Burchill Wind Project
Open House #3 Material

Project Overview

The Burchill Wind Project is a 10 wind turbine project being developed by Natural Forces to help Saint John Energy diversify their electricity mix by providing more local, renewable energy to their customers. The Project will generate approximately 42 megawatts of power to be distributed through the Saint John Energy electrical grid. The turbines will have an individual capacity of 4.2 MW, an approximate tower height of 135 meters, and a blade length of 70 meters. The Project will be located on Crown land approximately 15 kilometers southwest from the City of Saint John, between the community of Lorneville, the Spruce Lake Industrial Park, and the Coleson Cove Generating Station. This location has been chosen due to its elevation, optimal wind speeds, and the industrial nature of the surrounding area. The Project will make use of existing roads, including Burchill Road, where possible to minimize disturbance.

Benefits to the Community

- Production of emission-free energy, which will displace energy produced from fossil fuels in New Brunswick and decrease the provincial contributions to anthropogenic-induced climate change
- Contribution to the growing renewable energy sector in Saint John and the stabilization of the price of electricity
- Reduce the dependence of Saint John Energy and New Brunswick on imported energy sources, which will increase the province's energy security
- Increase revenue for the local area through the payment of annual property taxes to both the City of Saint John and the Province, the total of which is estimated to be more than $9 million over the project lifetime
- Increased revenue for local businesses due to activities associated with the construction, operation, and decommissioning phases of the Project. For example, construction spending is estimated to be approximated $60 million
- Creation of additional employment, estimated at 70-90 positions, in the region throughout the project life
- Investment opportunity for New Brunswick residents through the provincial Community Economic Development Corporation program, including tax credits


Burchill Wind Energy Project
Legend
Proposed Turbine Sites
Alternate Turbine Locations
Burchill Site Lands
Substation
New Roads
Upgraded Roads
Collector Circuit
Lorneville Community Centre
Coleson Cove Generating Station
Spruce Lake Industrial Park
N
Kilometers
0
0.5
1
2
3
Spatial Reference: UTM Zone 19, Northern Hemisphere
Date: 2020-08-25
naturalforces
T8i
T9i
T10i
A13i
A12i
King William Road
A11i
T7i
T6i
T5i
T4i
T3i
T2i
T1i
River Valley Scenic Drive
Lorneville Rd
Burchill Wind Project Open House - September 1st, 2020

Project Timeline

COMPLETED WORK

2020

- Submission of Environmental Impact Assessment
- Interconnection studies

ONGOING WORK

2020

- Finalizing field studies
- Continue stakeholder consultation
- Continue consultation with local and First Nation community members

FUTURE WORK

2020

- Turbine procurement
- Start of pre-construction activities
- Approval of Environmental Impact Assessment

2021-2022

- Civil works
- Electrical works and interconnection
- Turbine erection
- Project commissioning
- Opening party

2023+

- Operation of turbines
- Monitoring and site management
- Decommissioning and site reclamation

Wind4All

INVEST IN THE POWER OF WIND ENERGY.

Investing in New Brunswick - Community Economic Development Corporations:

A CEDC is an opportunity for New Brunswickers to channel their investment dollars into their local economy. CEDC stands for "**Community Economic Development Corporations**". A CEDC is a pool of money raised by selling shares to individuals in a defined community.

- Minimum individual investment: $1,000
- Maximum individual investment: $250,000
- Hold period: 4 years

Benefits to Investing in a CEDC:

- CEDC investors may receive returns in the form of dividends
- Investing in a CEDC may also carry tax benefits. The CEDC program is linked to the New Brunswick Small Business Investor Tax Credit (SBITC) program which offers a 50% personal income tax credit to investors on eligible investments made in CEDCs.
- Your investment may also be eligible to be held in a self-directed RRSP.

Burchill Open House - September 1st, 2020

Wind4All in New Brunswick

The Wind4All CEDC in New Brunswick:

- Wind4All NB Inc. has been incorporated in New Brunswick in a way that it can qualify to become a Community Economic Development Corporation.
- In the future, it is the hope that New Brunswickers will be able to invest in the Burchill Wind Project, using Wind4All NB Inc. as the investment vehicle.

Interested in investing: Please complete the **Expression of Interest** Form.

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W4A details: http://wind4all.ca/
CEDC details: http://fcnb.ca/cedc.html

Environmental Studies

Natural Forces has completed numerous desktop and field studies to satisfy the Provincial Environmental Impact Assessment (EIA) requirements These studies are helping Natural Forces to develop the project responsibly through minimizing the social and environmental impacts. Members of the local community have had the opportunity to review and comment on the EIA document throughout the process, and we continue to welcome comments and questions.

Studies Completed

- Wetland and Watercourse
- Breeding Birds
- Migratory Birds
- Common Nighthawk / Raptor
- Bat Detection
- Vegetation
- Species of Interest / Species at Risk
- Wind Resource
- Noise
- Shadow Flicker and Visual Aesthetics

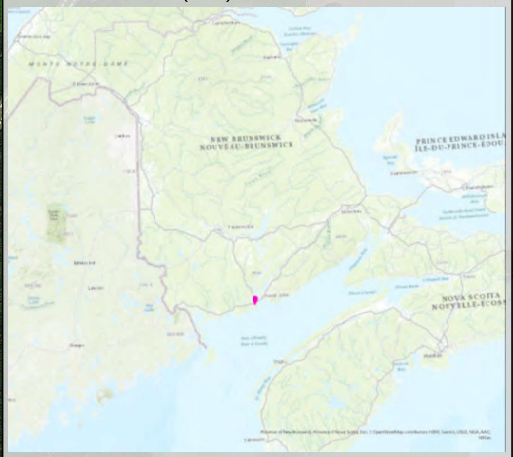
Burchill Wind Project - Site Constraint Map

Proposed Project Layout

- Proposed Turbine Locations
- Alternate Turbine Locations
- Substation
- Roads to Upgrade
- New roads
- Collector Circuit
- Site Lands

Site Constraints

- Residences
- Industrial Buildings
- Telecommunication Towers
- Coleson Cove Generating Station
- Water Main
- Pipeline
- Spruce Lake Industrial Park
- Existing Transmission Lines
- Pits and Quarries
- Capped Landill
- Protected Natural Area
- Delineated Watercourses (2019-2020)
- Regulated Watercourses
- Delineated Wetlands (2019-2020)
- Regulated Wetlands
- Residential Buffer (1 km)



N

Kilometers

0.00 0.50 1.00 1.50 2.00

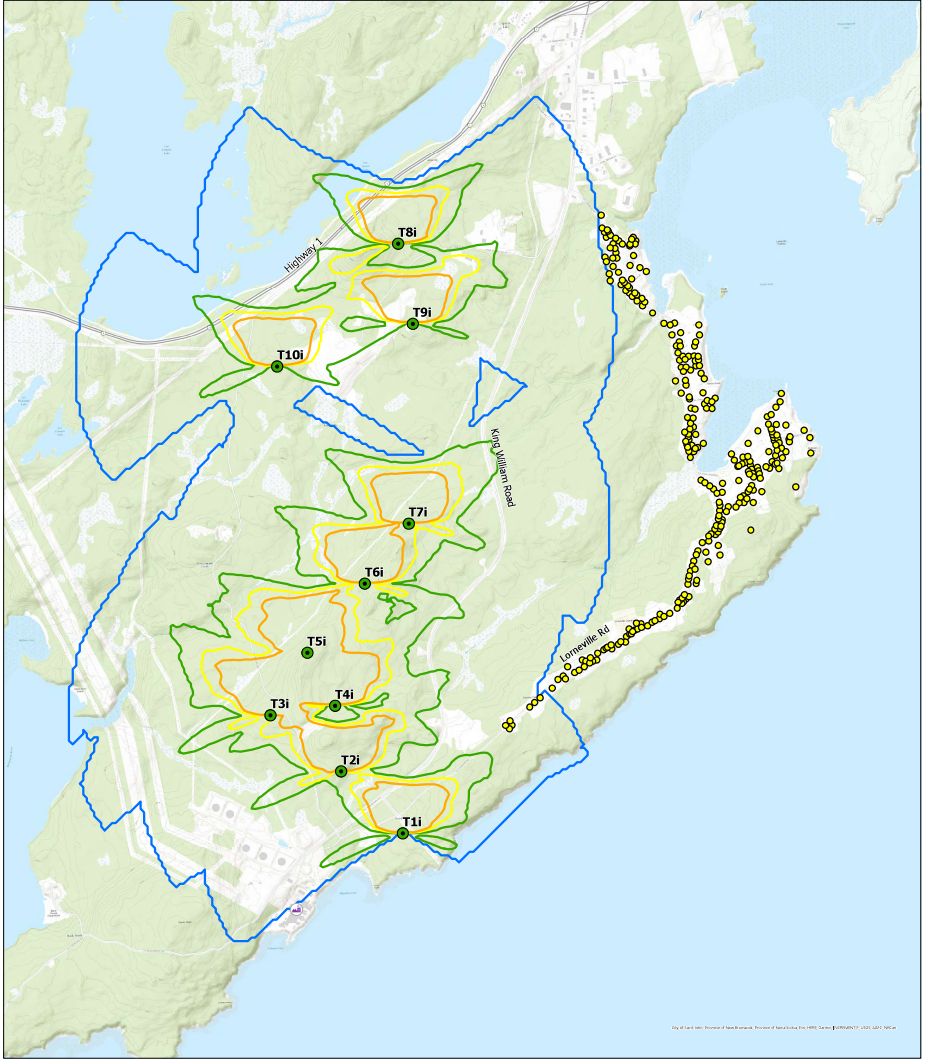
Spatial Reference: WGS 1984 UTM Zone 19N

Date: 2020-08-27

natural forces

T8i
T9i
T10i
A13i
A12i
A11i
T7i
T6i
T5i
T4i
T3i
T2i
T1i
Highway 1
King William Road
Lorneville Rd

Burchill Wind Project Open House - September 1st, 2020



Burchill Wind Project

Results of Shadow Flicker Assessment

Legend

- Proposed Turbine Sites
- Residences
- Coleson Cove Generating Station

Conservative Shadow Flicker Annual Hours Estimate

- 0 hr/year
- 10 hr/year
- 20 hr/year
- 30 hr/year

Notes:

Shadow Flicker is caused by the sun's light rays on moving turbine blades which then casts an intermittent shadow on a receptor.

New Brunswick's guidelines allow a maximum of 30 hours per year and/or 30 minutes per day of shadow flicker at a receptor from the wind turbine projects.

This conservative model of assessing shadow flicker hours per year makes the following assumptions:

- It is assumed that turbines are operational approximately 8,337 hours/year

- The "receptors" (buildings) are treated as though they are greenhouses with 3.0m high and 3.0m wide windows for 360 degrees of the building. It is assumed there is no shield from flicker (e.g., trees, other buildings, awnings, etc.).

- The calculations use the average daylight sunlight hours from Saint John based on local weather station data

This model is conservative as it does not take into account site-specific wind direction and treats receptors as greenhouses.

N

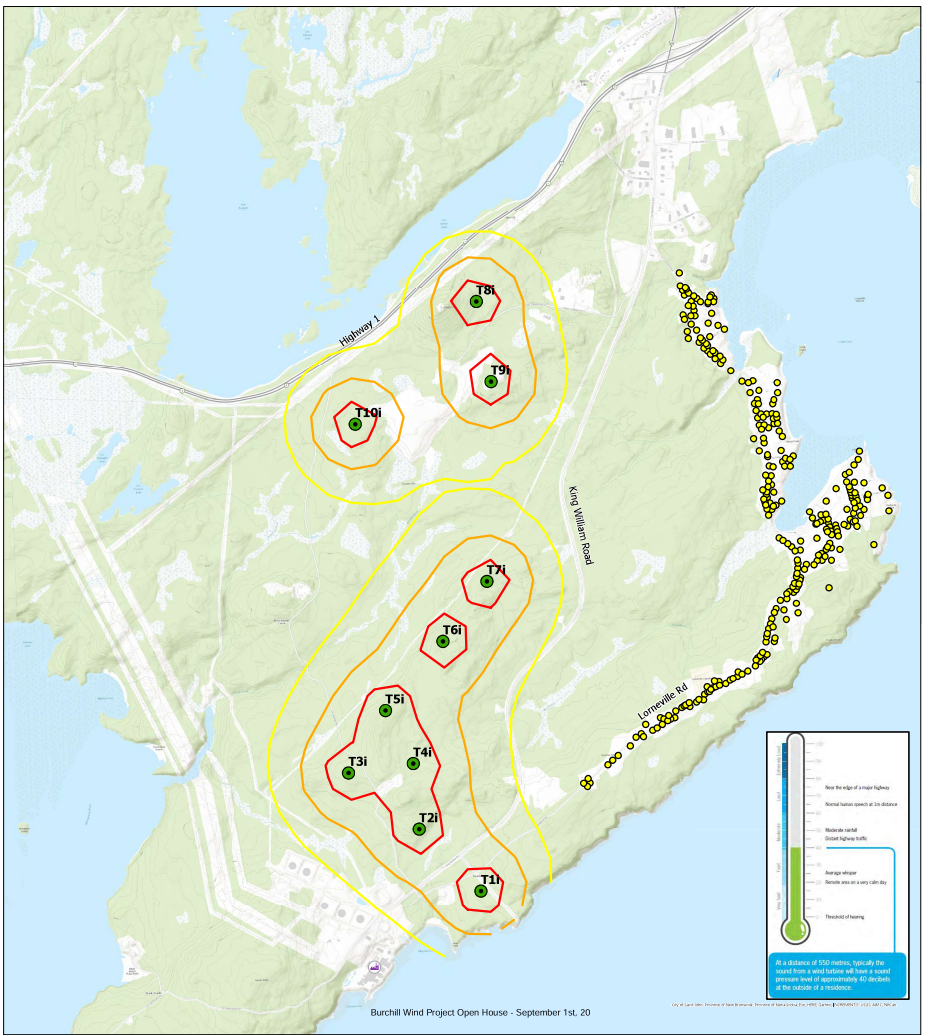
Kilometers

0 0.5 1 1.5 2

Spatial Reference
Name: UTM Zone 19, Northern Hemisphere

Date: 2020-08-31

natural forces



Burchill Wind Project

Results of Noise Assessment

Legend

- Proposed Turbine Sites
- Residences
- Coleson Cove Generating Station

Conservative Noise Levels at 10m/s Wind Speeds

- 40 dB(A)
- 45 dB(A)
- 50 dB(A)

Notes:

New Brunswick's guidelines allow the following sound levels for wind turbine projects at residential dwellings.

Wind Speed (m/s): 4 5 6 7 8 9 10 11
Noise Level (dBA): 40 40 40 43 45 49 51 53

More information can be found in the following document:

New Brunswick Ministry of Environment and Local Government. Additional Information Requirements For Wind Turbines - Clean Environment Act, New Brunswick.

This conservative model for assessing noise levels makes the following assumptions:

- Sound is travelling outwards in all directions of the wind turbine at once.

- Model assesses how changes in ground elevation will affect noise travelling from turbine hub to residences.

Reference (graphic to left): Smolentseva, A. 2019. CanWEA. Sound Levels from Wind Turbines. https://canwea.ca/wind-facts/your-health/canwea-windfacts-sound4levels/

N

Kilometers

0 0.5 1 1.5 2

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natural forces

Construction

Pre-Construction

April 2019 — March 2021

Design

Tender Process

Balance of Plant Construction

March 2021 — July 2022

Tree Clearing

Road Works & Crane Pads

Foundations

Collection System

Turbines Installed

January 2022 —August 2022

Turbine Delivery

Turbine Assembly

WEC Install & Electrical Works

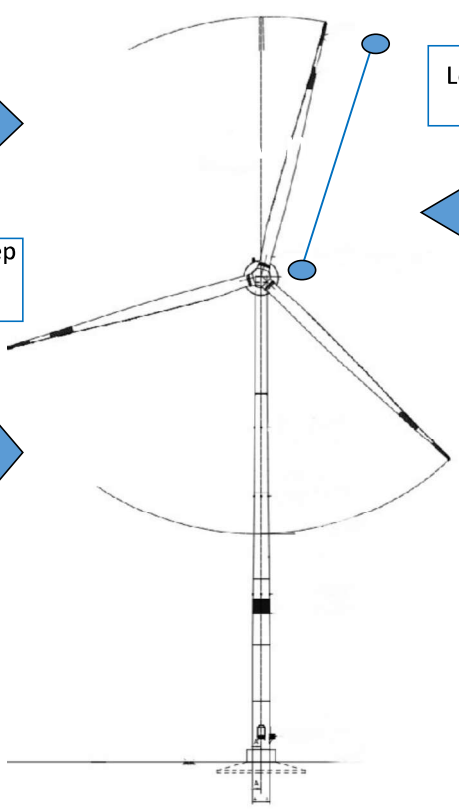
Commissioning

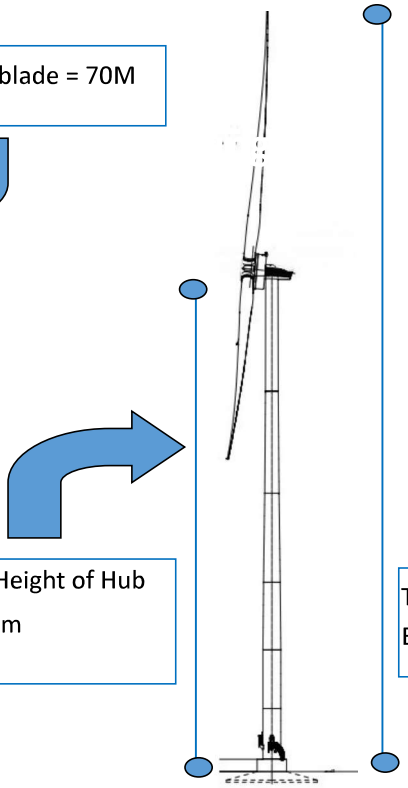
April 2022 —September 2022

Collection System Testing

WEC Commissioning

Turbine specifications





Other key Features of the turbines selected

- Gearless turbines
- Rotor blade heating technology
- Cold climate design
- Energy payback of 8 months

Annual Maintenance Schedule