

Competition, Conflict and Consequences: **Offshore Geospatial Planning** for the Energy Transition

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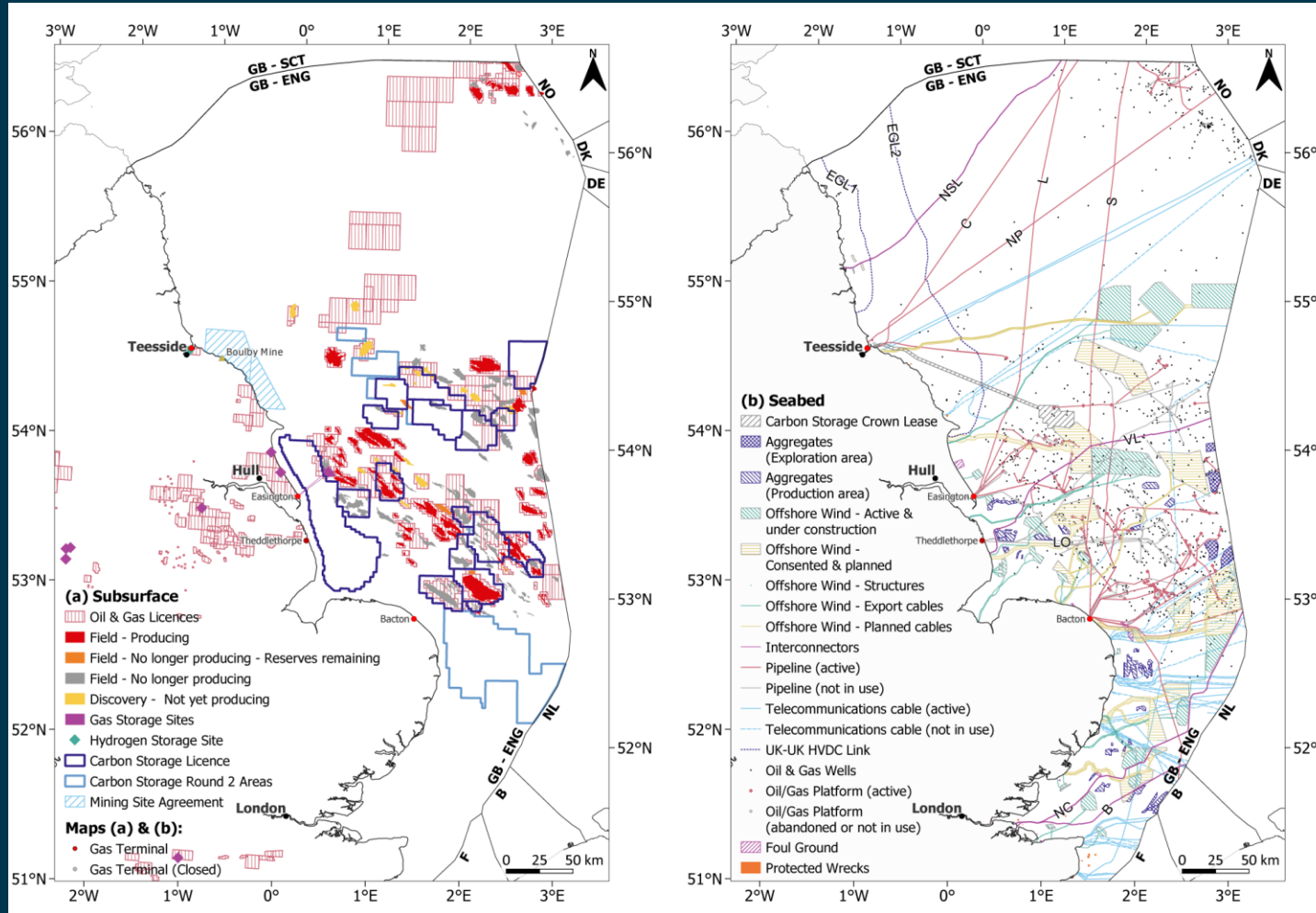


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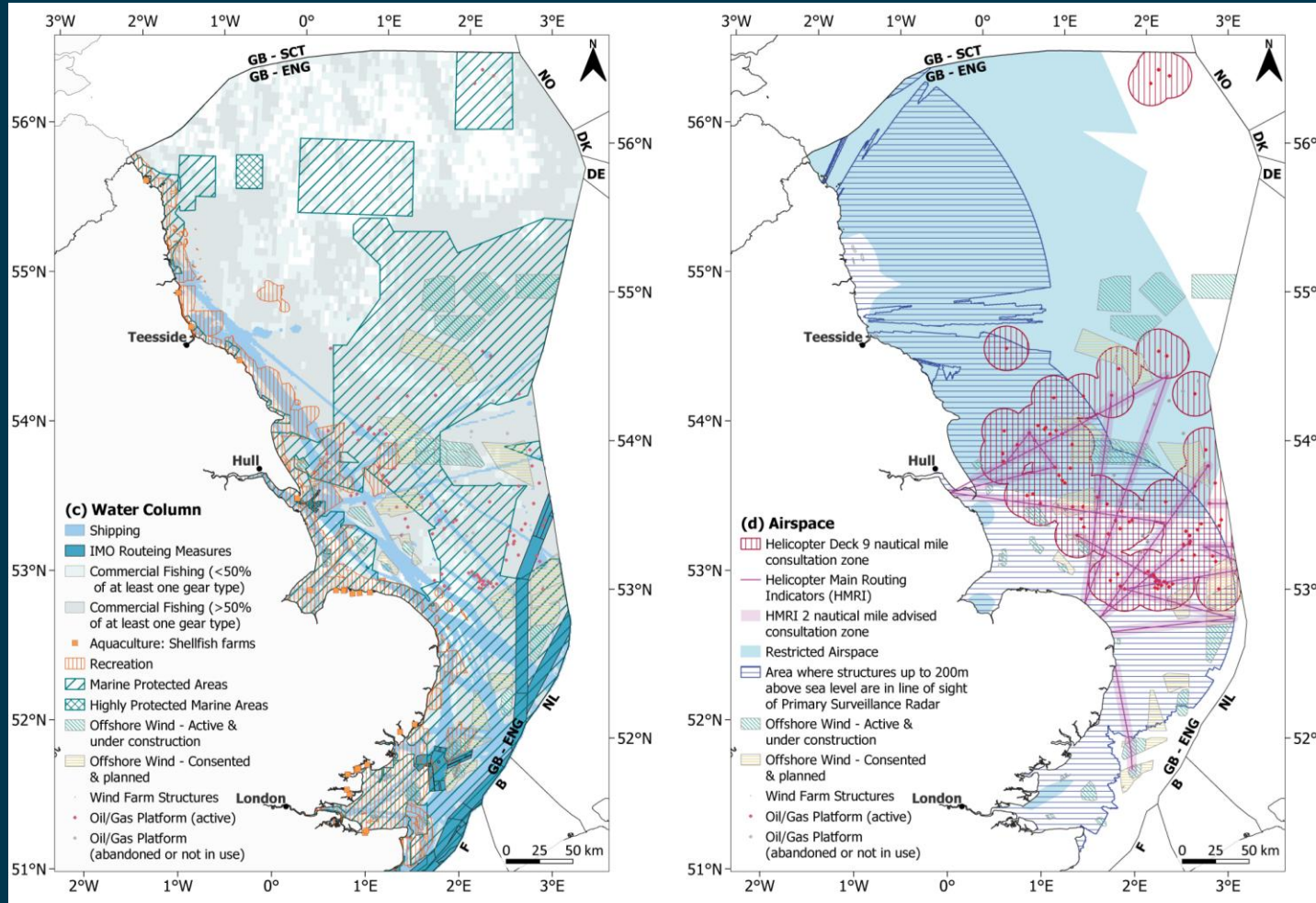
Offshore Geospatial Planning

- **The Energy Transition is driving an intense yet largely unrecognised competition for offshore space;**
- **Despite need for the subsurface, its importance for energy security and storage is often ignored;**
- **An increasing number of conflicts have emerged;**
- **Southern North Sea exemplar demonstrates the use of the subsurface, sea-bed, water column and airspace;**

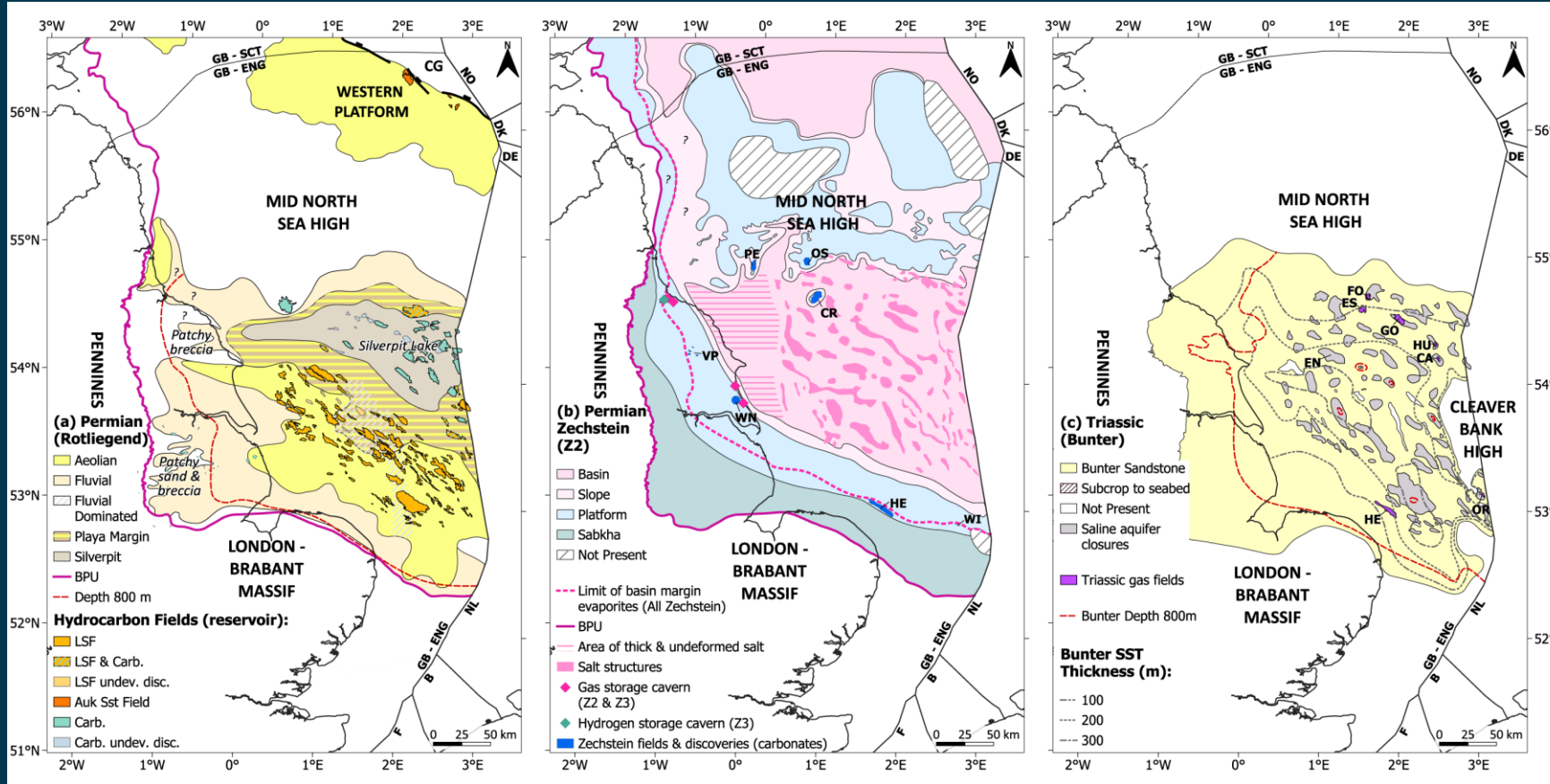
Subsurface and Seabed Use



Water Column and Airspace



Technical Evaluation

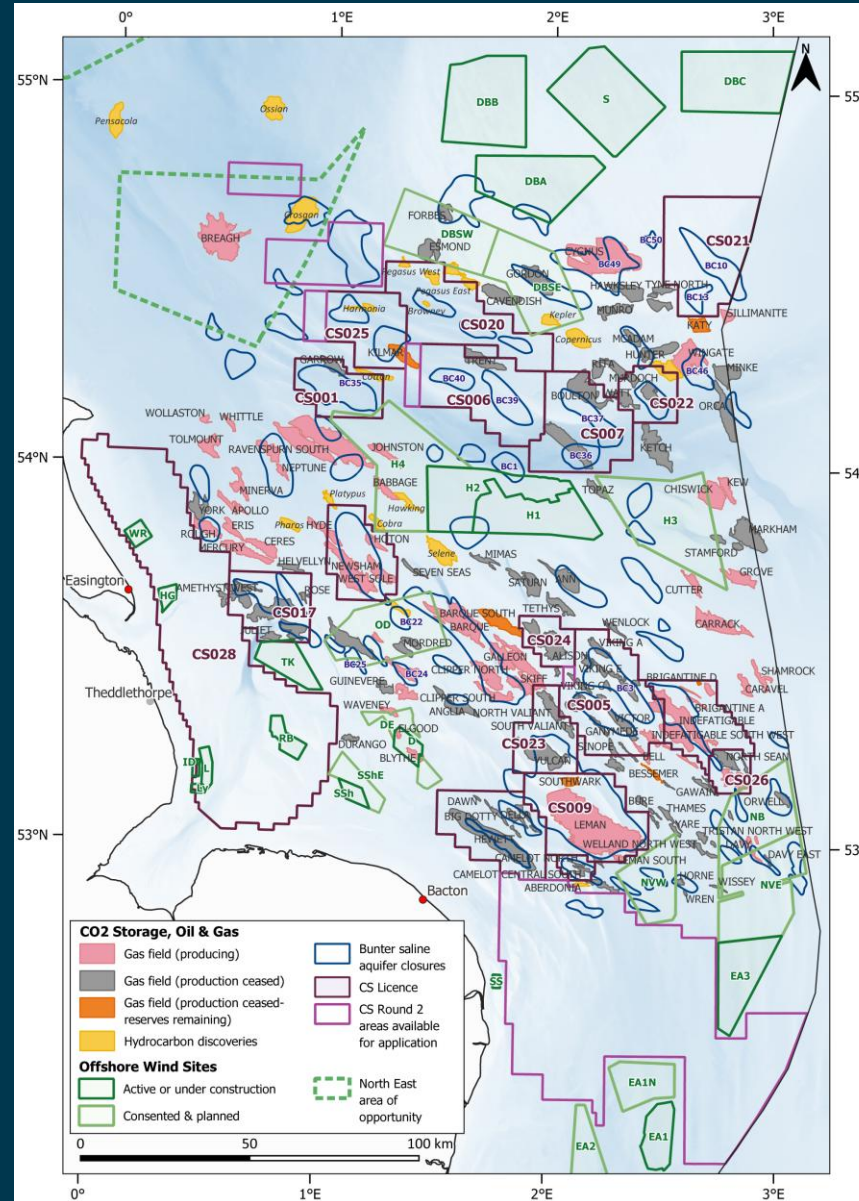


Geology dictates subsurface site locations

Wind, Carbon Storage & Gas

Overlaps between offshore wind with potential carbon storage sites and undeveloped hydrocarbon discoveries.

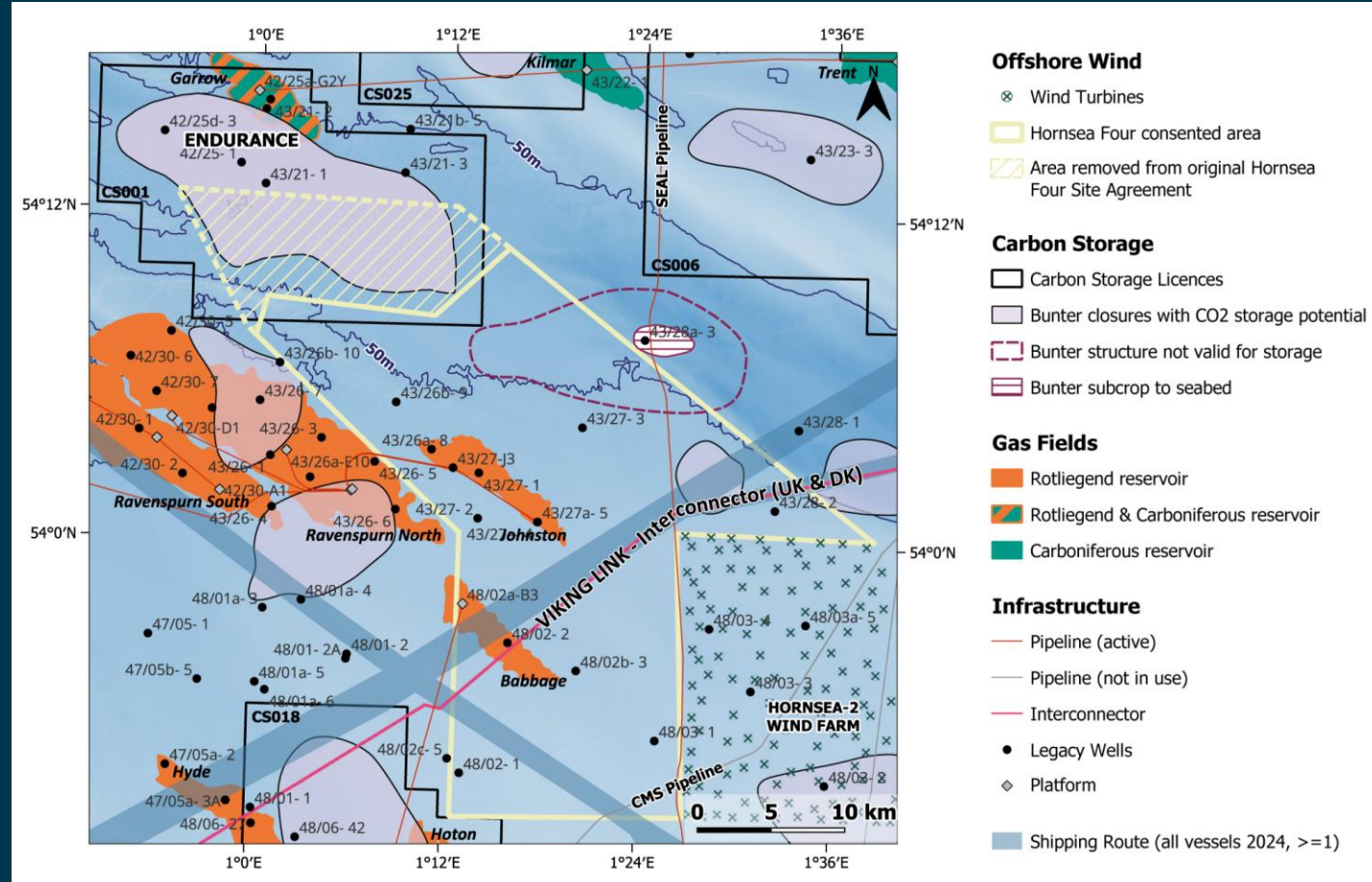
Licensed and leased areas correct as of February 2025



Wind and Carbon Storage

Example of the technical challenge associated with presence of multiple sectors within the area of the Hornsea-4 wind lease.

Shows the area of lease that was pared back to avoid overlap with the Endurance CCS site

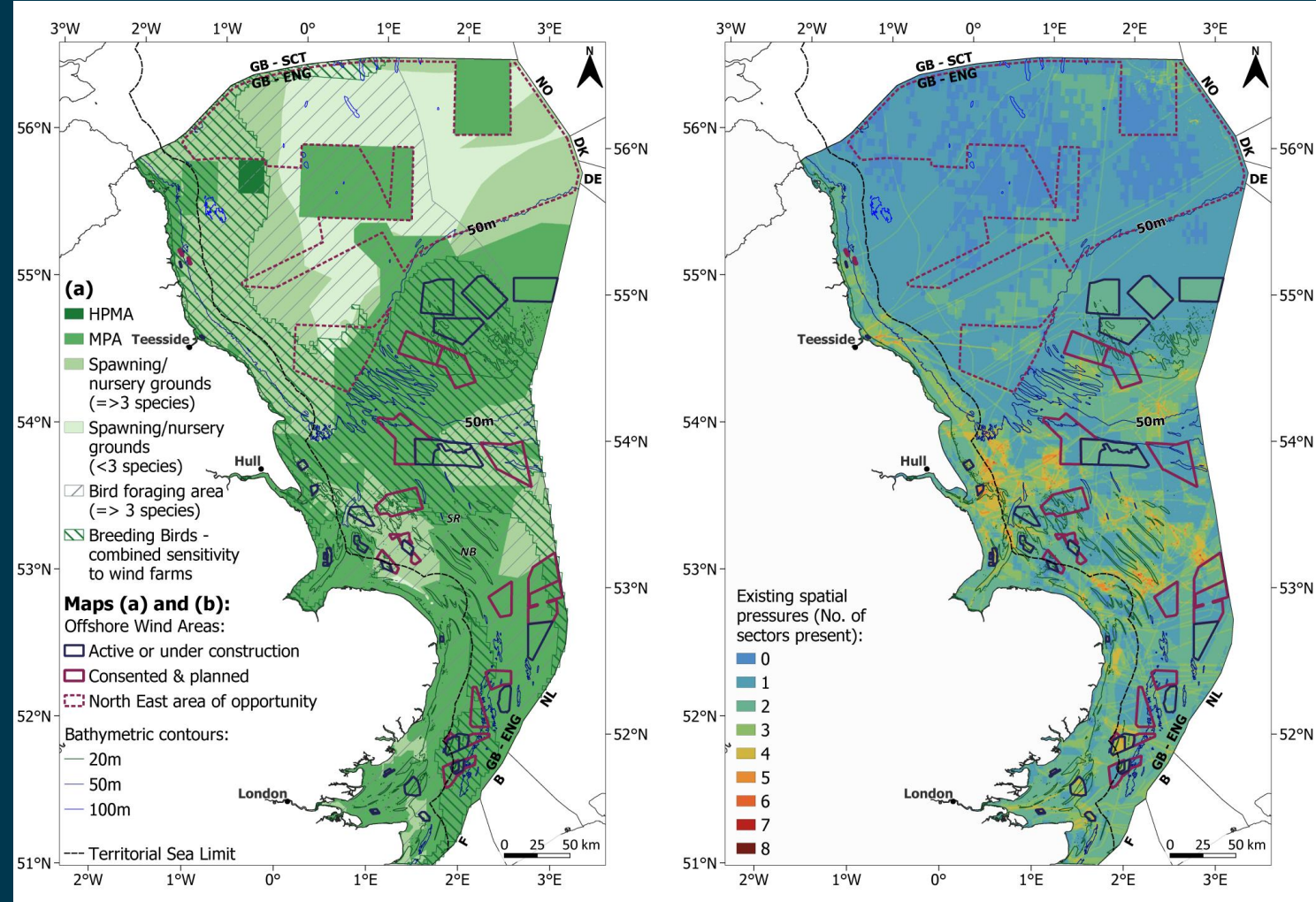


Hornsea-4 and NEP

Don't forget the fish

Loss and displacement of fishing grounds;

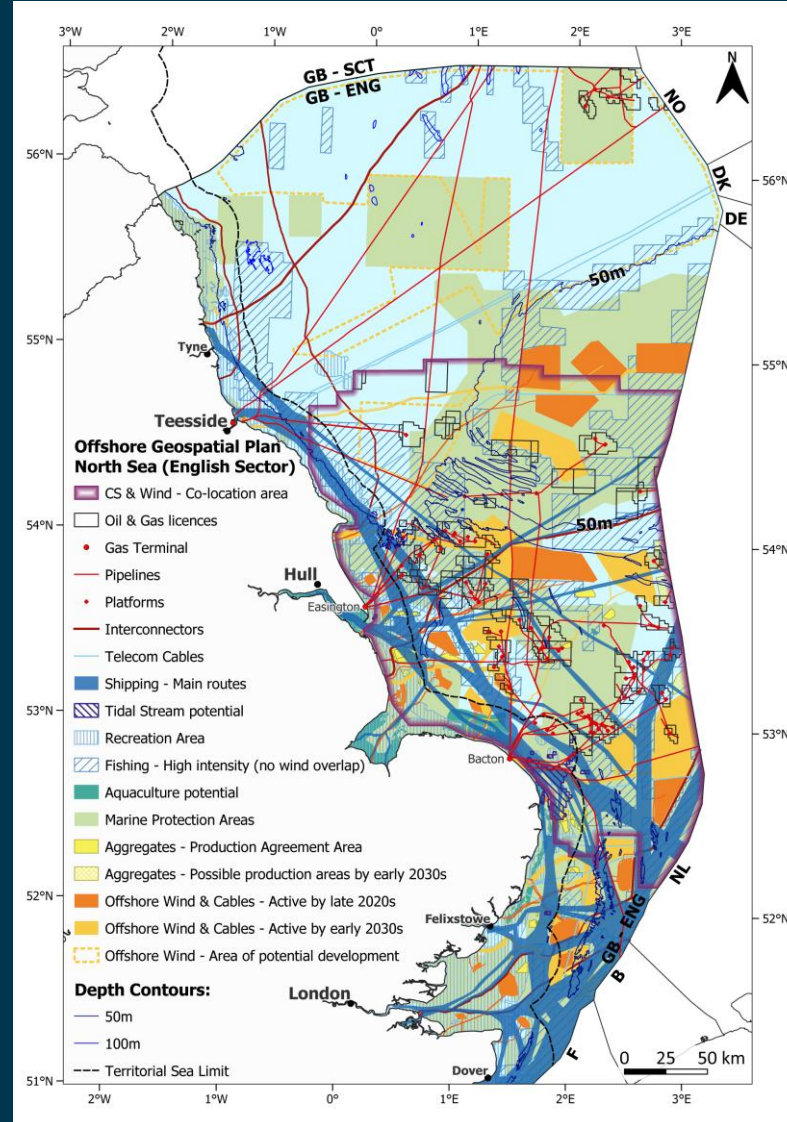
- Increased human impact on ecosystems and biodiversity, challenges for navigation, decommissioning and safety at sea



Towards an integrated Offshore Geospatial Plan

Indicative offshore geospatial plan for the ENS c.2030

Areas where emerging technology and innovation could contribute to multi-sectoral use through co-location solutions



Conclusions

- **Technical evaluation of the subsurface should be given priority;**
- **Recognition of the conflicts and trade offs involved;**
- **Offshore wind currently too prejudicial;**
- **Need to reserve and protect areas be they for fishing, oil and gas operations, carbon storage, shipping routes;**
- **Applicable to other areas of the UKCS and internationally;**

**Hamilton, R.V. & Underhill, J.R. 2026.
<https://doi.org/10.1144/gslbooks2025-35>**

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Recommendations



- **Need to shift away from single sector view to more holistic one;**
- **If left unresolved, the issues we have identified will cause delay and conflicts that threaten energy transition and net zero targets;**
- **Proposed solutions are to introduce legislation that promotes co-ordination between and across sectors;**
- **Best done by having a unified licensing regime governed by a single overarching regulator that receives all the data and evidence to make the best technically informed decision;**

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To find out more...

The screenshot shows the University of Aberdeen website. At the top left is the university logo with the year 1495. The main navigation menu includes Study, About, Research, Alumni & Giving, Business, and Quick Links, along with a search bar. The URL <https://www.abdn.ac.uk/research/interdisciplinary/> is displayed in the address bar. Below the navigation is a dark blue bar with the word "Research" and a sub-menu with items like "Explore our Research", "Impact", "Institutes and Centres", "Facilities", "Support", "Jobs", "REF 2021", and "Digital Research". A breadcrumb trail reads "University Home / Research / Explore our Research / Energy Transition". The main content area features a large banner for the "INTERDISCIPLINARY RESEARCH CHALLENGE Energy Transition" with the text "Bringing together Energy Transition research from across the University" and two buttons: "Download our Brochure" and "CET at SPE Offshore Europe". To the right, a dark blue box contains the text "BREAKING BOUNDARIES Interdisciplinary Institute" and "The home of our groundbreaking interdisciplinary research". Below this, the Interdisciplinary Institute logo is shown next to three ranking achievements: "1ST IN SCOTLAND", "2ND IN THE UK", and "TOP 10% WORLDWIDE", all from "THE Interdisciplinary Science Rankings 2025".