BEFORE
THE OHIO POWER SITING BOARD

In the Matter of the Application of **REPUBLIC WIND, LLC** for a Certificate of Environmental Compatibility and Public Need for a Wind-Powered Electric Generating Facility in Seneca and Sandusky Counties, Ohio.	)))))	Case No. 17-2295-EL-BGN

DIRECT TESTIMONY OF

Dalton S. Carr
Development Manager
Apex Clean Energy

on behalf of

Republic Wind, LLC

October 21, 2019

Q-1. Please state your name, current title, and business address.

A-1. My name is Dalton S. Carr. I am the Development Manager for Apex Clean Energy ("Apex"). My business address is 310 4th St. NE, Suite 300, Charlottesville, VA 22902.

Q-2. What is your educational and professional background?

A-2. I hold a Bachelor of Arts degree in Environmental Studies, with additional honors as a Scholar in Energy Studies from Yale University. Since 2015 I have been employed with Apex as Development Manager and responsible for wind development projects in Ohio, Kentucky and West Virginia. I have also worked on solar projects in Indiana, Kentucky, and West Virginia. Prior to my current position with Apex, I held positions with two environmental and energy companies.

Q-3. On whose behalf are you offering testimony?

A-3. I am testifying on behalf of the Applicant, Republic Wind, LLC ("Republic Wind" or "Applicant"). Republic Wind is a wholly owned subsidiary of Apex. Apex is an independent renewable energy development company founded in 2009. It is focused on building utility-scale generating facilities. Apex is building one of the largest, most diversified portfolios of renewable energy resources capable of producing over 13,000 MW of clean energy. It has wind and solar energy projects successfully operating in Illinois, Oklahoma, Texas, and Colorado. Apex has completed 13 wind facilities totaling approximately 2388 megawatts of clean energy.

Q-4. What is your role with respect to the Project?

A-4. In my position as Development Manager, I oversee and manage all facets of project planning and development for the Republic Wind Farm project (the "Project"). I oversee the permitting process, and the production of the various studies required to complete the application before the Ohio Power Siting Board ("OPSB" or "Board") for the Project's certification as a wind-powered electric generation facility.

Q-5. What is the purpose of your testimony?

A-5. The purpose of my testimony is the following:

- Provide background concerning Republic Wind's February 2, 2018 filing of an application for a certificate of environmental compatibility and public need with the OPSB, as supplemented on March 27, 2018 and the 1) Notice of Clarification filed on April 11, 2018; (2) Notice of Clarification filed on June 22, 2018; (3) Amended Application filed December 26, 2018; (4) Exhibit AA to the Amended Application filed December 27, 2018; (5) Notice of Project Modifications and Project Information Update filed June 28, 2019; and (6) responses to two sets of data requests and interrogatories from the Board's Staff (collectively, the "Application").
- Summarize major items in the Application and sponsor its admission into evidence along with exhibits and the various proofs of publication;
- Introduce the witnesses who will present direct testimony for the Applicant;
- Describe Republic Wind's outreach to the community;
- Describe the economic benefits of the Project.
- Review the 57 conditions suggested by the OPSB Staff ("Staff") in the Staff Report of Investigation filed on July 25, 2019 and respond on behalf of the Applicant.

Q-6. Do you have any corrections to the Application?

A-6. Republic Wind is modifying the location turbine 42 to comply with the Board's natural gas pipeline setback. Republic Wind intends to file brief Notice of Project Modification that will show that a small shift in the turbine's location will meet the setback. This filing will demonstrate that the shift creates no additional environmental impacts. The distance of the shift is also minor enough that the Federal Aviation Administration's ("FAA") determination of no hazard ("DNH") for turbine 42 remains unaffected.

Q-7. Is the Application and all exhibits and appendices, true and accurate to the best of your knowledge?

A-7. Yes, they are.

- The Application and exhibits thereto filed February 2, 2018 has been marked as Applicant Exhibit 1.

- The Supplement to the Application filed March 27, 2018 has been marked as Applicant Exhibit 1A;
- The Notice of Clarification filed on April 11, 2018 has been marked as Applicant Exhibit 1B;
- The Amended Application and exhibits thereto filed December 26, 2018 has been marked as Applicant Exhibit 1C;
- Exhibit AA to the Amended Application filed December 27, 2018 has been marked as Applicant Exhibit 1D;
- The Notice of Project Modifications and Project Information Update filed June 28, 2019 has been marked as Applicant Exhibit 1E; and
- The Notice of Project Modifications filed October 21, 2019 has been marked as Application Exhibit 1F.

Q-8. Did any portion of the application contain confidential information that was filed under seal?

A-8. Yes, pages 32-35 of the Application filed February 2, 2018 and Exhibits G and W thereto contained confidential and financial proprietary information. The unredacted version of the Application and Exhibits G and W were filed under seal. In addition, pages 33-36 of the Amended Application filed December 26, 2018 and Exhibits G and W thereto also contained confidential and financial proprietary information. The unredacted version of the Amended Application and Exhibits G and W were filed under seal. These confidential filings have been marked as follows:

- Unredacted Application filed February 2, 2018 has been marked as Confidential Exhibit 1G.
- Unredacted Exhibit G to the Application filed February 2, 2018 has been marked as Confidential Exhibit 1H.
- Unredacted Exhibit W to the Application filed February 2, 2018 has been marked as Confidential Exhibit 1I.

- Unredacted Amended Application filed December 26, 2018 has been marked as Confidential Exhibit 1J.
- Unredacted Exhibit G to the Amended Application filed December 26, 2018 has been marked as Confidential Exhibit 1K.
- Unredacted Exhibit W to the Amended Application filed December 26, 2018 has been marked as Confidential Exhibit 1L.

Q-9. Are Republic Wind's responses to the interrogatories/data requests served on it by Staff true and accurate to the best of your knowledge?

A-9. Yes, they are.

Q-10. Did Republic Wind cause the Application to be served on various local government officials and libraries?

A-10. Yes. The certificate of service of the initial Application was filed on May 30, 2018 and has been marked as Applicant Exhibit 2. The certificate of service of the Amended Application was filed on December 26, 2018 and has been marked as Applicant Exhibit 3.

Q-11. Did Republic Wind submit its application fee to the Board?

A-11. Yes, Applicant Exhibit 4 shows that proof of compliance with this requirement was filed with the Board on June 25, 2018.

Q-12. Did Republic Wind send a letter to property owners and tenants within the project site or contiguous to the project site?

A-12. Yes. A copy of this letter was filed with the Board on October 16, 2019 and is marked as Applicant Exhibit 5.

Q-13. Did Republic Wind have notices of the Public Information Meetings, the Application, and the hearings published in a newspaper of general circulation in Seneca County?

A-13. Yes. Proof of publication was submitted to the Board as reflected in the following exhibits:

- The proof of publication of notice of the initial public information meeting was filed December 11, 2017 and is marked as Applicant Exhibit 6. The proof of publication of the notice of the public information meeting on the Amended Application was filed December 11, 2018 and is marked as Applicant Exhibit 7.
- The proof of publication of the initial Application was filed August 15, 2018 and is marked as Applicant Exhibit 9. The hearings noticed in the publication were canceled and, pursuant to Administrative Law Judge Entry of September 4, 2018, notice of cancelation of the hearing was published and proof filed with the Board on October 16, 2018, and is marked as Applicant Exhibit 9.
- The proof of publication of the Amended Application was filed April 12, 2019 and is marked as Applicant Exhibit 10. The hearings noticed in the publication were canceled and, pursuant to Administrative Law Judge Entry of April 26, 2018, notice of cancelation of the hearing was published and proof filed with the Board on June 7, 2019, and is marked as Applicant Exhibit 11.
- The proof of the second publication of the Amended Application and rescheduled hearing dates was filed September 5, 2019 and is marked as Applicant Exhibit 13.

Q-14. Are you sponsoring any other exhibits?

A-14. Yes. Attached to my testimony is the 9/24/2019 technical assistance letter ("TAL") Republic Wind obtained from the U.S. Fish and Wildlife Service ("USFWS"). (Attachment DC-1).

Q-15. Will Republic Wind be sponsoring witnesses to support the Application in addition to your testimony?

A-15. Yes, the following witnesses will be providing testimony on behalf of Republic Wind on following respective topics:

WITNESS	SUBJECT
Dalton Carr Development Manager Apex Clean Energy	Application overview; Project background; Project benefits; response to local concerns; response to staff report and conditions
Paul Kerlinger	Avian studies and reports; bat technical

WITNESS	SUBJECT
Independent Consulting Biologist	assistance letter
Chris Leftwich Chief Operating Officer Copperhead Environmental Consulting	Bat studies and reports
Isaac Old Consultant Resource Systems Group, Inc.	Noise impact assessment
Jane Rice Principal Environmental Design & Research	Socioeconomic Report
Susan Lawson Project Manager Environmental Design & Research	Cultural Resources
Dr. Kenneth A. Mundt Epidemiologist; Principal Health Scientist Cardno ChemRisk	Alleged adverse health impacts of wind turbine noise and shadow flicker
Matthew Robinson Visualization Project Manager Environmental Design & Research	Visual Impact Assessment; Application
Ryan Rupprecht Senior Project Scientist, Practice Lead Cardno, Inc.	Wetland Delineation/EA
Shawn McGee, P.E. Office Practice Leader, Geotechnical Engineering & Inspection TRC	Goundwater, Hydrogeological and Geotechnical; Application Exhibit F
Mike MaRous President MaRous & Company	Property values
Francis Marcotte Consultant	Aviation- helicopter flight
Benjamin M. Doyle President Capitol Airspace Group	Aviation
Gary Baldosser Local Resident	Local resident testifying in support of Project

Q-16. Would you please provide a summary and overview of the proposed facility?

A-16. Republic Wind proposes to construct the Project, a new wind-energy facility located in Adams, Pleasant, Reed, Scipio, and Thompson Townships in Seneca County, Ohio, and in York Township in Sandusky County, Ohio. The project will consist of no more than 50 wind turbine generators, each with a nameplate capacity rating of 3.6 to 5.7 MW, depending on the final turbine model selected. The total generating capacity will not exceed 200 MW and annual energy production of approximately 560,000 to 665,000 megawatt hours ("MWh"). The Project also consists of access roads, electrical interconnection, construction staging areas, operations and maintenance facility, up to two meteorological towers and the substation. Notably, the actual footprint of the facility will occupy a much smaller area. The total project area proposed is 24,000 acres.

Q-17. The Application contains a variety of supplements, clarifications and amendments. Please describe those filings.

A-17. That is correct. As stated previously, the Application was filed February 2, 2018 (Application Exhibit 1). It was supplemented on March 27, 2018, to clarify the setback requirements applicable to this project (Applicant Exhibit 1A), which supplement was subsequently withdrawn by notice of April 11, 2019 (Applicant Exhibit 1B). Then, on June 22, 2018, the application was clarified to remove Green Creek Township, Sandusky County from the Project area. Applicant Exhibit 1C. An amended Application was filed on December 26, 2018. Applicant Exhibit 1D. The modifications made by the Amended Application and subsequent filings include:

- <u>Amended Application, December 26, 2018 (Applicant Exhibit 1D):</u> The Amended Application modified the Project's wind turbine array, without adding additional parcels of land, and introduced new wind turbine models for use. The amendment reduced the number of turbines that are to be constructed, the number of acres in the Project area (by 9,000 acres), as well as the number of access roads, meteorological towers and collector lines.
- <u>Exhibit AA to the Amended Application, December 27, 2018 (Applicant Exhibit 1E)</u>: This exhibit, the Visual Impact Assessment, merely completed the Amended Application filed a day earlier on December 26, 2018.
- <u>Notice of Project Modifications and Project Information Update, June 28, 2019 (Applicant Exhibit 1F):</u> This filing uprated the capacity of two currently proposed turbine models, whose dimensions remained the same. It also introduced another turbine model for potential use in the Project that is smaller than other potential turbines. The modifications did not create further

impacts for property owners or within the planned site, and in some cases, resulted in a reduction of impacts to property owners.

Q-18. What is the general purpose of the facility?

A-18. The Project will provide electricity supply in the region and throughout the PJM Interconnection, LLC system. In doing so, the Project will utilize Ohio's natural wind resources to deliver clean, renewable energy to the existing electricity grid. The Project is sited in Seneca and Sandusky counties because northwestern Ohio has some of the strongest wind resources in the state.

Q-19. Please describe the power generation potential of the Project.

A-19. Up to 50 turbines could be operated as a part of the Project, although as few as 44 could be constructed. Each of the potential 50 turbines will have a nameplate capacity rating of 4.2 to 5.7 MW, depending upon the final turbine model selected. The generation capacity will be limited to 200 MW. The Project is expected to operate with an annual capacity factor of 32 to 38 percent, generating a total of 560,000 to 665,000 megawatt-hours of electricity each year, depending on the final turbine model selected for the Project.

Q-20. Please describe Republic Wind's public information program to provide the local community information about the Project.

A-20. Republic Wind followed all of the Board's public information and public notice requirements. It hosted two public information meetings on November 29, 2017 prior to filing the Application. It also hosted a voluntary public information meeting on December 11, 2018, prior to filing its Amended Application. Republic Wind also is maintaining a website with information about the Project. However, Republic Wind went beyond these requirements to engage the local community about the Project. For example, Republic Wind was a sponsor of the 2016, 2017, 2018, and 2019 Seneca county Fair and Junior Fair. Republic Wind has also sponsored the Attica, Erie, Huron, and Seneca Junior Livestock Sales and the Seneca County Cattleman's County-Born Show. In addition, Republic Wind is supporter of the Bellevue Athletic Booster Club. Republic Wind is a member of Seneca/Huron/Erie/Bellevue City Chambers of Commerce. Also, Republic Wind representatives have also attended numerous community meetings,

including with the Seneca County Commissioners, local school boards, and township officials.

Q-21. In your experience, what are some of the common concerns that arise during the development of a utility-scale wind generation facility?

A-21. The concerns that arise during development of a wind energy project generally are the same concerns that the residents expressed during Republic Wind's public information program, in the formal motions to intervene of some residents, in public written comments filed with Board, and testimony provided at the local public hearing held September 12, 2019. The Board's regulations are designed to address these concerns and to protect the residents' interests. It is Republic Wind's intent also to protect the residents' interest by strictly adhering to these rules. In some instances, Republic Wind has exceeded these protections. Republic Wind has actively engaged with opponents of the project and communicated with concerned local residents. This included conversations over coffee, meetings in the Bellevue office and the homes of those who requested time, and even a debate with a fly-in opponent at Heidelberg University.

Q-22. Did you review the written public comments submitted to the docket in this proceeding?

A-22. Yes, and I had the comments categorized. As of October 15, 2019, approximately 450 persons had submitted written comments in the public docket. Of these, approximately 250 commenters supported the Project and approximately 200 opposed it. Approximately 75 commenters submitted multiple comments.

Q-23. Please describe, generally, the subject-matter of the comments.

A-23. The comments can be placed in seven general categories. The following provides the proportion of the comments that fall into each category, recognizing that some commenters raised more than one issue:

- **Environmental Impacts**: Approximately 13% of the comments communicated concerns about environmental impacts from the Project, particularly regarding wildlife and groundwater/well water. Republic Witness Kerlinger is the expert who assessed the impact the Project may have on various avian species, and Republic

Witness Leftwich is the expert who assessed the impact the Project may have on bat species. Each witness explains that Republic Wind has worked closely with the United States Fish and Wildlife Service ("USFWS") and the Ohio Department of Natural Resources ("ODNR") to identify state and federally listed threatened and endangered wildlife species in the Project area. As a result of these studies Staff has recommended certain ecological conditions to address the construction, operation, and maintenance of the project. I address a number of these proposed conditions later in my testimony

Witness McGee offers testimony that concludes that construction of the Project will not be prohibited by the local geology or hydrogeology, and that the Project is not anticipated to result in any negative impact on the property owners' water wells. O.A.C. 4906-4-09(A)(2)(b)(i) requires that the Applicant submit a fully detailed geotechnical exploration and evaluation sixty days before the preconstruction conference. This final report will address whether proposed turbine locations are located above karst formations and whether potential mitigation measures are recommended.

- **Health Impacts**: Approximately 25% of the comments communicated concerns about the alleged health impacts from the Project, including the effects of noise, infrasound and shadow flicker. As I indicated previously, Dr. Kenneth A. Mundt addresses this issue through his expert testimony. Based upon his analysis of various peer-reviewed studies related to the alleged adverse health effects of wind farms, as well as his education training and professional experience, he concludes that the epidemiological evidence does not demonstrate that wind turbine noise, infrasound or shadow flicker harm human health. He finds that the proposed noise levels for the Project [46 dBA L(8)] for nighttime noise outside of non-participating residences)[1] conform with the guidelines of the World Health Organization and the National Association of Regulatory Utility Commissioners. Further, he finds that that there is no peer-reviewed publications that support

[1] Republic Witness Old supports studies that show the average nighttime sound level for the Project is 41 dBA. Applying the OPSB's rule regarding operational sound limit to the 41 dBA average nighttime ambient sound level, the operational sound limit for this Project is 46 dBA $L_{eq\ (1\ hr)}$ measured at any non-participating sensitive receptor.

adverse health effects from shadow flicker. Because the sound level at the boundaries of non-participating homes is limited to 5 dBA over ambient nighttime average sound levels, and shadow flicker to no more than 30 hours a year, the Project will ensure the protection of neighboring residents.

- **Property Valuation**: Almost 9% of the comments expressed concerns that home and property values will fall as a result of the Project. However, Witness MaRous conducted a market impact appraisal analysis based upon Ohio data from which he concludes that the Project will not have a negative impact on rural residential or agricultural property values in the surrounding area. He further finds that the income received from wind turbine leases may increase the value and marketability of those properties that host turbines. Witness Rice provides the potential significant amount of these annual lease revenues for participating landowners at page 25 of the Socioeconomic Report.

- **Aesthetics/Rural Character**: Approximately 11% of the comments expressed concerns that the Project would detract from the rural character of the area.[2] Witness Robinson performed a comprehensive Visual Impact Assessment of the Project. He notes that, in more densely settled residential areas the Project will be at least partially screened. Republic Wind mitigated visual impacts by siting the Project in a rural residential/agricultural zone, which has a relatively low density of viewers; by reducing the number of turbines required by selecting turbines with greater generating capacity; by using underground collection lines; and by painting the turbines a neutral light color, per guidance from the FAA. Public comment and testimony shows that viewers' reaction to the physical appearance of wind turbines is subjective. While some viewers may have adverse reactions to wind turbines, others find them aesthetically pleasing to look at and prefer the slow-spinning turbine blade to other utility structures.[3] As noted above and discussed in more detail below, Republic Wind believes that the Project will help

[2] However, over 3% of the comments were concerned that the area was too populated for siting a wind farm.

[3] See, *e.g.*, Testimony of Barbara Baldosser, Tr. at 199; Testimony of Roger Walters, Tr. at 61; Testimony of Evelyn Snavely, Tr. at 183.

preserve the agricultural nature of the area by providing farmers with a much-needed source of additional income.

- **Turbine Setbacks**: About 8% of the comments raised issues concerning the setbacks for turbines. As discussed later in my testimony, the Project will be subject to much greater property line setback distances than many other earlier projects approved by the Board and provide residents even greater protection.

- **Aviation:** Some commenters expressed concern about the turbines' effect on aviation and Life Flight operations, including Dave Sniffen, Airport Manager of Fostoria Metropolitan Airport.[4] Mr. Sniffen expressed concern that 12 turbines would affect operations at his airport. However, Republic Witness Doyle testifies that the Federal Aviation Association determined that these turbines were not a hazard to air navigation.

- **Project Proponents**: Over half the commenters expressed support for the project, including from non-participating residents and others, noting local economic growth, benefits to the Seneca County School District, and the property rights of landowners to lease their land.[5]

Q-24. Did you attend the local public hearing held on September 12, 2019?

A-24. Yes. Over 60 people offered sworn testimony, and many others submitted written comments to the public docket. Over half of those offering testimony were not in the Project's footprint. There were approximately 20 residents who live within the project area that offered testimony. Fourteen of those individuals testified in support of the project.

Q-25. Please describe, generally, the topics raised by those testifying at the local public hearing.

A-25. Generally, the issues raised at the local public hearing were similar to issues expressed in the public comments, above. However, I would like to respond to a number of the

[4] See, Public Comment of Dave Sniffen, filed August 15, 2019.

[5] See, Public Comment of Katherine Meyers, filed January 15, 2019.

concerns raised at the local public hearing concerning public safety and turbine setbacks, as well as the positive benefits the project will provide to the community.

Q-26. What response do you have to public safety concerns that were raised?

A-26. Public safety and minimization of impacts to the local residents are of paramount concern and are a special focus of Project planning and design, construction, and operations. Some residents were concerned with fire safety.[6] As indicated in the Application, the turbines and electrical equipment will be installed in accordance with National Fire Protection Association (NFPA) 70E code standards. This compliant installation, along with integrated safety systems that will be incorporated in the design, minimize the chance of fire occurring in the turbines or electrical stations. In the event a fire would occur, the system control and data acquisition (SCADA) system to be installed will sense when equipment operation is compromised and report conditions to the control center at the O&M building. Depending on the specific condition notes, the affected turbines(s) may be immediately shut down or other action taken, allowing Project maintenance personnel to respond as appropriate.

Other public safety issues expressed at the local public hearing included concerns about turbine construction on karst formations, blade shear, and emergency flight access within the project area.

<u>Karst Formations</u>

Some members of the public raised concerns about karst features in the Project area. In particular, concerns were expressed about the potential for turbine collapse and well water/ground water contamination as a result of these features.[7] However, Attorney Ronald Smith testified that his discussions with Republic Wind representatives led him to believe that the foundations of constructed turbines would not create issues with karst formations.[8] Mr. Smith testified that he reviewed research prepared by Republic Wind regarding karst formations and concluded that there would not be any issues regarding

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[6] See, *e.g.*, Testimony of Tami Andrews, Tr. at 142; Testimony of Dr. Zachary West, Tr. at 253.

[7] See, e.g., Testimony of Casey Didion, Tr, at 34; Testimony of Dustin Austin, Tr. at 42; Testimony of Dennis Schreiner, Tr. at 95; and Testimony of Valerie Myers, Tr. at 176.

[8] See Testimony of Ronald Smith, Tr. at 123.

sinkholes or impacts to karst formations due to the project.[9] To be sure, Project design and construction will take into consideration the potential presence of karst features, avoiding and minimizing risk to the maximum extent practicable. Additional geotechnical investigations will be conducted prior to construction to finalize foundation design in compliance with O.A.C. 4906-4-09(A)(2)(b)(i). I note that the Staff Report contains no conditions related to Karst formations; however, the report's text (at page 26) states that if these subsequent investigations identify Karst formations, Republic Wind will avoid those locations for siting turbines. To be clear, as explained by Witness McGee, if future geotechnical studies identify that proposed turbine locations are located above karst formations, implementation of mitigation measures (such as grouting) is likely to be the recommended course of action. Complete avoidance of these areas may not be necessary or the recommended course of action.

Blade Shear

Others testifying expressed concern about blade shear, which is the possibility of a wind turbine tower collapsing or a rotor blade dropping or being thrown from the nacelle.[10] While rare, such incidents have occurred, although it is not believed that any member of the public has ever been injured due to such incidents, indicating that the setbacks employed have been sufficient to protect homes and roadways. Tower collapse or blade throw might be caused by a variety of factors. For the most part, these events have been related to a control system failure leading to over-speed operation, a lightning strike, or a manufacturing defect in the blade. Technological improvements and mandatory safety standards during turbine design, manufacture, and installation have significantly reduced the instances of blade throw. Under the OPSB Staff's recommended Condition 41, we must notify the OPSB Staff within 24 hours of an occurrence of any blade shear event, to be followed up by a written report with 30 days of the event detailing the incident and corrective actions to be taken to avoid, prevent, mitigate, or minimize a recurrence. We agree with this condition.

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[9] *Id.*

[10] See, e.g., Testimony of Jim Feasel, Tr. at 55; Testimony of Gail Miller, Tr. at 84; and Testimony of Dennis Schreiner, Tr. at 92.

Air Ambulance

The Project's potential impact to air ambulance service was another concern raised at the local public hearing.[11] The Project commits to work with Life Flight to establish communication with the Project's 24-hour emergency operation center to coordinate the shutdown of turbines during medical emergencies. Once Life Flight notifies our control center of a medical emergency, the Project would initiate a stop on all turbines, which would be shut down in a very short period of time. Witness Marcotte will testify regarding the ability of Life Flight to fly within the project foot print.

The Project, as required under R.C. 5727.75, will also provide proper equipment to fire and emergency responders to enable them to respond to emergencies. Notably, the Staff recommends as Condition 49 that, prior to construction, the Project develop a plan for at least one predesignated emergency-response landing zone within the project area, which is also to be included in the Project's emergency response plan. The Project will accept Staff's recommendation to make the landing zone permanent.

Q-27. Earlier, you mentioned that turbine setback requirements have been sufficient to protect homes and roadways from blade shear. Are there other purposes for mandated setback requirements in your opinion?

A-27. Mandatory turbine setbacks clearly are intended to prevent damage from the remote possibility of blade shear and also ice throw. The setbacks also mitigate noise and shadow flicker at non-participating residences. In addition, setbacks lessen the visual impact of wind turbines for those who subjectively find them unattractive.

Q-28. What setback standards apply to this Project?

A-28. The Project must comply with the current setback standards described in Ohio Revised Code 4906.20. In part, this standard requires a setback of at least 1,125 feet from the tip of the turbine's nearest blade to adjacent property lines of nonparticipating landowners or highways. The minimum setbacks from property lines for the turbine models considered for the Project would be between 1,216 and 1,334 feet. This standard reflects the most

[11] See, e.g., Testimony of Melissa Clapp, Tr. at 212; and Testimony of Shanna Price, Tr. at 242.

stringent setback that Ohio has had under its laws. Wind turbines built prior to 2014 were required to have setbacks of only 550 feet from the nearest property line.

Q-29. What positive benefits will the Project provide to the local community?

A-29. First of all, the Project will provide a positive impact to the community. As the socioeconomic study submitted as part of the Application indicates, there are various ways in which the region will benefit. The project will contribute to the taxing entities that host the project, primarily the school districts, townships, and the county. Assuming that the complete 200 MW facility is constructed, the increase in local tax revenues could amount to between $1.2 and $1.8 million annually.

Also, landowners will receive annual lease payments for hosting the facility. It is expected that a certain portion of these payments will be used to purchase goods and services in the local communities and surrounding region, which will further stimulate economic activities. Witness Rice details economic benefits of the Project. The Project will create 753 jobs during construction with associated annual earnings of $41.4 million. It will create 41 jobs during operations with associated annual earnings of $2.3 million. Many persons who testified at the local public hearing supported the Project precisely because of these benefits to schools, libraries, counties and townships.[12]

I also believe that the Project will be especially important to enable the area to maintain its rural character and support its local farmers. As hosts of a renewable energy project, Seneca and Sandusky County farmers will be able to use their land to provide clean, domestic energy for the region, while creating a new and predictable revenue stream for their farming businesses.[13]

Q-30. Have you reviewed the Staff Report of Investigation in this proceeding?

A-30. Yes.

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[12] See, e.g., Testimony of Roger Walters, Tr. at 61; Testimony of James Schumacher, Tr. 132; Testimony of Testimony of Evelyn Snavely, Tr. at 183.

[13] Many members of the public presenting testimony recognized the benefits to landowners and farms, citing their Constitutional property rights (Testimony of Attorney Ronald Smith, Tr. at 123), and simply explained by resident famer Don Zieber that farmers want to "harvest their crop and they want to harvest the wind" to diversify their income. Tr. 217.

Q-31. What is Staff's recommendation?

A-31. Staff recommends that 57 Conditions become a part of any certificate issued for the Project. Staff recognizes that these conditions may be modified upon receipt of subsequent input. I will discuss the conditions that Republic Wind proposes to be modified based upon additional input. The conditions generally are categorized as those related to socioeconomics, ecological protections, public services, facilities, and safety, air, water, solid waste, and aviation.

Q-32. Does Republic Wind have any recommend modifications to Staff's proposed conditions?

A-32. Yes. Below are the conditions which Republic Wind suggest be revised by the Board. While I will discuss all of Republic Wind's proposed modifications, I will be deferring to Witness Kerlinger and Witness Doyle for certain modifications.

<u>Ecological Conditions</u>

Q-33. Condition 22 states that "30 days prior to the preconstruction conference, the Applicant shall provide Staff with a construction access plan for review. The plan would consider the location of streams, wetlands, and wooded areas, and sensitive plant species, as identified by the Ohio Department of Natural Resources (ODNR) and explain how impacts to all sensitive species resources would be avoided or minimized during construction." Do you propose modifications to this condition?

A-33. Yes. Because the condition does not define "sensitive plant species", it is unclear what type of plants Republic Wind would be required to consider. Further, the condition does not define "sensitive species resources." As currently drafted, it unclear the scope of Republic Wind's obligations in developing the construction access plan. I suggest the follow revisions to Condition 22:

> 30 days prior to the preconstruction conference, the Applicant shall provide Staff with a construction access plan for review. The plan would consider the location of streams, wetlands, and wooded areas, and <u>state and federally listed threatened plant species</u> as identified by the Ohio Department of Natural Resources (ODNR) and explain how impacts to all <u>such</u> ~~sensitive species~~ resources would be avoided or minimized during construction.

Q-34. Do you have suggested modifications to Condition 24?

A-34. Yes. Republic Wind suggests the following modification:

> The Applicant shall have an environmental specialist on site during construction activities that may affect sensitive areas~~, as mutually agreed upon between the Applicant and Staff, and~~ as as shown on the Applicant's final approved construction plan. Sensitive areas include~~, but are not limited to,~~ areas of vegetation clearing, designated wetlands and streams, and locations of threatened or endangered species or their identified habitat. The environmental specialist, as mutually agreed upon between the Applicant and Staff, shall be familiar with water quality protection issues and potential threatened or endangered species of plants and animals that may be encountered during project construction.

Q-35. Why do you propose this modification?

A-35. I recommend this modification because it provides clarity regarding what constitutes "sensitive areas." As currently drafted, the condition is unclear regarding the scope of Republic Wind's obligation to have an environmental specialist on-site. Our proposed modification provides clarity regarding the specific areas that need to be analyzed and protected during construction activities. In addition, this modification clarifies that the Applicant and Staff are to mutually agree upon the environmental specialist selected.

Q-36. Do you have suggested modifications to Condition 25?

A-36. Yes. Republic Wind suggest the following modifications:

> The Applicant shall contact Staff, the ODNR, and the U.S. Fish and Wildlife Service (USFWS) within 24 hours if state or federal listed threatened and endangered species are encountered during construction, operation, or monitoring activities. Activities that could injure, harm, or kill ~~adversely impact~~ the identified plants or animals shall be immediately halted until an appropriate course of action has been agreed upon by the Applicant, Staff and the appropriate agencies. If the Applicant encounters any state or federal listed threatened and endangered plant or animal species prior to construction, the Applicant shall notify Staff of the location and how impacts would be avoided during construction.

Q-37. Why do you propose these modifications?

A-37. These modifications clarify the scope of species to which this condition applies. It is my understanding that there are various species that may be "listed" but are not actually designated as "threatened or endangered." Republic Wind is committed to protecting all

species during construction, operation, and monitoring to the extent it is feasible and possible. However, requiring the Applicant to contact Staff, ODNR, and USFWS every time a "listed" species is encountered is excessive. Limiting this obligation to "threatened and endangered species" properly focuses this obligation on protected species. I also propose modifying "adverse impact" to "injure, harm, or kill". The term "adverse impact" is unclear. It appears that the purpose of this provision is cease activities that may result in a take of listed threatened or endangered species. To the extent activities will not result in any physical harm to listed threatened or endangered species, Republic Wind should be allowed to continue such activities.

Q-38. Do you have suggested modifications to Condition 26?

A-38. Republic Wind is proposing a new Condition 26, as follows:

> At least 60 days prior to the first turbine becoming operational, the Applicant shall obtain a technical assistance letter from the USFWS. The technical assistance letter shall include feathering of turbines during low wind speed conditions at night during periods of risk. This documentation shall be reviewed by Staff to confirm compliance with this condition.

Q-39. Why do you propose these modifications?

A-39. This proposed condition provides for the protection of the Indiana Bat ("IB") and the Northern Long-Eared Bat ("NLEB") while also clarifying the extent of Republic Wind's obligations. Republic Wind has received a technical assistance letter ("TAL") from USFWS which details recommended curtailment measures to be put in place with regard to IB and the NLEB. (See 9/24/2019 TAL, attached as Exhibit ___.) Witness Kerlinger provides an explanation of the TAL process and Republic Wind's actions to obtain a TAL. The TAL is the result of ongoing communication and coordination with USFWS and it addresses recommend avoidance measures such as the feathering of turbines. According the Witness Kerlinger, obtaining a TAL is voluntary. However, it is important guidance for implementing the appropriate measures to avoid mortality for the IB and NLEB. Witness Kerlinger also explains how the requirements in Staff's proposed Condition 26 is inconsistent with TAL. Republic Wind's proposed condition ensures clarity and consistency with the TAL recommendation. Further, Republic Wind's

proposed Condition 26 is essentially the same as a condition approved by the Board in *6011 Greenwich Windpark, LLC*, Case No. 13-990-EL-BGN. The only modification is that Republic Wind proposes replacing the term "migratory seasons" with "periods of potential risk." The revisions is more consistent with the terms of the TAL and actual provides a broader protection by including the summer, which is not in the migratory season but is a period of potential risk.

Q-40. Do you have suggested modifications to Condition 29?

A-40. Republic Wind is proposing a new Condition 29, as follows:

> The Applicant will notify Staff, ODNR, and USFWS within 24-48 hours of a significant mortality event as defined within the ODNR's On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio, or as agreed upon with USFWS and ODNR. As soon as possible and no longer than 30 days of the significant mortality event, Applicant will coordinate with ODNR and/or USFWS to review existing data and agree upon additional minimization and mitigation measures that, if needed, can be employed to rectify the significant mortality event. If determined appropriate in consultation with USFWS/ODNR, operational activities may be modified to minimize risk until an appropriate adaptive management strategy is agreed upon.

Q-41. Why do you propose these modifications?

A-41. Staff's proposed condition does not define "wild animals." Further, condition does define "significant adverse impact." As such, it is very unclear what species are to be projected and what criteria is being used to determine if an event is "significant." It appears that this condition intended to protect potential post-construction impacts birds and bats. Republic Wind's proposed condition uses the ODNR definition of "significant mortality event" which provides clarity regarding the level of impacts. Further, the proposed condition requires coordination with USFWS and ODNR to minimize potential impacts.

Q-42. Do you have suggested modifications to Condition 31?

A-42. Republic Wind is proposing modifications to Condition 31, as follows:

The Applicant shall conduct no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat, unless coordination with the ODNR allows a different course of action.

Q-43. Why do you propose these modifications?

A-43. ODNR is best suited to determine when in-water work in perennial streams will impact indigenous aquatic species. This modification allows Republic Wind to follow a different course of action if approved by ODNR.

Q-44. In Condition Nos. 33, 34, and 35, Staff recommends that construction in upland sandpiper, loggerhead shrike, and northern harrier "preferred nesting habitat types" be avoided during the species' respective nesting periods (unless coordination with the ODNR allows a different course of action). Do you have recommend modifications to these Conditions?

A-44. Yes. According to Witness Kerlinger, a slight modification of these conditions is necessary to clarify the exact habitat area to be protected. Republic Wind recommends that ODNR's definition of preferred nesting habitat be referenced in the condition to clarify the habitat at issue. I recommend that these conditions be modified as follows:

33. Construction in upland sandpiper preferred nesting habitat types, as defined by ODNR, shall be avoided during the species' nesting period of April 15 through July 31, unless coordination with the ODNR allow a different course of action.
34. Construction in northern harrier preferred nesting habitat types, as defined by ODNR, shall be avoided during the species' nesting period of May 15 through August 1, unless coordination with the ODNR allow a different course of action.
35. Construction in loggerhead shrike preferred nesting habitat types, as defined by ODNR, shall be avoided during the species' nesting period of April 1 through August 1, unless coordination with the ODNR allow a different course of action.

Q-45. Do you have suggested modifications to Condition 36?

A-45. Republic Wind is proposing modification Condition 36, as follows:

36. Prior to construction, if impacts to wetlands or upland habitats adjacent to wetlands are proposed, the Applicant shall obtain an ODNR-approved herpetologist to conduct Blanding's turtle and spotted turtle habitat suitability surveys to determine if suitable

habitat exists within the project area. If suitable habitat is determined to be present, the Applicant shall avoid or minimize impacts to this habitat by doing one of the following:

a. Avoid the area determined to be suitable habitat along with an appropriate buffer determined by the ODNR.

b. Obtain an ODNR-approved herpetologist to conduct a presence/absence survey. If either species is determined to be present, the Applicant shall continue to coordinate with the ODNR to assure that impacts are avoided.

c. Coordinate with ~~Obtain~~ an ODNR-approved herpetologist to develop and implement an avoidance/minimization plan. Such plan shall developed by the Applicant.

Q-46. You are recommending that the Board not adopt Condition 40. Please explain why.

A-46. As Witness Kerlinger discusses, Republic Wind has already performed adequate preconstruction eagle use surveys in consultation with ODNR and USFWS. These agencies have acknowledged that no further eagle use surveys are necessary. According to Witness Kerlinger, the surveys that have been performed demonstrate that the risk of bald eagle collision is extremely low. Further, as Witness Kerlinger will discuss, the development of an Eagle Conservation Plan is voluntary. As such, Republic Wind believes Staff's proposed Condition 40 is unnecessary and overburdensome.

Public Services, Facilities, and Safety Conditions

Q-47. You are recommending that the Board not adopt Condition 42. Please explain why.

A-47. Condition 42 states that "Applicant shall not construct turbines 10, 38, or 43 as proposed because these do not meet the minimum setback outlined in Ohio Adm. Code 4906-4-08(C)(2)." In its current form, the rule requires a setback of 1,125 feet from state and federal highways. However, this rule took effect on April 26, 2018, after the Project filed its certificate application. Prior to that date, the rule required that turbines meet a setback of "at least one and one-tenth times the total height of the turbine structure as measured from its tower's base to the tip of a blade at its highest point" from state and federal highways. Turbines 10, 38, and 43 meet the setback standard that was in effect at the time of the application's filing. As a result, Condition 42 should not be adopted.

Q-48. You are recommending that the Board modify Condition 43. Please explain why.

A-48. Republic proposes the following modification to Condition 43 states that "Applicant shall not construct turbine 42 as proposed unless the turbine is shifted to meet ~~because it does not meet~~ the setback to an existing pipeline." As discussed above, Republic Wind intends to submit a modification to comply with this setback.

Aviation Conditions

Q-49. Do you have a recommended modification to Condition 52? Please explain why.

A-49. Yes. I recommend that Condition 52 be modified as follows:

> 51. The Applicant shall meet all recommended and prescribed Federal Aviation Administration (FAA) and Ohio Department of Transportation (ODOT) Office of Aviation requirements to construct an object that may affect navigable airspace. This includes submitting coordinates and heights for all structures exceeding 199 feet AGL for ODOT Office of Aviation and FAA review prior to construction ~~and the non-penetration of any FAA Part 77 surfaces~~.

Q-50. Why do you propose this modification?

A-50. According to Witness Doyle, the language of this condition appears to be inconsistent with the FAA's regulations and process for determining if a structure constitutes a hazard to navigable airspace. In Republic Wind's case, all of the turbines penetrate "FAA Part 77 surfaces." However, the FAA has determined that none of the proposed turbines constitute a hazard to navigable airspace. Witness Doyle will discuss the FAA determination process and how Republic Wind obtained determinations of no hazard for this project.

Q-51. You are recommending that the Board not adopt Conditions 56 and 57. Please explain why.

A-51. It appears from the Staff Report that Condition 56 and 57 are based solely upon the July 18, 2019 determination of the Ohio Department of Transportation ("ODOT") Office of Aviation. As Witness Doyle will explain, ODOT Office of Aviation's determination is completely inconsistent with the FAA's determination that none of the proposed turbines constitute a hazard to navigable airspace. Witness Doyle will explain how the FAA has

determined that each of turbines at issue in Conditions 56 and 57 will not affect the safe and efficient use of navigable airspace.

Q-52. Does the Application enable the Board to determine the nature of the probable environmental impact of the facility?

A-52. Yes. The Application extensively addresses all the necessary subject matter areas, including the following three categories: socioeconomic impacts, ecological impacts, and public services, facilities, and safety. The Application includes detailed assessments of the probable impacts that the facility will have in 22 different topics across all three of these categories. The Stipulation augments the assessments contained in the Application. Each of those topics are adequately addressed in the Application and supported by the witnesses in this case.

Q-53. Does the Application enable the Board to determine that the facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations?

A-53. Yes. First, the Application thoroughly describes the site selection process and the factors considered when selecting the final site. The Application outlines how the current site minimizes adverse environmental impacts as compared to other sites evaluated. Next, the Application includes thorough risk assessments for avian and bat species and fisheries and aquatic resources. The conclusions of the risk assessments are that the facility poses minimal risk to birds, bats, fisheries, and aquatic resources. Finally, the Application identifies many impact minimizing measures inherent in the design of the project, as well as measures Republic Wind commits to undertake throughout the construction and operations of the facility. All of these factors are addressed extensively in the Application, including the site selection process, risk assessments concluding minimal risk, and impact minimizing measures.

Q-54. Does the Application enable the Board to determine that the facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems that the facility will serve the interests of electric system economy and reliability?

A-54. Yes. The Application includes the studies that PJM performed to analyze the electric power grid, with the facility interconnected to the grid, for compliance with the North American Electric Reliability Corporation and PJM reliability criteria. PJM concluded that no reliability violations would occur during single and multiple contingencies and that no violations were found in the short circuit analysis. The Application describes that the facility would provide additional electrical generation to the regional transmission system. The PJM conclusions demonstrate that the facility is consistent with regional plans for expansion of the electric power grid serving this state and interconnected utility systems, and that the facility will serve the interests of electric system's economy and reliability.

Q-55. Does the Application enable the Board to determine that the facility will comply with the requirements established by the state of Ohio for air pollution control; solid and hazardous waste, water pollution control; permitting for a major increase in withdrawal of waters; and aeronautical requirements?

A-55. The Application addresses air, water, solid waste, and aviation topics. The Application includes assessments demonstrating compliance with the state of Ohio requirements in all 4 topics.

Q-56. Does the Application enable the Board to determine that the facility will serve the public interest, convenience, and necessity?

A-56. Yes. The Application addresses the many aspects of public interest, convenience, and necessity including economic impact, plans for road and transportation system utilization, liability insurance, decommissioning, health and safety, land use and community development. Each of those topics are adequately addressed in the Application and supported by the witnesses in this case.

Q-57. Does the Application enable the Board to determine that the facility's impact on the viability as agricultural land of any land is not applicable?

A-57. Yes. The Application indicates that the facility will not impact any agricultural districts or agricultural land.

Q-58. Does the Application enable the Board to determine that the facility incorporates maximum feasible water conservation practices, considering available technology and the nature and economics of the various alternatives?

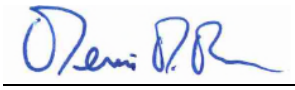
A-58. Yes. The Application establishes that the facility is a wind-powered electricity generation facility. Water is not utilized in the process for wind-powered electricity generation. Since water is not used in the generation process, the only water usage is potable water for using the operation and maintenance facilities. The minimal water usage does not warrant specific conservation practices.

Q-59. Does this conclude your testimony?

A-59. Yes, it does, except that I reserve the right to supplement my testimony in response to the Supplemental Staff Report filed October 18, 2019, but not served upon Republic Wind until today, October 21, 2019. I also reserve the right to update this testimony to respond to any further testimony in this case.

CERTIFICATE OF SERVICE

I hereby certify that the foregoing Direct Testimony of Dalton Carr was served upon the following parties of record via regular or electronic mail this 21st day of October 2019.



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September 24, 2019

Ms. Jennie Geiger
Apex Clean Energy Inc.
310 4th St. NE, Suite 200
Charlottesville, VA 22902

TAILS : 03E15000-2019-E-02058

Re: Republic Wind Farm – Technical Assistance Letter

Dear Ms. Geiger:

This letter is in response to Apex Clean Energy Inc.'s (Apex) request for technical assistance regarding the effects of the above-referenced project on listed species pursuant to the Endangered Species Act of 1973, as amended (ESA), under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS). The Indiana bat (*Myotis sodalis*), a federally-listed endangered species, and the northern long-eared bat (*Myotis septentrionalis*), a federally-listed threatened species are both known to occur near the project area (within Sandusky or Seneca Counties).

Section 9(a)(1)(B) of the ESA, 16 U.S.C.§ 1538 (a)(1)(B), makes it unlawful for any person to "take" an endangered species. Take of threatened species is prohibited pursuant to 50 C.F.R. § 17.31, which was issued by the USFWS under the authority of Sections 4(d) and 9(a)(1)(G) of the ESA, 16 U.S.C. §§ 1533(d) and 1538(a)(1)(G), respectively. "Take" is defined by the ESA as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct" 16 U.S.C. § 1532(19).

Take of Indiana bats has been documented in both spring and fall at two wind facilities in Ohio, and at other wind facilities in Indiana, Pennsylvania, and West Virginia. Mortality of northern long-eared bats has been detected at many wind facilities throughout the range of this species in the United States and Canada. Thus, take of Indiana bats and northern long-eared bats at Apex's Republic Wind Farm is likely to occur without implementation of appropriate avoidance measures.

The USFWS has reviewed the information provided in your request, and the measures that will be implemented at Republic Wind Farm to avoid any potential take of such species. This includes fully feathering the wind turbine generators below a wind speed of 6.9 meters per second between one-half hour before sunset to one-half hour after sunrise during the Indiana bat's spring and fall migratory periods, which encompass the dates of March 15-May 15, and August 1-October 31. In addition, for the subset of turbines within the homerange of Indiana bat maternity colonies, turbines will also be feathered below 6.9 m/s during the summer (May 16-July 31) between one-half hour before sunset to one-half hour after sunrise. Turbines will be operated individually utilizing a 10-minute rolling average wind speed for shutdown and a 20-

minute rolling average wind speed for startup. That is, turbines will be feathered below the specified seasonal cut-in speed based on a 10-minute rolling average and will resume operations once the 20-minute rolling average wind speed is above the specified seasonal cut-in speed. Based on USFWS' review of these avoidance measures, no incidental take permit is recommended. The USFWS reached this conclusion through coordination and ongoing discussions with Apex including Apex's commitment in writing to the USFWS, that these measures will be implemented throughout the life of the project or until incidental take coverage is obtained. However, if unexpected take of a listed species does occur, we will recommend obtaining an incidental take permit.

The USFWS published a 4(d) rule for the northern long-eared bat on January 14, 2016, which exempts incidental take of this species for certain otherwise lawful activities. Under the 4(d) rule, take of northern long-eared bats from operation of the Republic Wind Farm would be exempted from the ESA's take prohibitions. Northern long-eared bats are in the same genus as Indiana bats, and have similar morphological features, habitat needs, and active periods. The USFWS believes the avoidance measures outlined above for Indiana bats will also result in avoidance of mortality for northern long-eared bats. Thus, should the northern long-eared bat 4(d) rule ever cease to apply, implementation of the avoidance measures as described above should preclude take of northern long-eared bats.

As required by the Ohio Power Siting Board Certificate of Environmental Compatibility and Public Need, post-construction mortality monitoring will be required to document bird and bat mortalities. This monitoring should be consistent with Ohio Department of Natural Resources (ODNR) protocol and be reported annually. ODNR's monitoring protocol is also sufficient to document to the USFWS that the measures above are precluding take of Indiana bats and northern long-eared bats. We request that you provide our office with the monitoring results concurrent with ODNR notification.

This office is not authorized to provide guidance in regards to the USFWS Office of Law Enforcement investigative priorities involving federally listed species. However, we understand the Office of Law Enforcement carries out its mission to protect ESA-listed species through investigation and enforcement, as well as by fostering relationships with individuals, companies, and industries that have taken effective steps to avoid take of listed species; and by encouraging others to implement measures to avoid take of listed species. It is not possible to absolve individuals or companies from liability for unpermitted take of listed species, even if such take occurs despite the implementation of appropriate take avoidance measures. However, the Office of Law Enforcement focuses its enforcement resources on individuals and companies that take listed species without identifying and implementing all reasonable, prudent and effective measures to avoid such take. As of this date, the USFWS Ohio Field Office concludes that the proposed project is unlikely to result in take of ESA-listed species.

We recommend you coordinate this project with the ODNR-Department of Wildlife, as both the Indiana bat and northern long-eared bat are state-listed species. Please contact Erin Hazelton at (614) 265-6349, or Erin.Hazelton@dnr.state.oh.us.

We appreciate Apex's efforts to coordinate with our office in determining what measures could be implemented to avoid take of any ESA-listed species. Should any new information become available, we request that Apex promptly notify the USFWS. If new information becomes available to the USFWS that other measures could be implemented to avoid take that would not require additional commitment by Apex, such as wind speeds shown to preclude foraging by Indiana bats, USFWS will notify Apex as soon as possible.

Sincerely,

Patrice Ashfield
Field Supervisor

cc: Erin Hazelton, ODNR, via email

Republic Wind Project – February 15, 2019
Term Sheet for a Technical Assistance Letter

This document addresses the key components of a conservation plan that Republic Wind, LLC proposes for federally listed bat species in order to support issuance of a Technical Assistance Letter (TAL) from the U.S. Fish and Wildlife Service (USFWS) for the Republic Wind Project ("Project") proposed in Seneca and Sandusky Counties, Ohio. The intent of these commitments, as described in this TAL term sheet, is to reduce the risk to federally listed bat species to a level where USFWS agrees that the Project can be constructed and operated without the need for incidental take authorization from USFWS or until an approved Habitat Conservation Plan and Incidental Take Permit are obtained for the Project. The terms presented below result from coordination with USFWS during development of the Project.

Design and Construction:

(1) Setback turbines a minimum of 1,000 feet from suitable Indiana bat habitat within 2.5 miles of the Indiana bat average roost.
(2) Unless otherwise approved by USFWS, avoid tree clearing as follows:
    - Within 2.5 miles of the Indiana bat average roost from April 1 – October 31
    - Within 150 feet of identified northern long-eared bat roost trees from June 1 – Jul 31

Operations:

(1) Feather turbines from 30 minutes before sunset to 30 minutes after sunrise as follows:
    - Spring (March 15 – May 14): at wind speeds below 6.9 m/s
    - Summer (May 15 - Jul 31):
        - at wind speeds below 6.9 m/s at turbines within 2.5 miles of Indiana bat average roost
        - at wind speeds below manufacturer's cut-in speed at turbines > 2.5 miles from Indiana bat average roost
    - Fall (August 1 – October 31): at wind speeds below 6.9 m/s
(2) Conduct post-construction bat fatality monitoring for up to two years in accordance with Ohio Department of Natural Resources (ODNR) *Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio* (ODNR 2009).

Reporting and Adaptive Management:

(1) Submit results of annual fatality monitoring studies to USFWS and ODNR for review and discussion.
(2) Notify USFWS within 24 hrs of discovery of any federally listed bat mortality during operations.

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in

Case No(s). 17-2295-EL-BGN

Summary: Testimony of Dalton Carr on behalf of Republic Wind, LLC electronically filed by Teresa Orahood on behalf of Devin D. Parram