



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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VIA ELECTRONIC MAIL

May 3, 2019

Jesse A. Langer, Esq.
Updike, Kelly & Spellacy, P.C.
8 Frontage Road
East Haven, CT 06512-2101

RE: **PETITION NO. 1367** – CP Middletown Solar I, LLC and CP Middletown Solar II, LLC, petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 1.0-megawatt AC solar photovoltaic electric generating facility and a 0.986-megawatt solar photovoltaic electric generating facility on approximately 30 acres comprised of six abutting parcels located northeast of the intersection of Higby Road and Meriden Road (Route 66), west of Ballfall Road (Route 217) and south of Sisk Street in Middlefield and Middletown, Connecticut, and associated electrical interconnection.

Dear Attorney Langer:

The Connecticut Siting Council (Council) requests your responses to the enclosed questions no later than May 15, 2019. 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.

Please be advised that the original and 15 copies are required to be submitted to the Council's office on or before the May 15, 2019 deadline.

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.

Sincerely,

Melanie A. Bachman
Executive Director

MB/MP/lm

c: Council Members

Petition No. 1367
Interrogatories
Set One
May 3, 2019

Project Development

1. What entity/subcontractor would be constructing the facility? Has this entity/subcontractor constructed other solar projects in the Northeast? If so, list similar projects.
2. Was the project selected through a DEEP RFP process? If so, which RFP? What entity submitted the proposal? When was the project submitted? When was the project selected?
3. Was the project selected for the ZREC Program? If yes, were both the 1 MW AC facility and the 0.986 MW AC facility selected?
4. Does CP Middletown Solar I, LLC and CP Middletown Solar II, LLC (collectively, the Petitioner) have a contract to sell the electricity and renewable energy certificates (RECs) it expects to generate with the proposed project? If so, indicate which of the two solar facilities it would be applicable to and which public utility that the RECs and electricity would be sold to. If the electricity is to be sold to more than one public utility, provide the percentage to be sold to each public utility.
5. What authority approves the power purchase agreement (PPA) for the facility? Has a PPA with an electric distribution company been executed? If so, at what alternating current megawatt output? If not, when would the PPA be finalized?
6. What is the length of the power purchase agreement? Are there provisions for any extension of time in the PPA? Is there an option to renew?
7. Is the alternating current megawatt capacity of the facility fixed at a certain amount per the PPA and/or the RFP? Is there an option within the PPA to allow for changes in the total output of the facility based on unforeseen circumstances?
8. If the PPA expires and is not renewed and the solar facility has not reached the end of its lifespan, will the Petitioner decommission the facility or seek other revenue mechanisms for the power produced by the facility?
9. Would the petitioner participate in the ISO-NE Forward Capacity Auction? If yes, which auction(s) and capacity commitment period(s)?

Proposed Site

10. What types of development and minimum lot sizes are permitted per the zoning designations of the host municipalities?
11. Would the six lots (collectively, the subject property) be leased or purchased (or a combination thereof) if this project is approved by the Council? Explain.
12. If the subject property is to be leased, are there any provisions in the lease agreement with the property owner related to site restoration at the end of the project's useful life? If so, please provide any such provisions.

13. Is the subject property, or any portion thereof, part of the Public Act 490 Program? If so, how does the municipal land use code classify the parcel(s)? For example, is/are the parcel(s) classified as "Tillable D – good to fair"? How would the project affect the use classification?
14. Referencing page 13 of the Environmental Assessment, would the proposed project be visible from Tynan Memorial Park, located approximately 0.5 miles to the northwest?
15. Referencing page 16 of the Phase 1A Cultural Resources Assessment Survey (Phase 1A Report), the nearest National Register of Historic Places property is the Seth Wetmore House. The Phase 1A Report notes that, "This structure is located a half mile north of the center of the project parcel." Referencing Figure 22 of the Phase 1A Report, would this property be located approximately a half mile to the east of the center of the project parcel?
16. What acreage of Prime Farmland Soils would the solar panels and associated equipment be located on? What acreage of Statewide Important Farmland Soils would the solar panels and associated equipment be located on?
17. What impacts, if any, would the proposed project have on the soil productivity of the site? Has the property owner expressed any potential soil restoration methods to be employed at the end of the project's useful life?
18. Provide the distance, direction and address of the nearest off-site residence from the solar field perimeter fence.

Energy Production

19. Referencing Sheet SP-1, the proposed east array and the proposed west array have the same number of 370 Watt solar panels each: 3,492. However, the East Array is approximately 0.986 MW AC, and the West Array is approximately 1.0 MW AC. Why are the AC MW outputs different given the same quantity (and wattage) of panels?
20. Have electrical loss assumptions been factored in to the output of the facility? What is the output (MW AC) at the point of interconnection?
21. Explain why a solar panel orientation to the south with an angle of 20 degrees above the horizontal was selected for this facility. How did the Petitioner arrive at a fixed angle of 20 degrees for the solar panels as being the optimum angle? Is the project designed to maximize annual energy production or peak load shaving?
22. What is the projected capacity factor (expressed as a percentage) for the proposed project?
23. What is the estimated average annual energy production in terms of megawatt hours? How was this estimate derived?
24. Would the impact of soft shading, such as air pollution or hard shading, such as bird droppings or weather events, such as snow or ice accumulation, hail, dust, pollen, etc. reduce the energy production of the proposed project? If so, was this included in the proposed projects capacity factor? Would any of these expose the solar panels to damage?

25. Could the project be designed to serve as a microgrid? Could the proposed project incorporate battery storage? If so, please indicate the anticipated size of the battery storage system and where it may be located on the site.
26. Should one section of the solar array experience electrical problems such that the section shuts down, could other sections of the system still operate and transmit power to the grid? For example, would it be two separate sections electrically: East Array and West Array? Explain.

Site Components and Solar Equipment

27. Would the proposed panels be mounted in a portrait or landscape fashion?
28. Referencing page 6 of the Petition, the proposed 50-kW inverters are string inverters. Is the proposed 36-kW inverter a string inverter?
29. What is the design wind speed of the solar panel mount? How are the panels adhered to the mount? What prevents the solar panels from separating from either the racking or the foundation during high winds?
30. Referring to Petition p. 6, the modules would be attached to a ground-mounted, pile-driven racking system. Please respond to the following:
 - a) What is the length of the driven posts and to what depth would the posts be driven into the ground to provide the required structural stability?
 - b) Are residential areas abutting the proposed site served by private wells? Can vibrations caused by driven installation of the posts cause sediment buildup or other negative effects on nearby wells?
 - c) How many panels will each rack hold?
31. If any solar panel wiring is external, are there any concerns regarding potential damage from weather exposure, vegetation maintenance, or animals? Explain.
32. Page 6 of the Petition notes that, "Citrine would provide minor upgrades to the access which would be extended farther north approximately 580 feet to the proposed location of the equipment pads." Would this involve adding gravel to the existing access and extending the access with additional gravel? The proposed access extension is about 580 feet long. How long is the existing access in linear feet?
33. Sheet DN-1 shows approximately a two-foot minimum to the bottom of the solar panels. Approximately how tall (in maximum height above grade) would it be to the tops of the solar panels?
34. Sheet SP-1 depicts a 13.5-foot aisle width between the rows of solar panels. Would this aisle spacing be uniform for the entire project?
35. Page 7 of the Environmental Assessment notes that the proposed site is designated as Zone X, an area of minimal flooding. Is this the unshaded Zone X, an area outside of both the 100-year and the 500-year flood zones? Page 24 of the Environmental Assessment notes that the site is Zone C. Is Zone C equivalent to unshaded Zone X?

Interconnection

36. Would the 1 MW AC facility and the 0.986 MW AC facility interconnect to the utility distribution lines on Meriden Road using separate feeders or would there be only one (combined) feeder to connect to the existing distribution lines? If it hasn't yet been determined per the interconnection design process, please indicate as such.
37. Would any of the power produced be used on-site (identify use), or would it all be fed into the local distribution system? If any of the power would be used on-site, estimate the total on-site load in kilowatts.
38. Where would the approximately seven proposed utility poles along the gravel access drive be located, or is that still being determined as part of the interconnection design?
39. Did a system impact study need to be performed by Eversource to ensure that the distribution system can support the 1.986 MW AC or no because of the facility size? Could the distribution system support the 1.986 MW AC output?
40. Is the existing distribution on Meriden Road three-phase or would it have to be upgraded from single-phase to three-phase? Would the proposed facility connect to existing distribution on the same side of Meriden Road as the proposed facility, or would there be, for example, an overhead crossing of Meriden Road to reach a utility pole on the opposite side of Meriden Road?

Public Safety

41. Would the solar facility have a protection system to shut the facility down in the event of a fault within the facility or isolate the facility during abnormal grid disturbances or during other power outage events?
42. Would the project comply with the National Electrical Code, the National Electrical Safety Code and any applicable National Fire Protection Association codes and standards?
43. Would the proposed project comply with the Department of Energy and Environmental Protection noise control standards at the property boundaries?
44. Would sun reflection off of the panels create a glare effect at abutting residence(s)? What measures can be employed to reduce potential glare (ex. Solid fencing, landscaping)?
45. Where is the nearest airport and/or airfield? Page 12 of the Petition notes that the Petitioner has submitted the proposed project location to the Federal Aviation Administration. Has a response from FAA been received? If yes, please provide a copy. Would glare from the solar arrays have any impact on air navigation? Has a glare analysis been conducted? If not, under what circumstances would a FAA glare analysis be required?
46. Would the proximity of any existing or proposed structures present a fire safety or other hazard (ex. Lightning strike)? Would the proximity of any existing or proposed structures present a hazard in relation to the electric generating equipment?

47. In the event of a brush or electrical fire, how does the applicant propose to mitigate electrical hazards that could be encountered by emergency responders? If there is an issue that requires emergency responder response, how will the responders know that an area is indeed de-energized prior to entering?
48. With regard to emergency response:
- a. Is outreach and/or training necessary for local emergency responders in the event of a fire or other emergency at the site?
 - b. How would site access be ensured for emergency responders?
 - c. 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?
 - d. Could the entire facility be shut down and de-energized in the event of a fire? If so, how?
 - e. Would there be an emergency key box for first responders to access the site for shutdown purposes?

Environmental

49. Page 5 of the Petition notes that the State has the right to drain stormwater off Route 66 and flood the wetland areas in the southern portion of the site up to the 330-foot elevation mark. Would this have any impact on the proposed project?
50. Referencing page 1 of the Carbon Debt Analysis, the Petitioner notes that, "The Site is approximately 8.7 acres, and the Project will require the removal of 0.55 acres of trees representing 0.6 percent of the project site." Would 0.55 acres represent approximately six percent of the project site?
51. Of the approximately 0.55 acres of trees to be removed as referenced in the Carbon Debt Analysis, would there be any clearing in wetlands? If yes, provide the area/acreage and indicate what methods would be used to clear trees in wetlands?
52. Page 16 of the Petition notes that there would be a removal of a wind-row of trees in the center of the project area. Also, Sheet SP-1 notes an existing tree to be removed on the east side of the subject property. However, also per Sheet SP-1, additional trees would be removed along the south-southeast property boundary (with the stumps to remain). In such area, would there be tree clearing up to the property line?
53. Would the Petitioner conduct a Shade Study Analysis? Would shading present any challenges for the proposed project? If so, how many trees will be removed to mitigate for shading?
54. What effect would runoff from the drip edge of each row of solar panels have on the landfill cap or site drainage patterns? Would channelization below the drip edge be expected? If not, why not?
55. Page 16 of the Petition notes that a formal vernal pool assessment is being performed. Provide the status of such vernal pool study. Would the proposed project be consistent with the U.S. Army Corps of Engineers Vernal Pool Best Management Practices?
56. What is the setback regulation from wetlands for both host municipalities?

57. What is the length of the posts and to what depth would the posts be driven into the ground to provide structural stability? What are the posts made of? Are there any anticipated impacts to groundwater quality as a result of these driven posts? If so, how would the petitioner manage and/or mitigate these impacts? Should bedrock be encountered, how would the petitioner proceed?

Facility Construction

58. With regard to earthwork required to develop the site, provide the following:
- a) Will the site be graded? If so, in what areas?
 - b) What is the desired slope within the solar array areas?
 - c) Could the solar field areas be installed with minimal alteration to existing slopes?
 - d) If minimal alteration of slopes are proposed, can existing vegetation be maintained to provide ground cover during construction?
 - e) Estimate the amounts of cut and fill in cubic yards for the access road(s)
 - f) Estimate the amounts of cut and fill in cubic yards for solar field grading.
 - g) If there is excess cut, will this material be removed from the site property or deposited on the site property?
59. How would the posts (that support the racking system) be driven into the ground? In the event that ledge is encountered, what methods would be utilized for installation?
60. Has a comprehensive geotechnical study been completed for the site to determine if site conditions support the overall Project design? If so, summarize the results. If not, has the Petitioner anticipated and designed the Project with assumed subsurface conditions? What are these assumed conditions?
61. Will blasting be required to install any site infrastructure? If not, what methods would be used if bedrock is encountered?
62. Under Tab 3 of the Petition is the Construction Schedule. Does "Site Prep" include tree clearing? And was the tree clearing scheduled for August 2019 to be protective of the northern long-eared bat (NLEB) per page 2 of the NLEB Streamlined Consultation memo dated April 3, 2019?

Maintenance Questions

63. Referencing page 3 of the Operations and Maintenance Plan & Annual Inspection Protocol (OMPAIP), how would the Petitioner remove snow that accumulates on the panels and any effects of blocking the sunlight? Describe snow removal methods including method of site access.
64. Has any analysis been conducted to determine structural limits of snow accumulation on the solar panels and steel support structures, assuming heavy, wet snow and or ice? Would there be circumstances that would require snow/ice removal to prevent damage to the panels/rack system?
65. Referencing page 3 of the OMPIAP, would the mowing be performed under or around the proposed solar panels/modules? Would the petitioner adhere to any seasonal restrictions on mowing due to the presence of state and federal protected species?
66. Is the Petitioner proposing to use any herbicides or pesticides? Does the Petitioner have an invasive species plan?
67. Would the petitioner store any replacement modules on-site in the event solar panels are damaged by hail, prey shells or other impact hazards? If so, where? How would damaged panels be detected?