

Lifting Ontario's Offshore Wind Moratorium...



... Responsibly

Agenda

- Trillium Power Wind Corporation: **Mission**
- The **Problem with Onshore Energy**
- Value of **Far-Offshore Wind & TPW1**
 - Addressing Past Challenges
 - TPW1: The Gem of the Great Lakes
 - Proven and Fast-to-Market Technology
 - Strategic Export Opportunities - NYISO
 - Lennox & Napanee
 - Economic Development Impact
 - Private Corporate PPAs





Trillium Power
Wind Corporation™

Founded to harness the enormous energy potential in our Great Lakes

- Offshore Wind has a strategic and integrated role to play in Ontario's energy future.
- We have the team and the resources to make it happen now. We are a local company operating in Ontario since 2004 and ready to serve our communities with affordable, clean power and significant economic development opportunities.
- We are committed to provide a secure, stable, and sustainable power supply that is unseen, unheard, and free from the risks of fuel inflation, waste mitigation, or environmental harm. By advancing innovative, responsible, and forward-thinking energy practices, we aim to ensure a resilient and prosperous energy landscape for generations to come.

The Transition is NOW. The mission is BOLD.

All Hands on Deck

- The LARGEST PROCUREMENT IN HISTORY OF PROVINCE
- “Technology Agnostic”
- Affordable
- Clean

Nuclear is Ontario’s Present & Future

- Local and Clean
- Technology Export
- Foundational

Nuclear + Gas = NOT ENOUGH * RISK

- Alternatives are necessary
- “ALL HANDS ON DECK”
- Technology Agnostic

Nuclear + Gas + Offshore Wind = ENOUGH



The Problem with Onshore Energy Alternatives

Community Opposition - NIMBY

- ***Ontarians strongly oppose having wind farms or gas plants in their communities.*** Thirty-five Ontario municipalities, representing almost 60% of the province's population, have passed resolutions calling for phase-out of gas power by 2030 or ASAP.

Siting and Land Use Conflicts Prevent Significant Contributions

- Siting gas, solar and onshore wind farms is challenging beyond just NIMBY due to environmental and other regulatory issues and available resources (wind and sun). ***IESO LT2 is extremely challenged in their procurement of new onshore generation resources.***

The Significant Risks of Gas/Nuclear-Centric Focus

- Gas and Nuclear are far from the most affordable alternatives to pursue and ***directly conflict with the political agenda creating enormous risk***
- Gas is mistakenly marketed as 'clean' energy and while a pragmatic and necessary "gap-filler" it should be minimized where possible on the basis of both "affordable" and "clean" objectives
- Fuel Inflation
- Waste mitigation



The Value of Far-Offshore Wind



Clean Energy supplement minus the NIMBY

- Lower cost than both Nuclear and Gas
- Offshore wind eliminates onshore siting challenges and local opposition.
- Utilizes vast, uninhabited, “invisible” marine spaces for energy generation.
- Rural communities are completely unaffected by far-offshore projects.
- Inclusion of minimum distance-to-shore as part of lifting moratorium e.g. 10kms

Perfect Complement to Nuclear

- Supports energy diversification alongside strategic nuclear expansion.
- Reduce reliance on interim Gas to 2050
- Risk Mitigation: Federal CER, uncertainties in SMR technology, development timelines, fuel cost inflation, waste, Net-Zero.
- “Hybrid” Baseload-Peakload power with 50+% Capacity Factor.
- Combine with Advanced Storage technologies

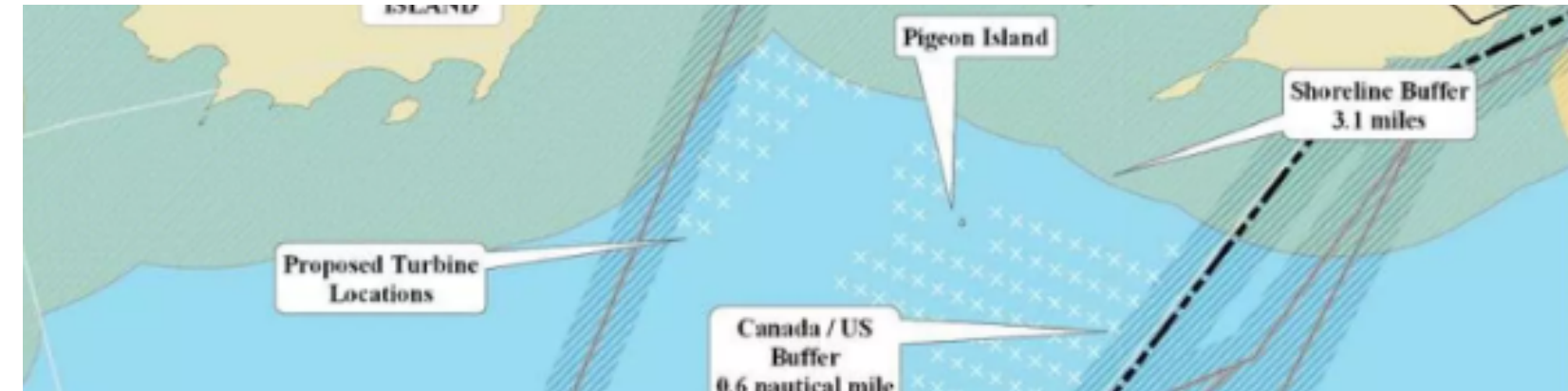
Addressing Past and Current Challenges



View of an offshore wind farm (Horns Rev) at 25 kms (same as TPW1) from shore

Understanding the Moratorium

- Near-shore siting of Toronto Hydro off the Scarborough Bluffs was politically untenable.
- This factor led to the initial and blanket moratorium on all offshore wind projects.
- By implementing a minimum distance from inhabited shore restriction e.g. 10 kms, NIMBY is completely avoided by reducing the number of eligible sites (relatively shallow waters) and ensuring they are virtually invisible from inhabited shorelines.



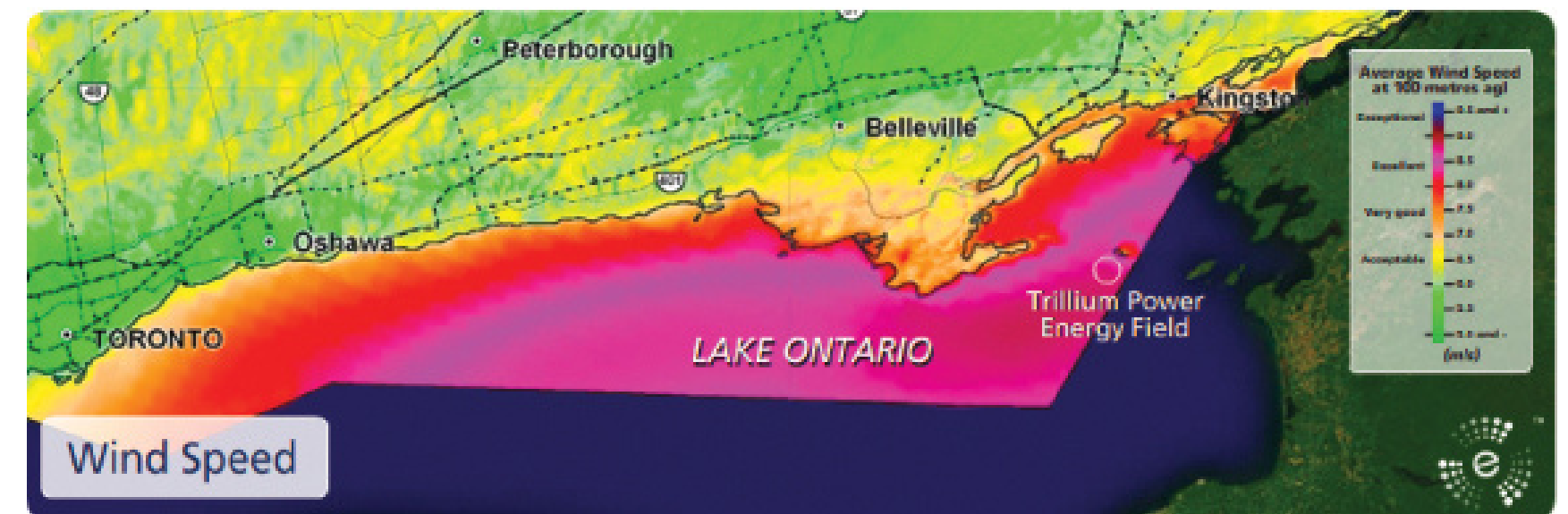
Windstream Litigation (Wolfe Island Shoals) 300 MW

- Current litigation with Windstream hangs over the province, the government and our industry.
- An opportunity exists to settle that litigation.
- Or not. This case (or any case) should not and need not prevent the responsible lifting of the province wide moratorium. The WIS project site is divided by a shipping lane and at closest point is only about 6 kms from shore - could go ahead at reduced scale with shoreline distance restriction of 10km.
- “Clean up the previous government’s mess!”

The Value of the *Trillium Power Wind 1 (TPW1)* project

Start with The “Gem” of Great Lakes Offshore Wind

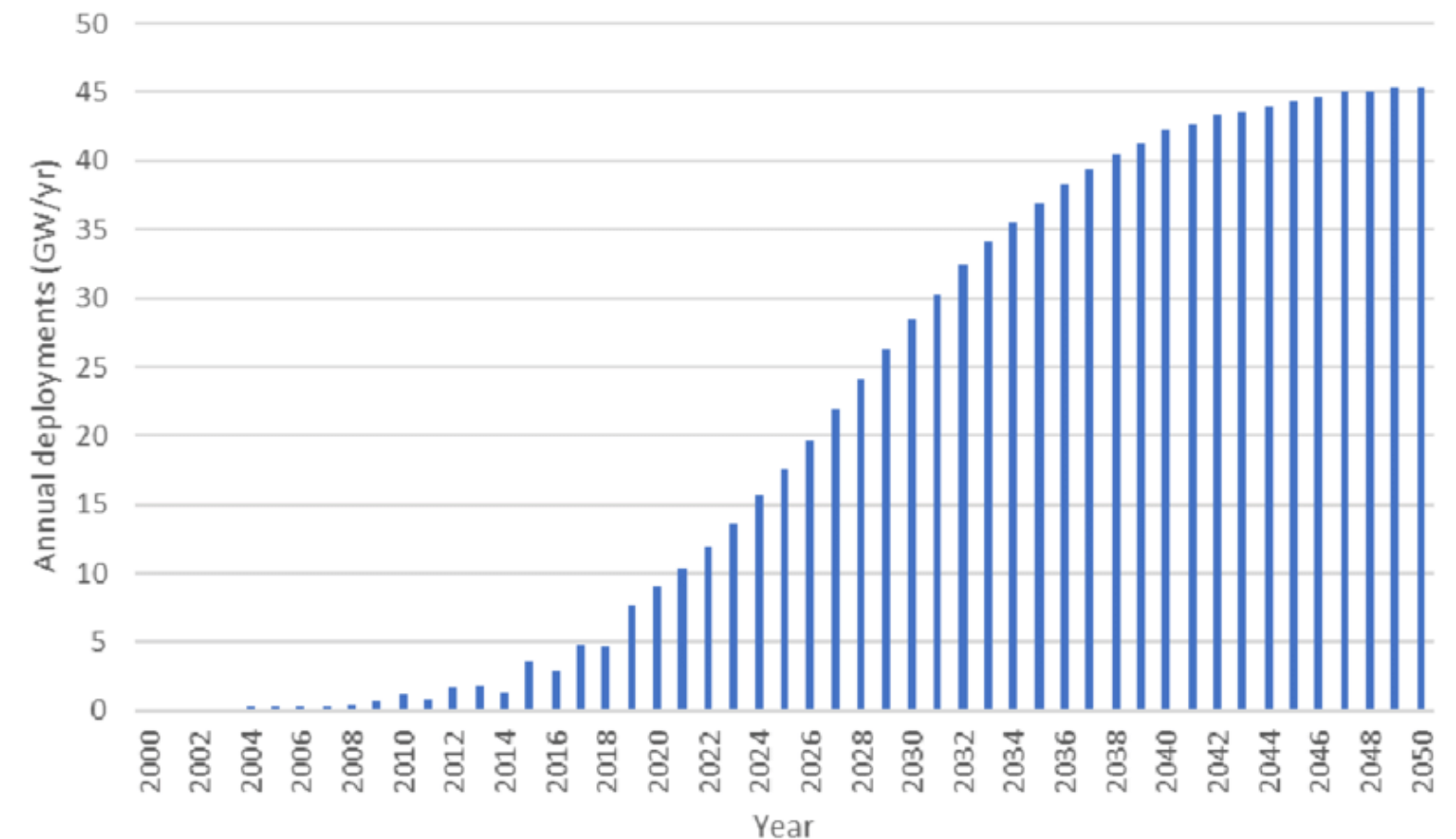
- **Far-Offshore location** in rare shallow Lake Ontario waters. The closest uninhabited shoreline on Amherst island is 18 kms away. Inhabited shorelines are min 25 kms distant.
- Nameplate up to 700 MW with **World Class wind resource** average speeds ca. 9 m/s. and >50% Capacity Factor
- Advanced State of development **years ahead of any other project** in the Great Lakes
 - Jack-up barges engineered and designed
 - 100+ studies and investments completed
 - Experienced team and well prepared supply chain
 - IESO feasibility study complete
 - ESA final drafts ready for review and submission
- Easily extensible via the TPW2 project (adj. to NW)
 - Another 700 MW nameplate adjacent to TPW1 site
- Only project to receive Land Use Permit issued by the MNR
 - Issued in 2004 and surviving 2 moratoriums



TPW1 Advantage: Proven and Fast-to-Market Technology

- Offshore wind technology has been successfully implemented in various regions across the globe, demonstrating its reliability and efficiency.
- The global offshore wind industry has matured dramatically since 2011. The technology is mature and the risks are well known.
- TPW1 has been developed based upon fully “bankable” technology. Local and global financing is available for every aspect of the project.
- TPW1 is feasible to reach COD by 2030-31.

Journal of Marine Science & Engineering
Annual OSW Deployments Globally



TPW1 Advantage: Strategic Export Opportunities

Increasing Export Capacities

- High voltage underwater transmission lines enable efficient export of surplus energy with reduced transmission losses
- TPW1 naturally has potential to establish the route between Lennox ON & Oswego NYISO.
- Isolation of the Transmission business plan increases the value of entire project
- Trillium's "Great Lakes Array" project brings additional capacity to export to MISO across Lake St. Clair.



TPW1 Advantage: Lennox & Napanee support and relief



**Mitigating
Environmental and
Community Concern**

OPG obtained approval for site-specific air standard for a 10-year period (2022-2032) due to the plant’s excessive emissions of sulphur dioxide, oxides of nitrogen, and sulphuric acid, whereby exceeding current emission standards set forth in the Environmental Protection Act, RSO 1990.

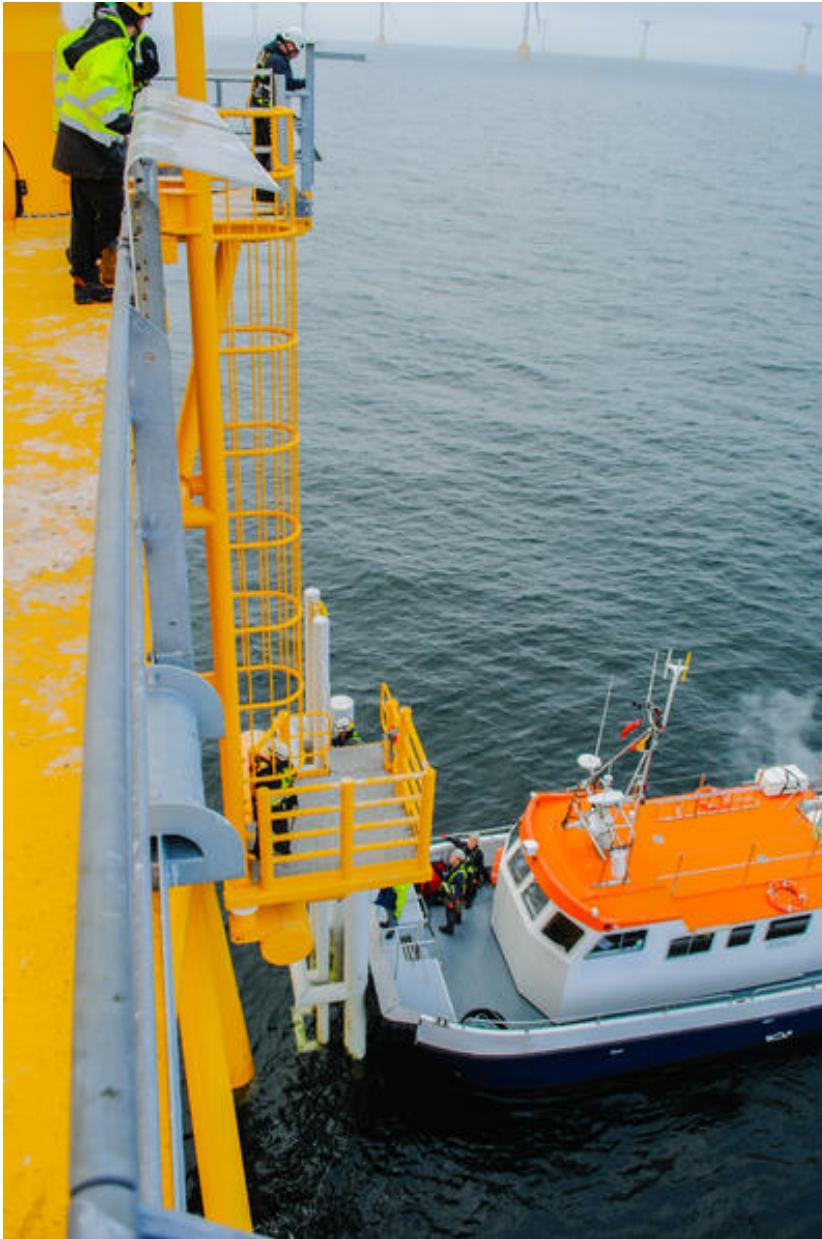
**Recover loss of 900
MW latest 2032**

TPW1 will replace end-of-life and supplement IESO’s new gas generation at Lennox by recovering some or eventually all of generating capacity scheduled to be shuttered early next decade and aligns perfectly with battery storage being installed

Toronto East Capacity

TPW1 connects into the Toronto EAST corridor that will see significant (> 4 GW) increase in transmission capacity become available by 2029.

Economic Development Impact



Job Creation

Offshore wind projects can create thousands of jobs in construction, maintenance, and operations, boosting local economies and providing stable employment.

Investment in Infrastructure

Significant investments in marine infrastructure, such as ports and transmission facilities, will enhance regional capabilities and attract further investment.

Diversification of Economy

By tapping into offshore wind, Ontario can diversify its economy, reducing dependence on traditional sectors and fostering innovation in marine and energy technologies.

Private / Corporate Power Purchase Agreements

The private sector can get this done

- The Government has proposed amendments to Ontario Regulation 429/04 under the Electricity Act, 1998. The proposed changes, announced in November 2023, aim to facilitate corporate Power Purchase Agreements (PPAs) by allowing Industrial Conservation Initiative (ICI) participants to offset peak demand charges with renewable energy contracted through PPAs. These amendments are designed to support clean energy development and ***enhance industrial competitiveness in Ontario.***
- Our project TPW1 is perfectly suitable for such a contracting opportunity (as are a small handful of other far-offshore projects)
- Certainty is needed to pursue these opportunities



Green Hydrogen

An opportunity to bring investment to Ontario

- Global hydrogen production reached 97 million tonnes in 2023, with less than 1% from low-emission sources, including green hydrogen.(1)
- Announced projects suggest low-emission hydrogen production could reach 49 million tonnes per annum by 2030. (1)
- Electrolyzer manufacturing capacity doubled in 2023 to 25 GW/year, with China contributing 60% of this capacity. (1)
- Despite rapid growth, green hydrogen still represents a small fraction of total hydrogen production, indicating substantial potential for future expansion.

(1) International Energy Agency



Conclusion

Lifting the moratorium on offshore wind is essential for Ontario's energy future.

The sheer demand and progress of the energy transition in our province demands the lifting of this moratorium. Whether the power is delivered to the IESO, directly or virtually to a large power consumer, our project(s) are essential to Ontario's energy future.

Be true to your messaging.

Mitigate Risk.

Explore the affordability.

Leverage the siting advantages.

Finalize the amendments to Ontario Regulation 429/04

Allow the markets and the private sector to function as it should.

Lift the moratorium responsibly. It's a simple news release on a website.

NEWS RELEASE

Archive

This is an archived posting from a previous administration. It is provided for historical and archival purposes.

Ontario Rules Out Offshore Wind Projects

McGuinty Government Committed to Renewable Energy While Protecting the Environment

February 11, 2011

[Environment, Conservation and Parks](#)

ONTARIO NEEDS MORE AFFORDABLE

ENERGY 
ENOUGH TO POWER TORONTO

4.5x

Thank you.