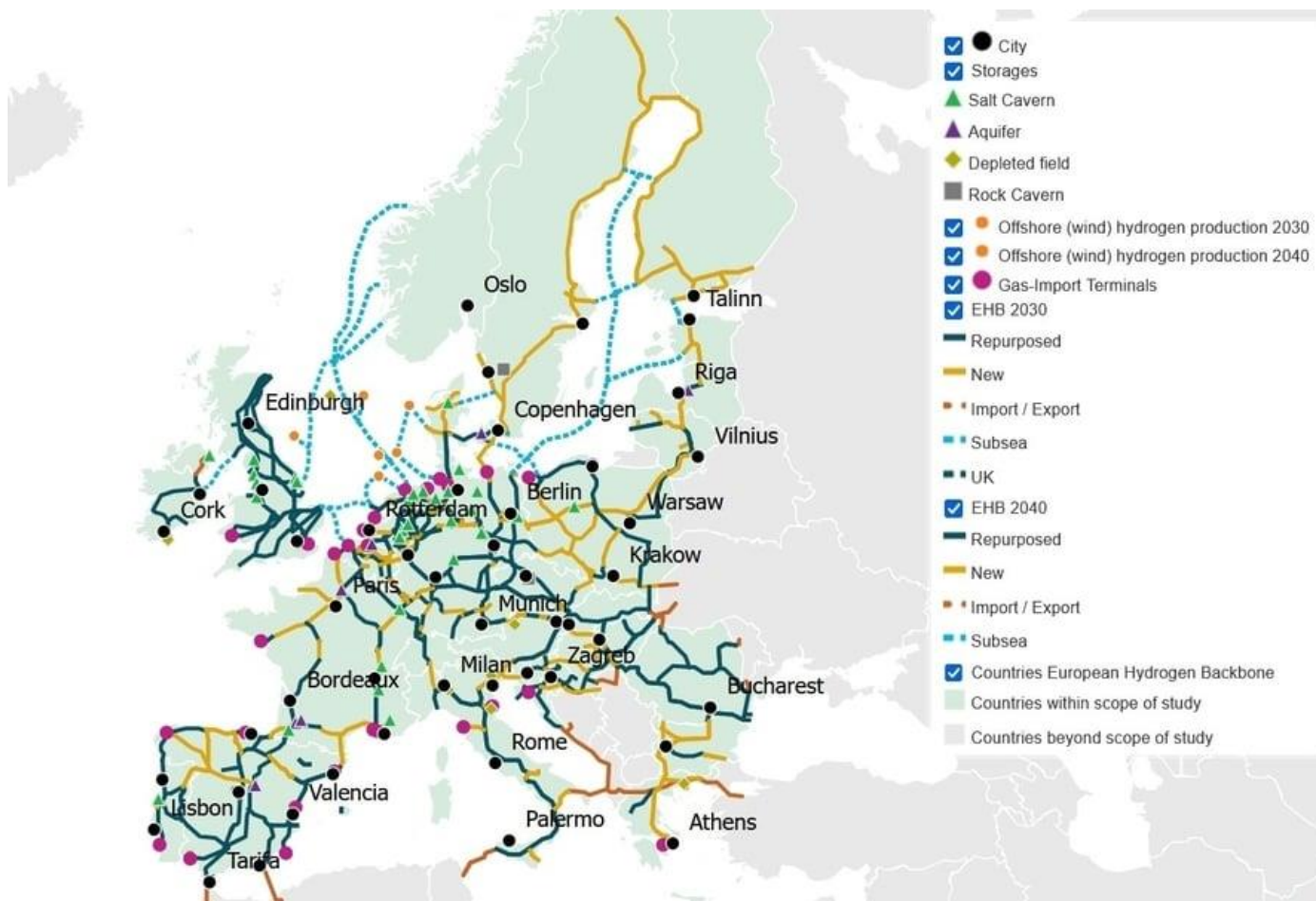
	DESNZ Proposal
Construction and use of offshore hydrogen pipelines	DESNZ is proposing to extend the scope of the Petroleum Act to give the NTSA powers to award Pipeline Works Authorisations in relation to the construction and use of subsea pipelines for offshore hydrogen pipelines
Offshore storage licensing	DESNZ proposes to extend the existing law to designate hydrogen as a ‘gas’ under s2(4) of the Energy Act 2008. This would enable the NTSA to issue offshore licenses for hydrogen importation and storage projects.
Decommissioning	<p>If DESNZ’s proposal to extend the scope of Petroleum Act is accepted, then it would mean that the hydrogen pipelines would fall with the decommissioning provisions.</p> <p>Designation under section 2(4) of the Energy Act 2008 would mean that 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.</p>

Low Carbon Hydrogen Certification

Characteristic	Description
Scheme design	Emissions threshold and methodology for calculating production emissions; factual disclosure and labelling
Chain of custody	Mass Balance Chain of Custody: allows certified and non-certified hydrogen to be mixed along the supply chain with low carbon hydrogen certificates also passed along the supply chain until a consumer takes the certified hydrogen out of the system
Delivery and administration	Information requirement for the scheme certificates is to be aligned with the reporting requirements for other funding schemes, such as the NZHF and HPBM/LCHA. Monthly data reporting and annual audits. Certification body to be set up to manage certificates and IT registry etc.



Hydrogen Backbone in Europe



Q&A



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