Marine Renewables Canada

Atlantic Canada Wind Energy Supply Chain Assessment

Executive Summary

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ABOUT

This study was commissioned by Marine Renewables Canada with support from the Atlantic Canada Opportunities Agency, the Nova Scotia Department of Energy, and the Prince Edward Island Energy Corporation. The project committee would like to thank the many individuals and organizations that provided input to the study through participation in workshops, surveys, and individual interviews. The study represents views and recommendations from the study authors and parties consulted throughout the project and should therefore not be construed as the position of the Atlantic Canada Opportunities Agency, the Nova Scotia Department of Energy, the Prince Edward Island Energy Corporation, and Marine Renewables Canada.

Xodus Group, with Nova Scotia-based Envigour Policy Consulting, Newfoundland and Labrador-based partners Angler Solutions and Caron Hawco Group, along with New Brunswick-based Roxham Advisory & Consulting Services, and Indigenous-relations expert Eric Christmas, have joined their expertise together to conduct a wind energy supply chain assessment of the Atlantic Canadian provinces. The project team would also like to express gratitude to everyone that participated in this research and contributed to this scope of work.

Xodus Group is a leading global energy consultancy, with established expertise in the offshore wind (OSW), hydrogen, and offshore oil and gas sectors. Formed in 2005 and headquartered in Scotland, Xodus currently employs over 500 multi-disciplinary engineers and specialist advisors.

Angler Solutions is an innovation-focused consulting firm based in St. John's, NL, with international experience delivering strategic advisory and project development services for the energy and ocean technology sectors. Angler specializes in early-stage project services, including feasibility studies, energy systems modelling, and techno-economic analysis.

Caron Hawco Group provides strategic advice on stakeholder engagement, socio-economic matters, reputation management, local content, regulatory affairs, and diversity for large energy projects and industries, including petroleum, hydrogen, wind and the clean/ocean tech sectors.

Envigour Policy Consulting was started in 2016 located in Nova Scotia. Principal Consultant Bruce Cameron has more than 40 years of experience in public policy critique, analysis, and development.

Roxham Advisory & Consulting Services was established with the goal of building resilient, sustainable businesses and communities. President and lead consultant Neil Jacobsen has spent the last three decades advancing Atlantic Canada's energy sector, specializing in energy policy, regulatory affairs, and economic development.

INTRODUCTION

Atlantic Canada possesses among the strongest wind resources in the world, both offshore and onshore. With strong capabilities in marine industry and technology, an existing onshore wind supply chain poised for growth, a capable workforce, and a track record of Indigenous participation, this region is set to see significant economic benefits from the ongoing development of offshore and onshore wind energy sectors.


Atlantic Canada Bulk Terminal, Sydney, NS (Credit: Christopher Morrison)

Offshore wind (OSW), still nascent in many geographies, is rapidly becoming a mainstream energy generation technology. With both bottom-fixed and floating OSW options, wind energy can now access the stronger, more consistent winds found offshore. The desire for green hydrogen and increasing renewable penetration in regional energy systems are key sources of demand driving wind energy development. The wind resource potential both onshore and offshore in Atlantic Canada has attracted the attention of wind energy developers to the region, where marine industrial knowledge, deep water ports, extensive experience in major civil construction, significant quayside development space, and a skilled workforce present a major opportunity. There is a desire by proponents and stakeholders to ensure that maximum economic and social benefits are realized locally as these industries grow.

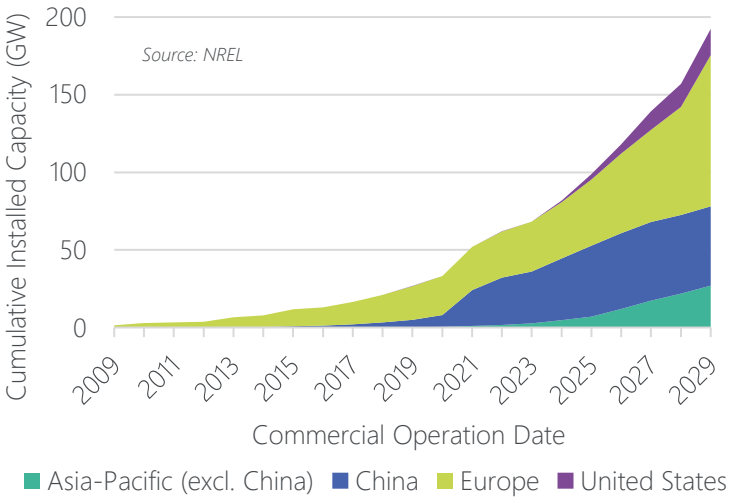
In addition to performing a supply chain assessment of local companies across Atlantic Canada for onshore and offshore wind, this report provides background on the status of wind industry development and actionable recommendations for supply chain growth. The assessment of the offshore and onshore wind energy supply chain potential in Atlantic Canada identifies strengths and gaps, leading to the development of strategies and actions to support existing regional companies. The goal of this scope of work was to conduct research, engage with stakeholders and rights holders, and develop evidence-based insights to assist industry, suppliers, governments, Indigenous community members, and Atlantic Canadian residents with understanding pathways for supply chain development that will result in sustainable offshore and onshore wind industries, while realizing significant local benefits for the provinces and their communities. A summary of the recommended actions for supply chain development based on short-term (2025), medium-term (2026-2030) and long-term timeframes (2030+), along with proposed action owners, is provided below, followed by key details and findings from the analysis. Additional information can be found in the full version of this report.

RECOMMENDATIONS SUMMARY

		Offshore	Onshore	Timeline			Owner
	Supply Chain			S	M	L	
	Leverage Existing Supply Chain Strengths						
1	Long-Term Value Creation in Supply Chain Investments	x	x		M		Government/Utilities/Regulators, Developers and/or Tier 1s, Ports
2	Explore Manufacturing Interest to Encourage Supply Chain Clustering	x	x			L	Government/Utilities/Regulators, Developers and/or Tier 1s, Ports
	Strengthen Wind Industry Ecosystem Support						
3	Streamlined Supply Chain Development Program	x	x	S			Economic Development/Industry Organizations
4	Promote and Assist Rural Businesses		x		M		Government/Utilities/Regulators, Economic Development/Industry Organizations
	Encourage Supply Chain Diversity						
5	Establish and Communicate Industry Diversity Expectations	x	x	S			Government/Utilities/Regulators, Economic Development/Industry Organizations
6	Establish Provincial or Regional Diversity Entities/Entity	x	x		M		Government/Utilities/Regulators, Economic Development/Industry Organizations
7	Diversity Plans For Large-Scale Projects (>500 MW)	x	x			L	Government/Utilities/Regulators
	Facilitate Indigenous Involvement in Offshore and Onshore Wind Industry						
8	Educate Developers on Indigenous Equity Options	x	x	S			Government/Utilities/Regulators, Economic Development/Industry Organizations, Developers and Tier 1s
9	Create an Indigenous Supply Chain Hub	x	x		M		Government, Economic Development/Industry Organizations, Developers and Tier 1s
	Workforce						
	Strengthen Workforce Support Structures						
10	Commitment to Coordination Between Training Entities	x	x	S			Training/Academia
11	Industry-Funded Training Initiatives	x	x		M		Training/Academia, Developers/Tier 1s
	Improve Access to Training and Workforce Development						
12	Community Career Opportunity Outreach	x	x	S	M		Training/Academia, Economic Development/Industry Organizations
13	Strengthen Apprenticeship Initiatives	x	x			L	Government/Utilities/Regulators, Training/Academia
	Connect Workers with Jobs in Wind Industry						
14	Adjacent Industry Workforce Attraction	x	x		M		Government/Utilities/Regulators, Training/Academia, Economic Development/Industry Organizations
	Policy						
	Send Positive Market Signals for Regional Wind Energy Development						
15	Explore Electricity Export Opportunities	x		S	M	L	Government/Utilities/Regulators
16	Set Capacity Targets for Wind Energy Development	x	x		M		Government/Utilities/Regulators
17	Establish Transparent and Predictable Permitting and Offtake Processes	x		S	M	L	Government/Utilities/Regulators, Developers and Tier 1s, Economic Development/Industry Organizations
18	Establish Investable Value of Offshore Wind	x		S	M	L	Government/Utilities/Regulators
19	Explore Reductions in Cost of Doing Business in Atlantic Canada	x				L	Government/Utilities/Regulators
	Policy Support for Local Economic Benefits						
20	Direct Licensing Funds to Build Needed Infrastructure	x				L	Government/Utilities/Regulators
	Leadership and Communication						
	Build Industry Awareness and Support						
21	Public Wind Industry Educational Campaign	x	x	S			Economic Development/Industry Organizations
	Create Supply Chain Development Momentum						
22	Interprovincial Collaboration on Wind	x	x		M		Government/Utilities/Regulators, Economic Development/Industry Organizations
	Innovation						
23	Innovation for Next Generation Wind Technology	x	x	S			Training/Academia, Developers and Tier 1s
24	Carbon Footprint Management in Wind Energy Supply Chain	x	x	S			Training/Academia, Developers and Tier 1s
25	Develop 3D Printing to Support Wind Industry Activities	x	x		M		Training/Academia, Developers and Tier 1s

OFFSHORE WIND

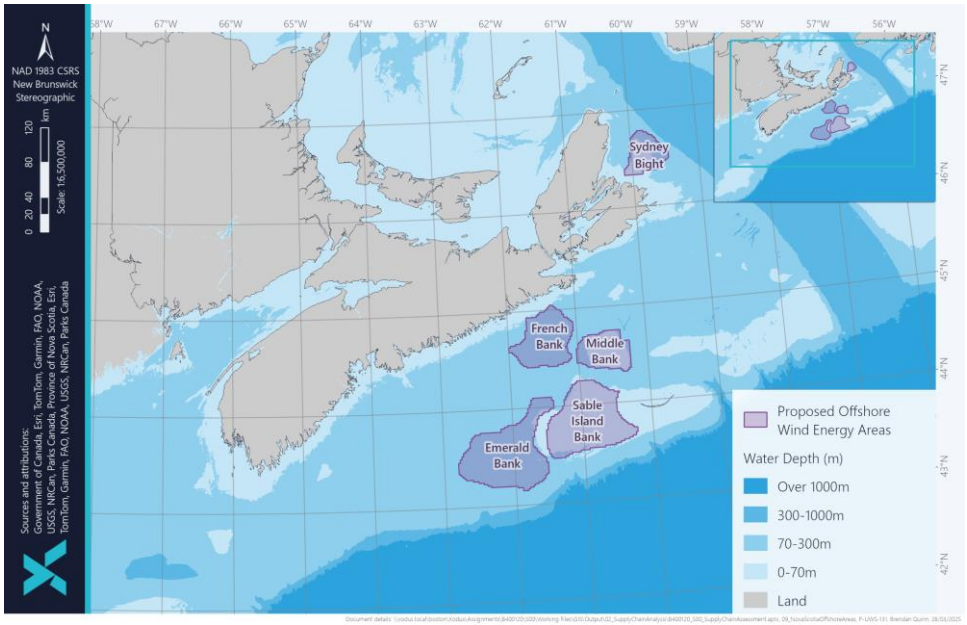
The global OSW industry represents nearly 70 gigawatts (GW) of installed capacity, with up to 190 GW planned to be installed by 2029. Outside of China, the European region dominates OSW activities, both in terms of installation and supply chain capability. Global OSW development is continuing to expand on a global scale, with several countries and continents having ambitious capacity deployment targets set for the 2030s and 2040s. This will continue to create opportunities for supply chain development and expansion in relation to increased demand.



Global Offshore Wind Forecast (Source: NREL, 2024)

This is truly a global industry, with products being produced and shipped around the world. It has, however, been affected by the rise in supply chain and commodity prices over the past two to three years resulting in a more cautious approach to emerging markets, along with a focus on returns and project certainty to send market confidence signals. Site awards, subsidy mechanisms, and establishing procurement targets are some of the core policy mechanisms that countries use to support industry growth, and are crucial for developing a domestic supply chain.

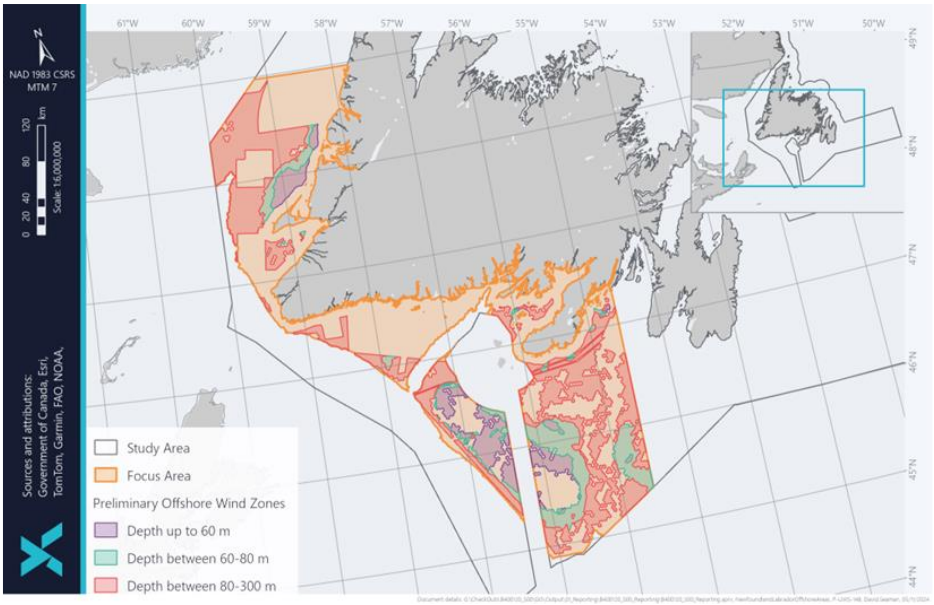
Atlantic Canada offers ideal environmental conditions for OSW, including consistent speeds in excess of 11 m/s, as well as suitable water depths and bathymetry. Despite this, Canada does not yet have any installed OSW; however, the province of Nova Scotia (NS) has a stated goal of leasing 5 GW of OSW capacity by 2030. Until now, a major challenge to the development of Canada's OSW industry has been the lack of a regulatory framework, however recently passed legislation amending the Atlantic Accord Acts has mandated joint federal-provincial management of offshore renewables in NS and Newfoundland and Labrador (NL)



Nova Scotia Offshore Wind Energy Areas

Currently only NS and NL are pursuing OSW, and have undergone joint federal-provincial Regional Assessment (RA) processes to provide information, knowledge, and analysis that will inform future OSW

development processes. Following from the RA recommendations, five Wind Energy Areas were announced by the NS government, with plans for a licensing round sometime in 2025.



Identified Potential Future Development Sites (Regional Assessment of OSW Development in NL, 2025)

While NL has not publicly committed to OSW development, the RA report provided recommended future development areas. Additionally, there are 16 designated bays in NL where joint federal-provincial management is not required for the development of offshore renewables. Both NS and NL have the possibility to develop both fixed-bottom and floating offshore wind. New Brunswick (NB) has no stated plans to develop OSW but may consider it if project economics improve. Prince Edward Island (PEI) also has no current OSW development aspirations.

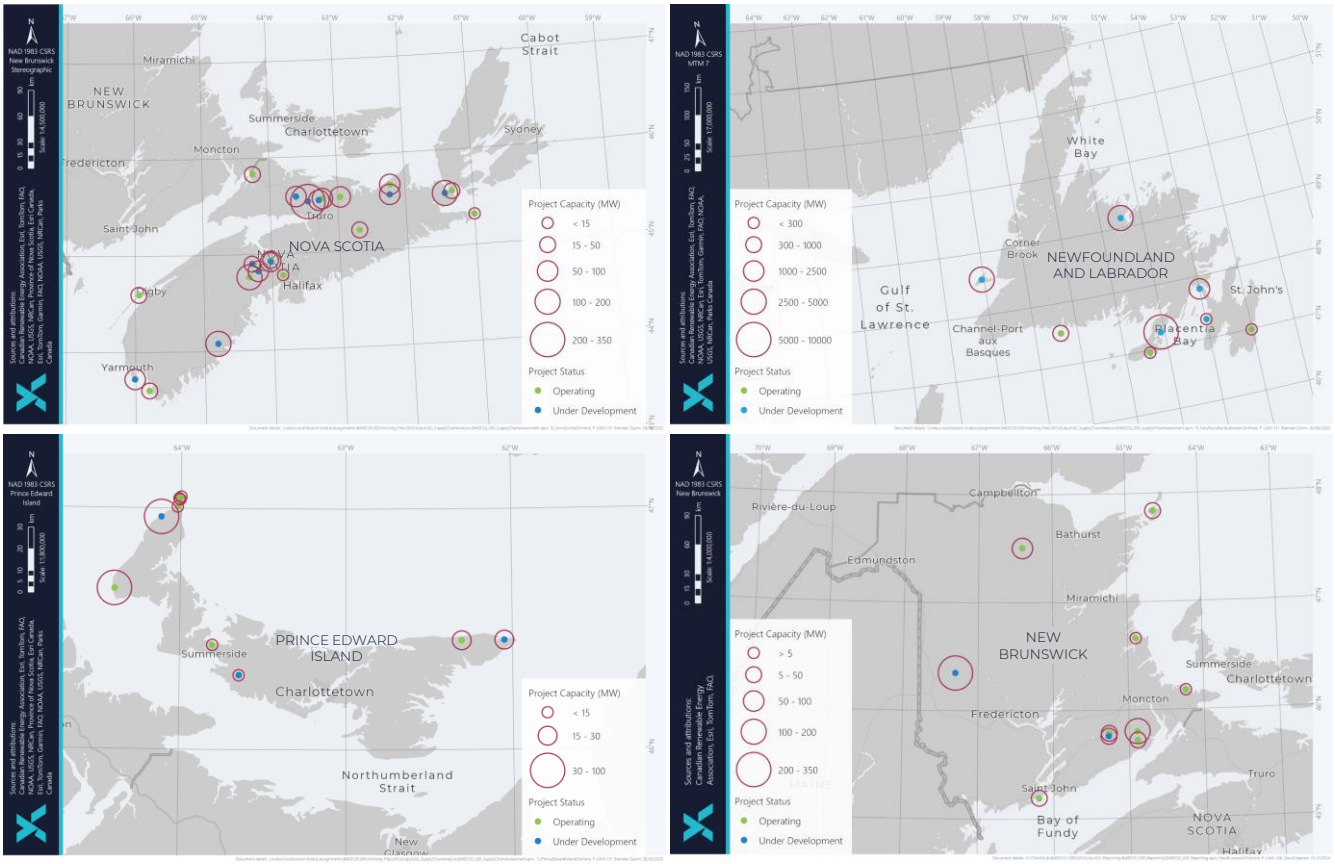
Several ports in NS and NL have already supported projects in the US by marshalling— the process of collecting, storing and preparing wind turbine components before they are transported and installed at the wind farm site—major components such as monopiles, transition pieces, and blades, owing to their existing readiness and capabilities.

Monopiles at the Port of Argentia, NL (Credit: Port of Argentia)

ONSHORE WIND

There is currently in excess of 945 GW of installed onshore wind capacity globally. China and the US continue to dominate as the largest markets for onshore wind installations, followed by Brazil, Germany, and India. With onshore wind now being one of the cheapest sources of energy across markets and offering largely localized supply chain and workforce opportunities, it features prominently in many countries' decarbonisation plans. Similar to OSW, clarity on market access and revenue streams remains a critical focus for supply chain development.

Atlantic Canada has seen significant onshore wind development since PEI's first pilot project in 2001. The region has seen a plateau in onshore wind development over the last decade, although several small-scale projects have been installed during this time. Primary drivers of wind development in Atlantic Canada today are clean electricity goals and, more recently, green hydrogen production. Canada has signed MOUs with Germany and the Netherlands, establishing partnerships for green hydrogen supply and export. The availability of Crown land in NL paired with the lifting of the wind moratorium have created significant onshore wind demand for green hydrogen, with a total of 28.4 GW planned.



	NS	NL	NB	PEI
INSTALLED ONSHORE WIND CAPACITY	623 MW	55 MW	397 MW	204 MW
PLANNED ADDITIONAL CAPACITY FOR GRID	1.4 GW by 2030	500 MW by 2030	1.7 GW by 2035	309 MW by 2032
PLANNED CAPACITY FOR H_2 PRODUCTION	4.4 GW by 2035	28.4 GW by 2035	1.7 GW by 2032	None to date

SUPPLY CHAIN ASSESSMENT

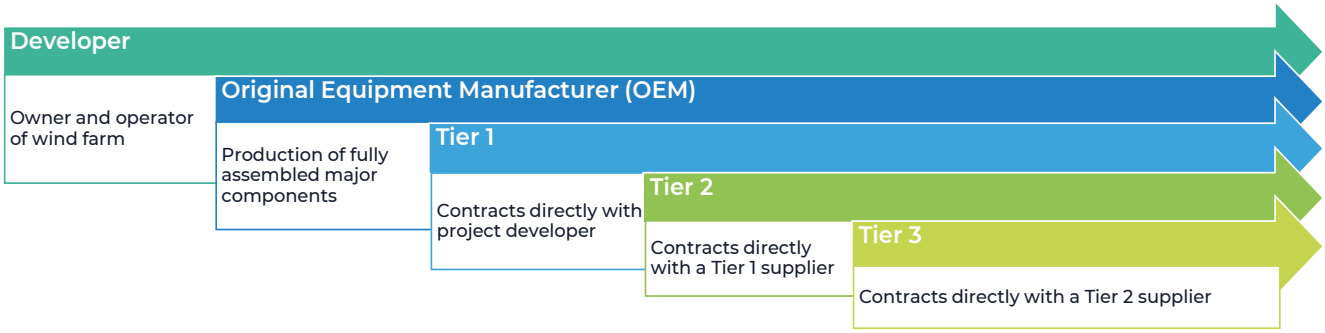
When describing the supply chain of an industry, standard terminology, also referred to as taxonomy, is used to categorize companies based on standard contracting structures. Supply Chain Areas, also known as "packages" represent the project development lifecycle. Supply Chain Elements comprise the components, activities, and services required to deliver a project. Companies in this assessment are considered at the Supply Chain Element level.

SUPPLY CHAIN AREA	SUPPLY CHAIN ELEMENT	FIXED/FLOATING/ ONSHORE
PROJECT DEVELOPMENT	Project management	All
	Permitting	All
	Onshore surveys and environmental monitoring	All
	Offshore surveys and environmental monitoring	Fixed, Floating
	Engineering and design	All
MANUFACTURING AND COMPONENT SUPPLY (WTG AND BOP)	Major industrial electrical equipment supply	All
	Minor industrial electrical equipment supply	All
	Industrial motion precision component fabrication	All
	Blade supply	All
	Major steel component supply	All
	Secondary steel component supply	All
	Mooring supply	Floating
	Cable supply	All
	Ancillary equipment supply	All
	Vessel design and build	Fixed, Floating
CONSTRUCTION, TRANSPORTATION INSTALLATION AND COMMISSIONING (CTI&C)	Onshore construction	All
	Onshore tower and turbine installation	Onshore
	Offshore installation works	Fixed, Floating
	Electrical/grid connection and commissioning	All
	Onshore logistics	Onshore
	Vessels and marine logistics	Fixed, Floating
OPERATIONS AND MAINTENANCE (O&M)	Operations	All
	Onshore inspection, maintenance and repair (IMR)	Onshore
	Offshore inspection, maintenance and repair (IMR)	Fixed, Floating
DECOMMISSIONING	Dismantling onshore infrastructure	All
	Removal of subsea infrastructure	Fixed, Floating
	Repowering	All
	Site restoration	All
SECTOR SUPPORT	Government, industry associations, non-profit organizations	All
	Training, Academia, Labour Organizations (Unions) and R&D	All
	Other professional services	All

The desk-based portion of the supply chain assessment focused on analysing existing companies in Atlantic Canada for their ability to support offshore and onshore wind supply chains. The goal of this exercise was to establish an

understanding of the strengths and gaps that exist in Atlantic Canada, providing proponents with an informed idea of suitable supply chain activity and where it would take place, and identifying opportunities where outside investment/partnerships could stimulate supply chain growth. This consisted of categorizing a list of companies—sourced through regional industry associations, economic development organizations, and other entities—according to the respective wind energy taxonomy, and then individually assessing relevant companies to determine to what degree they would be able participate.

The assessment was carried out using publicly available data about the company, including websites, press releases, news articles, social media, etc. The supply chain of companies necessitates use of standard terminology, including Developers, OEMs, and Tiered suppliers, defined below. The scope of this supply chain assessment looks primarily at local opportunities for Tier 1 to Tier 3 companies. A total of approximately 1,070 companies were assessed to have some level of applicability in OSW, onshore wind, or both.

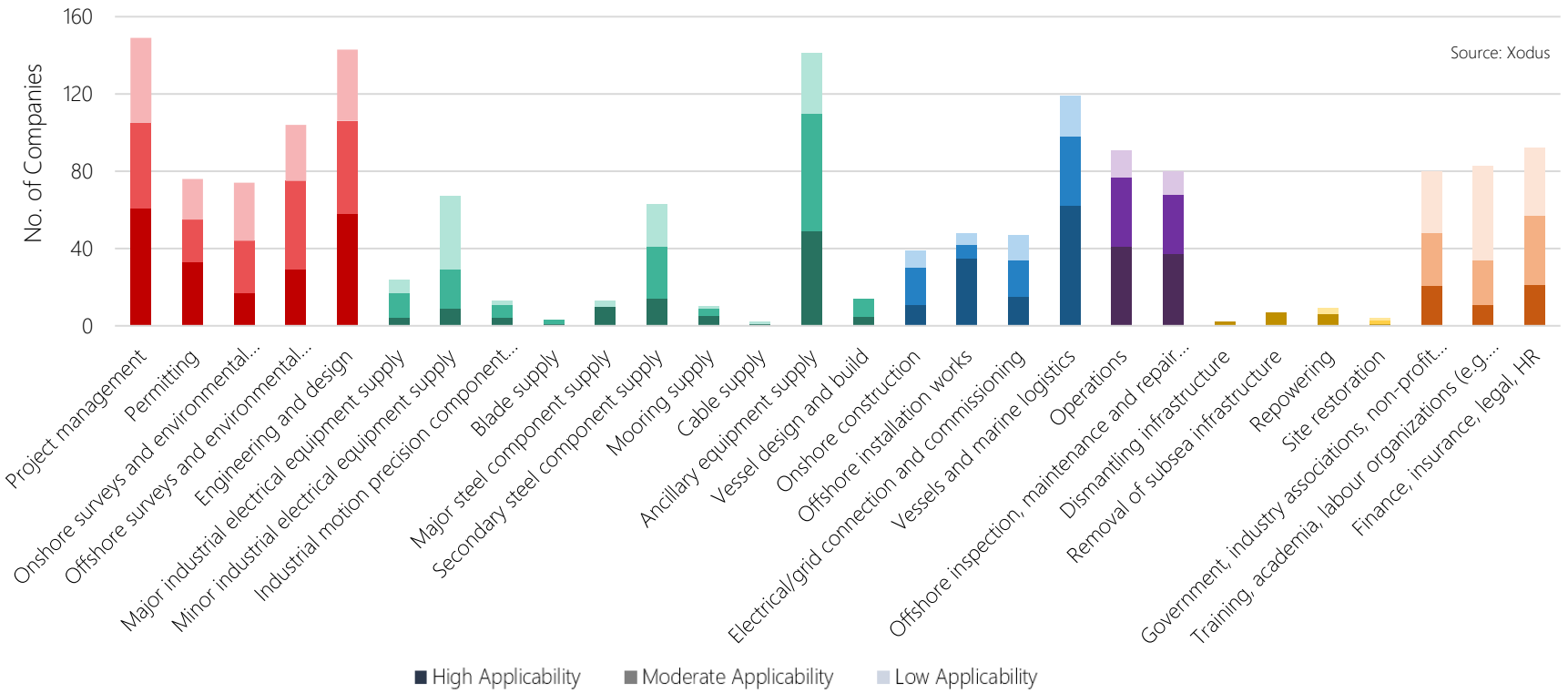


All companies were assessed for high, moderate, or low applicability according to the supply elements they are mapped to, as follows:

- **High applicability:** Company has direct experience in offshore/onshore wind or provides products/services that are highly relevant to offshore/onshore wind in design, scale and production volume; investment required to transition company into offshore/onshore wind is minimal, and/or would be directly applied to scaling/qualification operations;
- **Moderate applicability:** Company has no direct experience in offshore/onshore wind but provides products/services that are like those relevant to offshore/onshore wind in design and scale; investment required is moderate and would be needed to help company retool, meet standards/qualifications, and scale operations;
- **Lower applicability:** Company provides products/services that resemble those needed in offshore/onshore wind but would need to significantly change operations to enter the industry; significant investment in retooling, meeting specifications/qualifications, and scaling would be required.

The results of the supply chain assessment of companies are provided in the following pages, noting observed strengths and gaps. OSW results are presented first, followed by onshore wind. Note that there is a slight difference in the taxonomy used given the differences in supply chain between the two technologies.

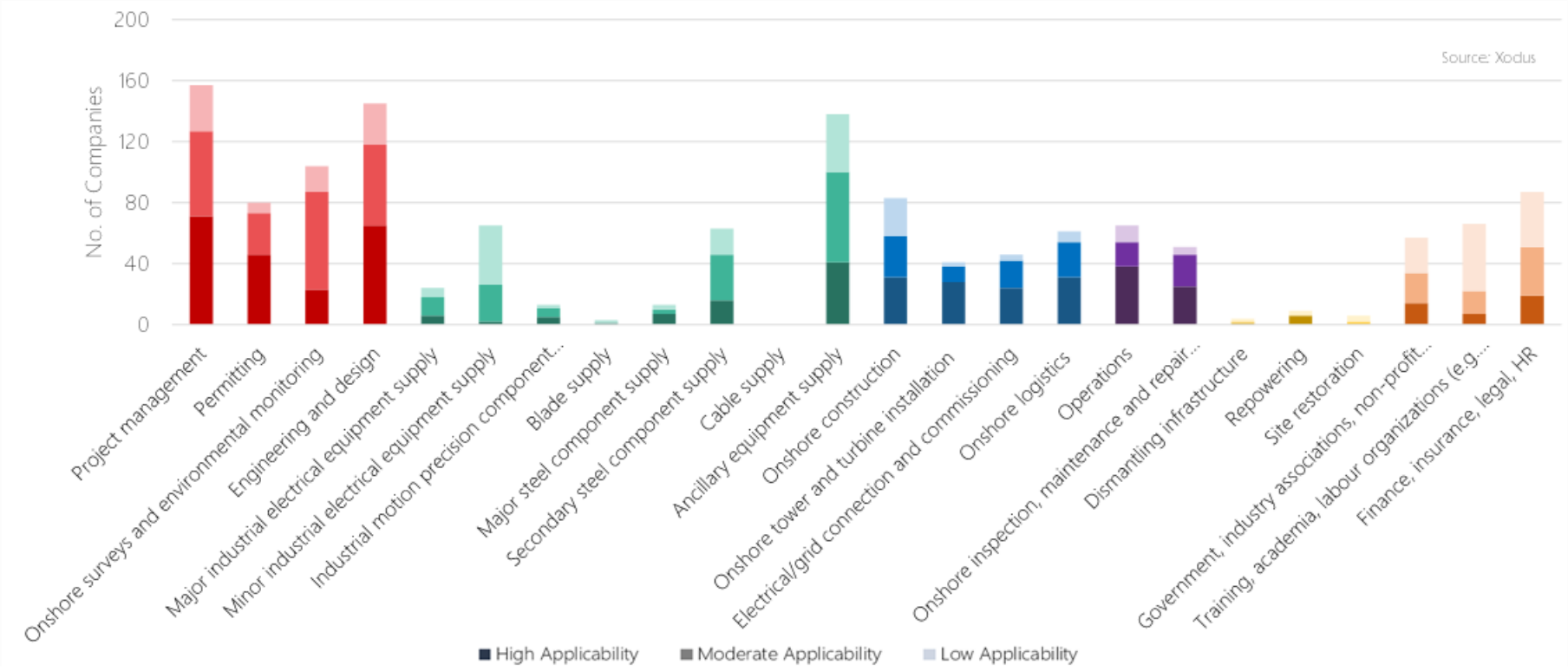
Offshore Wind Supply Chain Assessment Results



Strengths: Atlantic Canada's greatest OSW-related strengths are in Project Development, including **engineering, environmental monitoring, permitting and project management**, with many of these capabilities supporting marine industrial activities. Substantial steel and **secondary steel component fabrication** capabilities exist, with local companies that are capable of fabricating **large steel components**. There is a strong local presence in **marine logistics and vessel services**, along with **offshore installation and maintenance** experience that can be leveraged within the region.

Gaps: There are very **few manufacturing operations** in the Atlantic Canada region, **lacking scale and serial production capabilities** required to produce major OSW components. There is also a gap in companies capable of **decommissioning activities.**

Onshore Wind Supply Chain Assessment Results

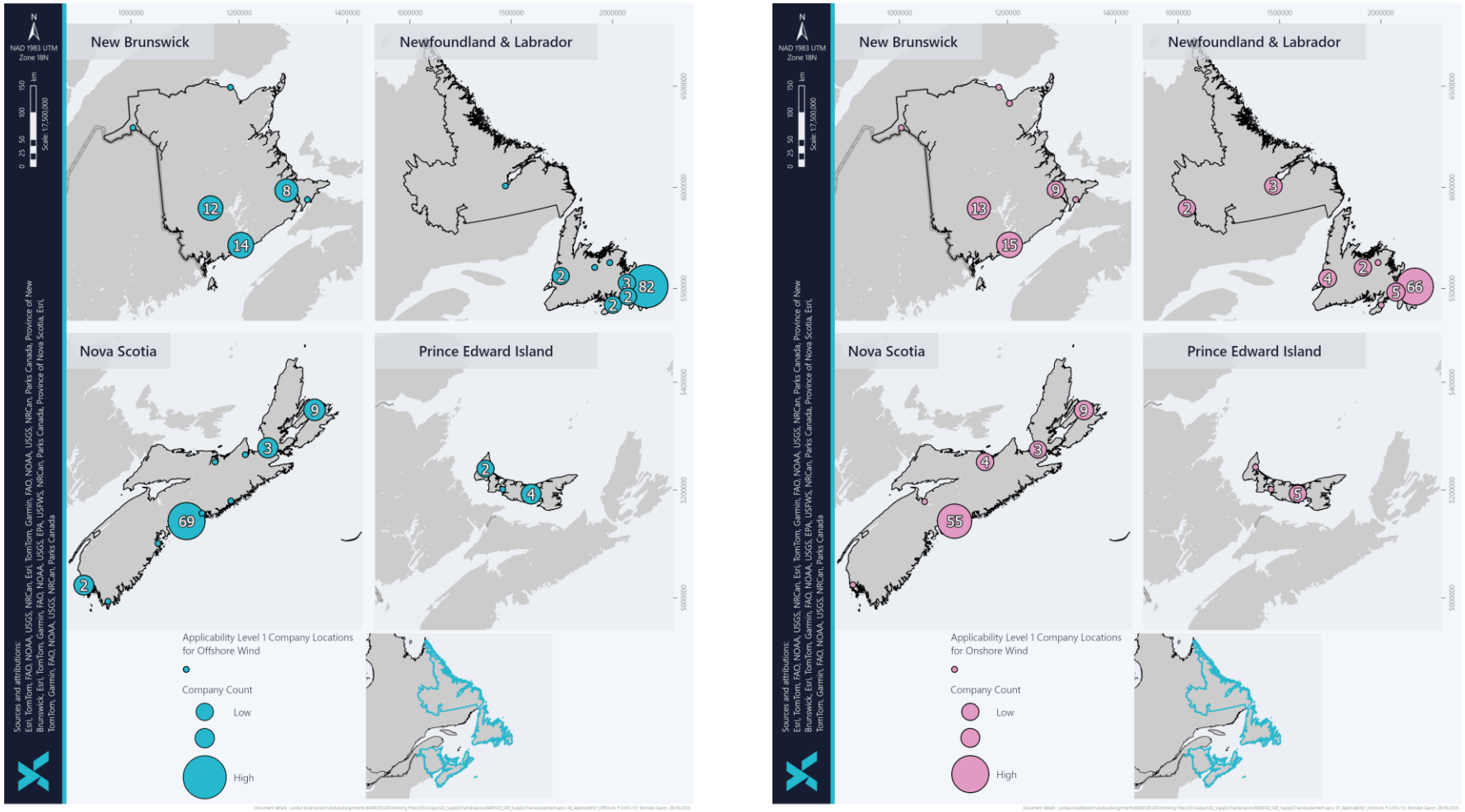


Strengths: Project Development, including **engineering, environmental monitoring, permitting and project management**, are regional strengths, with several companies having direct industry experience. Additional strengths exist in supplying **secondary steel and ancillary equipment** as well as in **onshore construction, logistics, and installation activities.** Approximately 23 independent companies identified as suppliers of **major industrial electrical equipment** (such as control systems, transformers, switchgear, etc.) along with smaller industrial electrical equipment providers.

Gaps: Atlantic Canada **does not produce components** for the onshore wind sector, with **blade and cable supplies notably limited**. There is a gap in companies stating **decommissioning capabilities**, however given strengths in onshore construction and logistics this is likely a non-issue.

Geographic Distribution of High Applicability Companies

Distribution of high applicability companies across the Atlantic Canadian provinces is shown for OSW (left) and onshore wind (right). It is observed that many of the **larger, high-applicability companies have offices in most or all Atlantic Provinces**, particularly those with direct offshore/onshore wind experience or experience in adjacent industry. Companies are **mostly concentrated around major cities**: Most companies are coastal, owing to the substantial coastlines possessed by each province, and their reliance on marine commerce. Overall, **approximately 21%-28% of companies assessed were assigned high-applicability**.



Geographic Distribution of High Applicability Companies for Offshore (left) and Onshore (right) Wind, by Province

OPPORTUNITY ANALYSIS

This analysis considered the results of the supply chain assessment of companies, paired with review of provincial energy literature, and engagement with a broad cross-section of Atlantic Canadian stakeholders and rights holders, including government, utilities, developers, economic development/industry groups, ports, and more. An opportunity analysis was carried out to assess regional strengths and opportunities, as well as weaknesses and threats, with respect to supply chain development for offshore and onshore wind. These were then used to synthesize recommendations that will help the industry to identify priority actions for supply chain development based on short-term (2025), medium-term (2026-2030) and long-term actions (2030+), as well as identify parties to execute on the recommended actions.

Strengths and Opportunities

Weaknesses and Threats

Identified weaknesses and threats to wind industry supply chain development are summarized below, indicating which of the recommendations apply as mitigating measures to these challenges.

CATEGORIES	WEAKNESSES & THREATS	MITIGATING RECOMMEDATION(S)
Supply Chain	**Global bottlenecks** in workforce and equipment availability across multiple concurrent projects, especially for essential infrastructure like transmission and distribution components (e.g. transformers, cables); **No local major component manufacturing.**	2, 17, 19, 25
	Port and transportation **infrastructure (e.g. bridges) upgrades needed** to handle shipments of onshore and OSW components.	1, 20
	High cost of doing business in Canada, including high federal duty on temporary imported vessels impacting project economics.	19
	Stakeholder scepticism and resistance to wind developments in new areas with large-scale rapid rollout with perceived inadequate communication. Lack of formal local content mandates, resulting in a **lack of clarity and visibility of benefits.**	3, 17, 21
	Complex and onerous procurement systems and certification processes of top tier suppliers could discourage local suppliers from participating.	3, 4, 8, 9
	Difficult to identify diverse-owned companies due to lack of reporting; difficult to confirm diverse-ownership without certification.	5, 6, 7, 8
Workforce	**Labour shortages** in key roles like technicians, electricians, and grid engineers. Aging local populations impacting workforce availability; **Limitations with existing apprenticeship systems.**	4, 10, 11, 12,13, 14
	Provincial bottlenecks in workforce and equipment availability across multiple concurrent projects.	2, 11, 16, 22
Policy, Leadership & Communication	Resistance from communities due to **'Not In My Backyard' (NIMBY) attitudes** and environmental concerns, including within fishery (re: OSW), community benefits and regarding recyclability of components (blades).	16, 21, 24
	Pathways to market are not obvious – transmission systems and electricity export opportunities are currently limited.	15, 16
	Economic uncertainties, lack of consistent project pipeline, and lack of clear regulatory frameworks impacting investments in wind energy sectors.	2, 3, 15, 16, 22
	Global competition from regions with established wind supply chains and stricter local content policies.	2, 18, 19
	Regional competition among Atlantic provinces creating inefficiencies and missed collaboration opportunities. Regional **disparities in labour market and infrastructure** readiness between provinces.	10, 22
	Inter-provincial trade barriers limit the ability of provinces to provide mutual supply chain and workforce support.	10, 22
Innovation	Current cost and **inflationary pressures may limit investment** options within innovation or R&D space.	16, 18

SUPPLY CHAIN RECOMMENDATIONS

Leverage Existing Supply Chain Strengths

1. **Long-Term Value Creation in Supply Chain Investments:** Focus early investment on building long-term services that leverage existing experience and support sustainable industry growth with lower entry costs, such as legal, financial, environmental, engineering, and other professional services. Prioritize timely infrastructure investment in marshaling and O&M ports, like cranes and lifting equipment.

2. **Explore Manufacturing Interest to Encourage Supply Chain Clustering:** Explore opportunities to establish manufacturing operations and co-locate supply chain activity in Atlantic Canada. Develop a realistic and properly timed strategy to attract these manufacturing activities to the region, given a sufficient project pipeline.

Strengthen Wind Industry Ecosystem Support

3. **Streamlined Supply Chain Development Program**: Develop a supply chain program to identify and promote local companies' capabilities and mitigate barriers to entering the offshore and onshore wind supply chains. Establish a searchable supply chain database of local companies vetted for their stated capabilities and diverse or Indigenous ownership status, and collaborate with developers and broader industry to maximize local opportunities.

4. **Promote and Assist Rural Businesses:** Increase awareness of opportunities and understanding of supply chain requirements for rural companies. Establish virtual engagement tools to overcome geographical barriers and allow entry of rural companies into the supply chain through rural municipalities, EDOs, and/or Chambers of Commerce.

Encourage Supply Chain Diversity

5. **Establish and Communicate Industry Diversity Expectations:** Develop supplier diversity initiatives with benchmarks and measurable goals for developers and their subcontractors. Establish grants and subsidies to support diverse-owned businesses in scaling, retooling, and upskilling to encourage development and inclusion.

6. **Establish Provincial or Regional Diversity Entities/Entity:** Establish provincial or regional supplier diversity organizations to guide supplier diversity policies, establish a certification process for diverse-owned companies, and develop a searchable database of certified diverse businesses.

7. **Diversity Plans for Large-Scale Projects (>500 MW):** Require developers to include supplier diversity plans in licensing or offtake procurement processes for projects exceeding 500 MW, mandating engagement with diverse suppliers during early project phases.

Support Indigenous Involvement in Offshore and Onshore Wind Industry

8. **Educate Developers on Indigenous Equity Options:** Identify best practices for Indigenous equity options in wind projects. Educate developers and Tier 1 companies on Indigenous equity structures and associated benefits and ensure cultural alignment around Indigenous engagement and business practices.

9. **Create an Indigenous Supply Chain Hub:** Assist with partnership building for smaller or less experienced Indigenous supply chain companies by building a consortium with industry players and across Indigenous groups. Establish a single point of contact for developers to limit the burden of engagement with multiple entities.

WORKFORCE RECOMMENDATIONS

Strengthen Workforce Support Structures

10. **Commitment to Coordination Between Training Entities**: Streamline the region's wind energy training programs and ensure that they are fully aligned with industry requirements, expectations, and timelines. Coordinate the programs to complement each other and establish awareness of operations across institutions.

11. **Industry-Funded Training Initiatives:** Formalize partnerships between developers/OEMs and training institutions to provide funding, guidance, and curriculum for industry-focused training programs. Establish networks of certified training institutions such that Developers, OEMs, and Tier 1 and 2 suppliers have ready access to a trained local workforce while protecting trade secrets.

Improve Access to Training and Workforce Development

12. **Community Career Opportunity Outreach:** Organize outreach initiatives to highlight career paths in the wind energy field, targeting disadvantaged communities, adjacent industry, rural workers, and other overlooked communities. Inform the Atlantic Canadian workforce of the opportunities, timelines, and requirements in offshore and onshore wind to increase awareness. This outreach should target K-12 schools through to the trades and secondary education institutions.

13. **Strengthen Apprenticeship Initiatives:** Increase and improve apprenticeship opportunities to mitigate the current and anticipated future trades worker shortages. Ensure apprentices can transition into long-term employment in the offshore and onshore wind industries following journeyperson designation.

Connect Workers with Jobs in Wind Industry

14. **Adjacent Industry Workforce Attraction:** Create upskilling initiatives to allow workers to transition from offshore O&G, onshore construction, mining, and other relevant sectors to meet workforce bottleneck challenges while creating supplementary opportunities for the region's existing workforce.

POLICY RECOMMENDATIONS

Send Positive Market Signals for Regional Wind Energy Development

15. **Explore Electricity Export Opportunities:** Explore and firm other offtake pathways and end uses in export markets like the Northeast US states, other Canadian provinces, green fuels, and corporate PPAs to fully capitalize on the wind energy opportunity. Quantify these potential markets and establish timelines for development, given demand.

16. **Set Capacity Targets for Wind Energy Development:** Establish and clearly communicate provincial offshore and onshore wind procurement targets and timelines to drive supply chain planning and growth. Develop regional or provincial roadmaps to demonstrate a robust, long-term development pipeline to investors and developers.
17. **Establish Transparent and Predictable Licensing, Permitting and Offtake Processes:** Establish transparent and predictable licensing, permitting, and offtake processes and communicate relevant timelines to attract developers to the region. Harmonize environmental approval processes with licensing requirements, federal and provincial clean energy goals, and industry standards.

18. **Establish Investable Value of Offshore Wind:** Initiate a publicly funded assessment of Atlantic Canada's offshore wind resource to establish the value of OSW for investors and utilities. Develop a high-quality wind resource database to establish where OSW developments can fill in for onshore wind production.

19. **Explore Reductions in Cost of Doing Business in Atlantic Canada:** Investigate opportunities to remove interprovincial trade barriers and unlock economies of scale in workforce and supply chain development. Revisit the Federal Duty on Temporary Imported Vessels and finalize federal tax incentives for renewable energy development.

Policy Support for Local Economic Benefits

20. **Direct Licensing Funds for Industry Development:** Invest revenue from seabed licensing auctions to fund various industry development activities, such as transmission and infrastructure development, workforce upskilling, and other high priority/high impact recommendations.

LEADERSHIP AND COMMUNICATION RECOMMENDATIONS

Build Industry Awareness and Support

21. **Public Wind Industry Educational Campaign:** Launch regional energy literacy initiatives to inform, educate, engage, and involve communities, Indigenous communities, and businesses about wind energy and the associated economic benefits in Atlantic Canada. Engage as early as possible to communicate development strategies, obtain community input, and build local acceptance and support.

Create Supply Chain Development Momentum

22. **Interprovincial Collaboration on Wind:** Develop a unified approach to marketing, investment attraction, and supply chain development across the Atlantic provinces for the offshore and onshore wind industries to capitalize on efficiencies. Present the region as a cohesive unit to strengthen its value proposition in the global supply chain.

INNOVATION RECOMMENDATIONS

23. **Innovation for Next Generation Wind Technology**: Leverage the existing R&D ecosystem to foster innovation and sector leadership by establishing R&D projects in partnership with universities, public, and private sector entities to address technological and cost challenges in wind energy, such as hydrogen production, harsh weather design, and floating OSW technology.

24. **Carbon Footprint Management in Wind Energy Supply Chain:** Encourage R&D efforts to reduce the carbon footprint of the wind energy supply chain by developing sustainable materials, optimizing processes, and extending lifespan, such as natural fiber composites, bio-based resins, advanced coatings, and alternative fuels for vessels.

25. **Develop 3D Printing to Support Wind Industry Activities:** Develop advanced 3D printing technology to supply custom, hard-to-procure replacement parts for the offshore and onshore wind sectors, as modeled by the offshore O&G industry, thereby reducing reliance on imports.