STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

GRE GACRUX LLC petition for a declaratory ruling for the proposed construction, maintenance and operation of a 16.78-megawatt AC solar photovoltaic electric generating facility in Waterford, Connecticut. Reopening of this petition based on changed conditions.	**Petition No. 1347A**
	April 13, 2020

INTERROGATORIES DIRECTED TO GRE GACRUX LLC
FROM SAVE THE RIVER-SAVE THE HILLS, INC.

Save the River-Save the Hills, Inc. ("STR-STH") asks that the petitioner, GRE GACRUX LLC ("GRE"), respond to the following interrogatories:

1. The project is proposed to be built on an environmentally sensitive parcel, sandwiched between two trout supporting cold water streams that are in the headwaters region of the Niantic River. Where does GRE use Low Impact Development standards in its plans in order to not adversely impact the site and the surrounding environment? How has the knowledge that the site is an environmentally sensitive area impacted the design of this project?

2. According to Davison Environmental, "Available data shows the presence of wild brook trout (*Salvelinus fontinalis*) in the downstream sections of both Oil Mill Brook and Stony Brook. Brook trout are an indicator of high water quality, requiring cold well-oxygenated waters, with temperatures not exceeding the upper 60s Fahrenheit." (Appendix H at 9.) Has GRE calculated the thermal impact of runoff from the site being directed to the streams, and the impact on the species in those streams? How will GRE ensure that these receiving streams for site stormwater runoff will not be thermally impacted, thereby reducing or eliminating trout habitat?

3. All stream-spawning trout species require clean gravel sediments in which to spawn. How will GRE ensure that silt and other fine sediments will not be discharged into Oil Mill Brook and Stony Brook, thereby reducing or eliminating trout spawning habitat?

4. An LLC associated with GRE was sued by a landowner downstream from their East Lyme Antares Solar Farm (*see* Petition No. 1056) for damages to his land from the stormwater runoff from the solar project. Has GRE studied the stormwater engineering failure of the Antares Solar Farm that adversely impacted the environment of that site and the surrounding parcels to inform its engineering for the Waterford proposal? If so, please explain how; if not, please explain why not.

5. Jean-Paul La Marche stated that "a 100-foot wetland non-disturbance buffer has been applied to the Project." (La Marche testimony, Jan. 23, 2020, at 3:21-22.) GRE's environmental consultant, Matt Davison, wrote: "I would recommend a minimum 200-foot buffer around wetlands, with the first 100-feet being a no disturbance zone where existing forest remains intact. The second 100-feet should remain non-impervious [*sic*] (i.e., no solar panels) but can include stormwater management features and associated grading." (Appendix H at 9.) Why was the suggestion of the environmental consultant for a more protective 200-foot buffer around the wetlands and water courses on the Project site not included in the project design?

6. GRE indicated that "No tree clearing will take place within 100-ft of designated inland wetlands and watercourses, with the exception of minor selective clearing in locations where the existing dirt access road will be improved." (Petition at 13.) What is "minor selective clearing" within 100 feet of designated inland wetlands and watercourses? Please indicate where such clearing appears on the site plans.

7. Will any topsoil gathered during site clearing and grading be deposited elsewhere on the site, or will it be removed from the site? If it is to be removed, explain that process.

8. Did GRE investigate the extent and degree of soil compaction from the movement of the tree removal equipment on the site? If so, what type of investigation was performed and where on the site was it performed? If not, why not?

9. GRE states that it is following standards developed by the State of Minnesota for the design of ground mounted solar arrays (*see* Petition at 12), but GRE does not treat the solar panels as impervious for purposes of the calculation of the Water Quality Volume. The Minnesota standards state that solar panels are to be considered impervious for such purposes. Why didn't GRE consider the panels impervious in making its WQV calculations?

10. Please explain how GRE concluded that the channel protection volume will be met when the post-development runoff is based on the assumption that the solar panels are not impervious. Doesn't that assumption mean the post-development runoff is being under-estimated?

11. Please explain why the stormwater report reflects the use of delineated inland-wetland areas for water quality improvement (*see* Exhibit B at 3-6), when it is the policy of DEEP not to use wetlands for water quality treatment.

12. What processes within the proposed stormwater basins will provide water quality treatment?

13. The stormwater report notes that a "timber harvest" performed by the owner of the land "resulted in the cutting of approximately 45 acres of the Project's wooded area within the limits of development, and a total of approximately 66 acres of the Site." (Exhibit B at 2-3.) How and why did a selective timber harvest remove so much forest from the site? Has GRE analyzed the impact of this deforestation on the existing conditions of the site? If so, please explain how.

14. The stormwater report assumes that the stone access paths are considered impervious. If that is the case, how can GRE also assume that the paths will provide water quality treatment of the runoff? (*See* Exhibit B at 3-6.) Please explain.

15. The 2004 Storm Water Quality Manual prohibits the use of Infiltration Basins for temporary sediment traps as it adversely affects the infiltrative capacity of the basin. However,

GRE's plans call for some of the stormwater basins to be infiltration basins. How will GRE address this conflict?

16. Please explain why GRE used variable soil classifications for the calculations of the Water Quality Volume.

17. The petition calls for the site to be cleared, graded and seeded in year one and then the solar panels would be installed in year two. The 2002 Guidelines for Soil Erosion and Sediment Control limit soil disturbance to 5 acres at one time, and a disturbed area must be vegetated prior to moving onto the next 5-acre area. Why was no phasing plan provided which limits site disturbance to five (5) acres or less per phase? Please explain how GRE will disturb and restore 75 acres in less than a year under these criteria.

18. Why were small frequent rainfall events not considered in the design of the stormwater management system, when they constitute over 90% of all annual rainfall events?

19. There are many types of stormwater ponds defined in the 2004 Storm Water Quality Manual. What specific types of ponds are being proposed on this site, particularly for those labeled #1, #4, #6, #9, #11, #12, and #16?

20. All stormwater ponds must contain a system for pre-treatment per the 2004 Storm Water Quality Manual. Is a pre-treatment system being provided for all stormwater ponds? If so, then what type of pre-treatment system is being provided? If not, why not?

21. According to the 2004 Storm Water Quality Manual, infiltration basins must have a pre-treatment system which contains a minimum of 10% of the Water Quality Volume. What type of pre-treatment system is being proposed for the infiltration basins?

22. The 2004 Storm Water Quality Manual strongly recommends that infiltration basins be installed in an off-line configuration to prevent clogging of the basin. As GRE's plans do not follow this guidance, please explain how clogging of the Infiltration Basin will be prevented.

23. Why is there no pre-treatment of the runoff prior to entering the sand filter when this is required by the 2004 Storm Water Quality Manual?

24. No matter the type of stormwater basin, the outlet structure is a riprap spillway set near the top of the basin berm, which means there will be a ponded water from the bottom of the basin to the invert of the spillway. Therefore, the available storage capacity for runoff is significantly reduced, but GRE considers this volume available. Please explain this discrepancy.

25. Percolation tests were conducted approximately 42" below grade, yet the bottoms of Basin #2, #13, #14, are much deeper below grade. Please explain using a shallow test result when the 2004 Storm Water Quality Manual requires the infiltration testing to be done at or below the bottom of the infiltrative practice.

26. How will GRE ensure that the Sand Filter (Basins #3, #10), which are infiltrative practices, will work when the vertical separation to groundwater does not comply with the requirement of 36" contained in the 2004 Stormwater Quality Manual?

27. Basins #5 and #7 are Infiltration Basins, but according to the information submitted by GRE, the bottoms of the Infiltration Basins are below seasonal high groundwater, so how will infiltration occur in a saturated zone?

28. Basins # 3, 5, 8, 10, 12, 13 and 16 all have portions of their embankments over four (4') feet in height. Why are these embankments not designed as dams per the 2004 Stormwater Quality Manual?

29. What is the purpose of a rectangular area on the plan above several of the stormwater basins? What type of pre-treatment system is this?

30. Terracon performed testing which are not considered Double Ring Infiltration tests and showed that soils were not suitable for infiltration system, so why were infiltration practices proposed?

31. La Marche testified that the site will be cleared in 202, hydroseeded, and then construction will begin in 2021, after the site "had achieved some level of stabilization." (La Marche testimony, Jan. 23, 2020, at 3.) Please explain what "some level of stabilization" means from a construction point of view.

32. Please provide real world performance data for the ERTEC E-Fence20 system which demonstrates it is more effective than conventional erosion control barriers. (*See* Sheet C-6.1.)

33. Will the use of the ERTEC system perpendicular to contours create concentrated flow? Why or why not?

34. Why are there no erosion control barriers shown downgradient of areas proposed to be regraded on the site?

35. Why are there no provisions for maintenance of post-development stormwater basins?

36. Why are there no intermediate erosion control barriers proposed on the site?

37. According to the plans, the post-development stormwater basins will be used as temporary sediment traps. How will the basins be properly restored to function as the post-development basins?

38. Davison Environmental stated "All clearing should occur between October 15th and March 1st, to prevent impacts to wildlife." (Appendix H at 10.) The Petition, however, provides: "Project construction is anticipated to begin in Spring 2020 pending regulatory approvals. Initial work will involve site clearing and the installation of erosion control measures, including installation of sediment basins." (Petition at 14.) The draft construction schedule timeline provided in Figure 5 (referenced on page 15 of the Petition) showed that except for the passive seed establishment period, *no* site construction activities were scheduled to take place

between October 15, 2020 and March 1, 2021. Why is GRE ignoring the recommendation of its environmental consultant with respect to construction activities by scheduling nearly all site clearing and other work in the spring? *(STR-STH recognizes that based on current circumstances, site work likely will not begin during the spring of 2020, but that does not change GRE's plans, which conflict with the recommendations of its consultant.)*

39. Why were there no surveys completed of the physicochemical characteristics and the biota (both fish and macroinvertebrates) found in the two coldwater streams (Oil Mill and Stony Brooks) draining the property as part of satisfying the Council's requirement for a more complete wildlife study?

40. Appendix F, GRE's "Public Outreach Documentation," refers to an agenda for a presentation made to representatives of the Town of Waterford on October 2, 2019. (*See also* Petition at 21). Both Appendix F and the Petition mention a "comprehensive wildlife survey report" in connection with that presentation. What document is the "comprehensive wildlife survey report" referenced?

41. Appendix F includes under Agenda item 3 the term "Invertebrate Animals." Is there any information available either through the NDDB determination and/or GRE-sponsored surveys about terrestrial or aquatic invertebrates found on the project site? If so, please provide that information.

42. The Davison Environmental states: "For many species, this wildlife assessment is habitat-based, with no detailed surveys conducted" and "This assessment does not address all biota that inhabit the site ... Rather, the goal of the study was to focus on those species most likely to be adversely impacted from a change in land use. These include amphibians and reptiles which have low mobility and dispersal capabilities, as well as breeding birds of conservation concern

within the State." (Appendix H at 4-5.) Why were more detailed surveys not conducted in 2019 of onsite amphibians and birds?

43. How will the considerable deforestation and change in ground cover on the site affect resident amphibians, such as frogs, toads, and salamanders, which require such habitat as well as the wetland pools needed for breeding?

44. The Petition notes that "The site has been forested since at least the 1930s," and Davison Environmental consultant stated that "The site lies within an approximately 750 acre block of contiguous forest," and noted that "the site's forests are part of a larger 'core forest.'" (Petition at 24; Appendix H at 7, 10.) How many other large (≥150 acres) blocks of intact forest are presently found within the Town of Waterford?

45. The Petition states that this site "was selected … to have minimal natural resource impacts, to not have adverse impacts on quality forest land…." (Petition at 8.) How will clear-cutting 75 acres on a 152-parcel located within a contiguous 750-acre core forest block not have an adverse impact on quality forest land?

46. Davison Environmental stated "While no targeted breeding season bird surveys were conducted, all species observed from late April through mid-May were recorded as noted in Table 5. (Appendix H at 7.) Similarly, the 2019 breeding bird survey was only conducted on two days, May 21 and June 14. (VHB memo, Appendix I at 5-6.) Why were the bird surveys limited to just a few days of observation? How does that limited period of observation impact the conclusions of the consultant's reports?

47. Why didn't GRE conduct a survey or assessment of fall migratory or winter resident birds on this site?

48. What would be the regional effects to avian biodiversity resulting from the loss of habitat and the fragmentation of a core forest area as a result of this project?

49. If stormwater and its chemical constituents are to be discharged into the two streams bracketing the site and subsequently these streams continue flowing until each reaches its terminus at the Niantic River, then why were there no assessments made for environmental impacts to both aquatic habitat and biota that are found offsite in each of these streams as well as in the Niantic River?

50. Would there be relatively more nitrogen discharged into site groundwater and Oil Mill and Stony Brooks as a result of this project being built as designed or if the site had remained forested, even with the logging that has already taken place?

51. As this site is an environmentally sensitive site that has two streams and the Niantic River Estuary dependent on it for their health, and the proposed development would affect about 90 acres, will GRE engage an independent, third-party engineer having the expertise for such a function to perform onsite inspections during site clearing, construction, and post-construction operation?

52. Why does GRE repeatedly refer to the project as redeveloping and reusing "underutilized industrial property" (*see* Petition at 2; Motion to Reopen at 2) when the parcel is zoned RU-120, a residential designation?

53. GRE claims that "The Project has been configured to avoid and minimize other environmental impacts by using to the greatest extent possible portions of the Project Site that have been subject to former agricultural uses." (Petition at 37.) What is meant by "former agricultural uses" and what portion of the site has been subject to such uses?

54. Is GRE expecting that stormwater and its control will require more land to implement its present design than is found on the parcel? If not, why did GRE in December 2019 contact owners of an adjacent parcel to the southeast of the site to try to gain control over 14 acres of land for "stormwater mitigation"?

55. Why hasn't GRE completed a Phase 1B Cultural Assessment, as recommended by its own consultant and by the SHPO? How does GRE respond to SHPO's recommendation that "no construction or other ground disturbance should be initiated until SHPO has had an opportunity to review and comment upon the requested [Phase 1B] survey"? (*See* SHPO letter to Council, dated Mar. 3, 2020.)

56. Had GRE conducted an analysis of what substances might be emitted (and/or end up in the stormwater runoff) by the photovoltaic panels should they burn?

57. Has the Town of Waterford Fire Marshal been consulted about fire safety issues with respect to the project, including the ingress and egress of emergency personnel, emergency vehicles and other necessary equipment, and necessary clearances and turning radiuses required for these vehicles? If so, please provide information about those discussions, including any written communication. If not, please explain why not.

58. Would GRE make changes made to the proposed site plan design to address any comments or concerns made by the Town of Waterford with respect to fire safety?

59. The current version of the Waterford Hazard Management Plan does not have a section dealing with 45,976 solar panels should a natural disaster such as a hurricane impact the town. Is GRE willing to pay for an update to that plan to include how first responders should handle solar panels and other parts of the array that might have been destroyed and thrown off of the project site, as was seen in Puerto Rico after Hurricane Maria?

60. Neither Mr. La Marche's testimony nor the brief description of photovoltaic panels found in the Petition detail the type of photovoltaic panels to be used. However, on Figure 3 - Site Layout Plan, the following was noted: "PANEL TYPE: JINKO SOLAR EAGLE HC 72M G2 400W." Is this the type of panel GRE plans to install? If not, what type of panel will GRE be using?

61. Please provide the manufacturer's technical specifications for the specific photovoltaic panel that will be used in this project, and state whether the panel is a monocrystalline type, whether there are any hazardous or toxic substances (e.g., lead-based solder, cadmium, nickel) found in its composition, and to what wind speeds from a hurricane or tornado they are designed to withstand.

62. In various places in the Petition and certain of its exhibits, the project is referred to as having a 30-year assumed lifetime or a 35-year design life, yet the lease is for 20 years and the decommissioning plan is based on salvage value in 20 years. (*See, e.g.*, Petition at 10, 17; Exhibit D at 1-2.) Is this project expected to have a 20-, 30-, or 35-year operational lifespan?

63. What decision criteria will be used in determining whether or not to renew the parcel lease after 20 years?

64. The carbon debt analysis provided by GRE assumes a 30-year period of project life. (*See* Petition at 18-19; Exhibit E at 2.) Please provide analyses of the carbon debt load should the project have a 20- or 35-year life.

65. Given the 0.7% decrease in photovoltaic panel efficiency each year, after the initial 3% drop in the first year, is there a plan to replace the panels when a certain level of decreased power production is reached?

66. In its decommissioning plan, GRE assumes that the solar panels will be recycled for free. However, the current cost of recycling one panel is $35.00 based on a quote STR-STH received from one of the companies GRE offered as a potential recycler it would use (noted in an answer to interrogatories in 2018). With 45,976 panels proposed for the Waterford project to be recycled, this results in a total cost of $1,609,160 (present value). Who will be responsible for paying the recycling fees if GRE's assumption that recycling will be free does not come to fruition?

67. Adding up the individual task cost estimates provided in Appendix D, the total estimated decommissioning cost is $239,643. Is all of the decommissioning and restoration funding expected to come from the salvage value of project equipment and materials? What happens if GRE's assumptions about the salvage value are inaccurate? Who pays for the cost of salvage?

68. Were the decommissioning cost estimates made using present day costs for labor and equipment or were the estimates escalated to some future year value? If escalated to a future year, please provide the year and escalation rate. If not escalated, please provide the escalated decommissioning costs after 20, 30, and 35 years of operation and the escalation rate used in those calculations.

69. Following decommissioning how will "The Project…restore the surface to a condition similar to that existed at the inception of the Project" when all or a large majority of the trees, shrubs, ground cover, and forest floor duff within the 75 acre footprint have been removed? (*See* Petition at 17.) What is the estimated cost to "restore the surface to a condition similar to that existed at the inception of the Project"? Who will pay for that?

70. Mr. La Marche's testimony and the Petition refer to multiple corporate entities involved in this project, including Greenskies Clean Energy LLC, GRE, Clean Focus, and Clean Focus Yield." (La Marche testimony, dated Jan. 23, 2020, at 1:2-3, 1:6; Petition at 6.) Please explain the corporate relationships among GRE GACRUX LLC, Greenskies Clean Energy LLC, Clean Focus, Clean Focus Yield, Clean Focus Renewables, Inc., and Neo Solar Power. Which entity is ultimately responsible for the construction, operation, maintenance, and decommissioning of this project? What is the role of the new corporate entity that bought Greenskies Clean Energy in January 2020, JCL Infrastructure?

71. Which corporate entity ultimately will receive the incentive monies from the State of Connecticut that are associated with this project?

SAVE THE RIVER-SAVE THE HILLS, INC.

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CERTIFICATION

I hereby certify that a copy of the foregoing document was delivered by first-class mail and e-mail to the following service list:

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