

Urgency and uncertainty

Strategic planning for the North Sea

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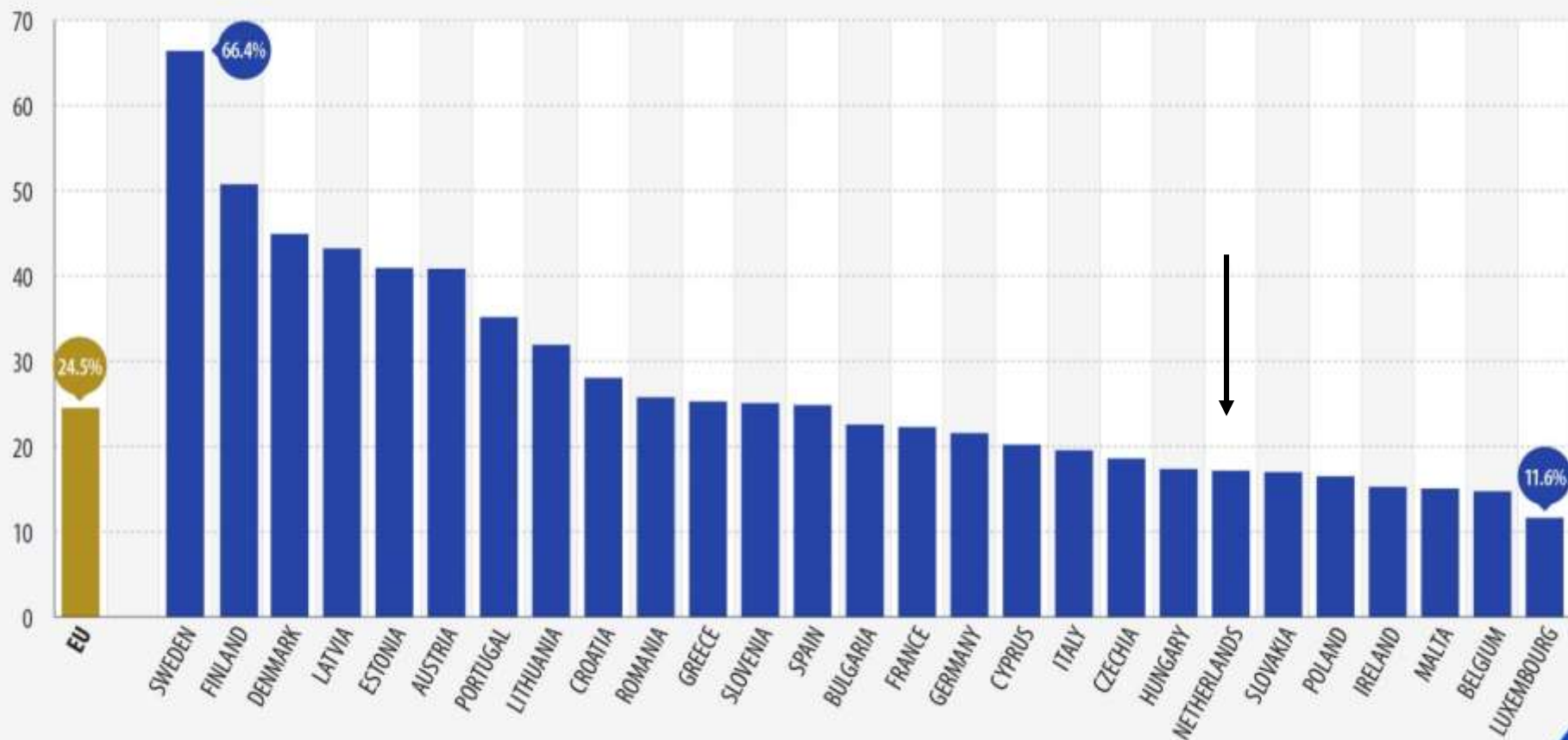
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Share of energy from renewable sources in 2023

(%)



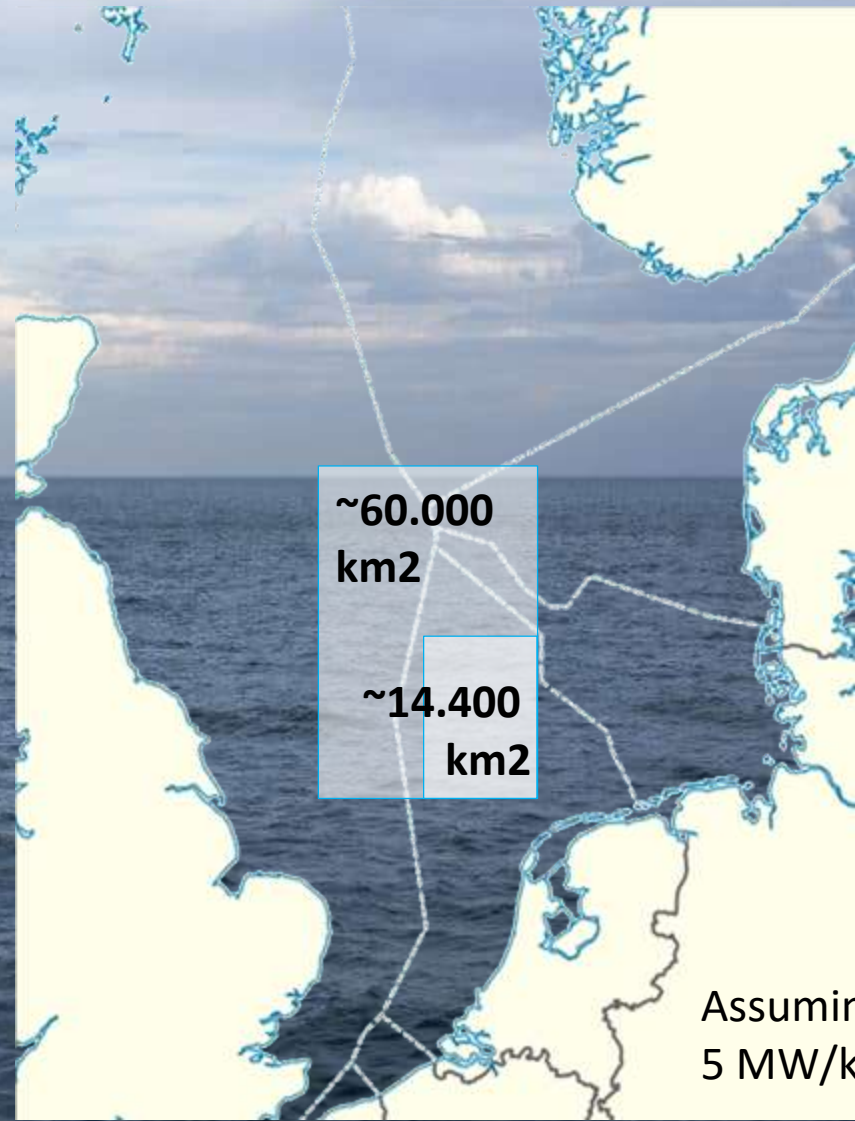
The North Sea

North Sea: 33GW to 300+ GW

Netherlands: 4,7GW to 70+ GW

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The North Sea



‘sustainable blue economy’

Food transition



Nature transition



‘good ecological status’
30% protected areas

~60.000
km²

~14.400
km²

Assuming
5 MW/k



The North Sea

Do we have enough ecological space?

Do we have enough physical space?

Do we have enough institutional capacity?

Ecological space

Taking an 'ecosystem based approach'

Develop 'within the boundaries of the ecological system'

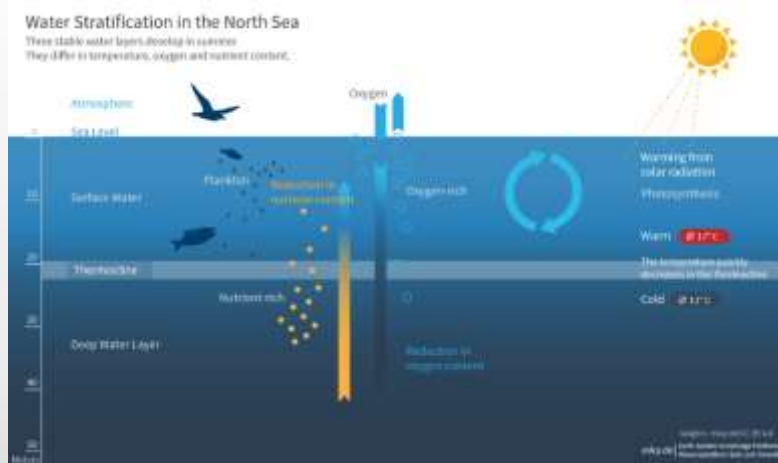
But what does it mean?

- Contested interpretations
- Limited legal clarity
- Hard to operationalize



Ecological space

And available ecological knowledge & methods are a challenge



MONS



Modellering van
ecosysteemeffecten

2031 scenario voor Kader
Ecologie en Cumulatie (KEC 5.0)

Science – Policy interface

“different attitudes towards knowledge between systems of research and policy” due to “incompatibility of roles, goals, and workways” (De Vries et al. 2024)



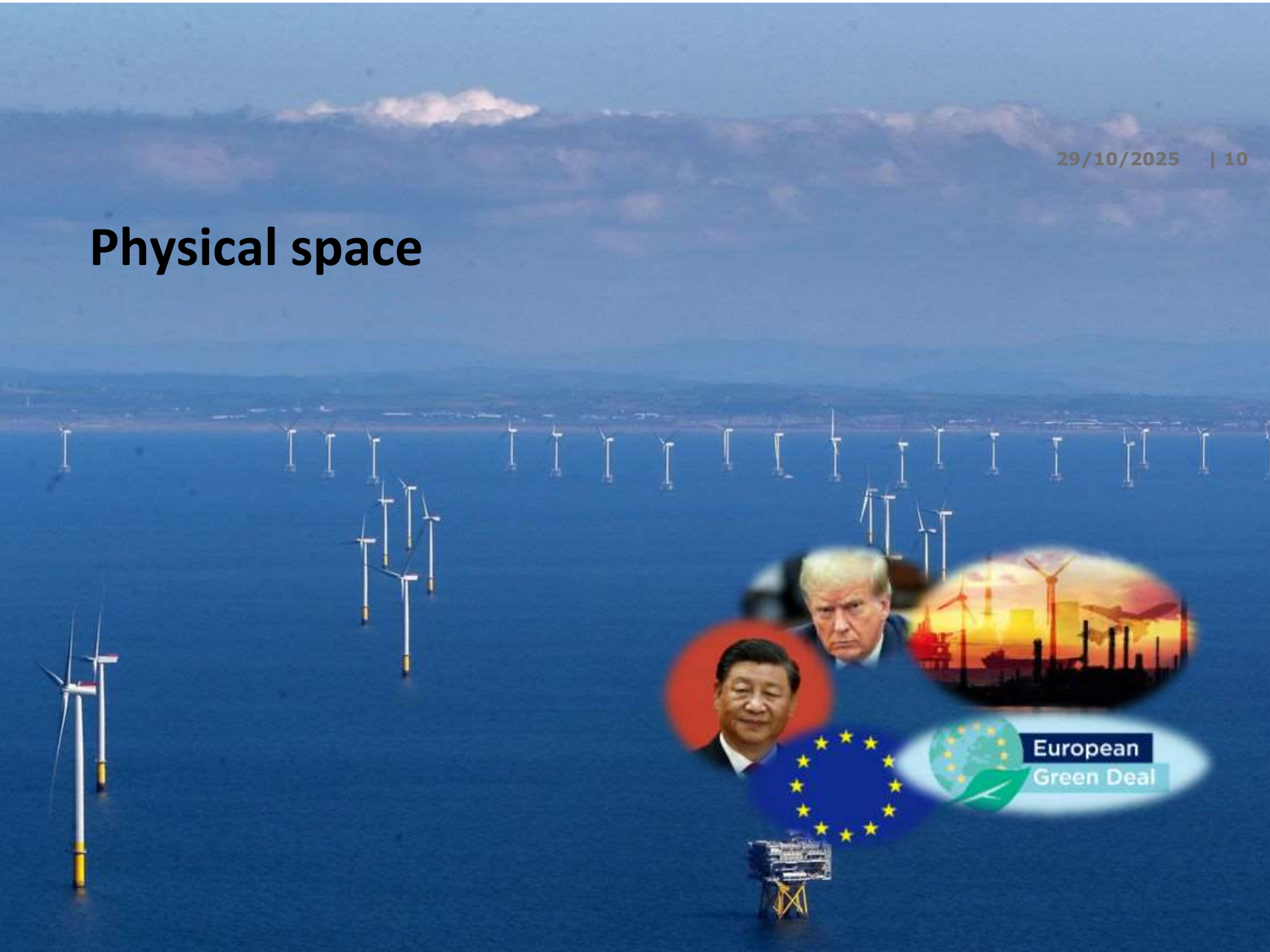
Research, produces knowledge scientifically

Time depends on question
Needs to be correct
See the whole ecosystem
Uncertainty needs to be included

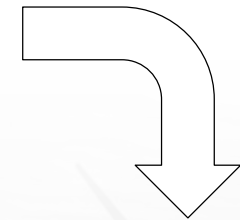
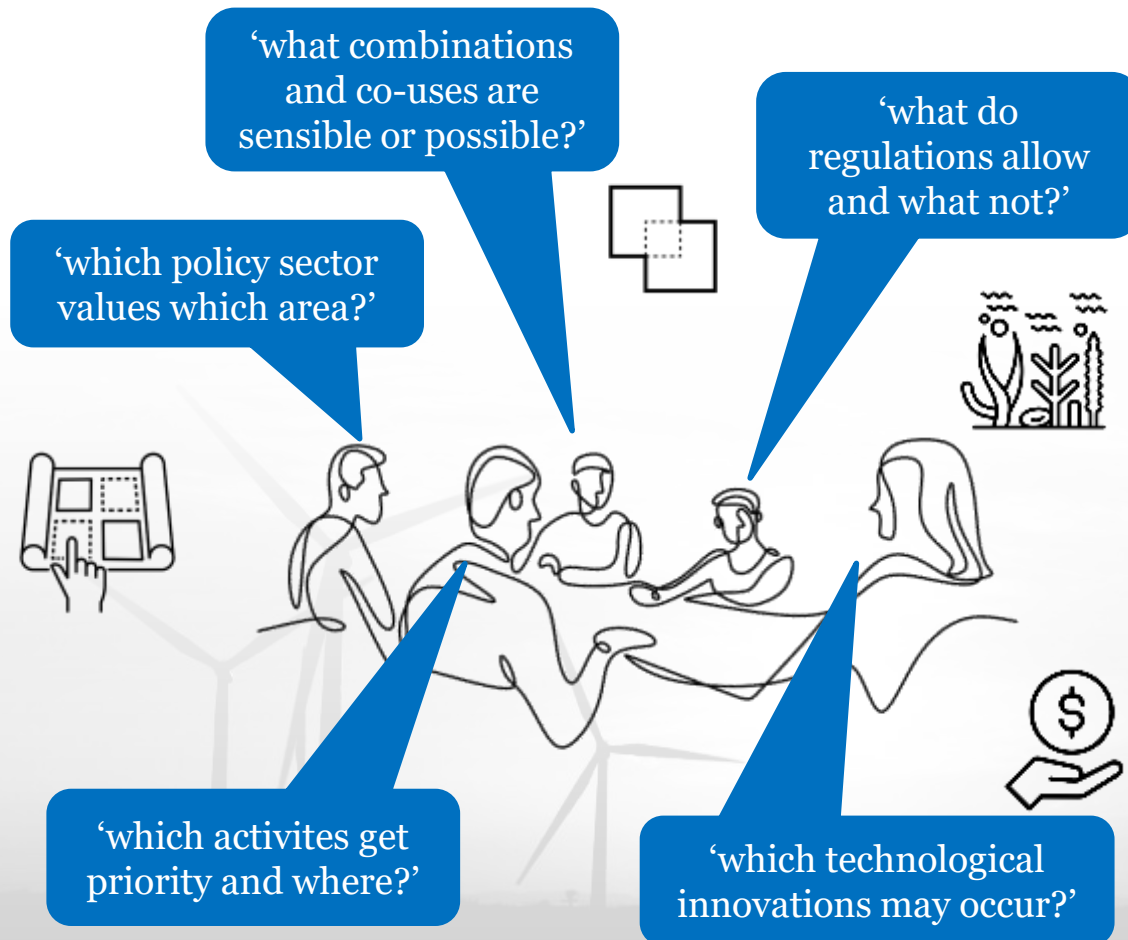
Policy, solves problems politically

Widow of opportunity
Needs to help support arguments (understandable)
Focus on what is legally and policy relevant
Uncertainty is hard to include (loss of confidence)

Physical space



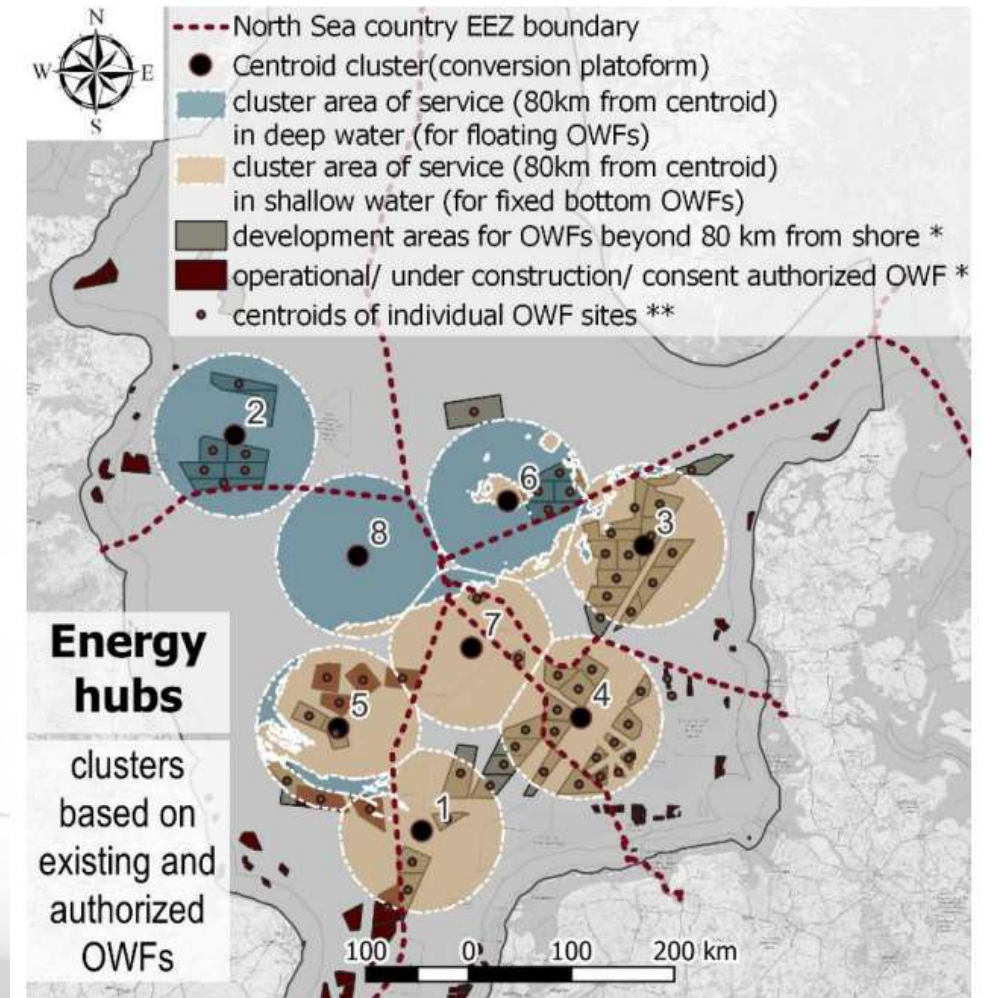
Space is dynamic



Spatial futures depend on policy choices and available conflict resolution options

Possible futures

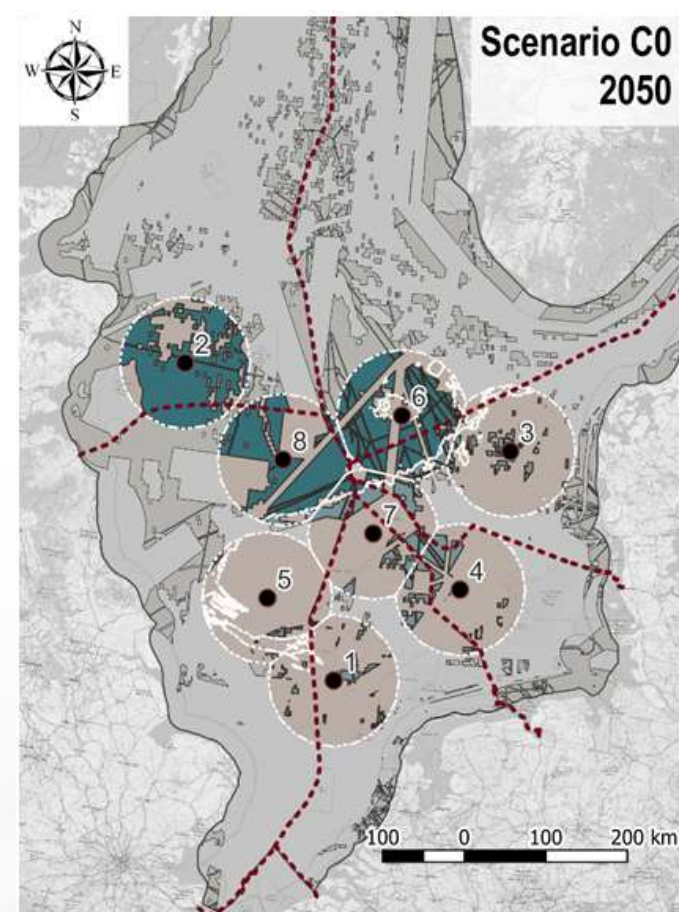
- Studie RUG/TNO
(Martinez-Gordón et al 2022)
(Gusatu et al. 2023)



Scenarios

- A0: Integral planning
 - A1: 50% co-use between OWF and fisheries
 - A2: 10% co-use in nature protection areas
 - A3: both
- C0: Sectorale planning (NO multiuse)
 - C1: replace 10% fisheries
 - C2: replace 2% nature protection





- North Sea country EEZ boundary
- Centroid cluster (conversion station)
- Cluster area (80 km service area from centroid)
- Multi-use: fixed bottom OWFs (10%) in research areas
- available areas outside the defined clusters

- Available space for OWFs (single use)
- Areas for floating OWFs (under 55 m depth)
 - Areas for fixed bottom OWFs (over 55 m depth)
- Predominantly fishig activities (10% OWFs)
- Areas for floating OWFs (under 55 m depth)
 - Areas for fixed bottom OWFs (over 55 m depth)

- Areas reserved for nature protection areas extension
- Areas for floating OWFs (under 55 m depth)
 - Areas for fixed bottom OWFs (over 55 m depth)
 - Multi-use: floating OWFs (10%) in general use areas
 - Multi-use: fixed bottom OWFs (10%) in general use areas

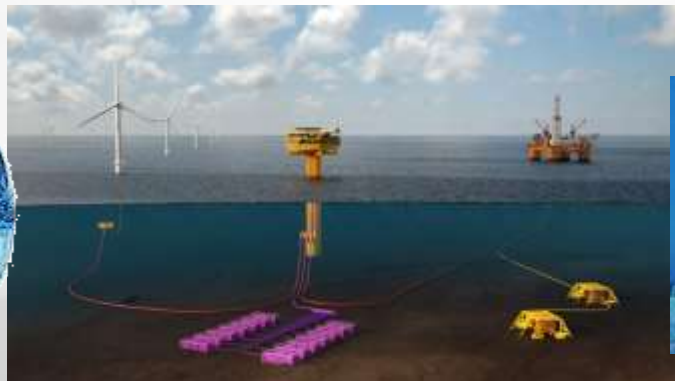
Strategic planning?



Four big questions ahead

1 System integration

- › A relative strong focus on technology, but little attention to regulatory and institutional dimensions (Wiegner et al 2024)
- › While novel technologies, uses and solutions are not easily reaching the process of agenda setting (Kusters et al. 2023)



Four big questions ahead

2

Integrated policies and (multi-use) projects may unlock tens of GWs, notably in the southern North Sea

- › Fragmented planning processes (Spijkerboer et al. 2021)
- › Institutional ambiguities, particularly regarding institutional arrangements concerning responsibility and ownership (Kusters et al. 2023, Adreasson 2024)



Four big questions ahead

3 Allocation across borders, use areas with more space?

Considerable differences between national approaches to conflict resolution (Kusters et al. 2025)



Four big questions ahead

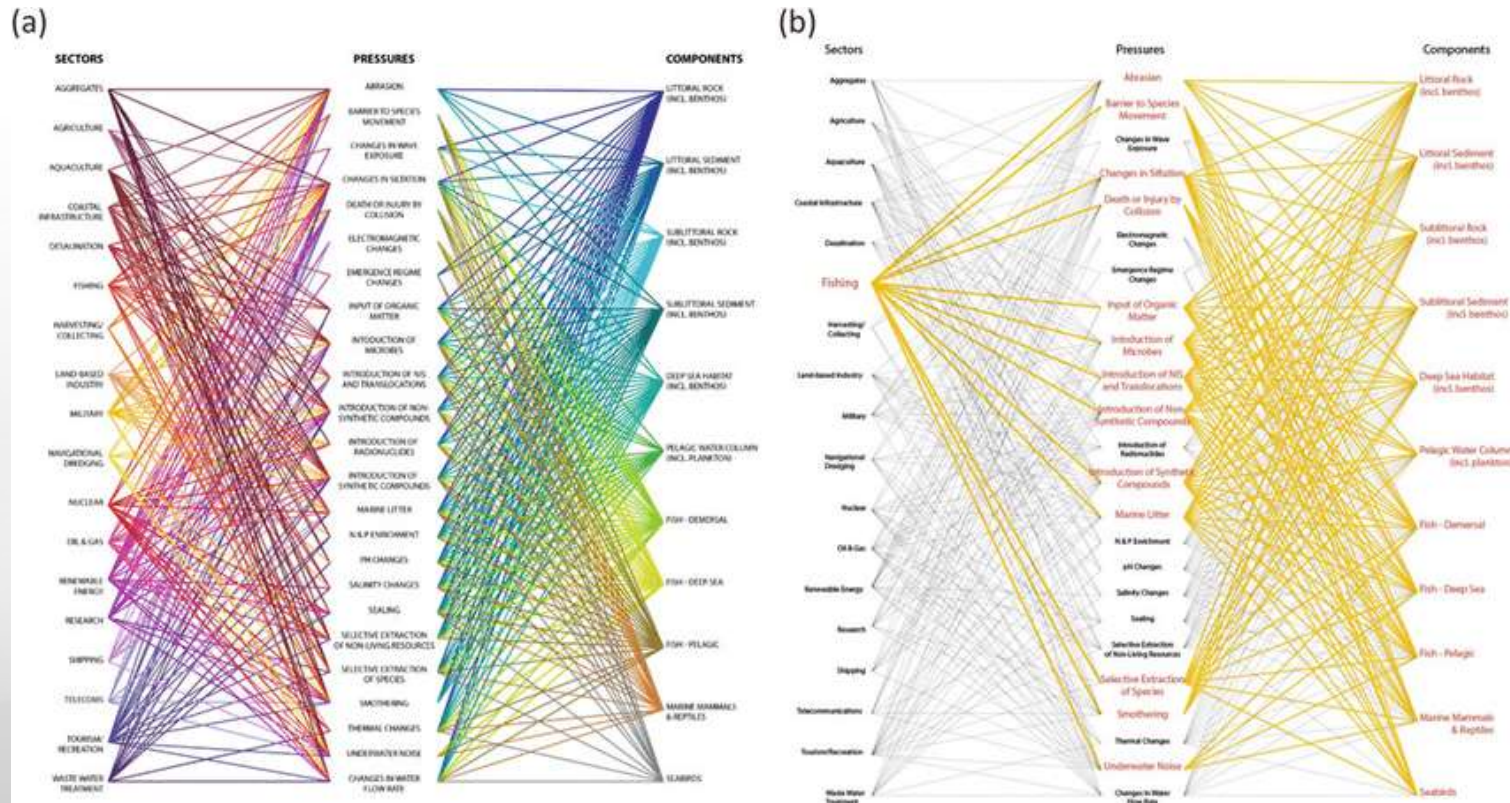
4 A true ecosystem based approach and good ecological status?

- › Protected species are leading (Kusters et al. 2023)
- › Science – policy interface remains a challenge (De Vries et al. 2024)



Certainty and control?

How do we know? What can we know?



Urgency as driver and risk?

A reliance on a sectoral focus on offshore wind energy and a short-term fixation on 2030 targets limit the uptake of energy innovations (Kusters et al. 2023)

Not only are strategic policies underdeveloped, the strict choices made also limit the institutional space that may allow for more strategic choices and, in turn, complicate finding physical space for offshore energy transition (Kusters 2025)



Strategic planning?

Strategic planning is not about developing predefined blueprints;

It is about having the time, people and institutional resources to ...

... choose paths we want to pursue

... create 'institutionele space' to make these paths possible

... know which risks we are willing to take and when to do so



Questions and remarks?

