



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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VIA ELECTRONIC MAIL

August 26, 2020

Lee D. Hoffman, Esq.
Pullman & Comley, LLC
90 State House Square
Hartford, CT 06103-3702

RE: **PETITION NO. 1421** - Bristol Solar One, 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 3.25 megawatt AC solar photovoltaic generating facility located at 399 Hill Street, Bristol, Connecticut, and associated electrical interconnection.

Dear Attorney Hoffman:

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

Sincerely,

s/Melanie Bachman

Melanie Bachman
Executive Director

MB/RM

c: William Herchel, Bristol Solar One, LLC
Bryan Fitzgerald, Bristol Solar One

**Petition No. 1421
Bristol Solar One**

**Interrogatories - Set One
August 26, 2020**

Project Development

1. If the project is approved, identify all permits necessary for construction and operation, and indicate which entity will hold the permit(s).
2. Referencing page 5 of the Petition, Bristol Solar One, LLC states that, “Alternatively, in the event virtual net metering capacity becomes available, energy produced by the Project may be delivered to Eversource...” As an update, what is the status of the availability of virtual net metering capacity for this project? Would the project be viable based on the market-based tariff if virtual net metering is not available?
3. Referencing page 5 of the Petition, the Petitioner notes that, “Energy produced by the Project will be sold to Eversource at market rates specified in the applicable utility tariff...” Would the Petitioner also sell its renewable energy certificates (RECs) it expects to generate with the proposed project? If so, to which public utility? If the RECs are to be sold to more than one public utility, provide the percentage to be sold to each public utility.
4. Would the Petitioner participate in the ISO-NE Forward Capacity Auction? If yes, which auction(s) and capacity commitment period(s)?

Proposed Site

5. In the lease agreement with the landowner, are there any provisions related to site restoration at the end of the project’s useful life? If so, please provide any such provisions.
6. Is Minor Street a City of Bristol owned road? If so, would the necessary upgrades to Minor Street (Petition p. 12) require City approval? If so, at what point will the Petitioner present its proposed road upgrades to the City?
7. Petition p. 15 states sheep would be allowed to graze at the site.
 - a. Have there been other solar projects in CT where sheep have been allowed to graze within the array area? Is there a potential of damage to the panels/wiring from grazing?
 - b. Would the specified seed mix for the solar array areas be altered to provide adequate forage?
 - c. Is a shed/shelter necessary/proposed for the site? If so, where would it be located?

Energy Output

8. Have electrical loss assumptions been factored into the output of the facility? What is the output (MW AC) at the point of interconnection?
9. What is the projected capacity factor (expressed as a percentage) for the proposed project? For clarity, is this capacity factor based on a ratio of AC MWh to AC MWh, or a ratio of AC MWh to DC MWh?

10. Is the project being designed to accommodate a potential future battery storage system? If so, please indicate the anticipated size of the system and where it may be located on the site.
11. Would the impact of soft or hard shading reduce the energy production of the proposed project? If so, was this included in the proposed project's capacity factor? What are the expected losses year to year and at what point would panel cleaning be necessary?
12. Does the design of the Project, including the method of interconnection, allow it to serve as a microgrid?
13. Referring to petition p. 16:
 - a. what "infrastructure upgrades" are proposed that will improve reliability?
 - b. how will reduction in energy demand during peak usage decrease energy costs for ratepayers statewide?
14. 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?
15. 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 such challenges?

Site Components and Solar Equipment

16. Is the wiring from the panels to the inverters installed on the racking? If wiring is external, how would it be protected from potential damage from weather exposure, vegetation maintenance, or animals?
17. How many panels can each rack hold?

Interconnection

18. Referencing page 7 of the Petition, would Eversource be responsible for any interconnection work or necessary permits/approvals? If so, would the demarcation point of the Petitioner's/Eversource's control (or responsibility for permitting) be at the proposed equipment pads or at another location?
19. Is the existing electrical distribution on Minor Road three-phase or would it have to be upgraded from single-phase to three-phase?
20. Is the project interconnection required to be reviewed by ISO-NE?

Public Safety

21. Referring to Petition p. 17, has there been any discussion with the local fire marshal regarding compliance with the CT State Fire Prevention Code, Ground Mounted Photovoltaic System Installations section 11.12.3 in regards to site design clearance requirements around the perimeter of the solar array? If not, when will the petitioner contact the Fire Marshall?

22. Referring to Petition p. 17:
 - a. Are the proposed access roads designed to accommodate emergency vehicles?
 - b. Would outreach and/or training be conducted for local emergency responders in the event of a fire or other emergency at the site?
 - 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?
23. Are there any drinking water wells on the site or in the vicinity of the site? If so, how would the Petitioner ensure wells and/or water quality are not impacted from construction activities?
24. Referring to Petition p. 38, please clarify the name and distance to the nearest federally-obligated airport.

Environmental

25. Referring to Petition p. 9, p. 11, Appendix A and Appendix C, different values are given for the size of the property, amount of clearing/disturbance, and percent that will remain outside the limit of disturbance. Please clarify.
26. Referring to Petition Appendix C, p. 32, it states 4.5 acres of upland forest would be cleared; however, Appendix C, p. 9 states upland forest totals 2.4 acres. Additionally, Appendix E states 0.68 acres of forest are to be cleared. Please clarify the amount of upland forest that would be cleared for the project.
27. The Greenhouse Gas (GHG) Assessment in Appendix M of Council Petition No. 1352 compared the life cycle GHG emissions from a solar project to a scenario where the solar project is avoided and an equivalent amount of natural gas-fired electric generation operated for the estimated life of the solar facility. For the proposed project, how would the net GHG emissions (or reduction) over the life of the solar facility and carbon debt payback be affected under this natural gas-fired generation versus proposed solar generation scenario?
28. Referring to Petition p. 29, would the proposed arborvitae plantings present a shading issue as they mature? If so, would the plantings be trimmed or replaced?
29. Can solid/stockade fencing be installed in the southeast corner of the site to provide additional screening of the solar array area from residences to the east and south?
30. Can red cedar or other native low growing tree/shrubs be used as a visual screen instead of arborvitae?
31. Referring to the fence detail on Sheet DN-1, revise the specification to include a minimum 6-inch gap between the fence fabric and ground level to allow for small wildlife movement through the site, as specified on Petition p. 26.
32. Referring to Petition p. 24, what is the approximate area of prime farmland soils that would be excavated and stockpiled? Will this soil be permanently stored on top layers of the berms or mixed in with all excavated soils that comprise the berms?

33. Has the Petitioner had any meetings with the Department of Energy and Environmental Protection (DEEP) Stormwater Division regarding the Stormwater design? If so, when and with whom? Were any recommendations incorporated into the Petition site plans prior to filing with the Council?
34. Referring to Petition p. 32, it states the Project has been designed to meet the current draft of DEEP's Appendix I, Stormwater Management at Solar Array Construction Projects. Please explain how the Project meets the wetland buffer criteria in Appendix I Section (1)(e).
35. How would project output be affected if the project was designed with 100-foot wetland buffers to on-site wetlands?
36. Referring to Petition p. 38, what nearby noise receptors are referred to and what would be the calculated noise levels at these receptors?

Facility Construction

37. Would the concrete be pre-cast or poured on site for the proposed electrical equipment concrete pads? What other concrete components are proposed at the site? Where and by what method would cement trucks be cleaned at the site?
38. Referring to Petition p. 14, and Sheet EC-1, Phase 2 note 8 states *Install remaining electrical conduit*. Where was conduit installed prior to this step? Please clarify.
39. Referring to Sheet EC-8, rip-rap slope protection is specified in the western portion of the solar field. Quantify the area that would be stabilized by rip-rap. Why is rip-rap necessary in this area? Is the rip-rap surface considered impervious or have a different Stormwater CN number than meadow? If so, was this CN value used in the Appendix E Stormwater calculations?
40. Identify areas of the site that have post-construction slopes greater than 15 percent as measured along the alignment of the row of solar panels.
41. The Site Plans show the outlet and emergency overflow of Stormwater Basin B-3 discharging towards abutting properties along Clover Street. What is the distance from the outlet structure end points to the property lines? What are the grades after the point of discharge? Will basin discharge flow onto these properties?
42. The Site Plans show the outlet and emergency overflow of Stormwater Basin B-2 discharging towards an abutting property. Can the basin be designed so that discharge point is to the northeast so that outflow will be directed on the site property towards Wetland 2?
43. The 4 stormwater basins are specified as "pond" detention basins. Would the basins contain standing water year-round?
44. Project construction is estimated at 5 months. When is the anticipated start date? What are the typical construction hours and work days of the week? Are these hours/days consistent with City of Bristol ordinances?
45. If the proposed construction schedule has a majority of work occurring during winter months, provide detailed winter work procedures that address construction erosion and sediment control as well as work area soil stabilization.

46. Has a comprehensive geotechnical study been completed for the site to determine if site conditions support the overall Project design (e.g. solar array, roads, stormwater basins)? If so, summarize the results. If not, has the Petitioner anticipated and designed the Project with assumed subsurface conditions? What are these assumed conditions?
47. What effect would runoff from the drip edge of each row of solar panels have on the site drainage patterns? Would channelization below the drip edge be expected? Are energy dissipators, as depicted in DEEP's draft Appendix I, Stormwater Management at Solar Array Construction Projects-Figure 2, proposed for this Project? If not, why not?

Maintenance Questions

48. Provide a post-construction Operations and Maintenance Plan that includes provisions for vegetation management within and outside the array/rip-rap areas that incorporates mowing/vegetation management restrictions related to listed-species, and inspection/corrective action protocols for site equipment, stormwater features, and landscaping.
49. Would the installed solar panels require regular cleaning or other, similar, maintenance? If so, describe cleaning procedures including substances used. Would this maintenance activity have any impacts to water quality?
50. How will sediment be removed and transported from stormwater features? Where would accumulated sediment be disposed of?
51. Would the petitioner store any replacement modules on-site in the event solar panels are damaged or are not functioning properly? If so, where?