



Albany Office

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April 21, 2022

Mr. JD Downing, Chairman
Town of Glen Planning Board
7 Erie Street
Fultonville, NY 12072

Re: Town of Glen
Reynolds Road Wind Energy Project
Our Project No. GNY02WD-19503-07

Dear Mr. Downing:

We are in receipt of the Sound Level Assessment Report, Sound Level Modeling Report, and Shadow Flicker Modeling Report all as prepared by Epsilon and dated 3/16/2022, a No Adverse Impact letter from OPRHP dated 3/7/2022, a Lead Agency Coordination Response from NYSDEC dated 11/23/2021, Historic Resource Survey as prepared by Hartgen Archeological Associates, dated January 2022. We are also in receipt of GHD responses letter dated 4/14/22, Civil Plans dated 4/14/22, Turbine Construction Cost estimate dated 3/30/22, and SWPPP revision 2 dated 4/14/22.

The project is located at 411 Reynolds Road, Fultonville, New York 12072 and involves the construction of a single 4.3 MW wind turbine, gravel pad, crane pad, and run of overhead electrical lines and poles off Reynolds Road on approximately 4.64 +/- acres of the total 191.60 +/- acres (tax map id 100.-5-8). Based on a review of the documents, we have the following comments: (prior addressed comments have a strike-through to keep the numbering system from letter to letter).

Civil Plans

- ~~1. Applicant acknowledged.~~
- ~~2. Plans have been revised to include survey information.~~
- ~~3. Applicant has removed reference to the Town of DeRuyter on this set of the plans.~~
- ~~4. Item 9 on Sheet C-0 under erosion and sediment control measures has been revised for clarity.~~
- ~~5. Applicant acknowledged.~~
- ~~6. Applicant acknowledged.~~
- ~~7. External lighting is said to be solely for meeting aircraft warning requirements. Applicant states they will not be providing a lighting plan. **~~
- ~~8. Plans note the color of the turbine as white. **~~
- ~~9. Applicant states that no advertising signs will be installed on this property. **~~
- ~~10. We find response regarding Federal Aviation Administration (FAA) requirement lighting acceptable. **~~
- ~~11. Location and types of disturbances are now shown on sheet C-3-0.~~
- ~~12. The applicant agrees that in the event that these dimensions are exceeded, the project would need to come back to the Planning Board for approval of the increase.~~
- ~~13. Existing culvert to be replaced has been identified on the revised plans.~~
- ~~14. Proposed culvert at the site entry way on the north side of the proposed access route has been revised to protect existing wetlands.~~
- ~~15. Overhead and underground wires have been identified on plans.~~



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16. The applicant has agreed to provide the results of the investigation and the geotechnical report to the Town upon completion.
17. Applicant has more clearly identified the "temporary truck route" on the site.
18. ~~Connection equipment and ground mounted equipment are shown on the updated plans.**~~
19. ~~Applicant indicates they will not be planting any landscaping as part of this work apart from seeding done as part of site restoration. With this response, we do not believe the applicant needs to submit a landscaping plan.~~
20. ~~Applicant has provided details for the proposed access road.~~
21. ~~Traffic flow patterns in and around the site are shown on sheet C-3.0.~~
22. Details for filter strips are not included in the revised SWPPP.
23. ~~Applicant has verified that no guy wires are proposed for this work. **~~
24. ~~Proposed setback from the nearest residence is shown as 1,549'. This is in compliance with the recommended requirement of 1,500' from residences. A dimension has been added to the plans showing this setback. **~~
25. ~~Per discussion between Planning Board and applicant at the October 21, 2021 meeting, The Board agreed that the applicant should try to get as close to a 1.5x the total height of the wind turbine from the off-site property boundaries and public roads as possible, but realize it may only be 1.2-1.3x. Submitted Sheet C-1.0, received on November 11, 2021, show a setback distance of 1.41x (918') the height of the tower (650'). Upon further evaluation of the project, it was realized that this put the proposed turbine closer to residences on Reynolds Road. Therefore, the turbine was moved back near the original planned location where the distance between homes and the turbine would be maximized. The Turbine is now shown 723' from the rear property line. The proposed turbine is closest to a residence on Reynolds Road at a distance of 1,549' which is 2.38x the height of the tower, which exceeds the NYSERDA recommendation.**~~
26. ~~A barrier gate has been added across the access road at about station 4+75 on sheet C-6.0 to deter unauthorized access.**~~
27. The applicant has indicated that the total wetland disturbance from what was submitted on 2/10/2022 to what was submitted on 4/14/2022 has decreased from 0.25 acres to 0.21 acres. The applicant has indicated they submitted a Joint Application to involved agencies on March 24, 2022. We request a copy of the submitted application be submitted to the Town. The applicant notes that the final determination by agencies will be submitted to the Town when obtained.
28. The note on sheet C-3.0 now reflects the identified tree clearing in the plans.
29. ~~We note that permanent impervious coverage has decreased from plans dated 9/2/2021 to plans dated 12/15/2021. The decreased coverage is in the amount of 0.07 acres.~~
30. Plans now include revision dates with the latest being 3/9/2022.
31. We note that some additional leaders have been added to incorporate detail regarding proposed culverts and swales. Level spreader details have been removed from proposed plans.

SWPPP

1. ~~Section 3.1 has been revised to note 80% vegetation establishment prior to removing erosion and sediment control practices.~~
2. ~~Section 3.1 has been revised to include maintenance of erosion and sediment control practices throughout construction.~~
3. Applicant has revised the first paragraph in Section 3.2 regarding 5-acre disturbances. The SWPPP now confirms that the project will not include the disturbance of more than 5 acres at any one time. In addition to alerting the NYSDEC Regional Office, applicant would need to notify the Town and apply for a new



permit if more than 5 acres is planned to be disturbed, as this would not be covered under the current application. A statement to this effect should be written in this section of the SWPPP.

4. In Section 3.5.a., there is a reference to a “lease exclusion zone”. The applicant has revised sheet C-1.0 to show this zone.
5. Applicant shows the anticipated location of filter strips that are planned to be a post-construction stormwater management practice in Figure 3, but these should also be shown in the plans with the details for such practice. Applicant should resubmit plans and SWPPP showing these items. The level spreader detail was removed from the plans, as this feature is no longer planned. The previous contradictions in the plan have been addressed by the applicant as follows, except item c which still requires revision:
 - a. Grass-lined swales are called out on plans, on the detail sheet, and in the hydraulic calculations.
 - b. A level spreader detail was removed. Level spreaders will not be utilized.
 - c. No filter strip is shown on the plans or on the detail sheet (They are shown in Figure 3 but should be shown in the plan set with details).
 - d. Swale references have been clarified. No underdrains will be required.
6. HydroCAD calculations have been provided for the site. The calculations should show pre-development hydraulics and post-development hydraulics. The area of proposed work appears to be almost entirely wooded prior to development. This should be shown in pre-conditions. Until that is shown in the model, CPv calculations cannot be verified. The SWPPP appears to show that peak flow for 1-year, 10-year, and 100-year events will not increase from pre and post construction and that CPv for pre and post conditions will not increase. Revised calculations should be submitted to correlate with information in the body of the Plan.
7. The SWPPP now includes the calculations of Channel Protection Volume, Overbank Flood Control, and Extreme Flood Control. However, as stated in other comments, it is unclear how the values representing each of these were obtained. There are no pre vs post conditions accurately described. The applicant should provide calculations for each of these items.
- ~~8. Section 3.6 now includes Operation and Maintenance of proposed Erosion and Sediment Control Practices that will be implemented for this SWPPP.~~
9. The SWPPP still refers to Borrego as Owner/Operator. Borrego has made it clear that they will not own or operate the site long term. The SWPPP should be revised to represent how the site will be maintained and inspected without Borrego’s involvement. References include Section 2.1, 2.4, 4, and 5.
- ~~10. We find the applicant’s response regarding inspection schedule satisfactory.~~
- ~~11. Appendix G includes the standard Construction Duration Inspection form.~~
- ~~12. The SWPPP now includes specific references for each contractor’s responsibilities regarding implementing and maintaining the SWPPP.~~
13. We note the inclusion of the filter strip location in Figure 3. But this should also be identified on the plans.
14. The SWPPP includes the latest version of submitted plans.
- ~~15. The Construction Sequence now includes a typical schedule to identify the timing of implementation of the erosion and sediment control practices.~~
16. Filter strip details are not provided in the plans or SWPPP. The NYS Blue Book has details and specifications required for the use of filter strips. The SWPPP and plans should comply with these.
- ~~17. The SWPPP, in Section 3.3 includes a description of the pollution measures that will be used to control litter and construction debris, as to prevent it from becoming a pollutant source to stormwater discharge.~~
18. The Appendices now include pre and post development conditions drawings. However, the catchments shown do not appear to be broken up properly. Catchments should be drawn peak to peak to include all contributing flow that will be channelized at the design point. If the sub catchments are revised, calculations will need to be revised as well.



19. The applicant still needs to provide soil condition information, such as test pit and percolation test data, to support the design of their post-construction stormwater management practices.
20. Site Plans in the SWPPP appear to be the most up to date version.
21. Water Quality Volume Calculations in Appendix F have been revised. Sub catchments seem to be identified, however, if the boundaries are revised per comment 18, calculations will need to be revised. Additionally, it cannot be seen how the WQv volume is being met. In the "Runoff Reduction Volume and Treated Volumes" summary table, no practices are shown to treat WQv, but in the bottom summary, 1240 cf of water is said to be treated by swales. Where this volume comes from needs to be shown in the supporting calculations.
22. The table for Pre and Post Development Peak Flows is better understandable. However, the calculations they are based off of are not true pre and post conditions of the site. The "pre" conditions are based off of the 411 Reynolds EX Hydro CAD model, which uses a CN number of 80 for the entire site in question, indicating 75% grass cover of the whole site. This does not include the wetlands, forested lands. None of the actual site coverage. See comment 6 and revise accordingly.
23. The WQv does not appear to be met properly. See comment 21 and revise accordingly.
24. The RRv was previously shown to be 752 cf. When considering all the new impervious surfaces in each subcatchment that sum to 1.09 acres (according to site plans), we calculated this same figure. But now RRv has been revised to be smaller. Calculations in Appendix F only show 0.01 acres of new impervious surfaces. The plans still claim that 1.09 acres of new impervious surfaces will be created. Plans and SWPPP should match each other.
 - a. When using a contributing area of 4.38 acres (this is a conservative value, using the limits of disturbance shown in the plans), WQv is calculated to be just under 4,500 cf. This is much greater than the 715 cf shown in the SWPPP Appendix F. The SWPPP and calculations need to consider all of the long-lasting changes to the site- the new access route, grading, disturbing of the wetlands, wiring/poles, the turbine foundation, etc.
25. See comment 9 of this section.
26. We note that dry swales will no longer be utilized.
27. Section 2.1 Project Background has been revised to show location of the project on County Route 121.
28. Section 2.4 Involved Parties has been revised to site NYSDEC Region 4.

General Wind Energy Based Comments

1. It appears that the applicant is now considering an alternative wind turbine, a GE 3.4-140. The applicant should ensure plans and provided technical materials show this option, update visual impacts and other information accordingly.
2. We note the Avian Study has been provided to the NYSDEC and coordination continues. The NYSDEC has indicated they will be issuing Standard Activity Permits for Incidental Take for raptors and NLEB, and an individual permit for grassland birds. The expected timeframe for issuance is approximately 6 months. The request for consideration of this for a condition by the Planning Board can be seen in a later section of this letter.

Decommissioning Plan

1. The applicant has provided more information regarding the tip height versus the turbine height.
2. ~~The Decommissioning Plan has been revised to include a general description of the removal process. We note that the demolition contractor will be responsible for actual means and methods at the time of disassembly.~~



- ~~3. Applicant has noted that the amount for the surety bond will be based on the Decommissioning costs before salvage.~~
4. A detailed analysis of the costs estimates is currently underway by PRIME AE.
- ~~5. The Decommissioning plan and associated costs will be updated every 5 years by a licensed professional engineer as per the revised decommissioning plan language. **~~

Sound Level Modeling Report

1. The applicant measured existing sound levels at three (3) field locations and interpolated the results to obtain existing sound levels at the same receptors as shown in this report. These are recorded and presented in the *Sound Level Assessment Report*.
2. Hub height is identified as 120 m. This appears to correlate with other submitted materials.
3. A noise analysis has been performed and provided. The table in Appendix B has been updated with receptor (home) addresses for clarity. *,**

Sound Level Assessment Report

1. It is unclear what the ambient levels recorded from each measurement location were. It would be beneficial if this data was presented in the report to show how the 40 dB value was selected from the trendline in Appendix C.
2. How was the data collected at the measurement locations interpolated to the locations of Receptor IDs?
3. Based on the information presented in this report, specifically Tables 7-1 and 7-2, it appears that the increase of sound at presented Receptor IDs that include residences will comply with NYS DEC's guidance of "no appreciable effect", which is an increase of 0-3 db in overall noise levels. The report also states that the sound will not exceed 50 dB at the property lines.
4. The "Total Sound Level Increase over Ambient" values provided in the last column of Tables 7-1 and 7-2 do not appear to coincide with the "Approximate Addition of Sound Levels" table as provided in NYS DEC, "Assessing and Mitigating Noise Impacts", Division of Environmental Permits, February 2, 2001. USEPA's Protective Noise Levels is cited in this report under Table A for Approximate Addition of Sound Levels. The applicant should consult this table and verify the anticipated sound increase from proposed equipment, as it doesn't appear that the EPA guidance table was followed properly.
5. A noise analysis has been performed and provided. Existing sound levels were collected at 3 locations and interpolated for the 10 receptor IDs. A previous comment asks how the interpolation was performed. *,**
6. The applicant has proposed that a post-construction sound report shall be performed within 6 months of commissioning of the wind turbine to ensure material compliance with NYS noise standards. During the life of the project, the operator shall perform and provide additional noise measurement reports to the Town as requested, no more frequently than annually.

Shadow Flicker Modeling Report

1. The applicant has advised that the 4.3MW turbine referenced in the Shadow Flicker report and the 4.2MW turbine mentioned in the Facts and Figures are both the same physical size and either model may be considered for the final selection based on availability at time of construction.
2. The revised report reflects the adjusted location of the proposed wind turbine. The model results state that two (2) receptors (351 Reynolds Rd and 138 Severine Lane) may experience between 10 hours and 30 hours of shadow flicker per year. One (1) additional receptor (314 Lang Drive) may experience less than



one hour of shadow flicker per year. Regulations of Shadow Flicker do not currently exist for New York State, however, Connecticut and Wisconsin do regulate Shadow Flicker. Shadow Flicker in these states must be less than 30 hours per year.

No Adverse Impact letter

1. NYS Office of Parks, Recreation, and Historic Preservation has evaluated the submitted materials, including the January 2022 Historic Resource Survey Report completed by Hartgen Archeological Associates, Inc. and surrounding sites of significance and has found that the proposed project will have no adverse impact on historical or cultural resources as stated in their 3/7/2022 letter. The Town is following up with OPRHP to ask how they arrived at this determination.

Lead Agency Coordination Response

1. NYSDEC has no objection to the Town of Glen Planning Board assuming lead agency status for the project's environmental review.

Turbine Construction Cost estimate

1. The turbine cost estimate has been provided for review. This estimate includes Mobilization, Installation, Foundation Construction, Excavation and Grading, Electrical Work, and Demobilization, all amounting to \$5.925 million. This was requested to help with the decommissioning estimate review, specifically to cross-check quantities of materials installed versus removed from the site, however the construction cost estimate was provided as lump sum items and not unit price items. A more detailed estimate is still requested.

Possible Conditions of Approval

* The applicant has requested the following items be Conditions of Approval (CoA). We do not necessarily agree that all items listed should be CoA. We have simply compiled them in this list for clarity and ease of review. This list is inclusive of documents the applicant has said are forthcoming.

1. Completion of FAA and FCC review with their granted approval.
2. A post-construction sound report shall be performed within 6 months of commissioning of the wind turbine to ensure material compliance with NYS noise standards. During the life of the project, the operator shall perform and provide additional noise measurement reports to the Town as requested, no more frequently than annually.
3. Completion of a geotechnical study, the associated report, and the completed foundation design should be executed and submitted to the Town prior to building permit approval.
4. A copy of the submitted Army Corps of Engineers permit application should be submitted to the Town for record and associated approval shall be obtained prior to construction.
5. Prior to obtaining a building permit, an updated Emergency Action Plan shall be provided based on coordination with emergency responders applicable operator contact information.
6. Site specific fire department training will be provided at least annually.
7. The applicant has agreed to provide pre and post construction photos to the Town of the Town's public road system to verify that no damages have occurred. If damages are identified by the Town or its agents, applicant will be responsible for all repair costs associated with such damages. Borrego's Transportation



Standards have been provided. These include references to bonds that will be secured in the case that roads are damaged and not properly repaired by applicant. When final agreement and bonds are agreed upon by applicant and Town, they should be submitted officially for the record.

8. The detailed route improvement/upgrade plan shall be submitted prior to a building permit being issued. Due to the ever-changing nature of infrastructure, these detailed assessments need to be delayed until closer to construction, to reflect potential upgrades, road repairs, etc. To protect the Town, a road use agreement will be entered into prior to construction, as indicated in the Borrego Transportation Standards submitted 12/14/2021.
9. The final O&M Plan shall be a condition of approval to be submitted prior to a building permit being issued.
10. Official comment from Fire Chief Brisbane regarding submitted plans and Emergency Action Plan shall be provided as a condition of approval.
11. Documentation and determination from NYSDEC regarding Avian and Bat Mitigation will be provided once available.
12. Standard Activity Permits for Incidental Take for raptors and NLEB, and an individual permit for grassland birds shall be obtained prior to construction.

Symbol key:

* - This comment is based on the Wind Energy Guidebook for Local Governments by NYSERDA.

** - This comment is based on the Town of Duanesburg Wind Energy Facility Law, as the Town of Glen does not currently have a local law for wind energy.

If you have any questions, please feel free to contact me.

Sincerely,

KB Group of NY, Inc. dba PRIME AE Group of NY



Douglas P. Cole, P.E.

Senior Director of Engineering

cc: Brandon Smith, Borrego Solar

