

**STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL**

<b>PETITION NO. 1615 - C-Tec 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 3.98-megawatt AC solar photovoltaic electric generating facility located at the former Hartford Landfill at 180 Leibert Road, Hartford, Connecticut, and associated electrical interconnection.</b>	<b>Petition No. 1615</b>
	<b>June 14, 2024</b>

Petitioner C-Tec Solar, LLC (“C-Tec”) hereby submits the following responses to the Interrogatories that were directed to C-Tec by the Connecticut Siting Council (“Council”) on May 24, 2024.

**Notice**

1. Referencing Petition p. 9 and Exhibit B, has C-Tec Solar, LLC (C-Tec) received any comments since the petition was submitted to the Council? If yes, summarize the comments and state how these comments were addressed.

C-Tec has not received any comments.

2. Would notice to the Federal Aviation Administration (FAA) be necessary for the temporary use of a crane during construction?

C-Tec does not intend to use a crane in the construction of this project. In addition, CTEC has requested and received Determinations of No Hazard to Air Navigation for Temporary Structure for seven representative locations within the project area. See Exhibit A, Appendix H.

## **Project Development**

3. Has C-Tec applied to the Department of Energy and Environmental Protection (DEEP) for a Stormwater Permit? If so, what is the status of such permit?

CTEC has not applied to DEEP for a Stormwater Permit. None is required, as planned disturbance is less than one acre. All panels are ballast mounted; the only disturbance will be for installation of utility poles associated with the interconnect route. See email correspondence between Tom Little of All-Points Technology Corp., Inc. and Christopher Stone, P.E. of the DEEP Stormwater Section of the Water Permitting & Enforcement Division (attached).

4. Referencing Petition pp. 6, and 7, if the project is approved, identify all permits necessary for construction and operation and which entity will hold the permit(s)?

If the project is approved, it is anticipated that the project will require the following:

- Approval of this Petition; and
- Building and electrical permits from the City of Hartford.

5. What is the estimated cost of the project?

The estimated cost for this project is \$7.1 million.

6. Is the project, or any portion of the project, proposed to be undertaken by state departments, institutions or agencies, or to be funded in whole or in part by the state through any contract or grant?

No.

7. Referencing Petition p. 9, when was the City's RFP process initiated, what was the goal of the RFP and when was the project selected in the City's RFP?

The RFP was initiated in late 2019 with an award in early 2020. The goal was for the project to participate in the VNM program, however, additional funding was never allocated to the VNM program, so the project applied to the NRES program.

8. What is the revenue mechanism for the proposed project?

The revenue mechanism is the NRES Buy All program.

9. Which entities would purchase the energy, capacity and renewable energy certificates (RECs) from the project?

The City of Hartford would purchase the energy, capacity, and renewable energy certificates.

10. To whom would the total capacity of the facility be supplied and in what percentage?

The City of Hartford would receive a yearly lease payment as well as 10% of the bill credits.

11. If the facility operates beyond the terms of any RFP Agreement, will C-Tec decommission the facility or seek other revenue mechanisms for the power produced by the facility?

It is anticipated that C-Tec will seek other revenue mechanisms for the power produced by the facility once the RFP Agreement has run its course. If power cannot be sold on the markets profitably, C-Tec will decommission the project at that time.

12. If C-Tec transfers the facility to another entity, would C-Tec provide the Council with a written agreement as to the entity responsible for any outstanding conditions of the Declaratory Ruling and quarterly assessment charges under CGS §16-50v(b)(2) that may be associated with this facility, including contact information for the individual acting on behalf of the transferee?

Yes. C-Tec will provide the Council with such written information.

### **Proposed Site**

13. Does C-Tec have a lease agreement with the City for the site? If so, what is the length of the lease agreement?

General terms of the lease have been agreed to, and the lease with the City is being finalized. The lease is anticipated to have a term of 20 years with the option to extend for 3 additional 5 year terms.

14. If there is a lease agreement with the City, are there any provisions related to decommissioning or site restoration at the end of the project's useful life? If so, please describe and/or provide any such provisions.

The lease will provide that at the end of the project's lifespan it will be fully decommissioned and removed from the property.

15. Provide a decommissioning plan to summarize the plans to remove equipment and restore the site after the operational life has been reached and/or the project is removed from service.

Please refer to the Operations and Maintenance Manual and Decommissioning Plan attached hereto as Exhibit A.

16. What entity manages the landfill?

It is C-Tec's understanding that the Connecticut Department of Energy and Environmental Protection manages the landfill.

17. What is the distance from the perimeter fence of the solar facility to the nearest residence and what is the address of the residence?

No perimeter fence for the solar facility is proposed. The nearest residences to the limits of the proposed facility are located at 36 Sunset Street and 16 Tower Avenue, Hartford, at distances of approximately 0.50 and 0.61 mile, respectively.

18. Referencing Petition p. 8 and Exhibit A p. 6 and Appendix A (project plans) please provide construction plans showing the existing landfill security fence and gate.

Attached at Exhibit B is a revised Sheet OP-1 that depicts the existing fence, which partially encloses the landfill property, and gates. The fence does not surround the entire property; it does not extend along the western border of the property adjacent to I-91 or through portions of the northernmost portion of the property.

### **Existing Solar Array**

19. When was the existing solar array installed at the site?

It is C-Tec's understanding that the existing solar array was installed between 2012-2014. C-Tec was not involved in that installation.

20. What is the generating capacity of the existing solar array at the site in alternating current?

The current generating capacity is 1 MW AC.

21. Would the existing solar array interact and/or interfere with operation of the proposed solar facility? Explain.

No. The other solar array is separate from the proposed project, and the proposed project will not interact or interfere with it in any way.

### **Proposed Facility and Associated Equipment**

22. Provide site plans showing the location of the inverters, switchgear and transformers. Would the inverters be installed on concrete pads or posts? What are the approximate dimensions of the transformer and switchgear.

Attached as Exhibit C is a revised Sheet SP-0 that calls out the location and size of the transformer and switchgear that will be located on the two concrete pads. Each transformer is approximately 90" x 72"; the switchgear is approximately 90" x 60" x 36". Inverters will be mounted to the back of the racking structures.

23. Provide the dimensions of the ballasts supporting the solar panels.

The dimensions of the ballasts are 10'x 2'4" x 1'3".

24. What is the length of the existing access road?

The existing access road is approximately 6,000 feet long, extending from the southwest corner of the property near Leibert Road, through the landfill to a point at the northeast of the property, where it intersects with an existing dirt service road that parallels the dike system and Connecticut River. The fence location at the southern end of the property and

generally along the eastern boundary in the vicinity of the proposed facility is shown on Exhibit B.

### **Energy Output**

25. 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 any contract(s).

At this time the project is not being designed to accommodate a future battery energy storage system. If, however, Connecticut changes its procurement systems to allow for adequate recovery of costs associated with implementing such a system, the project may add such a battery system in the future.

26. What is the anticipated capacity factor of the project? Identify what electrical loss assumptions have been factored into the output of the facility, if any.

The capacity factor of the project is 15%. The electrical loss assumptions factored into this output are nine percent.

27. Would C-Tec participate in an ISO-NE Forward Capacity Auction or other energy markets? Explain.

C-Tec does not anticipate participating in any other energy markets at this time, but it reserves the right to do so in the future.

### **Electrical Interconnection**

28. Provide the line voltage of the proposed electrical interconnection.

The line voltage is 23kV.

29. Provide the distance of the interconnection point from the facility equipment pad.

The interconnection point to the nearest equipment pad is approximately 1,300'.

30. Provide the total length of cable tray to be installed.

The total length of cable tray is approximately 2,500'.

31. Referencing Petition p. 6, the project would require the installation of four new utility poles. Of the four poles, how many would be C-Tec-owned and how many would be Eversource-owned?

There would be 5 new poles. Eversource would own 3 and C-Tec would own 2.

32. What equipment would be located on the Eversource and C-Tec poles?

The equipment on Eversource poles would be the utility disconnect switch, pole mounted recloser and metering. The equipment on the C-Tec poles would be the GOAB, lightning arrestors, recloser, recloser controller and cable tray riser.

33. Provide the height above grade of the proposed utility poles and their distance apart.

Utility poles are typically 30'-40' high and 40' apart.

34. Would any of the power produced be used on-site, 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.

All power will be fed into the local distribution system.

35. Has an interconnection application been submitted? If so, what is the status?

An interconnection application has been executed and a 20% construction upgrade payment will be made by 6/14/24.

36. Does the interconnection require a review from ISO-NE?

No.

37. Would any off-site upgrades to the existing electric distribution system be required (e.g. distribution line upgrades and/or upgrades from single to three phase)? If yes, describe.

2,400' of underground conductor will be upgraded.

38. Have there been any discussions with Eversource to use pad-mounted equipment rather than pole-mounted equipment? Provide cost estimates for both an overhead and underground interconnection.

No such discussions with Eversource have been had. All current designs are for pole-mounted equipment. C-Tec does not have cost estimates for underground connection. C-Tec can state that underground interconnections are substantially more expensive than above ground and would therefore put the project's economic viability at risk.

### **Public Safety**

39. Would the project comply with the current Connecticut State Building Code - 2022, National Electrical Code, and Connecticut State Fire Prevention Code?

Yes. The project will apply with all relevant codes.

40. Referencing Petition Exhibit A, Appendix A, Sheet SP-3, aside from a prohibition on ground penetration, what other safety and precautionary measures are required to protect the existing gas vent pipes?

There will be an additional 10' buffer around the gas vent pipes. C-Tec will also put a high visibility mesh fence around the vents.

41. What are industry Best Management Practices for Electric and Magnetic Fields at solar facilities? Would the site design conform to these practices?

According to the Council's revised EMF Best Management Practices dated February 7, 2014, the Council recognized that a 2010 guideline established 2,000 mG as an acceptable exposure level to EMF. The Council also recognized that there is scientific consensus that there is no cause-and-effect link with EMF and any health effect, and that "scientific evidence to date does not warrant the establishment of MF exposure limits" surrounding transmission lines. In 2015, the Massachusetts Department of Energy Resources, Department of Environmental Protection, and Clean Energy Center released a solar guide that states that PV arrays generate EMF in the same extremely low frequency range as electrical appliances and wiring found in most homes and buildings and that the measurements at three commercial PV arrays in MA gave off less than 0.5 mG at the sites' boundaries and typically PV arrays give off less than 1.0 mG within three inches of the



panels, whereas a vacuum cleaner three feet away from a motor is approximately 2.0 mG. As such, C-Tec is not aware of any BMPs for EMF at solar facilities.

42. What equipment would be the major source of noise at the proposed site. Would the proposed project meet the applicable state noise standards at the property boundaries?

It is anticipated that inverters would be the major source of noise at the proposed site, however, it is also anticipated that the proposed project would meet all applicable state noise standards at the property boundaries. In addition, as referenced above, the nearest residences are a significant distance away from the project.

43. Where is the nearest federally-obligated airport? Is a glare analysis required to comply with Federal Aviation Administration (FAA) policy?

Answer: The nearest federally-obligated airport is Hartford-Brainard Airport. No glare analysis is required for the project. FAA policy dictates that a glare analysis be performed if a solar facility is located on airport property.

44. Referencing Petition p. 27 and Exhibit A/Appendix G, has C-Tec received an updated Determination of No Hazard to Air Navigation from the FAA?

CTEC has not received an updated Determination of No Hazard for any portion of the project. The Determinations submitted with the Petition (Exhibit A, Appendix H) do not expire until May 2025.

45. Referencing Petition p. 8, would training be provided for local emergency responders regarding site operation and safety in the event of a fire or other emergency at the site?

Yes. C-Tec will offer training to the City of Hartford's emergency responders if the City desires such training.

46. Are there manual facility shut-off switches that can be operated by emergency personnel? If yes, in what location(s)?

The first customer pole at the PCC with Eversource is a GOAB which will be accessible 24/7.

47. In the event of a brush or electrical fire, how are potential electric hazards that could be encountered by emergency response personnel mitigated? What type of media and/or specialized equipment would be necessary to extinguish a solar panel/electrical component fire?

In the event of an electrical or brush fire that threatens electrical equipment, the proper response to mitigate further risk is to spray water around the fire area to reduce or prevent the spreading of fire. Additionally, all electrical equipment would be shutdown via the main switch. If the project main switch is not accessible, the electricity can also be turned off on the utility side at the point of interconnection. This information will be included during the training of emergency responders. Fire extinguishers rated for electrical fires or chemical suppressants should be used to extinguish an electrical fire. Water should not be added to an electrical fire. It is also important to cut off the flow of power from whatever device is on fire. Otherwise, no specialized equipment is required to manage fire at a ground mounted solar project.

48. What is the distance of the nearest municipal fire hydrant to the proposed facility? What alternative water sources are available to the fire department? How would water be brought to the site in the event of a fire?

The nearest municipal fire hydrant is approximately 1000' from the project. C-Tec is not aware of other water resources available to the site, however, it anticipates that the City of Hartford has pumper trucks that could be used if necessary.

49. Provide an Emergency Response Plan for the proposed facility.

Please refer to the Site Safety Information section of Exhibit A for the Emergency Response Plan.

50. What type of insulating oil is used within the transformer(s)? Is it biodegradable? Do the transformer(s) have a containment system in the event of an insulating oil leak? Would the transformer(s) have a low oil alarm?

The final selection of a transformer for this project has not been made as of this time, however, C-Tec anticipates that it will select a transform that uses insulating oil that is FR3 and biodegradable. C-Tec does not anticipate utilizing a separate containment system and does not typically employ a low oil alarm on the transformers as a lack of oil within the transformer will result in system failures. These system failures will trigger alerts through C-Tec's data acquisition system, and data acquisition system will inform C-Tec of difficulties with the equipment.

51. What is the noise profile of the selected transformer?

As referenced above, the final selection of a transformer has not been made for the project. However, C-Tec will be certain to use a transformer that is built in compliance with IEEE and ANSI standards, including those entities' noise standards.

### **Environmental Effects and Mitigation Measures**

52. Considering the facility's proximity to the Connecticut River, would the solar panels attract birds (ex. appear as water)? How would the petitioner manage bird collisions and/or damage to the panels (ex. from dropping prey shells)?

It has been hypothesized that utility-scale PV facilities may attract migrating water-dependent species (waterfowl and shorebirds) through what has been called the "lake effect," whereby migrating birds perceive the reflective surfaces of PV panels as bodies of water and collide with project structures as they attempt to land on the panels. Although studies appear to show some correlation between utility-scale PV facilities and visual cues birds use to locate water bodies (solar panels do polarize light in a manner similar to water), to date research has not shown conclusively that these solar facilities result in an attractant to aquatic habitat birds, how landscape context is a factor, if bird collisions or fatalities are a significant concern, or what mitigation measures would be recommended. To our knowledge, there have been no reported bird collisions/fatalities associated with the existing PV facility at the landfill.

Shorebird activity, which might include using the panels as a surface for opening shellfish, is not anticipated to result in damage that would have any significant effect on the project. The glass covering the solar panels is designed to withstand hail with a diameter of one inch. Utilizing that standard as a reasonable proxy for dropped shellfish, any damage across the solar array would be sporadic and unlikely to affect near term production in any measurable or significant way. Should damage occur from shorebird activity, it would be addressed through maintenance or replacement in the same manner as any other source of damage.

53. Referencing Petition Exhibit A, Appendix G, the Photo Log Map on the second page is partially blank. Submit a copy of the full map.

Attached as Exhibit D is an additional copy of the Photo Log Map contained in Appendix G of Exhibit A of the Petition. The Petitioner notes that the Photo Log page found in the Council's public record on-line is complete.

54. Submit photographic site documentation with notations linked to the site plans or a detailed aerial image that identify 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).

Attached as Exhibit E is the requested site documentation. Please note that the nearest residences are at least 0.5 mile away and are not within view of the Site.

### **Facility Construction**

55. Referencing Petition Exhibit A, Appendix A (project plans) Sheet VR-01, what is the purpose of the “Stone Mowing Strip?”

The Stone Mowing Strip is an existing feature that was included during the construction of the landfill itself. It is typically used as an edge border treatment around areas that make mowing easier, as it creates a clear edge to mow against.

56. 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?

Since the existing landfill site has stormwater control devices already installed, and there is no proposed ground disturbance other than the installation of the utility poles, there is no anticipated effect on drainage patterns. Furthermore, there will be no increase in impervious area or change in ground cover, thus, there would be an insignificant increase in stormwater run-off. No improvements are being proposed to the existing stormwater facilities. In conclusion, the proposed solar array is not expected to result in any change in runoff conditions to the surrounding areas and properties.

Moreover, the rows of solar panels are not considered “closed systems,” because there are gaps between each module (both north/south and east/west). As a result, the drip edge of each solar panel will not have an impact on the Site’s drainage patterns, as stormwater will flow off of the panels at multiple locations as the panels follow the contours of the existing land. Channelization along the drip edge is not expected.

57. Would ballasts be cast on-site? If yes, where would this activity occur?

No. It is anticipated that the ballasts will be constructed elsewhere and then delivered to the site.

58. What type of construction vehicles would be expected to enter the site during construction and where would they park?

Low PSI rubber tracked excavators are anticipated to be used. It is anticipated that these will be parked on or along the access road.

59. Identify the location of the construction staging area within the proposed site.

The construction staging area would be located west of the proposed Project located within grassland habitat. (See attached revised SP-0.) A condition of the DEEP NDDB Determination Letter accounted for the possibility of the staging area in grassland habitat with the following condition: “Construction activities: Land disturbance activities including digging, ground clearing, heavy machinery driving staging, or trampling that will occur more than 100 feet into or cut across in a way that fragments large parcels of grassland habitat should be done when grassland birds are not breeding. Breeding primarily takes place between May 1- August 30. Conduct land disturbance activities outside of the breeding season to avoid impact to the individuals.”

Therefore, this construction staging area would be limited to use outside of the breeding season, i.e., September 1 through April 30.

### **Facility Maintenance/Decommissioning**

60. Provide a post-construction Operations and Maintenance Plan (O&M Plan) for the project.

The requested O&M plan is contained within Exhibit A.

61. Has the manufacturer of the proposed solar panels conducted Toxicity Characteristic Leaching Procedure (TCLP) testing to determine if the panels would be characterized as hazardous waste at the time of disposal under current regulatory criteria? If so, submit information that indicates the proposed solar modules would not be characterized as hazardous waste. If not, would C-Tec agree to install solar panels that are not classified as hazardous waste through TCLP testing?

Please refer to the attached TCLP Report, attached as Exhibit F.

62. Would the installed solar panels require regular cleaning or other, similar, maintenance? If so, describe cleaning procedures including substances used.

It is not anticipated that the panels will require cleaning. If the unexpected occurs and cleaning is required, C-Tec would truck water onto the site and use water to clean the panels. No solvents or surfactants would be used.

63. Provide a Project Decommissioning Plan.

The requested Decommissioning Plan is contained within Exhibit A.