



# Bear Lake Wind Project

West Hants Presentation

April 8, 2024

# Membertou Welcome: Pjila'si



**Terry Paul, O.C.**  
Chief and CEO, Membertou

*“Membertou is proud to partner with EverWind Fuels in the Bear Lake and Kmtnuk wind farm developments.*

*As majority owner, Membertou will inform the development process, and along with our partners, we will work to progress the transition to green energy in Nova Scotia and the world. This development will provide a necessary source of energy, and will create economic benefits for the people of Membertou”*



# Opportunity for Economic Reconciliation

**Rose Paul, CEO of Bayside Development:** “True partnerships like this are the embodiment of what is meant by economic reconciliation.”

**Chief Terry Paul, Chief & CEO of Memberton:** “Securing clean energy for generations to come is both a strong moral decision, and one that supports economic reconciliation through a meaningful partnership with EverWind.”

**Chief Wilbert Marshall, Chief of the Potlotek:** “Having this project in our county and in our backyard allows us to see and be a part of working towards a greener future through the development of alternative energy sources.”



**Memberton**  
WELCOMING THE WORLD

# Who is Bear Lake Wind?

## Majority Owner



- Wind Strength is a Membertou company
- Wind Strength is a translation of the Mi'kmaq word "Wju'snewiknaq" (Wu-jew-sin-eh-wee-ginn-ah)
- For generations, Mi'kmaw were prevented from participating in and benefitting from the development of Canada's natural resources. Today, as the past, present, and future caretakers of this land, we are proud to be at the forefront of building a cleaner future for Nova Scotia and the world.

## Minority Owner



- Atlantic Canadian company
- >120 employees, highly experienced infrastructure team
- First Nations ownership

## Developer



# Presentation Members & Introduction

## Presentation Members



**Brendan Chard**  
VP Power,  
EverWind Fuels



**Mark Stewart**  
Renewable Energy  
Systems (RES)



**Dr. Chris Ollson**  
OEHM



**Jeff Bonazza**  
EverWind Fuels



**Graham Marshall**  
Councillor,  
Membertou

## Supporting Panelists



**Adam Langer**  
EverWind  
Fuels



**Shawn Duncan**  
Strum  
Consulting



**Andrea Cosman**  
RES

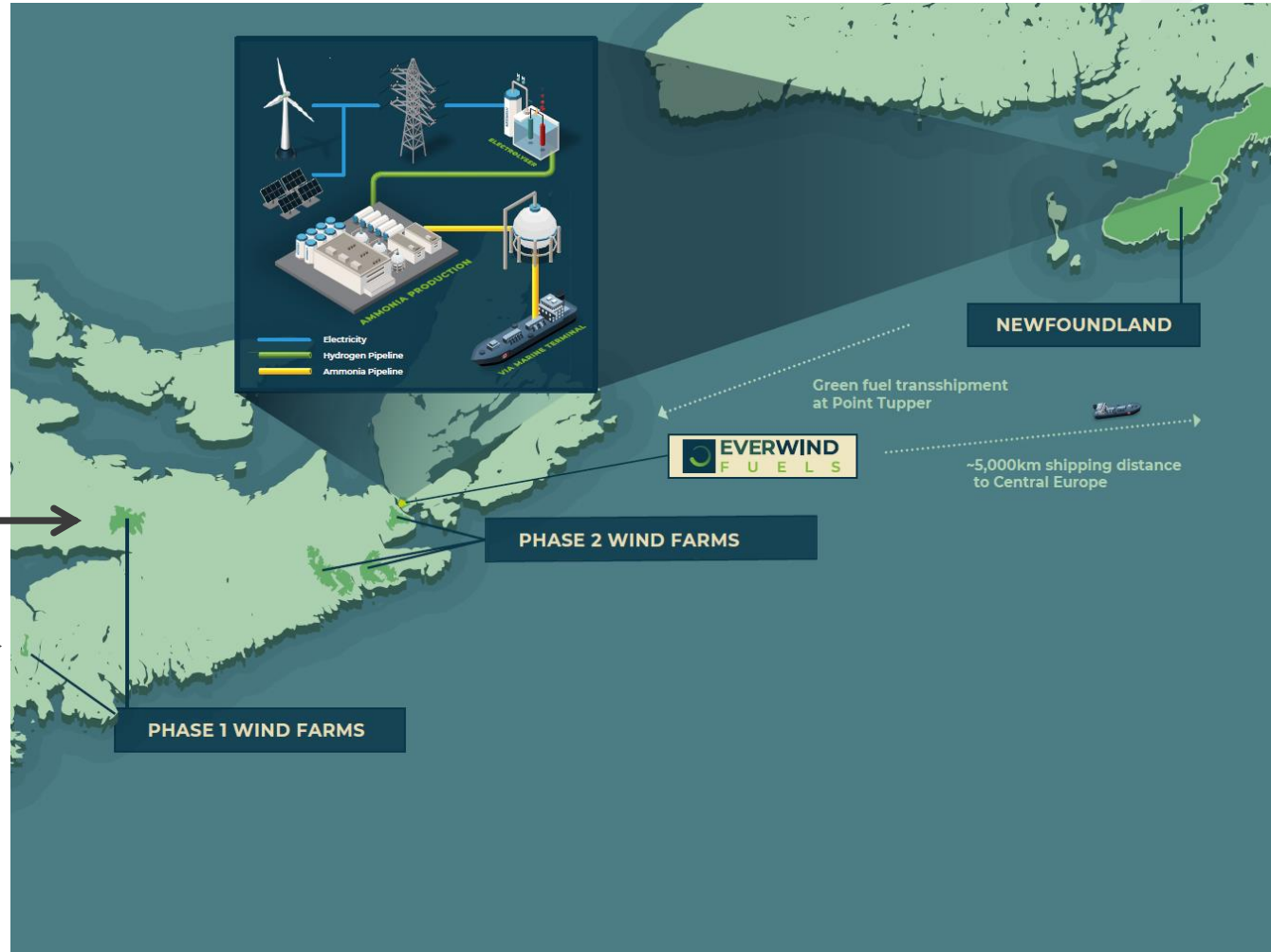


**Andrew Woods**  
RES

# Phased Green Hydrogen Project

Windy Ridge  
& Kmtnuk

Bear  
Lake



## 1) Nova Scotia Phase 1

- >600MW of wind added to NS grid
- ~150MW of solar
- ~240ktpa of green ammonia
- Bear Lake contributes to grid stabilization, economic opportunity and future regional development

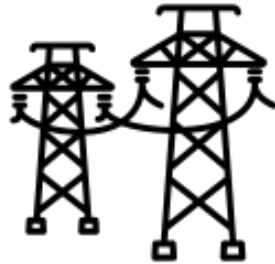
# Green Hydrogen: Stored Wind Power

## Production

New Renewable Energy



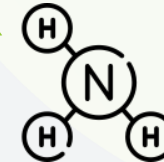
Existing Transmission



Hydrogen Production



Ammonia Production



**\*\* One tonne of ammonia produced by EverWind will displace 2 tonnes of CO2**

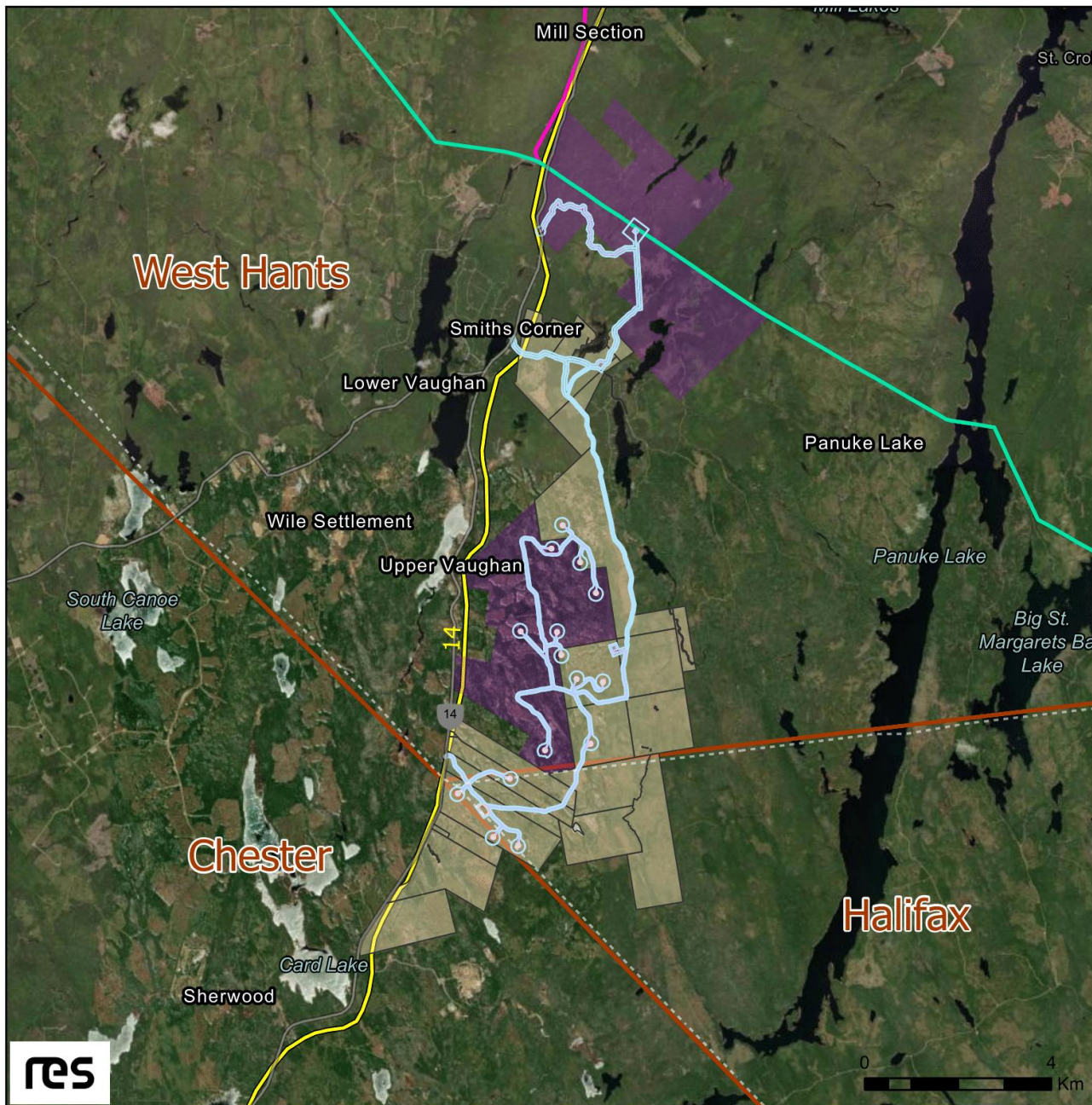
# Why Turn Green Electricity to Green Hydrogen?

- ✓ **Green hydrogen allows us to store wind power:** provides zero-carbon energy/electricity when the wind isn't blowing, and the sun isn't shining
- ✓ **Not everything can run on electricity:** hydrogen can replace the use of carbon-intensive fuels like natural gas, oil, and coal and can be used across industries like shipping, refining, steel, chemical/industrial processes

**Green hydrogen combined with electrification supports a 100% transition from fossil fuels**

# Project Details (15 turbines 11 in West Hants)

Project Overview	Total Project	West Hants
Project Size (Maximum)	Up to 89 MW	Up to 65 MW
Ownership	51% Membertou 49% EverWind Fuels	
Location	West Hants, Chester, Halifax Regional Municipality	
Number of Turbines*	Up to 15 Turbines	Up to 11 Turbines
Number of Turbines on Private / Crown Land*	Up to 7 on Crown Land Up to 8 on Private Land	Up to 7 on Crown Land Up to 4 on Private Land
Turbine Model	Nordex N163 5.9MW	
Hub Height	125 m (410 ft)	
Blade Length	81.5 m (267 ft)	
Length of New Roads (approx.)	~16 km	~14 km
Length of Existing Roads (approx.)	~25 km	~22 km
Final Substation Footprint	Up to 2.5 acres	
Final O&M Building Footprint	Up to 1 acre	



# Bear Lake Site Plan

- Roads
- Turbine / Transmission Access Roads
- Municipalities
- Bear Lake Crown Land
- Bear Lake Private Land
- Transmission Line
  - 69 kV
  - 138 kV

Coordinate System:  
NAD 1983 CSRS UTM Zone 20N

## RENEWABLE ENERGY SYSTEMS

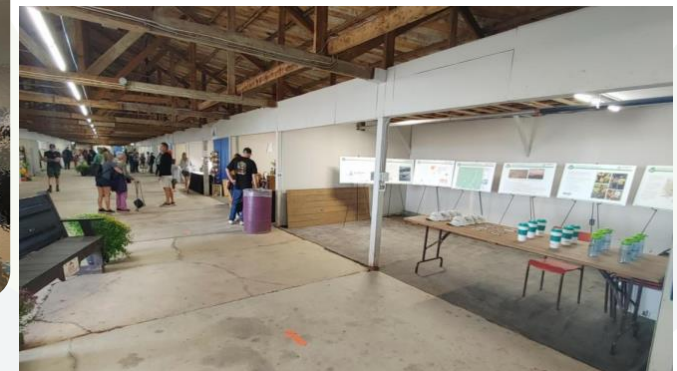
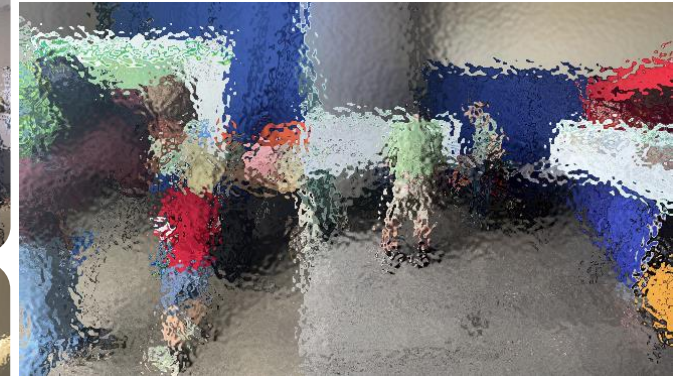
5605 Av. de Gaspé bureau 508  
Montréal, QC H2T 2A4  
Phone: (514) 525-2113  
Fax: (303) 429-4299



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# Ongoing Engagement

- **Open Houses:**
  - August 22 (55 attendees)
  - September 19 (25 attendees)
  - December 7
  - December 8
- **Community-Led Sessions:**
  - October 14 (>20 attendees)
- **Hants Fair:**
  - September 17 & 18
- **Office Hours @ Upper Vaughan Community Hall :**
  - January 25
  - February 6/22
  - March 5/21
- **Ongoing – project newsletters, Q&A documents, etc.**



# Direct Benefits of the Bear Lake Project

- **Municipal tax:** ~\$22 million in municipal tax revenue for West Hants over project life (~\$31 million over the entire project municipalities)
- **Jobs:** 6-12 P/T and F/T jobs during operations, hundreds of construction
- **Voluntary Community Benefits:**
  - **\$70,000** per year proximity payment – *Residences within 1-2km distance of the closest turbine will receive a proximity payment of approximately \$1,000 annually for the life of the project (35 years) based on presented layout*
  - **\$20,000** per year vibrancy fund
  - **\$50,000** scholarships

**Binding Community Benefits Agreement to be signed with Municipality of West Hants**

# Minimizing Environmental Impacts

- Much of the Project site is previously disturbed from historical and current forestry and recreational activities
- Membertou and EWF are aiming to minimize the environmental impact of the Project by:
  - Minimizing tree clearing and prioritizing existing logging roads
    - 25 km (61%) of Project access roads are existing.
    - Seven turbines are sited in previously disturbed habitat.
  - Maintaining large setbacks from residences (>1 km) and protected areas (~1.3 km)
  - Avoidance of direct impacts to more sensitive Old Growth Forest
  - Minimizing impacts to wetlands and watercourses
    - Direct impacts limited to 1.96% of wetland habitat identified within the Study Area
    - Three new watercourse crossings and 24 potential culvert upgrades

# Environmental Assessment

- Environmental Assessment (EA) approved by NSECC in December 2023.
- Fifty-six terms and conditions within the Approval.
  - Baseline field surveys required for turtles (Condition 6.3) and mainland moose (Condition 6.4)
  - Pre-commencement plans include:
    - Updated shadow flicker assessment and noise modelling (Condition 4.1)
    - Surface water management plan (Condition 5.2)
    - Sediment and erosion control plan (Condition 5.3)
    - Blasting plan (Condition 5.5)
    - Wildlife management plan (Condition 6.2)
    - Mainland moose monitoring plan (Condition 6.5)
    - Archeological Resource Impact Assessment (ARIA; Condition 8.2)
    - Complaints resolution plan (Condition 9.1)
    - Mi'kmaq communication plan (Condition 10.1)
    - Mi'kmaq Ecological Knowledge Study (MEKS; Condition 10.2)
    - Contingency plan (Condition 11.1)
- Additional environmental permits required include wetland alteration and watercourse alteration approvals.

# Evaluation of Public Health & Safety – Sound

## Provincial Requirement

- In establishing separation distances, a proponent must ensure that the wind farm design and turbine siting does not cause sound levels to exceed 40 dBA (A-weighted decibels) at the exterior of receptors.

## Bear Lake Wind Sound Results

- Evaluated cumulative sound from ambient background levels, from all Bear Lake wind turbines in the proposed project
- Other neighbouring wind turbine projects are >3 km from the Bear Lake turbines and would not add cumulative noise to homes.
- The predicted sound levels at all homes in the project area will experience cumulative sound level of <40 dBA
- One of the most stringent (lowest) sound standards for wind projects in the world.



# Evaluation of Public Health & Safety – Shadow Flicker

## Provincial Requirement

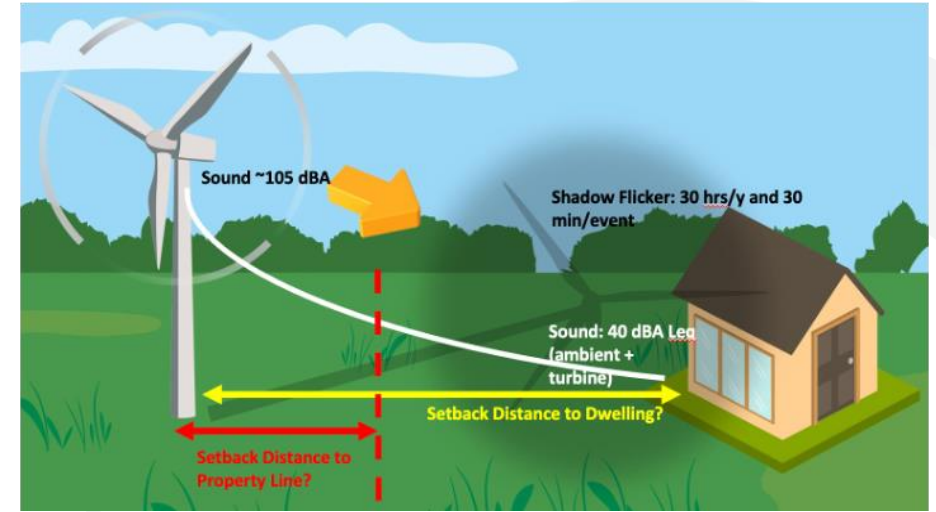
- Shadow flicker <30 hr/year and <30 min/day at dwellings.

## Bear Lake Wind Shadow Flicker Results

- Evaluated the cumulative effect of shadow flicker from all Bear Lake wind turbines in the proposed project + shadow from any wind turbines from nearby projects.
- All residents will experience <30 hrs/year and <30 min/day at a dwelling
- One of the most stringent (lowest) shadow flicker standards for wind projects around the world.



# Evaluation of Public Health & Safety - Setbacks



## West Hants Requirement

- No by-law set distance.
- Precedent of previous West Hants wind development permits of 1 km to residents and 550 m to cabins.

## Bear Lake Wind Setbacks

- Project was designed with the setback distance of 1 km to homes and 550 m to cabins.
- All turbines at least 1.5 x tip height to neighbouring property lines.
- Consistent with other Nova Scotia and Canadian jurisdictions.
- These setbacks to homes are further than required to protect public health – sleep and medical conditions.
- These setback distances to property lines are further than required to protect public safety – ice throw, blade failure, tower collapse.

# Evaluation of Public Health & Safety - Conclusion

OEHM has reviewed the Bear Lake Wind Project layout and accompanying sound and shadow flicker reports.

- Sound and shadow flicker have met the stringent provincial standards. Setbacks to residents, camps and property lines comply with internationally recognized standards to protect safety.
- Based on the weight of evidence of over 150 peer reviewed publications the Bear Lake Wind Project is properly sited to ensure the protection of West Hants resident's health and safety.

**OEHM urges Planning Staff to recommend approval of the Bear Lake Wind Project development agreement to the West Hants PAC and Council.**

# Compliance with WHMPS

The WHMPS states that Council wishes to encourage the use of technologies that reduce dependence on non-renewable resources and do not contribute to greenhouse gas emissions. (Policy 4.24)

Having regard to the following (Policy 4.24.4):

- a) Any required provincial and/or federal government environmental assessment processes have been completed;
- b) Adequate separation distances are maintained from adjacent land uses to minimize impacts of noise and shadow and to ensure public safety;
- c) The development is not visually intrusive in the landscape, taking into account the location and distance from which it is visible, and the significance and sensitivity of the landscape, topography, vegetation and built form in the surrounding area;
- d) Safe roadway access can be provided

# a) Environmental Assessment

Any required provincial and/or federal government environmental assessment processes have been completed;

- Bear Lake Wind registered its provincial Environmental Assessment on October 24, 2023.
- On December 13, 2023, Bear Lake Wind received its Environmental Assessment approval, with conditions.
- Bear Lake Wind is and will comply with all conditions in the approval, in the timeframe required by the approval. Additional work required by EA conditions will be shared with WHRM as it becomes available.

**Bear Lake Wind Development Agreement Application is compliant with Environmental Assessment requirements.**

# b) Separation Distances for Sound, SF and Public Safety

- Bear Lake Wind demonstrated compliance with the provincial 40 dBA sound level requirements at residences, ensures public health and safety.
- Bear Lake Wind demonstrated compliance with the provincial <30 hrs/year and <30 min/day shadow flicker requirement at residences.
- Setback distances of:
  - 1 km to homes and 550 m to cabins ensures compliance with sound and shadow flicker and protect public safety.
  - 1.5 times tip height to neighbouring property lines ensures protection of public safety from ice throw, blade failure and tower collapse.

**Bear Lake Wind Development Agreement Application is compliant with setback distances to homes to ensure that public safety is protected for sound, shadow flicker and setback distances.**

## c) Visual Considerations

- Bear Lake Wind has designed a project that attempts to limit the visual intrusion of the wind turbines on the surrounding landscape. For the following reasons Bear Lake Wind believes that the project is compatible with the surrounding environment:
  - There is a 10+ year history of wind turbines on the viewscape of West Hants, so wind turbines are not new to the fabric of the landscape in the area.
  - The visual landscape will change. We are working with the community to prepare visual simulations from their home and properties.
  - By using new technology, it means that 2.5x less turbines are required on the landscape than for example are required for the existing Ellershouse project (2.35 MW turbines). So only 11 turbines are required instead of 28 turbines. Significant reduction of visual impact to produce the same power.
  - We are in the process of evaluating an Aircraft Detection Lighting System (ADLS), which employs radar to monitor airspace and reduces the presence of red flashing lights when aircraft is not present.
  - Wind turbine projects are going to be an important aspect of the provincial plan to meet its renewable energy goals by 2030 and seeing wind turbines on the viewscape has/will become normal across rural Nova Scotia.

**Bear Lake Wind Development Agreement Application is compliant with limiting the visual intrusion of the wind turbines on the surrounding landscape.**

## d) Roadway access

- All applicable permits will be obtained with the Department of Public Works.
- The Bear Lake Wind project has designed access roads that will allow for access to the individual turbines in the municipality.
- A new road will be built on the southside of the project that will allow a secondary emergency egress route for residents of Chalet Hamlet.
- Bear Lake Wind will work with WHRM to develop a traffic management plan prior to construction.
- Notification to local residents will be provided on haul routes, timing, etc.
- All roads used by Bear Lake Wind will be left in the same or better condition after construction.

**Bear Lake Wind Development Agreement Application has demonstrated that road access and maintenance will be improved with the construction of the project.**

# Closing

- The Bear Lake Wind Project has been designed by engineers and scientists to be a world class project in all regards.
- Environmental Assessment approval was granted by the province on December 13, 2023, that outlines conditions that need to be met throughout the lifecycle of the project.
- The project is designed to minimize impacts on the environment.
- The project complies with stringent provincial and international standards to ensure the protection of public health, safety and welfare of the community.
- The project design and layout is compliant with the WHMPS and all the considerations for approval of a wind project.

**Bear Lake Wind respectfully requests that Planning Staff recommend approval, with reasonable conditions, of the Development Agreement to the PAC and Council**

# Question & Answer