



August 2, 2023

Christopher Henry

Director of Planning and Development
109 N. Main Street
Oneida, NY 13421

**RE: Oneida Wind Energy Project
0 Brewer Road
Oneida, NY 13421**

Dear Mr. Henry:

New Leaf Energy is pleased to submit the attached responses to comments and questions raised by the community regarding the Oneida Wind Energy Project. The following list of comments is a combination of; a) general topics that have been raised and discussed during the course of the public hearing process, b) written comments and questions from abutters, and c) written comments provided by Madison County.

Thank you for providing the written comments and questions from the community so that New Leaf can provide additional information on these topics.

Letters have been sent via certified mail to neighbors to provide them with the website address and to inform them that it has been updated with additional information. Please see a copy of that communication attached.

We look forward to discussing these topics and any new or outstanding questions or comments at the September 12th meeting. If you have any questions regarding the above, please do not hesitate to call.

Sincerely,

New Leaf Energy, Inc.

A handwritten signature in black ink, appearing to read "Brandon Smith".

Brandon Smith, PE

bsmith@newleafenergy.com

Ph: (978) 221-3093

Attachment: Oneida Wind Update Letter

1. Property Values

NLE Comment: Questions about property values were raised at the Public Hearing, as well as in written questions received by neighbors. Several anecdotal individual opinions were submitted, however there are many large reputable property value studies that can be relied upon.

For large wind farms, there's no evidence that wind power impacts property values long-term, based on years of major comprehensive and peer-reviewed studies in the US. There is some evidence of a potential short-term reduction in home values, attributed to an effect called 'anticipation stigma' which is associated with the negative anticipation of turbine construction. Prices returned to normal after construction and commenced normal operations.

To study specific impacts from Community Wind projects, a study commissioned by the Department of Energy and the Massachusetts Clean Energy Center was published in the Journal of Real Estate Research (JRER) in 2016. This study found:

"Although we found the effects from various negative features (such as electricity transmission lines) and positive features (such as open space) generally accorded with previous studies, we found no net effects due to turbines in these communities. We also found no unique impact on the rate of home sales near wind turbines."

Even as recently as February 2022, the leading energy researcher for the Department of Energy was quoted in an NPR interview reiterating his findings that there's no impact to residential property values after studying it over multiple periods of time.

The New York State Energy Research and Development Authority (NYSERDA) summarizes the expected impacts to property values in the New York Wind Energy Guidebook published in September 2020. Impacts to property values were found to be temporary in nature and were the result of expected negative effects turbine construction would have. NYSERDA found that there "*is some evidence for an effect termed anticipation stigma*" and that "*...prices dropped by 8% after the wind project announcement but before construction. Home prices subsequently returned to normal after the wind project was constructed and commenced normal operations.*"

More details can be found in the NYSERDA Wind Energy Guidebook in the link below:

<https://www.nyserda.ny.gov/All-Programs/Clean-Energy-Siting-Resources/Wind-Guidebook>

Lastly, proper siting is important for any wind turbine to mitigate or eliminate impacts to neighboring property values, which is why this project is sited over 2,000 feet from any residences. This distance provides a buffer to ensure operation of the turbine does not adversely affect property values in the area.

2. Safety

NLE Comment: Wind turbines are an extremely safe way of producing electricity. Accidents do happen, but many measures have been and will be taken to ensure that this project is as safe as possible. Safety starts with siting. This project is adhering to the City of Oneidas setback of 1.5 x tip height, which amounts to a minimum of 840' feet from the nearest property line. This is greater than the industry and ORES standard of 1.1x tip height. This setback distance provides a buffer between the turbine and any homes, businesses, or infrastructure that could be damaged in the case of an accident. Additionally, the turbine is over 2000' feet from the nearest structure, adding an even greater safety margin.

A second important factor in safety is maintenance. Selecting state-of-the-art, certified and new wind turbines, and maintaining them properly can prevent the vast majority of wind turbine incidents and failures. New Leaf Energy only partners with experienced entities to own and operate our projects. This is one of the reasons a height variance is required - industry leading owners and operators require new turbines, eliminating the option for the project to site an older, sub-450' turbine.

With regard to safety and stability, the turbine provided will receive a Type Certification. The Type Certification is the industry-standard and demonstrates conformity under the International Electrotechnical Commission's (IEC) standard 61400, denoting a fully independent assessment of the completeness, correctness, and safe functioning of a wind turbine for its design lifetimes. It also provides the traceability for the application documentation for design, testing, and manufacturing. The certification will confirm that the turbine will be operated in accordance with all industry standards and safety requirements. This shall be provided prior receipt of the building permit.

Lastly, we are dedicated to working with the local fire department. As part of the pre-application process, New Leaf met with Brian Burkle, Fire Marshall, from the Oneida Fire Department. It was discussed during this meeting that in the event of a fire, the fire department should not attempt to fight a turbine fire. Rather, a defensive approach is appropriate where the department secures the area and allows the turbine to burn itself out. As the project continues to mature, New Leaf is committed to providing site plans, knox boxes, training, or other accommodations to the Oneida Fire Department as necessary.

3. Ice Throw, lightning, collapse, etc

NLE Comment: The wind industry has incorporated several icing risk mitigation measures to ensure the safety of modern wind turbines. First and foremost is siting - the proposed turbine is located 840 feet from the nearest property line, and more than 2000 feet from the nearest home.

To reduce the risk of ice throw, the wind turbines can be shutdown remotely when site personnel observe icing conditions and ice formation on the wind turbines, or predicted atmospheric conditions warrant. The manufacturer also offers automatic systems to prevent, detect, and de-ice turbine blades. If ice is being built up, the turbine will shut down and go into an ice-shedding mode, in which the turbine is at a standstill until it detects that the ice has been shed. In this case the ice would fall directly below the turbine. If the ice detection system is not able to measure ice (for example due to a sensor failure) the turbines will be stopped automatically if the ambient temperature is below 5°C. An additional de-icing system may be employed where hot air is circulated through the blade cavities, to speed up the ice shedding process. These systems allow ice to be shed directly below the turbine, and prevent ice from being thrown from the blades during operation.

The turbines have been designed to withstand lightning strikes, and are designed to withstand hurricane force winds. Turbine operation is continuously monitored and protected against overspeeding. In case of an overspeed situation, the safety system activates an emergency feathered position of the blades (full feathering, facing perpendicular to the wind) which will stop the system from rotating until the wind reduces to an operable speed. Again, proper siting provides a safety buffer in the unlikely event of a turbine collapse. In the rare event that turbines have collapsed, typically the blade strikes the tower, causing the structure to collapse down, rather than falling over. However, in the worst case scenario where the turbine falls over intact, the 840 foot setback to the nearest property line allows the 560 foot tall turbine to fall without risking neighbors or infrastructure.

4. In ice storms, will the blades throw ice? Will it hit someone's roof?

NLE Comment: No, please see information above. The project is sited well away from residences, and modern wind turbines employ measures to ensure ice does not accumulate to the level where it can be thrown any significant distance.

5. Groundwater and Well Impacts

NLE Comment: A proper foundation requires approximately 12 feet of excavation to prepare the subgrade for a reinforced concrete spread foundation. Blasting for the foundation will only be utilized if 12 foot depth cannot be excavated by

traditional methods (ripping, jackhammer). New Leaf has submitted proposed conditions to mitigate any risk posed by potential blasting.

6. Who would be responsible if we did lose our well water because of the construction of a wind turbine?

NLE Comment: New Leaf Energy is committed to ensuring that no one's well or water source is negatively impacted by the construction of the proposed wind turbine. We are confident that the likelihood of any wells being impacted by the construction of the turbine is extremely low, and therefore agree to be responsible for any impacts resulting from the turbine construction.

7. Pre- and post-installation well monitoring needs to be done for a full year

NLE Comment: New Leaf has consulted with our geotechnical consultant who has confirmed that industry standard is to test within weeks of blasting, and that the mechanism for impacts to occur (sediment clogging fissures, etc.) takes days and weeks, not months. However, we understand the concern, and defer to the Planning Commission as to whether the 3 month responsible period should be extended to 1 year. The primary concern New Leaf has with this extended timeframe is the potential for issues not related to the wind turbine construction being attributed to the turbine. There are many other factors that impact wells such as other construction activities, seasonal changes, or droughts. Extending the timeframe makes it more difficult to ascertain the exact cause of well impacts and increases the likelihood that the turbine construction is held responsible for impacts resulting from other factors.

8. Surface water runoff

NLE Comment: The project must obtain a State Pollutant Discharge Elimination System (SPDES) Permit for stormwater discharges. In order to obtain the permit, a Stormwater Pollution Prevention Plan (SWPPP) was prepared and submitted to the City. This document is a design report that outlines all the measures that are implemented to protect the adjacent properties from surface water problems and show how the project meets State regulations.

First, several measures are installed during construction to keep sediment (dirt) within the project site and not allow it to be released downstream. Second, the contractor must use several pollution prevention measures and good housekeeping practices to keep the site clean and controlled.

Finally, the project must be designed such that runoff from the developed site is lower than the runoff from the pre-developed site (vacant). We accomplish this by adding shallow, low slope swales around the project (mostly on the east side of the roadway) to hold and slowly release the water. The SWPPP contains hydraulic

analysis using computer modeling of the site and the project to back up this statement and show the calculations on how the project controls runoff as to not impact neighbors. In addition, the culvert pipes have level spreaders installed on the outlet side. These stone trenches take the concentrated flow from the pipe, slow it down and spread it out along the ground surface, so that it can return to a sheet flow the same as current conditions. Overall, the project will not increase the amount of water coming off the site, nor will the water quality be impacted.

9. Effect of surface water or rising water table on radon

NLE Comment: A hydrologic analysis has been performed and a Stormwater Pollution Prevention Plan has been submitted with the application and is required to obtain the State permit for stormwater discharges. The results of the hydrological model is that the turbine will have no adverse effect on surface water or groundwater levels and so no effect to radon is anticipated.

10. Effect of surface water or rising water table on septic

NLE Comment: A hydrologic analysis has been performed and a Stormwater Pollution Prevention Plan has been submitted with the application and is required to obtain the State permit for stormwater discharges. The results of the hydrological model is that the turbine will have no adverse effect on surface water or groundwater levels and so no effect to septic is anticipated.

11. Sound

NLE Comment: Wind energy is a quiet neighbor when operating. The proposed turbine will adhere to the City of Oneida noise regulations, which limit wind turbines to no more than 45 decibels of sound at the property line.

Prior to submitting an application to the City of Oneida, New Leaf Energy worked closely with Epsilon Associates, an industry leader in sound modeling, to analyze the proposed project. The purpose of this analysis was to ensure compliance with the City of Oneidas code, as well as industry standards. The resulting study, submitted with the Conditional Use permit application, shows sound levels well below industry standards, and meeting the City code.

The resulting sound levels at homes in the area were also analyzed and it was found that levels will be below 35dB even at the nearest home. For context, 35dB is the level of a quiet library. It should be noted that these are the maximum noise levels a turbine would produce, which would correspond to windy conditions when ambient noise levels are high.

12. Infrasound

NLE Comment: A letter and several studies were submitted by an abutter regarding concerns about infrasound. Epsilon Associates addressed infrasound in the Sound Modeling Report submitted with the project application. We understand the concerns about infrasound, but there is misleading information available on this topic online - the reality is that most of the concern from infrasound is based on anecdotal experiences or the placebo effect.

Low frequency (LF) and infrasound are present in the environment due to other sources besides wind turbines. For example, refrigerators, air conditioners, and washing machines generate infrasound and low frequency sound, as do natural sources such as ocean waves.

A detailed infrasound and low frequency noise measurement program of wind turbines was conducted from 2013-2015 by the Ministry for the Environment, Climate and Energy of the Federal State of Baden-Wuerttemberg, Germany. The conclusions of the German study were:

“Infrasound and low-frequency noise are an everyday part of our technical and natural environment. Compared with other technical and natural sources, the level of infrasound caused by wind turbines is low. Already at a distance of 150 m (~500 ft), it is well below the human limits of perception. Accordingly, it is even lower at the usual distances from residential areas. Effects on health caused by infrasound below the perception thresholds have not been scientifically proven. Together with the health authorities, we in Baden-Württemberg have come to the conclusion that adverse effects relating to infrasound from wind turbines cannot be expected on the basis of the evidence at hand.”

The Massachusetts Department of Environmental Protection (MA DEP) and the Massachusetts Department of Public Health commissioned an expert panel who found that: *“Claims infrasound from wind turbines directly impacts the vestibular system have not been demonstrated scientifically. Available evidence shows that the infrasound levels near wind turbines cannot impact the vestibular system.”*

In a 2011 National Association of Regulatory Utility Commissioners (funded by the U.S. Department of Energy) found that *“the widespread belief that wind turbines produce elevated or even harmful levels of low frequency and infrasonic sound is utterly untrue as proven repeatedly and independently by numerous investigators”*

It should be noted that in the Malecki et al. (2023) study Mr. Coapman referenced ultimately concluded *“we conclude that it is much more probable that the obtained influence of [wind turbine] IS [infrasound] on subjects’ well-being is a*

result of: unintentional perception of the stimuli, presence of IS background below 5 Hz or the tendency of a specific group (in this case females) to report negative well-being after the classes if they were tired before the classes.” Effectively, they found that these increased reports were due to other factors rather than wind turbine infrasound.

Ultimately, yes, infrasound is a real phenomenon, but it’s not a unique thing that is only produced by wind turbines, and the level of infrasound produced by wind turbines is not high enough to be a concern at the distances this project is from any person or domestic animal.

13. Sound impacts to domestic animals. Respond to frequency range and link Animals

NLE Comment: At the distances that the proposed project is to any human or domestic animal, noise levels will be extremely low. There are many factors that will cause this turbine to be significantly quieter than previous turbines. First, the size of the turbine allows for lower RPMs, and continuing advances in turbine technology have reduced the noise output at any given wind speed. Finally, due to the stringent noise requirements in the City of Oneida, the turbine will be operating in NRO (Noise Reduced Operation) mode. This allows the turbine to operate quieter than a typical turbine with a slight impact to electricity production. Two studies were submitted regarding the impact of turbines on animals (geese and pigs) in both of these studies, the animals were subjected to much higher levels of exposure than what will be possible from the proposed project. For example, in M. Karwowska et al., the pigs that showed an impact were kept within 50m (164ft) of the turbine with a noise level of 53.6 dB(A). The nearest feasible location that livestock would be kept in proximity to the Oneida wind project is approximately 1800 feet away, in areas where levels are modeled to be 35dB(A) or lower. Considering the logarithmic nature of decibels, this is significant.

14. Impacts to wildlife

NLE Comment: Impacts to terrestrial wildlife are limited due to the small footprint of the site, lack of barriers to movement, and because the site will be unmanned. Therefore, the typical impacts from wind turbines are to avian and bat species. To mitigate this impact, New Leaf has partnered with Environmental Design & Research to perform a field study to quantify the potential habitat on site. This survey has been provided to the NYS Department of Environmental Conservation. New Leaf intends to comply with all DEC mitigation requirements to limit the net impact to species.

In fact, New Leaf has already agreed to curtail operations during periods of high bat activity to limit the impact to the Northern Long Eared Bat. This is in spite of

the fact that it is calculated (using probabilities used by NYSDEC) that one turbine only has about a 60% chance of taking a single Northern Long Eared Bat over the course of 30 years.

15. Is there a danger to the bald eagles that are sometimes seen up there?
NLE Comment: A habitat survey has been performed on site to check for evidence of Bald Eagle nesting, among other things. This of course does not mean Bald Eagles do not traverse the site. While it can happen, Bald Eagles are not highly susceptible to colliding with wind turbines. In NY, only five bald eagle fatalities from wind turbines were recorded as of 2020, with over 2,000 MW of wind power installed. In the last decade, Bald Eagle populations have quadrupled in the U.S, during that same time, wind energy tripled, indicating that wind turbines do not pose a significant threat to the Bald Eagle population.
16. Decommissioning
NLE Comment: As discussed at the public hearing, New Leaf has submitted a decommissioning plan and estimate requiring the removal of all project features including the turbine and all gravel areas to a depth of 4 feet as required by NYS Ag & Markets and the restoration of surfaces to grass. The total cost was calculated to be \$295,460 without salvage value, and \$102,000 after salvage value. New Leaf is amenable to ensuring that a decommissioning bond is kept in place throughout the life of the project and periodically renewed. New Leaf proposes a condition requiring an updated estimate every 5 years.
17. Communication with Town of Lenox, with Oneida Indian Nation
NLE Comment: New Leaf has sent notices in accordance with SEQR and the City code, which requires consultation with any relevant and involved parties, including the County of Madison.
18. Air Force tower and drones: has anyone given information to the Air Force? Will the windmill interfere with their radar testing?
NLE Comment: The Air Force is notified of this proposal via the FAA filing. When a project files with the FAA, the filing is sent to numerous government agencies, the Air Force included. They have the opportunity to issue a "Notice of Presumed Risk" which flags the filing for more thorough review and potential mitigation. The project was filed in February 2022 and has been out for public comment since September of 2022, with no concerns raised by any agencies.
19. Green Leaf sent out 20 notices, they only got 4 responses
NLE Comment: Notices have adhered to the City of Oneida code for area variances. Additional mailings will be sent to abutters prior to the next Public Hearing notifying them of additional information available on the project website.

20. Where will you be able to see the windmill from?

NLE Comment: Visual simulations have been submitted with the application and are available to view on the project website:

<https://www.newleafenergy.com/project/oneida-wind> (see Application Documents section). The turbine will be visible from other areas but these visuals provide a representative sample of what it will look like from the closest locations.

21. Will it rotate in the wind or be in a fixed position?

NLE Comment: The turbine will rotate to face the direction of the wind. In this area, it will typically be facing west.

22. Would like a plan from the Fire Department in case there's a fire: will mutual aid be called? Where will the staging be? The City doesn't have a tanker, tankers would have to be brought in.

NLE Comment: The fire department response will be less intensive than a typical residential fire. The site is unmanned, with no potential for children or other people needing to be rescued. If the City of Oneida fire department requests information, New Leaf is committed to working with them to ensure a plan is in place, but the response is straightforward - ensure no one goes near the turbine, and ensure the fire does not spread, but otherwise allow the turbine to burn.

23. Who's going to inspect the wind turbine site? What qualifications will the inspector need to have - an engineer, or just a codes officer with a 4-hour training class? How will people know the inspections were actually done?

NLE Comment: The City of Oneida may hire a qualified engineer to perform inspections and monitor construction on their behalf, at the project's expense. New Leaf is amenable to this being included as a condition to ensure this is done.

24. What happens when you get a big 9 foot snow? Heavy rainfall?

NLE Comment: Wind turbines have been employed all over the world for decades. While the models utilized are cutting edge, the basic technology is tried and tested. Heavy snow or rainfall will not affect the turbines, other than potentially cause them to shut down if the wind parameters are outside of the effective range, or ice conditions cause the turbine to enter ice-shedding mode.

25. Will the property owner where the windmill is end up paying higher property taxes after it's built?

NLE Comment: The project will result in additional tax revenue for the City.

26. What is the minimum wind speed for starting the blade?

NLE Comment: The cut-in speed depends on the model but is approximately 3 m/s (6.7 mph).

27. The city should hire an engineering firm to watch the construction and have Green Leaf pay for it.

NLE Comment: Please see response to question number 23. New Leaf defers to the Planning Commission regarding this condition.

County Questions

1. Could a wind turbine that meets the City's Code be placed here? The City's wind ordinance requires a visual impact analysis (one was not included with the project materials that we received) and we feel this would go a long way toward answering some of the height and visibility questions on this project that tie directly back to the variance request.

NLE Comment: No, wind turbines shorter than 450 feet are not available for this application. To stay competitive with increasing efficiencies, manufacturers have needed to increase turbine heights. Older, refurbished models may be available on the secondhand market, but they are not as reliable, marketable, or economically feasible. It should be noted that much of this increase is due to blade length. The hub height will be approximately 320 feet, with only the blade tip reaching to the requested height variance of 560 feet.

Visual simulations were provided in the application depicting existing conditions, a 450 foot turbine, and a 560 foot turbine from several representative locations.

2. Lastly, the applicant indicated that the specific wind turbine model has not been picked out at the time of filling out the application. Given this information, there are specific documents that have not yet been provided as per the zoning code requirements:
- 1) Detailed turbine drawings depicting the wind turbine, tower, foundation, etc. 190-26.2, E, 1, a, 7.
 - 2) GE provided general ice throw and blade throw information. However, based on the information, we did not see any reports from a NY state professional engineer calculating the maximum distance of ice throw and blade throw 190-26.2, E, 1, a, 10-11.
 - 3) Catastrophic tower failure information from the manufacturer 190-26.2, E, 1, a, 12.
 - 4) A lighting plan detailing all lighting that will be required for the turbine 190-26.2, 2, e, 1.

The City may want to indicate that the site plan is approved based on condition of receiving this information.

NLE Comment: New Leaf is amenable to a condition requiring the submission of these documents prior to the issuance of a building permit.