

# A new framework for holistic impact assessment for offshore wind



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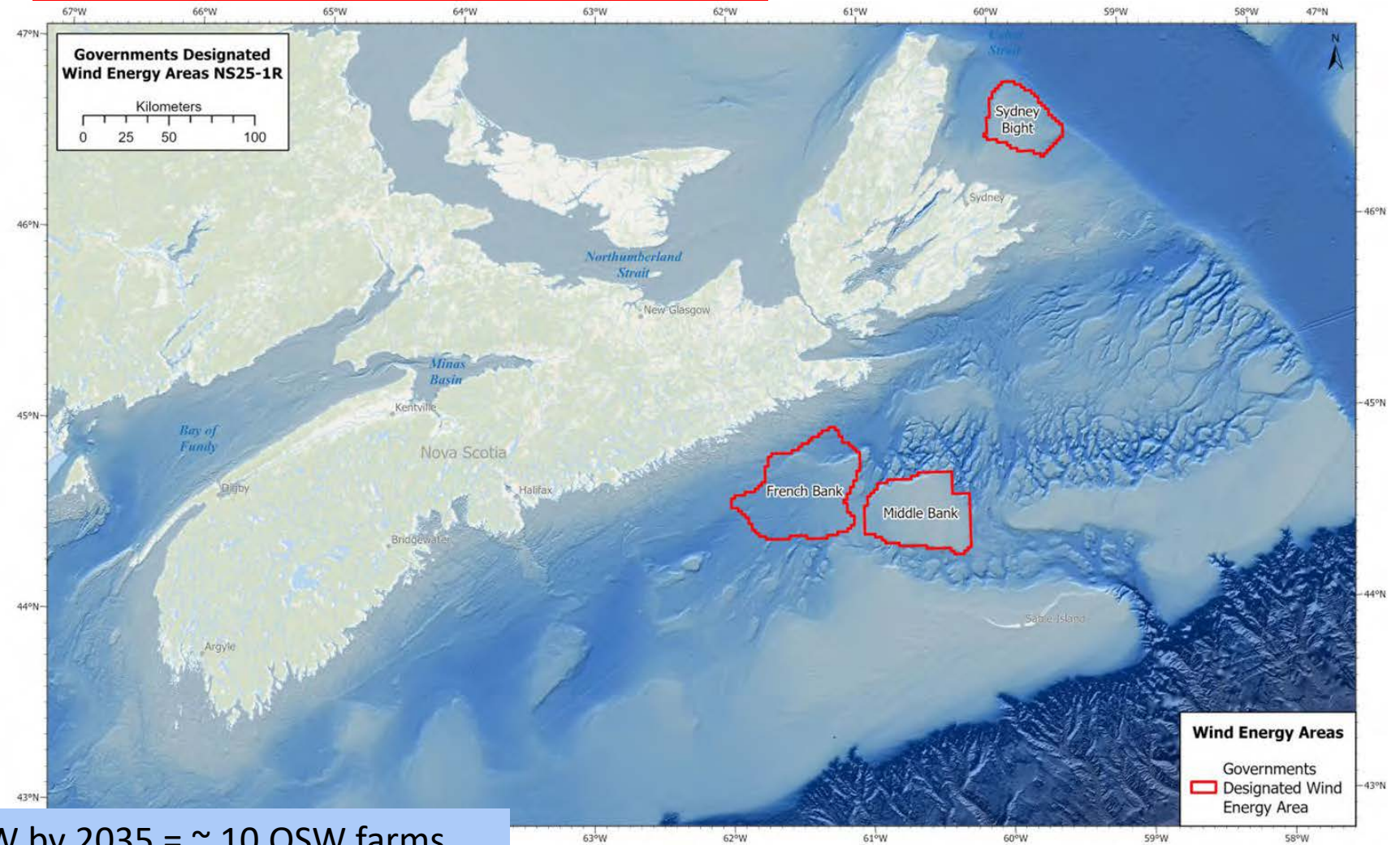
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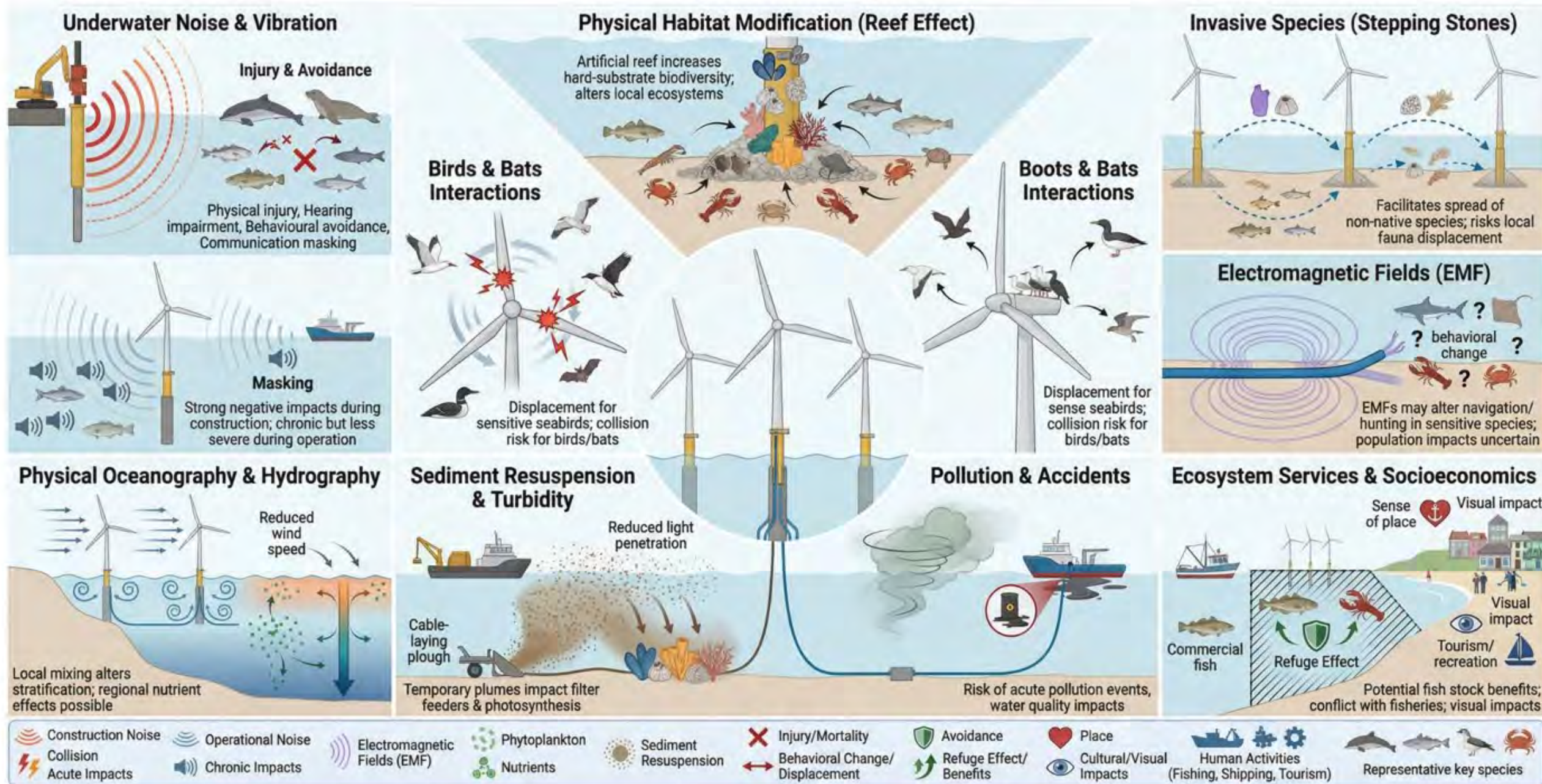


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## The next few...years



5 GW by 2035 = ~ 10 OSW farms  
15 GW by 2040 = ~ 30 OSW farms



# ACCELERATING OFFSHORE WIND

DEVELOPING A REGIONAL ECOSYSTEM  
MONITORING PROGRAMME FOR THE UK  
OFFSHORE WIND INDUSTRY

“86% of possible offshore wind farm impacts on ecosystem services are still unknown, suggesting that the full extent and consequences of ecological change are not being considered.”

1. Bird and bat collision with wind turbines and onshore transmission lines
2. Seabed habitat loss, degradation and transformation
3. Hydrodynamic change
4. Habitat creation
5. Trophic cascades
6. Barrier effects or displacement effects due to the presence of wind farm
7. Bird mortality through electrocution on associated onshore distribution lines
8. Mortality, injury and behavioural effects associated with vessels
9. Mortality, injury and behavioural effects associated with underwater noise
10. Behavioural effects associated with electromagnetic fields of submarine cables
11. Pollution (e.g., dust, light, solid/liquid waste)
12. Indirect impacts offsite due to increased economic activity and displaced activities, such as fishing
13. Associated ecosystem service impacts
14. Introduction of invasive alien species

# Typical Impact Assessment Model...

- **Offshore wind is unique**
  - Similar start dates (auctioned in bunches)
  - Regional in scale

Project 1



Project 2



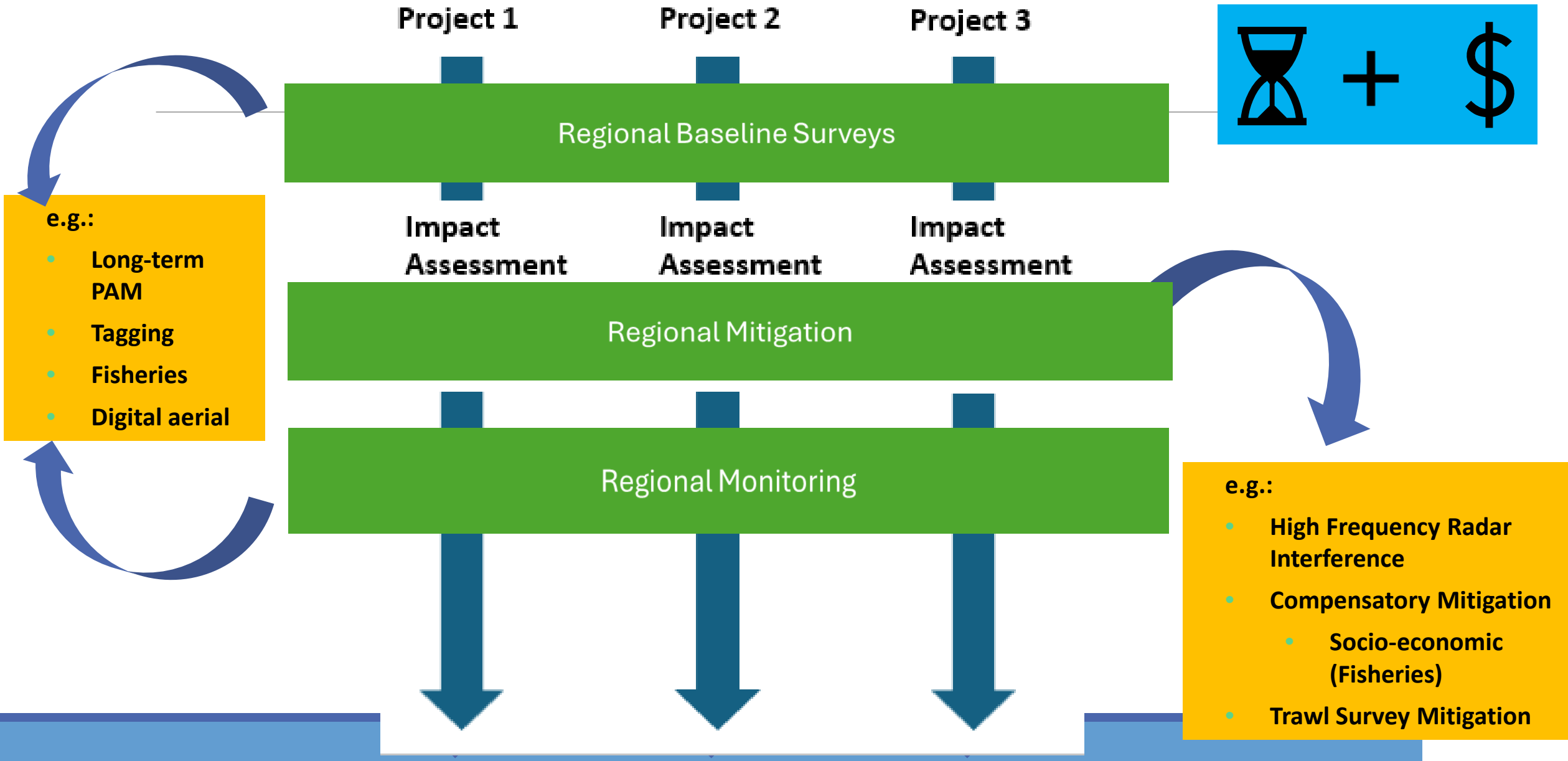
Project 3



Adapted from Atma Khalsa,  
Director of Environment,  
Avangrid

Meeting of Canada Network  
for Offshore Wind Research,  
Ocean Frontier Institute  
(Halifax, Canada)

# What if we studied *across* projects...:



# From Distributed Knowledge to Cumulative Understanding



1. Conventional impact assessment is typically structured around individual projects, with more limited treatment of system-wide and cumulative effects.



3. An integrated knowledge system connects data and knowledge from different holders through shared governance, standards, and metadata

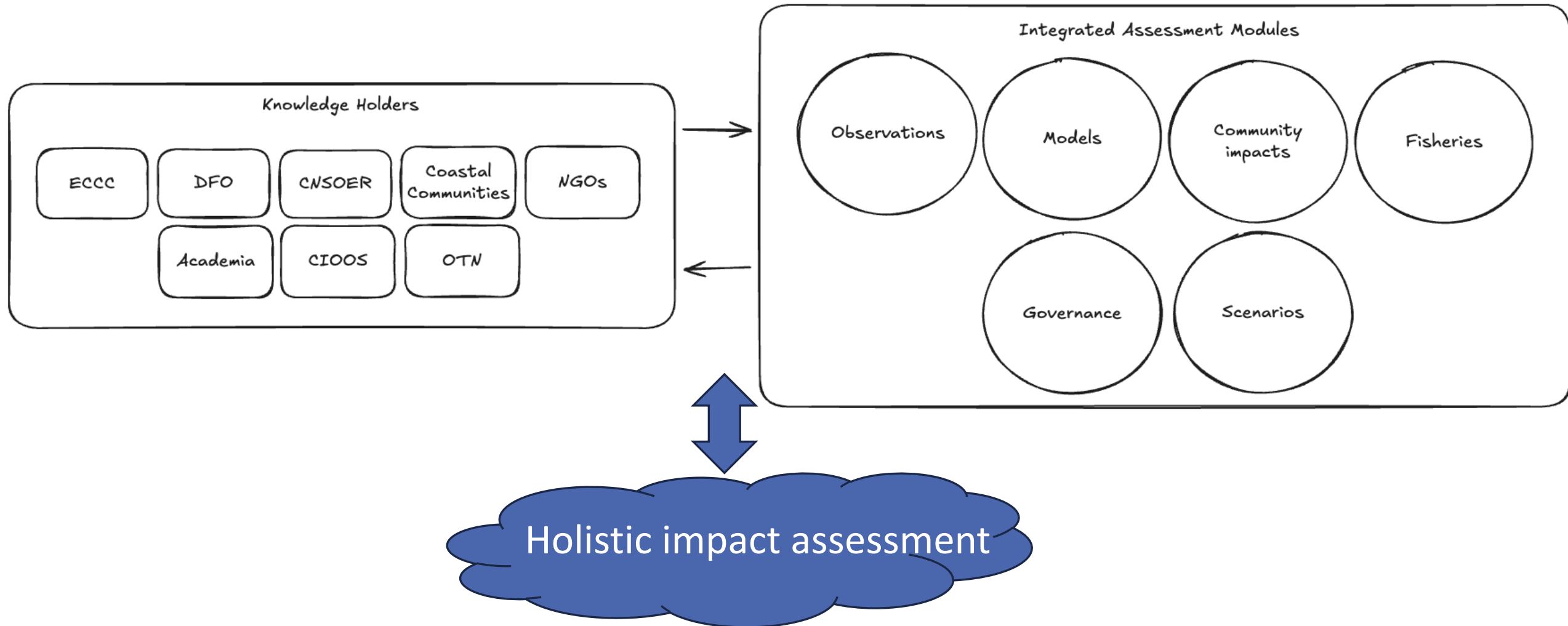


2. Communities and ocean users are concerned with cumulative effects across multiple projects and over time

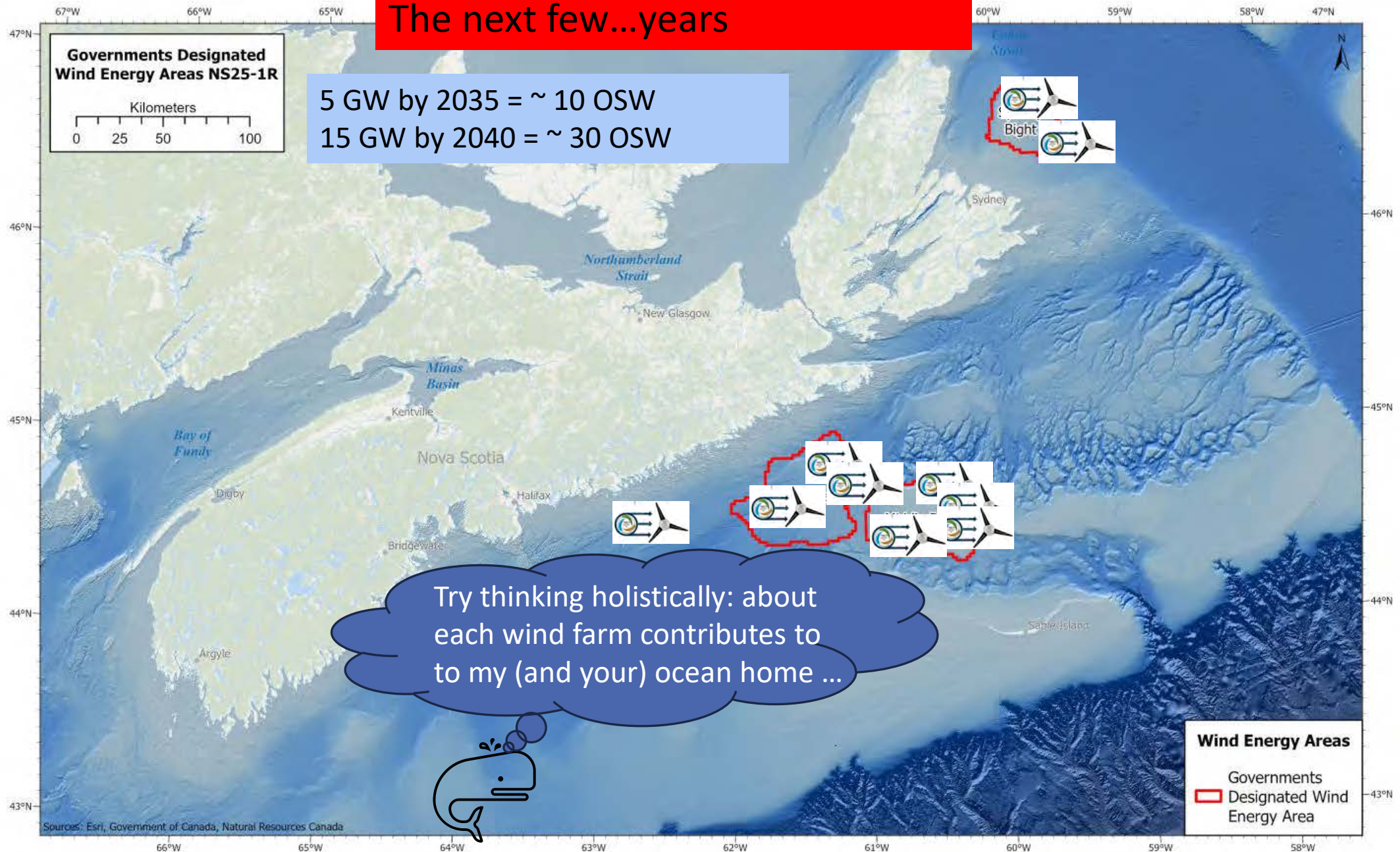


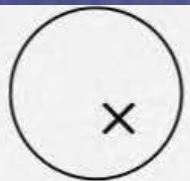
4. This allows us to identify what we know, what we can model, and where more data or better models are needed

# A Modular Approach for Distributed Ocean Knowledge (attuned to Nova Scotia realities)



# The next few...years





## Canada Network for Offshore Wind Research (CNOWR) CoP

Lead: [Déborah Benkort](#)

Co-lead: [Ian Stewart](#)

By bringing people together, CNOWR CoP will connect partners across Canada to support sustainable energy transition with offshore wind.





**IAIA26**  
QUÉBEC CITY, CANADA

# Let's continue the conversation!

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