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Memorandum

To	Emmons-Logan Wind, LLC	Pages	2
Subject	Emmons-Logan Wind Energy Center Addendum to the Application to the North Dakota Public Service Commission for a Certificate of Site Compatibility Acoustic Assessment Update Emmons and Logan Counties, North Dakota		
From	AECOM		
Date	November 5, 2018		

Emmons-Logan Wind, LLC (Emmons-Logan Wind), a wholly owned, indirect subsidiary of NextEra Energy Resources, LLC, submitted an application for a Certificate of Site Compatibility to construct the Emmons-Logan Wind Energy Center (Project) in July 2018. The North Dakota Public Service Commission (Commission) has deemed the application complete and scheduled a public hearing for December 7, 2018. This memorandum serves as an addendum to the application.

Since application submittal, there have been minor changes in the Project layout and subsequent acoustic assessments, as described in detail below. In particular, as Emmons-Logan Wind has worked to finalize the design and layout of the Project, and in response to various factors, including landowner requests, geotechnical survey results, and environmental and archaeology survey results, Emmons-Logan Wind altered the Project layout and moved some turbines. Accordingly, the results of the November 2018 Acoustic Assessment submitted with this memorandum differ from those specified in the application. The application indicates that received sound levels will be above 50 dBA within 100 feet of nine receptors (i.e. occupied residence or community building); whereas the November 2018 Acoustic Assessment concludes that the Project will not generate sound levels in exceedance of Commission criteria at any receptor.

The impacts identified in the application were solely due to the compounding effect of identical conservative assumptions applied to the model in the anomalous meteorological scenario. As a result, the duplication of these assumptions had a compounding effect that returned an overprediction of operational sound levels. The November 2018 Acoustic Assessment corrects for this overprediciton by omitting the manually added adjustments which were determined to be already considered in the modeling software's sound propagation calculation. The modeling software follows the ISO 9613-2 standard, which accounts for anomalous meteorological conditions, such as temperature inversions and downwind conditions. This is further reinforced by the Institute of Acoustics (IOA) in their guidance document titled "A Good Practice Guide to the Application of ETSU-R-97 for the assessment and Rating of Wind Turbine Noise," which asserts that predictions made using the ISO 9613-2 standard relate to "worst-case" conditions (typically downwind propagation from source to receiver and/or downward refraction under temperature inversions) (IOA 2013). Therefore, the modeled results of the November 2018 Acoustic Assessment, while still maintaining conservatism, are a more accurate measure of expected maximum operational sound levels.

In summary, the Project will not result in sound levels above 50 dBA at any receptor is compliant with the Commission's sound level requirements.

Reference:
Institute of Acoustics (IOA), 2013, A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise.