

Welcome!

Thank you for coming to our information session and for welcoming us to your community.



ABO Wind is committed to ongoing engagement, transparent dialogue, listening to feedback and working together with you. Our team members are here to listen to you and provide information. We invite you to:

- Visit our informational posters throughout the room that outline various elements of this proposed wind project.
- Provide feedback and ask any questions you may have to the ABO Wind team as you visit the informational posters.
- Fill out a comment card! Our team welcomes comments or questions and will follow up directly with more information as requested.
- Join our Project Community Liaison Committee (CLC).

Questions or feedback following this session, or wish to join the CLC? Please contact:
Heidi Kirby, Communications and Engagement Lead (Atlantic)
heidi.kirby@abo-wind.ca | 902-329-9907

Did you know?

In addition to sharing your feedback with ABO, The Environmental Assessment Registration Document we must submit and have approved before constructing the Project will also have a 30 day comment period for residents to submit support for the Project or outline any concerns.



Project Information

www.abo-wind.ca



Our team



A local team working for a more renewable Atlantic Canada, backed by global expertise

- A company since 1996, ABO Wind now has 1200 employees worldwide. Internationally active in 16 countries in Europe, North and South America, Africa.
- ABO Wind Canada Ltd. is a subsidiary of ABO Wind AG and was founded in 2017. We developed Canada's largest wind farm to-date, Buffalo Plains (AB). 30+ staff in Canada, half based in our Atlantic Canada hub in Halifax to embrace the growing renewable energy section in this region.
- ABO Wind is focused on wind, hydrogen, solar and battery storage projects throughout the region. Our local team works closely with ABO Wind team members in Canada and globally.
- Our team is committed to building relationships and working together with First Nations, local communities and all stakeholder groups.



ABO Wind becomes ABO Energy in 2024

We are changing our name. But why?



Our new name better captures the entirety of the clean energy projects we develop, demonstrating the value of working with (and for) ABO. We started with wind, then added solar and battery, and are now also developing hydrogen projects. The name ABO Wind no longer fully describes our business.

Project Information

www.abo-wind.ca



What we're working for

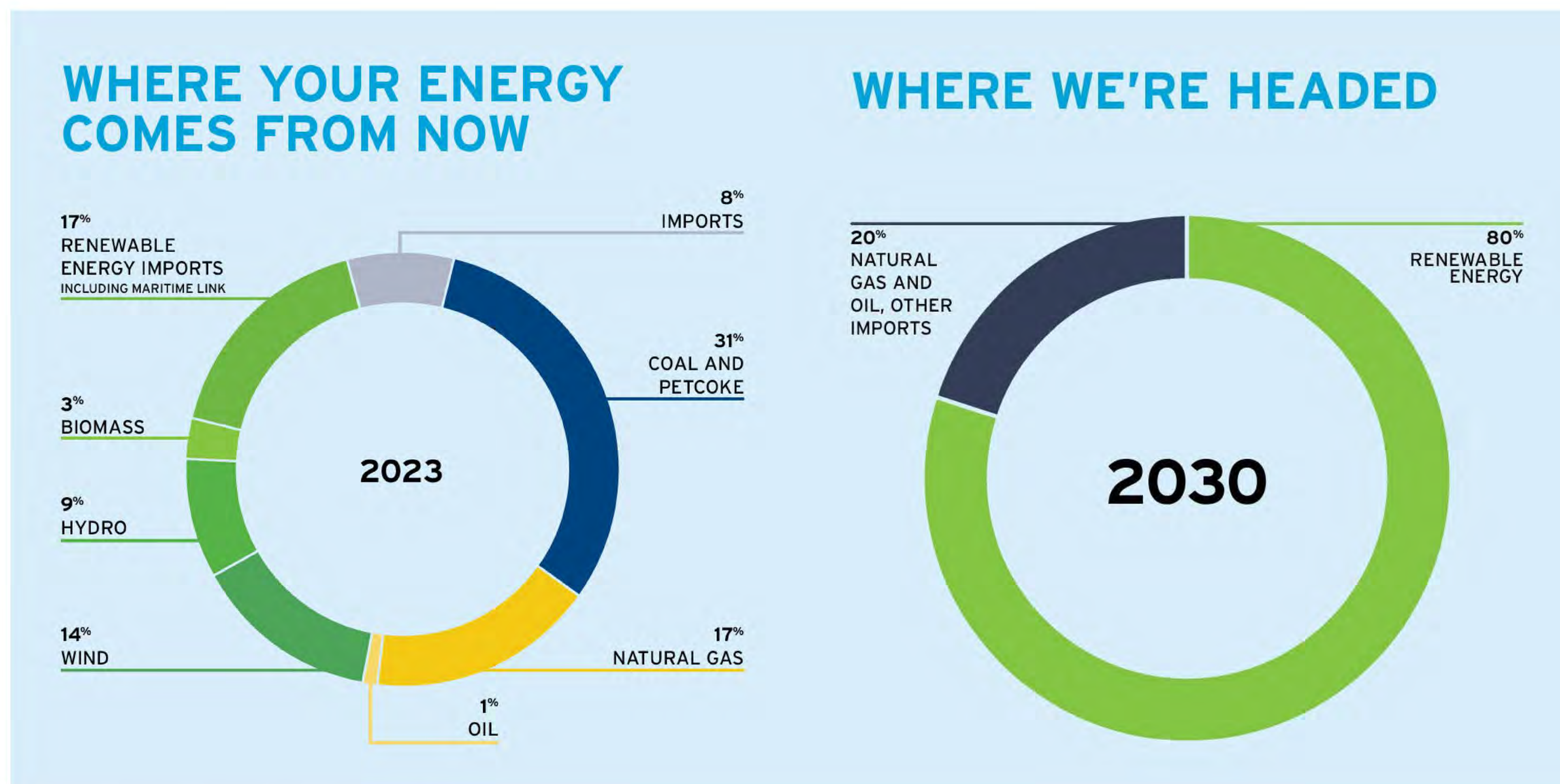
Helping create a cleaner, more sustainable Nova Scotia



ABO Wind is currently developing two wind farm projects in Nova Scotia to submit into the Green Choice Program this year: Melvin Lake Wind and Rhodena Wind.

Our wind Projects will be part of a large and collective effort to meet provincial and federal goals to reach 80% renewable energy and move off coal by 2030.

ABO Wind Canada will submit a proposal in the Green Choice program issued by the Province of Nova Scotia. The submission deadline is now June 14, 2024.



What is the Green Choice Program?

- An emerging green power offering developed between the Province, suppliers, the utility, and large energy buyers.
- The Green Choice Program will allow large energy customers in the province to purchase up to 100% of their electricity use from local renewable energy sources.
- This could include governments, educational institutions, factories and more.
- More access to renewable energy will help to create jobs and ensure that Nova Scotia continues to lead in the fight against climate change.

Image Credit: Nova Scotia Power (2024)

Project Information

www.abo-wind.ca



Melvin Lake Wind



How many wind turbines?

Up to 20 in total

Why has the number of turbines changed since 2023?

The Green Choice program has a new requirement to build on private land only, so we are no longer utilizing Crown lands for our turbines. We made modifications based on land access which also aligns with feedback we have heard.

With new private land leases in the area, we have been able to add several additional turbines to produce more clean, renewable energy for our province. We are hopeful this new layout is accepted positively by the community and welcome your feedback on this change.

Where will it be located?

Just south of Highway 101 and west of Pockwock Lake, in East Hants and Halifax Regional Municipality

How far from the nearest home?

The smallest distance from a turbine to a residence is 1543m

How much clean power?

115.5 megawatts of green energy – enough to power more than 25,000 homes annually!

How high are the turbines?

125m to hub, 206.5 including the tip of the blade

Are existing access roads being used?

The new layout is expected to use about 70% already existing roads, with a percentage of these requiring upgrades to ensure safe access and sufficient widening for equipment association with wind turbine installation.

Why was this location selected?

Low grid connection cost and proximity to Halifax, favourable wind speeds, an existing network of forestry roads, land topography, grid capacity and the ability to adhere to and exceed company, municipal and provincial setback guidelines.



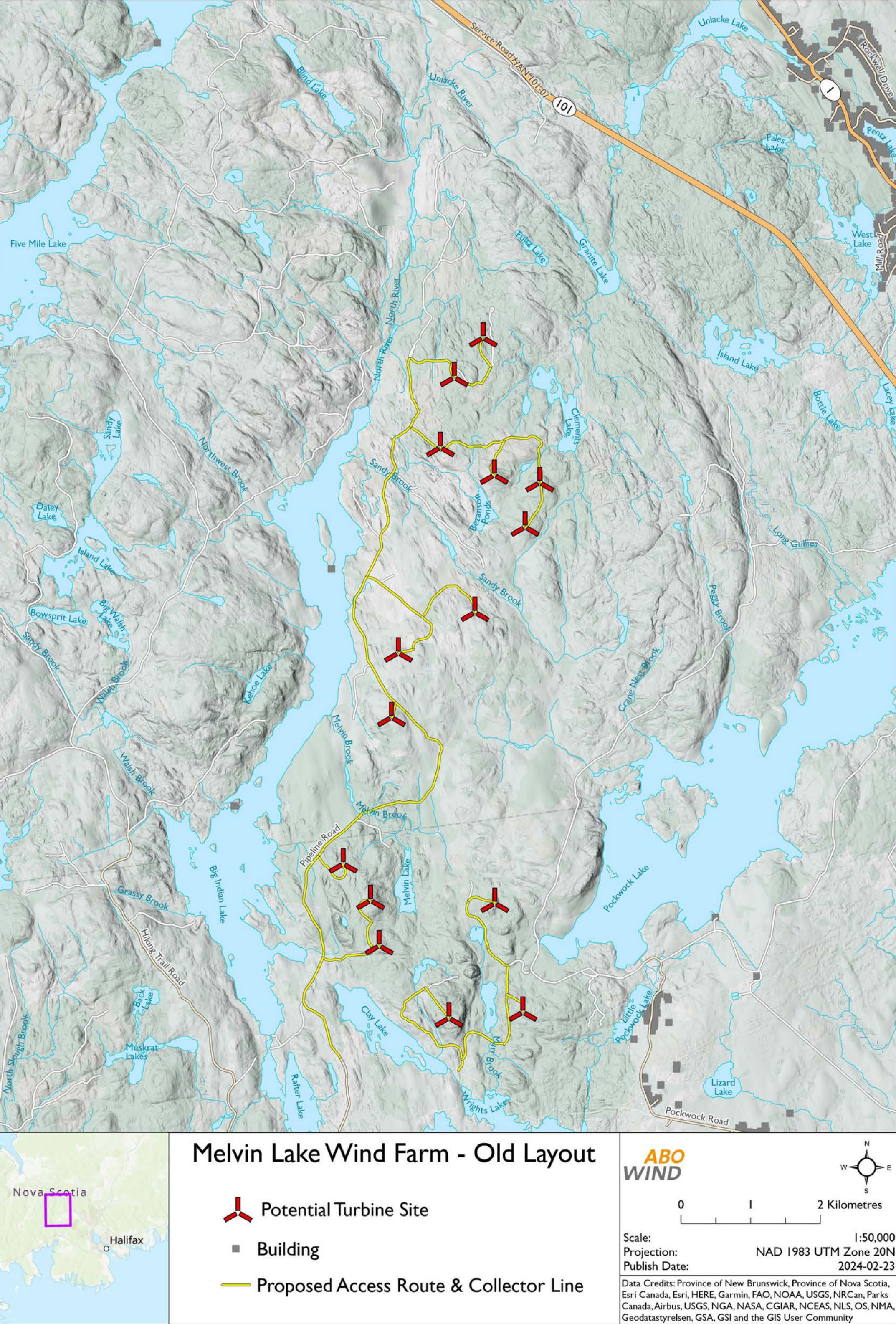
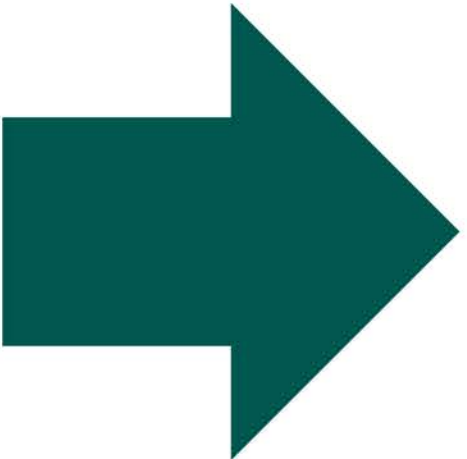
Evolution of Melvin Lake Wind



Old layout (2023) 15 turbines

New layout (2024)

20 turbines
115.5 megawatts



Why this change?

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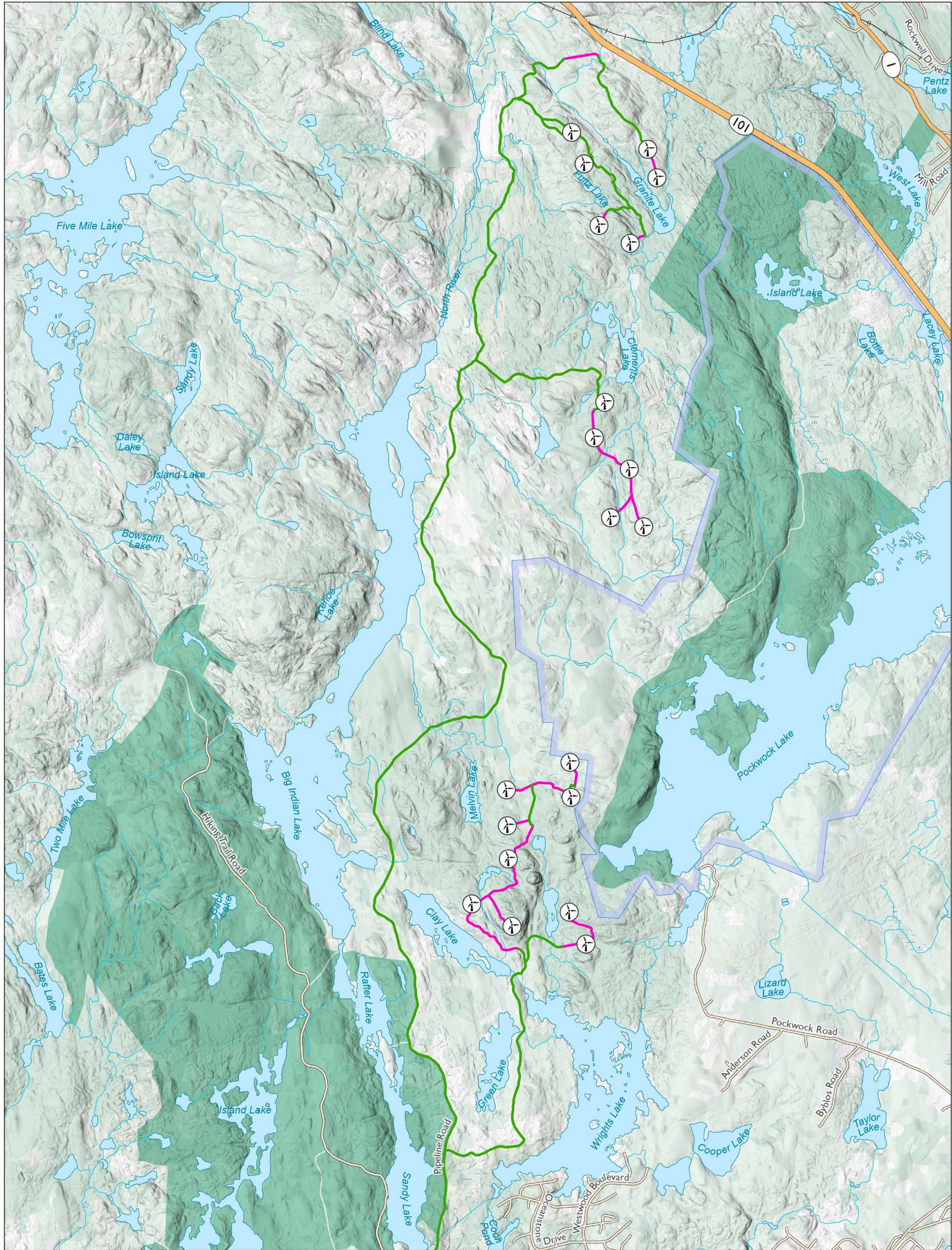
With new private land leases in the area, we have been able to add several additional turbines to produce more clean, renewable energy for our province.

The turbines are now in three very separate clusters.

We are hopeful this new layout is accepted positively by the community and welcome your feedback on this change.



New vs. Existing Access Roads



Melvin Lake Wind Farm Preliminary Layout

- Proposed Turbine
- Proposed Project Road
- Existing Road
- New Road
- Highway
- Road
- Railway
- Protected Watershed Area
- Park & Protected Area

ABO WIND

0 1,500 3,000 Meters

Scale: 1:55,000
 Projection: NAD 1983 UTM Zone 20N
 Publish Date: 2024-04-10

Data Credits: Province of New Brunswick, Province of Nova Scotia, Esri Canada, Esri, HERE, Garmin, FAO, NOAA, USGS, NRCan, Parks Canada, Airbus, USGS, NGA, NASA, CGIAR, NCEAS, NLS, OS, NMA, Geodatastyrelsen, GSA, GSI and the GIS User Community

Benefits & Opportunities

A significant Project in the region, valued at \$230-255 million total



Clean, renewable energy production will create significant opportunities in the region, and across the province - from direct employment, contracts, and spin-off benefits. :

ABO believes that those in close proximity should benefit from the project.

- We have many mechanisms we use that captures this mindset, including our Local Economic Development Policy, Indigenous Inclusion Policy, Community Benefit Funds.

Melvin Lake Wind - Local Benefits and Opportunities



Local Contracts and Jobs, and Spinoff Revenue

75-125 jobs during construction, 2-5 long-term for operations and maintenance



Community Benefits Fund

Funds will go to communities in the vicinity of the Project to help local initiatives through the life of the Project



Municipal Tax Payments

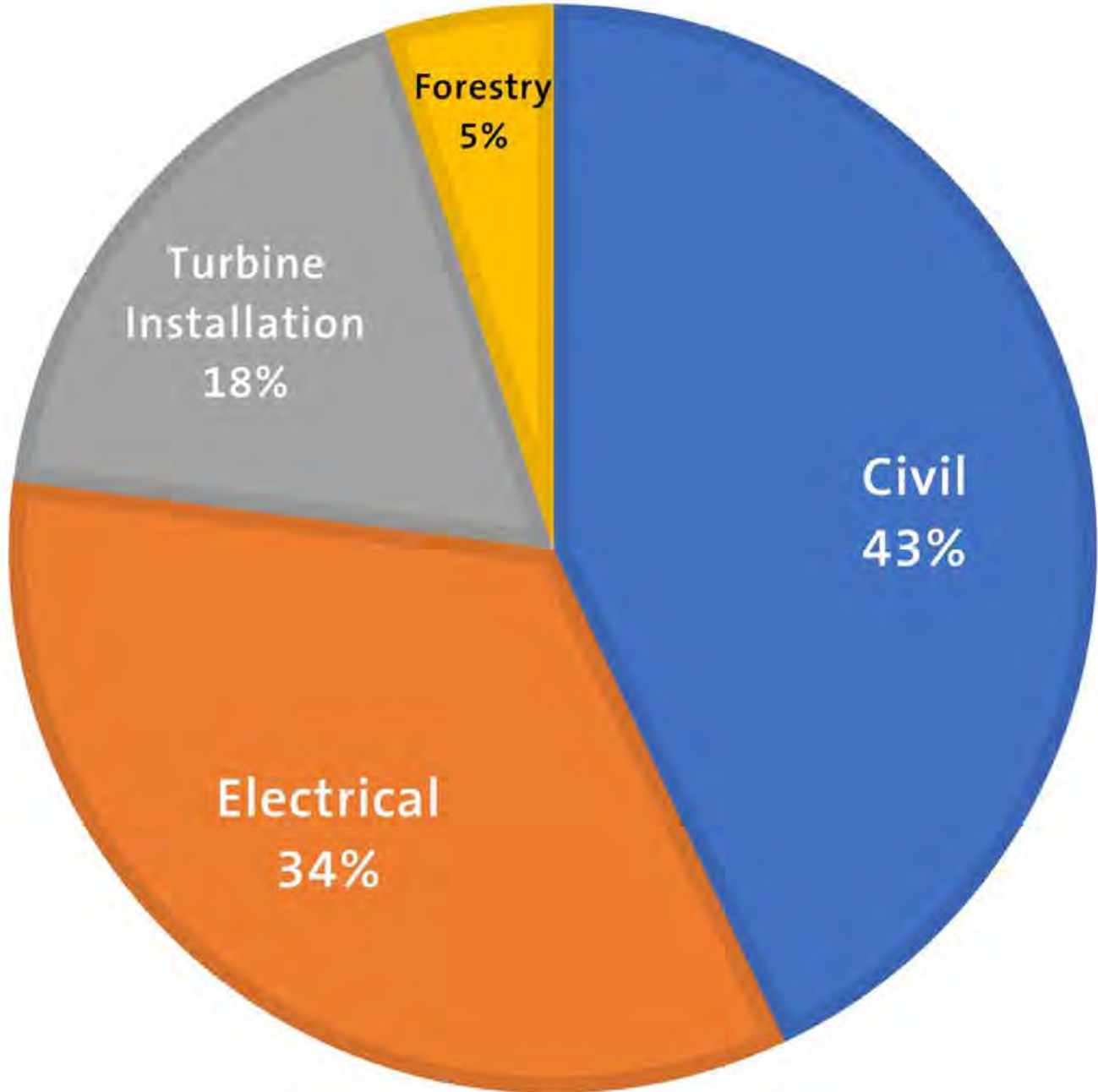
\$20-25M from ABO Wind to the municipality for local services and infrastructure over the lifetime of the project



Health Benefits

The Project will offset emissions that would otherwise be emitted through the burning of fossil fuels. It will generate electricity without emitting greenhouse gases or air pollutants or any use of freshwater

Major Works Required



- Wind turbines (transport to site, erection)
- Measurement Equipment (installation, etc.)
- Access roads (clearing and other civil works)
- Electrical transmission lines and collector lines (geotechnical, transmission line installations, etc.)
- Substations (electrical)
- Operations and Maintenance Facilities

Join ABO Wind's Contractor Portal: Scan Phone Here



Minimizing Environmental Impact

Melvin Lake Wind



Environmental Studies

Updated environmental studies have commenced and will be completed in 2024. The studies will consist of desktop assessments and field surveys to characterize the existing environment on the Project site.

Field surveys within the Project study area include:

- Wildlife surveys: winter tracking surveys, trail cameras, pellet group surveys and wood turtle assessments to document activity and potential habitat throughout the site.
- Species at Risk and Species of Conservation Interest (including mainland moose) are targeted throughout these surveys to understand potential habitat use and distribution.
- Terrestrial habitat studies: review of vegetation, lichens, and rare species, including blue felt lichen
- Wetland and watercourses surveys: will document existing features in the area to inform design, as well as determine offsetting, where required.
- Bird surveys: year-round surveys to highlight species presence on site radar surveys to document large-scale migratory movements and avian activity in the area.



Environmental Mitigations and Reporting

The results of the field studies will be incorporated into the Project design to minimize direct impacts to environmental features. Mitigations to minimize environmental impacts may include infrastructure siting to avoid wetlands and other sensitive features.

Construction footprint and disturbance of regular activity reduced to:

- Prioritize use of existing access roads
- No fencing is anticipated to be installed at the Project except for around the substation for safety reasons. Recreational use and hunting activities will not be disrupted, with exception of construction related safety measures and temporary road closures.
- Minimize tree clearing

Interactions between the Project and environmental components will be reviewed as part of the Effects Assessment in the Environmental Assessment Registration Document.



Wind Power

How does it work?

- Wind turbines are installed on concrete foundations, and have several key components: Tower, nacelle (generator) and the turbine blades.
- Wind causes the blades to rotate. The blades are connected to a gearbox in the nacelle, which turns the generator to produce electricity.
- This clean electricity is transmitted through cables and collected at a substation before feeding into the Nova Scotia electrical grid through overhead power lines.

How high?

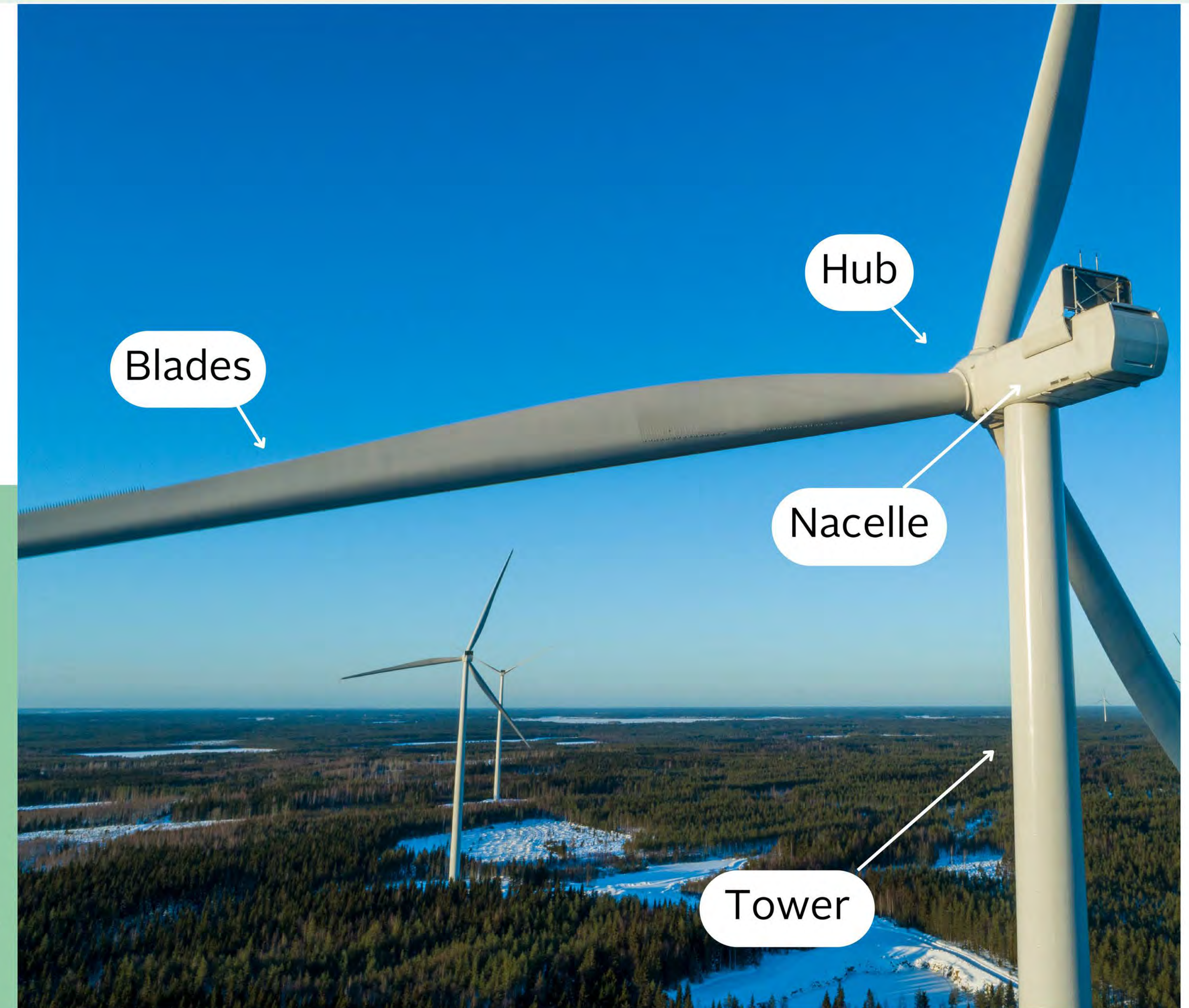
Nova Scotia Projects

Rhodena Wind turbine height - 387 ft. hub / 655 ft. tip
Melvin Lake turbine height - 410 ft. hub / 676 ft. tip

Comparison to Large Structures

Length of Canso Causeway – 4544 ft.
Length of MacDonald Bridge, Halifax – 4265 ft.
Height of CN Tower – 1816 ft.
Height of Eiffel Tower – 1063 ft.
Height of New Transmission Tower at Straight of Canso – 525 ft.
Height of Purdy's Wharf Tower 2 in Halifax – 288 ft.

ABO
WIND



Project Information

www.abo-wind.ca



Health and Safety

Human Health

There have been well over 100 peer-reviewed research papers published by academics, consultants and medical agencies around the world on the potential health effects of people living near wind turbines. The studies include issues of audible sound, low frequency noise, infrasound, shadow flicker, and electromagnetic fields (EMF).

Health Canada conducted the largest study in the world of people living, working and playing near wind turbines:

- Largest study ever undertaken around the world on wind turbines and health. 1238 people participated, including those in homes as close as 820 ft out to 7 miles from wind turbines.
- Conducted self-reported questionnaires and for the first time ever, tested objective measures of health including: sleep studies, hair cortisol (stress), and blood pressure.

The overall conclusion to emerge from the study findings is that the study found no evidence of an association between exposure to wind turbine noise and the prevalence of self-reported or measured health effects beyond annoyance.

Municipal setback distances - that we meet and exceed - will ensure the protection of public health from wind turbine sound.

Safety

- A Project-specific Emergency Management Plan will be developed. It will be informed by industry best-practices, ABO's global and Canadian expertise in developing wind farms, and local emergency responders.
- We'll use existing access roads along with some new access roads as part of this Project, working to ensure adequate emergency access, including identified egresses for the Project site are incorporated and shared as part of the Project safety plans.
- For the safety of workers and residents, like any construction site, there would be periods of limited access in zones that are under active construction (i.e., turbine installation, foundation pouring, etc.).
- Once turbines and other infrastructure are installed in a given area, if there is not active construction happening, in-season hunting, hiking, ATV use, snowmobiling, and other activities can occur in/around the Project site.



Wind turbine failures, fires and ice throw are very rare events

- 1 blade failure per 10,000 a year
- Fires are very rare events with <1 a year in Canada
- Ice throw can occur but only as far as the height of the turbine

Project Timeline

The timeline is preliminary and subject to change



Sound

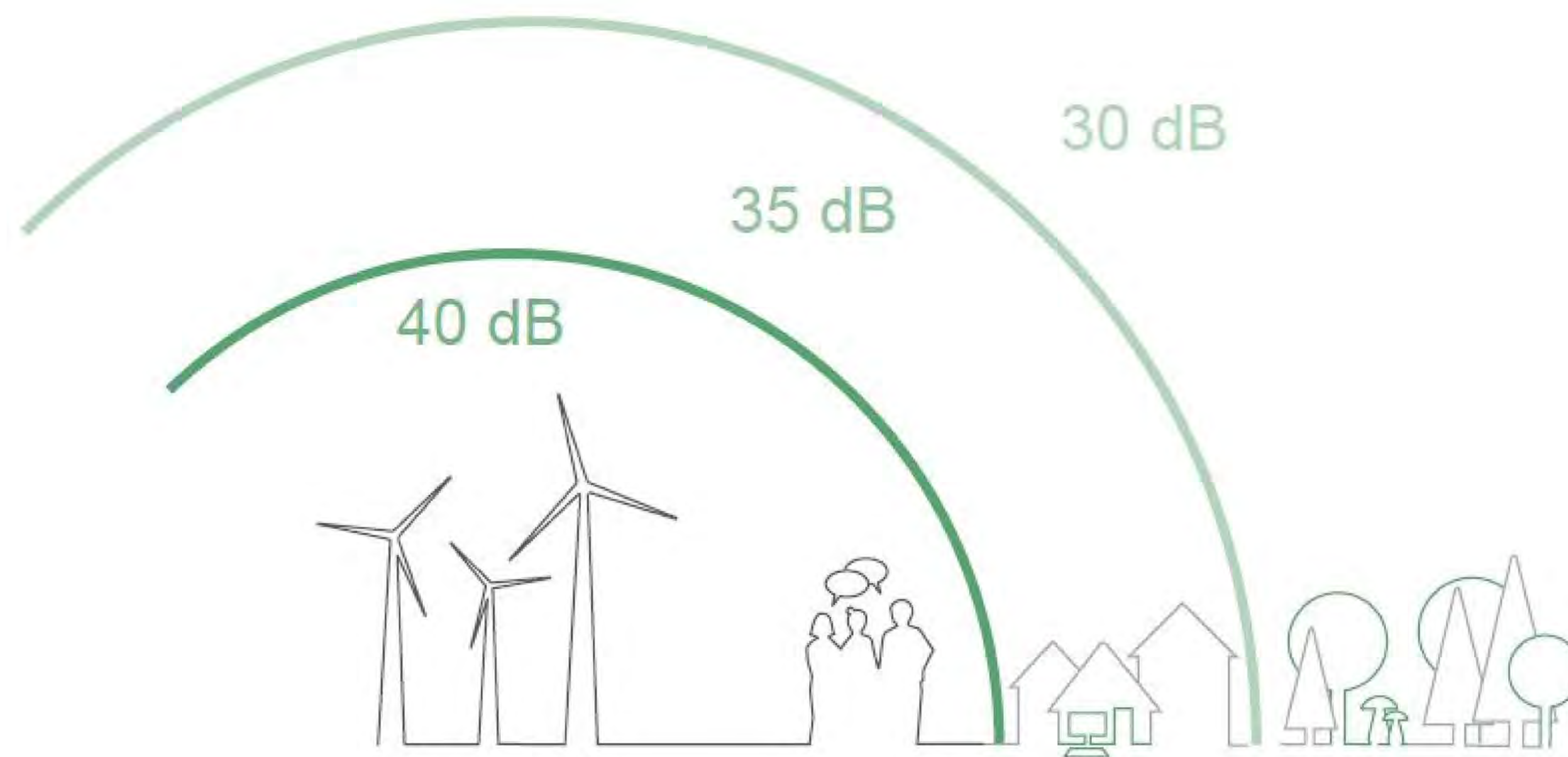
How we're reducing and measuring noise related to wind turbines



The Project will be designed in accordance with the Province of Nova Scotia's Environmental Assessment ("EA") requirements for Wind Power Projects.

This Project not only meets, but exceeds the requirement for sound levels: "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" (Province of Nova Scotia, 2021).

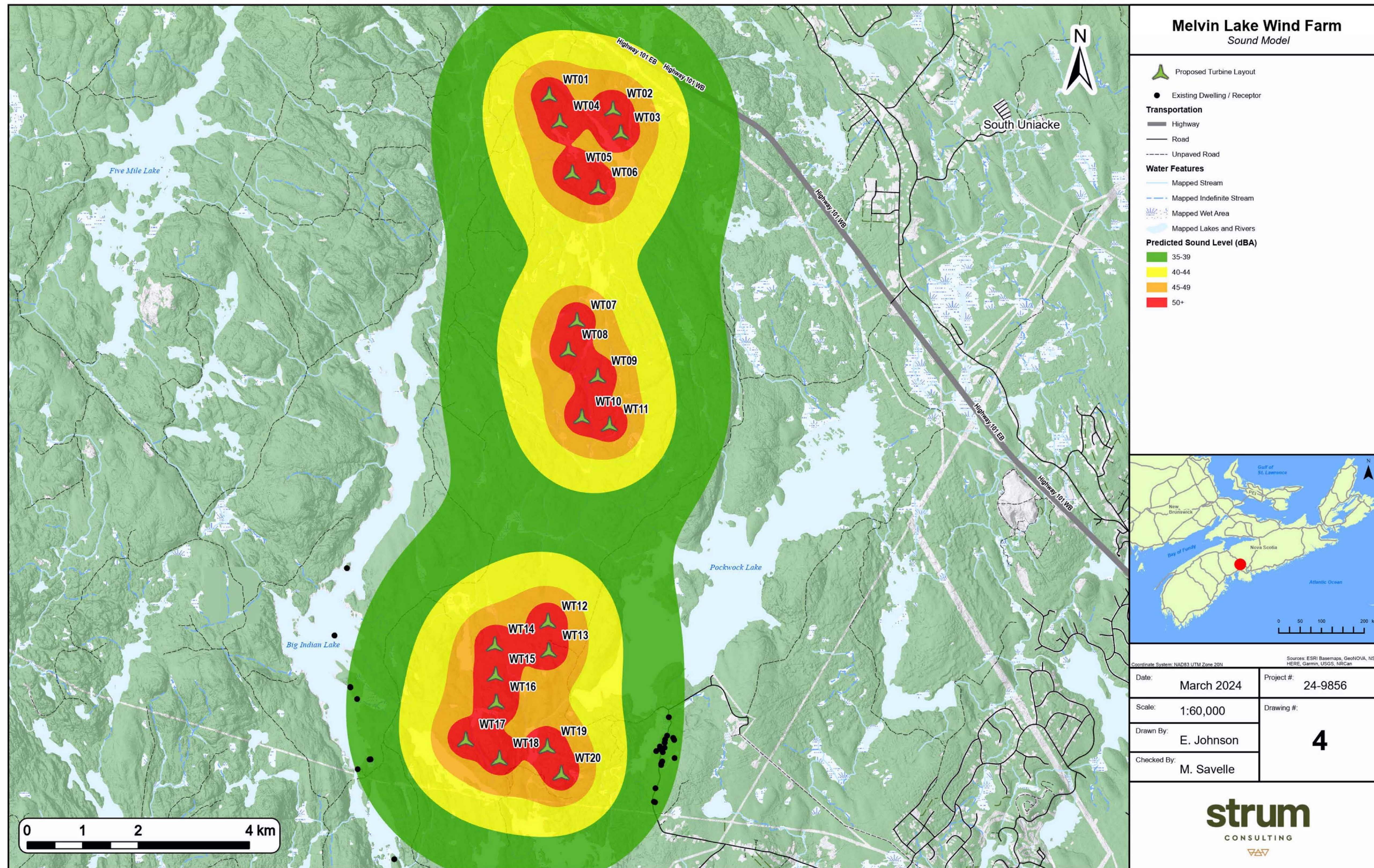
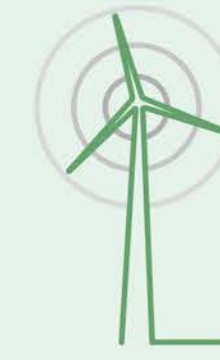
- The Project-specific noise modelling study indicates that cumulative noise level, including turbine-generated noise, will not exceed 40 dBA at any existing residences.
- A 40 dBA sound level is similar to a quiet library or a suburban area at night.



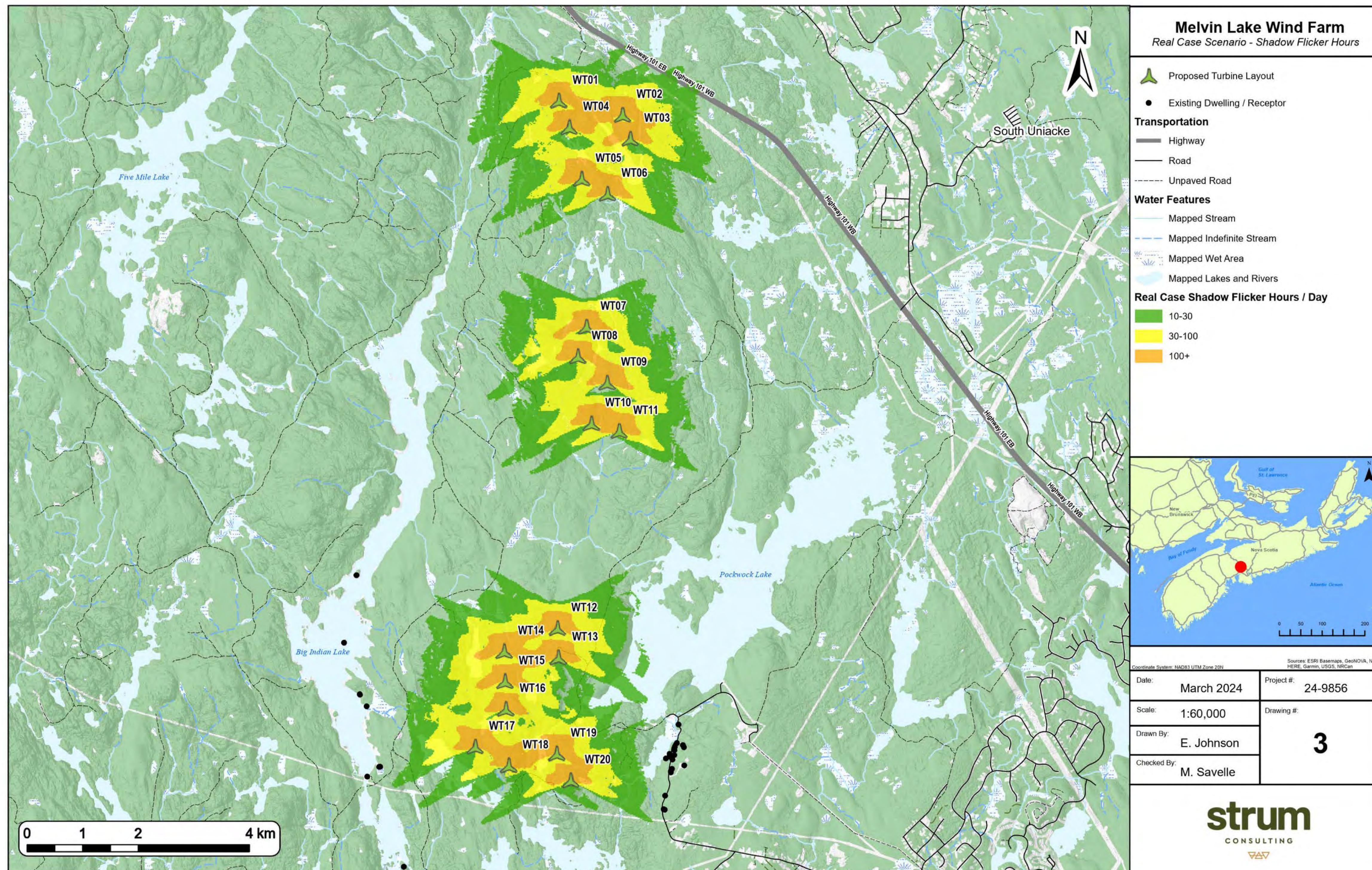
Examples of common sound levels (dBA)

140	Threshold of pain
130	Jet take off
120	Rock concert
110	Jackhammer
100	Power saw
90	Street traffic
80	Doorbell
70	Office
60	Normal conversation
50	Quiet urban neighborhood, daytime
40	Library
30	Soft whisper
20	Ticking of a wrist watch
10	Rustling leaves

Sound Model



Shadow Flicker



What is “shadow flicker”?

Shadow flicker occurs when the spinning rotor is located between the sun and a building, and the turbine blades alternately block and allow the sunlight to shine through.

This causes a ‘flicker’ effect and only occurs when certain conditions are met such as the sun shining and turbine(s) operating.

A Shadow Flicker study has been conducted to assess the potential for shadow flicker at nearby receptors (residences).

The assessment will be included in the Project Environmental Assessment that is being submitted to the Province of NS for approval.

Shadow flicker study results:

27 receptors (residences) were identified within 2km of the study area.

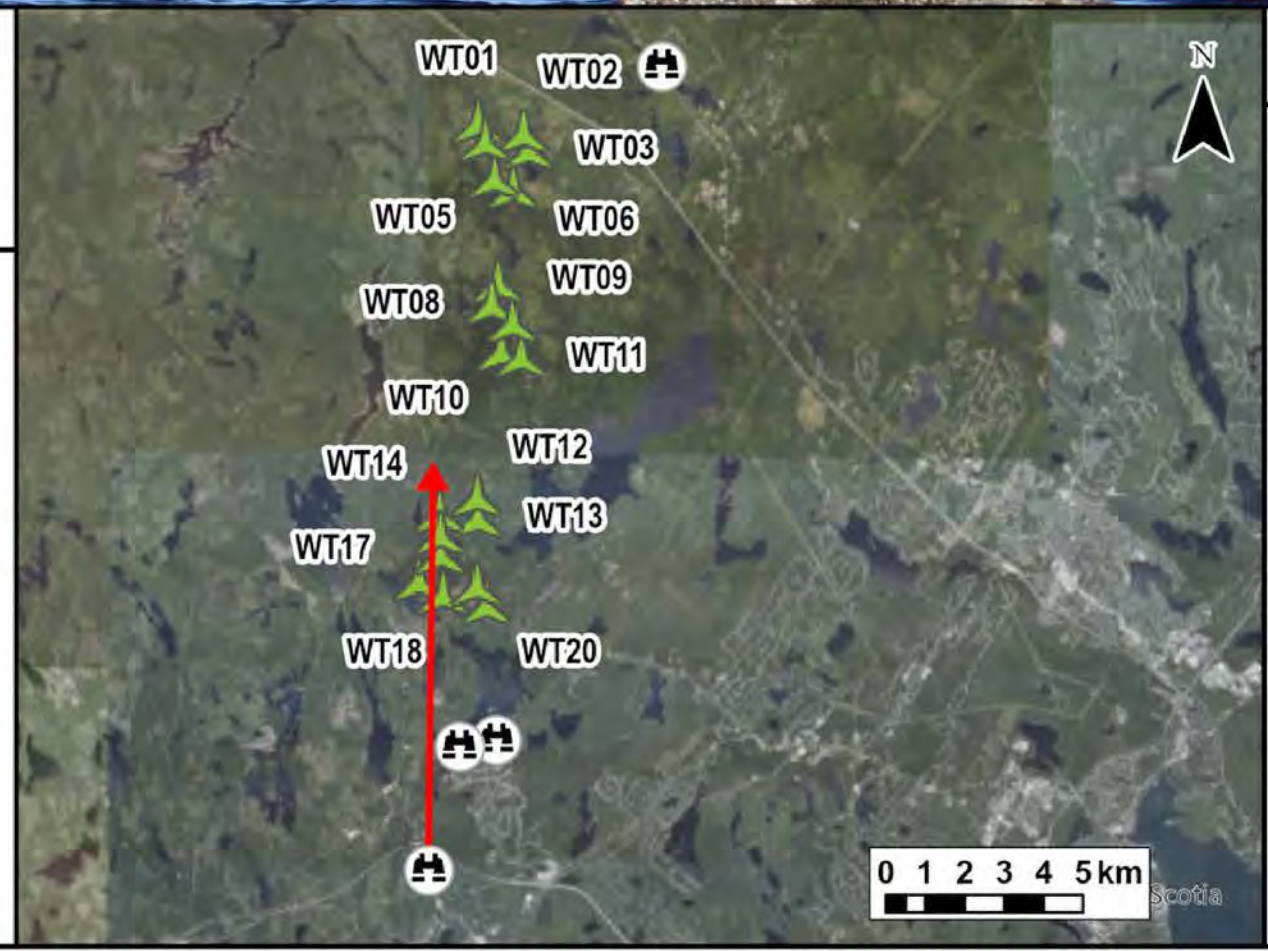
Under worst-case scenario conditions, the most shadow flicker experienced at a receptor is 17 hours and 32 minutes per year, and 22 minutes on the worst day.

Normally, it would be less. Shadow flicker modeling indicates that regulatory thresholds will be met by the Project.



Notes:
 1. Data Sources: GeoNova, Client
 2. Basemaps: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
 3. Projection: NAD83 UTM Zone 20

- Proposed Turbine Layout
- Camera Location
- Camera Bearing
- Turbine Visible



TECHNICAL INFORMATION	
Visual Simulation Location:	Mill Lake
View Coordinates:	Latitude: 44° 42' 26.0308" N Longitude: 63° 53' 54.9961" W Easting: 428816.00m Northing: 4950821.00m
Distance to Nearest Turbine:	6.6km
Direction of View:	North, Heading 0°
Camera Make/ Model:	Canon EOS REBEL T7
Lens:	50 mm
Image Resolution:	6000 x 4000
Weather Conditions:	Clear
Date of Photo:	2024/04/08
Time of Photo:	10:45
Photo Credit:	Strum Consulting

**Melvin Lake
Wind Farm -
Visual Simulation
Mill Lake**

strum
CONSULTING

Date:	Project #:
April 2024	24-9856
Scale:	Drawing #:
1:250,000	1
Drawn By:	Checked By:
E. Johnson	M. Savelle



Notes:
 1. Data Sources: GeoNova, Client
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- Turbines Visible



TECHNICAL INFORMATION	
Visual Simulation Location:	Wrights Lake Public Dock
View Coordinates:	Latitude: 44° 44' 03.8024" N Longitude: 63° 52' 30.9529" W Easting: 430697.75m Northing: 4953817.71m
Distance to Nearest Turbine:	4.1km
Direction of View:	Northwest, Heading 352°
Camera Make/ Model:	Canon EOS REBEL T7
Lens:	50 mm
Image Resolution:	6000 x 4000
Weather Conditions:	Clear
Date of Photo:	2024/04/08
Time of Photo:	9:15
Photo Credit:	Strum Consulting

**Melvin Lake
Wind Farm -
Visual Simulation
Wrights Lake Public Dock**

strum
CONSULTING

Date:	Project #:
April 2024	24-9856
Scale:	Drawing #:
1:250,000	9
Drawn By:	Checked By:
E. Johnson	M. Savelle



Notes:
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 Camera Make/ Model: Canon EOS REBEL T7
 Lens: 50 mm
 Image Resolution: 6000 x 4000
 Weather Conditions: Clear
 Date of Photo: 2024/04/08
 Time of Photo: 9:15
 Photo Credit: Strum Consulting

**Melvin Lake
 Wind Farm -
 Visual Simulation
 Wrights Lake Public Dock**



Date:	Project #:
April 2024	24-9856
Scale:	Drawing #:
1:250,000	7
Drawn By:	
E. Johnson	
Checked By:	
M. Savelle	



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- Proposed Turbine Layout
- Camera Location
- Camera Bearing
- Turbine Visible



TECHNICAL INFORMATION

Visual Simulation Location: Oceanstone / Falcourt
 View Coordinates: Latitude: 44° 43' 58.4552" N
 Longitude: 63° 53' 14.1441" W
 Easting: 429746.00m
 Northing: 4953663.00m
 Distance to Nearest Turbine: 3.6km
 Direction of View: Northeast, Heading 12°
 Camera Make/ Model: Canon EOS REBEL T7
 Lens: 50 mm
 Image Resolution: 6000 x 4000
 Weather Conditions: Clear
 Date of Photo: 2024/04/08
 Time of Photo: 9:45
 Photo Credit: Strum Consulting

**Melvin Lake
 Wind Farm -
 Visual Simulation
 Westwood Hills Subdivision**



Date:	Project #:
April 2024	24-9856
Scale:	Drawing #:
1:250,000	6
Drawn By:	
E. Johnson	
Checked By:	
M. Savelle	



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 Weather Conditions: Clear
 Date of Photo: 2024/04/08
 Time of Photo: 10:45
 Photo Credit: Strum Consulting

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 Visual Simulation
 Mill Lake**



Date:	Project #:
April 2024	24-9856
Scale:	Drawing #:
1:250,000	2
Drawn By:	
E. Johnson	
Checked By:	
M. Savelle	



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April 2024	24-9856
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1:250,000	3
Drawn By:	
E. Johnson	
Checked By:	
M. Savelle	

Wind farm life cycle

Decommissioning and Repowering



ABO
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Wind turbines are expected to last between 20 and 30 years.

During the life of the wind farm, maintenance will occur as needed to replace parts, like your vehicle or home. Operations and maintenance workers will be required to fulfill this important task through the life of the wind farm.

There will be a decommissioning and reclamation plan required as part of the Environmental Assessment.

What happens at the end of life of a wind farm? It may be repowered or decommissioned.

Repowering

The older wind turbines or other components can be upgraded with newer, more efficient equipment.

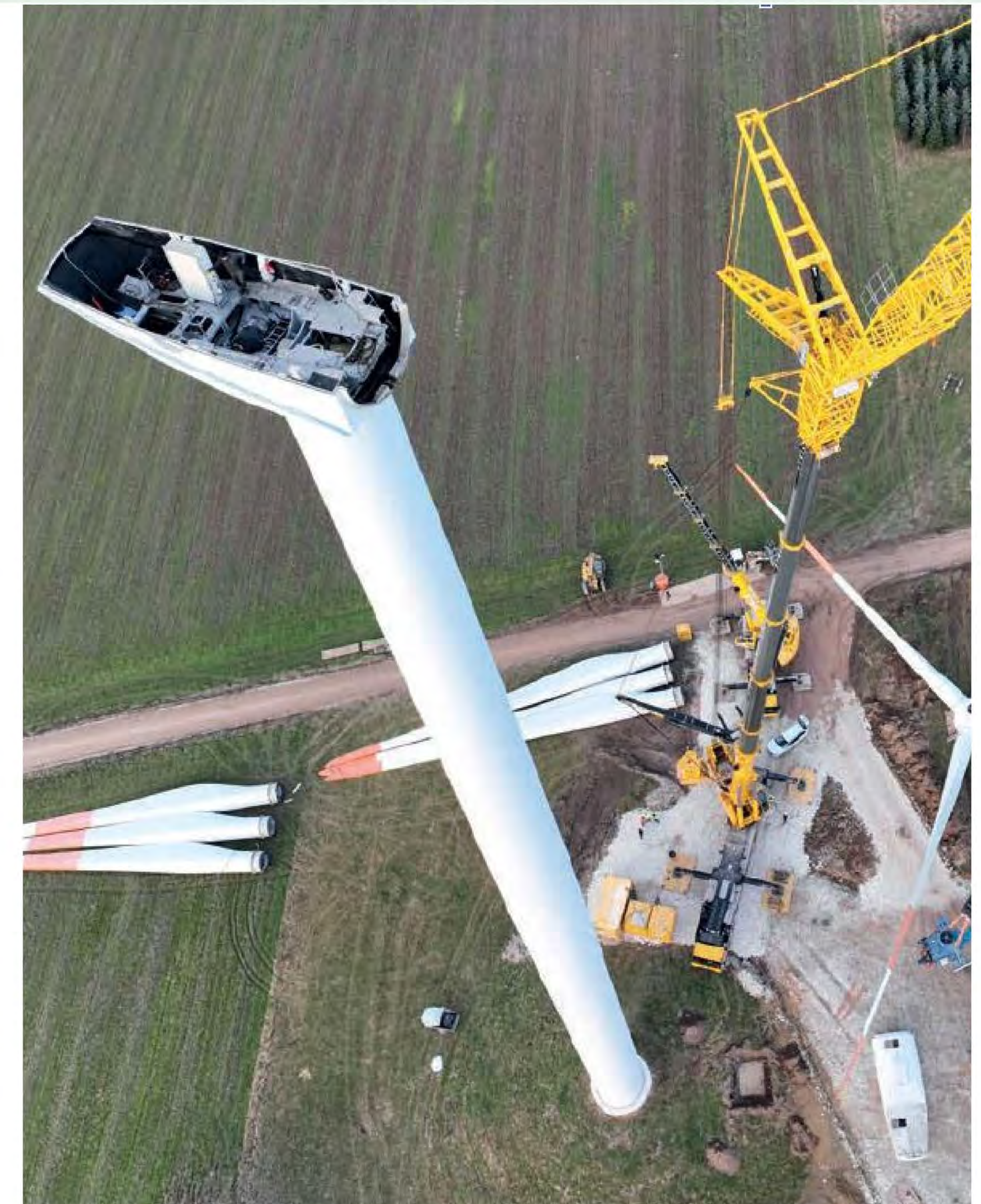
Decommissioning

Due to economics, regular wear and tear or other factors, it may be necessary to remove the project and return the land to its original state.



The main components of a wind turbine that can be recycled, repurposed, or salvaged include: Steel tower sections, steel reinforcement, electrical equipment and cables, precious metals, and concrete. Other materials or pieces of equipment that cannot be recycled, repurposed, or salvaged will be disposed of according to local/provincial regulations.

Two of the largest turbine manufacturers have created the first set of turbine blades that are fully recyclable. The use of these blades will be evaluated for this project.



Dismantling a wind farm



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Melvin Lake
 Wind Farm -
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 Westwood Hills Subdivision



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1:250,000	4
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