

**RESPONSES TO QUESTIONS SUBMITTED IN RESPONSE TO:**

**REQUEST FOR PROPOSALS FOR SOLAR PANEL AND BATTERY WASTE AND RECYCLING CONSULTANT**

We thank consultants who submitted questions as part of the Solar Panel and Battery Waste and Recycling Consultant RFP. We appreciate your interest in working with the Connecticut Green Bank. The answers provided in this document cover the broad variety of questions we received, and have been condensed for clarity.

**A. Submission Requirements**

1. *Please confirm the 20-page limit includes. Would you like us to add resumes for the proposed project team as an attachment?*

All required materials should be included within the 20-page submission. If you include attachments, such as team resumes, please do not exceed 5 additional pages.

2. *What time on 2/19 are proposals due?*

Please submit proposals by 5pm EST on February 19, 2024. Proposals shall be submitted electronically to Sara Harari at the following email address: [RFP-Responses@ctgreenbank.com](mailto:RFP-Responses@ctgreenbank.com) The subject line should be identified as: "Proposal for End-of-Life Technology Consultant".

3. *Is there a defined budget for this project?*

The Green Bank cannot give the expected budget for the submission, as the RFP is a competitive solicitation.

4. *What resources (data, personnel) will the Green Bank be able to provide to support this project?*

The Green Bank will support this scope via a program manager, as well as with domain experts from our solar and storage deployment and asset management teams. The Green Bank has supported the deployment of thousands of distributed solar and storage systems and maintains records of the type and location of installed systems. Please note that the scope dictated by PURA exceeds Green Bank-deployed assets.

## **B. Research Scope and Objectives:**

### *1. What is the deliverable for Scope of Services #1 (Research & Education)?*

As detailed in the RFP, any results from the research conducted under Scope of Services #1 would be presented to the Working Group, condensed into report material that would be used in both a submittal to PURA of the Working Group findings, as well as the Connecticut Green Bank Waste & Recycling Primer.

### *2. Which jurisdictions or regions would you like us to focus on when researching the success or failure of end-of-life approaches for similar technologies? Are there any restricted jurisdictions? Should jurisdictions be limited to North America?*

The Green Bank would look to market leaders in this space, regardless of their location and will look to the selected consultant to inform this selection.

### *3. Can you provide any key goals/ specific objectives you aim to achieve with the end-of-life management strategy for solar panels and batteries?*

The Green Bank seeks solutions for the responsible end-of-life management of solar panels and batteries. For example, based on the *CMMS Amendment (January 2023)*,<sup>1</sup> a “Waste Management Hierarchy” can inform the applicant’s perspective.

### *4. Does the Green Bank have existing data or studies on solar and battery end-of-life management that could inform benchmarking/ market research?*

The Green Bank would refer applicants to the *2023 Clean & Renewable Energy Report (January 31, 2024)*<sup>2</sup> issued by the Public Utilities Regulatory Authority for the installed capacity of solar panels and battery storage deployed in Connecticut. Also, the Green Bank maintains a database of 45,000+ residential solar PV systems including the number, manufacturer, and model of panels deployed through its program.

### *5. What specific data related market readiness, economics, and environmental impacts of end-of-life solar and battery waste is the Green Bank seeking? Are there particular aspects of market readiness, environmental impact, and economics that are higher priority or concern to the Green Bank?*

The Green Bank will look to the selected consultant to inform this selection.

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<sup>1</sup> [https://portal.ct.gov/-/media/DEEP/waste\\_management\\_and\\_disposal/Solid\\_Waste\\_Management\\_Plan/January2023/CMMS-Amendment-2023-DRAFT.pdf](https://portal.ct.gov/-/media/DEEP/waste_management_and_disposal/Solid_Waste_Management_Plan/January2023/CMMS-Amendment-2023-DRAFT.pdf)

<sup>2</sup> [23-08-01 Draft Attachment 1.pdf \(state.ct.us\)](https://portal.ct.gov/-/media/DEEP/waste_management_and_disposal/Solid_Waste_Management_Plan/January2023/CMMS-Amendment-2023-DRAFT.pdf)

6. *How in-depth is the research expected to be?*

The Green Bank will look to the selected consultant to right-size market research. We anticipate it would be appropriate to begin with a high-level review of commercially viable solutions as well as potential advances in this field. Deep dives into specific solutions would be guided by fit for the Connecticut market.

7. *Is the research on these topics expected to be based on publicly available literature or in-depth interviews and primary research?*

The Green Bank anticipates a hybrid approach of market research and interviews will be required to achieve the findings PURA has requested.

**C. Stakeholder Engagement & Working Group:**

1. *Who are the key stakeholders involved in the Working Group?*

Beyond the Working Group participants identified in the RFP (the Green Bank, CT DEEP, EDCs), we anticipate that the selected consultant will support the identification and inviting of other invested stakeholders including, but not limited to: representatives from waste recycling companies, clean energy technology installers and third party owners, NGOs, community-based organizations, etc.

2. *Does the Green Bank expect the engagement to be conducted virtually, in-person or in a hybrid modality?*

The Green Bank anticipates that Working Group meetings will be conducted virtually. At this time we do not anticipate any in-person or hybrid meetings. Should these occur, it is unlikely to require travel by the selected consultant (e.g. the Green Bank could host any hybrid or in-person meetings).

3. *Does the Green Bank have an approximation on how many meetings will be held with the Working Group during the engagement period?*

The Green Bank anticipates that the Working Group will meet on a monthly cadence leading up to the August 1, 2024, findings delivery date. However, we recognize that additional, direct meetings with participants will likely be warranted to solicit input.

4. *Any specific topics/ areas of focus that the Green Bank would like to cover in Working Group meetings?*

The Green Bank will look to the selected consultant to set the agendas for these meetings. However, at a minimum, we would expect to both solicit input on the state of solar and storage end-of-life market need and size. Additionally, we would expect some meeting time to be spent in the selected consultant presenting end-of-life options for feedback from the Working Group.

5. *Does the Green Bank envision any type of public stakeholder engagement besides with the Working Groups?*

At points in the process, the Green Bank may opt to seek public comment, for example soliciting input from environmental justice communities on the design, pros and cons, operations, or other aspects of various types of potential solar panel and/or battery storage facilities under CGS 22a-20a.

**D. Covered Clean Energy Technology:**

1. *Which solar and storage configurations does this work cover?*

The PURA-directed Working Group includes both ground- and rooftop solar as well as energy storage. The programs covered by this direction include both residential and commercial applications, as well as utility-scale solar.

2. *Is this primarily focused on battery storage projects, or does it also include batteries used in electric vehicles (EVs)?*

This scope does not cover EV batteries.

3. *How many hardware components and systems that require end-of-life solution does the Green Bank expect to be researched on? If there is no clear number, can you provide a range?*

To our knowledge the technology deployed through these programs includes primarily silicon wafers/modules and lithium-ion batteries. The Green Bank would refer applicants to the *2023 Clean & Renewable Energy Report (January 31, 2024)*<sup>3</sup> issued by the Public Utilities Regulatory Authority for the installed capacity of solar panels and battery storage deployed in Connecticut.

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<sup>3</sup> [23-08-01 Draft Attachment 1.pdf \(state.ct.us\)](#)

## **E. Covered End-of-Life Technology:**

1. *What are the Green Bank's current capabilities regarding the recycling and end-of-life management of solar panels and batteries?*

The Green Bank is currently managing a limited amount of solar waste (due to faulty solar panels). We anticipate that the results of this scope will guide Green Bank end-of-life strategy for solar and storage.

2. *How does the Green Bank define 'end-of-life'? Does it include all R-strategies or is there a specific preference? Should the emphasis be on recycling, re-use or disposal, or are you also open to exploring alternate ways to use the waste?*

Today, Connecticut defines a waste management hierarchy within the *CMMS Amendment (January 2023)*.<sup>4</sup> However, the Green Bank is open to exploring alternate ways to manage and prioritize end uses.

3. *Are there any specific use-cases regarding solar panel and storage solutions that Green Bank wants to focus on?*

No.

## **F. Timeline and Phases:**

1. *Is there a specific timeline or deadline by which the Green Bank expects to implement the recommendations from this study?*

The Green Bank anticipates submitting findings of this study to PURA by August 1, 2024. Any independent activities that the Green Bank may pursue would follow on from this submission date.

2. *Are there any critical milestones or checkpoints throughout the project duration that we should be aware of?*

As the submittal deadline to PURA is August 1, 2024, we would anticipate that the selected consultant could provide a draft submittal for review by the Working Group no later than July 1,

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<sup>4</sup> [https://portal.ct.gov/-/media/DEEP/waste\\_management\\_and\\_disposal/Solid\\_Waste\\_Management\\_Plan/January2023/CMMS-Amendment-2023-DRAFT.pdf](https://portal.ct.gov/-/media/DEEP/waste_management_and_disposal/Solid_Waste_Management_Plan/January2023/CMMS-Amendment-2023-DRAFT.pdf)

2024. This submittal would contain, at a minimum, the preliminary findings of the Working Group, but may not include a recommendation on the basis of these findings.

### **G. Waste & Recycling Primer:**

1. *Will the “Waste and Recycling Primer” be published exclusively under the Green Bank brand?*

The Waste and Recycling Primer will be published exclusively under the Green Bank brand. Please see previously published primers in the [Environmental Infrastructure Planning section of our website](#).

2. *Does the Green Bank have an intended audience in mind for the “Waste and Recycling Primer”? (e.g., is it aimed towards industry experts, the public, or internal?)*

As you will see from the primers currently posted on our website, they are intended for a wide audience and the consistency between the content of each primer should be maintained with the “Waste and Recycling Primer”.

### **H. Post Working Group Scope:**

1. *What would be the next steps after the research?*

After submitting findings to PURA, the Authority may incorporate recommendations into the various programs that deploy this technology. Furthermore, some subsection of the Working Group may also seek to advance policy, either within state agencies or through the legislature, in support of this industry. Per Public Act 21-115, the Green Bank has the statutory authority to provide catalytic investment into the Waste & Recycling industry as we deem in support of public policy. We would anticipate working with the selected consultant to identify priority actions to address end-of-life investment needs.

2. *Can the Green Bank expand on the level of “support” desired under section IV, 3a and 3b? Would the support with PURA and Connecticut Legislation be high-level or does it require in-person and comprehensive support?*

The Green Bank anticipates that any follow-on support to the August 1, 2024, PURA filing would largely entail advising the Green Bank on strategy, or repackaging materials developed through this scope for a new audience (e.g. the Connecticut legislature).