Playing Consenting Catch-up: Developing a strategy to align the UK regulatory framework with targets for green hydrogen

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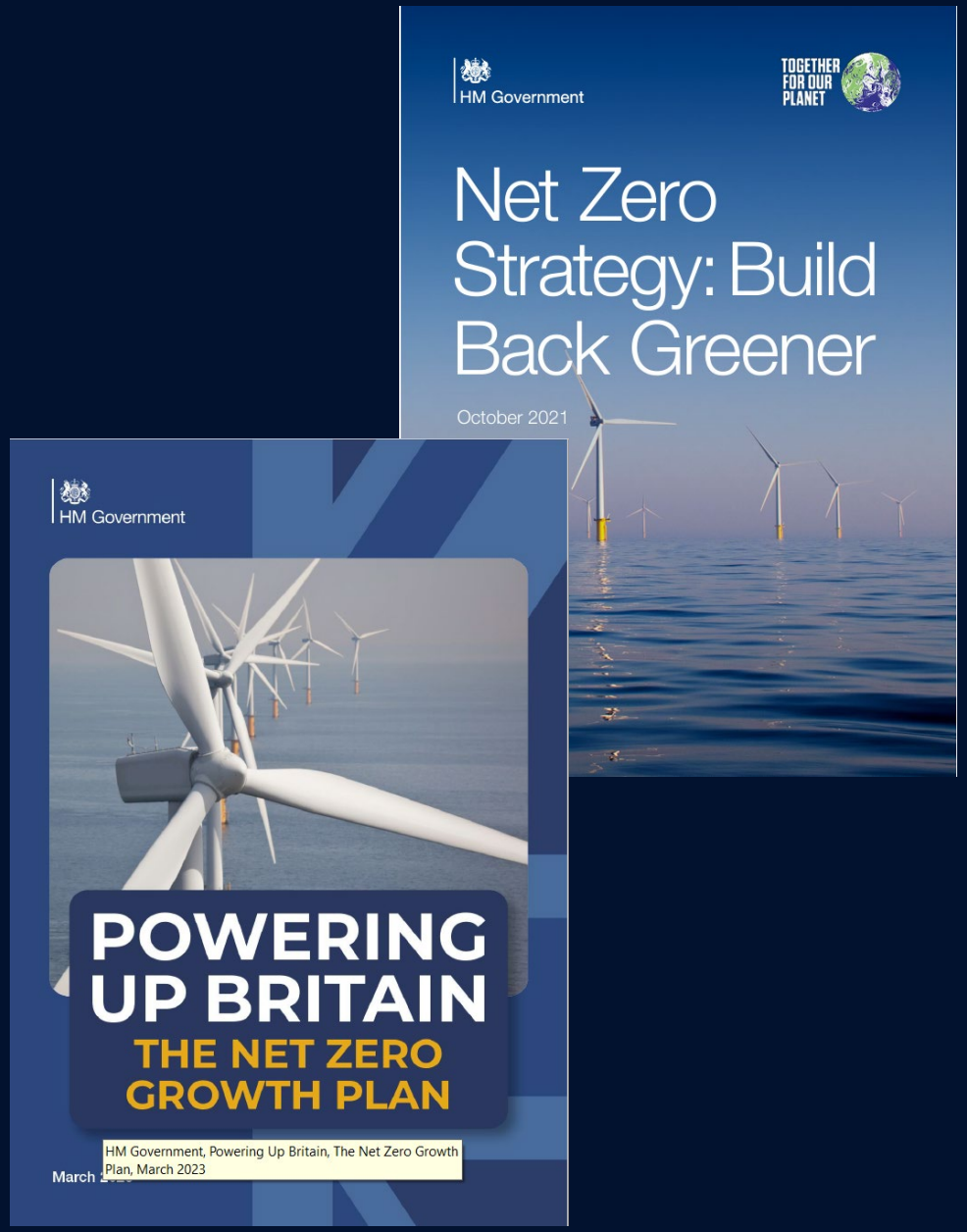
Contents

1) The Path to Net Zero

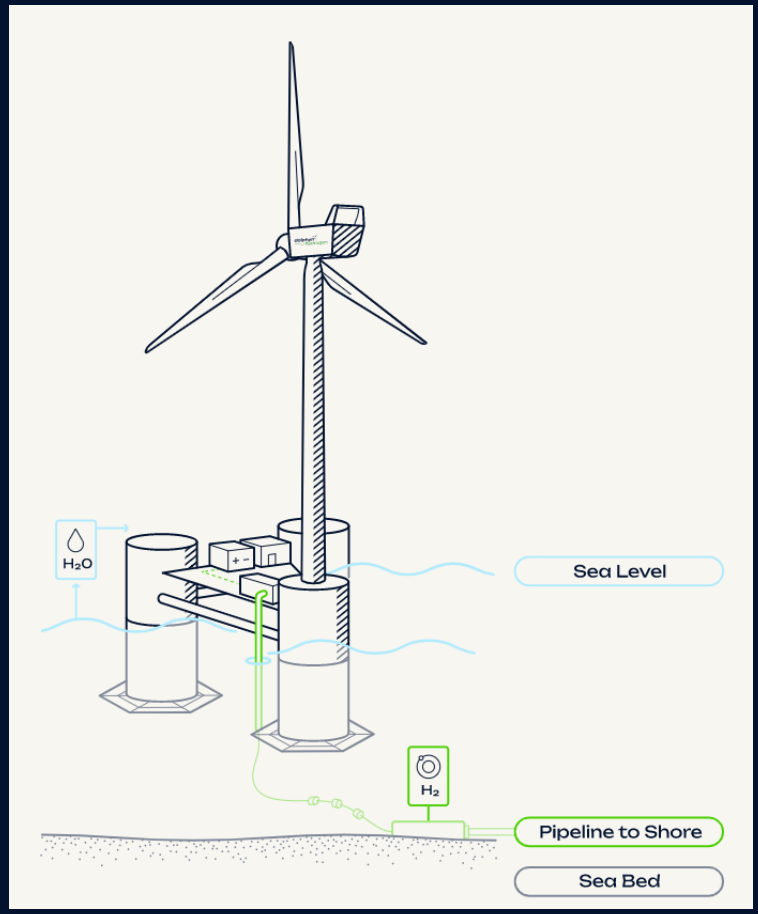
- 10GW low carbon hydrogen production capacity by 2030, at least half from electrolytic hydrogen
- £240 million NZHF in April 2022 and the first electrolytic hydrogen allocation round in July 2022



2) Dolphyn Hydrogen

Dolphyn Hydrogen

- Under development for over 5 years with funding from the UK, Welsh and Scottish Governments, currently going through FEED.
- Scalable, modular concept producing ultra low carbon hydrogen without the need for an electrical grid connection.
- Desalination unit removes salts and impurities from seawater before it goes into the electrolyser.
- The wind power from the turbine generates the electricity to power all of the equipment, including the electrolyser.
- Hydrogen is then transported to the seabed before being brought to shore, to areas of high energy demand.
- The use of floating wind technology allows Dolphyn to be located in areas of deep water where wind resources are optimum.
- Offshore, the transport of hydrogen to shore is less expensive than electricity and the hydrogen pipeline itself also provides storage capacity.



https://vimeo.com/809145552

3) Offshore Hydrogen Consenting

Gas or not?

- Marine Licence normally required for 'licensable marine activity' from the relevant marine regulator ie Scottish nearshore waters = Marine Scotland.
- However, hydrogen is a "gas" under the Gas Act, therefore a hydrogen pipeline is a reserved matter.
- But hydrogen is not a gas under the Energy Act, so the Petroleum Act does not apply.
- Larger projects may also be classed as Nationally Significant Infrastructure (NSIP), requiring a Development Consent Order (DCO); however thresholds and applicability vary across nations.
- A DCO also does not apply to a marine pipeline…

  …although it could be 'Associated Development….

  …but it would still need a Marine Licence in Welsh waters…

  …and there's no DCO regime in Scotland…

  …and it's different again in Northern Ireland ☹

4) Government (DESNZ) Consultation

Consultation Key points

- Covers hydrogen transport and (subsurface) storage
- Brings offshore hydrogen pipelines within scope of Part 3 of the Petroleum Act, as well as the decommissioning provisions in Part 4.
- Includes hydrogen under the definition of combustible gas in the Energy Act, therefore also pulls in hydrogen storage.
- NSTA and OPRED would become the principal offshore regulators for hydrogen transport and storage.
- Still evolving.

Pros and cons...

5) Dolphyn Hydrogen next steps

2023

Small Scale trials in Milford Haven, South Wales

Commercial Scale demonstrator, Aberdeen Scotland

2025

2028

First commercial scale array in the Celtic Sea

Gigawatt scale expansion

2030's

Milford Haven Dolphyn Trials (2023)

- Pre-consented Marine Energy Test Area near Pembroke Port
- End-to-end hydrogen production test from seawater intake, through desalination and PEM Electrolyser
- Monitor key parameters such as electrolyser start-up and shut down, ramp rates, power consumption and hydrogen quality under variable sea conditions

dolphyn hydrogen

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