

November 12, 2021

VIA E-MAIL AND FEDERAL EXPRESS

Mr. Steven Kahl
Executive Secretary
North Dakota Public Service Commission
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480

**RE: Sunflower Wind Project, LLC's Request for Extension of Time to Install Light-Mitigating Technology System
Case No. PU-14-105**

Dear Mr. Kahl:

Enclosed for filing are an original and ten (10) copies of Sunflower Wind Project, LLC's Request for Extension of Time to Install Light-Mitigating Technology System with accompanying Exhibit A. Electronic copies of the enclosed documents and this letter were filed with the Commission today via e-mail.

If you have any questions, please let me know.

Sincerely,



MOLLIE M. SMITH

MMS/ms/74430001v1
Enclosures

cc: Patrick Fahn (via e-mail, w/ enclosures)
Brian Johnson (via e-mail, w/ enclosures)
Stacey Fitts (via e-mail, w/ enclosures)
Bruce Kerr (via e-mail, w/ enclosures)
Raul Garcia (via e-mail, w/ enclosures)
Ian Fudalski (via e-mail, w/ enclosures)

Attorneys & Advisors
main 612.492.7000
fax 612.492.7077
fredlaw.com

Fredrikson & Byron, P.A.
200 South Sixth Street, Suite 4000
Minneapolis, Minnesota
55402-1425

STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION

**Sunflower Wind Project, LLC
Sunflower Wind Energy Project – Siting Application
Stark & Morton Counties, North Dakota**

Case No. PU-14-105

**Sunflower Wind Project, LLC’s Request for Extension of Time
to Install Light-Mitigating Technology System**

INTRODUCTION

Sunflower Wind Project, LLC (“Sunflower”) submits this Request for Extension of Time to Install a Light-Mitigating Technology System on the Sunflower Wind Energy Project (“Project”) pursuant to North Dakota Century Code (“N.D.C.C.”) § 49-22-16.4(3) and North Dakota Administrative Code (“N.D.A.C.”) § 69-06-11-02(2). More specifically, Sunflower requests that the North Dakota Public Service Commission (“Commission”) grant an extension until June 30, 2022 for Sunflower to install a functioning light-mitigating technology system on the Project.

Onward Energy Holdings, LLC (“Onward”), Sunflower’s parent company, has prior experience with the Vestas Aircraft Detection Lighting System (“ADLS”) on two wind projects in Maine. Onward’s experience with Vestas’s ADLS technology, among other factors discussed further below, led Sunflower to conclude that the Lighting Intensity Dimming Solution (“LIDS”) technology developed by Technostrobe would be a better long-term light-mitigating technology for the Project and area residents. The next best alternative would be a modified version of Vestas’s current ADLS technology. However, neither LIDS nor Vestas’s modified ADLS design have received approval from the Federal Aviation Administration (“FAA”), and recently-obtained

information indicates more uncertainty as to when FAA approval may be obtained than had been previously conveyed to Sunflower.

Despite reservations regarding the currently-approved ADLS technology, Sunflower recognizes its obligation to install light-mitigating technology. Therefore, Sunflower has committed to installing Terma's ADLS technology at the Project and requests an extension until June 30, 2022 to complete installation of the Terma system. Further support for this request is provided below.

LEGAL STANDARD

N.D.C.C. § 49-22-16.4(3) states that “[b]y December 31, 2021, every wind energy conversion facility for which the [C]ommission issued a certificate of site compatibility before June 5, 2016, must be equipped with a functioning light-mitigation technology system that complies with rules adopted by the [C]ommission. After public hearing, the [C]ommission may grant a waiver or an extension of time based on technical or economic feasibility considerations.” *See also* N.D.A.C. § 69-06-11-02(2). The content requirements for a light-mitigating technology extension request are specified in N.D.A.C. § 69-06-11-02(7).

On June 20, 2014, the Commission issued Certificate of Site Compatibility No. 39 to Sunflower for the Project. Thus, the Project is subject to the light-mitigating technology requirement set forth in N.D.C.C. § 49-22-16.4(3). *See also* N.D.A.C. § 69-06-11-02(2).

DISCUSSION

I. Onward's Experience with Vestas Turbine-Mounted ADLS Technology.

Onward, Sunflower's parent company, currently has two operating wind projects in Maine that utilize Obstruction Collision Avoidance System (“O.C.A.S.”) technology, an ADLS technology developed by Vestas. Like other ADLS technologies, Vestas's O.C.A.S. technology

is a radar activated light-mitigating system. It was the first ADLS technology authorized by the FAA and is the most mature ADLS technology on the market in the United States. Currently, the O.C.A.S. technology uses wind turbine tower-mounted rotating radar units set in an array to cover the designated area, which activate the FAA lighting mounted on the wind turbine towers when an aircraft approaches. The Maine projects utilize Vestas turbines, and Onward contracts with Vestas to provide both turbine and O.C.A.S. maintenance and support, which includes 24/7 remote monitoring of both the turbines and the O.C.A.S.

At the time the Maine projects were permitted, applicable permitting rules required installation of light-mitigating technology. At the time the projects were constructed, the O.C.A.S. turbine-mounted design was the only FAA-approved ADLS technology available for installation, and the quoted cost of the technology was incorporated into the original development cost for each project.

Unfortunately, the wind turbine tower-mounted design has been susceptible to damage from ice falling from the towers. At one of Onward's Maine wind projects, an elaborate prototype roof system was designed and installed in 2020-2021 to try to improve the winter survivability of the radar units. However, the long-term viability of the prototype roof system has yet to be fully vetted, and it came at a considerable additional cost to both Vestas and the wind projects. Additionally, there were initially software issues with the technology that caused it to be inoperable at both of Onward's Maine projects for nearly 7 months in 2020 and 2021. Through diligent monitoring and 24/7 support from Vestas, the software issues have been corrected. However, between ice damage and other repairs, one of Onward's Maine wind projects has only had an operable system for 14 of 50 months since it was commissioned.

Due to the ice-related issues noted above, the O.C.A.S. wind turbine tower-mounted technology is not technically feasible for Sunflower's Project given the similarity in winter conditions between North Dakota and Maine. Additionally, based on Onward's past experience, Sunflower recognizes the issues that can arise with new complex technology, such as ADLS, as well as the importance of diligent, constant support from the technology manufacturer to correct issues when they do arise.

II. FAA Approval of Vestas O.C.A.S. Stand-Alone Tower Technology Delayed.

To address the ice damage issue with its turbine-mounted design, Vestas has developed an alternate design for the O.C.A.S radar units where they are mounted on a stand-alone tower system. Given Vestas's experience with ADLS technology, and its 24/7 remote monitoring and full-service support, Sunflower initiated discussions with Vestas in October 2020 regarding use of the stand-alone tower O.C.A.S. technology at the Project. However, Sunflower is currently unable to move forward to secure and install the Vestas O.C.A.S. stand-alone tower design.

Although the O.C.A.S. ADLS technology has already been approved by the FAA and stand-alone ADLS radar tower mounting has been authorized for other ADLS technologies, the alternate stand-alone tower design for Vestas's O.C.A.S. still requires FAA approval. In October 2020, Vestas indicated that it expected FAA approval of the alternate design in First Quarter 2021. Likewise, in January 2021, Vestas continued to indicate that FAA clearance should not be a technical hurdle, as the technology was the same but just installed differently, and that it anticipated FAA approval in the First Quarter 2021. However, in September 2021, Vestas indicated for the first time that it was uncertain when the alternate design would receive FAA approval, and noted difficulties getting a response from the FAA to its timing inquiries.

II. Concerns with Installing the Currently-Approved ADLS Technology at Sunflower's Project.

Two ADLS stand-alone tower technologies are currently approved by the FAA: the DeTect Harrier Intelligent Radar (“DeTect”) ADLS technology and the Terma ADLS technology. Both systems employ a stand-alone tower mounted radar system which, similar to the O.C.A.S. technology described above, activates the wind turbine FAA lighting when an aircraft approaches a defined area in the vicinity of the wind turbines.

In October 2020, Sunflower sought quotes for both the DeTect and Terma ADLS technologies. While the cost of purchasing and installing the DeTect and Terma ADLS technologies was comparable to the purchase/installation cost for the Vestas O.C.A.S. stand-alone tower technology, unlike Vestas, neither DeTect nor Terma offered (or could provide) 24/7 remote monitoring of their ADLS technology. Additionally, while Vestas concluded that two stand-alone tower mounted radars would be required for Sunflower's Project, the DeTect and Terma quotes called for only one radar tower. While the FAA approves ADLS designs pre-installation, for Onward's projects in Maine, the FAA also conducted post-installation fly-bys to ensure the systems were operating as they should; if the system had not provided the required coverage, the FAA could have required modifications to the system. As a result, the fact that Vestas proposed two towers, while DeTect and Terma proposed only one, was concerning as it raised the potential for coverage issues requiring post-installation modifications for adequate coverage.

Additionally, while Sunflower has experience with Vestas, and Vestas is the most-experienced ADLS supplier in the United States, Sunflower does not have ADLS-related experience with DeTect¹ or Terma, who are relative newcomers to the ADLS market. Sunflower

¹ Onward has experience with DeTect as a supplier of bat detection technology.

contacted local operations staff at some of the operating wind projects that have deployed the DeTect technology in North Dakota. The reports from the operations staff received during these calls were not encouraging and included more than one complaint about unreliable operation and false detections resulting in instances of lights being activated despite no aircraft in the area. Sunflower is also aware of supply chain issues for the DeTect system.² Due to concerns with system compliance, technical support, experience, reliability, and potential costly post-installation system modifications, Sunflower has concerns regarding installing either DeTect or Terma ADLS technologies at the Project.

III. Sunflower Initially Pursued LIDS as a Better Long-Term Light-Mitigating Technology.

Given Onward's experience with ADLS on its two Maine wind projects, its concerns with the currently approved ADLS technologies, and its analysis of the LIDS technology, Sunflower initially concluded that LIDS would be a better long-term light-mitigating technology for the Project. LIDS, developed and sold by Canadian vendor Technostrobe, utilizes light sensors to adjust the intensity of lights based on weather and visibility conditions to suit the needs of approaching aircraft, while limiting visual impacts in the surrounding area. The LIDS technology has been approved for use in Canada by the Canadian equivalent to the FAA and has been operating in Canada since 2015. The LIDS technology is anticipated to provide more reliable light mitigation results for local residents, be less expensive and faster to install, and require less technical support during operations. For example, the LIDS technology does not require the hardware, software, communications, and other complex equipment that the ADLS technology

² See, e.g., Case Nos. PU-11-662, PU-09-151, PU-11-57, PU-11-162, PU-13-1274 (requests for extension of the light-mitigating requirements by ALLETE on behalf of five wind projects in North Dakota due to significant delays in procuring the necessary semiconductors).

requires; thus, it requires less fine-tuning and site-specific data input, as well as less maintenance. Additionally, the LIDS technology does not require installation of a communications tower and, as a result, does not require permitting or environmental review (e.g., Western Area Power Administration (“WAPA”)³ environmental review, Federal Communications Commission registration, and local and state siting authorizations).

Sunflower knows that the LIDS technology is awaiting FAA approval. However, in discussions with Technostrobe, the supplier indicated consistently that the technology was in the late stages of FAA review and approval would be forthcoming. As a result, Sunflower negotiated and executed a supply agreement with Technostrobe for delivery of the LIDS system. More recently, however, Sunflower learned that, contrary to what it had been told by Technostrobe, the LIDS technology is unlikely to receive FAA approval within the next two years.

IV. Sunflower Requests an Extension to Enable Installation of Currently-Approved ADLS Technology.

Although Sunflower has significant concerns about installation of the currently-approved ADLS technologies, Sunflower also recognizes it has an obligation to install light-mitigating technology on the Project. After Vestas notified Sunflower in September that it was uncertain when the Vestas stand-alone tower O.C.A.S. design would receive FAA approval, and it became evident that the LIDS technology would not receive FAA approval in the near future, Sunflower again contacted both Terma and DeTect. DeTect’s response was delayed and it indicated that the expected lead time to install the technology would be 12-14 months. Terma responded promptly and Sunflower is negotiating an agreement with Terma for its ADLS technology. Currently,

³ The Project interconnects to the grid via a WAPA-owned substation. As a result, WAPA completed a National Environmental Policy Act (“NEPA”) review that included the Project prior to commencing interconnection-related construction activities. Project modifications also require WAPA review in connection with its prior NEPA analysis.

Terma is working on a final ADLS design for the Project. Once the design is finalized, Sunflower will complete the WAPA review, the FAA approval process, the FCC communications tower registration process, will submit a siting exclusion certification to the Commission, and will secure any local approvals required for installation of the system. Terma has indicated that the typical time period from purchase to installation is typically seven months, although it may be able to install the system in less time. Terma also indicated that it can deliver a radar system to the Project site in February so it is ready for installation as soon as permitting is complete and the weather allows. Based on this information, and barring unforeseen issues, Sunflower anticipates it will be able to install a functioning light-mitigating system on the Project on or before June 30, 2022.

V. Community Input on Extension Request.

Sunflower understands the purpose of the light-mitigating technology requirement is to minimize the impact of turbine lighting on area residents, and Sunflower is also concerned about mitigating impacts to area residents. Given its concerns regarding ADLS installation, and its initial preference to use the LIDS technology, Sunflower sought input from local residents near the Project regarding potentially requesting an extension of time to comply with the light-mitigating technology requirement to allow time for FAA approval of LIDS. To get input directly from area residents, Sunflower had a Project booth at a local Hebron Fall Festival in Hebron, North Dakota specifically for the purpose of discussing light-mitigating technology and the potential for Sunflower to request an up to two-year extension of the time in which to install light-mitigating technology. The local population expressed strong support for granting an extension for up to two years, and a copy of an informal petition supporting the extension request signed by area residents is included as **Exhibit A**.

Although Sunflower is no longer pursuing LIDS, the above information helps provide the Commission with insight into the community's thoughts regarding light-mitigating technology and Sunflower's extension request.

VI. Conclusion.

For the reasons set forth above, Sunflower respectfully requests that the Commission grant an extension authorizing Sunflower to equip the Project with a functioning light-mitigating technology system by no later than June 30, 2022.

Dated this 12th day of November, 2021.

FREDRIKSON & BYRON, P.A.



By _____


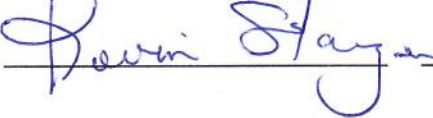


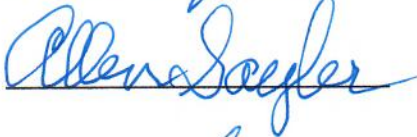
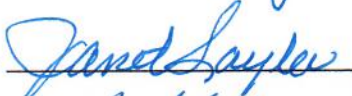

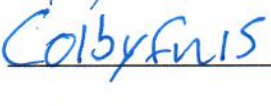
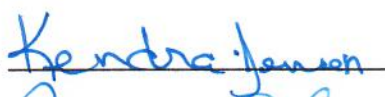
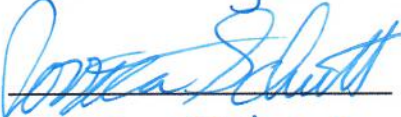


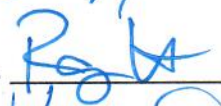
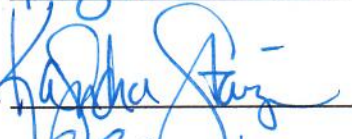

MOLLIE M. SMITH, ND Bar #06714
BRIDGET A. DUFFUS, ND Bar #09235
Attorneys for Sunflower Wind Project, LLC
200 South Sixth Street, Suite 4000
Minneapolis, MN 55402-1425
(612) 492-7270
(612-492-7277
msmith@fredlaw.com
bduffus@fredlaw.com

No-Objection Statement to Extension of Light Mitigation Deadline for Sunflower Wind Farm

A law was passed by the North Dakota Legislature (North Dakota Century Code section 49-22-16.4(3)) which established a deadline of December 31, 2021 for the Sunflower wind farm to have a functioning light-mitigating technology system for FAA lights on turbines. We understand the Sunflower wind farm has been diligently working to meet this goal but because of technical and economic feasibility considerations it may be advantageous to have additional time to comply with this requirement.

We, the undersigned, have no objection to the Sunflower wind farm receiving a two-year extension to this deadline, to allow Sunflower wind farm to meet this obligation.

	Signature	Name	Address
1.	<u>Kyle Schulte</u>	<u>Kyle Schulte</u>	<u>3206 77th Ave. 58638</u>
2.	<u>Heidi Schulte</u>	<u>Heidi Schulte</u>	<u>3206 77th Ave Hebron ND 58638</u>
3.	<u>Joe Warner</u>	<u>Joe Warner</u>	<u>Hebron ND 58638</u>
4.	<u>Rick Wiege Rick Wiege</u>	<u>Rick Wiege</u>	<u>Hebron N.D 58638</u>
5.	<u>Laurie Dakker</u>	<u>Laurie Dakker</u>	<u>712 Summit Hebron</u>
6.	<u>Paul M Dilli</u>	<u>Paul M Dillinger</u>	<u>PO Box 92 Hebron N.D</u>
7.	<u>Kyle Sinkwa</u>	<u>Kyle Sinkwa</u>	<u>712 North ave Hebron ND</u>
8.	<u>Tamara Warner</u>	<u>Tamara Warner</u>	<u>6995 38th St Hebron, ND</u>
9.	<u>Terry Dakker</u>	<u>Terry Dakker</u>	<u>717 Summit Tr. Hebron ND</u>
10.	<u>CHARLIE HOTTER</u>	<u>CHARLIE HOTTER</u>	<u>209 S GROUVE STR HEBRON N.D</u>
11.	<u>Chester Brandt</u>	<u>Chester Brandt</u>	<u>222 - S. BUFFALO Hebron, ND</u>

	Signature	Name	Address
12.		Dale Saylor	2521 Del Rio Dr Bismarck 58638
13.		Kevin Staiger	P.O. Box 83 Hebron
14.		Brian Shaver	4754 71 st Ave Glen Ullin
15.		Kim Shaber	4754 71 st Ave Glen Ullin
16.		Allen Saylor	4681 - 75 th Ave. Hebron.
17.		Janet Saylor	4681 75 th Ave, Hebron
18.		McKayla Fuls	828 N East St Hebron
19.		Colby Fuls	228 N East St Hebron
20.		Kendra Jensen	218 S. maple
21.		Jessica Schutt	212 2nd St. S. Richardton
22.		Bailey Sletten	412 East 5th N Hebron
23.		Stephanie Heck	125 5 th St. N. Richardton
24.		Roger Heck	125 5 th St N Richardton 775
25.		Kasandra Staiger	40 1/2 St. Hebron ND
26.		Elizabeth Wanner	1697 County 5 S.

Signature	Name	Address
27. <u>Edmund</u>	Wyatt Schultz	3206 77th Ave Hebron
28. <u>Sadia Zafar</u>	Sadia Zafar	3204 77th Ave, Hebron
29. <u>Lester J. Mutschelknaus</u>	Lester J. Mutschelknaus	903 Fulton Ave, Hebron.
30. <u>Ron Schantz</u>	Ron Schantz	Hebron N.P. 58638
31. <u>JoAnn Schantz</u>	JoAnn Schantz	Hebron, ND 58638
32. <u>Marsha Wanner</u>	Marshall Wanner	Bismarck, ND 58503
33. <u>Jesse Gall</u>	Jesse Gall	Bismarck, ND 58503
34. <u>Taylor Gall</u>	Taylor Gall	Bismarck, ND 58501
35. <u>Russ Kreis</u>	Russ Kreis	Hebron, ND 58638
36. <u>Jessi Elkins</u>	J Elkins	Hebron, ND 58638
37. <u>Karla Staiger</u>	Karla Staiger	Hebron, ND 58638
38. <u>Becky Ressler</u>	Becky Ressler	Glen Ullin ND 58601
39. <u>Larry Lottus</u>	Larry Lottus	Hebron 58638
40. <u>Dale Hevile</u>		Hebron 58638 8336 3975 St SW Richardson ND 58652
41. <u>CRAIG S Fisher</u>	Craig S Fisher	Richardson ND 58652

Signature

Name

Address

42. Brian Khan

Brian Khan

4491 79th AVE
SW Richmond Tn

43. _____

44. _____

45. _____

46. _____

47. _____

48. _____

49. _____

50. _____

51. _____

52. _____

53. _____

54. _____

55. _____

56. _____
