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**EMAIL ONLY**

August 16, 2019

Kenneth Little  
EDP Renewables Canada Ltd., Development  
219 Dufferin St., Unit 217C  
Toronto, ON M6K 3J1

Dear Sir:

**Re: Condition A9 and requirements in Schedule C of your REA  
Renewable Energy Approval # 0871-AV3TFM (Approval)  
Nation Rise Wind Farm  
Cornwall City, United Counties of Stormont, Dundas and Glengarry  
Reference Number 6695-APKGUB**

The ministry has reviewed the documents submitted to fulfill Condition A9 and requirements in Schedule C of your Approval, (*refer to Annexes 1, 2 & 3 of this letter for details*).

By means of this letter, it is acknowledged that your firm has fulfilled the submission requirements of Condition "A9" and requirements in Schedule C of your Approval, and the Equipment component can be received at the site effective September 9, 2019.

It is further acknowledged that:

- a. the equivalent turbine is an Enercon E-138 EP3, 3.44 MW (Mode NR2) turbine (*refer to Annex*), and
- b. the selected transformer substation has a sound power level of 101.7 dBA as opposed to 109.9 dBA noted in the Approval. Furthermore, in accordance with provisions in Schedule C of the Approval minor adjustments to the barriers positioning were noted and accounted for to the satisfaction of the ministry. (*Refer to Annex 5*).

Please post the updated acoustic assessment report (*document "d" in Annex 3 ; Noise Impact Assessment including Tables 7-1 and 7-2*) on your project website within ten (10)

days of the date on this document. The tables and any updates must be made available to the public on the project website for the life of the project.

If you have any questions regarding the above, please contact me at the above phone number.

Yours truly,



Mohsen Keyvani, P.Eng.  
Director  
Section 47.5, *Environmental Protection Act*

c: District Managers, Ottawa & Cornwall

## Annex - 1 : Condition A(9) of the REA

A9. If an Acoustically Equivalent Wind Turbine(s) is utilized in the Facility then:

- (1) at least three (3) months prior to delivery of the first Equipment component to the site of the Facility or such other date as agreed to in writing by the Director, a Wind Turbine Specifications Checklist confirming the actual equipment make/model, must be submitted to the Director and the District Manager for review and approval,
- (2) at least three (3) months prior to delivery of the first Equipment component to the site of the Facility or such other date as agreed to in writing by the Director, the following documents must be submitted to the Director and the District Manager for review and approval;
  - (a) a Wind Turbine Specifications Report,
  - (b) an IEC 61400-11 test report(s) confirming the chosen turbine is acoustically equivalent to the approved Reference Wind Turbine, and
  - (c) a summary containing updated tables 7-1 and 7-2 of the Acoustic Assessment Report.

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## Annex - 2 : Schedule C of the REA

### **SCHEDULE C Noise Control Measures**

#### **Acoustic Barrier**

One (1) four (4) sided acoustic barrier, positioned as per Section 4.4 of the Acoustic Assessment Report. The acoustic barrier shall be continuous without holes, gaps and other penetrations, and having a surface mass of at least 20 kilograms per square metre. The barrier shall have the following minimum heights relative to facades of the transformer substation:

<b>Façade of Substation</b>	<b>Height of Barrier</b>
North	5.0 m
East	5.5 m
South	6.0 m
West	5.0 m

Minor adjustments to the barrier's positioning are acceptable, in order to accommodate the final transformer geometric size, as long as the modelled sound levels are equal or below sound levels in the Acoustic Assessment Report. If there are minor adjustments to the barrier alignment an updated Acoustic Assessment Report based on the actual barrier configuration shall be submitted to the Director and the District Manager three (3) months (or a date agreed to in writing by the Director) prior to construction of the acoustic barrier.

## Annex - 3 : Documents Reviewed

The ministry has reviewed the following documents submitted to fulfill Condition A9 and requirements in Schedule C of the subject Approval.

### Condition A9

- a. Wind Turbine Specifications Checklist/ Specifications Report.

**Entitled:** *NATION RISE WIND FARM, Specifications Report, Wind Facility Nation Rise Wind Farm Limited Partnership, Document No.: 10021027-CAMO-R-08; Issue: E, Status: Final, Dated: 22 May 2019.*

**Prepared by:** DNV-GL

- b. The IEC 61400-11 Test Report

**Entitled:** *Noise Emissions Measurement of a Wind Turbine Generator ; Type: Enercon E-138 EP3 ; Site: Wieringermeer, Netherlands; Dated: 16 May 2019.*

**Prepared by:** Deutsche WindGuard Consulting GmbH (WindGuard)

- c. Updates of Tables 7-1 and 7-2 of the Acoustic Assessment Report referenced in the Approval

### Schedule C

- d. Updated Acoustic Assessment Report referenced in Schedule C of the Approval

**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: F, Status: Final ; Date: 31 May 2019.*

**Prepared by:** DNV-GL

- e. **Excel file entitled:** *Nation Rise E138 NR2 noise level updates for MECP.xlsx*  
**Prepared by:** DNV-GL

## Annex - 4 : Equivalent Turbine Specifications

The equivalent turbine is an Enercon E-138 EP3, 3.44 MW (Mode NR2) turbine with the following specifications/details:

<b>Model</b>	<b>Enercon E138 EP3 with Operating Mode NR2</b>
Rated Power	3.44 MW
Hub height	131 m
Rotor diameter	138.6 m
Blade modifications	Trailing Edge Serrations (TES)
Cut-in wind speed	2.5 m/s
<b>Maximum sound power level</b>	<b>104.3 dBA</b>

The maximum sound power level for the equivalent turbine in the Approval is 105.8 dBA.

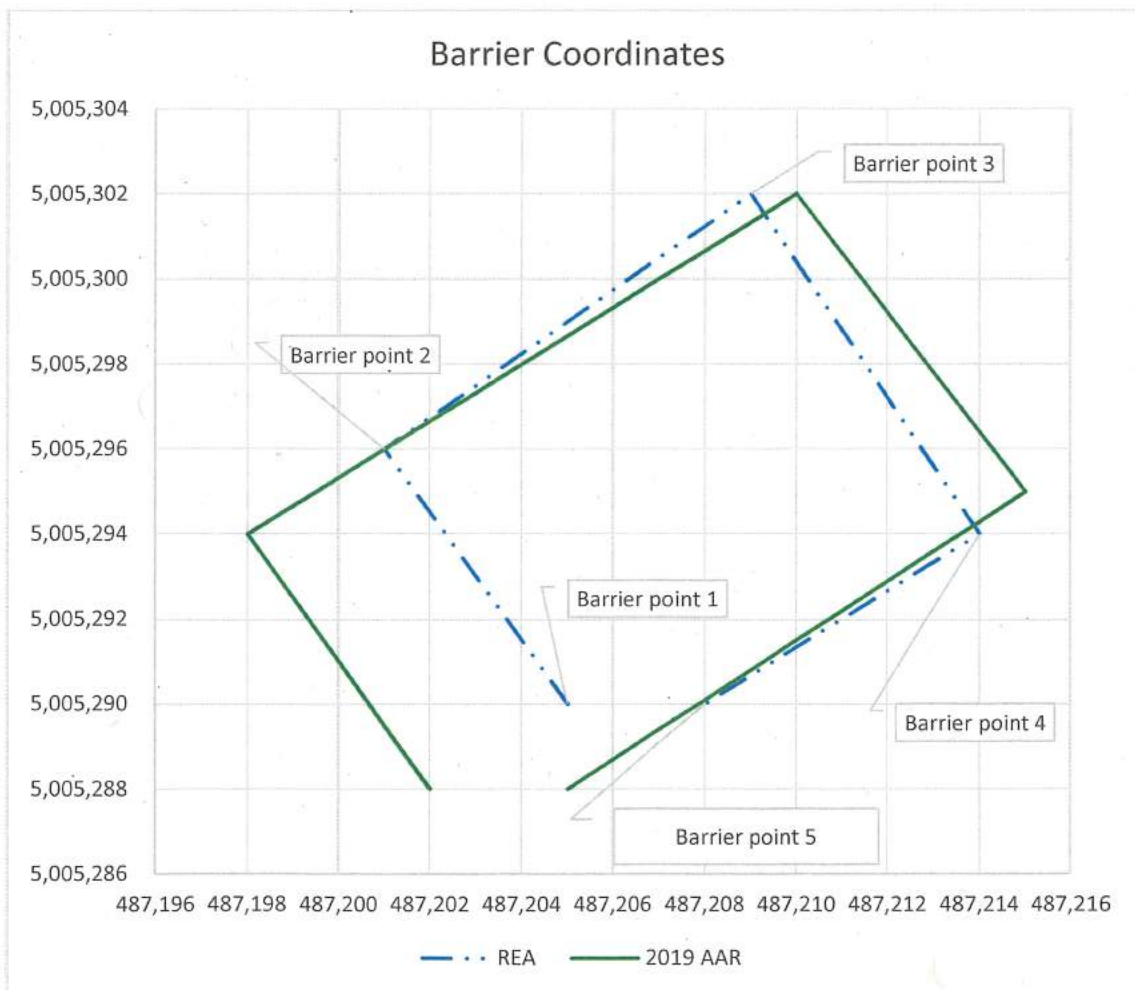
## Annex - 5 : Updated Transformer Details

A sound barrier is planned for the Project substation transformer. The type of barrier used in the (2019) noise study is one that can be described as of absorptive type with an Absorptive Coefficient of at least 0.8.

The acoustic barriers will have a surface density of at least  $20 \text{ kg/m}^2$  and have a closed surface free of gaps and cracks. A four-sided barrier was modeled with heights ranging from 5 m to 6.05 m. The total barrier linear length is approximately 42 m. The following tables provide details of the substation and acoustic barrier.

**Table 1: 2019 Project substation barrier coordinates vs Approval barrier Coordinates**

Description	REA - Approval		2019 AAR		Change [m]
	Easting [m]	Northing [m]	Easting [m]	Northing [m]	
Barrier point 1	487,205	5,005,290	487,202	5,005,288	3.6
Barrier point 2	487,201	5,005,296	487,198	5,005,294	3.6
Barrier point 3	487,209	5,005,302	487,210	5,005,302	1.0
Barrier point 4	487,214	5,005,294	487,215	5,005,295	1.4
Barrier point 5	487,208	5,005,290	487,205	5,005,288	3.6



**Table 2: 2019 Project transformer sound power level calculation**

Transformer Power Rating [MVA]	115
Transformer Voltage Rating [kV]	230
Sound Pressure Level $L_p$ [dBA]	74
Sound measurement area $S$ (m <sup>2</sup> )	187.8
Sound Power Level [dBA] (without penalty)	96.7
Sound Power Level $L_w$ [dBA] (with penalty)	<b>101.7</b>

**Table 3: 2019 Substation Transformer sound power level**

Frequency (Hz)	Octave band sound power level*									Broadband (dBA)
	31.5	63	125	250	500	1000	2000	4000	8000	
PWL (dBA)	58.9	78.1	90.2	92.7	98.1	95.3	91.5	86.3	77.2	101.7
PWL (dB)	98.3	104.3	106.3	101.3	101.3	95.3	90.3	85.3	78.3	

\* Includes 5 dB penalty to account for tonality

Annex - 6 : Maximum sound levels at receptors (Table 7-1 of AAR)

	Point of Reception ID	Receptor		Parcel Ident. Number	NIA map ID	Distance to nearest source	Nearest source	Calculated sound pressure level at receptor [dB(A)] at selected wind speed in m/s		Sound level limit [dB(A)] at selected wind speed in m/s	Diff. in Sound Level dB
		height									
		[m]				[m]	[ID]	NIA for REA	E138 NR2 2019 update	≤6	
1	V4336	4.5		601060088	2	587	Transf	39.8	39.4	40	-0.4
2	V4338	4.5		601060425	1	810	T18	39.0	38.3	40	-0.7
3	V4284	4.5		601050115	2	691	T41	39.2	38.2	40	-1.0
4	V4315	4.5		601010119	4	828	T21	39.2	38.2	40	-1.0
5	V4329	4.5		601060378	2 and 4	745	T21	39.2	38.1	40	-1.1
6	V4491	4.5		601060341	2 and 4	661	T23	39.2	38.1	40	-1.1
7	R1314	4.5		601000192	1	654	T7	39.1	38.0	40	-1.1
8	R1422	4.5		601060069	1 and 2	867	T18	38.7	38.0	40	-0.7
9	R1467	4.5		601060339	2 and 4	637	T23	39.0	38.0	40	-1.0
10	R1750	4.5		601050136	3	696	T47	39.1	38.0	40	-1.1
11	V4331	4.5		601060381	2	681	Transf	38.6	38.0	40	-0.6
12	V4359	4.5		601060092	2	683	Transf	38.5	38.0	40	-0.5
13	R4858	4.5		601050141	3	670	T48	39.1	38.0	40	-1.1
14	V4290	4.5		601050082	2	698	T38	39.0	37.9	40	-1.1
15	R1502	4.5		601060262	2 and 4	672	T25	38.9	37.8	40	-1.1
16	V4356	4.5		601060090	2	649	Transf	38.2	37.8	40	-0.4
17	R1406	4.5		601060079	2	788	Transf	38.1	37.7	40	-0.4
18	R2092	4.5		601090098	2	588	T28	38.8	37.7	40	-1.1
19	R1425	4.5		601060426	1	905	T18	38.3	37.6	40	-0.7
20	R1441	4.5		601010066	1	698	T12	38.7	37.6	40	-1.1
21	R1503	4.5		601050063	2 and 4	735	T32	38.7	37.6	40	-1.1
22	V4126	4.5		601020137	3	622	T44	38.7	37.6	40	-1.1
23	V4293	4.5		601050064	2 and 4	779	T25	38.6	37.6	40	-1.0
24	V4774	4.5		601040057	3	685	T48	38.7	37.6	40	-1.1
25	R1305	4.5		601000135	1	735	T4	38.6	37.5	40	-1.1