



What could offshore wind energy mean for Nova Scotia?

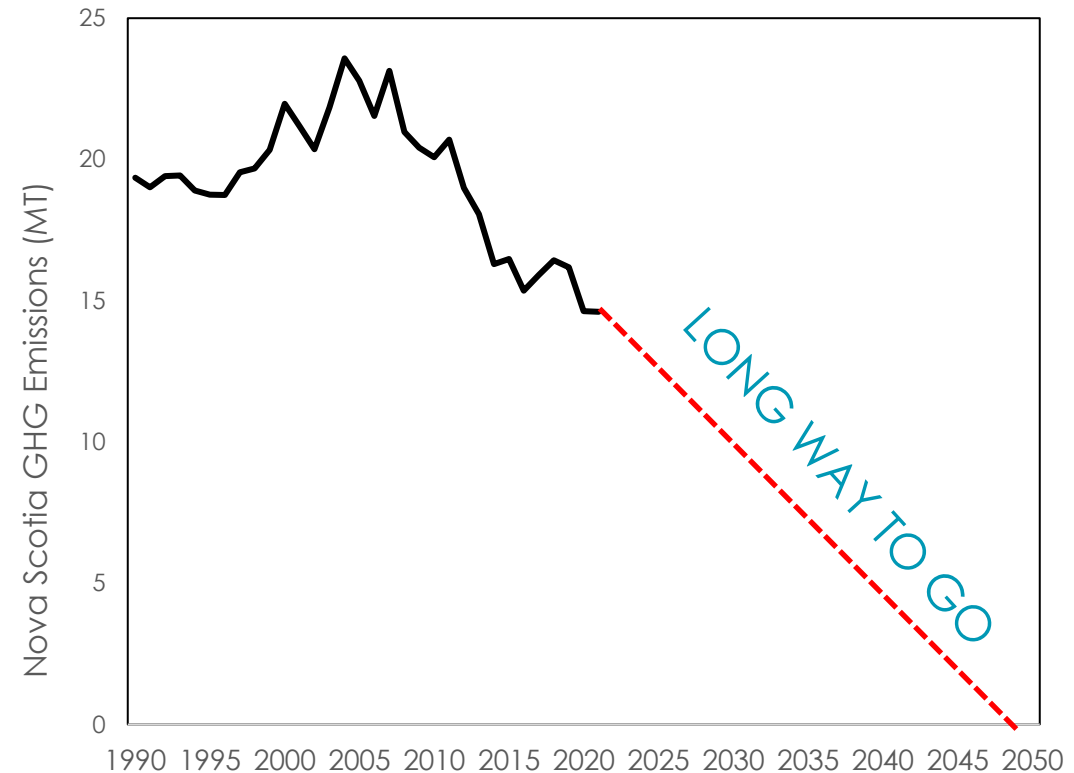
Presentation to the Municipality of Barrington

Victoria Watson, Project Manager

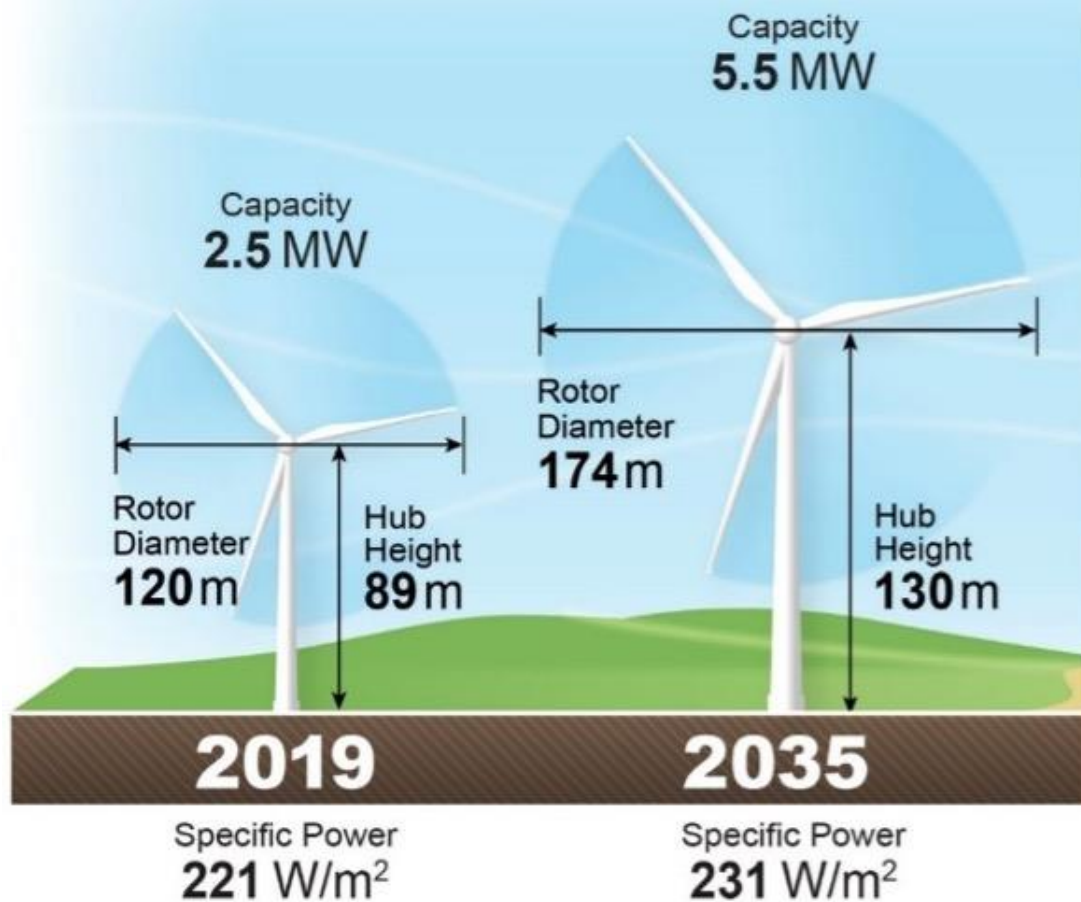
March 12, 2024

Nova Scotia's emissions need to be reduced.

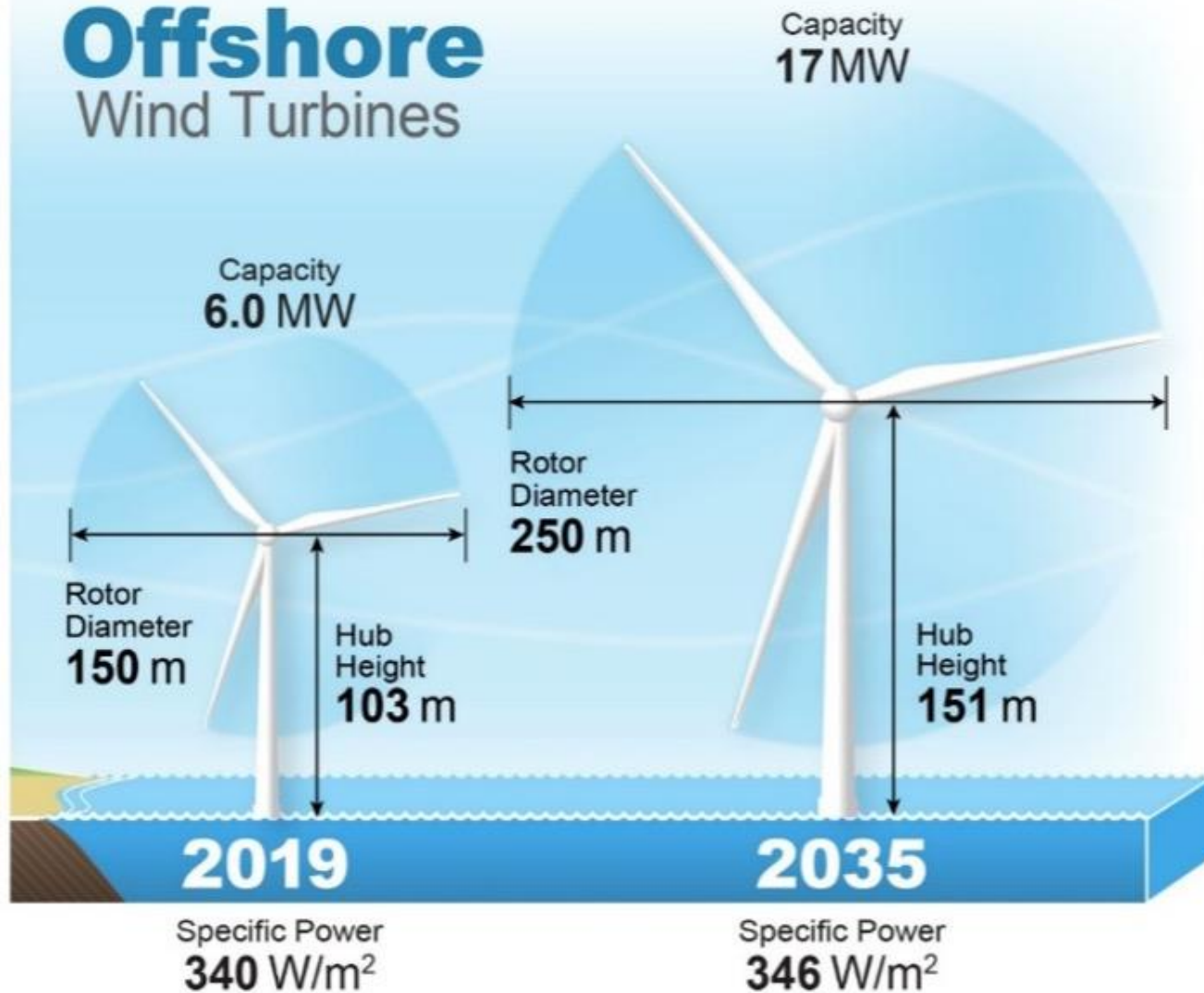
- Canadian legislation requires **net-zero emissions by 2050** and phasing out coal-fired electricity by 2030.
- Nova Scotia legislation requires **80% renewable electricity by 2030**.
 - In 2022, 33% of the province's electricity came from renewables (solar, wind, hydro), and **67% came from fossil fuels** (coal, petroleum and natural gas).
- Demand for electricity is expected to increase.



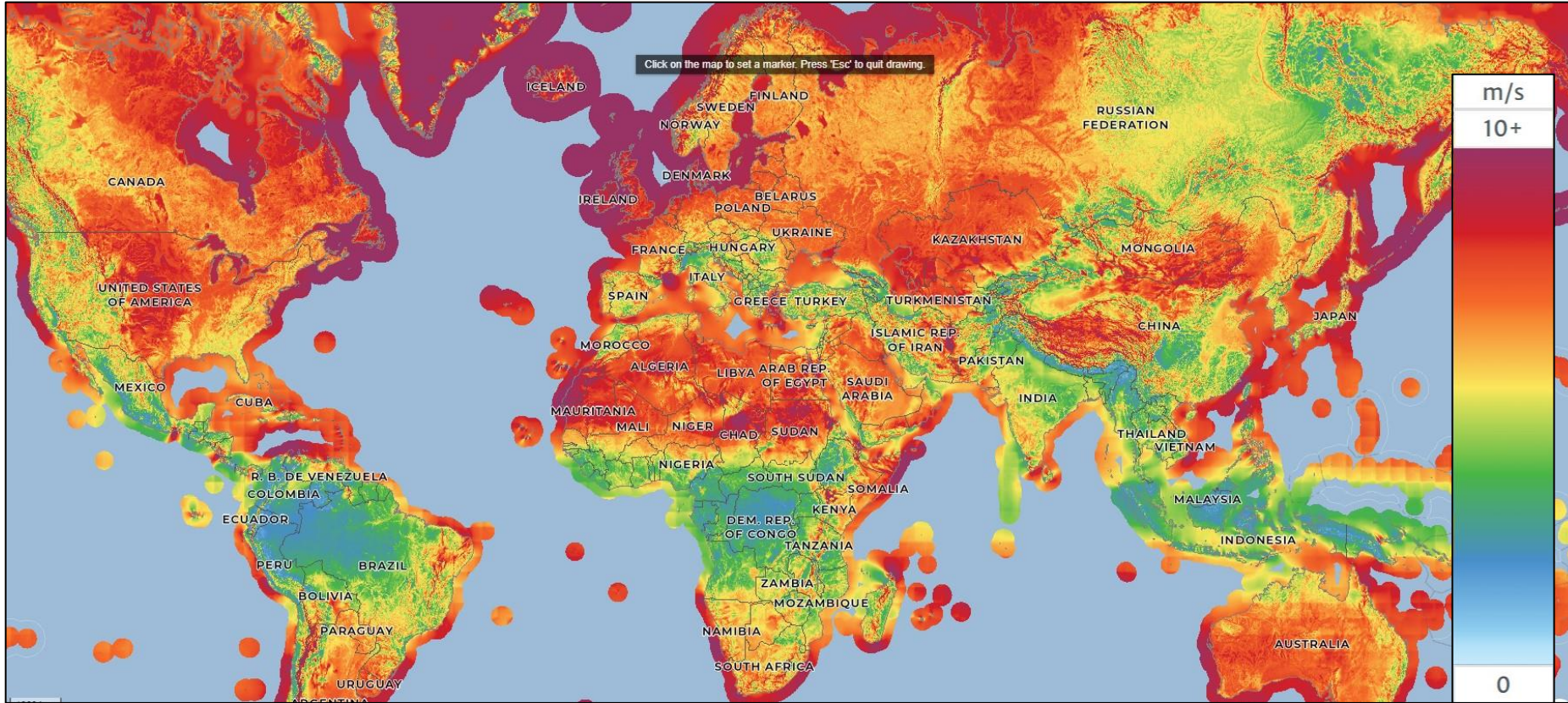
Onshore Wind Turbines



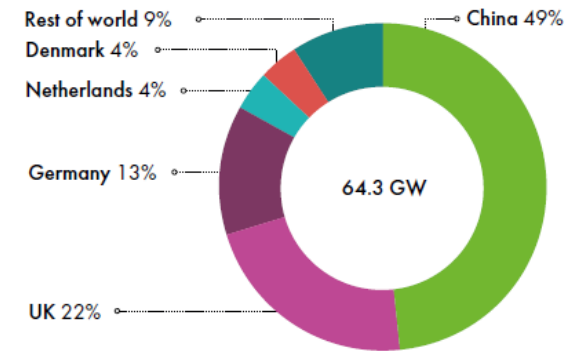
Offshore Wind Turbines



A global resource

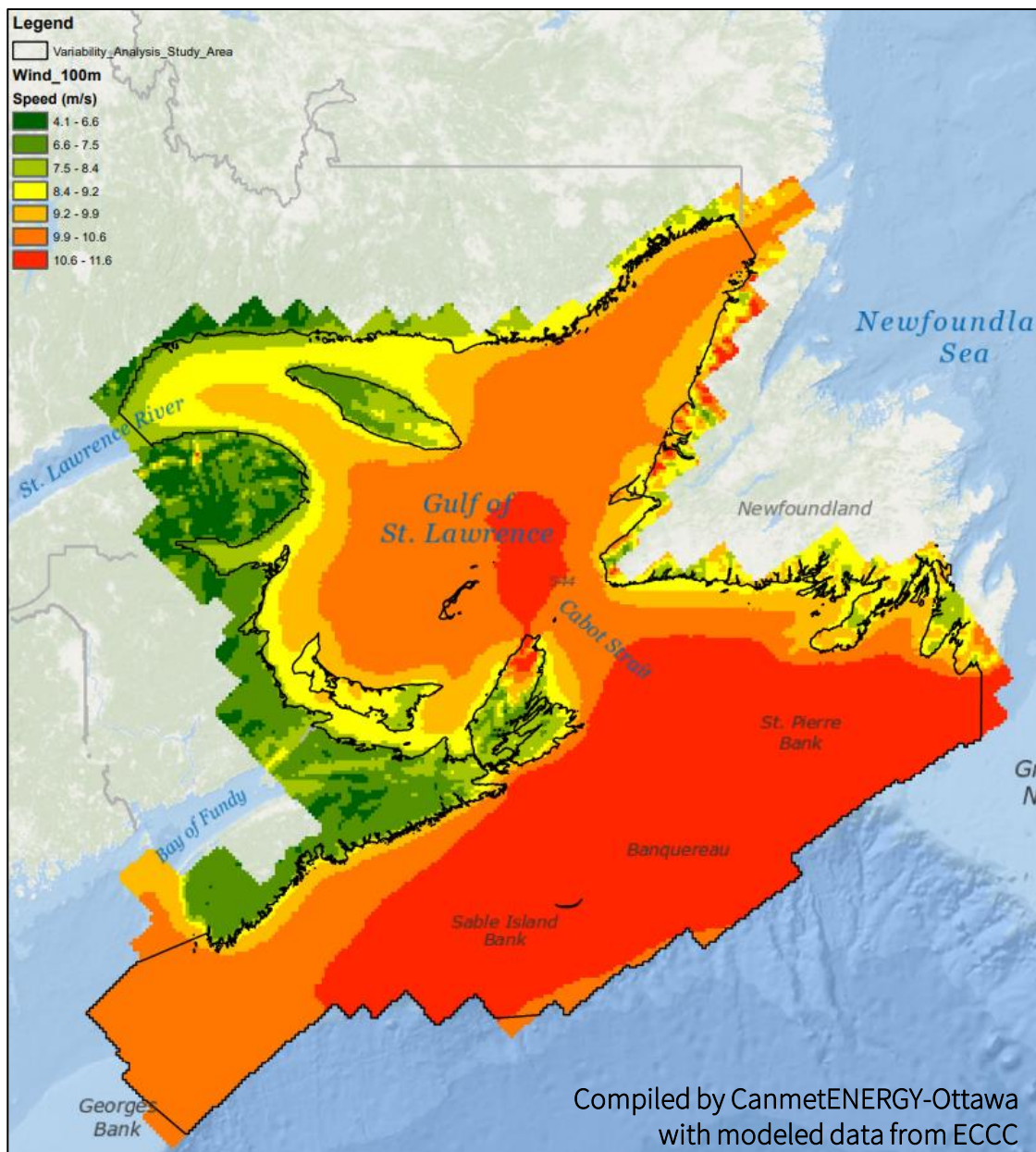


Total installations offshore (%)



- Like other natural resources, offshore wind is not distributed evenly across the globe.





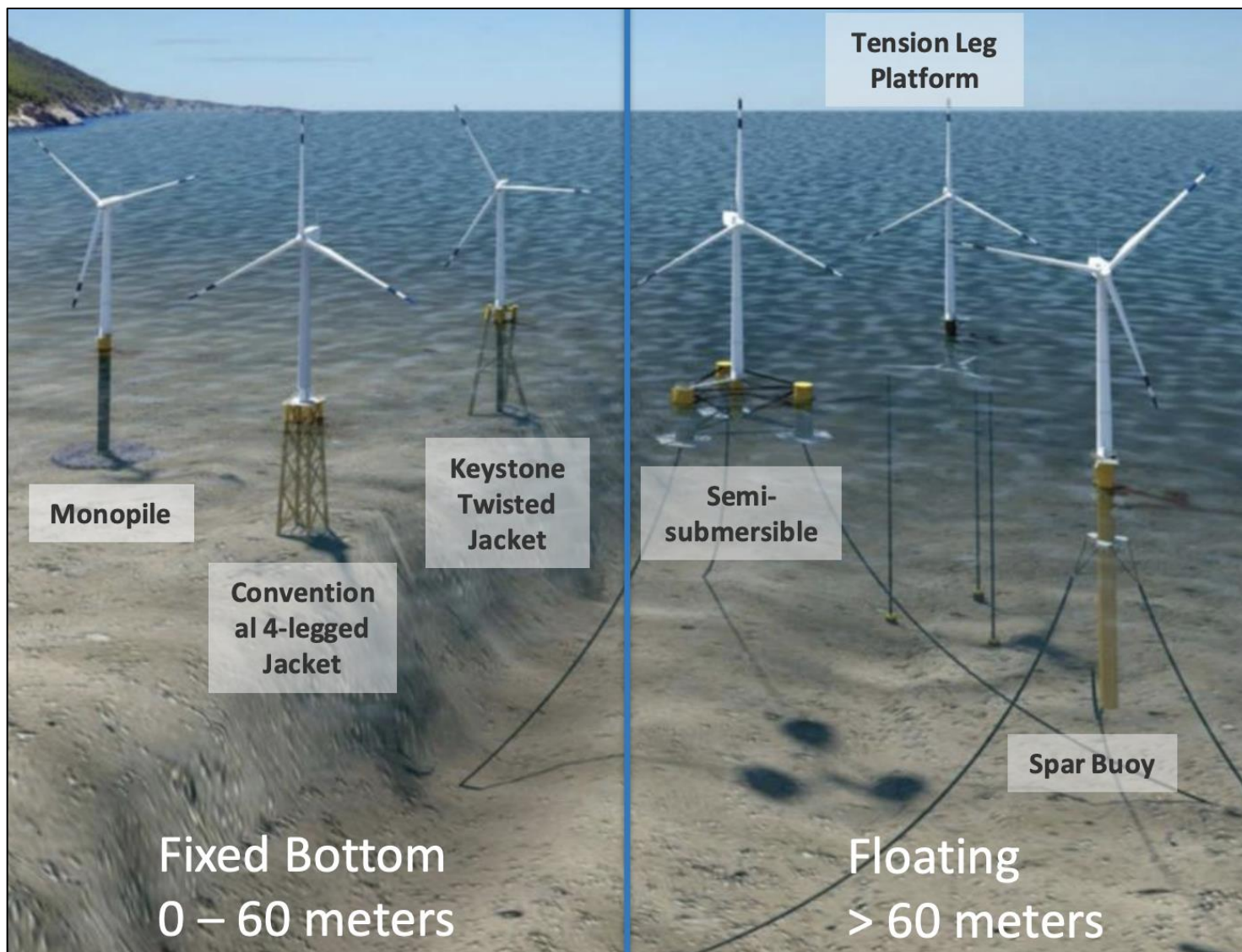
Offshore wind in Nova Scotia

- Atlantic Canada's OSW resource is exceptional.
- NS Government made commitment to offering lease agreements for up to 5GW of offshore wind by 2030.
 - Surpasses current need for electricity in NS.



Turbine foundation types

- There are two main types of offshore wind turbine foundations:
 - Fixed bottom
 - Floating
- Foundation types are dependent on depth and subsea geology.



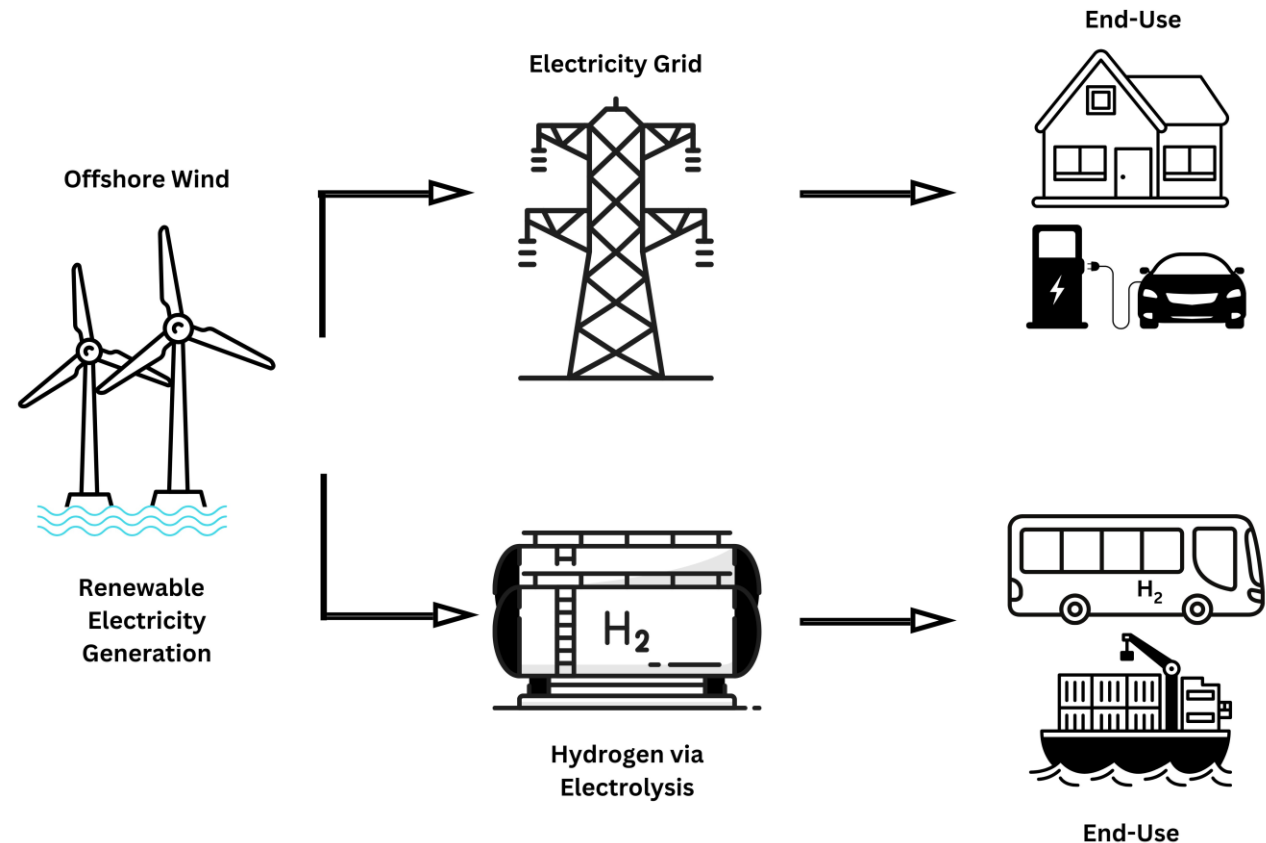
Scale of offshore wind

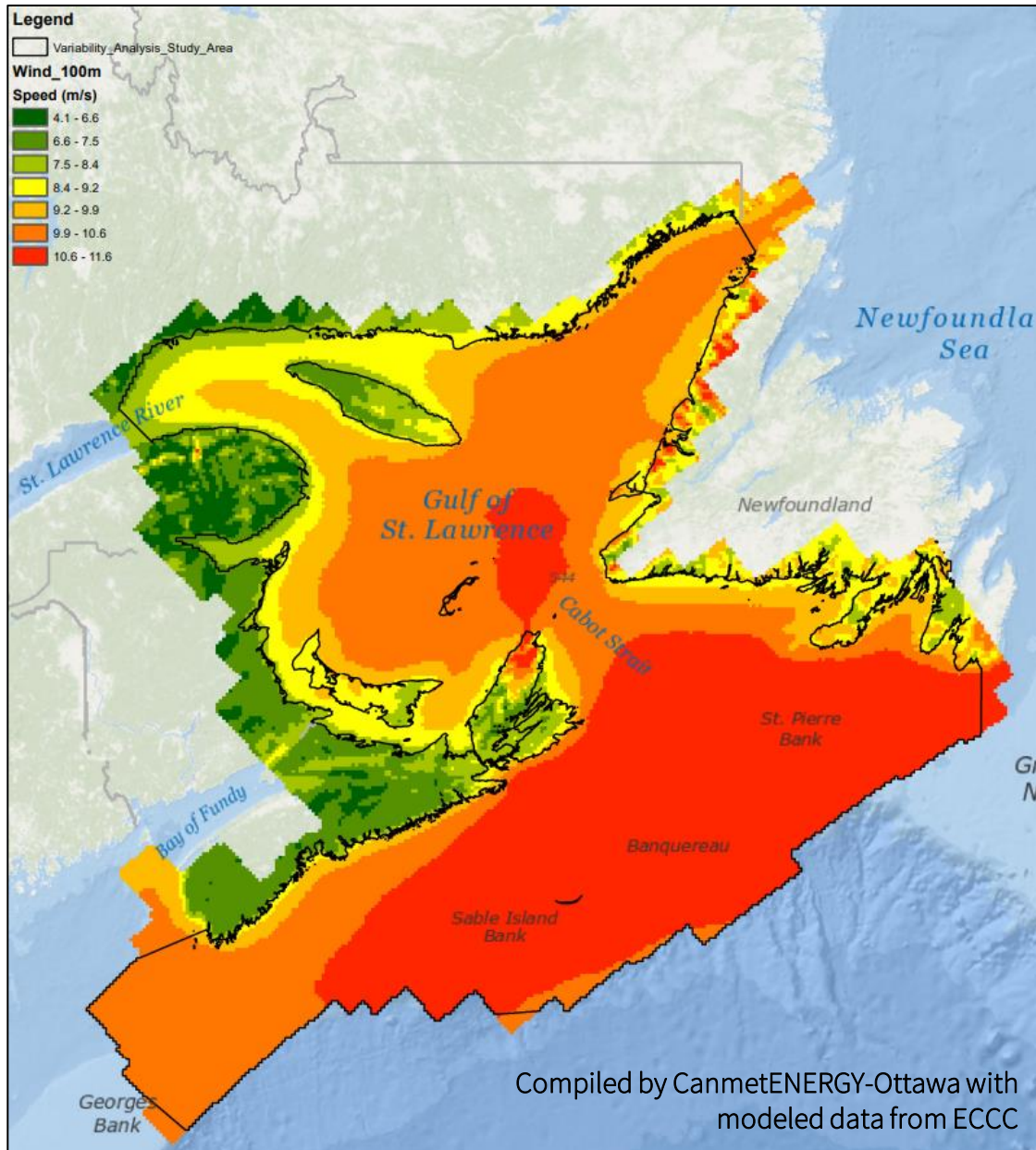
- Hornsea 2 offshore wind park (2022)
 - Located in North Sea, can generate enough green electricity to power over 1.4 million homes
 - 1.32 GW combined capacity
 - 165 turbines (8 MW)
 - 189 km off coast
 - 462 square km



Wind energy end use

- Wind energy can be used to meet electricity demand, or produce green fuels (e.g., hydrogen).
- This can be used domestically or exported.
- Potential paths to market for NS:
 - Local/regional electricity supply
 - United States electricity market
 - Local/regional hydrogen supply
 - Hydrogen export (e.g., EU)





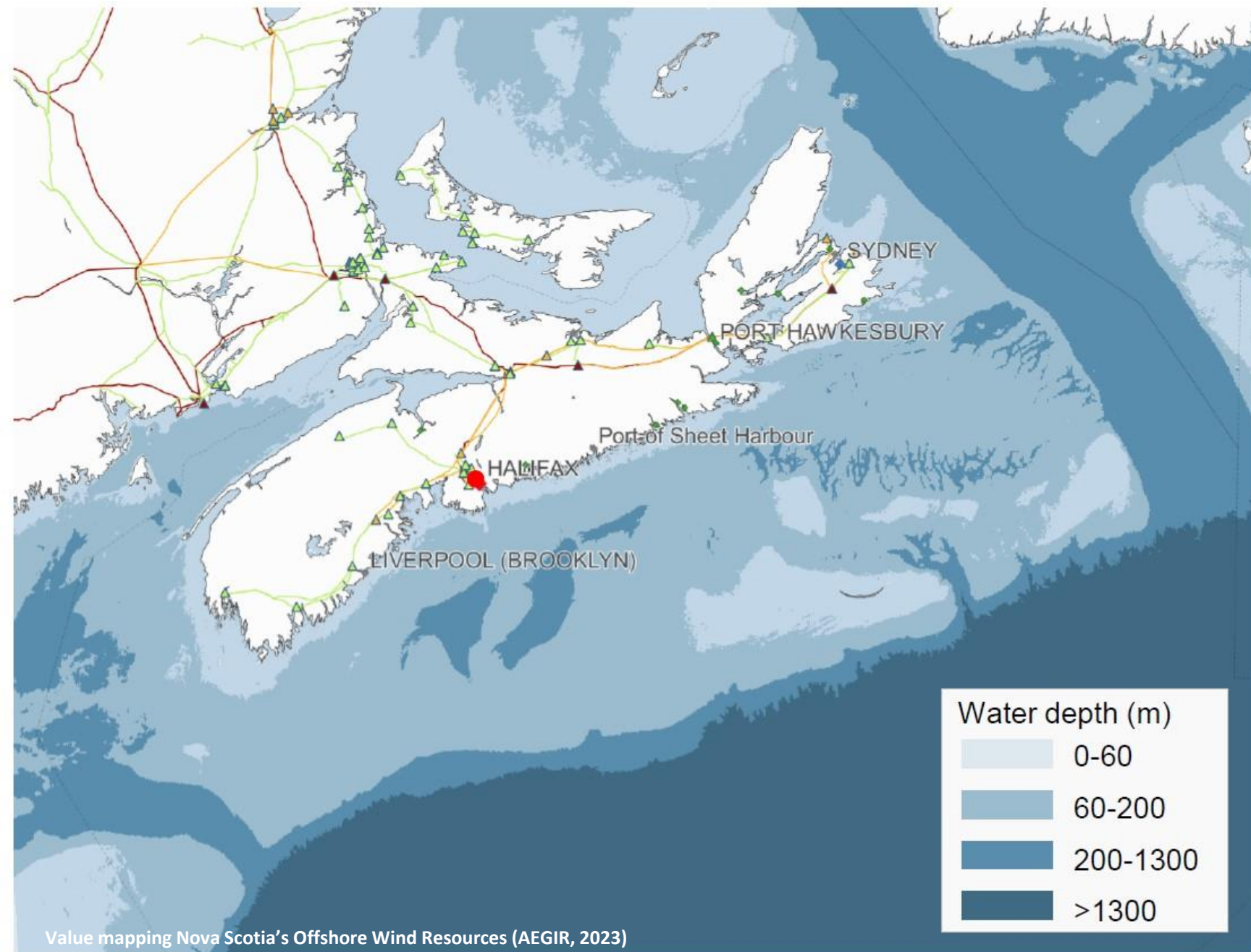
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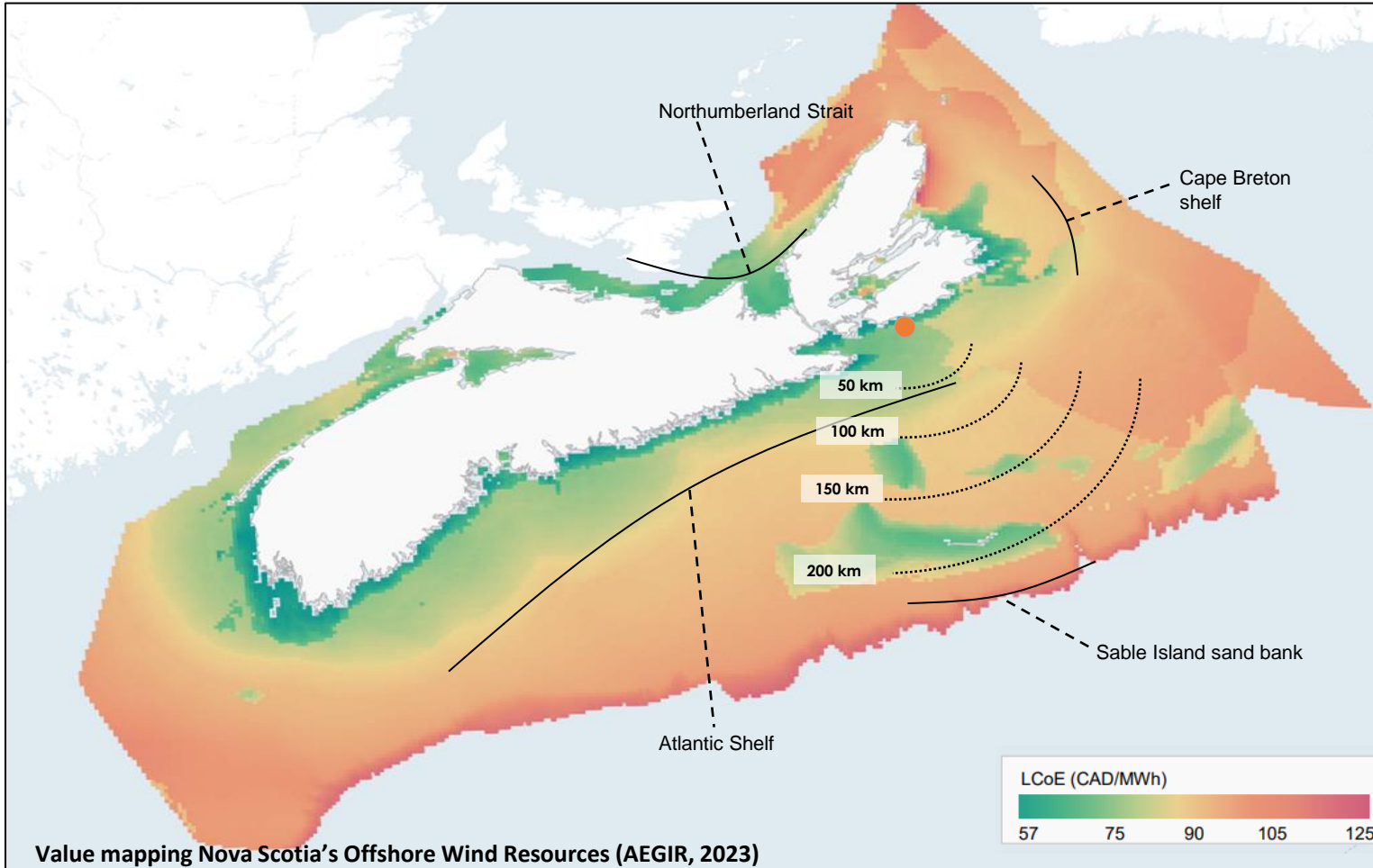


Water depth Nova Scotia

- Important for determining likely type of development
- <60m depth = good for fixed bottom
- >60m depth = good for floating



Mapping development



Green areas are likely to be most cost competitive based on:

- Average annual wind speed
- Water depth
- Distance to construction ports and grid connection

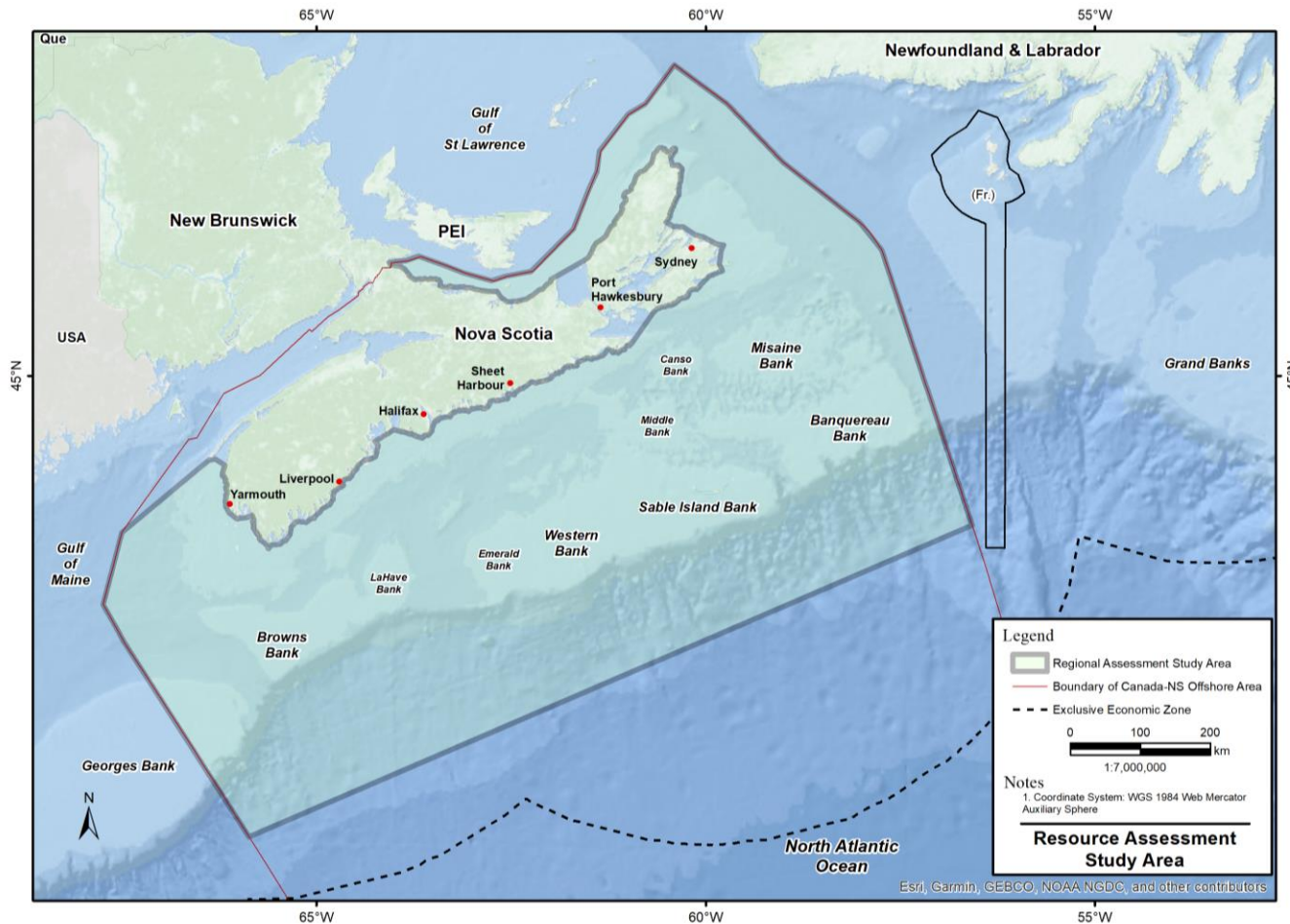


Considerations include:

Economic	Environmental	Social
Fisheries and Other Ocean Uses	Air Quality and Greenhouse Gases	Indigenous Communities, Activities, Interests, and Rights
Tax revenue	Marine Fish and Avifauna habitats (birds and bats)	Visual Aesthetics
Royalty revenue from leases	Marine mammals and sea turtles	Physical and cultural heritage
Job creation	Acoustic environment	Protected and Special Areas
Workforce development, skills realignment,	Increased vessel activity	Community benefit/wellbeing
Transportation infrastructure development (ports, rail, road)	Reef effect from foundations, anchors, cables	
Supply chain development/indirect economic impacts		



Regional Assessment of Offshore Wind in Nova Scotia



Regional Assessment (RA) led by an independent Committee appointed by the Minister of Environment and Climate Change Canada.

- The RA Committee will recommend geographic area(s) to be considered for future development and provide recommendations to government for mitigation, monitoring and follow-up for future projects.

Contributions from citizens and representative groups are wanted.

- Open House sessions are happening now.
- Written submissions can be made via the RA email or the public comment tool on the Registry.

Completion is targeted for the fall of 2024.



Summary of Other Current Initiatives:

Offshore Renewable Energy Regulations (ORER)

- Federal-managed waters

Canada-Nova Scotia Offshore Energy Regulator

- Transitioning from Offshore Oil and Gas

NS Provincial Offshore Wind Roadmap

- Evergreen document

Marine Spatial Planning

- Department of Fisheries and Oceans - ongoing



Next steps

- This session is part of an ongoing discussion.
- Share your thoughts! We would love to hear your questions, concerns, and topics of interest for a future event in your community.
- Participate in ongoing discussions and encourage others.
 - Net Zero Atlantic workshops
 - Regional Assessment Information Sessions
 - New opportunities to engage (e.g., with industry, provincial government, etc.)

More Information: netzeroatlantic.ca/offshorewind

Contact us: offshorewind@netzeroatlantic.ca

Regional Assessment Registry: <https://www.iaac-aeic.gc.ca/050/evaluations/proj/83514>

Regional Assessment Email: OffshoreWind-EolienneExtracotiere@iaac-aeic.gc.ca

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