



MORRISON HERSHFIELD

Comment on the Nation Rise Wind Farm at Final Design Stage

North Stormont Council Meeting, May 28th, 2019

Outline

- Introductions
- Scope of our Review
- Status of the Project
- Comment on the EDPR Presentation
- Terms and Conditions of the REA
- Final Engineering Design and Permitting
- Comment on Wells
- Action Items for Township

Introduction

- Anthony (Ant) West, Ph.D., P.Eng.
 - Senior Environmental Engineer, Manager of Ottawa Environmental
 - Graduated from University of Waterloo in 1992
 - Masters from Carleton (2001) – contaminant release from mine tailing
 - Ph.D. from Queen's (2006) – flow through bedrock aquifers
 - 21 years of environmental consulting (e.g., contaminated sites, construction projects, landfill monitoring, quarry licensing)
 - Previously involved in two wind farm projects
- Eric Emery, B.Sc., MBA, P.Eng.
 - Civil Engineer and Manager of the Municipal Engineering practice for Morrison Hershfield Limited in Ottawa
 - 32 years of experience in water resources and municipal engineering

Scope of Our Review

- Listening to the EDPR Presentation, May 14th, 2019
- Listening to questions put to council, May 14th, 2019
- Reviewing questions submitted to EDPR from Council Meeting
- Review of two rounds of questions submitted by Rainer Pethke
- Review of documents on <http://nationrisewindfarm.com/>
 - Renewable Energy Approval (REA)
 - REA Reports – Final (including responses to our own comments provided via the Municipal Consultation Form)
 - REA Supplementary Reports and Approvals
 - REA Design and Operations Report – Final
 - Municipal agreements (RUA, Traffic Management Plan, Entrance Permits)
- Phone call between AW and RP
- Phone calls between MH and North Stormont staff

Comment on the EDPR Presentation

- Introduced four individuals, but did not set out their individual responsibilities very well
- Provided a good high level summary of the approvals process
- Provided some additional information on well surveys
- Solicited volunteers for Community Liaison Committee (CLC)
- Did not provide specifics relevant to residents' concerns (who do I call if my laneway is blocked?)

Project Status

- EDPAR presentation listed the various federal, provincial, municipal, and conservation authority approvals.
 - *The project was granted its Renewable Energy Approval (REA, 0871-AV3TFM) on May 4th, 2018.*
 - *Currently in late stage development completing final engineering as well as permitting...*
- The documents are on the website, the REA process was followed, and responses to MH comments on draft documents were provided.



Ministry of the Environment and Climate Change
Ministère de l'Environnement et de l'Action en
matière de changement climatique

RENEWABLE ENERGY APPROVAL

NUMBER 0871-AV3TFM
Issue Date: May 4, 2018

Nation Rise Wind Farm GP Inc., as general partner for and on behalf of Nation Rise Wind Farm Limited Partnership
219 Dufferin St., Suite 217C
Toronto, Ontario
M6K 3J1

Project Location: Nation Rise Wind Farm
Within an area generally bounded by the Municipality of The Nation and the Township of Russell to the north, Courville Road and MacMillan Road to the east, Township of South Stormont to the south, and the Township of North Dundas to the west.
Township of North Stormont
United Counties of Stormont, Dundas and Glengarry

You have applied in accordance with Section 47.4 of the Environmental Protection Act for approval to engage in a renewable energy project in respect of a Class 4 wind facility consisting of the following:

- the construction, installation, operation, use and retiring of a Class 4 wind facility with a total name plate capacity of up to 100 megawatts (MW).

For the purpose of this renewable energy approval, the following definitions apply:

1. "Acoustic Assessment Report" means the report included in the Application and entitled "Nation Rise Wind Farm, Renewable Energy Approval Application - Noise Impact Assessment Nation Rise Wind Farm Limited Partnership", Document No.: 10021027-CAMO-R-06 Issue: E, dated 26 September 2017, prepared by GL Garrad Hassan Canada, Inc and signed by S. Dokouzian, P.Eng.;

Terms and Conditions of the REA

Terms and Conditions of REA	Report/Plan/Approval/Guide lines	Involved Personnel Qualification	Inspection/Monitoring Requirements (During Construction)	Mitigation Measures (During Construction)	Complaints/Notification
C-Noise Performance Limits	Renewable Energy Approval Application - Noise Impact Assessment				MECP District Manager
D-Confirmation of Vacant Lot Noise Receptors	Renewable Energy Approval Application - Noise Impact Assessment				
E-Acoustic Audit- immission	Compliance protocol for wind turbine noise	Independent Acoustical Consultant (see Note 1)	As per Part D of the protocol		
F-Acoustic Audit- emission	CAN/CSA Standard C61400-11:07	Independent Acoustical Consultant	As per the CAN/CSA Standards		
G-Water Taking Activities	Hydrogeological Assessment and Effects Assessment			See Note 2	Notify the MECP District Manager within two (2) business days of any complaint. Notify the District Manager immediately if the water taking have any significant impact on the surrounding waters.
	Spill Control and Response Plan				See Note 3

1. "Independent Acoustical Consultant" means an Acoustical Consultant who is not representing the Company and was not involved in the Acoustic Assessment Report.
2. If any change in well conditions is reported or observed during dewatering period through the complaints procedure, actions will be taking: Supply water will be provided; Reduction of the rate and amount of water taking (during dewatering) to prevent negative effect on wells. Limit duration of dewatering to minimal possible; Dewatering discharge rates should be evaluated as to not result in erosion and sedimentation to receiving water body; and Implement groundwater cut-offs, as applicable, to limit groundwater taking. All vehicles must be in good condition and have proper operation and maintenance to limit leaks. Oil trays should be placed under equipment that could present oil or fuel leaks, as applicable. Develop a site-specific Spill Response Plan and train staff on appropriate procedures.
3. The following stakeholders will be notified within 24 hours of any reportable spills of pollutants as per O. Reg. 675/98: Ontario's Spills Action Centre (toll-free number 1-800-268-6060); the local municipality; the owner of the substance (if known); and the person in control of the substance (if known).

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H-Stormwater Management, Erosion and Sediment Control, and Surface Water Monitoring	Stormwater Management Plan	Qualified Inspector (See Note 4)	Twice per year inspection for excess sediment buildup and drainage blocks		
	Erosion and Sediment Control Plan (ESC)	Monitoring: Construction Supervisor or a designated representative of the contractor Inspection: Qualified Inspector	Monitor ESC measures as section 4.8 of ESC plan and REA	Section 4 of ESC plan	
	Turbidity Sampling Program (condition H-10 And H-17)	Qualified Inspector	In-field turbidity levels to be monitored for all projects constructions which take place within 30 m of the high water mark of a water body and all the in-water works		If the turbidity and TSS exceedances observed, MECP District Manager or Spill Action Center should be notified.
I-Well Water Sampling	Water Well Complaint Response Procedure and Contingency Plan	“Qualified Expert” as a “Professional Engineer” or “Professional Geoscientist”	Section 3.5.1 of the Contingency Plan and I7 of REA		See Note 5
	Pre-construction Well Survey				

4. “Qualified Inspector” means a person with training and/or experience in erosion and sediment control, stormwater management, and surface water monitoring not representing the Company who was not involved in preparing stormwater management and erosion and sediment control plans.
5. Nation Rise Wind Farm Limited Partnership, 219 Dufferin St, Unit 217C, Toronto, ON M6K 3J1, Phone: (416) 502-9463, Email: nationrise@edpr.com. In addition, the District Manager of the MECP will be notified by EDPR within one (1) business day of receiving a complaint

Within 24 hours of receiving the complaint, or at their earliest convenience, the Qualified Expert will conduct a site visit and collect a raw (prior to any treatment systems) water well sample representative of the water well associated with the complaint. Within four weeks of the site visit provide a written opinion as to whether the water sampling analysis demonstrate the construction of the facility caused an Adverse effect to the well supply.

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K- Ground-borne Vibration Monitoring	Ground-Borne Vibration Monitoring Program	Qualified Expert	K1 of REA		
L-Groundwater Monitoring	Groundwater Monitoring Program	“Qualified Expert” as a “Professional Engineer” or “Professional Geoscientist”	See Note 6		MECP District Manager
M-Sewage Works of the Transformers Substation Spill Containment Facility		Qualified Person	- Ensure the system is installed in accordance with designs and specifications. - Inspection on oil detection system on a monthly basis		
N-Archaeological	Appendix C – Stage 1 and Stage 2 Archaeological Assessments	Licensed Archaeologist	See Note 7		Immediate notification of the Archaeologist and the MTCS in the event archaeological resources are found.

- During the blasting and/or pile-driving activity, if any, is to monitor for any potential adverse impacts to well water quantity and quality. As a minimum, continuous data logger water level measurement and daily field water quality measurements for Temperature, pH, Conductivity, and Turbidity are to be conducted during blasting and/or pile-driving activity for the locations designated by the Qualified Expert
- The 20 metre protective buffer and the 50 metre monitoring buffer fall outside of the proposed Project Location, and as such it will be completely avoided during construction, operation and decommissioning. Should construction begin prior to completion of the Stage 3, construction monitoring will be required within locations BhFt-2, BhFt-7, BhFt-5, BhFt-10, BgFs-3, BhFt-6, BhFt-8, BgFs-4, and BhFt-9 within the 50 metre construction monitoring zone and around the protected portion of the site. If initial ground disturbing construction activities intrude into the 50 metre construction monitoring buffer zones, a licensed archaeologist will be brought in to monitor those construction activities and will be empowered to stop construction if there is a concern for impact to an archaeological site.

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O-Cultural Heritage Resources and Protected Properties	Heritage Impact Assessment		See Note 8	If the avoidance and minimization measures cannot be implemented, a more detailed vibration analysis will be undertaken by a qualified engineer.	
P- Natural Heritage and Pre and Post Construction Monitoring	Appendix E1 - Natural Heritage Records Review Report Appendix E2 - Natural Heritage Site Investigation Report Appendix E3 - Natural Heritage Evaluation of Significance Appendix E4 - Natural Heritage Environmental Impact Study Report Appendix E5 - Natural Heritage Bird and Bat EEMP	Not specified, assumed to be qualified biologist	Conduct pre and post construction Monitoring and assessment for the REA listed significant wildlife habitats and Bat and Birds Mortality following the EEMP	Mitigation measures as described in the EEMP	Director, the MECP District Manager and MNRF should be contacted if the thresholds exceed
Q- Endangered Species Act Requirement	Ensure that activities requiring authorization under <i>the Endangered Species Act, 2007</i> will not commence until necessary authorizations are in place.				

8. A preconstruction condition survey/photographic documentation of the structures at 14114 Concession 10-11 Road should be done prior to access road construction and the condition of the structures should be monitored against the precondition survey by construction personnel during construction to ensure they are not damaged by vibration; regular monitoring of the structures for visible signs of vibration damage and/or separation of construction or traffic from a historic building by approximately 60 metres are generally accepted procedures to mitigate potential negative impacts

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R- Geotechnical	Geotechnical Report – Wind Turbine Generator Foundations Geotechnical Report - Substation Geotechnical Report – Overhead and Underground Collection System Geotechnical Report – MET Tower Geotechnical Report – Pre-Construction Road Condition Survey Data	Not specified, assumed to be qualified geotech engineer	See Note 9		
S-Municipal Consultation	Traffic Management Plan and Road Use Agreement not found on the website				
T- Community Liaison Committee	Notice of Formation of Community Liaison Committee				
U- Indigenous Consultation	No documents found on the website				
V-Operation and Maintenance	Emergency Response Plan Section 5 Facility Operations Plan				
W- Record Creation and Retention					All complaints should be recorded and retained

9. Tulloch recommends monitoring, testing and consultation during construction and/or excavation activities, to confirm that the conditions encountered are consistent with those indicated by the borehole and/or test pit investigation, and to provide recommendations for design changes should the conditions revealed during the work differ from those anticipated. Displacement monitoring and settlement monitoring should be conducted for construction on Leda Clay areas

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X-Notification of Complaints	Notify MECP district Manager in writing within 2 business days and all records described in Condition W1(3) in 8 business days				MECP District Manager
Y-Change of Ownership	Notify the director MECP district Manager in writing within 30 business days				
Others, incorporated into Construction Plan					
Natural Heritage-During Construction Monitoring	Construction Plan	On-site environmental monitor - a contractor with experience providing environmental recommendations on a large scale construction site	According to the Construction Plan Section 11	According to the Construction Plan Section 11	According to the Construction Plan Section 11
Water Body					
Emission to Air, including odour and dust					
Noise					
Local and Provincial Interests, Land, Use and Infrastructure					
Public Health and Safety					

Final Design and Permitting

Township Responsibilities

- Administer and monitor Road Use Agreement (By-Law 14-2018)
- Administer Community Benefit Fund Agreement (By-Law 15-2018)
- Apply Tree Canopy Policy (By-Law 14-2019)
- Pre-Construction and Post-Construction Municipal Infrastructure Survey
- Monitor implementation of Traffic Management Plan
- Crossing agreements for underground conduits
- Review and Approval of Entrance Permits
- Review changes to Municipal Drains
- Review submissions and issue Building Permits

Civil engineering support can be engaged by the Township with compensation from Nation Rise

Comment on Wells

- People are worried about their wells
- “North-Kent Water Discolouration Issue” is oft-cited as proof that windfarms can damage aquifers
- I spoke to MECP hydrogeologists Shawn Kenney, Hydrogeologist in Eastern Region (Kingston), and Bruce Harman, Hydrogeologist in Southwestern Region (London)
- Well impacts are always possible during construction (the example of a dug well close to a construction area was brought up on May 14th)
- The aquifer will be fine, well impacts will minimal, and reparable

Action Items

- Submit a question regarding their environmental inspectors, and independent experts
- Ensure the distribution of the “fridge magnet” information package (contact information, etc.)
- Encourage resident participation in the Community Liaison Committee (CLC)
- Nominate a councilor to sit on the committee?
- Take advantage of paid engineering support through the REA and RUA (including engineering representation at the CLC)
- Foster a relationship with MECP Provincial Officer, specific to this project