

THE OHIO POWER SITING BOARD

IN THE MATTER OF THE APPLICATION OF
ICEBREAKER WINDPOWER INC. FOR A
CERTIFICATE OF ENVIRONMENTAL
COMPATIBILITY AND PUBLIC NEED FOR
AN ELECTRIC GENERATING FACILITY IN
CUYAHOGA COUNTY, OHIO.

CASE NO. 16-1871-EL-BGN

OPINION, ORDER, AND CERTIFICATE

Entered in the Journal on May 21, 2020

I. SUMMARY

{¶ 1} The Ohio Power Siting Board approves and adopts the stipulation and recommendation, as modified herein, between Icebreaker Wind Inc., Staff, and other parties and directs that a certificate be issued to Icebreaker Wind Inc. for construction of a new 20.7 megawatt wind-powered electric generation facility.

II. INTRODUCTION

{¶ 2} This Opinion, Order, and Certificate considers an application from Icebreaker Windpower Inc. (Icebreaker or Applicant) to construct a six-turbine wind farm in Lake Erie. This project represents not just the first offshore wind project in Ohio, but also the first freshwater offshore wind project in North America. As described by Icebreaker, this is a small-scale demonstration project that will provide valuable information as to how offshore wind facilities interact with the environment. Icebreaker explains that the ultimate goal of this project is to assess whether large-scale wind facilities are viable in Lake Erie and other Great Lakes. (Icebreaker Ex. 1 at 3.) While we find that the probable environmental impact can be assessed, as a first-of-its-kind project the actual impacts of the facility are, naturally, still unknown. This is obviously not unexpected because, as a demonstration project, the aim of this facility is to gather knowledge that will better inform us and the public going forward. Thus, we determine that, at this time, it is prudent to proceed with necessary caution. In our decision, the Board ultimately finds that a certificate for construction should be issued to Icebreaker in order to construct the facility. However, we

determine that additional risk mitigation is essential at the forefront which, as more data and information comes in, can be scaled back accordingly.

III. PROCEDURAL BACKGROUND

{¶ 3} All proceedings before the Ohio Power Siting Board (Board) are conducted according to the provisions of R.C. Chapter 4906 and Ohio Adm.Code Chapter 4906.

{¶ 4} Icebreaker is a corporation and a person under R.C. 4906.01(A).

{¶ 5} The proposed electric generation facility is an economically significant wind farm, as that term is defined in R.C. 4906.13(A) and Ohio Adm.Code 4906-1-01(R).

{¶ 6} On September 13, 2016, Icebreaker filed a pre-application notification letter informing the Board of public informational meetings for its proposed facility.

{¶ 7} On February 1, 2017, Icebreaker filed its application for a certificate to construct a wind-powered electric generation facility in Cuyahoga County, Ohio, which it has described as a 6-turbine demonstration wind-powered electric generation facility located 8-10 miles off the shore of Cleveland, in Cuyahoga County, Ohio. The wind turbines are expected to have a nameplate capacity of 3.45 megawatts (MW) each, with a total generating capacity of 20.7 MW.

{¶ 8} On March 13, 2017, the Applicant filed an application supplement consisting of a narrative and numerous attachments.

{¶ 9} By letter dated April 3, 2017, the Board notified Icebreaker that the application, as supplemented, had been found not to comply with the requirements of Ohio Adm.Code 4906-01, et seq.

{¶ 10} On July 20, 2017, the Applicant filed a second supplement and response to the Board's letter dated April 3, 2017.

{¶ 11} By letter dated July 31, 2017, the Board notified Icebreaker that its application, as supplemented, had been found to be sufficiently complete pursuant to Ohio Adm.Code Chapter 4906-1, et seq.

{¶ 12} On August 15, 2017, the administrative law judge (ALJ) issued an Entry establishing the effective date of the application as August 14, 2017, and adopting a procedural schedule for this case, including dates for a local public hearing and adjudicatory hearing. The local public hearing was scheduled for November 8, 2017.

{¶ 13} On August 18, 2017, Icebreaker filed the third supplement to its application.

{¶ 14} On October 23, 2017, Staff filed a motion to suspend the procedural schedule with the exception of the public hearing. Staff's motion was granted by ALJ Entry issued on October 23, 2017.

{¶ 15} The first local public hearing was held on November 8, 2017.

{¶ 16} On March 22, 2018, Icebreaker filed the fourth supplement to its application.

{¶ 17} By Entry dated April 20, 2018, the procedural schedule was reestablished, including dates for a second local public hearing and the adjudicatory hearing.

{¶ 18} By Entry dated May 23, 2018, Ohio Environmental Council (OEC), the Indiana/Kentucky/Ohio Regional Council of Carpenters (Carpenters), Sierra Club, Business Network for Offshore Wind, Inc. (BNOW), and W. Susan Dempsey, Robert M. Maloney, Gregory Binford, and Leon Blazey, Jr. (collectively, Bratenahl Residents)¹ were granted intervention. The motion to intervene of Cuyahoga residents Vicci Weeks, Caryn Good Seward, and Steven Seward was denied.

{¶ 19} The Staff Report of Investigation was filed on July 3, 2018.

¹ Gregory Binford and Leon Blazey, Jr. later withdrew their petitions.

{¶ 20} The second local public hearing was held on July 19, 2018.

{¶ 21} By Entry dated August 1, 2018, the ALJ adjusted the procedural schedule at the request of the parties and directed that the hearing commence on September 24, 2018. In the Entry, Icebreaker was also directed to issue public notice of the hearing.

{¶ 22} Icebreaker, BNOW, Carpenters, OEC, and Sierra Club filed a joint stipulation and recommendation on September 4, 2018 (Initial Stipulation).

{¶ 23} Icebreaker filed its direct testimony on September 6, 2018. Intervener testimony was filed on September 14, 2018. Staff testimony was later filed on September 18, 2018.

{¶ 24} The adjudicatory hearing commenced on September 24, 2018, and concluded on October 2, 2018. A briefing schedule was set.

{¶ 25} Following the hearing, multiple continuances of the briefing schedule were granted to provide the parties additional time for settlement negotiations.

{¶ 26} On May 14, 2019, Icebreaker filed its fifth supplement to the application.

{¶ 27} On May 15, 2019, Icebreaker, Staff, BNOW, Carpenters, OEC, and Sierra Club (Signatory Parties) filed a revised joint stipulation and recommendation (Revised Stipulation), along with a motion seeking to reestablish the procedural schedule. The Signatory Parties indicate that the Stipulation represents an agreement resolving all matters pertinent to the certification and construction of the wind-powered electric generation facility in Cuyahoga County, Ohio, as proposed in this proceeding.

{¶ 28} On May 22, 2019, the ALJ issued an Entry granting the motion to reestablish the procedural schedule and setting a prehearing conference to discuss potential dates for a hearing.

{¶ 29} On June 17, 2019, the ALJ issued an Entry setting deadlines for testimony and scheduling an adjudicatory hearing to commence on August 20, 2019.

{¶ 30} Icebreaker filed revised testimony on July 26, 2019, while Staff filed revised testimony on July 26 and July 29, 2019. Bratenahl Residents filed supplemental testimony on August 13, 2019.

{¶ 31} The second adjudicatory hearing was held on August 20, 2019. A briefing schedule was established following the hearing.

{¶ 32} On September 3, 2019, Staff filed a letter in the docket indicating Icebreaker had failed to pay its supplemental application fee. On September 3, 2019, the ALJ suspended the briefing schedule and directed that Icebreaker file notice of payment of the supplemental application fee by September 13, 2019. On September 12, 2019, Icebreaker filed notice of payment of the supplemental application fee.

{¶ 33} By Entry issued September 12, 2019, the ALJ reinstated the procedural schedule and directed that initial and reply briefs be filed by October 11, 2019, and November 15, 2019, respectively.

{¶ 34} Initial briefs were filed by Icebreaker, Staff, Bratenahl Residents, and jointly by OEC and Sierra Club on October 11, 2019. Reply briefs were filed by the same parties on November 15, 2019.

IV. PROJECT DESCRIPTION

{¶ 35} The project will be located eight to ten miles off the shore of Lake Erie, in Cuyahoga County, Ohio. It will consist of six wind turbine generators, along with submerged electric collection cables, a temporary staging area at the Port of Cleveland, an operations and maintenance center, and a substation. The project meant to be a demonstration-scale project to help assess the potential success for future larger-scale offshore wind farms in Lake Erie and other Great Lakes. The energy generated at the facility

will deliver power to a single point of interconnection on the existing Cleveland Public Power electric grid, Lake Road Substation. (Icebreaker Ex. 1 at 2, 3, 6, 19; Staff Ex. 1 at 5.) The project will be constructed on the bed of Lake Erie, on leased submerged state land off the coast of Cleveland, Ohio, the rights of which were obtained through a submerged land lease with the state of Ohio (Icebreaker Ex. 1 at 5). The facility will consist of six Mitsubishi Heavy Industries Vestas Offshore Wind Class IIA and IIB model- Vestas 3.45 MW offshore wind turbine generators for a total generating capacity of 20.7 MW. (Icebreaker Ex. 1 at 6; Icebreaker Ex. 2 at 2.) The facility is expected to operate for approximately 8,200 hours per year and generate approximately 75,000 megawatt hours (MWh) of electricity each year. There are two electric collection line cable components: the inter-array cables, which connect the wind turbines together; and the export cable, which transmits the electricity generated by all wind turbines to the shore. The length of each of the inter-array cables is approximately 0.48 miles. The purported purpose of the facility is to produce wind-powered electricity that will maximize energy production from the project area wind resources in order to deliver clean, renewable electricity. The electricity generated will add fuel diversity to the electric supply mix and help reduce air pollution. (Icebreaker Ex. 25 at 9.)

V. SUMMARY OF EVIDENCE

{¶ 36} The Board will review the evidence presented with regard to each of the eight criteria by which we are required to evaluate these applications. Any evidence not specifically addressed herein has nevertheless been considered and weighed by the Board in reaching its final determination.

A. *Public Input*

{¶ 37} Since Icebreaker filed the application, the Board held two public hearings and received numerous comments. The Board first held a public hearing on November 8, 2017, in Cleveland, Ohio. The ALJs heard testimony from 41 witnesses. Witnesses spoke both in support of the project and in opposition, although a majority at the initial hearing

were in favor of the project going forward. Among those offering testimony in support of the project were representatives from local trade and union groups, who spoke about the potential jobs created by construction of the turbines and the opportunity for Cleveland to be a leader in the industry (*See, e.g.*, Nov. 8, 2017 Tr. at 12, 34, 104, 148). Also of note, representatives from Cleveland Public Power, the Lake County Board of County Commissioners, and the City of Cleveland testified in support (Nov. 8, 2017 Tr. at 22, 84, and 133). Among other witnesses supporting the project, reoccurring reasons for their backing was a need for renewable energy resources and job creation. Those opposing construction include the Black Swamp Bird Observatory and the American Bird Conservancy, who testified about the project's effects on the safety of birds and bats (Nov. 8, 2017 Tr. at 79). Other witnesses expressed similar concerns. Additional oppositional testimony discussed the aesthetics of placing wind turbines in Lake Erie and the possible environmental effects of an electric generation plant in the lake. In addition, the ALJs offered a petition for people to sign, either for or against the application, to those who did not wish to testify but wanted to express support either way. At the hearing, 21 people signed a petition in favor of the project and one person signed in opposition.

{¶ 38} After the procedural schedule was suspended and Icebreaker supplemented its application, a second public hearing was held on July 19, 2019. Testimony was provided by 43 witnesses. At the hearing, a variety of opinions were submitted and, compared to the previous public hearing, testimony was more split between those in support of the project and those opposed, although more people overall still testified in support of Icebreaker's application. Representatives from the Black Swamp Bird Observatory and the National Audubon Society expressed concern about the project's impact on birds, but supported the Staff Report and Staff's recommended conditions (July 19, 2019 Tr. at 52, 59). Multiple other witnesses also testified as to how the project could endanger bird populations. Several witnesses that opposed the project discussed the "Public Trust Doctrine" and explained that the right to use and enjoy Lake Erie is shared by the public at large. As in the previous hearing, witnesses spoke out against the aesthetics of turbines in Lake Erie. Representatives

from the Interlake Yachting Association and the Ohio Boating Association asserted that the turbines would create navigational hazards for boaters and could have other detrimental effects on the lake (July 19, 2019 Tr. at 74, 175). Numerous witnesses spoke in favor of Icebreaker's application. Representatives from Lakewood City Council and Euclid City Council advocated for the approval of the project. Additional trade groups and unions discussed the quality jobs that would be created. There were again several witnesses that testified for the need to invest in renewable energy, particularly in Ohio. The ALJs again offered petitions for people to sign that did not wish to testify. Ultimately, 71 people signed the petition in favor of the project and 28 people signed in opposition.

{¶ 39} In addition to the public hearings, since Icebreaker's application was filed, over 1,000 comments were submitted to the docket for the Board's review. Comments were relatively divided between those in favor of the application and those against it. Formal correspondence from multiple Ohio state senators and representatives were filed in support of the project. Resolutions from local governments, including Cuyahoga County and Lorain County, recommended approval of the application. Many small businesses, unions, and trade groups also wrote in favor of the application's approval. Also in support, several advocacy groups and citizens commented on the need for renewable energy. Opposing the project, many comments wrote that Lake Erie should be untouched from commercial development, especially power plants. A multitude of submissions also expressed displeasure with the potential aesthetics of turbines in Lake Erie. Great Lakes Wind Truth, an advocacy group opposing the Icebreaker project, filed numerous comments with articles and research regarding the effectiveness of wind power and wind turbines. All of the comments are available online on the Board's docketing system under this case number.

B. Staff Report

{¶ 40} Pursuant to R.C. 4906.07(C), Staff completed an investigation into the application, which included recommended findings regarding R.C. 4906.10(A). The following is a summary of Staff's findings.

1. BASIS OF NEED

{¶ 41} R.C. 4906.10(A)(1) requires an applicant for an electric transmission line or gas pipeline to demonstrate the basis of the need for such a facility. Because the project is a proposed electric generating facility, Staff recommends that the Board find this consideration is inapplicable. (Staff Ex. 1 at 13.)

2. NATURE OF PROBABLE ENVIRONMENTAL IMPACT

{¶ 42} R.C. 4906.10(A)(2) requires that the Board determine the nature of the probable environmental impact of the proposed facility. As a part of its investigation, Staff reviewed the nature of the probable impact of the proposed project; the following is a summary of Staff's findings.

a. Socioeconomic Impacts

{¶ 43} Icebreaker seeks to place six wind turbines within the water of Lake Erie. In addition to the turbines, the project requires a substation, an operations and maintenance (O&M) building, and an electric line. The substation would be built on property already used for utility purposes by Cleveland Public Power and would be adjacent to another substation. The O&M building would occupy an existing structure currently being used for offices and warehouse space. Within Lake Erie, the turbine foundations would be mostly buried, as would the collection lines. (Staff Ex. 1 at 14.)

{¶ 44} Staff does not anticipate that recreational activities would be greatly affected by the project. The onshore buildings are located in current industrial areas and are not likely to impact any recreational spaces. Offshore, Lake Erie hosts recreational activities such as boating, fishing, and swimming. The collection line will be buried under the lake bottom and therefore should not impact any recreational activities. The installation of the line is expected to last just one week. Because the turbines would be located eight to ten miles offshore, Staff does not expect recreational activities to be significantly affected. Research from Icebreaker indicates that most boating occurs outside of the project area. Further, while Icebreaker's research shows that the turbine area is not a popular spot for

recreational fishing, fishing would not be prohibited near the turbines. Multiple parks were identified near the shoreline in Cleveland. Depending on weather conditions and locations, the turbines may be visible from some of the parks. The impact on park users viewing experience is subjective; but, because of the small footprint of the project, Staff expects any impact to be minimal. (Staff Ex. 1 at 15.)

{¶ 45} Regarding cultural, archaeological, and architectural resources in the area, Icebreaker conducted a cultural resources literature review. The review identified 23 National Register of Historic Places within the area of potential effect, as well as 450 Ohio Historic Inventory properties. Additionally, the National Oceanic and Atmospheric Administration revealed 13 shipwrecks and obstructions in the Cleveland area of Lake Erie. Staff does not expect the project to impact any of these resources but recommends that Icebreaker continue to coordinate with the U.S. Department of Energy and the Ohio Historical Preservation Office. (Staff Ex. 1 at 16.)

{¶ 46} The Applicant provided an estimate of the potential economic impacts of the project on the local region. Construction would create \$41 million in wages and \$86 million in economic output. The operation of the facility is estimated to produce \$1.6 million in wages and \$6.7 million in economic output. Additionally, Icebreaker would pay \$8,000 annually associated with the submerged land lease in Lake Erie and \$60,000 annually for a docking location in the Port of Cleveland. Estimated payments in lieu of taxes were between \$124,000 and \$186,000 per year. (Staff Ex. 1 at 19-20.)

b. Ecological Impacts

{¶ 47} As discussed, the project would be installed in Lake Erie. Specifically, the Applicant intends to construct the project in the central basin of Lake Erie, which has an average depth of 57 feet. The lake bottom primarily consists of clay and silt, as well as some sand and gravel. The project area has a history of seismic activity as recently as 2013. Icebreaker asserts it has incorporated design parameters to properly address seismic considerations. (Staff Ex. 1 at 20-21.)

{¶ 48} The installation of the turbines would not require any drilling or excavation. However, the installation of the turbine foundations, as well as the electric cable, would likely result in temporary sediment disturbance. Due to minimal currents in the area, any disturbances are expected to be short-term and relatively contained. (Staff Ex. 1 at 21.)

{¶ 49} The turbines are built with three levels of containments in order to minimize any discharge of oil, hydraulic, and cooling fluids. Further, the turbine blades would be inspected and cleaned every year. The blades would be cleaned with biodegradable solutions that would not impact water quality. There are four water intake structures in the vicinity of the project; the water intake structure nearest the turbines is four miles away and the structure nearest the electric line is two miles away. The water intake structures belong to the City of Cleveland Water Department (Cleveland Water). Cleveland Water expressed some concern about the potential for increased turbidity associated with installation of the electric line. Cleveland Water provided four agreements with Icebreaker wherein the Applicant may be responsible to provide relief in the unlikely event that additional water treatment is needed. (Staff Ex. 1 at 22.)

{¶ 50} Staff explains that any impact on vegetation is expected to be minimal. Onshore structures are located in already industrialized areas. Due to water depth and construction methodology, offshore components are not expected to materially impact any aquatic vegetation. (Staff Ex. 1 at 26.)

{¶ 51} Regarding any impact on wildlife, the Ohio Department of Natural Resources (ODNR) and the United States Fish and Wildlife Service (USFWS) have been coordinating since 2008 to assess any potential impacts of wind turbines on wildlife in Lake Erie. Icebreaker used this research to locate a project site that would minimize potential impacts to wildlife. Notably, the project area is not a critical habitat for any federally listed species, or any state listed species. As to aquatic wildlife, the area is primarily used by migratory fish such as walleye, yellow perch, and rainbow smelt. The project would temporarily displace these species, but no major impacts are expected. The Applicant and

ODNR coordinated on a memorandum of understanding (Fisheries and Aquatic Resources MOU) to undertake a monitoring plan that would assess the impact of the project. (Staff Ex. 1 at 25-26.)

{¶ 52} ODNr and the Applicant also developed a memorandum of understanding to assess the project's impact on avian and bat species (Avian and Bat MOU). Staff expresses that the project will likely impact avian and bat species, although the impact will be mitigated by the small size of the project. Like with the Fisheries and Aquatic Resources MOU, the main purpose of the Avian and Bat MOU is to establish a monitoring plan to evaluate the impacts of the turbines on avian and bat species. The goals of the plan are to: document existing conditions and patterns of use of species at the project site; document changing conditions and patterns of species and their associated habitats as a result of the project; develop and implement effective mitigation and adaptive management strategies to minimize impacts; and evaluate the feasibility of various monitoring protocols in an offshore setting. The monitoring plan incorporates a number of studies, including pre- and post-construction bat acoustical monitoring, pre- and post-construction aerial waterfowl surveys, and post-construction collision monitoring for birds and bats. ODNr and Icebreaker also agreed on pre- and post-construction radar monitoring for birds and bats. However, the proper method to conduct radar monitoring in a manner that would produce the necessary results was not resolved when Staff issued the Staff Report. (Staff Ex. 1 at 23-25.) A key issue in this proceeding is the best method of radar monitoring and the needed results. This is discussed at length further below.

c. Public Services, Facilities, and Safety

{¶ 53} Due to the turbines location eight to ten miles offshore, the project is expected to have minimal impacts on the public. Being so far offshore, the project would comply with all setback requirements identified in R.C. 4906.20(B)(2). Similarly, any potential blade shear is not expected to have any impact on roads or building. Nonetheless, the turbines will have multiple safety features including two independent braking systems, a pitch control system, and a turbine shut-off mechanism in the event of excessive wind

speeds, excessive blade vibrations, or stress. There are additionally expected to be minimal impacts associated with ice throw. The nearest commercial shipping lane is two miles away from the nearest turbine and shipping traffic is minimal when ice is present. Also, the turbines are equipped with ice detection features that shut down the turbines as needed. Finally, regarding shadow flicker, due to the turbines distance from the shore, no onshore receptors would be impacted. (Staff Ex. 1 at 27-30.)

{¶ 54} Regarding any effects on various communication systems, the project is generally not expected to have any significant impact. This includes AM and FM radio broadcasts, television broadcasts, maritime radio communications, microwave communications, as well as civilian and military radar. The National Oceanic and Atmospheric Administration expressed initial concern as to whether the turbines would influence the radar systems' ability to detect lake effect snow, but upon further analysis determined that any impact would be acceptably low. (Staff Ex. 1 at 30.)

{¶ 55} According to Staff, the principal impact on public services would be minimal increases in traffic on routes leading to the project area, mainly during the construction phase, however, no road or lane closures are expected. Most of the large project components are expected to be delivered by barge. Staff recommends that the Applicant be required to develop a final transportation management plan, including a road use agreement. (Staff Ex. 1 at 27-28.)

{¶ 56} Staff determined that minimum adverse noise impacts are expected. Due to the installation of mono-bucket foundations, no pile driving will be necessary to install the turbines. While this may result in noise impacts to aquatic organisms, any impact is expected to be minimal due to the short duration of construction activities. Icebreaker is working with ODNR to avoid construction activities during sensitive fish spawning periods. Noise impacts during high winds may result in fish avoiding the area approximately 13 feet around the turbines. (Staff Ex. 1 at 29.)

{¶ 57} Icebreaker has committed to completely decommission each turbine within 12 months after the end of the useful life of the turbine. Here, “useful life” is defined as a continuous 12-month period without generating electricity. To decommission the facility, the entire turbine, including the foundation would be removed. The electric cables would remain buried. Prior to beginning construction, Icebreaker would determine an appropriate removal deposit amount to be set aside for decommissioning, subject to approval from the State of Ohio. The estimated decommissioning costs would be updated every five years. (Staff Ex. 1 at 31.)

3. MINIMUM ADVERSE ENVIRONMENTAL IMPACT

{¶ 58} Pursuant to R.C. 4906.10(A)(3), the proposed facility must represent the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, along with other pertinent considerations.

{¶ 59} In choosing the ideal location for the facility, the Applicant considered a feasibility study completed by the Great Lakes Energy Development Task Force in 2009, as well as ODNR’s Wind Turbine Placement Favorability Analysis. According to Staff, the location Icebreaker chose, eight to ten miles offshore, either minimizes or eliminates numerous potential impacts to individuals onshore, including operational noise, shadow flicker, ice throw, and blade shear. The visual impact is also greatly reduced by being so far offshore. By being eight to ten miles offshore, the Applicant would be able to have most large turbine components delivered by barge, which reduces traffic congestion and road damage. The location of the turbines is also outside of any navigational channels and away from most recreational boating. However, the turbines would still be equipped with foghorns and sufficient lighting. Finally, as mentioned, and discussed more fully below, the project may impact birds, bats, and aquatic life. (Staff Ex. 1 at 32-33.)

{¶ 60} Overall, Staff recommends that the Board find that the proposed facility represents the minimum adverse environmental impact and, therefore, complies with the

requirements of R.C. 4906.10(A)(3), provided that any certificate issued by the Board include the conditions specified in the Staff Report (Staff Ex. 1 at 33).

4. ELECTRIC POWER GRID

{¶ 61} Pursuant to R.C. 4906.10(A)(4), the Board must determine that the proposed wind-powered facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems. Under the same authority, the Board must also determine that the proposed facility will serve the interest of the electric system economy and reliability.

{¶ 62} Staff evaluated the impact of integrating the facility into the existing regional electric transmission grid. As proposed, the turbines would be capable of producing 20.7 MW and would interconnect to Cleveland Public Power's Lake Road Substation at 138 kV. The substation interconnects to the transmission grid of American Transmission System, Inc. (ATSI). Icebreaker submitted a generation interconnection request to PJM Interconnection, LLC (PJM), which is the regional transmission organization responsible for planning upgrades and administering the generation queue for the regional transmission system in Ohio. PJM completed a System Impact Study (SIS), the results of which were released in May 2015 and updated in October 2017. Icebreaker would make 7.5 MW of energy available in the PJM market and the remaining 13.2 MW would be sold to Cleveland Public Power. In PJM's analysis, there would be no problems with reliability, overloads, or circuit breakers. (Staff Ex. 1 at 34-35.)

{¶ 63} Staff concludes that the facility would serve the public interest, convenience, and necessity by providing additional electrical generation to the regional transmission grid, would be consistent with plans for expansion of the regional power system, and would serve the interests of electric system economy and reliability. Accordingly, Staff recommends that the Board find that the facility complies with the requirements of R.C. 4906.10(A)(4) so long as any certificate issued for the proposed facility includes the conditions specified in the Staff Report. (Staff Ex. 1 at 36.)

5. AIR, WATER, SOLID WASTE, AND AVIATION

{¶ 64} Pursuant to R.C. 4906.10(A)(5), the facility must comply with Ohio law regarding air and water pollution control, withdrawal of waters of the state, solid and hazardous wastes, and air navigation.

{¶ 65} Staff explains that although the proposed facility will not require any air quality permits, fugitive dust rules may be applicable to construction associated with the land-based components. Neither construction nor operation of the proposed facility would require significant amounts of water. The Applicant would acquire all necessary permits and approvals to comply with R.C. Chapter 6111 and all associated rules. (Staff Ex. 1 at 37.)

{¶ 66} Due to the turbines placement offshore, no public use airports, helicopter pads, or landing strips are located within 5 miles of the facility. The Federal Aviation Administration (FAA) reviewed the turbine layout and determined that the project would not exceed obstructions standards and would not be a hazard to air navigation. Applicant will work with all requirements from the FAA and Ohio Department of Transportation (ODOT) Office of Aviation. (Staff Ex. 1 at 38.)

{¶ 67} Based on these findings, Staff recommends that the Board find that the proposed facility complies with the requirements specified in R.C. 4906.10(A)(5), provided that any certificate issued for the facility include the conditions specified in the Staff Report (Staff Ex. 1 at 38).

6. PUBLIC INTEREST, CONVENIENCE, AND NECESSITY

{¶ 68} Pursuant to R.C. 4906.10(A)(6), the Board must determine that the facility will serve the public interest, convenience, and necessity.

{¶ 69} Staff reviewed the safety manual associated with the turbines and recommends the Applicant comply with the manual and that a copy of the manual be kept in the O&M building. During construction of the facility, Icebreaker will install a temporary 1,640-foot safety avoidance zone around the installation vessels and a 328-foot zone around

each turbine, as well as the substation. Additionally, there will be 24-hour security presence during construction. The wind turbines will have lighting that complies with FAA and US Coast Guard regulations. Two turbines will have foghorns that emit a signal that would be audible two nautical miles from the facility. Contractors will develop and implement an emergency action plan and work with local emergency services. (Staff Ex. 1 at 40-41.)

{¶ 70} Staff recommends the Applicant establish a complaint resolution process and that all complaints and resolutions be filed in the docket on a quarterly basis. Icebreaker will carry insurance to cover liability and potential claims during the construction, operation, and decommissioning of the proposed facility. (Staff Ex. 1 at 39, 41.)

{¶ 71} In all, Staff recommends that the Board find that the proposed facility would serve the public interest, convenience, and necessity and, therefore, complies with the enumerated requirements of R.C. 4906.10(A)(6), provided that any certificate issued by the Board includes the conditions specified in the Staff Report (Staff Ex. 1 at 42).

7. AGRICULTURAL DISTRICTS

{¶ 72} Pursuant to R.C. 4906.10(A)(7), the Board must determine the facility's impact on the agricultural viability of any land in an existing agricultural district within the project area of the proposed utility facility.

{¶ 73} Staff concludes that no agricultural district land would be disturbed in association with the project. Accordingly, Staff recommends that the Board find that the impact of the proposed facility on the viability of existing agricultural land in an agricultural district has been determined and, therefore, the requirements of R.C. 4906.10(A)(7) are satisfied, so long as any certificate issued by the Board include the conditions specified in the Staff Report (Staff Ex. 1 at 43).

8. WATER CONSERVATION PRACTICE

{¶ 74} Pursuant to R.C. 4906.10(A)(8), the proposed facility must incorporate maximum feasible water conservation practices, considering available technology and the nature and economics of the various alternatives.

{¶ 75} Water would not be utilized in the process of electricity production. Potable water used at the O&M building would be minimal. In all, the facility would incorporate maximum feasible water conservation practices as specified in R.C. 4906.10(A)(8). Staff recommends that any certificate issued by the Board include any conditions specified in the Staff Report. (Staff Ex. 1 at 44.)

9. RECOMMENDATIONS

{¶ 76} In addition to making various findings throughout its report, Staff recommended that 34 conditions be made part of any certificate issued by the Board for the proposed facility (Staff Ex. 1 at 45-52). With some notable differences, many of the recommended conditions found within the Staff Report are adopted and re-enumerated in the Revised Stipulation. The conditions are discussed below.

VI. STIPULATION AND CONDITIONS

{¶ 77} On September 4, 2018, the Initial Stipulation was docketed. The Initial Stipulation was signed by Icebreaker, BNOW, the Sierra Club, Carpenters' Council, and OEC and contained 35 recommended conditions. Staff and the Bretenahl Residents were not signatories. After an adjudicatory hearing, the briefing schedule was postponed on multiple occasions to allow the signatory parties to continue to negotiate with Staff. These discussions ultimately resulted in the Revised Stipulation, filed May 15, 2019. Thereafter, a second adjudicatory hearing took place regarding any changes between the Initial Stipulation and the Revised Stipulation.

{¶ 78} The following is a summary of the conditions agreed to by the parties and is not intended to replace or supersede the actual Revised Stipulation. The parties stipulate that:

- (1) The facility shall be installed as presented in the application and modified by supplemental filings.
- (2) Applicant shall complete a separate filing with the Board regarding an associated transmission line prior to construction of a transmission line associated with the facility.
- (3) Applicant shall not commence construction of the facility until it has a signed Interconnection Service Agreement with PJM.
- (4) The facility shall be operated such that no more than 18 MW would be injected into the ATSI transmission grid at any time.
- (5) Applicant shall conduct a pre-construction conference prior to the start of any construction activities.
- (6) Within 60 days after the commencement of commercial operation, the Applicant shall submit to Staff a copy of the as-built specifications for the entire facility.
- (7) The certificate shall become invalid if the Applicant has not commenced a continuous course of construction of the proposed facility within five years of the date of journalization of the certificate.
- (8) As the information becomes known, the Applicant shall file in this proceeding the date on which construction will begin, the date on

which construction was completed, and the date on which the facility begins commercial operation.

- (9) Prior to the commencement of construction activities in areas that require permits or authorizations by federal or state laws and regulations, the Applicant shall obtain and comply with such permits or authorizations.
- (10) At least 30 days prior to the pre-construction conference, the Applicant shall submit to Staff, for review to confirm compliance with this condition, one set of detailed engineering drawings of the final project design.
- (11) Prior to construction, the Applicant shall finalize coordination with the appropriate federal agency (U.S. Department of Energy) in consultation with the Ohio Historic Preservation Office with regards to completing Section 106 of the National Historic Preservation Act of 1966, as amended.
- (12) No commercial signage or advertisements shall be located on any turbine, tower, or related infrastructure, except for reasonable identification of the manufacturer, the operator of the wind farm, or the operator's designee.
- (13) At least 30 days prior to construction, the Applicant shall provide Staff, any affected property owners and tenants, the municipalities along the shore in the project viewshed, Cuyahoga County officials, emergency responders, and libraries with written notice regarding the start of construction and the complaint resolution process.

- (14) During the construction and operation of the project, the Applicant shall file on the docket in this case a summary report of any complaints received through its complaint resolution process, a description of actions taken to resolve each complaint, and a status update if the complaint has yet to be resolved in the case record by the 15th day of April, July, October, and December of each year.
- (15) Applicant shall comply with all terms of the Avian and Bat MOU and the Fisheries and Aquatic Resources MOU. Prior to the commencement of construction, the monitoring plans associated with each MOU will be finalized and accepted through written communication from the ODNR. The monitoring plans are living documents and any modifications to the MOUs or resulting documents will be finalized and accepted through written communication from the ODNR and shall be filed in the case docket upon completion.
- (16) Prior to construction, the Applicant shall execute a modified submerged lands lease with the ODNR and adhere to all terms and conditions stated in the modified lease.
- (17) At least 120 days prior to commencement of construction, the Applicant shall submit a fisheries and aquatic resources construction monitoring plan to the ODNR and Staff for review to confirm compliance with this condition. Prior to the commencement of construction, the monitoring plan must be finalized and accepted through written communications from ODNR. The Applicant's plan shall be consistent with the Fisheries and Aquatic Resources MOU and monitoring plans attached to the MOU, and any other protocols or documents resulting from the

MOU. The monitoring start date and reporting deadlines will be provided in the ODNR acceptance letter and the Staff concurrence letter.

- (18) At least 120 days prior to commencement of construction, the Applicant shall submit an avian and bat impact mitigation plan to ODNR and Staff for review to confirm compliance with this condition that implementation of the plans would be effective in avoiding significant impacts to avian and bat species. The avian and bat impact mitigation plan shall incorporate the most current survey results, the post-construction avian and bat monitoring plan, and all measures that have been adopted to avoid and minimize potential adverse impacts to birds and bats. The plan shall also include a collision monitoring plan, which will include a description of the collision detection technology selected by the Applicant in consultation with ODNR and Staff, the results of lab and field testing of the collision detection technology, and adaptive management strategies. The collision detection technology shall be installed and fully functioning at the time the turbines commence operation and shall continue to function in accordance with the collision monitoring plan. Operation of the collision detection technology is subject to audits by ODNR or its third-party consultant. Prior to the commencement of construction, the impact mitigation plan must be finalized and accepted through written communications from ODNR. The Applicant shall also provide the impact mitigation plan to, and seek consultation with, USFWS. The Applicant shall update the impact mitigation plan as new information is attained through surveys. Any proposed modifications to the impact mitigation plan shall be submitted to

ODNR and Staff for review to confirm compliance with this condition and shall be finalized and accepted through written communications from ODNR. The impact mitigation plan (including the collision monitoring plan) shall survive the MOU and shall remain in place for the life of the project.

- (19) At least 120 days prior to commencement of construction, the Applicant shall submit a fisheries and aquatic resources impact mitigation plan to ODNR and Staff for review to confirm compliance with this condition that implementation of the plan would be effective in avoiding significant impacts to fisheries and aquatic resources. The fisheries and aquatic resources impact mitigation plan shall incorporate the most current survey results, the post-construction fisheries and aquatic monitoring plan, and all measures that have been adopted to avoid and minimize potential adverse impacts to fisheries and aquatic resources, as needed. Prior to the commencement of construction, the impact mitigation plan must be finalized and accepted through written communications with ODNR. The Applicant shall also provide the impact mitigation plan to and seek consultation from the USFWS. The Applicant shall update the impact mitigation plan as new information is attained through surveys. Any proposed modifications to the impact mitigation plan shall be submitted to ODNR and Staff for review to confirm compliance with this condition and shall be finalized and accepted through written communications from ODNR.
- (20) If state or federally listed endangered or threatened species are encountered during construction, operation, or monitoring activities, the Applicant shall contact Staff, ODNR, and the USFWS,

as applicable, and modify operational activities that could adversely impact the identified animals to minimize risk within 24 hours.

(21) The Applicant shall implement a radar monitoring program which includes the following:

- a. Radar must be able to detect and track directional movement and altitude of individual 10-gram and larger vertebrates.
- b. Radar must have the ability to collect data continuously, due to the pulsed nature of migration.
- c. Radar must suppress false detections from insects, wave clutter, and weather and without downtime bias with respect to biological periods producing viable data 75 percent or greater of the hours of the survey time (dusk to dawn spring, summer, and fall April 1 to November 15). For post-construction monitoring, the radar may be placed on the turbine platform. For purposes of calculating the 75 percent, all potential scenarios, including force majeure events, shall be included. Force majeure events include heavy precipitation (rain or snow heavy enough to be unable to detect targets) or high seas (when the barge is removed from the lake for safety reasons because the wave heights are forecasted to significantly exceed 6 feet). The Applicant shall notify ODNR in writing within 48 hours after the barge is redeployed. During any such force majeure event, the Applicant shall summarize NEXRAD data to provide a large-scale assessment of nocturnal

migrant passage rates. Each time the Applicant surveys for one full spring, summer, and fall survey period, the Applicant shall submit a radar monitoring survey report to ODNR which shall describe any force majeure event that occurred during the preceding survey time. For any period the barge was not on the lake, the Applicant shall provide a detailed description of when and why operations were interrupted and an analysis of how the useable radar data was used to satisfy the study objectives. The monitoring survey report shall demonstrate how the 75 percent criteria was met. The report shall be submitted to ODNR and Staff for review to confirm compliance with this condition and, if determined sufficient, shall be accepted through written communications from ODNR.

- d. Radar must be able to determine flight altitude of migrants at altitudes near and entirely within the rotor-swept zone at the project site to quantify the number of targets in the rotor-swept zone to inform the potential for collision.
- e. Radar must be able to provide information that can be used to determine and quantify behavioral avoidance or attraction to turbines in the open water setting.
- f. Radar must collect data for both bird migratory seasons and bat migratory seasons (April 1 to November 15) pre-construction.
- g. Radar must collect data for at least two spring/summer/fall migratory seasons post-construction to determine behavioral changes that make collision more or less likely.

If the Applicant demonstrates to ODNR's satisfaction that a second spring/summer/fall post-construction radar survey is unlikely to result in the collection of additional data to inform the question of avoidance/attract effects, ODNR may, in its sole discretion, determine that the Applicant does not need to conduct a second spring/summer/fall post-construction radar survey.

- (22) Prior to construction, the Applicant shall demonstrate that these requirements can be satisfied through implementation of the radar-monitoring program for one spring/summer/fall migration season. Proof of completion of these requirements shall be submitted to ODNR and Staff for review to confirm compliance with this condition at least 90 days prior to construction.
- (23) The Applicant will immediately report a significant mortality event regarding all avian or bat species (21 or more detected collisions at the facility within a 24-hour period based on a facility-wide detection probability of 59 percent) to ODNR. The number of detected collisions that trigger a significant mortality event will be adjusted based on the demonstrated detection probability of the collision detection technology. If there is a significant mortality event, the Applicant will modify operation activities that could adversely affect the identified animals to minimize risk as described in the impact mitigation plan within 24 hours and follow the process for significant mortality events set forth in the impact mitigation plan.
- (24) All annual and final reports, as outlined in the MOUs, shall be filed on the docket in this case upon completion.

- (25) Should construction be delayed beyond five years of the date of the certificate, certain wildlife and aquatic surveys may need to be updated and approved by Staff and the ODNR, if required by the Board.
- (26) The Applicant shall comply with the turbine manufacturer's most current safety manual and shall maintain a copy of that safety manual in the operations and maintenance building of the facility.
- (27) Prior to commencement of construction activities that require transportation permits, the Applicant shall obtain all such permits.
- (28) The Applicant shall enter into a road use agreement with the appropriate authorities prior to construction and subject to Staff review and confirmation.
- (29) The Applicant shall mitigate any observed impacts of the project to communication systems, including maritime VHF radio, within seven days or if good cause is shown within a longer time period acceptable to Staff.
- (30) The Applicant shall provide the final decommissioning plan to Staff for review at least 30 days prior to the pre-construction conference. The Applicant shall file with the Board a revised decommissioning plan every five years from the commencement of construction. The Applicant shall, at its expense, complete decommissioning of the facility, or individual wind turbines, within 12 months after the end of the useful life of the facility or individual wind turbines. Subject to confirmation of compliance with this condition by Staff in consultation with ODNR, and seven days prior to the pre-construction conference, an independent,

registered professional engineer shall be retained by the Applicant to estimate the total cost of decommissioning in current dollars, without regard to salvage value of the equipment. The Applicant shall post and maintain for decommissioning a performance bond in an amount equal to the per-turbine decommissioning costs multiplied by the sum of the number of turbines constructed and under construction. The performance bond shall be released by the holder when the Applicant has demonstrated, and the Board concurs, that decommissioning has been satisfactorily completed, or upon written approval of the Board, in order to implement the decommissioning plan.

- (31) The Applicant shall meet all recommended and prescribed FAA and ODOT Office of Aviation requirements to construct an object that may affect navigable airspace.
- (32) All applicable structures, including construction equipment, shall be lit in accordance with necessary FAA regulations.
- (33) The Applicant shall comply with fugitive dust rules by the use of water spray or other appropriate dust suppressant measures whenever necessary.

(Joint Ex. 2 at 3-12.)

VII. CERTIFICATE CRITERIA

{¶ 79} Pursuant to R.C. 4906.10(A), the Board shall not grant a certificate for the construction, operation, and maintenance of a major utility facility, either as proposed or as modified by the Board, unless it finds and determines all of the following:

- (1) The basis of the need for the facility if the facility is an electric transmission line or gas pipeline;

- (2) The nature of the probable environmental impact;
- (3) 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;
- (4) In the case of an electric transmission line or generating facility, 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 and the facility will serve the interests of electric system economy and reliability;
- (5) The facility will comply with R.C. Chapters 3704, 3734, and 6111, as well as all rules and standards adopted under those chapters and under R.C. 1501.33, 1501.34, and 4561.32;²
- (6) The facility will serve the public interest, convenience, and necessity;
- (7) The impact of the facility on the viability as agricultural land or any land in an existing agricultural district established under R.C. Chapter 929 that is located within the site and alternative site of the proposed major facility; and
- (8) The facility incorporates maximum feasible water conservation practices as determined by the Board, considering available technology and the nature and economics of various alternatives.

² The Board notes that R.C. 4906.10 was recently amended, effective October 17, 2019, such that all references to R.C. 1501.33 and 1501.34 were removed.

VIII. CONSIDERATION OF CERTIFICATE CRITERIA

{¶ 80} Consistent with R.C. 4906.10(A), the Board has reviewed the record and made determinations regarding each of the statutory criterion.

A. *Basis of Need*

{¶ 81} R.C. 4906.10(A)(1) requires that the Board consider the basis of the need for the facility if the facility is a gas pipeline or an electric transmission line.

{¶ 82} Staff concluded that R.C. 4906.10(A)(1) is not applicable in this proceeding, given that the project is not a gas pipeline or an electric transmission line (Staff Ex. 1 at 13). The Signatory Parties agree that this criterion is not applicable to this proceeding.

{¶ 83} Because the project is not a gas pipeline and does not include approval of an electric transmission line, the Board finds that R.C. 4906.10(A)(1) is not applicable under the circumstances (Staff Ex. 1 at 13; Joint Ex. 2 at 3).

B. *Nature of Probable Environmental Impact*

{¶ 84} R.C. 4906.10(A)(2) requires that the Board determine the nature of the probable environmental impact of the proposed facility.

{¶ 85} Icebreaker, Staff, and, jointly, OEC and Sierra Club submit that the record in this proceeding sufficiently provides the Board with enough information to determine the nature of the probable environmental impact of the project. According to Icebreaker and Staff, the application, in conjunction with the Revised Stipulation, allows the Board to assess the project's socioeconomic impacts, public service and safety impacts, and ecological impacts.

1. SOCIOECONOMIC IMPACTS

{¶ 86} Economically, Icebreaker asserts the construction of the facility and its ongoing use will have a positive impact in the local area. According to Icebreaker, project construction will produce \$41.2 million in employment earnings and the value of the

economic output associated with the facility is \$85.5 million. Icebreaker further projects that each year of operation will generate roughly \$1.6 million in earnings and \$6.7 million in economic output. The Applicant also states the local government revenues will benefit, as payments in lieu of taxes are estimated to range from \$124,000 to \$186,000 per year. (Icebreaker Ex. 27 at 5-6.) Multiple public comments, especially from those representing unions and trade groups, discussed the positive economic impacts that the project could bring.

{¶ 87} Due to the turbines' location eight to ten miles off of the shore, Staff maintains that recreational activities are not expected to be affected, as common activities such as swimming, boating, and fishing are not popular in the vicinity of the turbine's location. Further, Icebreaker avers that the installation of the electric line is only expected to last a week and should cause minimal disruption to lake activities. Icebreaker conducted a visual impact analysis (VIA) to assess how the project would be viewed from on-shore. According to the VIA, visual impacts would be minimal and whether the turbines are visible would be dependent on multiple factors, such as cloudiness. (Icebreaker Ex. 43.) Additionally, Staff and Icebreaker explain that due to the offshore location of the facility, nearby cultural and historical resources will not be affected (Staff Ex. 1 at 16; Icebreaker Ex. 1 at Ex. AA). In public comments and testimonies, various people expressed concern regarding the project's impact on boating and fishing. Additionally, both positive and negative opinions were expressed regarding the view from the shoreline and the aesthetics of the turbines in Lake Erie.

{¶ 88} Consistent with the Staff Report, the Board finds that the probable impact of the project on socioeconomic conditions has been evaluated and determined. We observe the positive economic impact that the construction and operation of the project will have on the local community (Icebreaker Ex. 27 at 5-6). We additionally recognize that the project is expected to minimally affect recreational activities in the area, as well as any cultural or historical resources. The site location was specifically chosen to minimize impacts on recreational activities, among other things. We also note that fishing around the turbines

will not be prohibited. (Staff Ex. 1 at 15-16.) Finally, regarding the visual impact of the project, the VIA demonstrated that, being located eight to ten miles offshore, the visibility of the turbines will be minimal and dependent on the weather and the viewer's location (Icebreaker Ex. 43).

2. PUBLIC SERVICES, FACILITIES, AND SAFETY

{¶ 89} According to the Applicant, common issues associated with wind turbines such as setback requirements, shadow flicker, ice throw, and blade shear are minimized due to the facility's location eight to ten miles offshore. However, Icebreaker explains that the turbines will still have various protections and state-of-the-art technology to ensure safety. Specifically, Icebreaker notes that each turbine will have braking systems, speed controls, pitch controls, and ice-detection equipment. (Icebreaker Ex. 1 at 85.) During construction, Icebreaker anticipates that road closures will be not be necessary as most components will arrive by barge (Icebreaker Ex. 1 at 131).

{¶ 90} Staff and Icebreaker note that Condition 30 of the Revised Stipulation specifically addresses the decommissioning requirements. Icebreaker avers that this requires submitting a decommissioning plan before the pre-construction conference and updating the plan every five years. Further, Icebreaker will be required to post a bond for the cost of decommissioning, which will be determined by an independent engineer. (Joint Ex. 2 at 10-12.)

{¶ 91} The Board also finds that the probable impact of the project on public services, facilities, and safety has been evaluated and determined. In doing so, we note that the turbines' offshore location negates many issues common to other wind facilities, such as setback requirements, shadow flicker, ice throw, and blade shear (Staff Ex. 1 at 28-30). We further observe that Icebreaker is taking necessary precautions to ensure the turbines would operate safely. For example, the turbines will have state-of-the-art braking systems, pitch controls, sensors, vibration monitors, fire suppression systems, and ice detection equipment. Additionally, pursuant to Condition 9 of the Revised Stipulation, Icebreaker will obtain all

necessary federal and state permits and authorizations. Finally, we find that the decommissioning process, outlined in Condition 30, satisfies the decommissioning requirements outlined in Ohio Adm.Code 4906-4-09(I) and will be overseen by the Board and Staff. We specifically note that the Revised Stipulation states “[s]ubject to confirmation of compliance with this condition by Staff in consultation with ODNR,” Icebreaker is required to retain an independent, registered professional engineer, licensed to practice engineering in the state of Ohio, in order to estimate the total cost of decommissioning (Joint Ex. 2 at 11). We would, however, clarify that the Board maintains the authority to ultimately accept or reject the engineer chosen by the Applicant to conduct such an analysis, further fulfilling our obligation to ensure the decommissioning requirements set forth in Ohio Adm.Code 4906-4-09(I) are observed.

3. ECOLOGICAL IMPACTS

{¶ 92} Staff and Icebreaker contend that the Application and the Revised Stipulation provide the Board with the ability to determine the ecological impact of the project. Initially, Icebreaker submits that the facility will not impact any public or private water supplies. Icebreaker states it has obtained all necessary permits and the nearest water intake system is four miles away from any turbine. The turbines will be installed using a “Mono Bucket” foundation. As described by Icebreaker, the foundation is a steel structure installed using gravity and suction pumping that eliminates the need for pile driving or dredging (Icebreaker Ex. 1 at 7-8). Staff explains that the turbines are built with three levels of containment to prevent any discharge of oil, hydraulic, and cooling fluids (Staff Ex. 1 at 22). The electric collection cable is to be installed via a barge using a bury-while-lay technique. According to Icebreaker, this results in minimal displacement of sediment. (Icebreaker Ex. 1 at 17.)

4. AQUATIC IMPACTS

{¶ 93} Icebreaker affirms it completed an Aquatic Ecological Characterization and Impact Assessment (Aquatic Assessment) in 2016 that demonstrates the project will have

minimal impact on aquatic life (Icebreaker Ex. 1 at Ex. O). Based on the Aquatic Assessment, the Applicant maintains that the project location is a “dead zone” with minimal fish activity and that the project location is a significant distance from any spawning areas or key habitats. Further, Icebreaker contends that it has already completed the two years of pre-construction monitoring required by the Fisheries and Aquatics MOU (Icebreaker Ex. 3 at Ex. A). Icebreaker witness Edward M. Verhamme asserts that the monitoring indicates that the project location is not a unique habitat area (Icebreaker Ex. 34 at 7). Staff agrees, noting that the Fisheries and Aquatics MOU, as adopted in Condition 19 of the Revised Stipulation, provides ongoing monitoring protocols and, if needed, mitigation plans (Staff Ex. 15 at 2).

{¶ 94} Regarding aquatic ecology, the Board concludes that the impact has been evaluated and determined. The Aquatic Assessment showed that any impact is expected to be minimal and that the location of the facilities is not near any vital habitation areas (Icebreaker Ex. 1 at Ex. O). In order to assess the project’s impact on aquatic life, a number of studies were conducted, including hydroacoustic surveys, trawl surveys, water sampling for water chemistry, phytoplankton and plankton collections, sediment samples, substrate mapping, hydrodynamic collections with doppler current meters, acoustic telemetry monitoring to detect migratory tagged fish, sound monitoring to document ambient noise levels, and aerial boat use surveys. Icebreaker witness Verhamme noted that the area is not a unique area for aquatic species, which Staff witness Travis Hartman explained precludes any fish from living in the area. (Icebreaker Ex. 34; Staff Ex. 7 at 3-5.) Further, the Fisheries and Aquatics MOU ensures continued monitoring of aquatic life near the project (Icebreaker Ex. 3 at Ex. A).

5. BIRD AND BAT IMPACTS

{¶ 95} The most contested issue in this proceeding is the project’s impact on birds and bats. Icebreaker asserts that there is sufficient information to satisfy R.C. 4906.10(A)(2), to which Staff largely agrees. Icebreaker commissioned multiple risk assessments which, according to the Applicant, determined that the project is of low risk to birds and bats, particularly due to the small scale of the project and the facility’s location eight to ten miles

offshore. The assessments were largely conducted by Western EcoSystem Technology, Inc (WEST), which examined multiple marine radar studies, aerial studies, and other terrestrial wind projects. Their initial review concluded in 2016 and resulted in “Icebreaker Wind: Summary of Risks to Birds and Bats” (2016 Risk Assessment), authored by Caleb Gordon and Wallace P. Erickson (Icebreaker Ex. 1 at Ex. J). The assessment was updated in 2018 with the “Summary of November 2015 Avian and Bat Risk Assessment” (2018 Risk Summary) (Icebreaker Ex. 6 at Ex. 2). The assessments examined the risks of the projects on bat and birds, including raptors, waterfowl, and passerines.

{¶ 96} Based on the assessments, Icebreaker notes that the offshore site eliminates several risks typically associated with a terrestrial wind project. This includes any habitat destruction associated with construction as well as any risks affiliated with nesting birds or roosting bats. Icebreaker also asserts that the project location is not frequented by any threatened or endangered species and no associated permits were required from United States Fish and Wildlife Service (USFWS) (Icebreaker Ex. 31 at 20). The Applicant maintains that raptors are primarily limited to the shoreline and have not been observed near the project site (Icebreaker Ex. 30 at 6). Icebreaker thus concludes that migratory birds and bats would primarily be the only wildlife at risk. However, based on the risk assessments, Icebreakers contends that any risk is low.

{¶ 97} According to the Applicant, the 2016 Risk Assessment determined, among other things, that the project would be of minimal risks to waterfowl such as ducks and gulls. That assessment considered a number of different studies, including an extensive aerial survey of waterfowl conducted by ODNR. Icebreaker states the 2016 Risk Assessment concluded that there are only six species of waterfowl in the vicinity of the project site and waterfowl abundance was almost negligible beyond five to seven miles offshore. (Icebreaker Ex. 7, Attach. 4.)

{¶ 98} Icebreaker further asserts that the 2016 Risk Assessment and the 2018 Risk Summary utilized multiple marine radar studies to conclude that there is minimal risk to

nocturnally migrating songbirds, a category of birds, also called passerines, that includes the vast majority of bird species that occur within the Great Lakes region. First, Icebreaker avers that the birds typically migrate at altitudes higher than the heights of the turbines (Icebreaker Ex. 30 at 15, citing Attach. CEG-10). Additionally, based on an examination of Next Generation Radar (NEXRAD), a weather radar that is able to track the location, density, and direction of migrating birds, the Applicant maintains that the project area has consistently lower densities of migrating birds than terrestrial or shoreline locations. Icebreaker also contends that the site's location in the central basin of Lake Erie is a "cold spot" for bird migration, which further mitigates any collision risks (Tr. Vol. III at 518). Regarding bats, Icebreaker asserts that the facility's offshore location severely reduces the risk of bat collision. Icebreaker explains that bat activity is approximately ten times greater on land than offshore. (Icebreaker Ex. 1 at Ex. J.)

{¶ 99} After analyzing terrestrial wind projects in Ohio, as well as multiple wildlife studies conducted by Icebreaker and ODNR, Staff asserts that the nature of the probable environmental impact to birds and bats will be collision, avoidance, and attraction. Staff generally agrees with Icebreaker that the projected impact on birds and bats is expected to be low. Staff also notes that, as with most wind facilities, the precise impacts are unknown until post-construction monitoring is complete. (Staff Ex. 3 at 5-6.) As proposed in the Revised Stipulation, Icebreaker will be required to conduct pre-construction monitoring before initiating installation of the facility. Thereafter, post-construction monitoring, including collision detection, will be required for two years. Staff explains that the pre-construction surveys will establish a baseline for bird and bat activity in the area and, thereafter, will allow Staff and Icebreaker to fully quantify the project's impact and implement any additional modifications. (Tr. Vol. VII at 1633.)

{¶ 100} The Bratenahl Residents argue that there is insufficient information to determine the nature of the probable environmental impact and that Icebreaker's application should be denied. The Bratenahl Residents explain that Icebreaker has not determined the specific technology that will be used for pre-construction monitoring, post-

construction monitoring, and collision detections. According to the Bratenahl Residents, it is unknown if sufficient technology even exists for bird and bat monitoring of offshore-based wind facilities. The Bratenahl Residents insist that until Icebreaker can identify what technology it will use, and that technology is deemed to be adequate, the Board cannot issue the Applicant a certificate. The Residents further assert that available studies provide an incomplete description of how many birds and bats fly through the project area. Professor Henry M. Streby, Ph.D., testified on behalf of the Bratenahl Residents that the radar studies relied on by Icebreaker are not able to accurately identify the species of birds in the area or the density of birds. The radar studies are also unable to ascertain the altitude of the birds and bats. (Bratenahl Residents Ex. 23.) As argued by the Bratenahl Residents, the NEXRAD radar relied on by Icebreaker is flawed in that it does not track birds at altitudes under 114 meters, it cannot track the specific altitudes of any birds, and it only tracks groups of birds—not individual birds. The Bratenahl Residents submit it is imperative to know the flight altitude of passing birds, noting that Dr. Streby disagreed with Icebreaker’s contention that migrating birds typically fly above the height of the turbines. According to the Bratenahl Residents, until it can be determined how many birds fly through the turbines’ rotor-swept zone, the impact of the project on birds and bats is unknown.

{¶ 101} In reply, Staff points out that, prior to the filing of either stipulation, Staff determined that Icebreaker’s application satisfied R.C. 4906.10(A)(2) (Staff Ex. 1 at 31). Staff submits that collision monitoring and the post-construction radar results are not necessary to determine the probable environmental impact. Staff observes that, naturally, with all wind facilities, collision monitoring has little bearing on assessing the probable environmental impact; rather, such studies demonstrate the actual impact once the facility is operating. Similarly, Staff asserts that the pre-construction radar and post-construction radar go towards assessing the actual impact of the project on birds and bats. As Staff explains, the pre-construction radar establishes a baseline for how many birds and bats fly over the project site. Once the project is built, that initial information is compared to the post-construction radar data to analyze bird and bat attraction, avoidance, and collision

with the turbines. Thus, Staff submits that while that data is incredibly important, its purpose is to determine the actual—not probable—environmental impact and is not applicable to R.C. 4906.10(A)(2). (Staff Ex. 3 at 4.) Regarding the radar monitoring, Staff asserts that Icebreaker bears the burden of meeting the data requirements outlined in the Revised Stipulation. Although the Bratenahl Residents argue that Staff and ODNR are not qualified radar experts, Staff explains that it is primarily only reviewing the data, not the technology. Staff further states that the radar technology for the pre-construction monitoring has already been identified and what is still undetermined is whether Icebreaker will use a radar affixed to a vessel or a stationary platform. According to Staff, pursuant to the Revised Stipulation, it is Icebreaker’s responsibility to choose the method that will meet the specific, necessary data requirements. (Tr. Vol. VIII at 1771-72, 1783-84.) Staff concludes that it is not required for a specific method to be approved ahead of time as the data will either be valid or it will not.

{¶ 102} Icebreaker emphasizes that there is an abundance of information for the Board to determine the probable environmental impact. Icebreaker identifies multiple studies that have already been completed, including: a waterfowl study at the project site; bat acoustic studies on buoys at the project site; the NEXRAD radar analysis of the project site; and 42 bird fatality wind farm studies from the Great Lakes region (Icebreaker Ex. 1 at Ex. J, Icebreaker Ex. 30, Icebreaker Ex. 33). Icebreaker maintains there is ample evidence to demonstrate that the facility will have minimal impact on birds and bats. According to the Applicant, based on three years of studies, the site location is a “cold spot” in Lake Erie, where the least amount of passerines transit over the lake (Tr. Vol. III at 510). Icebreaker also contends that the typical altitude of migrating birds was shown to be higher than the project’s proposed turbines (Icebreaker Ex. 30, Attach. CEG-10). Icebreaker reiterates that the pre-construction radar monitoring is not necessary to determine the probable impact of the facility on birds and bats and further states the radar is not a predictor of risk. Instead, the Applicant agrees with Staff that the function of the pre-construction radar is to establish a baseline so that actual impacts can be determined after the facility is constructed.

{¶ 103} Initially, the Board acknowledges the extensive evidence provided in order to evaluate the nature of the probable environmental impact of the project on birds and bats. This includes the 2016 Risk Assessment, 2018 Risk Summary, the Bat Acoustic Survey, the Aerial Waterfowl Report, ODNR's 2009 Wind Turbine Placement Favorability Analysis, as well as Staff's review of mortality results from terrestrial wind energy projects in Ohio. The 2016 Risk Assessment and the 2018 Risk Summary relied on numerous studies taking place at or near the project site, including: a 2003-2007 NEXRAD analysis from ODNR; a 2017 NEXRAD analysis; a pelagic bird study completed by ODNR in 2011; a 2010 bird acoustic survey; a 2010 bat acoustic survey; a 2010 MERLIN radar study; and a 2010 boat-based radar study. Additionally, the 2016 Risk Assessment and 2018 Risk Summary also reviewed 42 land-based wind projects in the Great Lakes region.

{¶ 104} From this evidence, the nature of the probable environmental impact can be determined. We initially observe that the small scale of the project and its location offshore severely reduces any impact the facilities could have on birds and bats. By being located eight to ten miles offshore, the project would not impact habitats for nesting birds or roosting bats. Further, eagles and other raptors are concentrated near the shoreline and would not be expected to be near the project site. (Icebreaker Ex. 6, Attach. 4 at 7-8.) Therefore, compared to terrestrial wind projects, the only primary impact of the project would be on in-transit, migratory birds and bats.

{¶ 105} Staff witness Erin Hazelton expressed that migrating birds, as well as bats, would be affected by the facilities through collision, avoidance, and attraction (Staff Ex. 3 at 5-6). The common flight pattern of nocturnal migratory birds is a "broad front migration," where migrating birds cover large areas of land and do not have specific, narrow flight pathways (Icebreaker Ex. 30 at 8). Based on the 2017 NEXRAD analysis as well as in other studies, the evidence suggests that migrating birds would be expected to primarily voyage above the rotor-swept zone at the project site, although a small percentage of birds will travel within the rotor-swept zone. (Icebreaker Ex. 1, Ex. J at 24; Icebreaker Ex. 30, Attach. CEG-10). We acknowledge, as pointed out by the Bratenhal Residents, that NEXRAD has

restrictions in that the radar cannot identify individual birds and has limitations in measuring altitude (Bratenhal Residents Ex. 23 at 16). However, our assessment of bird migration patterns is informed not just by the NEXRAD analysis but also by Icebreaker witness Dr. Caleb Gordon's review of 42 terrestrial wind farms in the Great Lakes region and Staff's review of Ohio's terrestrial wind projects. A review of these other wind projects produces a consistent impact on migrating birds. As described in the 2016 Risk Assessment, the average effect of a wind farm on migrating birds was two to four collisions per MW. Dr. Gordon projected a similar impact for Icebreaker; according to the witness, the project could expect impacts of one to two collisions per MW, or 21-42 fatal bird collisions a year. (Icebreaker Ex. 1, Ex. J at 21.) No evidence was presented to suggest that an offshore wind facility would have more impacts on birds than a terrestrial facility but we recognized that the actual quantifiable impact is still unknown.³ However, some evidence demonstrated that an offshore facility may have less impact on nocturnal migrating birds than land-based wind projects (See Icebreaker Ex. 33 at 5-6, Attach. WE-3, Attach. WE-4). Similarly, regarding bats, the project's impact on bats can be evaluated by looking at terrestrial wind projects in the Great Lakes region. Here, the 2016 Risk Assessment analyzed 55 land-based projects regarding bat fatalities. Further, the Bat Acoustic Survey demonstrated that bat activity near the Icebreaker project area is significantly greater onshore than offshore. Accordingly, it is estimated that there will be 1-30 bat collisions per year. (Icebreaker Ex. 6, Attach. 4 at 21.)

{¶ 106} The Board additionally recognizes the small scale of the project, which will consist of only six turbines. The size of the project is mainly attributable to its function as a demonstration project that will provide information for future offshore wind projects. As described by USFWS, such a small project has "limited direct risk to migratory birds and bats" (Icebreaker Ex. 6, Attach. 6). Icebreaker witnesses Gordon and Erickson both testified

³ The ability to calculate and assess the actual environmental impact of the project on birds and bats, and the ability to assess the risks and craft necessary mitigation, is discussed in our consideration of R.C. 4906.10(A)(3), beginning at ¶ 148.

that of the over 100 wind projects they have assessed, because of the small size of the project, Icebreaker is expected to have the lowest impact on birds and bats (Icebreaker Ex. 30 at 5; Icebreaker Ex. 33 at 10).

{¶ 107} Largely at issue in this proceeding is the conditions agreed to in the Revised Stipulation associated with determining the nature of the environmental impact of the project on bats and birds, particularly Conditions 21 and 22. As discussed, Condition 21 requires Icebreaker to complete up to two years of pre-construction radar monitoring and produce a specific threshold of quality data before construction can begin. The Bratenahl Residents insist that the monitoring should be completed before a certificate is issued and that, without such monitoring data, the nature of the probable environmental impact cannot be determined. The Board disagrees. We explained above that the probable impact of the project on birds and bats can be evaluated by, among other things, examining similarly-situated terrestrial wind projects and analyzing radar of migrating bird flight patterns at the project site. Pursuant to R.C. 4906.10(A)(2), the Board is tasked with identifying the nature of the probable impact, not the actual impact. The Supreme Court of Ohio describes “a dynamic process that does not end with the issuance of a construction certificate.” *Buckeye Wind* at ¶ 16. Thus, R.C. 4906.10(A)(2) authorizes the Board to conditionally approve a certificate and to continue to monitor the project as it develops. Here, we determine that the pre-construction radar is not necessary in this proceeding to evaluate the project’s expected impact on bats and birds, but we affirm that it is a necessary condition in order to ensure that the project represents the minimum adverse environmental impact, as discussed below. The purpose of the pre-construction monitoring is to establish a baseline so that, after construction, the projected effects—birds and bats’ collision, attraction, and avoidance—can be quantified. While pre-construction radar will provide more details regarding the flight patterns of migrating birds and bats, particularly in the rotor swept zone, it will not provide information regarding the probable impacts to birds and bats, namely, collision, attraction, and avoidance. Rather, that knowledge has been gathered from evaluating other similar, albeit terrestrial, projects. That evidence, combined with the NEXRAD data from the project

site, allows the Board to make a determination regarding the probable impact. The function of the pre-construction radar is not to make an assessment of the probable impact but instead to ensure that any impact is minimal, in compliance with R.C. 4906.10(A)(3).

6. CONCLUSION

{¶ 108} Consistent with our determinations above, the Board finds that the nature of the probable environmental impact can be evaluated and determined. The small scope of the demonstration project and the proposed location minimize many potential effects often associated with wind generation. For example, by being located offshore, common issues such as location of nearby properties in relation to the wind turbines concerning such items as blade shear, shadow flicker, set-back requirements, and ice throw are not applicable to this project (Staff Ex. 1 at 28-30). In addition, the project's location in Lake Erie naturally limits the ecological impact on vegetation and animals. Although the turbines will be located in the lake, we found that any impacts to aquatic life is expected to be minimal. While birds and bats will be affected by the project, the offshore location limits the impact. Eagles and other raptors are not expected to frequent the project location, nor do most waterfowl venture that far away from the shoreline. Similarly, bat activity is almost ten times more frequent on the shoreline than offshore. (Icebreaker Ex. 6, Attach. 4 at 7-8, 13.) Thus, Icebreaker's main impact is expected to be on nocturnal migrating birds. By evaluating migration patterns at the project site and by reviewing terrestrial wind farms in the Great Lakes region, the probable impact can be determined. It is expected that most birds, when migrating south in the fall and north in the spring, will fly above the rotor-swept zone of the turbines (Icebreaker Ex. 30 at 9-11). Those birds flying through the rotor-swept zone will experience collision, attraction, and avoidance associated with the turbines (Staff Ex. 3 at 8).

C. *Minimum Adverse Environmental Impact*

{¶ 109} Pursuant to R.C. 4906.10(A)(3), the proposed facility must represent the minimum adverse environmental impact, considering the state of available technology and

the nature and economics of the various alternatives, along with other pertinent considerations.

{¶ 110} The Signatory Parties claim that the Application and the Revised Stipulation provide for a number of measures to ensure that the project has the minimum adverse environmental impact. Ultimately, the Signatory Parties believe that the Revised Stipulation provides a well-balanced approach to ensuring that the facility represents the minimal adverse impact to the environment, while also taking into the consideration the need for certainty with regard to the construction and operation of the project, the need to finance the project, and a reasonable and effective approach to maintaining the safeguards.

{¶ 111} However, Bratenahl Residents generally believe that Icebreaker and the other Signatory Parties have failed to provide the requisite information for the Board to make a determination as to whether the facility represents the minimum adverse environmental impact pursuant to R.C. 4906.10(A)(3). Their arguments primarily pertain to the protection of avian and bat species that may be impacted by the project.

1. AVIAN AND BAT

{¶ 112} As discussed previously, Icebreaker contends that the evidentiary record demonstrates that the project poses low risk to birds and bats, noting it encompasses a six-turbine installation, all of which are located in an area where existing studies indicate relatively low use by wildlife. In fact, Icebreaker notes that the location of the project was moved to its current location based upon ODNR's Wind Turbine Placement Favorability Analysis that assigned a lower risk category to the current project site compared to the original site located closer to the shoreline (Tr. Vol. I at 171; Tr. Vol. II at 14-22; Icebreaker Ex. 1 at Ex. H). Icebreaker reiterates that several measures have already been taken in addition to the 2016 Risk Assessment analysis, including completing extensive pre-construction monitoring with regard to waterfowl surveys and bat acoustic surveys (Icebreaker Ex. 6, Attach. 4). Moreover, as documented in the Revised Stipulation and the avian and bat monitoring plan, the Applicant notes that it is committed to rigorous

additional pre-construction bird and bat monitoring that will include bat acoustic surveys and radar surveys, which Icebreaker claims will inform the monitoring that will take place post-construction (Joint Ex. 2 at 6-8).

{¶ 113} OEC and Sierra Club also agree that the monitoring and adaptive management strategies contained in the Revised Stipulation will ensure continued monitoring and assessment of the project's impacts as it moves forward into the development phase. Despite the significantly low risk attributed to the project, as calculated by Icebreaker's consultants, OEC and Sierra Club add that the Revised Stipulation introduces significant protections to any eventual impacts that may occur during pre-construction, construction, or operational phases of the project, including the considerable monitoring and adaptive management strategies. (Joint Ex. 2 at 6-9.)

{¶ 114} Contrarily, Bratenahl Residents contend that the application contains significant flaws that prevent the Board from making a determination on whether the project represents the minimum adverse environmental impact. In fact, the Bratenahl Residents state that, even after two and a half years following Icebreaker's application filing with the Board, it has not presented any data or information regarding the number or density of birds and bats that migrate through the rotor-swept zone of the project. Bratenahl Residents argue that the application lacks actual radar data collected from the project site, which the Residents note USFWS has been requesting since 2008, to study the potential impacts of the proposed project. The U.S. Department of Energy (DOE) had similar concerns when constructing its draft Environmental Assessment, which, according to the Bratenahl Residents, reiterated the need to accurately quantify per-turbine impacts for the demonstration-level project subject to this proceeding in order to understand risk levels of larger future projects. (Bratenahl Residents Ex. 7 at 2; Bratenahl Residents Ex. 12 at 2-3; Icebreaker Ex. 1 at 90; Tr. Vol. I at 324-325.) Although the Applicant attempts to argue that birds and bats would remain close to the shoreline during migration events, Bratenahl Residents argue that the evidence shows hundreds of thousands, if not millions, of birds and bats migrate over Lake Erie every year, demonstrating the need for a robust radar study

(Staff Ex. 1 at 24; Staff Ex. 3 at 8). In fact, in the draft Environmental Assessment, while acknowledging birds and bats remain close to the shoreline during dawn and daytime when they land to rest, the Bratenahl Residents claim that the DOE agreed with Staff's assessment, noting that migrants commonly cross Lake Erie during the actual nocturnal migration (Bratenahl Residents Ex. 12 at 3). Finally, Bratenahl Residents conclude that the underlying circumstances have not changed since Staff initially found that conditions in the Initial Stipulation were not in the public interest regarding the protection of wildlife and that the project did not represent the minimal adverse environmental impact. Icebreaker still has not identified a suitable technology to monitor bird and bat activity at the project site or to detect bird and bat collisions or encounters with state or federally listed endangered or threatened species (Staff Ex. 1 at 32-33; Staff Ex. 3 at 12). Additionally, the Bratenahl Residents note that Staff's agreement to become a signatory party to the Revised Stipulation constitutes unreasonable concessions from its original stance in this proceeding, especially in regard to the extent of feathering that may be required at ODNR and Staff's request and the fact that ODNR and Staff allegedly lack the expertise to determine whether the eventual radar and collision monitoring technologies comply with the conditions proposed in the Revised Stipulation (Icebreaker Ex. 57 at 3; Tr. Vol. VIII at 1747-1748, 1776, 1786, 1779-1780).

{¶ 115} In response, Icebreaker argues the Revised Stipulation contains modified conditions in order to enhance the previously proposed requirements expected from the Applicant, which acknowledge the unique location of the project approximately eight to ten miles off the shore of Lake Erie, as well as the fact that the application is limited to a small demonstration project, and further ensure the project will represent the minimum adverse environmental impact. Further, Icebreaker notes that the Board's standard for considering certification applications does not require that the project represent zero impacts. Rather, Icebreaker argues the statute requires the Board to determine all measures have been taken to ensure the minimum adverse environmental impact "considering the state of available technology and the nature of economics of various alternatives, and other pertinent considerations." R.C. 4906.10(A)(3). In fact, Icebreaker argues that ODNR has even

conceded it is unreasonable to expect wind turbines in Ohio to have no impact on wildlife (Icebreaker Ex. 40 at 13). Given the extensive modifications to the Initial Stipulation, which primarily address Staff's initial concerns with the project, Icebreaker argues that Staff was justified to signal its support of the Revised Stipulation.

{¶ 116} Staff also disagrees with Bratenahl Residents' argument that Staff unreasonably shifted its position to one of support. Staff initially asserts that its position has always been one of support of the project going forward; however, it was essential for Staff to advocate for adequate measures to be in place in order for the project to represent the minimum adverse environmental impact. Such an effort has been continuously ongoing since Icebreaker filed its application and Staff avers the significant modifications to certain safeguards adopted in the Revised Stipulation allowed Staff to find that the conditions outlined in the Revised Stipulation will make certain that the project represents the minimum adverse environmental impact. As such, contrary to the Bratenahl Residents' arguments, Staff opines that it did not oppose the project in 2018; rather, Staff argues that after the initial hearing conducted in 2018, the parties to this proceeding engaged in extensive additional negotiations resulting in substantially greater protection to Ohio's avian and bat wildlife. (Joint Ex. 1; Joint Ex. 2; Staff Ex. 1 at 13-52; Staff Ex. 3 at 6-16; Staff Ex. 13 at 6-7; Staff Ex. 14 at 2-13.) Due to the significant changes, and the fact that these safeguards, among others, were not present in the Initial Stipulation, Staff was able to support the Revised Stipulation and concluded that, as a package, the Revised Stipulation represents the minimum adverse environmental impact (Staff Ex. 14 at 2-13).

2. AVIAN AND BAT MOU AND AVIAN AND BAT IMPACT MITIGATION PLAN

{¶ 117} Icebreaker contends that the additional commitment of adhering to the Avian and Bat MOU and associated plans, and the additional protections provided through the Revised Stipulation requirements, namely Conditions 15, 18, 21, and 23, will ensure the project complies with the minimum adverse environmental impact statutory requirement. Icebreaker first acknowledges that this case is atypical having an MOU for monitoring birds and bats submitted with an application, adding that past wind energy projects certificated

by the Board have not been required to submit a post-construction monitoring protocol or bird and bat conservation strategy⁴ until after receipt of the certificate but before the facility commences operation. See, e.g., *In re Application of Paulding Wind Farm IV, LLC*, Case No. 18-91-EL-BGN, Opinion, Order, and Certificate (Feb. 21, 2019). However, in an effort to proactively coordinate its efforts with ODNR and USFWS on adaptive management and mitigation measures, Icebreaker states that it provided a draft bird and bat conservation strategy to ODNR and Staff prior to commencement of the hearings in this matter (Icebreaker Ex. 31 at 19). In fact, as a result of the second round of negotiations, the Signatory Parties aver that, at least 120 days prior to commencement of construction, Icebreaker will submit a final avian and bat impact mitigation plan to ODNR and Staff (Joint Ex. 2 at 6). Furthermore, Icebreaker acknowledges that the Avian and Bat MOU addresses pre-, during, and post-construction monitoring studies and analyses of the project's impact on birds and bats. According to Icebreaker, the avian and bat monitoring plan, which is attached to the Avian and Bat MOU, is meant to "assess, in a scientifically rigorous manner, any impacts that project construction and operation may have on avian and bat resources * * *." (Icebreaker Ex. 3 at Ex. A⁵; Icebreaker Ex. 6 at 3; Icebreaker Ex. 31 at 10.) Not only does the avian and bat monitoring plan provide significant protections to mitigate risk for birds and bats, Icebreaker contends it is designed in a way to adapt to take advantage of advancing technologies for detecting collisions and ensure the protocol can be modified subject to ODNR's approval, as necessary (Icebreaker Ex. 31 at 18; Joint. Ex. 2 at 5). Further, as noted by Icebreaker, the avian and bat impact mitigation plan will be submitted to ODNR, who will be charged with ensuring that its implementation will be effective in avoiding significant impacts to avian and bat species and confirming the Applicant's compliance with Condition 18 of the Revised Stipulation. Additionally, Icebreaker notes that the avian and bat impact mitigation plan will incorporate the most current survey results, the post-

⁴ The Signatory Parties to the Revised Stipulation agreed that the plan will be titled the avian and bat impact mitigation plan, rather than a bird and bat conservation strategy.

⁵ As noted in Icebreaker's initial post-hearing brief, the Aerial and Waterfowl Surveys section on pages 9 and 10 of Ex. A, the avian and bat monitoring plan, was replaced and superseded by Icebreaker Exhibit 5, the Aerial and Waterfowl & Waterbird Study Plan dated August 8, 2017.

construction avian and bat monitoring plan, and will include a collision monitoring plan, which will include a description of the collision monitoring technology selected by Icebreaker, in consultation with ODNR and Staff, as well as the results of lab and field testing of the collision detection technology that will demonstrate the technology's effectiveness and accuracy. (Staff Ex. 14 at 3.)

{¶ 118} OEC, Sierra Club, and Staff agree that Condition 15 of the Revised Stipulation, which requires Icebreaker to comply with all terms included in the Avian and Bat MOU, is of paramount importance in determining the minimum adverse environmental impact (Icebreaker Ex. 38). According to these signatory parties, the Avian and Bat MOU incorporates the pre- and post-construction protocols, consisting of aerial waterfowl surveys, bat acoustic monitoring surveys, and radar monitoring surveys for pre- and post-construction, as well as post-construction collision monitoring requirements (Icebreaker Ex. 3).

{¶ 119} OEC, Sierra Club, and Staff also note that the USFWS will have an opportunity to provide feedback on the impact mitigation plan, which will, again, ultimately need to be approved by ODNR prior to construction. (Joint Ex. 2 at 6; Staff Ex. 14 at 3-4.) Further, OEC and Sierra Club state that Icebreaker is required to comply with all of the terms of the Avian and Bat MOU, including the attached monitoring plans and any other protocols or documents resulting from the Avian and Bat MOU (Joint Ex. 2 at 10). Furthermore, OEC and Sierra Club contend that the avian and bat impact mitigation plan includes avoidance and mitigation measures, adaptive management, strategies, reporting requirements, and will be carried out collaboratively with ODNR and Staff (Joint Ex. 2 at 6). Staff adds that Icebreaker has agreed to comply with a "comprehensive adaptive management plan," which includes coordinating with ODNR and USFWS to discuss and implement adaptive management methods "that can be employed to further avoid, minimize and mitigate any unforeseen impacts that the project is having on bird and bat species." (Icebreaker Ex. 38, avian and bat monitoring plan at 12-13). Similarly, Staff claims that Icebreaker's avian and bat impact mitigation plan also provides for ODNR oversight in

order to determine whether additional measures are appropriate (Icebreaker Ex. 57 at 3; Staff Ex. 14 at 12).

3. RADAR MONITORING PROGRAM

{¶ 120} Icebreaker explains that the conditions regarding the radar monitoring program will ensure that the project represents the minimum adverse environmental impact, even when considering the unique nature of the project and the risks it poses to surrounding wildlife. Specifically, Icebreaker asserts that the Revised Stipulation directs that radar surveys will be conducted for at least one spring, one summer, and one fall bird and bat migratory season prior to construction (Icebreaker Ex. 31 at 16; Joint Ex. 2 at 7-8). Additionally, Icebreaker notes that the radar monitoring program must also be able to produce viable data 75 percent or greater of the hours of the survey time, with the 75 percent calculation including all potential scenarios, including force majeure events (i.e., heavy precipitation and high seas). Furthermore, Icebreaker states it will be required to submit monitoring reports to ODNR and Staff to demonstrate how this threshold criteria is met and, if the condition is met, ODNR will confirm compliance with the condition in writing. Additionally, Icebreaker notes that, prior to construction, it must demonstrate that the requirements of the radar monitoring program can be met, which at that point ODNR and Staff will review the information to determine compliance with the condition before construction of the project can commence. (Joint Ex. 2 at 7-8.)

{¶ 121} According to Icebreaker, the record in this case also supports the use of either vessel-based radar (VBR) or a fixed platform for the pre-construction monitoring protocol (Staff Ex. 1 at 23-24; Tr. Vol. VIII at 1788). A report authored by Dr. Robert Diehl, a research ecologist with the U.S. Geological Service (USGS), in December 2017 (Diehl Report) analyzed the viability of pre-construction radar from a vessel (Icebreaker Ex. 6, Attach. 5). The radar system intended for use in this project and recommended in the Diehl Report, the Accipiter NM1-24D Avian Radar system, is a fully-automated system that would collect, store, and transmit data to an offsite location and can be used on a VBR setting or fixed platform (Icebreaker Ex. 32 at 6-8). The radar deployed will track directional

movement and altitude of individual 10-gram and larger vertebrates (Bratenahl Residents Ex. 14 at 2). With over 20 years of radar experience studying nocturnal migration, Icebreaker witness Todd Mabee testified that Accipiter is a viable choice for this radar study, as it allows tracking of migrants in 3-D and has a narrow beam that helps minimize issues such as sea clutter. Icebreaker further notes that, if the vessel is required to go to port temporarily, data can be collected from the NEXRAD station in Cleveland as a supplementary source of information as it collects regional weather radar data, including within the project area (Icebreaker Ex. 32 at 6-8). Icebreaker witness Wallace Erickson also testified that the 75 percent criteria for usable data and the extended sampling period found in Condition 21 of the Revised Stipulation “will result in a large and more than sufficient dataset for which to characterize migration and target passage rates.” (Icebreaker Ex. 59 at 2). The additional use of NEXRAD data, as provided in Condition 21 of the Revised Stipulation, “to evaluate the migration intensity on nights of force majeure events will provide a reasonable assessment of whether the missing radar data is an unusual night that could bias the overall results,” which Icebreaker alleges is consistent with the recommendations of Dr. Diehl (Icebreaker Ex. 37 at 9). Regardless, according to Mr. Mabee, migration rates on nights of heavy precipitation are generally low so it is not anticipated that major migration events will coincide with time periods when radar is not producing viable data; however, NEXRAD data will be used to verify the migratory intensity during these time periods (Icebreaker Ex. 59 at 2; Tr. Vol. IV at 894-896).

{¶ 122} Staff, OEC, and Sierra Club also argue that Condition 21 will have a similar effect to ensure the minimum adverse environmental impact, quantifying the collision risk by requiring a 75 percent minimum data threshold requirement for the radar monitoring survey period (Staff Ex. 14 at 6-10). These parties emphasize that Icebreaker will be required to engage in onsite pre- and post-construction radar monitoring, which will indicate how the project area is being used by birds and bats (Joint Ex. 2 at 7-8; Icebreaker Ex. 38, Attach. A at 11; Staff Ex. 14 at 11-12). Staff further notes that neither VBR nor a fixed platform for radar monitoring were dictated to be used under the circumstances by any state or federal

agency, and, in fact, the Revised Stipulation allows Icebreaker to select which type of radar system to utilize (Tr. Vol. II at 462, 1630; Joint Ex. 2 at 7-8). While Staff originally recommended an 80 percent threshold requirement, due in part to the recommendations of Dr. Diehl, Staff later adjusted the viable data requirement after considering the potential impacts of removing the barge from the data collection site for safety and maintenance reasons. According to Icebreaker, these type of scenarios were not considered by Dr. Diehl, or by the USFWS, when they recommended the 80 percent threshold. (Icebreaker Ex. 37; Joint Ex. 2 at 7-8; Staff Ex. 2; Staff Ex. 14 at 7, Attach. 1; Tr. Vol. V at 1102-1103; Tr. Vol. VII at 1667.)

{¶ 123} Although Staff, OEC, and Sierra Club concede that the barge will be required to be removed at certain intervals throughout the data collection periods for safety-related reasons, these parties also note that Revised Stipulation 21(c) provides that data from the land-based NEXRAD radar based in Cleveland will be submitted during these periods, allowing the on-site radar data to be supplemented in order to provide a more robust analysis of wildlife activity at the project site. Staff also points out that this NEXRAD supplemental data cannot be used to satisfy any portion of the 75 percent minimum requirement for viable, on-site data. (Joint Ex. 2 at 7-8; Staff Ex. 14 at 8.)

{¶ 124} Staff further notes that the radar monitoring data collection period, encompassing the entire period from April 1 through November 15, is significantly longer than the recommended radar monitoring periods required for Ohio's terrestrial wind energy facilities, which covers five nights per week from April 15 through May 31 and from August 15 through October 31 (Joint Ex. 2 at 7-8; Icebreaker Ex. 40 at 8). Again, Staff contends this designated period covers the spring and fall migration seasons, as well as the summer residency period, which are identified as the time periods where birds and bats may be the most vulnerable to the project (Joint Ex. 2 at 7-8). Importantly, Staff argues that the 75 percent threshold also specifies that this requirement be calculated "without downtime bias with respect to biological periods," eliminating the possibility of situations where the data is unrepresentative of distinct biological periods (Tr. Vol. VIII at 1799-1800).

Furthermore, Staff acknowledges the requirement that Icebreaker conduct two seasons of post-construction radar monitoring in order to characterize the distribution and density of birds and bats and to ultimately determine if there are any underlying avoidance or attraction effects for birds or bats (Staff Ex. 3 at 11-12). Icebreaker witness Gordon explains that one impact in the post-construction monitoring that will be crucial to determine is whether birds will attempt to use the turbines as a perch to rest during their transit across Lake Erie (Tr. Vol. II at 485-486). While Revised Stipulation Condition 21(g) allows for a waiver of the second season of post-construction radar monitoring in ODNR's sole discretion, Staff witness Hazelton testified that Icebreaker will likely be required to conduct two years of post-construction radar monitoring, given the lofty parameters to qualify for a waiver of the second season (Staff Ex. 14 at 9; Joint Ex. 2 at 8). Furthermore, Staff notes the waiver language is consistent with ODNR's regulatory approach for terrestrial wind energy projects (Staff Ex. 14 at 9, Attach. 2).

{¶ 125} The Bratenahl Residents dispute Icebreaker's argument that there is no correlation between the number or density of birds and bats that migrate through the rotor-swept zone of its turbines and the level of mortality risk (Tr. Vol. IV at 847-848). Citing to earlier Staff testimony and various exhibits, the Bratenahl Residents contend that this type of information provides an accurate assessment on the level of collision risk faced by birds and bats, consistent with Icebreaker witness Mabee's prior radar studies cited in his testimony. However, the Bratenahl Residents continue to argue that Icebreaker has failed to provide this necessary information and, thus, cannot ensure the project represents the minimum adverse environmental impact. (Tr. Vol. VII at 1694; Icebreaker Ex. 32 at Attach. TJM-1; Staff Ex. 3 at 6; Bratenahl Residents Ex. 9 at 6; Tr. Vol. IV at 850-851.)

{¶ 126} Similarly, Bratenahl Residents also contend that Icebreaker has not yet identified the technology or methodology by which it will attempt to determine the number or density of birds and bats that migrate through the project area (Tr. Vol. VIII at 1768). However, the Bratenahl Residents note that Icebreaker appears to have decided to place its radar unit on a floating platform, despite concerns voiced by Staff and other experts

regarding the complexities of placing the unit on a moving platform, which, according to Bratenahl Residents, will likely introduce errors into the radar data. Specifically, the Bratenahl Residents point to Staff witness Hazelton's testimony where she explained that it is still unclear as to whether a moving platform would be able to meet all of the criteria set out in Revised Stipulation Condition 21. (Tr. Vol. VIII at 1771, 1774-1776; Joint Ex. 2 at 7-8; Staff Ex. 1 at 23-24; Staff Ex. 3 at 8.) While Staff directed the Applicant to provide supplemental information regarding the viability and design of the of the pre- and post-construction radar monitoring protocol, Bratenahl Residents claim the report submitted in response fails to satisfy Staff's request. Entry (Oct. 23, 2017) at 2. The submitted report contains Dr. Diehl's evaluation of three vendors' proposals submitted in response to Icebreaker's request for information, all of which identified deficiencies with each proposal. Not only did Icebreaker fail to satisfy Staff's request by not providing which avian radar system was to be used, Bratenahl Residents contend that Dr. Diehl was limited in his evaluation of vendors' software capabilities, given that this information was typically considered trade secret. Additionally, Dr. Diehl, recognizing that all of the vendors proposed a form of VBR, rather than a fixed platform, acknowledged that his evaluation did not consider an analysis of the costs and benefits of adopting either approach over the other. (Icebreaker Ex. 37 at 1-3, 9-10.) Additionally, Bratenahl Residents explain that, despite Dr. Diehl identifying the proposal submitted by Vendor A, Accipiter, as the most likely to succeed, Dr. Diehl had several issues with the proposal, including the fact that he questioned the vendor's ability to track targets in an offshore setting where sea clutter will likely pose a persistent problem that is magnified by a rolling and pitching barge or whether the vendor would be able to implement the proposed strategy in the near term (Icebreaker Ex. 37 at 1-2, 28). Bratenahl Residents also note that Staff agreed with Dr. Diehl's assessment, stating in its report that "radar monitoring and collision monitoring are still in development" and finding that Dr. Diehl did not confirm definitively that any of the submitted proposals would actually be successful (Staff Ex. 1 at 22-23). Given Staff's concerns regarding the viability of the proposed strategy, Bratenahl Residents argue that Staff suggested several recommended conditions in the Staff Report; however, Staff ultimately concluded that it

was unclear if a moving platform would be able to satisfy the criteria and, thus, added that if the pre-construction radar data did not meet the suggested criteria, construction should not be allowed to commence until these requirements are met. Even during cross-examination, the Bratenahl Residents contend that Icebreaker's own witnesses could not definitively state whether the moving platform would provide useful data or if such data would be just as useful as that collected from a fixed platform. (Staff Ex. 1 at 23-24; Tr. Vol. II at 228-229, 235, 244; Tr. Vol. IV at 768, 820; Tr. Vol. VII at 1631; Tr. Vol. VIII at 1748, 1769-1771, 177-1776.)

{¶ 127} Finally, Bratenahl Residents claim that the only independent avian radar expert who has testified in this case, former USFWS scientist Dr. Jeffrey Gosse, testified that Icebreaker has not presented any scientifically valid data or identified validated methodologies for the Board to make findings and ultimate determination if the project represents the minimum adverse environmental impact (Bratenahl Residents Ex. 24 at 4). Dr. Gosse specifically provided that Revised Stipulation Conditions 15 and 18 will not ensure the minimum adverse environmental impact given the fact that no specific technology has been chosen for pre- or post-construction radar monitoring or post-construction collision monitoring, let alone validated through testing and presented to the Board for approval. In response to Revised Stipulation Condition 20, Bratenahl Residents similarly argue, as noted by Dr. Gosse, that Icebreaker has not explained how it will detect whether state or federal listed endangered or threatened species encounter the project or how the condition will be enforced. (Bratenahl Residents Ex. 24 at 5.) Bratenahl Residents again emphasize that Staff was unable to definitely determine the project represents the minimum adverse environmental impact without adopting its recommended conditions proposed in the Staff Report, given the fact that no pre-construction avian radar data from the project site or designated radar or collision monitoring technologies were included with the application, adding that information has yet to be provided in this proceeding (Staff Ex. 3 at 6-16).

{¶ 128} Bratenahl Residents witness Dr. Henry Streby, an assistant professor of Ecology at the University of Toledo, agreed with Staff's original findings in the Staff Report, concluding that adequate pre-construction monitoring of avian activity in the project area had not been completed, rendering it impossible for the Board to determine that the project represents the minimum adverse environmental impact. Moreover, Dr. Streby found that, given the known great densities and volumes of birds that pass over Lake Erie during migration, the project will negatively impact birds, precluding the project from representing the minimum adverse environmental impact on nocturnal migratory birds. Further, Dr. Streby testified that no scientifically reliable conclusions can be drawn about the potential impacts to birds and bats that may use the project area, until pre-construction data is collected for, at least, two years using modern avian radar systems on fixed platforms at the project site and a comparable control location. (Bratenahl Residents Ex. 23 at 2.) The Bratenahl Residents also claim that Dr. Streby raised several issues with Icebreaker's underlying analysis, including the fact that the risk of mortality, disturbance, or displacement of birds during migration periods cannot be assessed if the number and density of birds passing through the project area has not been determined. Further, Dr. Streby noted that it was "factually inaccurate" for Icebreaker to assert that very few birds fly below a certain meter threshold or, generally, that there is low risk to migrating birds and bats, given the fact that the NEXRAD data relied upon by Icebreaker to make this assessment does not measure altitude and does not include birds flying at an altitude of less than 114 meters. Moreover, according to Icebreaker witness Rhett Good, Bratenahl Residents argue that NEXRAD can only track the flight of a large group of birds, rather than individual birds. Bratenahl Residents stress that the concern regarding insufficient data is focused on the fact that Icebreaker is unaware of the number of birds or bats that may fly through the project's rotor-swept zone during migration periods. (Bratenahl Residents Ex. 23, Attach. at 5-6; Tr. Vol. II at 317, 324-325, 331, 406; Tr. Vol. III at 581; Tr. Vol. IV at 861, 940; Tr. Vol. V at 1083-1084; Tr. Vol. VI at 1472, 1501-1502). In fact, Bratenahl Residents contend that Icebreaker witnesses Gordon and Erickson even acknowledged in their report entitled "Summary of Risks to Birds and Bats" that there is a "great deal of uncertainty regarding

the potential for offshore wind energy to create adverse impacts on birds and bats,” primarily driven by the fact that this project is novel in nature and the inherent difficulties in collecting data regarding risks and impacts to surrounding wildlife in an offshore setting (Bratenahl Residents Ex. 9 at 1; Tr. Vol. II at 351). Without deploying a verifiable radar system to collect pre-construction or post-construction monitoring data, Bratenahl Residents assert the Board is unable to quantify the environmental risk the project poses to these species, let alone verify that sufficient measures are in place to ensure the minimum adverse environmental impact (Staff Ex. 3 at 6; Tr. Vol. II at 485; Tr. Vol. VIII at 1768; Icebreaker Ex. 30 at 4).

{¶ 129} In response, Icebreaker initially stresses the numerous studies and analyses conducted for the project, which provide the certainty needed to determine the risk and probable impact of the facility to migrating birds and bats. Moreover, according to Icebreaker, the Revised Stipulation sets forth specific radar monitoring programs the Applicant must adhere to in order to verify the number and density of birds and bats that migrate through the project area, many of which adopted Staff’s initial recommendations (Staff Ex. 1 at 48). The Applicant further notes that drafts of the avian and bat impact mitigation plan and the radar monitoring protocol have already been filed as part of the record in this case, in addition to the Avian and Bat MOU and the avian and bat monitoring plan (Icebreaker Ex. 32, Attach. TJM-2). Also, in response to concerns of utilizing VBR, Icebreaker contends that even Dr. Diehl recognized that there is precedent for radar-based scientific data collection on floating platforms at sea, emphasizing the use of marine radars that have been used to collect such data (Icebreaker Ex. 37 at 9, 16; Tr. Vol. IV at 758). Additionally, Icebreaker acknowledges that, regardless if a fixed platform or VBR is ultimately utilized, the Revised Stipulation imposes strict radar monitoring requirements which the Applicant must meet in order to proceed with construction, including the need to “suppress false detections from insect, wave clutter, and weather without downtime bias with respect to biological periods producing viable data 75 percent or greater of the hours of survey” (Joint Ex. 2 at 7; Tr. Vol. IV at 866-867). Icebreaker disputes that Staff required

more information in order to determine the probable environmental impact when it filed its motion to supplement on October 23, 2017; rather, Icebreaker claims ODNR, USFWS, and the Applicant retained Dr. Diehl as an objective third party radar expert in order to determine “whether collection of pre-construction radar data at the project site on a vessel is feasible and will achieve the study objectives * * *.” (Icebreaker Ex. 3, Avian and Bat MOU, Ex. A at 11; Icebreaker Ex. 38). As such, Icebreaker contends Staff was merely requesting additional information on VBR as a potential use for pre-construction radar monitoring baseline studies, as cited in the avian and bat monitoring plan. Rather than conclusively determine that VBR was not a viable solution for such radar data collection, Icebreaker claims that Dr. Diehl ultimately found that Accipiter’s approach was the most likely to succeed, and then proceeded to offer suggestions that might improve upon Accipiter’s chances for collecting viable data. (Icebreaker Ex. 37 at 24; Icebreaker Ex. 38; Tr. Vol. III at 678.) As confirmed by Icebreaker witness Mabee, Dr. Diehl’s suggestions were communicated to the vendor, which then agreed to incorporate them into its proposal (Tr. Vol. IV at 924-925). Moreover, despite reservations over whether VBR will be able to satisfy the radar monitoring criteria set forth in the Revised Stipulation, Mr. Mabee, whom Icebreaker asserts is the only radar expert to testify in this proceeding, stated that the VBR monitoring protocol is likely to produce sufficient data to meet the study’s objectives (Tr. Vol. IV at 884-885). Moreover, Mr. Mabee also testified that the original Staff recommended 80 percent data threshold is not necessary to obtain sufficient data to characterize migration, as well as avoidance and attraction effects, emphasizing that he has published studies in peer-reviewed publications with much less data and that the USFWS has even published studies using as little as 67 percent viable data (Tr. Vol. IV at 892; Tr. Vol. V at 1050-1051; Icebreaker Ex. 32, Attach. 7). Notably, Icebreaker points out that Revised Stipulation Condition 22 requires that, prior to construction, Icebreaker will have to demonstrate that the requirements for radar monitoring set forth in Revised Stipulation Condition 21 have been satisfied for at least one spring, summer, and fall migration season (Joint Ex. 2 at 7-8).

{¶ 130} OEC and Sierra Club agree that, despite not identifying the precise technologies to be used for its radar and collision monitoring activities, the Signatory Parties have clear expectations for what is going to be required for the radar monitoring program, specifically ensuring the type of pre-construction collection will be sufficient to provide data comparable to the monitoring done during construction and after the project is operational (Joint Ex. 2 at 7-8). Further, to reiterate the points made by Staff, OEC and Sierra Club agree that Staff's previous concerns were addressed by the revisions made to Revised Stipulation Condition 21, which dictates the 75 percent viable data target and extends the radar data collection period by a month and a half, further assisting Staff and ODNR's understanding of bird and bat activity in the summer months (Staff Ex. 14 at 7-8, 10). These strict parameters regarding what type of technology and the data to be collected, according to OEC and Sierra Club, act as prerequisites to be permitted to move forward with the project (Tr. Vol. VIII at 1771).

4. COLLISION-MONITORING PLAN

{¶ 131} Pursuant to Revised Stipulation Condition 18, Icebreaker states this collision monitoring technology will be installed and fully functioning when the turbines commence operation (Joint Ex. 2 at 6). Notably, Icebreaker mentions that it has committed to include specific language regarding: the process for responding to significant mortality events within the avian and bat impact mitigation plan; and the ability for Staff to require feathering, either partially or completely if, once operational, the collision monitoring technology is not working as set forth in the collision monitoring plan (Icebreaker Ex. 57).

{¶ 132} Despite not choosing any particular collision detection technology at this time, the Applicant avers it has reviewed several collision detection technologies, including: the MUSE system, WTBird system, ThermalTracker and Virtual Bird/Bat Net, and the B-finder system. Icebreaker witness Rhett Good testified that advances in the use of camera technology provide an opportunity to utilize high definition cameras and advanced machine learning to reliably detect and identify bird and bat flights and collisions. In addition, Mr. Good stated that high definition cameras have been successfully used to study

the behavioral responses of birds and bats to wind turbines and to document collisions. According to Mr. Good, Icebreaker and its contractor, WEST, are working to improve the WTBird system, which has been successfully deployed at offshore wind projects to detect large birds, but requires additional modifications in order to be validated for the detection of small bird and bat collisions, as well as acoustic detectors to obtain additional information on species occurrence. (Icebreaker Ex. 31 at 16-17.) Icebreaker states that it has reserved any determination on the collision detection technology in order to take advantage of any developmental and technical improvements that may occur between now and the start of construction. At any rate, once the collision monitoring technology is selected, Icebreaker avers it will have to be demonstrated to ODNR through lab and field tests that it is effective in detecting collisions prior to the commencement of construction (Joint Ex. 2 at 6).

{¶ 133} Given the unique nature of this project and the fact it would be the first offshore freshwater wind energy generation facility in Ohio or North America, OEC, Sierra Club, and Staff note that many well-established methods for monitoring wildlife impacts will not be feasible solutions. For instance, these parties note that ODNR's land-based wind energy facility protocols require standardized carcass searches under the turbines in order to determine the extent of bird and bat mortalities. (Icebreaker Ex. 40; Staff Ex. 14 at 3, 9, Attach. 2 at Exhibit A.) As the parties note that is unlikely that many carcasses will be recoverable in Lake Erie, they agree with Icebreaker that additional methods should be implemented to monitor potential impacts in the offshore setting (Staff Ex. 14 at 9; Icebreaker Ex. 38). It is for this particular reason that OEC, Sierra Club, and Staff argue Revised Stipulation Condition 18 is so vital to the project being approved. As required by that condition, the parties state that Icebreaker will produce an avian and bat impact mitigation plan that will include a post-construction monitoring plan and collision monitoring plan detailing proven methods for accurately determining the number of bird and bat collisions with the six proposed wind turbines.

{¶ 134} According to Icebreaker witness Rhett Good, the post-construction monitoring contemplated in the Revised Stipulation will be the primary way to understand

what impacts the facility is having on wildlife. While Icebreaker has not selected the type of collision monitoring technology to be utilized for the project to date, the Signatory Parties aver that the eventual technology will be determined through continued consultation with wildlife agencies, experts, and other stakeholders, and will incorporate the most innovative and logistically feasible technologies available at the time of selection. (Icebreaker Ex. 31 at 18; Icebreaker Ex. 38, Attach. A at 12; Tr. Vol. III at 638.) Like many of the requirements set forth in the Revised Stipulation, Staff witness Hazelton testified that the collision monitoring technology will be subject to ODNR approval prior to construction, as well as a sufficiency demonstration to include field and laboratory testing (Joint Ex. 2 at 6; Staff Ex. 14 at 3). Additionally, Ms. Hazelton noted in her testimony that the collision monitoring technology must be installed and fully functioning prior to Icebreaker commencing operation, and will be subject to subsequent audit by ODNR or an identified third-party consultant (Joint Ex. 2 at 6; Staff Ex. 14 at 4).

{¶ 135} Once the facility is operational, Icebreaker, OEC, Sierra Club, and Staff opine that, in the event the collision monitoring technology does not operate as intended, the Revised Stipulation affords additional protections to ensure the risk of bird and bat mortalities remains low through Condition 23, which requires the Applicant to immediately report a significant mortality event to ODNR. A significant mortality event is defined as “21 or more detected collisions at the facility within a 24-hour period based on a facility-wide detection probability of 59%.” (Joint Ex. 2 at 9). Mr. Erickson affirmed that the threshold of 21 or more detected collisions at the facility within a 24-hour period, based on a facility-wide detection probability of 59 percent “is very low and conservative number for defining a significant mortality event when considering mortality events at tall structures or mortality sources and the fact that it includes both birds and bats.” (Icebreaker Ex. 59 at 3). Staff witness Hazelton also acknowledges that the exact number of collisions to trigger this condition may be adjusted based on the efficiency of Icebreaker’s chosen collision detection technology (Joint Ex. 2 at 9; Staff Ex. 14 at 11). If a significant mortality event occurs, Icebreaker notes Revised Stipulation Condition 23 requires the Applicant to modify its

operation activities that could adversely affect the identified animals to minimize impact as described in the avian and bat impact mitigation plan within 24 hours and follow the process for significant mortality events in the avian and bat impact mitigation plan. In order to further minimize any potential impact, if a significant mortality event reoccurs, ODNR may require Icebreaker to submit a revised adaptive management strategy for the avian and bat impact mitigation plan. (Joint Ex. 2 at 9.) In addition, Icebreaker and Staff assert further protection is afforded by the collision monitoring plan in the event the collision detection technology does not operate as anticipated, providing that “ODNR and Staff may require turbines be feathered, either partially or completely, until the technology has been demonstrated to work as set forth in the collision monitoring plan,” and, if required, would be limited to nighttime hours and only be applicable during the spring, summer, and fall migration periods (March 1 through January 1) (Icebreaker Ex. 57). Staff also acknowledges that less restrictive feathering may be required, based on the circumstances and subject to ODNR and Staff’s discretion. (Icebreaker Ex. 57 at 3; Staff Ex. 14 at 4-6.) Staff witness Hazelton explained in her testimony that the selected timeframe for potential feathering represents the critical time that Staff believes is the most heightened risk for avian and bat species’ migration tendencies and summer residency that may overlap with the project area (Staff Ex. 14 at 10-13; Tr. Vol. II at 1702-1704). However, Icebreaker states that the Revised Stipulation also requires it to verify the effectiveness of the chosen collision monitoring technology prior to commencement of construction (Joint Ex. 2 at 6).

{¶ 136} Staff, OEC, and Sierra Club agree that Revised Stipulation Condition 23 will help ensure the minimum adverse environmental impact to wildlife by requiring specific mitigation measures to be implemented when a significant mortality event occurs (Joint Ex. 2 at 9; Staff Ex. 14 at 10). Ms. Hazelton testified that Condition 23 provides certain deliverables and requires a specific, actionable process to promptly alleviate any significant adverse impacts to the bird or bat populations, which Ms. Hazelton identifies as the species most vulnerable in the project site (Staff Ex. 3 at 5-6; Staff Ex. 14 at 12-13). If a significant mortality event occurs, Staff contends that Icebreaker will be required to take prescribed

steps, including immediately modifying its operations to minimize the risk, notifying ODNR about the occurrence of the event, and complying with its ODNR-approved impact mitigation plan (Joint Ex. 2 at 9; Icebreaker Ex. 57 at 2-3; Staff Ex. 14 at 12).. Even if the significant mortality event recurs, Staff argues that the Revised Stipulation continues to ensure avian and bat species are protected by affording ODNR the authority to require the Applicant to submit a revised adaptive management strategy as a revision of the impact mitigation plan, which is subject to ODNR's final written acceptance (Joint Ex. 2 at 9). With these requirements in mind, Staff contends Revised Stipulation Condition 23, in conjunction with the final, approved impact mitigation plan, represents a collaborative approach that represents a timely response to any unanticipated elevated mortality events (Staff Ex. 14 at 12-13). Given the novel nature of the project, the precise extent of the impacts the project could have to birds and bats is unknown; however, Staff opines that this condition will help ensure wildlife is appropriately protected, by requiring timely and collaborative efforts between Icebreaker, ODNR, and Staff to sufficiently respond to significant mortality events (Staff Ex. 3 at 5-6; Staff Ex. 14 at 12-13).

{¶ 137} Despite assertions from the Signatory Parties, Bratenahl Residents stress that Icebreaker has not yet identified the technology or methodology by which it will attempt to determine the number of fatalities to birds and bats resulting from collisions (Tr. Vol. II at 272, 437; Tr. Vol. III at 622; Tr. Vol. IV at 919). In fact, Bratenahl Residents argue that Staff witness Hazelton admitted there are currently no proven post-construction collision technologies or methodologies available for offshore wind projects (Staff Ex. 1 at 24; Tr. Vol. VIII at 1775). Moreover, while Icebreaker notes it is still considering multiple collision monitoring technologies, the Bratenahl Residents contend that these technologies are in the early steps of validation and that a proven collision detection technology for wind turbines in an offshore setting does not exist at this time (Tr. Vol. III at 638, 668-670, 728-730; Tr. Vol. IV at 962; Tr. Vol. V at 1007). Bratenahl Residents go even further to assert that it is disingenuous for Staff to agree to the terms of the Revised Stipulation when many of the deficiencies raised by Staff, and as affirmed by Dr. Streby's assessment, against the Initial

Stipulation still exist. For instance, the Bratenahl Residents note that Staff found the Initial Stipulation did not ensure that the project represents the minimum adverse environmental impact because Icebreaker had not identified a suitable technology to monitor avian and bat activity at the project site or detect collisions with the wind turbines. (Staff Ex. 3 at 8, 10, 12; Tr. Vol. VIII at 1768.) In fact, the Bratenahl Residents argue that Staff witness Hazelton testified in favor of the project, even though Staff and ODNR believe that birds and bats will migrate through the rotor-swept zone, without any understanding of how many birds or bats may be impacted by flying through the rotor-swept zone or ability to quantify that risk (Tr. Vol. VIII at 1751, 1753, 1768, 1773-1774). While Icebreaker witness Gordon agrees that birds and bats will inevitably collide with turbines at the project site, Bratenahl Residents conclude the extent of the impact on avian and bat species is unknown at this time due to the lack of sufficient radar study data (Icebreaker Ex. 30 at 4).

{¶ 138} Bratenahl Residents also note the testimony of Staff witness Hazelton and her reliance on the proposed Staff condition to require that Icebreaker feather its turbines from dusk to dawn from March 1 through January 1 each year until proving that its avian radar and collision monitoring technologies will produce scientifically valid information. To ensure the minimum adverse environmental impact, Bratenahl Residents argue that Ms. Hazelton explained Initial Stipulation Condition 19 mandated the turbine feathering because Staff identified the most significant risk to birds and bats is nighttime during spring and fall migration, as well as the summer residency period, based on mortality studies from terrestrial wind energy projects and other surveys conducted by ODNR. (Staff Ex. 3 at 6, 8-9). As noted above, Bratenahl Residents see this deviation from Staff's earlier findings regarding the required feathering condition as conclusive evidence that the Revised Stipulation does not represent the minimum adverse environmental impact. Instead, the Bratenahl Residents contend Staff is now taking the position that it will determine at some point in the future whether Icebreaker's then-chosen avian radar and collision technologies are scientifically validated and will produce verifiable data in compliance with the criteria set forth in the Revised Stipulation (Tr. Vol. VIII at 1759). According to Bratenahl Residents,

this is not an acceptable course forward for two crucial reasons. First, the Bratenahl Residents assert that Staff witness Hazelton acknowledged that neither ODNR nor Staff employees are experts in avian radar or collision technology, further indicating that they are not competent to make these types of expert determinations (Tr. Vol. VIII at 1747-1748, 1776, 1786). Similarly, the Bratenahl Residents contend that the record demonstrates ODNR does not know how Icebreaker will determine if state or federally listed endangered or threatened species have been encountered by the turbines during operation, noting that, while certain technologies may be under development at this time, they are not proven technologies as required by the Revised Stipulation (Tr. Vol. VIII at 1791-1792). Furthermore, Bratenahl Residents question Ms. Hazelton's testimony that a third-party consultant would likely be used to determine the sufficiency of the technologies, pointing to the fact that the Revised Stipulation does not require that an independent expert be retained by ODNR for the review and ultimate decision (Tr. Vol. VIII at 1779). The second alleged flaw identified by Bratenahl Residents is the fact that the proposed process allowing Staff to make the ultimate determination of whether the project represents the minimum adverse environmental impact, without Board oversight or a public hearing, after the Board's issuance of the certificate runs contrary to the statutory language that such a determination be made prior the issuance of a certificate. R.C. 4906.10.

{¶ 139} The Applicant, while acknowledging that the collision monitoring technology has not yet been chosen for the project, disputes the Bratenahl Residents' argument that such technology does not currently exist. Icebreaker argues the record demonstrates there are a multitude of technologies that are currently under consideration to implement at the project site. Further, Icebreaker notes that the terms of the Revised Stipulation, in addition to the Avian and Bat MOU, avian and bat monitoring plan, and avian and bat impact mitigation plan, will ensure the ultimate technology chosen will provide the minimum adverse environmental impact. Given the unique offshore location of the proposed project, Icebreaker avers that it presented several potential options for post-construction collision monitoring with the intent to utilize the best available technology by

waiting until closer to construction before finalizing its plans for collision monitoring (Icebreaker ex. 31, Attach. REG-2 at 18). Icebreaker further recognizes the novel nature of the proposed project, arguing that it may “be necessary to explore the use of experimental technologies or methods to collect the data necessary to assess behavioral impacts and mortality” (Icebreaker Ex. 3 at Avian and Bat MOU Ex. A, at 3). Icebreaker witness Rhett Good testified that the Applicant is currently considering impact detection systems, camera systems, radar systems, and combinations thereof to address the challenges of collecting fatality data in an offshore environment (Icebreaker Ex. 31 at 16-17). Both Icebreaker witnesses Good and Erickson confirmed that these types of collision monitoring technologies are being deployed in commercial offshore settings and are capable of documenting collisions, with certain types of technologies even able to identify the species that was the subject of the collision (Tr. Vol. III at 669-672; Tr. Vol. IV at 958-963). Icebreaker further contends that the election of the Applicant to wait to identify the collision monitoring technology is actually prudent, given the developments in offshore collision monitoring technologies currently underway. According to Mr. Good, this will allow the Applicant to take advantage of the latest available technologies for the project. (Tr. Vol. III at 623.) Importantly, Icebreaker opines that one of the stark differences between the Initial Stipulation and the Revised Stipulation is the requirement that the Applicant have its collision monitoring technology fully functioning before being permitted to commence operations (Joint Ex. 2 at 6). Further, Icebreaker again emphasizes that, while it has produced significant data to inform a projection of anticipated fatalities to avian and bat species, the actual mortality rate will not be known until the facility has been built and is operational, contrary to the Bratenahl Residents’ arguments. Even if Icebreaker’s initial impact projections are incorrect, the Applicant further asserts that Revised Stipulation Condition 23 acts as a “catch-all provision,” requiring Icebreaker to report and take immediate action in the event of a significant mortality event (Joint Ex. 2 at 9). Similarly, Icebreaker disputes Bratenahl Residents’ that the application fails to identify the risks to endangered or threatened species and how collisions with these species will be identified. First, Icebreaker notes that the USFWS and the DOE agree that the project is not likely to

adversely affect species protected under the Endangered Species Act or the Bald & Golden Eagle Protection Act (Icebreaker Ex. 31 at 20; Icebreaker Ex. 6, Attach. 6). Icebreaker also contends that some carcasses will be recoverable if they fall on the support structure that will surround each turbine, further noting that cameras and acoustic detectors will be installed at the project to help determine if these species are impacted.

{¶ 140} Finally, Icebreaker and Staff argue that Staff and ODNR have the expertise and resources necessary to monitor and enforce the Applicant's compliance with the conditions in the Revised Stipulation, consistent with their roles of monitoring certificate conditions on behalf of the Board for approximately 50 years. In the event that additional technical expertise is required to determine whether the chosen radar monitoring and collision monitoring technologies comply with the Revised Stipulation conditions and are able to produce sufficiently viable data, Icebreaker opines ODNR and Staff are prepared to reach out to third-party consultants, such as Dr. Diehl, to make an informed assessment, consistent with Ms. Hazelton's testimony (Tr. Vol. VIII at 1777-1778).

5. ENDANGERED AND THREATENED SPECIES

{¶ 141} While USFWS concurred in DOE's assessment that the project is not likely to adversely affect threatened and endangered species protected under the Endangered Species Act and the Bald & Golden Eagle Protection Act, Icebreaker notes that Revised Stipulation Condition 20 provides that, if post-construction monitoring reveals a potential occurrence at the project involving these species, adaptive management measures will be part of the avian and bat impact mitigation plan, ensuring potential impacts are minimized (Icebreaker Ex. 31 at 20). This includes contacting Staff, ODNR, and USFWS and modifying operations that pose a risk to the identified species within 24 hours (Joint Ex. 2 at 7). Finally, Icebreaker contends that the relocation of the project further offshore, within an area designated by ODNR as having limited environmental factors, has minimized the risk to birds and bats (Icebreaker Ex. 31 at 20). In addition, to minimize the risk to birds and bats, Icebreaker also emphasizes its commitment to: follow the lighting recommendations of the USFWS 2012 land-based wind energy guidance; minimize the number of lights on the

turbines to one flashing red light; lights used on the work platforms on the base of the turbines will not attract birds and will be in compliance with United States Coast Guard requirements; and the lights at the facility substation will be down-shielded, equipped with motion sensors, or turned off when not in use (Icebreaker Ex. 1 at 122-123; Icebreaker Ex. 36).

{¶ 142} Staff also contends that state and federally listed species are specifically protected under the terms of the Revised Stipulation, noting that proposed Condition 20 contains detailed responsive steps to be taken to minimize potential risks posed to those species when encountered at the project site (Joint Ex. 2 at 7; Staff Ex. 14 at 6). Not only does the condition maintain that operational activities that could adversely impact the identified animals to minimize risk within 24 hours, consistent with the Initial Stipulation terms, Staff claims that the Revised Stipulation terms require Icebreaker to develop and submit a long-term strategy, which at a minimum, has to address the underlying cause of the encounter to ODNR and Staff as a proposed modification to its adaptive management strategy. As Staff witness Hazelton explains in her testimony, the long-term strategy requirement is intended to decrease the likelihood of the event occurring in the future. (Staff Ex. 14 at 14 at 6.) If, after the long-term strategy is implemented, the event persists, Staff also notes that the Applicant will be required to meet with ODNR and Staff to develop a revised adaptive management strategy, subject to final approval from ODNR (Joint Ex. 2 at 7). Staff witness Hazelton further emphasized that this condition is intended to compliment, not replace, existing state and federal regulations to which the Applicant will still be subjected to, and does not interfere with other agencies' jurisdiction over potential issues faced at the project site, including the USFWS. As such, Staff contends that Condition 20 helps to ensure the project represents the minimum adverse environmental impact. (Staff Ex. 14 at 6-7.)

{¶ 143} As noted above, the Bratenahl Residents contend that the record demonstrates ODNR does not know how Icebreaker will determine state or federally listed endangered or threatened species that encounter the turbines during operation, noting that,

while certain technologies may be under development at this time, they are not proven technologies as required by the Revised Stipulation (Tr. Vol. VIII at 1791-1792).

6. FISHERIES AND AQUATIC

{¶ 144} Icebreaker states that the Fisheries and Aquatic Resources MOU, which the ODNR has agreed to, addresses pre-, during-, and post-construction monitoring studies and analyses for the project's impact on fisheries and other aquatic resources. Icebreaker also avers that it has developed the Lake Erie Monitoring Plan for the Offshore Wind Project: Icebreaker Wind in consultation with ODNR and USFWS, which discusses pre-, during-, and post-construction monitoring studies and analyses for the impact of the project on fisheries and other aquatic resource (Icebreaker Ex. 1 at 33; Icebreaker Ex. 3, Fisheries and Aquatic Resources MOU, Ex. A). The Fisheries and Aquatic Resources MOU "documents the specific actions that Icebreaker will take to meet the requirements of ODNR's Aquatic Sampling Protocol***" and lays out specifically how monitoring will be conducted, reviewed, and reported (Icebreaker Ex. 34 at 5-6).

{¶ 145} Further, Icebreaker claims it has already met its two years of pre-construction monitoring required under the Fisheries and Aquatic Resources MOU (Icebreaker Ex. 3, Fisheries and Aquatic Resources MOU, Ex. A; Icebreaker Ex. 34 at 6-7). In addition, the Applicant notes that the same rigorous monitoring will be conducted during-construction and post-construction in order to compare to the pre-construction studies for fish behavior and noise. Icebreaker states that the focus of the aquatic monitoring plan will be on the fish community/lower tropic level impacts, physical habitat impacts, and fish behavioral impacts (Icebreaker Ex. 123, Ex. O).⁶ Further, Icebreaker witness Edward Verhamme explained that the aquatic monitoring plan sets forth specific sampling methods and data that will be generated annually, while the Fisheries and Aquatic Resources MOU describes the annual reporting and review process (Icebreaker Ex. 34 at 7). According to

⁶ Ex. O was later superseded and replaced by Icebreaker Ex. 3, Fisheries and Aquatic Resources MOU, Ex. A.

Icebreaker, the Revised Stipulation provides various protections for fisheries and aquatic resources that ensure minimum adverse impact. In addition to the requirement in Revised Stipulation Condition 17 requiring a final fisheries and aquatic resources monitoring plan prior to construction, Icebreaker states that it must submit an Aquatic impact mitigation plan to ODNR, pursuant to Revised Stipulation Condition 19. ODNR will then be required to review the plan to ensure that implementation of the plan will be effective in avoiding significant impacts to fisheries and aquatic resources. Icebreaker also notes that the Aquatic impact mitigation plan will incorporate the most current survey results, the post-construction aquatic monitoring plan, and “all measures that have been adopted to avoid and minimize potential adverse impacts to fisheries and aquatic resources.” (Joint Ex. 2 at 5-6.)

{¶ 146} Staff, OEC, and Sierra Club, as signatory parties, also agree that the application, as supplemented and modified by the Revised Stipulation, represents an appropriate balance and contend that the extensive studies undertaken related to bird and bat impacts, as well as fisheries and water resources impacts, along with the additional studies and data collection contemplated under the Revised Stipulation throughout the pre-construction, construction, and operational phases of the project satisfy the concerns of the environmental groups that have intervened in this case and Ohio’s statutory requirements (Staff Ex. 15 at 2-3).

{¶ 147} Specifically speaking to the aquatic wildlife concerns, Staff, OEC, and Sierra Club emphasize the importance of Condition 15 to the Revised Stipulation, acknowledging the condition requires Icebreaker to comply with all terms included in the Fisheries and Aquatic Resources MOU, the monitoring plan attached to the MOU, and any other protocols or requirements that result from the MOU. Further, these parties note that Condition 17 requires Icebreaker to submit their first construction monitoring plan to ODNR and Staff for approval prior to construction and Condition 19 requires Icebreaker to submit a fisheries and aquatic resources impact mitigation plan to ODNR and Staff for approval prior to construction. Staff adds that, because Condition 19 also requires the evaluation of current

and proper data to allow for appropriate mitigation measures to be implemented, as necessary, it further bolsters the protections afforded to fish and aquatic species (Staff Ex. 15 at 7-8). Again, noting the considerable protections afforded to aquatic life and resources, and the extensive body of analyses produced by Icebreaker during the evidentiary hearing demonstrating the low-risk assessment to such aquatic life and resources, OEC and Sierra Club argue the project also represents the minimum adverse environmental impact as it relates to water and aquatic life. Staff also notes that Condition 15 requires Icebreaker to comply with all of the terms and conditions of the Fisheries and Aquatic Resources MOU between Icebreaker and ODNR (Joint Ex. 2 at 5).

7. BOARD CONCLUSION

{¶ 148} As noted in our conclusion regarding R.C. 4906.10(A)(2), the projected risk to avian and bat species associated with this small demonstration project is expected to be low, recognizing, however, that there is a considerable unknown risk associated with the number and density of birds and bats potentially migrating through the rotor-swept zone. We acknowledge that, as an unprecedented demonstration project, unknown risks are to be expected and that a major purpose of this project is to gather information about the impacts of an offshore wind project in the Great Lakes. With that being said, the Board is still required to review the measures and safeguards proposed in the Revised Stipulation to ensure they are adequate to find that the facility, as conditioned, represents the minimum adverse environmental impact, considering the state of available technology, and the nature and economics of various alternatives, and other pertinent considerations. As discussed in further detail below, we find conditions set forth in the Revised Stipulation, as modified, sufficiently protect avian, bat, and fish species and ensure the minimum adverse environmental impact as result of the project, especially given the fact that this remains a small demonstration project. While our discussion focuses on the potential impacts to wildlife and the measures undertaken to ensure that those impacts are minimal in nature, we will also address concerns related to navigational channels and recreational use of the surrounding water.

{¶ 149} With the focus of the evidentiary hearings being on what information Bratenahl Residents considered to be absent from the application, it becomes difficult to appreciate the vast amount of information that was provided on the record in support of the project. We again emphasize the extensive amount of information that has been provided by Icebreaker regarding the various risk assessments and analyses undertaken to identify the risk and the various protocols and measures adopted by the Applicant in order to sufficiently respond to those risks. Notably, as identified by Icebreaker, such information above and beyond the documents assessing risk and the testimony provided by the Applicant's numerous witnesses include: Avian and Bat Memorandum of Understanding (Icebreaker Ex. 38); the avian and bat monitoring plan (Icebreaker Ex. 3); Aerial Waterfowl and Waterbird Study Plan (Icebreaker Ex. 5); Aerial Waterfowl and Waterbird Survey Report (Icebreaker Ex. 6 at Attach. 4, Appendix B); 2017 Bird and Bat Monitoring Annual Report dated Feb. 22, 2018 (Icebreaker Ex. 6 at Attach. 4); Final Bat Activity Monitoring Report dated Feb. 15, 2018 (Icebreaker Ex. 6 at Attach. 4, Appendix A); the draft avian and bat impact mitigation plan (formerly the bird and bat conservation strategy) (Icebreaker Ex. 31 at Attach. REG-2), which will be updated in order to comply with the Revised Stipulation; the draft radar monitoring protocol (Icebreaker Ex. 32 at Attach. TJM-2), which will be updated in order to comply with the Revised Stipulation; and the March 12, 2018 letter from USFWS to ODNR regarding the project (Icebreaker Ex. 6 at Attach. 6).

{¶ 150} As Icebreaker and Staff indicated, one crucial element of our analysis of this criterion is the fact that the project site was initially intended to be located approximately three to five miles off the Cuyahoga County shoreline (Staff Ex. 1 at 32). After considering numerous factors to develop its initial siting preference, Icebreaker took further steps and engaged ODNR to conduct a Wind Turbine Placement Favorability Analysis, which considered limiting factors such as shipping lanes, fish habitat, sport fishery effort, birding areas, aesthetics, lakebed substrates, and shipwrecks. The ultimate conclusions from the Favorability Analysis showed a strong correlation between fewer limiting factors and the farther the potential project was moved from the shore. As such, Icebreaker made the

decision to ultimately move the suggested turbine locations to the current proposed locations, approximately eight to ten miles offshore. (Staff Ex. 1 at 32; Icebreaker Ex. 1 at Ex. H.) As evidenced by the record, this eliminates or, at the very least, minimizes several potential impacts that may have otherwise impeded Icebreaker's efforts to move forward with this project (Staff Ex. 1 at 32).

{¶ 151} However, we do not take our consideration of this certificate lightly even though some historically contentious areas, such as setbacks, are not at issue in this proceeding. The Board recognizes that, despite the extensive efforts to minimize impacts to birds, bats, and aquatic resources, those impacts may nonetheless occur. This possibility is not fatal to the proposed project. We agree with prior ODNR guidance conceding that it is unreasonable to expect wind turbines in Ohio to have no impact on wildlife (Icebreaker Ex. 40 at 13). We have significant experience in certificating terrestrial wind energy projects and realize that is an unreasonable standard to uphold and inconsistent with the applicable statutory criteria, which dictates that the facility represent the minimum adverse environmental impact considering the state of available technology and the nature and economics of various alternatives, and other pertinent considerations. R.C. 4906.10(A)(3). However, we are hesitant to agree with Icebreaker witness Karpinski's statement that the proposed wind energy facility is no different than any other wind energy project constructed on land from the water level up (Tr. Vol. I at 86-87). We observe that the application describes this undertaking as a demonstration project, where a primary purpose is exploring the viability of other, larger-scale offshore wind facilities in the Great Lakes region (Icebreaker Ex. 1 at 3). This project constitutes a novel undertaking, not only in the state of Ohio, but the entire country; as such, we must ensure that all necessary precautions have been taken and all necessary measures are in place to mitigate both projected and unanticipated risks associated with avian and bat migratory behavior. Thus, to the extent that the Board has required more information compared to other terrestrial projects, or the requirements set forth in the Revised Stipulation and this Order appear to set a more

comprehensive approach to pre-, during-, and post-construction radar and collision requirements, these adjustments are warranted.

{¶ 152} The Board acknowledges significant improvements were garnered in the Revised Stipulation that will further bolster the protection of various wildlife species that may be impacted by the project. Of the notable differences between the Initial Stipulation and the Revised Stipulation, we emphasize six essential modifications pertaining to the protection of wildlife: (1) the collision-detection technology must be demonstrated to ODNR's satisfaction through lab and field testing prior to start of construction; (2) the collision-detection technology must now be installed and fully functioning prior to operation; (3) as dictated by the collision monitoring plan, ODNR and Staff will have the authority to direct mandatory feathering from March 1 through January 1, during all nighttime hours, in the event the collision-detection system does not accurately detect collisions; (4) the reliability threshold for avian radar data will be set at 75 percent viable data, with no exceptions; (5) the length of the radar monitoring seasons was extended to include all days from April 1 through November 15, which includes the summer residency period; and (6) the number of collisions before adaptive management is triggered has been lowered from up to 330 collisions, facility-wide, within a 24-hour period to up to 21 collisions, facility-wide, within a 24-hour period (Joint Ex. 2 at 6-9; Staff Ex. 14 at 4-6; Icebreaker Ex. 57 at 3).

{¶ 153} As noted by Staff, radar monitoring will allow for a comparative analysis of the pre- and post-construction conditions to determine if adaptive management is necessary to protect wildlife affected by the project, as well as identify the level of attraction or avoidance phenomena that may exist. Revised Stipulation Condition 21 specifically provides requirements for the radar monitoring program that will help ensure that the project will represent the minimum adverse environment impact, as required by R.C. 4906.10(A)(3). The 75 percent viable data threshold and the extended sampling period detailed in that condition will provide Staff and ODNR sufficient data in order to characterize migration patterns over the project site (Icebreaker Ex. 59 at 2; Staff Ex. 14 at 7-

10). Moreover, the fact that the 75 percent threshold is a firm requirement which incorporates all defined force majeure events, including the barge being removed from the project site and heavy precipitation events, allows all parties, including Bratenahl Residents, a clear and definite threshold to ascertain whether compliance has been achieved (Joint Ex. 2 at 7-8; Staff Ex. 14 at 7-8). After construction has been completed, the radar study will be repeated to determine if birds and bats are impacted by the facility, including behavioral impacts such as attraction and/or avoidance (Staff Ex. 1 at 23). Thereafter, if necessary, Icebreaker would have the ability to modify its operations in accordance with its adaptive management plan, subject to prior ODNR and Staff approval (Icebreaker Ex. 38, Attach. A at 12-13).

{¶ 154} While we acknowledge that no decision has been made as to whether the chosen avian radar technology will be deployed on a floating platform or a stationary platform, Icebreaker has identified the technology that will be employed (Icebreaker Ex. 37; Tr. Vol. VIII at 1788). Regardless of which form of deployment is chosen, the Applicant will, nonetheless, have to adhere to the stringent requirements of the Revised Stipulation, including meeting the 75 percent viable data threshold for its radar monitoring program (Staff Ex. 1 at 24; Joint Ex. 2 at 7-8). It is true that there lies some risk in whether Icebreaker will be able to meet this threshold if it chooses to utilize VBR, due to increased variables associated with the barge motion due to wave activity; however, this rightfully remains Icebreaker's risk to bear (Staff Ex. 2 at 2-3; Joint Ex. 2 at 7-8; Tr. Vol. VIII at 1771).

{¶ 155} Despite uncertainty underling the viability of using VBR, we are persuaded by the evidence produced by Icebreaker demonstrating certain measures can be taken to mitigate issues faced by mounting radar to a floating platform (Icebreaker Ex. 32 at 6-7; Icebreaker Ex. 37 at 9, 16; Tr. Vol. IV at 758). In fact, these suggestions, as recommended in the Diehl Report to improve the proposal's chances of success, were all later incorporated in Accipiter's proposal. With these modifications incorporated in the original proposal, it is not unreasonable to find that the VBR monitoring protocol may very well produce sufficient data to meet the criteria in Revised Stipulation Condition 21 (Tr. Vol. IV at 885-886, 924-926).

Furthermore, Bratenahl Residents' steadfastness to incorporate Staff's originally requested 80 percent threshold for viable data is unwarranted, given the testimony presented by Icebreaker witness Todd Mabee. Mr. Mabee, the only radar expert to present testimony in this proceeding, indicated that adherence to a strict viable data threshold, whether that threshold is 75 percent or 80 percent, is not necessary so long as the data collected is considered useful to characterize migration and avoidance effects for avian and bat species (Tr. Vol. IV at 866-867, 892). In fact, Mr. Mabee emphasizes that he has previously published peer-reviewed studies with a lower threshold than 80 percent, adding that USFWS has previously used 67 percent as a viable data threshold and concluded that the study was valid (Tr. Vol. V at 1050-1051; Icebreaker Ex. 32, Attach. 7).

{¶ 156} Further, ODNR regularly reviews data from on-shore activities and intends to collaborate with USFWS and USGS experts on these matters (Icebreaker Ex. 38, Attach. A at 11; Icebreaker Ex. 40 at 8-9; Tr. Vol. VII at 1616). As noted earlier, Staff and ODNR's role in that regard will not change in their oversight of these certificated conditions. A fundamental misunderstanding of the record in this case is for what distinct purposes the radar monitoring and the collision monitoring will be utilized to show and inform, as well as Staff's role in overseeing the operation of these technologies. The utilization of the radar monitoring program prior to construction is to verify the number or density of birds and bats migrating through the project area in order to create a baseline for comparative purposes with post-construction radar monitoring. As noted in our analysis regarding R.C. 4906.10(A)(2), we have already concluded that the project is anticipated to represent a low, yet incrementally higher, level of risk to avian and bat species that they would otherwise not be subjected to, given the fact that the facility will be comprised of only six turbines (Icebreaker Ex. 1, Attach. J; Icebreaker Ex. 6, Attach. 2). The parameters for determining whether the radar technology and methodology are sufficient have already been established, regardless of what that eventual technology is or the form in which it is deployed (Joint Ex. 2 at 7-8).

{¶ 157} We also agree with the Signatory Parties that Revised Stipulation Condition 18 helps ensure that the facility will represent the minimum adverse environmental impact to wildlife by requiring that a collision monitoring plan, and the associated collision-monitoring technology, will be approved prior to construction (Joint Ex. 2 at 6). Several potential collision monitoring technologies are currently under consideration, as explained by Mr. Good (Icebreaker Ex. 31, Attach. REG-2 at 16-18; Tr. Vol. II at 669-672). Icebreaker witness Wallace Erickson also confirmed that these identified technologies have been successful in detecting collisions, based on his personal experience working with them in the field (Tr. Vol. IV at 958-963). However, as noted in the avian and bat monitoring plan, “it may be necessary to explore the use of experimental technologies or methods to collect the data necessary to assess behavioral impacts and mortality.” (Icebreaker Ex. 3, Avian and Bat MOU, Ex. A at 3). Icebreaker acknowledges that no specific technology has been chosen to date because the Applicant wants to ensure the latest technologies and advancements are being utilized at the project, consistent with the intent of the statutory criterion to consider “the state of available technology” and “other pertinent considerations,” including the fact that the application requests approval of a demonstration project (Tr. Vol. III at 623).

{¶ 158} As noted by Staff witness Hazelton, a portion of the initial demonstration will be used to determine the collision monitoring technology’s detection efficiency, which will then be used to determine the exact number of recorded collisions resulting in a significant mortality event, as described in further detail below (Staff Ex. 14 at 11). Thus, while the 21 collisions noted in Condition 23 is initially defined as a significant mortality event, based on the values described in ODNR’s protocols for on-shore wind energy facilities, it may well be adjusted to more accurately reflect the associated risk at the project site after the detection efficiency is calculated (Staff Ex. 14 at 11; Icebreaker Ex. 40). Ms. Hazelton also noted that, consistent with terrestrial wind energy projects, “this trigger serves as an indicator of expectedly rare elevated impact events occurring in a short time period” (Staff Ex. 14 at 11). We find the enumerated 21 collision standard to be a reasonable

baseline until such time the collision monitoring technology dictates an adjustment to that specific number, subject to ODNR and Staff's approval (Joint Ex. 2 at 9).

{¶ 159} Importantly, the collision-monitoring technology must be "installed and fully functioning" prior to the Applicant commencing operation of the facility and will be subject to audits conducted by ODNR or a third-party consultant (Joint Ex. 2 at 6; Staff Ex. 14 at 4). Contrary to Bratenahl Residents' arguments noted above, in the event the collision monitoring technology does not operate as anticipated, the Revised Stipulation does afford some discretion to ODNR and Staff to subject the facility to feathering requirements during nighttime hours over the spring and fall migration periods, as well as the summer residency period (collectively, March 1 through January 1), as detailed in the collision monitoring plan. (Staff Ex. 14 at 5; Joint Ex. 2 at 6; Icebreaker Ex. 57 at 6). As noted by Ms. Hazelton's testimony, these appear to be the periods when birds and bats are at the highest risk from facility operation (Staff Ex. 14 at 4-6). This is a significant improvement from the feathering requirements suggested in the Initial Stipulation, which limited potential feathering to peak spring and fall migration periods when cloud ceilings were low, and arguably provides the same amount of protection afforded by Staff's originally recommended feathering condition (Joint Ex. 1 at 6; Staff Ex. 1 at 47-48). However, as noted above, we recognize there remains a certain degree of uncertainty around the post-construction avian and bat collision monitoring technology and whether the Revised Stipulation's conditions maintain sufficient protections for bird and bat species. Specifically, we are concerned that even the improvements garnered in the Revised Stipulation may not be sufficient to minimize impacts on these species after considering Dr. Streby's testimony and the issues raised during the cross-examination of Staff witness Hazelton, namely the fact that we do not have data from the project site indicating the number of birds and bats that may migrate through the rotor-swept zone (Tr. Vol. VIII at 1751-1753, 1773-1776, 1791-1792; Bratenahl Residents Ex. 23; Staff Ex. 3 at 6, 8-9; Staff Ex. 14 at 5; Icebreaker Ex. 30 at 4).

{¶ 160} As explained above, the ability to calculate and assess the actual environmental impact relies on technology and data that is, to an extent, unknown. Notably,

this is to be expected given the unprecedented nature of this project and that the purpose of this demonstration project is to explore these uncertainties. Given these uncertainties, the Board finds necessary risk mitigation measures should be installed from the beginning. Thereafter, as more information is ascertained, the protections can be accordingly scaled back. As such, we find it appropriate to condition the certificate, consistent with what the Applicant agreed to in the Fifth Supplement to the application filed on May 14, 2019, but modified as follows, so that the turbines remain completely feathered during nighttime hours, from dusk to dawn, from March 1 through November 1 of each year of operation, until or unless the Board directs otherwise. Rather than requiring nighttime feathering for ten months of the year, this additional condition being adopted by the Board will only require feathering for eight months of the year, thus permitting the Applicant to operate four consecutive months of the year or one calendar quarter without the nighttime feathering requirement. Given the novel nature of this project, we believe the more appropriate course is to limit operations during the periods where there is a heightened risk for bird and bat collisions, without waiting for a potential issue with the technology to occur (Tr. Vol. III at 684, 702-703, 726; Tr. Vol. IV at 996-1000; Tr. Vol. VII at 1647-1649; Tr. Vol. VIII at 1793-1798). This condition would only be in place until additional information regarding monitoring is on the record, as discussed below. We acknowledge that the primary purpose of this project is to gather data about the impacts of offshore wind facilities, with a greater goal of assessing the viability other, larger potential offshore wind projects in the Great Lakes region. We find these additional precautionary measures are necessary from the beginning for such an unprecedented project and can be appropriately adjusted as more information is accumulated.

{¶ 161} Further, we note that as proposed in Conditions 18, 21, and 22, the Applicant is required to provide Staff and ODNR with the bird and bat impact mitigation plan (including the collision monitoring plan) and demonstrate proof of compliance with requirements of preconstruction radar, both of which must be finalized and accepted by ODNR. However, rather than provide this information only to Staff and ODNR for

acceptance, we direct the Applicant to file the preconstruction radar compliance information and bird and bat impact mitigation plan in the record before the Board for review and approval. Once actual monitoring information is collected and such information demonstrates that less restrictive operating limits on the turbines can be introduced while ensuring that the project continues to represent the minimum adverse environmental impact, **the Applicant may subsequently request less restrictive operating limits** (Icebreaker Ex. 57). Filing the required information associated with Conditions 18, 21, and 22 in the docket not only permits additional Board review, but also provides Staff, ODNR, and other interested parties an opportunity to provide recommendations or comment on any request to reduce the feathering requirements. We encourage the Applicant to continue to work with Staff, ODNR, and other interested parties in order to allow as efficient process as possible. The Board will endeavor to consider such filings as expedited as possible, ultimately approving and/or providing additional directives considering the circumstances at that time and the completeness of the informational filings. Our modifications to the Fifth Supplement are supported by Icebreaker witness Gordon testimony who agreed the prior proposed feathering condition would provide a greater level of protection to avian and bat species than the feathering requirements proposed in the Initial Stipulation, albeit questioning whether such protection was necessary given the estimated risk attributed to the project (Tr. Vol. II at 482-483). We additionally observe that, in the public hearing, a representative of the National Audubon Society testified in support of the original conditions in the Staff Report, specifically noting the option to “schedule curtailment of the turbines under certain condition to protect our bird” (July 19, 2019 Tr. at 53-54). As such, this will further ensure that this project meets the requirements of R.C. 4906.10 and represents the minimum adverse environmental impact by requiring a greater degree of actual radar data from the project site to be presented before engaging in a transparent process to consider reducing these curtailment requirements (Staff Ex. 1 at 47-48). We also note that our modification of the Revised Stipulation will not, in any way, impact Icebreaker’s commitment to abide by manufacturing guidelines regarding other curtailment measures specified during the hearing or minimize Staff and ODNR’s authority to direct

additional mitigation measures as they deem necessary, as set forth in the Revised Stipulation.

{¶ 162} Despite the necessary modifications to the feathering requirements, we find that Revised Stipulation Condition 23 ensures a timely remedy in the event of a significant mortality event and helps ensure the minimum adverse environmental impact to wildlife by requiring specific and expedited mitigation measures to be implemented, as detailed by the adaptive management plan (Staff Ex. 14 at 12). Summarily, avian and bat species will be protected by means of an effective collision monitoring technology that will record collisions and, if applicable, by the additional measures set forth in the adaptive management plan. However, we are modifying the Revised Stipulation in order to provide additional measures to limit the risk to birds and bats during identified high-risk periods. (Joint Ex. 2 at 6, 9; Icebreaker Ex. 57; Staff Ex. 14 at 4-6, 10-13.)

{¶ 163} Additionally, in response to Bratenahl Residents' contention that Icebreaker has failed to satisfy the statutory criterion due to its lack of identifying the specific collision monitoring technology to be used at the project site, we again note that the mere fact the technology has not been chosen does not eliminate the strict requirements set forth in the Revised Stipulation regarding the Board's expectations as to how the collision monitoring technology will operate at the project site. Furthermore, as noted above, the collision monitoring technology must be in place and fully functioning prior to the commencement of operations and, as noted above, Icebreaker will be subject to stricter feathering requirements than those initially agreed upon in the Revised Stipulation. (Joint Ex. 2 at 6.) Finally, while Dr. Gosse may be a former employee of the USFWS and has significant experience in this particular field, we are not persuaded by his testimony indicating we should find otherwise, especially given the fact that his statements contradict the final findings of USFWS, which concluded that the proposed project has "limited direct risk to migratory birds and bats." (Icebreaker Ex. 6, Attach. 6).

{¶ 164} Revised Stipulation Condition 20 also provides a higher level of oversight and protection in regard to state and federally endangered and threatened species, in addition to all applicable laws and regulations, including the federal Endangered Species Act and R.C. 1531.25, Ohio’s statute protecting species threatened with statewide extinction (Joint Ex. 2 at 7; Staff Ex. 14 at 6-7). Specifically, Condition 20 contains incremental, responsive steps that are required to be taken to minimize the risks posed to these species, which is triggered if these species are encountered at the project site. Record evidence demonstrates there are a variety of ways the Applicant may utilize to determine whether an endangered or threatened species is encountered at or near the project site. Several include methods currently utilized at onshore wind energy facilities, including on-site identification by individuals working at the project site, physical evidence of the presence of such species, including the construction of a readily-identifiable nesting area on the turbines or platforms, and the recovery of carcasses. Moreover, Icebreaker witnesses Erickson and Good indicated that advancements in high-definition camera and thermal technology may allow Icebreaker to “reliably detect and identify bird and bat flights and collision.” (Tr. Vol. IV at 962; Tr. Vol. VIII at 1791; Icebreaker Ex. 31 at 16-17.) Notably, Staff and Icebreaker witnesses acknowledged the possibility of the collected data missing encounters with endangered or threatened species, adding that this is not a unique phenomenon experienced at offshore wind energy generation facilities and that there are a multitude of reasons that would prevent perfect data capture at even terrestrial wind projects (Tr. Vol. IV at 964; Tr. Vol. VIII at 1804-1805). We also note that the feathering requirements set forth in this Order will only further bolster the protections afforded to state and federally endangered or protected species.

{¶ 165} Similarly, and for many of the same reasons, we find that the Revised Stipulation also ensures that the project represents the minimum adverse environmental impact as it relates to fish and other aquatic species that may be impacted by the facility. However, as this issue was not heavily debated during the evidentiary hearings, we will not specifically address this issue now; rather, we simply note the extensive amount of

information produced by the Applicant relative to the protection of aquatic species, specifically the Fisheries and Aquatic Resources MOU. (Joint Ex. 2 at 5-6; Staff Ex. 15 at 2-3, 7-8; Icebreaker Ex. 1 at 33; Icebreaker Ex. 3, Fisheries and Aquatic Resources MOU, Ex. A; Icebreaker Ex. 34 at 5-6.)

{¶ 166} While recreational use of the surrounding water and the aesthetic effect of placing turbines in Lake Erie were issues more directly raised during the local public hearings, Icebreaker produced evidence on the record demonstrating that there is limited recreational boating in the proposed area of the turbine locations. Further, as acknowledged by Staff in its Staff Report, the turbines would be located outside of any navigational channels, thereby minimizing impacts to commercial transportation. (Staff Ex. 1 at 32-33; Icebreaker Ex. 1, Attach. H.) Furthermore, as noted earlier in our discussion of R.C. 4906.10(A)(2), the results of Icebreaker's VIA demonstrated that visual impacts would be minimal and whether the turbines are visible would be dependent on multiple factors, such as cloudiness (Icebreaker Ex. 42). As such, we find that Icebreaker has adequately addressed the concerns raised during the local public hearings by siting the wind turbine facilities at the proposed project site.

{¶ 167} Finally, we must address the arguments raised by Bratenahl Residents questioning whether Staff and ODNR are capable of confirming compliance with the conditions set forth in the Revised Stipulation. We wholeheartedly believe that Staff and ODNR contain the requisite expertise to ensure compliance with the conditions of the Revised Stipulation, given their vast experience with overseeing Ohio's terrestrial wind energy projects. We have previously permitted subsequent modification of Board conditions subject to ODNR or USFWS approval, specifically in regard to avian and bat protection plans. See, e.g., *In re the Application of Champaign Wind, LLC*, Case No. 12-160, Opinion, Order, and Certificate (May 28, 2013) (where the Board issued a certificate which imposed a condition requiring a post-construction avian and bat monitoring plan for ODNR and Staff review, consistent with ODNR's terrestrial wind project protocols). Moreover, if a third-party consultant is deemed necessary to review the radar and collision monitoring

technologies, a possibility noted by Staff witness Hazelton, that option is perfectly acceptable. In fact, R.C. 4906.02(D) specifically provides that the Chairman of the Board may contract for special third-party service outside the expertise of the state agencies themselves, including in this instance to verify that the collision monitoring technology complies with Revised Stipulation Condition 21.

{¶ 168} Based on the evidence of record in this proceeding as summarized and documented herein, the Board has more than ample evidence to support its finding that the facility, as conditioned by the Revised Stipulation, as modified by the Board, represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of various alternatives as outlined in compliance with R.C. 4906.10(A)(3).

D. Consistent with Regional Plans

{¶ 169} R.C. 4906.10(A)(4) provides that, in the case of an electric transmission line or generating facility, the Board must ensure that such facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems and that such facility will serve the interests of electric system economy and reliability.

{¶ 170} Icebreaker contends that the proposed project also satisfies R.C. 4906.10(A)(4), noting that the facility will interconnect with the Cleveland Public Power transmission system through the Lake Road 138 kV substation, which connects to the ATSI system. Icebreaker further provides that the PJM Feasibility Study, System Impact Study, and Facilities Study all included the analysis of the Cleveland Public Power 138 kV system, which were all completed as of May 2015. The PJM Feasibility Study, which evaluated compliance with reliability criteria for summer peak conditions in 2017 and analyzed the injection of the generating capacity from the project into the Cleveland Public Power substation and the ATSI transmission system, found no potential local or network problems with the substation and no violations with regard to deliverability were identified. Similarly,

Icebreaker notes that the System Impact Study also found no potential problems with the substation, the system reinforcements, deliverability, or the light load analysis after evaluating the project's compliance with applicable reliability planning criteria for summer peak conditions in 2017. Finally, Icebreaker asserts that the PJM Facilities Study had similar positive findings after assessing the possibility for potential Midcontinent Independent System Operator system impacts. In fact, after finding no impacts, PJM determined that a full Facilities Study was not required and issued a revised System Impact Study in 2015, after which the project was approved for interconnection. (Icebreaker Ex. 1 at 39-40, Attach. L.)

{¶ 171} Furthermore, Icebreaker argues that Revised Stipulation Conditions 2, 3, and 4 support its argument that the facility is consistent with regional plans for the electric power grid and that the facility will serve the interests of electric system economy and reliability. Condition 3 requires Icebreaker to have a signed Interconnection Service Agreement with PJM (Joint Ex. 2 at 3). Condition 4 requires the facility to be operated in such a way to assure that no more than 18 MW would be injected into ATSI's transmission grid at any time (Joint Ex. 2 at 3). Finally, Icebreaker again notes that the necessary transmission line extension will be a subsequent application filing (Joint Ex. 2 at 3).

{¶ 172} As noted earlier, Staff similarly recommended that the Board find that the proposed facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems, and that the facility would serve the interests of electric system economy and reliability. As the various PJM system studies indicated that, at an output of up to 18 MW, no reliability violations would occur during single and multiple contingencies, Staff suggested that the Applicant be required to obtain a signed Interconnection Service Agreement with PJM, as well as condition the facility to be operated in such a way as to assure that no more than 18 MW would be injected into ATSI's transmission grid at any time. (Staff Ex. 1 at 34-36, 45.)

{¶ 173} The unrefuted evidence provided by Staff and Icebreaker regarding the various PJM system studies persuades us to also find this criterion has been satisfied. Moreover, we note that the Revised Stipulation incorporates both of Staff's originally proposed conditions regarding these issues (Joint Ex. 2 at 3). Thus, the record establishes that the facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving the state of Ohio and interconnected utility systems, and will serve the interest of electric system economy and reliability, in accordance with R.C. 4906.10(A)(4).

E. Air, Water, Solid Waste, and Aviation

{¶ 174} Pursuant to R.C. 4906.10(A)(5), the facility must comply with Ohio law regarding air and water pollution control, withdrawal of waters of the state, solid and hazardous wastes, and air navigation.

1. SUMMARY OF EVIDENCE

{¶ 175} Initially, in support of its argument that the application also satisfies this criterion, Icebreaker asserts that no air pollution permits are required for the facility (Icebreaker Ex. 1 at 7, 54). However, Icebreaker notes that, to the extent fugitive dust requirements of R.C. Chapter 3704 may be applicable to onshore construction activities, Revised Stipulation Condition 33 requires the Applicant to comply with the rules by use of water spray or other appropriate measures when necessary (Icebreaker Ex. 1 at 54; Joint Ex. 2 at 12). Despite being located offshore in Lake Erie, Icebreaker further asserts that the project will not require the use of water for cooling or other activities and will not involve the discharge of water or waste into streams or water bodies. Although many individuals attending the local public hearings indicated that they were concerned about potential waste or pollutants being leaked into the lake, which is later used for drinking water, Icebreaker avers that, as an additional precaution, the turbines are designed with three levels of containment, offering a sealed system with various reservoirs throughout the turbine to collect any fluid discharge that may occur, as well as multiple sensors and monitors to detect

such discharge. Importantly, Icebreaker adds that, even in the unlikely event that all three levels of the containment system fail, any fluid that may leak into the environment is biodegradable. (Icebreaker Ex. 1 at 60-61.) Further, Icebreaker notes that, while some solid waste may be generated during construction activities, all waste and recyclable materials generated on the installation vessels at the offshore locations will be transported back and disposed of at a licensed solid waste disposal facility (Icebreaker Ex. 1 at 61-63). Similarly, the Applicant opines that construction activities have been designed to minimize disturbance of sediments, asserting there is low potential for toxicity in the project area, so aquatic receptors will not likely be impacted by disturbed sediment during construction (Icebreaker Ex. 1 at 57; Icebreaker Ex. 2 at Attach. 6). Additionally, Icebreaker argues that, due to the turbine's mono bucket foundation, no site clearing, dredging, or drilling in the lakebed will occur, indicating that any disturbances will be temporary and sediment will settle back to the lakebed (Icebreaker Ex. 1 at 57-60).

{¶ 176} Finally, Icebreaker alleges that it has also addressed any potential aviation-related concerns with the project. Icebreaker notes that the FAA conducted aeronautical studies of the wind turbine sites and provided Icebreaker an ultimate determination that no hazards to air navigation would result from the project after reviewing all seven of the proposed turbine locations. Further, Icebreaker avers that Revised Stipulation Conditions 31 and 32 ensure compliance with any navigational requirements. For instance, Condition 31 provides that the Applicant meet all recommended and prescribed FAA and ODOT Office of Aviation requirements to construct an objective that may affect navigable airspace, including submitting coordinates and heights for all towers exceeding 200 feet above ground level for ODOT Office of Aviation and FAA review prior to construction. Revised Stipulation Condition 32 requires all applicable structures, including construction equipment, to be lit in accordance with FAA guidelines. (Joint Ex. 2 at 12.)

{¶ 177} Staff posited similar arguments in its Staff Report of Investigation, ultimately recommending that the Board find that the facility complies with the requirements specified

in R.C. 4906.10(A)(5), provided certain conditions be approved by the Board. (Staff Ex. 1 at 37-38, 51-52).

{¶ 178} While Bratenahl Residents did not contest this issue during the hearing, there were a number of individuals and stakeholders attending the local hearings that indicated that they had concerns about the project related to the protection of water safety and preservation during construction and operations.

2. BOARD CONCLUSION

{¶ 179} We are persuaded by the record evidence produced by Icebreaker and other Signatory Parties as to these issues. In response to the various concerns raised during the local public hearings regarding the detrimental effect of the project on the lake water, we note the specific containment structure that will be utilized on all six turbines, minimizing the risk of any accidental leaks (Icebreaker Ex. 1 at 60-61). Staff also noted in its Staff Report that Icebreaker would be obtaining various state and federal permits related to water, including a permit under Sections 404 and 10 of the Clean Water Act and a Section 401 Water Quality Certification from the Ohio EPA (Staff Ex. 1 at 37). Further, all conditions recommended by Staff pertaining to this criterion have been incorporated in the Revised Stipulation as Conditions 31, 32, and 33 (Joint Ex. 2 at 12).

{¶ 180} Thus, the record establishes that, to the extent any of them are applicable, construction of the proposed facility will comply with the requirements in the Ohio Revised Code regarding air and water pollution control, withdrawal of waters of the state, solid and hazardous waters, and air navigation, and all rules and standards adopted under the relevant Ohio Revised Code Chapters.

F. *Public Interest, Convenience, and Necessity*

{¶ 181} Pursuant to R.C. 4906.10(A)(6), the Board must determine that the facility will serve the public interest, convenience, and necessity.

1. SUMMARY OF EVIDENCE

{¶ 182} Icebreaker contends that it has dedicated a substantial amount of time to gauge public interest and perception of the project, engaging local stakeholders and local communities, as well as identifying the willingness for consumers to purchase the electricity generating from an offshore wind facility. Specifically, Icebreaker notes a 2013 survey of 15,000 face-to-face contacts across Northeast Ohio, in which 92 percent of those surveyed expressed a favorable opinion of the project and 65 percent expressed a willingness to pay more for electricity generated by the project. (Icebreaker Ex.1 at 29.) Icebreaker adds that six lakefront communities have passed resolutions supporting the project, including the village of Bratenahl, where the Bratenahl intervenors live (Icebreaker Ex. 1 at 47). Further, Icebreaker stresses the economic development benefits to the city of Cleveland allowing an opportunity for the use of local goods and services, including labor, maintenance, and equipment. Icebreaker also claims that the facility aligns with the policy and goal of the city of Cleveland to become a national leader in the development and application of renewable energy and sustainable technologies. (Icebreaker Ex. 1 at 128.)

{¶ 183} Moreover, Icebreaker has also submitted a complaint resolution plan as a part of its application, which will allow all complaints related to the facility to be adequately investigated and resolved. Icebreaker adds that, as agreed to in the Revised Stipulation, it will be required to file quarterly reports in the docket summarizing complaints received and the actions taken to resolve the complaint. (Icebreaker Ex. 1 at 47, Attach. N; Joint Ex. 2 at 5.)

{¶ 184} OEC and Sierra Club also emphasize the importance of the project to clean energy development in Ohio, arguing that the project represents an important step toward developing a new, safe method to increase clean energy in the Midwest. Moreover, OEC and Sierra Club note that there has been widespread support to the construction of this project after a longstanding effort to engage local stakeholders to ensure the community benefits from the project and the power it produces (Icebreaker Ex. 1 at 29).

{¶ 185} Similar to its arguments related to R.C. 4906.10(A)(2) and (A)(3), Bratenahl Residents also contend that Icebreaker has failed to demonstrate that the project will serve the public interest, convenience, and necessity, as required by R.C. 4906.10(A)(6). Bratenahl Residents witness Dr. Richard Brown testified that the application failed to explain why there is a public need for the project, further noting that “[a]ny public need benefit associated with the Facility besides baseload generation can be achieved at a fraction of the cost by purchasing wind power from existing wind facilities through [power purchase agreements],” especially when considering the allegedly high rates resulting from the terms of Icebreaker’s power purchase agreement with Cleveland Public Power (Bratenahl Residents Ex. 21 at 4-6; Tr. Vol. VI at 1293-1295, 1352). Given the comparatively high prices, Bratenahl Residents ultimately argue that the project is not economically viable (Bratenahl Residents Ex. 21 at 6).

{¶ 186} Icebreaker and Staff contend that a majority of Dr. Brown’s testimony actually speaks to whether there is a basis of the need for the facility, related to the Board’s consideration of R.C. 4906.10(A)(1), which they assert is inapplicable in this proceeding. As such, Icebreaker ultimately requests that the testimony be stricken or, at the very least, disregarded by the Board. The remaining testimony at issue is regarding the alleged above-market rates resulting for the power purchase agreement. According to Staff, however, this testimony is also irrelevant, as the city of Cleveland is free to determine what is in its best interests. Additionally, Staff contends Bratenahl Residents have provided no evidence that Cleveland Public Power’s rates would increase as a result of the agreement. Finally, Staff notes several of the other benefits associated with the project, including the fact that this facility was always intended to act as a demonstration project, with an opportunity to study and significantly improve upon collision monitoring and detection methodologies currently being used for onshore wind projects. Also, given that this would be the first freshwater installation wind project in the country, Staff asserts that the project could potentially pave the way for future projects.

{¶ 187} Although purporting to testify regarding the application's failure to satisfy R.C. 4906.1(A)(6), Icebreaker, OEC, and Sierra Club contend that Dr. Brown's testimony is actually an ill-attempt to argue that PJM does not need the facility for baseload generation and whether the price paid through the agreed-upon power purchase agreement with Cleveland Public Power would be higher than PJM prices (Bratenahl Residents Ex. 21 at 4-6). As such, Icebreaker argues that several aspects of Dr. Brown's testimony should be stricken, or at the very least disregarded, as noted later in this Opinion, Order, and Certificate.

2. BOARD CONCLUSION

{¶ 188} The record establishes that the facility, as conditioned by the Revised Stipulation and modified herein, will serve the public interest, convenience, and necessity. Bratenahl Residents' argument focuses on the "public need," responding more to the requirements set forth in R.C. 4906.10(A)(1), which we have already found to be inapplicable to this proceeding. The remaining argument to address is regarding the alleged above-market rates resulting from the power purchase agreement with Cleveland Public Power.

{¶ 189} We agree that the city of Cleveland is free to purchase power that aligns with its own interests without the intervention or invasion by the Board. More importantly, however, we note that Bratenahl Residents have provided no evidence demonstrating that Cleveland Public Power's rates would increase as a result of the power purchase agreement, apart from the bare allegations proffered by Dr. Brown. As such, the arguments proffered by the Bratenahl Residents to establish that the proposed project will not promote the public interest, convenience, and necessity as required by R.C. 4906.10(A)(6) are misplaced.

{¶ 190} On the other hand, Icebreaker, Staff, OEC, and Sierra Club, and several individuals providing testimony at the local public hearings, provided ample ways in which the project will promote the public interest, including a small amount of generation, added renewable generation, job creation, and an opportunity to gain experience with an offshore wind project on a small scale (Staff Ex. 1 at 41-42). As we found earlier, any adverse effects

to wildlife will be effectively minimized by the recommended conditions and the Board's implementation of additional feathering requirements (Joint Ex. 2).

G. *Agricultural Districts*

{¶ 191} Pursuant to R.C. 4906.10(A)(7), the Board must determine the facility's impact on the agricultural viability of any land in an existing agricultural district within the project area of the proposed facility. Both Staff and the Applicant indicate that no agricultural district land would be disturbed as part of this project. Staff concluded that field operation, irrigation, or field drainage systems would not be impacted by construction, operation, and maintenance of the project (Staff Ex. 1 at 43). Accordingly, the Board determines that the Revised Stipulation complies with R.C. 4906.10(A)(7).

H. *Water Conservation Practices*

{¶ 192} R.C. 4906.10(A)(8) requires that a proposed facility must incorporate maximum feasible water conservation practices, considering available technology and the nature and economics of the various alternatives. Staff and Icebreaker express that water usage would be minimal. According to Staff, no water would be used in the process of production of electricity and only minimal water usage would be necessary at the O&M building (Staff Ex. 1 at 44). Upon review, we conclude that R.C. 4906.10(A)(8) is satisfied.

IX. CONCLUSION

{¶ 193} Pursuant to Ohio Adm.Code 4906-2-24, parties before the Board are permitted to enter into stipulations concerning issues of fact, the authenticity of documents, or the proposed resolution of some or all of the issues in a proceeding. Under Ohio Adm.Code 4906-2-24(D), no stipulation is binding on the Board. However, the Board affords the terms of such an agreement substantial weight. The standard of review for considering the reasonableness of a stipulation has been discussed in a number of Board proceedings. *See, e.g., In re Hardin Wind, LLC*, Case No. 13-1177-EL-BGN (Mar. 17, 2014); *In re Northwest Ohio Wind Energy, LLC*, Case No. 13-197-EL-BGN (Dec. 16, 2013); *In re AEP Transm. Co., Inc.*, Case No. 12-1361-EL-BSB (Sept. 13, 2013); *In re Rolling Hills Generating LLC*,

Case No. 12-1669-EL-BGA (May 1, 2013); *In re American Transm. Systems Inc.*, Case No. 12-1727-EL-BSB (Mar. 11, 2013). The ultimate issue for the Board's consideration is whether the agreement, which embodies considerable time and effort by the signatory parties, is reasonable and should be adopted. In considering the reasonableness of a stipulation, the Board has used the following criteria:

- (a) Is the settlement a product of serious bargaining among capable, knowledgeable parties?
- (b) Does the settlement, as a package, benefit ratepayers and the public interest?
- (c) Does the settlement package violate any important regulatory principle or practice?

A. *Is the settlement a product of serious bargaining among capable, knowledgeable parties?*

{¶ 194} Upon review, the Board finds that the Stipulation is the product of serious bargaining among capable, knowledgeable parties. Initially, we note that all parties were represented by knowledgeable, competent counsel that regularly appear before the Board. The Board additionally observes that the evidentiary proceedings were continued on multiple occasions as all parties—not just signatory parties—were engaged in ongoing negotiations resulting in the Initial Stipulation and the Revised Stipulation (Icebreaker Ex. 58 at 8-9). Thus, the Board finds that the first criterion is met.

B. *Does the settlement, as a package, benefit ratepayers and the public interest?*

{¶ 195} Icebreaker additionally avers that the second criterion is satisfied and that the project benefits ratepayers and the public interest. Icebreaker explains the project will produce positive economic impacts, including 500 new jobs, over \$85.5 million of economic input, and up \$186,300 in local tax revenue (Icebreaker Ex. 25 at 30). Further, according to Icebreaker, the facility responds to demand from the general public and the local economy

for locally-generated, renewable energy. As discussed previously, the Board received many comments from the public, both in support of the project and in opposition, either at the public hearings or submitted to the docket. In support, multiple trade groups and unions touted the economic benefits the project would bring (*See, e.g.*, Nov. 8, 2018 Tr. at 12, 34, 104, 148). Additionally, multiple local governments and government officials, including city officials, state senators, and state representatives submitted comments or resolutions demonstrating support of the project (*See, e.g.*, Nov. 8, 2018 Tr. at 22, 84, and 133). The Board also received many comments expressing support for renewable energy projects in Ohio. Those opposing the project expressed that turbines should not be placed in Lake Erie and that doing so is not in the public interest. Multiple comments explained that the project would dampen the aesthetics of one of Ohio's natural landmarks. Others felt the turbines would restrict boating and other recreational activities in the lake. Another common concern was possible environmental hazards associated with placing a generation facility in a major water resource.

{¶ 196} The Board concludes that the second element is satisfied. As a package, the Revised Stipulation benefits ratepayers and the public interest in multiple ways. First, we acknowledge the positive economic impact the project is expected to have. As mentioned, over 500 jobs would be created and there could be over \$85 million in economic output. Additionally, the project would result in significant tax revenue for local governments. (Staff Ex. 1 at 19-20.) The Board appreciates the amount of input this proceeding received from the general public. We acknowledge that the aesthetics of placing turbines in Lake Erie is subjective. We observe, however, that visibility of the turbines from the shoreline is expected to be limited. As the facility will be eight to ten miles offshore, the turbine's prominence should be subtle. (Icebreaker Ex. 43) Additionally, the turbines' distance away from the shoreline, as well as the small scale of the facility, should limit any potential impact on recreational activities (Staff Ex. 1 at 15). We also note that activities such as fishing would not be prohibited around the turbines. Regarding environmental concerns, the Board is persuaded by Staff's determination that the project will have little impact on the waters of

Lake Erie. The use of a mono bucket as the turbine foundation does not require any drilling or excavation and minimizes any impact. Similarly, the collection line will be installed via the “bury-while-lay” method, which results in only a minimal and temporary disturbance of the lakebed. As the turbines require the use of oil, hydraulic, and cooling fluids, we note that the turbines would employ a three-level containment system to recognize and minimize any potential issues. (Staff Ex. 1 at 22; Icebreaker Ex. 1 at 60-61.) Additionally, given the improvements made in the Revised Stipulation relative to the Initial Stipulation, as well as the Board’s modification of the curtailment requirements detailed above, we note that the impacts on avian and bat species, as well as other environmental aspects of the project, will be effectively minimized. The Board otherwise acknowledges the support for the project from trade groups, local officials, small businesses, and many other local citizens. Thus, we determine that, overall, the project will benefit ratepayers and the public interest.

C. Does the settlement package violate any important regulatory principle or practice?

{¶ 197} Icebreaker asserts that the application and the Revised Stipulation comply with all relevant regulatory principles and practices. Specifically, the Applicant maintains that every required criterion under R.C. 4906.10 is met. Staff and the other signatory parties agree. The Bratenahl Residents, however, disagree and maintain that the Revised Stipulation, as proposed, unlawfully delegates the Board’s authority to Staff and ODNR. As discussed, the Revised Stipulation permits Icebreaker to obtain its certificate prior to completing any pre-construction radar monitoring. However, the Applicant cannot begin construction until two years of radar monitoring is complete, if the monitoring satisfies specific criteria outlined in Condition 21 of the Revised Stipulation. Whether the pre-construction radar monitoring meets those standards is to be determined by Staff and ODNR. The Bratenahl Residents argue that, by giving Staff and ODNR authority to determine if Icebreaker’s pre-construction radar monitoring is sufficient, the Board is wrongfully delegating its authority to issue a certificate. The Bratenahl Residents contend that this delegation allows Staff and ODNR to make the final statutory determinations as to

the probable environmental impact and whether the project represents the minimum environmental impact. Further, they argue that Staff and ODNR lack radar expertise to make such a decision. Finally, the Bratenahl Residents submit that by delegating this statutory determination, the Board would be restricting additional review and public comment.

{¶ 198} In reply, Icebreaker, Staff, and the OEC and Sierra Club assert the Bratenahl Residents' argument lacks merit. Icebreaker maintains that there is enough evidence on the record for the Board to make a determination as to R.C. 4906.10(A)(2) and (A)(3). Specifically, Icebreaker emphasizes that the 2016 Risk Assessment, the 2018 Risk Summary, the NEXRAD Analysis, the Aerial Waterfowl Report, and the Bat Acoustic Survey provide more than enough information for the Board to ascertain the probable environmental impact. According to Icebreaker, the purpose of the pre-construction radar is not to fill in informational gaps regarding the nature of the probable environmental impact, but rather, the purpose of the radar monitoring is to establish a baseline for post-construction analysis. Staff explains that the ongoing role of ODNR and Staff is to implement and enforce the conditions included in the Revised Stipulation. Staff, Icebreaker, and OEC and Sierra Club all state this process has been recognized as acceptable by the Supreme Court of Ohio, citing *In re Application of Buckeye Wind, L.L.C.*, 131 Ohio St.3d 449, 2012-Ohio-878 (*Buckeye Wind*). As described in *Buckeye Wind*, the Supreme Court of Ohio found that the siting statutes "authorize a dynamic process that does not end with the issuance of a construction certificate." *Buckeye Wind* at ¶ 16. According to Icebreaker, the Supreme Court of Ohio has found that the Board can authorize Staff to monitor compliance with the certificate conditions. Further, Icebreaker expresses that any submission to Staff would be public record and available for additional scrutiny. Staff notes that R.C. 4906.97 allows any party to file a complaint if a developer violates a certificate. Icebreaker also explains that R.C. 4906.07 requires a hearing regarding any modification to a certificate that materially increases any environmental impact of the facility.

{¶ 199} Initially, the Board determines that the Bratenahl Residents' argument is largely moot. Our modifications to the Revised Stipulation described in our discussion of R.C. 4906.10(A)(3) require Icebreaker to file the bird and bat impact mitigation plan (including the collision monitoring plan) and demonstrate proof of compliance with requirements of preconstruction radar in the public record for the Board to review. However, regardless, the Board finds that Staff and ODNR's ongoing role is not unlawful. As stated in *Buckeye Wind*, the Supreme Court of Ohio has found that the Board is statutorily authorized to allow Staff to monitor compliance with the conditions enumerated in this decision. As further explained by the Court "* * *proper facility siting is subject to modification as the process continues—proposals are tested and matched to the defined conditions." *Buckeye Wind* at ¶ 17. Thus, the Bratenahl Residents are incorrect to describe Staff's continued involvement as an improper delegation of authority. Rather, Staff's ongoing duties are a necessary component in a dynamic process. Above, we made our determinations regarding the statutory requirements of R.C. 4906.10. In order to ensure that Icebreaker continues to comply with those requirements, ongoing monitoring is required. While the Board is able to determine the nature of the probable environmental impact, Staff's involvement will be able to calculate the specific, actual environmental impact in compliance with the certificate conditions as the project is constructed and begins operation. While the Bratenahl Residents argue that Staff is unqualified to provide oversight regarding the pre-construction radar monitoring, we note that Staff's review is largely objective, not subjective. Staff and ODNR will be reviewing the results of Icebreaker's radar monitoring to determine if it meets the specific, quantitative standards outlined in Condition 21, 22, and 23 of the Revised Stipulation. As we expressed previously, Staff and ODNR have experience monitoring the development of Ohio's terrestrial wind generation projects and they are eminently qualified to oversee Icebreaker's compliance with this order. The Board is not persuaded by the Bratenahl Residents' argument that Icebreaker's compliance with the conditions is not subject to additional review or public comment. First, we recognize that any material changes to the project require an application to amend the certificate. In addition, as acknowledged in *Buckeye Wind*, pursuant to R.C. 4905.07 all of Staff's records

are open to inspection. *Buckeye Wind* at ¶ 25. However, given the public interest in this proceeding, we direct Icebreaker to file the pre-construction radar monitoring report in the docket and direct Staff to file its review of the report in the docket.

{¶ 200} In their reply brief, the Bratenahl Residents additionally contend that the project violates the “Public Trust Doctrine.” According to the Bratenahl Residents, pursuant to the Public Trust Doctrine, the state of Ohio holds title to its portion of Lake Erie and cannot relinquish its interest for the benefit of private parties, citing *Illinois Central Railroad Co. v. Illinois*, 146 U.S. 387 (1892). The Bratenahl Residents maintain that the lake is to be held in trust for the benefit of the people of Ohio. The Public Trust Doctrine was also discussed by multiple people at the local public hearings and in filed comments. First, we observe that whether the project violates Public Trust Doctrine is a judicial determination and outside of the Board’s jurisdiction. However, we do not believe that the project would violate the Public Trust Doctrine. We initially note that the land used by the project is subject to a submerged land lease (SLL) between the state of Ohio, through ODNR, and the Applicant. Under the terms of the SLL, the Applicant is required to “at all times respect * * * the public’s right to the free and unrestricted use of the waters* * *.” Additionally, the project is “subject to the public’s right of navigation” in and around the facility. (Icebreaker Ex. 1, Attach. A at 5-6.) Pursuant to condition 16 of the Revised Stipulation, Icebreaker is required to execute a modified SLL with ODNR and follow all terms and conditions of the lease (Joint Ex. 2 at 5). Further, as extensively discussed, the Board is required to assess the environmental impact of the project. In doing so, we examined the project’s expected impact on, among other things, the public’s interaction with the lake and any effects on recreational activities such as boating, fishing, and swimming. In sum, due to the small scope of the project and its location eight to ten miles offshore, the project is expected to have minimal impact on the public’s enjoyment of Lake Erie. Therefore, because the state is not relinquishing any interest in Lake Erie, and consistent with our prior determinations, we find that the project does not violate the Public Trust Doctrine.

{¶ 201} Based on the record in this proceeding, the Board concludes that all of the elements established in accordance with R.C. Chapter 4906 are satisfied for the construction, operation, and maintenance of the wind generating electric facility described in Icebreaker's application, subject to the conditions set forth in the Revised Stipulation and this Order. Accordingly, based upon all of the above, the Board approves and adopts the Revised Stipulation, as modified, and hereby issues a certificate to Icebreaker in accordance with R.C. Chapter 4906.

X. PROCEDURAL ISSUES

{¶ 202} As a final matter, Icebreaker requests that the Board reconsider certain ALJ rulings denying the following motions filed by Icebreaker: the motion in limine and request to limit intervenor participation to relevant issues, filed on September 21, 2018, and the motion to exclude testimony, filed on July 26, 2019.

{¶ 203} Ohio Adm.Code 4906-2-29(F) provides, in pertinent part, that any party that is adversely affected by a ruling issued under Ohio Adm.Code 4906-2-28 or any oral ruling issued during a public hearing and that elects not to take an interlocutory appeal from the ruling may still raise the propriety of that ruling as an issue for the Board's consideration by discussing the matter as a distinct issue in its initial brief.

A. *Testimony of Bratenahl Residents Witness Dr. Richard Brown*

{¶ 204} Icebreaker notes that the ALJ denied Icebreaker's motion in limine, which requested that certain portions of Bratenahl Residents witness Dr. Richard Brown pre-filed direct testimony filed on September 14, 2018, be stricken from the record (Tr. Vol. I at 26). Icebreaker asserts that Dr. Brown was retained by the Bratenahl Residents in order to conduct an assessment on the economic viability of the project and prepare a report (Bratenahl Residents Ex. 21, Attach. RB-1). Despite acknowledging that the ALJ instructed that the Board would afford the testimony the appropriate weight it deserves, Icebreaker continues to argue that permitting the allegedly irrelevant testimony into the record of this case is prejudicial to Icebreaker, given that certain topics contained in Dr. Brown's testimony

fall outside the scope of the seven enumerated criteria, outlined in R.C. 4906.10, which the Board is to consider when determining whether to grant a certificate for the construction, operation, and maintenance of an wind-powered electric generation facility. Specifically, Icebreaker claims Dr. Brown addresses the project's cost and rate structure, the need for the project, the project's contributions to PJM's regional interconnection system, and other issues such as tax credits, all of which Icebreaker argues are irrelevant. Icebreaker opines that Dr. Brown's flawed analysis leads to prejudicial conclusions, including that the facility is not economically viable without "extensive subsidies," and will not produce economical renewable energy and the purported benefits of the project will only be realized in the event large-scale offshore wind development occurs. (Bratenahl Residents Ex. 21, Attach. RB-1 at 7, 14, 16.) In fact, Icebreaker contends other evidence presented by Staff witness Jason Cross confirms that the cost associated with the power purchase agreement with Cleveland Public Power is irrelevant as Staff determined it was not pertinent to its review of the application (Staff Ex. 10 at 2-3; Tr. Vol. VI at 1325). As these rates and terms associated with the purchase of power are not even subject to state regulatory review, Icebreaker argues this information falls outside the purview of the Board and, thus, should not be considered in this proceeding.

{¶ 205} Similarly, Icebreaker contends that the information presented by Dr. Brown regarding the "need" for the facility is irrelevant, reiterating its earlier arguments regarding the inapplicability of R.C. 4906.10(A)(1) and adding that other, more appropriate, forums exist to consider this issue, such as the Cleveland City Council deliberations when it considered whether to purchase Icebreaker's output. Icebreaker even contends that Staff has acknowledged Icebreaker provided all necessary information to allow the Board to determine that the project complies with R.C. 4906.10(A)(4) and is consistent with PJM's regional plans for the electric power grid (Staff Ex. 1 at 34-36). In response to Dr. Brown's assertions that the application "should explain specifically how its construction and operation will help assess the potential success of future larger-scale offshore wind farms in Lake Erie and other Great Lakes," Icebreaker notes that this case concerns a six-turbine

demonstration project and argues that hypothetical assessments for larger-scale offshore wind energy projects should not be considered (Bratenahl Residents Ex. 21 at 5, 30).

{¶ 206} Bratenahl Residents dispute the characterization of Dr. Brown's testimony, noting that his testimony specifically relates to the statutory requirements set forth in R.C. 4906.10(A)(4) and (A)(6). As initially raised in the Bratenahl Residents' filed objections relating to the application, they assert that Dr. Brown's testimony addresses issues related to how the project would impact the market and would require heavy subsidization while not eliminating needs for baseload generation, wholly within the scope of the Board's consideration of R.C. 4906.10(A)(4). Additionally, the Residents point to their filed objections where they argued that the application "failed to establish that the Proposed Project will serve the public interest, convenience and necessary required by R.C. 4906.10(A)(6). In sum, Applicant requests the OPSB to authorize construction of a privately-owned project that will visit currently-unknown, and potentially vast, environmental harms upon Lake Erie for no economic return – the Proposed Project will intermittently, and inefficiently, produce expensive electricity that will never displace fossil fuel-fired base load electricity for the PJM system." Bratenahl Residents Motion to Intervene (Jan. 22, 2018) at 13-14. Bratenahl Residents claim Dr. Brown's testimony regarding the project's economic and financial viability are relevant to a determination of R.C. 4906.10(A)(6).

{¶ 207} The Board finds that the ALJ's ruling denying the motion in limine, requesting certain portions of Dr. Brown's testimony be stricken from the record, was not unreasonable. As indicated on the record, we are perfectly capable of affording the purported testimony the appropriate evidentiary weight it deserves, which, as discussed earlier, was not persuasive to establish that the proposed project was not in the public interest and, therefore, compliant with R.C. 4906.10(A)(6). The Commission does not require the same level of protection from potentially prejudicial information as a jury trial would; thus, motions in limine requesting blanket, exclusionary rulings are rarely, if ever, granted in proceedings before us. Further, the ALJ clearly noted on the record that parties would be afforded an opportunity to raise their objections during the cross-examination of

Dr. Brown. (Tr. Vol. I at 26.) This instruction is consistent with the past practices of the Public Utilities Commission of Ohio, which focuses more on making evidentiary rulings in accordance with the parameters outlined by the Supreme Court of Ohio in response to motions to strike testimony and objections to cross-examination on a case-by-case basis. See, e.g., *In re Duke Energy Ohio, Inc.*, Case No. 03-93-EL-ATA, et al., Entry (Feb. 28, 2007). Finally, although we did not find Dr. Brown's testimony to be persuasive in our consideration of this matter, we note that no prejudice exists from allowing it to remain in the record. Specifically, we note that portions of Icebreaker witness David Karpinski's testimony were allowed to stand, despite testifying to the "financeability" of the project and certain financial information associated with the project (Tr. Vol. I at 31-43).

B. Testimony of Bratenahl Residents Witness Dr. Jeff Gosse

{¶ 208} Icebreaker also asks for the Board's reconsideration as it pertains to the ALJ's denial of the motion to exclude the testimony of Bratenahl Residents' witness Gosse. Entry (Aug. 9, 2019) at ¶¶16-17. Icebreaker contends that federal regulations, known as Touhy regulations, prohibit Dr. Gosse from testifying in this proceeding without first obtaining the permission of the USFWS or the Department of the Interior, as he was employed by the USFWS from 2009-2018 and cannot provide testimony regarding information he obtained while performing his official duties absent such permission. 43 C.F.R. §§ 2.280, 2.281, 2.290. See *U.S. ex rel. Touhy v. Ragen*, 340 U.S. 462, 468, 71 S.Ct. 416, 95 L.Ed. 417 (1951). Dr. Gosse was employed by USFWS as a Regional Energy Coordinator and had significant involvement in the project subject to this proceeding as it relates to bird and bat impacts and VBR options (Tr. Vol. VII at 1622). Additionally, Icebreaker argues that, even if the federal regulations do not preclude his testimony, Dr. Gosse's testimony should nonetheless be excluded on the basis that such testimony is unfairly prejudicial to the application, given his substantial involvement in the application, especially as it relates to bird and bat issues (Bratenahl Residents Ex. 24, Attach. 1; Tr. Vol. VII at 1622).

{¶ 209} Bratenahl Residents contend that the ALJ properly concluded that Dr. Gosse's testimony was permissible and requests that the Board uphold that decision.

Initially, Bratenahl Residents argue that Icebreaker, as a private party, does not possess the requisite standing to attempt to prevent a retired USFWS employee from testifying in this case by invoking these federal regulations. The more appropriate entities to make such argument, according to Bratenahl Residents, would be the USFWS or the Department of Interior. See *United States ex rel. Treat Brothers Co. v. Fidelity and Deposit Co. of Md.*, 986 F.2d 1110, 1119 (7th Cir. 1993); *United States ex rel. Liotine v. CDW Government, Inc.*, No. 05-33-DRH, 2012 WL 2807040 at *6 (S.D.Ill. July 10, 2012). Additionally, Bratenahl Residents claim that it would be unlawful for the Board to apply the Touhy regulations, which were designed to provide for federal agencies' internal management of their operations, to former employees no longer managed by such agencies. *Koopmann v. United States Dep't of Transportation*, 335 F.Supp.3d 556, 558 (S.D.N.Y. 2018) (where the Court determined that the United States Department of Transportation's (USDOT) denial of a request to depose a former USDOT employee was abuse of discretion, as Touhy regulations were unlawful to the extent they applied to former employees). Moreover, Bratenahl Residents note that the actual statute governing when and where former USFWS employees are prohibited from testifying, 18 U.S.C. ¶ 207, does not prohibit the testimony of Dr. Gosse. *Gulf Grp. Enters. Co. W.L.L. v. United States*, 98 Fed.Cl. 639, 645 (2011). In response to Icebreaker's arguments pertaining to the prejudicial effect of Dr. Gosse's testimony, Bratenahl Residents maintain that the substance of Dr. Gosse's testimony, which was submitted nearly a year and half after he retired from the USFWS, complied with the June 17, 2019 Entry limiting the scope of the hearing to "the fifth amendment to the application, modifications made between the September 4, 2018 stipulation, and the [Revised] Stipulation, as well as any new, relevant information that has developed since * * * October 2, 2018 * * *," Entry (June 17, 2019) at 2-3.

{¶ 210} Upon review of the arguments, the Board finds that Icebreaker's request should be denied. The August 9, 2019 Entry provides a thorough explanation as to why the motion to exclude Dr. Gosse's testimony should appropriately be denied, which we affirm in its totality. While Icebreaker is correct that it may question the rulings of the ALJ in its initial brief, Icebreaker has presented no new information or arguments in support of its

request for the Board's consideration. For this reason, we find that the ALJ's well-reasoned decision must stand.

XI. FINDINGS OF FACT AND CONCLUSIONS OF LAW

{¶ 211} Icebreaker is a corporation and a person under R.C. 4906.01(A).

{¶ 212} The proposed electric generation facility is an economically significant wind farm, as that term is defined in R.C. 4906.13(A) and Ohio Adm.Code 4906-1-01(R).

{¶ 213} On September 13, 2016, Icebreaker filed a pre-application notification letter informing the Board of public informational meetings for its proposed facility.

{¶ 214} Icebreaker held a public informational meeting regarding the project on November 3, 2016.

{¶ 215} On October 13, 2016, Icebreaker filed its confirmation of notification to property owners and affected entities of the date of the public informational meeting.

{¶ 216} On November 9, 2016, Icebreaker filed proof of its publication of the notice regarding the public informational meetings in accordance with Ohio Adm.Code 4906-3-03.

{¶ 217} On February 1, 2017, Icebreaker filed its application for a certificate to construct a wind-powered electric generation facility in Cuyahoga County, Ohio.

{¶ 218} On March 13, 2017, the Applicant filed an application supplement consisting of a narrative and numerous attachments.

{¶ 219} By letter dated April 3, 2017, the Board notified Icebreaker that the application, as supplemented, had been found not to comply with the requirements of Ohio Adm.Code 4906-01, et seq.

{¶ 220} On July 20, 2017, the Applicant filed a second supplement and response to the Board's letter dated April 3, 2017.

{¶ 221} By letter dated July 31, 2017, the Board notified Icebreaker that its application, as supplemented, had been found to be sufficiently complete pursuant to Ohio Adm.Code Chapter 4906-1, et seq.

{¶ 222} On August 1, 2017, Icebreaker filed notice of payment of the application fee to the Board, pursuant to Ohio Adm.Code 4906-3-07(A). Icebreaker also filed its proof of compliance with the requirements for service of its accepted and complete application, consistent with Ohio Adm.Code 4906- 3-07(A).

{¶ 223} On August 15, 2017, the ALJ issued an Entry establishing the effective date of the application as August 14, 2017, and adopting a procedural schedule for this case, including dates for a local public hearing and adjudicatory hearing. The local public hearing was scheduled for November 8, 2017.

{¶ 224} On August 18, 2017, Icebreaker filed the third supplement to its application.

{¶ 225} On August 30, 2017, the Applicant filed proof of service and publication of the accepted, complete application, in accordance with R.C. 4906.06(E) and Ohio Adm.Code 4906-3-09(A)(2).

{¶ 226} On September 8, 2017, Icebreaker filed proof of service and initial publication regarding the date, time, and location of the public hearing and adjudicatory hearing, including proof of notice of the public hearing and adjudicatory hearing to affected property owners and elected officials, in substantial compliance with Ohio Adm.Code 4906-3-09(A)(1).

{¶ 227} On October 23, 2017, Staff filed a motion to suspend the procedural schedule with the exception of the public hearing. Staff's motion was granted by ALJ Entry issued on October 23, 2017.

{¶ 228} On November 3, 2017, Icebreaker filed proof of service and second publication regarding the date, time, and location of the initial public hearing, including

proof of notice of the public hearing to affected property owners and elected officials, in substantial compliance with Ohio Adm.Code 4906-3-09(A)(2).

{¶ 229} The first local public hearing was held on November 8, 2017.

{¶ 230} On March 22, 2018, Icebreaker filed the fourth supplement to its application.

{¶ 231} By Entry dated April 20, 2018, the procedural schedule was reestablished, including dates for a second local public hearing and the adjudicatory hearing.

{¶ 232} On April 27, 2018, and May 11, 2018, Icebreaker filed proof of service and initial publication regarding the date, time, and location of the second public hearing and adjudicatory hearing, including proof of notice of the second public hearing and adjudicatory hearing to affected property owners and elected officials, in substantial compliance with Ohio Adm.Code 4906-3-09(A)(1).

{¶ 233} By Entry dated May 23, 2018, OEC, Carpenters, Sierra Club, BNOW, and Bratenahl Residents were granted intervention. The motion to intervene of Cuyahoga residents Vicci Weeks, Caryn Good Seward, and Steven Seward was denied.

{¶ 234} The Staff Report of Investigation was filed on July 3, 2018.

{¶ 235} On July 13, 2018, Icebreaker filed proof of service and second publication regarding the date, time, and location of the second public hearing and adjudicatory hearing, including proof of notice of the public hearing and adjudicatory hearing to affected property owners and elected officials, in substantial compliance with Ohio Adm.Code 4906-3-09(A)(2).

{¶ 236} The second local public hearing was held on July 19, 2018.

{¶ 237} By Entry dated August 1, 2018, the ALJ adjusted the procedural schedule at the request of the parties and directed that the hearing commence on September 24, 2018. In the Entry, Icebreaker was also directed to issue public notice of the hearings.

{¶ 238} Icebreaker, BNOW, Carpenters, OEC, and Sierra Club filed a joint stipulation and recommendation on September 4, 2018.

{¶ 239} Icebreaker filed its direct testimony on September 6, 2018. Intervener testimony was filed on September 14, 2018. Staff testimony was later filed on September 18, 2018.

{¶ 240} Icebreaker filed proof of publication of public notice of the adjudicatory hearing on September 18, 2018.

{¶ 241} The adjudicatory hearing commenced on September 24, 2018, and concluded on October 2, 2018. A briefing schedule was set.

{¶ 242} Following the hearing, multiple continuances of the briefing schedule were granted to provide the parties additional time for settlement negotiations.

{¶ 243} On May 14, 2019, Icebreaker filed its fifth supplement to the application.

{¶ 244} On May 15, 2019, Icebreaker, Staff, BNOW, Carpenters, OEC, and Sierra Club filed a Revised Stipulation, along with a motion seeking to reestablish the procedural schedule.

{¶ 245} On May 22, 2019, the ALJ issued an Entry granting the motion to reestablish the procedural schedule and setting a prehearing conference to discuss potential dates for a hearing.

{¶ 246} On June 17, 2019, the ALJ issued an Entry setting deadlines for testimony and scheduling an adjudicatory hearing to commence on August 20, 2019.

{¶ 247} Icebreaker filed revised testimony on July 26, 2019, while Staff filed revised testimony on July 26 and July 29, 2019. Icebreaker, BNOW, and Carpenters also filed a motion to exclude the testimony of Dr. Jeff Gosse on July 26, 2019.

{¶ 248} The ALJ denied the motion to exclude the testimony of Dr. Jeff Gosse on August 9, 2019. Bratenahl Residents filed Dr. Gosse's testimony on August 13, 2019.

{¶ 249} The second adjudicatory hearing was held on August 20, 2019. A briefing schedule was established following the hearing.

{¶ 250} On September 3, 2019, Staff filed a letter in the docket indicating Icebreaker had failed to pay its supplemental application fee.

{¶ 251} On September 3, 2019, the ALJ suspended the briefing schedule and directed that Icebreaker file notice of payment of the supplemental application fee by September 13, 2019.

{¶ 252} On September 12, 2019, Icebreaker filed notice of payment of the supplemental application fee.

{¶ 253} By Entry issued September 12, 2019, the ALJ reinstated the procedural schedule and directed that initial and reply briefs be filed by October 11, 2019, and November 15, 2019, respectively.

{¶ 254} Initial briefs were filed by Icebreaker, Staff, Bratenahl Residents, and jointly by OEC and Sierra Club on October 11, 2019. Reply briefs were filed by the same parties on November 15, 2019.

{¶ 255} Adequate data on the proposed economically significant wind farm has been provided to make the applicable determinations required by R.C. 4906.10(A). The record evidence in this matter provides sufficient factual data to enable the Board to make an informed decision.

{¶ 256} The record establishes that, because the project is not a gas pipeline or an electric transmission line, R.C. 4906.10(A)(1) is not applicable.

{¶ 257} The record establishes the nature of the probable environmental impact from construction, operation, and maintenance of the project, consistent with R.C. 4906.10(A)(2).

{¶ 258} The record establishes that the project, subject to the conditions set forth in this Opinion, Order, and Certificate, represents the minimum adverse environmental impact, considering the available technology and nature and economics of the various alternatives, and other pertinent considerations, consistent with R.C. 4906.10(A)(3).

{¶ 259} The record establishes that, as a generating facility, the project is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems and that the facility will serve the interests of electric system economy and reliability, in accordance with R.C. 4906.10(A)(4).

{¶ 260} The record establishes that the project, subject to the conditions set forth in this Opinion, Order, and Certificate, will comply with R.C. Chapters 3704, 3734, and 6111; R.C. 1501.33, 1501.34, and 4561.32; and all rules and regulations thereunder, to the extent applicable, consistent with R.C. 4906.10(A)(5).

{¶ 261} The record establishes that the project, subject to the conditions set forth in this Opinion, Order, and Certificate, will serve the public interest, convenience, and necessity, consistent with R.C. 4906.10(A)(6).

{¶ 262} The record establishes that, because the project will not cross any agricultural land or agricultural district parcels, R.C. 4906.10(A)(7) is not applicable.

{¶ 263} The record establishes that the project, subject to the conditions set forth in this Opinion, Order, and Certificate, incorporates maximum feasible water conservation practices, considering available technology and the nature and economics of the various alternatives, consistent with R.C. 4906.10(A)(8).

{¶ 264} The evidence supports a finding that all of the criteria in R.C. 4906.10(A) are satisfied for the construction, operation, and maintenance of the project as proposed by Icebreaker, subject to the conditions set forth in this Opinion, Order, and Certificate.

{¶ 265} The evidence supports a finding that the Revised Stipulation, as modified, is: the product of serious bargaining among capable, knowledgeable parties; as a package, benefits ratepayers and is in the public interest; and does not violate any important regulatory principle or practice.

{¶ 266} Based on the record, the Board should issue a certificate of environmental compatibility and public need, pursuant to R.C. Chapter 4906, for the construction, operation, and maintenance of the project, subject to the conditions set forth in this Opinion, Order, and Certificate.

XII. ORDER

{¶ 267} It is, therefore,

{¶ 268} ORDERED, That the Revised Stipulation be approved, as modified, and adopted. It is, further,

{¶ 269} ORDERED, That a certificate be issued to Icebreaker for the construction, operation, and maintenance of the wind-powered electric generation facility, subject to the conditions set forth in the Revised Stipulation and this Order. It is, further,

{¶ 270} ORDERED, That a copy of this Opinion, Order, and Certificate be served upon all parties and interested persons of record.

BOARD MEMBERS:

Approving:

Sam Randazzo, Chairman
Public Utilities Commission of Ohio

Rachel Near, Designee for Lydia Mihalik, Director
Ohio Development Services Agency

Mary Mertz, Director
Ohio Department of Natural Resources

Gene Phillips, Designee for Amy Acton, M.D., MPH, Director
Ohio Department of Health

Drew Bergman, Designee for Laurie Stevenson, Director
Ohio Environmental Protection Agency

George McNab, Designee for Dorothy Pelanda, Director
Ohio Department of Agriculture

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Case No(s). 16-1871-EL-BGN

Summary: Opinion & Order approving and adopting the stipulation and recommendation, as modified herein, between Icebreaker Wind Inc., Staff, and other parties and directs that a certificate be issued to Icebreaker Wind Inc. for construction of a new 20.7 megawatt wind-powered electric generation facility. electronically filed by Ms. Mary E Fischer on behalf of Ohio Power Siting Board