



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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VIA ELECTRONIC MAIL

October 11, 2017

Christopher Little, Esq.
Windham Solar LLC c/o Ecos Energy LLC
222 South 9th Street
Suite 1600
Minneapolis, MN 55402

RE: **PETITION NO. 1328** – Windham Solar LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of one 1-megawatt (MW) and one .99-MW solar photovoltaic electric generating facilities located at 481 Mashamoquet Road, Pomfret, Connecticut.

Dear Attorney Little:

The Connecticut Siting Council (Council) requests your responses to the enclosed questions no later than October 25, 2017. To help expedite the Council's review, please file individual responses as soon as they are available.

Please forward an original and 15 copies to this office, as well as a copy via electronic mail. In accordance with the State Solid Waste Management Plan, the Council is requesting that all filings be submitted on recyclable paper, primarily regular weight white office paper. Please avoid using heavy stock paper, colored paper, and metal or plastic binders and separators. Fewer copies of bulk material may be provided as appropriate.

Any request for an extension of time to submit responses to interrogatories shall be submitted to the Council in writing pursuant to §16-50j-22a of the Regulations of Connecticut State Agencies.

Yours very truly,

Melanie A. Bachman
Executive Director

MB/CW/bm

c: Council Members
Michael Melone, Windham Solar LLC c/o Allco Renewable Energy Limited

**Petition No. 1328
Interrogatories
October 11, 2017**

Notice

1. Please submit a clearly labeled abutters map identifying each parcel owner corresponding to the names listed on the abutters list behind Tab D of the petition.

Project Development

2. What is the relationship between the petitioner and the developer? If the project is approved, which entity will hold which permits?
3. Was the project selected through a Department of Energy and Environmental Protection (DEEP) RFP process? If so, which RFP? What entity submitted the proposal? When was the project submitted? When was the project selected?
4. Page 16 of the petition filing states that the petitioner does not have a contract to sell the energy or capacity from the project. Is the petitioner negotiating a contract? When would a contract be expected to be negotiated?

Proposed Site

5. Page 4 of the petition states "The Site is currently being used as un-cleared vacant land, light agriculture, commercial and there are a small number of residences to the west and south of the Site across Mashamoquet Road." Is that the current land use of the property or the existing surrounding land uses? What is the host property currently used for?
6. Have there been any photographic simulations of the solar facility prepared from area vantage points? If so, please submit.
7. Where is the nearest recreational area from the proposed site? Describe the visibility of the proposed project from nearby recreational areas.
8. Is the site parcel, or any portion thereof, part of the Public Act 490 Program? If so, how does the town land use code classify the parcel(s)? For example, is/are the parcel(s) classified as "Tillable D – good to fair"?
9. Has the State of Connecticut Department of Agriculture purchased any development rights for the proposed site as part of the State Program for the Preservation of Agricultural Land?
10. Is any portion of the site currently in productive agricultural use? If so, how many acres and is it used by the property owner or is it leased to a third party? Could the project qualify under the Agricultural Virtual Net Metering Program or other agriculturally-friendly renewable energy program?

11. Does the proposed site contain any Connecticut Prime Farmland and/or Important Agricultural Soils? If so, what acreage of prime and important soils would the solar panels and associated equipment be located on?
12. What impacts, if any, would the proposed project have on the soil productivity of the site? Would the project developer be willing to discuss and/or implement any potential restoration methods to be employed at the end of the project's useful life with the property owner? How would the petitioner decompact the soil as described in the decommissioning memo included with the petition? Has this soil decompaction previously been found to be adequate to restore soil productivity?
13. Have any residential subdivisions or other land use plans been approved by the town for the site in the past? If so, please submit the approved plans. If not, could a residential subdivision or other land use plan be constructed at the site? If so, please provide an overlay map depicting the details of a potential residential subdivision or other land use plan for the site using maximum development potential allowed by the town's zoning regulations.

Energy Production

14. Is this electrical output of each facility provided in direct current (DC) or alternating current (AC)?
15. What are the percent losses associated with the inverters?
16. On page 19 of ISO-New England, Inc.'s (ISO-NE) Final 2017 Solar PV Forecast, ISO-NE utilizes an AC MW to DC MW (AC/DC Ratio) of 0.83. Is it correct to say that the actual AC/DC Ratio can vary from one solar PV project to the next? Generally, which design considerations were used to determine the AC/DC Ratio of the proposed project?
17. Could a battery or other type of energy storage system be used to store power from the proposed facilities to be used at other times?
18. Would the impact of bird droppings, bird feeding habits (ex. Dropping food items such as clams or other prey on the solar panels) or weather events (ex. Snow or ice accumulation, hail, dust, pollen, etc.) reduce the energy production of the proposed project? If so, approximately how much and for how long? Would any of these expose the solar panels to ballistic or other damage? If applicable, what type of methods would be employed to clear the panels of the bird droppings, prey shells, snow and ice accumulation, hail, dust or pollen?
19. Would voltage and current be impacted by soft shading of the solar panels, such as air pollution, or hard shading of the solar panels, such as an accumulated solid? If so, would energy production be reduced and by what percent?
20. On page 7 of the petition, it states the facility equipment has an expected useful life of 45 years. Is it the petitioner's intent to operate the facility for 45 years with the original equipment? Would the petitioner consider a change in equipment if technology allowed greater improvements of electric output?

Site Components and Solar Equipment

21. What would be the benefit of using a string inverter design rather than a centralized inverter design? If the petitioner elects to use a string inverter design of thirty-three 60 kilowatt inverters, where would those inverters be installed within the project area? What size concrete pad would be necessary for the installation of each inverter using a string inverter design? When would the decision on inverters be made?
22. What is the design wind speed of the solar panel H-beam mount? How are the panels adhered to the mount? What prevents the solar panels from separating from the racking during high winds?
23. What is the length of the proposed access road?
24. What is the color of the solar panels? Are other colors available? Is the glass casing reflective? Are there solar panels available with non-reflective glass? If so, what are the costs and benefits of each type?

Interconnection

25. Several locations in the petition state that the project would be located on the customer-side of the meter, including pages 1 and 5. Please confirm that the energy produced by the proposed facilities would be used to provide power on-site rather than to the electrical grid. If this is true, what would the power generated be used for?
26. Would any of the power produced go to the grid? If so, would the power produced by the project be used regionally, locally or both?
27. Would the proposed facilities have one electrical interconnection to the electric distribution system for both solar arrays?

Public Safety

28. Would the solar plant have a protection system to shut the plant down in the event of a fault within the facility or isolate the facility during abnormal grid disturbances or during other power outage events?
29. Would the project comply with the National Electric Code, the National Electrical Safety Code and any applicable National Fire Protection Association codes and standards?
30. Would the proposed fencing be installed around the entire project areas? Would there be any physical division between the 1 megawatt area and the 0.99 megawatt area? Could there be a gap in the fence at the bottom for wildlife? Would the fence utilize any anti-climb measures?
31. What are the requirements for fencing the proposed project in accordance with the 2017 National Electric Code, including but not limited to, location, fence height, mesh size, barbed wire.
32. Would glare from the solar panels attract birds (ex. Appear as water) and create a collision hazard?
33. Where is the nearest airport and/or airfield? Would glare from the solar arrays have any impact on air navigation? Has a glare analysis been conducted?

34. Would the proximity of any existing or proposed outbuildings, structures, etc. present a fire safety or other hazard (ex. Lightning strike)? Would the proximity of any existing or proposed outbuildings, structures, etc. present a hazard in relation to the electric generating equipment?
35. In the event of a brush or electrical fire, how would the Petitioner mitigate potential electric hazards that could be encountered by emergency response personnel?

Environmental

36. Provide the carbon debt payback period based on Environmental Protection Agency calculations, including the acreage of tree clearing. How long would it take for the facilities to reach a point where carbon dioxide emissions reductions would equal sequestration loss?
37. Is there any environmental contamination on the proposed site from any previous agricultural use or other land disturbance (ex. Soil and/or water contamination)? If so, how would the petitioner remediate the pre-existing soil and/or water contamination?
38. Would any proposed tree clearing occur within .25 miles of a known Northern Long-eared Bat hibernaculum?
39. If applicable, would the petitioner comply with any seasonal construction restrictions due to the presence of any protected species on the site (ex. Northern Long-eared Bat)?
40. Are residences near the site served by private wells? Assuming some areas are served by private wells, can vibrations caused by the installation of the racking posts cause sediment buildup in adjacent wells? What measures will the petitioner undertake to ensure there is no disruption or effect on private well water?
41. Page 12 of the petition states that views of the solar facilities from the south, north and west would be screened by trees and natural vegetation that would be left in place; however, the site plans and Key Observation Point Plans included show that most or all vegetation along Mashamoquet Road and along the western boundary would be within the facilities project area and, therefore, removed. Please provide information as to where the robust buffer of trees and vegetation would remain to provide screening of the facilities.
42. Page 12 of the petition discusses planting trees to screen the views of the facilities from the property to the east; however, the Overall Landscape Plan shows only areas of hydroseeding. Where and what type of vegetation would be installed. Please provide an updated landscaping plan depicting these areas.
43. What effect would runoff from the drip edge of each row of solar panels have on site drainage patterns? Would channelization along the drip edge be expected? If not, why not?

Construction Questions

44. What is the anticipated sequence of construction? During what time of year would each sequence ideally occur?

45. Page 9 of the petition filing states that provisions for the wood turtle have been implemented on the project plans; however, there is no mention of the wood turtle on the DEEP response letter for the project or on the project plans included with the petition. Please clarify and identify where the provisions for wood turtle protection are located on the project plans.
46. Are the areas identified as being Hydroseeded and the proposed access road as shown on the "Overall Landscape Plan" drawing in the petition filing, the only areas that would require grading on the property? Would ground cover on the areas outside the hydroseeded areas remain as it exists today?
47. Are any impacts to groundwater anticipated as a result of construction of the proposed project? If so, how would the petitioner manage and/or mitigate these impacts?
48. Is the Hydrology Report included in Exhibit I of the petition consistent with the *2004 Connecticut Stormwater Quality Manual*?

Maintenance Questions

49. Would any mowing be required under or around the proposed solar panels/modules, and if so, approximately when and how often would mowing occur?
50. Would the installed solar panels require regular cleaning or other, similar, maintenance? How would this be accomplished? Would this maintenance activity have any impacts to water quality?
51. How would the grass/vegetative growth be controlled to keep the solar panels clear? Describe the maintenance of the grass/vegetative surface in the fenced solar field area.
52. What are the impacts of the grass on erosion?
53. Could the petitioner establish post-construction site restoration/revegetation that includes the incorporation of model pollinator habitat?