



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

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VIA ELECTRONIC MAIL

May 6, 2020

David W. Bogan, Esq.
Kathryn E. Boucher, Esq.
Locke Lorde LLP
20 Church Street
Hartford, CT 06103

RE: **PETITION NO. 1397** –Constitution 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 a 20-megawatt AC solar photovoltaic electric generating facility on approximately 149 acres comprised of four separate parcels located off of Cornell Road in Plainfield, Connecticut and associated electrical interconnection.

Dear Attorneys Bogan and Boucher:

The Connecticut Siting Council (Council) requests your responses to the enclosed questions no later than May 27, 2020. To help expedite the Council's review, please file individual responses as soon as they are available. At this time, consistent with the Council's policy to prevent the spread of Coronavirus, please submit an electronic copy only to siting.council@ct.gov. However, please be advised that the Council may later request one or more hard copies for records retention purposes.

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.

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Sincerely,

s/ Melanie A. Bachman

Melanie A. Bachman
Executive Director

c: Junior Aguaze, Constitution Solar, LLC

MB/RM

Petition No. 1397
Interrogatories -Set One

May 6, 2020

Notice

1. Was the Town of Plainfield Conservation Commission provided notice of the petition? If not, provide proof that such notice was sent to the Town of Plainfield Conservation Commission.

Project Development

2. If the project is approved, identify all permits necessary for construction and operation and which entity will hold the permit(s)?
3. Page 3 of the Petition notes that the proposed project was selected in DEEP's Small-Scale Clean Energy RFP whereas p. 13 states the Project was selected as part of the Tri-State RFP. Please clarify.
4. Referring to Petition p. 3, the Project has a power purchase agreement (PPA) with Eversource Energy and The United Illuminating Company. What percentage of the electricity/energy and RECs are being sold to each power supplier?
5. Are the PPAs based on energy (i.e. MWh) or capacity (i.e. MW) or both? Is there an option within the PPA to allow for changes in the total output of the facility based on unforeseen circumstances or site modifications prior to construction?
6. What is the length of the PPA? Are there provisions for any extension of time in the PPA? Is there an option to renew?
7. What is the operational life of the facility? If the PPAs expire and are 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?
8. Would the petitioner participate in the ISO-NE Forward Capacity Auction? If yes, which auction(s) and capacity commitment period(s)?

Proposed Site

9. Revise Petition Figure 6 to include designations for 50-foot and 100-foot wetland/watercourse buffers and the location of post-construction stormwater basins.

10. Petition p. 23 notes that the project site is currently used for crops. Is it used by the property owner, or is it leased to a third party?
11. Petition p. 13 refers to grass cover crops. Is the grass within the solar array considered a farm crop?
12. Petition p. 5 states the project site has a purchase option. Yet, the third column in Table 3-1 is entitled, "Project Lease or Purchase." If the Project is approved, is Constitution Solar required to execute the purchase options? If so, is the "site owner" referenced in the Decommissioning Plan referring to Constitution Solar? Also, if so, why is there a reference to "the end of the property lease term" in the Decommissioning Plan?
13. Is the site parcel, or any portion thereof, part of the Public Act 490 Program? If so, how does the municipal land use code classify the parcel(s)? How would the project affect the use classification?
14. Provide the distance, direction and address of the nearest off-site residence, not owned by the lessor/property owner, from the perimeter fence of the two separate solar field areas.
15. Petition Attachment L describes outreach to project abutters. What concerns did the abutters have and how were these concerns addressed?
16. Petition Attachment M contains a list of site owners. Does this refer to Project abutters? Please submit a clearly labeled abutters' map. What other area residents were notified, if any?

Energy Output

17. Have electrical loss assumptions been factored into the output of the facility? What is the output (MW AC) at the point of interconnection?
18. What is the efficiency of the photovoltaic module technology of the proposed project?
19. What is the estimated capacity factor of the proposed project?
20. Would the impact of soft or hard shading reduce the energy production of the proposed project? If so, was this included in the proposed projects capacity factor?
21. Is the project being designed to accommodate a potential future battery storage system? If so, please indicate the anticipated size of the system, where it may be located on the site, and the impact it may have on the PPA.
22. Can the project be designed to serve as a microgrid?
23. If one section of the solar array experiences electrical problems causing the section to shut down, could other sections of the system still operate and transmit power to the grid? If so, at what electrical point can the Project be sectionalized?

24. Explain why a solar panel angle of 13 degrees above the horizontal was selected for this facility as opposed to a more common 20 to 25 degree angle? Is the project designed to maximize annual energy production or peak load shaving?
25. Do solar facilities present a challenge for the independent system operator for balancing loads and generation (to maintain the system frequency) due to the changing (but not controlled) megawatt output of a solar facility? What technology or operational protocols could be employed to mitigate any challenges?

Site Components and Solar Equipment

26. Were string inverters considered for this project? If so, what factors led the current design of several large inverters rather than the use of string inverters? Would the use of string inverters rather than large inverters allow the Petitioner to reduce the footprint of the project?
27. Referring to Petition p. 7, what site specific factors determine the method of wire installation/routing?
28. What is the length of the posts and to what depth would the posts be driven into the ground to support the solar racking system?

Interconnection

29. Provide a detailed drawing of the facility switchyard.
30. Provide detail as to how the different solar array areas are connected to the switchyard.
31. Referring to petition Attachment P, Figure 2 depicts an interconnection route - is this the proposed route? If so, provide site plan detail.
32. Referring to petition p. 22, a collection line is mentioned. Are new overhead lines proposed for the interconnection? If so, provide a site plan that shows the interconnection route and locations of line support structures. Identify the height and type of support structures necessary for the interconnection.
33. If no new lines are proposed, is the existing distribution system three-phase or would it have to be upgraded from single-phase to three-phase to connect to the Fry Brook Substation?

Public Safety

34. Would the project comply with the National Electrical Code, the National Electrical Safety Code and any applicable National Fire Protection Association codes and standards?
35. Referring to petition p. 17, what is the status of the Noise study?
36. Will the petitioner conduct site safety/operation training for local emergency responders? At what point will outreach occur? How would site access to different facility areas be ensured for emergency responders?

37. How does the facility shut/de-energized during a fire? Would the solar panels still produce power and present an emergency response hazard if the site is shut down at the inverter level?
38. The site is located adjacent to a DEEP designated hunting area. Will the petitioner perform any outreach to DEEP regarding potential safety concerns during construction?

Environmental

39. What is the acreage of tree clearing and grubbing? What is the acreage of clearing that does not involve grubbing?
40. Referring to Site Plans C-005, why does the small area east of Wetland 11 and east of the farm road require clearing and grubbing? What site modifications can be made to avoid clearing in this area?
41. Referring to Site Plans C-012, can the existing agricultural field edge be maintained instead of clearing to the west, towards the Wetland 1?
42. Does site clearing account for potential shading effect from adjacent forested areas?
43. Would any tree clearing occur within core forest? If so, estimate the acreage of core forest that would be affected by site clearing.
44. Has DEEP responded to the Petitioner's September 3, 2019 correspondence regarding the NDDB field studies? If so, please submit.
45. Petition p. 24 states there would be no effect on nearby wells. What effect would rack post driving have on groundwater used for private wells?
46. The site abuts several State-owned parcels. Are there any DEEP/CFPA maintained hiking or recreational trails on these parcels? If so, would the project be visible from these recreational trails?
47. Referring to Petition Attachment C, Appendix F, Table A-1. For wetland 7, what is the current setback from the existing agricultural field to the wetland? What seed stock will be used to establish a 50-foot buffer around this wetland? Once established, how will the buffer be managed (e.g. shrub, meadow)?
48. Petition p. 25 states the Project area will be converted to a meadow habitat. What type of seed mix will be used in the project areas to provide a meadow habitat? What are the wildlife benefits from the use of this seed mix?
49. Referring to Petition pp. 23-24, where do these bat species typically hibernate?
50. Can project site fencing be designed to permit small animal movement under the fence?
51. Petition Appendix C describes construction wildlife exclusion fencing and associated wildlife searches. Will searches be conducted prior to the commencement of each sub-phase?

52. Please submit photographic site documentation with notations linked to the site plans or a detailed aerial image that identifies the locations of site-specific and representative site features. The submission should include photographs of the site from public road(s) or publicly accessible area(s) as well as Site-specific locations depicting site features including, but not necessarily limited to, the following locations as applicable:

For each photo, please indicate the photo viewpoint direction and stake or flag the locations of site-specific and representative site features. Site-specific and representative site features include, but are not limited to, as applicable:

1. wetlands, watercourses and vernal pools;
2. forest/forest edge areas;
3. agricultural soil areas;
4. sloping terrain;
5. proposed stormwater control features;
6. nearest residences;
7. Site access and interior access road(s);
8. utility pads/electrical interconnection(s);
9. clearing limits/property lines;
10. mitigation areas; and
11. any other noteworthy features relative to the Project.

A photolog graphic must accompany the submission, using a site plan or a detailed aerial image, depicting each numbered photograph for reference. For each photo, indicate the photo location number and viewpoint direction, and clearly identify the locations of site-specific and representative site features show (e.g., physical staking/flagging or other means of marking the subject area).

The submission shall be delivered electronically in a legible portable document format (PDF) with a maximum file size of <20MB. If necessary, multiple files may be submitted and clearly marked in terms of sequence.

Facility Construction

53. For the proposed electrical equipment concrete pad, would the concrete be pre-cast or poured on site? What other concrete components are proposed at the site? Where and by what method would cement trucks be cleaned at the site?
54. List the types of construction equipment that would be used at the site.
55. Would there be any attempt to stabilize agricultural areas prior to the commencement of project construction in January 2021? If so, what tasks would be performed and when?
56. The proposed construction schedule has a portion of the work occurring during winter months. Provide detailed winter work procedures for each major phase that address construction erosion and sediment control as well as stabilization of temporary sediment traps and/or basins, diversion swales and berms. If applied in winter, how will seeding be maintained until the spring growing season?
57. Referring to Petition Section 3.5, what is the expected time interval between Phases 2 & 4? What seed mix will be used in Phase 2 to ensure soils are stabilized before commencing Phase 4?

58. What are the slopes within the solar array areas?
59. Estimate the amount of cut and fill for the Project. Would the areas with grubbing require fill?
60. Is the soil in non-agricultural areas suitable for planting seed without the importation of nutrient rich topsoil?
61. Several locations on the Site Plans include stonewall demolition. Where will this material be disposed of?
62. Were any debris/waste disposal areas identified within the project limits? How would these areas be managed?
63. Referring to Site Plan G-001;
 - a) G. Note 8- what areas of the site contains this material?
 - b) G. Note 19 - where are culverts being installed?
 - c) E&S Note 2 - what would be the minimum distance from soil stockpiles to wetlands/watercourses?
64. Referring to Site Plan C-015- the northeast end of the solar field is located at the top of a ravine - are grades conducive to installing fencing and two rows of solar modules arrays in this area? How would stormwater runoff be controlled in this area?
65. Referring to Site Plan C-016, two swales are shown. Provide detail as to the type of swale that would be installed. Why are swales only located in these two locations if the topography of the site contains other areas with similar drainage contours along the edge of the solar array?
66. Referring to Site Plan C-017, provide the following;
 - a) Why is a portion of the perimeter fence and several rows of solar modules installed within the detention basin?
 - b) How would rack posts affect basin function? Would the posts act as a drainage pathway?
 - c) What is the fence clearance above the design pool height? Could leaf litter accumulate on the fence and cause water to discharge over the berm rather than through the emergency spillway?
 - d) Why are the two detention basins arranged in a row? Does the northern basin receive flows from the larger southern basin?
 - e) What is the cover material within the detention basins?
 - f) Is any cover material being installed on top of the emergency spillway erosion control blankets?
 - g) The emergency spillways discharge to a stone wall. Would the stone wall serve to channelize flows rather than allow for a dispersed flow?
67. Referring to Site Plans C-025 & C-026. Given the orientation of the panels and site topography, what methods of stormwater control would be employed to prevent channelized runoff and sediment from impacting the adjacent wetlands?
68. Referring to Detail Sheet C-027, three types of swales are shown. Where on the project site would each type be installed?

69. 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?
70. Petition p. 25 states CS met with DEEP Stormwater Division in 2018. Have there been any subsequent meetings concerning how site construction would conform to DEEP's proposed revisions to the General Permit, including draft Appendix I, *Stormwater Management at Solar Array Construction Projects*? If so, have these changes been incorporated? If not, does CS intend to adhere to Appendix I?
71. Referring to Petition p. 8, provide a site plan that details the construction sub-phases.

Maintenance Questions

72. What effect would runoff from the drip edge of each row of solar panels have on site drainage patterns? Would channelization below the drip edge be expected? If not, why not? If channelization is discovered during routine site inspections, what methods would be used to eliminate this condition?
73. Referring to the Operations and Maintenance (O&M) Plan, what grass height would be maintained to prevent grass fires?
74. How will the detention basins be accessed for repairs maintenance? What equipment will be used for access, repairs, and maintenance? Would the presence of the fence and solar arrays within the basins interfere with maintenance?
75. The O&M Plan does not contain information regarding detention basin or swale inspections. Please provide.
76. Where would sediment that is removed from the detention basins be disposed of?
77. Are there provisions for more frequent inspections of the Project Site in the first few years of operation to monitor and remediate areas of patchy site cover growth, site erosion and detention basin/swale integrity?
78. Would the petitioner store any replacement modules on-site in the event solar panels are damaged or are not functioning properly? If so, where? How would damaged panels be detected?