Lanfine
Wind Power Project

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BowArk

Project siting
Wind resource assessment

- This assessment determines how much electrical energy can be extracted from the wind
- Meteorological towers are installed on site to measure wind speed and direction
- A meteorological tower has been collecting wind data since September 2016
- Wind turbine locations are assessed and optimized based on local topography and measured wind speed

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Project siting
Setbacks

The following setbacks have been integrated into the Project design:

- Environmental setbacks from sensitive species and sensitive habitat;
- Noise compliance under the Alberta Utilities Commission Rule 012: Noise Control;
- Municipal bylaws and development permit requirements;
- Existing infrastructure such as roads, pipelines, oil and gas facilities, wells, transmission lines and distribution lines;
- Electromagnetic interference such as weather and defense radar and communication links;
- Airports and airstrips; and
- Constructability

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Project siting
Environmental considerations

- Environmental studies help assess and mitigate potential environmental impacts
- Studies underway and completed include:
  - Wildlife: birds, bats, and other sensitive species
  - Vegetation: habitat mapping and native prairie grass and rare plant studies
  - Wetlands: mapping, classification, and field verification
  - Noise: impact assessment
  - Historical resources: archaeological and cultural features
- Alberta Environment and Parks will review the field survey data and provide sign-off to the Alberta Utilities Commission
- Wind power project design considers impacts on wildlife and vegetation

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Project siting

Noise impact assessment

- All wind energy projects must meet Alberta Utilities Commission (AUC) Rule 012: Noise Control
- BowArk is conducting a noise impact assessment for all residences and dwellings within 1.5 kilometres of the Project
- This study will include the noise from the Project and other operational and proposed facilities nearby, including oil and gas
- BowArk will use the noise impact assessment results to determine the final turbine layout
- Results will be available at the second open house and will be submitted as part of the AUC Phase 2 buildable areas application
- Health Canada conducted a study in 2015 that shows there are no long-term human health effects from wind turbine noise

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Project siting
Additional considerations

Visual representation

- Viewscapes will be created to demonstrate how the Project will integrate with the local landscape
- BowArk will have visual representations available at the next open house once the turbine type and layout is finalized

Shadow flicker

- Created by rotating blades casting a shadow on residences
- The Project design considers the impact of shadow flicker at nearby residences
- Studies show that shadow flicker has no causal effect on health

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Key regulatory agencies and permitting bodies

Alberta Utilities Commission: Regulatory body providing approval for power plants

Alberta Environment and Parks: Reviews and provides a wildlife referral report sign-off for any impacts to species or sensitive habitat

Alberta Culture & Tourism: Ensures the protection of heritage resources

Alberta Transportation: Ensures safe operation of highways and protection of infrastructure

NAV Canada: Governs the safe navigation of aircraft and vessels

Transport Canada: Identifies lighting requirements for wind turbines

Environment and Climate Change Canada: Monitors weather conditions and generates forecasts based on radar data

Special Areas Board and the Municipal District of Acadia: Provides development permits aligned with rural development policies

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Wind farm construction

Foundation rebar

Crane walk

Laydown area

Rotor lift

Completed turbine

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Operating wind farm

Left:
Farming practices after turbine construction is complete

Below left:
Reclaimed access road

Below right:
Final footprint of turbine

Below far right:
Winter access to turbine

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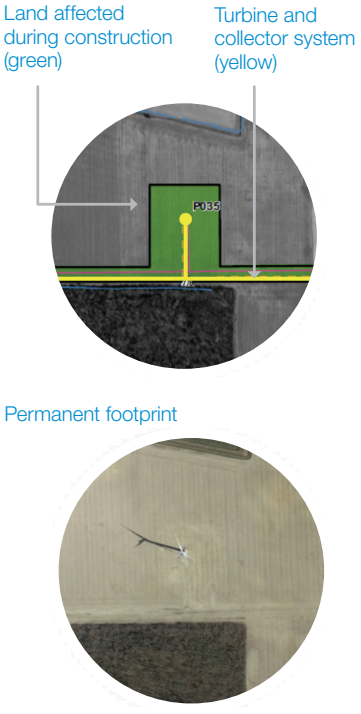
Permanent footprint

Example: South Kent Wind Power Project

Developer: BowArk Energy Ltd.
Owner and operator: Pattern Energy
Municipality: Chatham-Kent, Ontario
Project size: 270 megawatts
Operations date: 2014

Temporary construction area is significantly smaller than the permanent footprint

Planned temporary construction area showing turbine locations, access roads and collector lines



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Project decommissioning

Following the operations phase, BowArk is committed to repowering or decommissioning the turbines

Most often, wind farm facilities are repowered, where old turbines are replaced with new turbines

Repowering

- Replace the existing turbines with updated technology
- Remove foundations to below plow depth
- Leverage existing infrastructure (substation, transmission, access roads)

Decommissioning

- Remove all turbines and foundations to below plow depth
- Underground collector cables will likely remain in the ground

BowArk will develop a repowering and/or decommissioning plan with the Special Areas Board and the MD of Acadia

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Project schedule

March 21, 2017	First open house
Q2 2017	Submission to the Alberta Utilities Commission for Phase 1 Buildable Areas Application
Spring 2017	Spring environmental studies
Q2 - Q3 2017	Second open house
Fall 2017	Submission to the Alberta Utilities Commission for Phase 2 Buildable Areas Application
2018	Alberta Utilities Commission approval anticipated
Fall 2018	Final project engineering complete
Winter 2019	Site mobilization Lanfine North
2019	Commercial operations Lanfine North
Winter 2020	Site mobilization Lanfine South
2020	Commercial operations Lanfine South

Development Timeline
October 2015 – December 2018

Construction Timeline
January 2019 – December 2019

AUC Application
March 2017 – December 2018

Operations Timeline
2019 – 2044

BowArk is committed to engaging with the community throughout the development, construction, and operations phases

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Buildable areas application

BowArk intends to submit a buildable areas application to the Alberta Utilities Commission:

Phase 1 application

- Requires identifying a project boundary, as well as the area where BowArk can site turbines, called “buildable areas”

Phase 2 application

- Requires identifying the turbine type and final infrastructure layout, including turbine locations, collector system routing, and access roads

Each phase requires stakeholder consultation

BowArk will meet with stakeholders who will have an opportunity to provide feedback

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Thank you for attending!

- We value stakeholder input
- We commit to working safely, responsibly, and with integrity
- We also commit to working respectfully and collaboratively with local communities

We'd like to hear from you.
Tell us what you think.
We're listening!

Did you fill out a feedback form?

Contact Us

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