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January 4, 2022

Via U.S. Mail & Email

Luly E. Massaro
Public Utilities Commission
89 Jefferson Blvd.
Warwick, Rhode Island 02888

RE: Docket No. XXXX

The Distributed Generation Board - Budget Request for 2022 Renewable Energy Quality Assurance Field Case Studies and Report

Dear Ms. Massaro:

In accordance with R.I. Gen. Laws § 39-26.6-4(b), we write to respectfully request approval from the Public Utilities Commission (“PUC”) to perform the 2022 Renewable Energy Quality Assurance Field Case Studies and Report. The Distributed Generation Board is respectfully requesting approval from the PUC to receive One Hundred Fifty-Nine Thousand Nine Hundred Forty Dollars (\$159,940.00) for the Renewable Energy Quality Assurance Study and Report.

As way of background, R.I. Gen. Laws § 39-26.6-4(b) authorizes the Office of Energy Resources (“OER”), in consultation with the Rhode Island Distributed Generation Board (“Board”), “... to hire, or to request the electric-distribution company to hire, the services of qualified consultants to perform ceiling price studies subject to commission approval that shall be granted or denied within sixty (60) days of receipt of such request from the office. In addition, the office, in consultation with the board, may request the commission to approve other costs incurred by the board, office, or the electric-distribution company to utilize consultants for annual programmatic services or to perform any other studies and reports, subject to the review and approval of the commission, that shall be granted or denied within one hundred twenty (120) days of receipt of such request from the office, and that shall be recoverable through the same reconciliation provisions..” The cost of the ceiling price studies and reports “shall be recoverable through the rate reconciliation provisions of the electric-distribution company set forth in § 39-26.6-25, subject to [PUC] approval.” See R.I. Gen. Laws § 39-26.6-4(b).

For several years, the Board has utilized the reconciliation process for renewable energy quality assurance studies and is again seeking PUC approval for the aforementioned study. The previous reconciliation request in 2020 was for \$146,400. Due to COVID, quality assurance work was postponed that year as onsite inspections of PV systems were not possible. The funding from 2020 was applied to work in 2021.

If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Albert J. Vitali" followed by a stylized flourish.

Albert Vitali
Legal Counsel
Department of Administration on behalf of the Office of Energy Resources and Distributed
Generations Board

cc: Nicholas S. Ucci, Commissioner, Office of Energy Resources
Shauna Beland, Office of Energy Resources
Christopher Kearns, Office of Energy Resources
Laura Bartsch, Chair, Distributed Generation Board

2022 Reconciliation Funding Request for 2022 Quality Assurance Inspections and Report for the Renewable Energy Growth Program

For the past three years OER has engaged a consultant to provide quality assurance inspections and a report related to the quality of Renewable Energy Growth projects. A memo providing an update and budget request to the Distributed Generation Board on the REG renewable energy quality assurance work was presented at the November 2021 DG Board Meeting (see attached).

On October 9, 2019 OER issued an RFP for a vendor to continue to REG Q/A work. Responses were due on November 7, 2019 and one vendor submitted a response for a total of \$146,400. Cadmus, the selected vendor the past three years, declined to submit a proposal. Natural Power, a relatively new company to the Rhode Island renewable energy market, did submit a response. Interestingly, several Cadmus employees that conducted much of the work in previous years related to REG quality assurance and inspection services now work for Natural Power and its consultant team. In fact, Shawn Shaw and Danielle Burns previously provided testimony at previous PUC hearings on this subject while representing Cadmus. Natural Power met all the technical requirements of the RFP and their cost proposal was in line with OER's expectations for the 2020 budget.

OER and the DG Board contracted with Natural Power be awarded the contract for the 2020 Quality Assurance Study and Report. However, due to COVID quality assurance inspections were not able to safely take place and the 2020 work was postponed to the 2021 Program Year. The scope of work included nine tasks:

- Task 1 – Small Scale PV Inspections
- Task 2 – Medium Scale PV Inspections
- Task 3 – Commercial/Large Scale PV Inspections
- Task 4 – **(optional)** Small Scale Solar projects + battery storage inspections
- Task 5 – **(optional)** Wind, Hydro, and Anaerobic Digester inspections
- Task 6 – Customer Feedback Survey
- Task 7 – Draft Quality Assurance Report
- Task 8 – Final Quality Assurance Report
- Task 9 – Presentations (three are required)

Natural Power's cost proposal for Tasks 1-3 and 6-9 totaled \$146,400 which is the amount for this reconciliation request. Tasks 4 and 5 were optional.

- Task 4 - Small Scale Solar projects + battery storage inspections would cost \$1,600 per inspection with the average inspection time being approximately 5 hours.
- Task 5 - Wind, Hydro, and Anaerobic Digester inspections would cost \$2,000 per inspection for each technology.

No inspections related to Tasks 4 and 5 were conducted during the work performed in 2021.

Additional Background Questions and Answers

1. What were the PUC-approved reconciliation budgets for the 2017, 2018, 2019 and 2020 Renewable Energy Growth Programs – Renewable Energy Quality Assurance Studies?

\$125,000 in 2017

\$139,422 in 2018

\$140,575 in 2019

\$146,400 in 2020 (moved to work completed in 2021)

2. How much of these approved budgets was spent, as of XXXXXXXXXXXX?

\$120,750 in 2017

\$138,722 in 2018

\$128,755 in 2019

\$0.00 in 2020 as this work was postponed due to COVID

\$123,027 so far with one expected invoice remaining

3. Who is the selected consultant performing these services?

The Cadmus Group, Inc. was the consultant for the first three years of REG quality assurance work. In 2020, Natural Power was awarded a contract with the Board conducted quality assurance inspections and reports in 2021. Natural Powers will continue to perform this work in 2022.

4. Did OER issue an RFP for quality assurance services? If yes, what is the current duration of that contract between OER and the selected consultant?

Yes, OER went out to bid on October 9, 2019 and received one response, from Natural Power. They are under contract with OER, with an option to renew, for a total of three years.

5. Please summarize the work to be included in the 2022 Renewable Energy Quality Assurance Study.

There are ten tasks outlined for 2022:

Task 1 – Small Scale PV Inspections

Task 2 – Medium Scale PV Inspections

Task 3 – Commercial/Large Scale PV Inspections

Task 4 – Small Scale Solar projects + battery storage inspections

Task 5 – (will not be needed in 2022) Wind, Hydro, and Anaerobic Digester inspections

Task 6 – Customer Feedback Survey – Natural Power will conduct a survey of REG small scale customers

Task 7 – Draft Quality Assurance Report

- Task 8 – Final Quality Assurance Report
- Task 9 – Presentations (up to three)
- Task 10 (new for 2022) Trainings

OER worked closely with Natural Power to identify possible cost savings measures for 2022 with an understanding that costs have increased since the RFP was issued in 2019.

Beginning in the 2020 program year National Grid allowed for the installation of small-scale PV and energy storage in the REG program. The 2022 budget accounts for inspections of these system. The Board and OER recommends that at least 3 DC and 3 AC coupled PV and energy storage projects are inspected in the 2022 program year.

Natural Power has also recommended decreasing the number of medium scale inspections from 20 to 10.

6. Why did the cost for the 2022 quality assurance work increase?

The cost for the 2022 work has increased \$13,540 from 2020. This change is the result of increased labor costs, as well as COVID-related costs. Additionally, new work is proposed during the 2022 program year including inspections of small scale and energy storage projects as well as a training course for installers.

7. Will the PUC receive a presentation from OER and Natural Power when the 2022 study and report is complete?

Yes, if requested.

8. Why does the Board and OER believe that quality assurance work for the REG program should continue?

Quality Assurance is an important component for renewable energy projects because renewable projects are highly technical, involve multiple parties, and technology continues to evolve. In addition, codes continue to change as the renewable energy industry matures. Rhode Island will adopt the next version of National Electric Code, NEC20, in Quarter 1 of 2022. Solar installers, solar installation subcontractors, municipal code officials, and electricians need to be aware of the code changes that affect the solar photovoltaic industry.

It is critical that all solar PV systems in Rhode Island are safe, reliable, and perform as expected. However, due to budgets and technical feasibility, it is impossible to inspect all PV systems. While the REG quality assurance efforts inspect a small percentage of the solar PV systems in the state, the

benefits of this effort are clear. As more installers and electricians enter Rhode Island's solar market, install PV systems and go through inspections, they can learn from the inspection process, and incorporate corrective actions and best practices for future installations.

It is incredibly important that the cycle of inspections continue to ensure that solar installers, both current and new hires, learn from their mistakes and do not replicate them on future installs.

Memorandum to the Distributed Generation Board
2022 REG Quality Assurance Study Recommendations for the 2022 Program Year

Prepared by: Shauna Beland, OER
10/27/21

Summary

Through this memorandum, the DG Board is being asked to support recommendations to help improve installation quality in the 2022 Program Year. Natural Power and OER have developed these recommendations based on feedback from participating small scale REG customers as well the REG inspections completed in 2021.

Recommendations:

1. Continue quality assurance studies in the 2022 Program Year.
2. Include small scale PV and energy storage in the portfolio of projects to be inspected in 2022, representing both AC and DC coupled energy storage projects.
3. Building additional website content on OER's REG website for small scale program participants and working with National Grid to enhance the Frequently Asked Question document on their REG website. This will include education sections related to the Consumer Protection Disclosure form to help ensure customers have more information about the form they are required to sign.
4. Offer an in-person training to REG installation companies and their electrical subcontractors about the unique interconnection requirements for small scale programs. Rhode Island will be adopting National Electric code 2020 in 2022 and this training will also provide updates to installers about the changes in NEC20 relating to PV and energy storage. Additionally, Natural Power and OER will work with National Grid to update the Minimum Technical Guidance document to include more detailed grounding information and will share this information to installers before the start of the 2022 program year.
5. Add small improvements to the small scale REG Consumer Protection Disclosure forms. OER issued a survey to small scale REG installers for recommendations for improvements to the form. Also, because the Renewable Energy Fund also required a similar form, OER and the REF collaborated on these recommended changes to keep the REF and REG forms as similar as possible to avoid installer confusion. As a result of this feedback and collaboration two small changes are recommended to the forms under the section "Contract, Cost, and Estimate Performance Section"¹:
 - a. change "array production %" to "array production efficiency (TSRF)".
 - b. add an optional "array 4"

OER will work with National Grid to finalize these changes to all three forms to be included in National Grid's tariff filing with the PUC for the 2022 program year.

¹ There are three REG Consumer Protection Disclosure Forms – Direct Purchase, Third Party Ownership and Self-Installers. They can be found on the [National Grid website here](#) under "Simplified Interconnection Application Forms".

**Memorandum to the Distributed Generation Board
2022 REG Quality Assurance Study and Report Budget**

Prepared by: Shauna Beland, OER
10/26/2021

Summary

Through this memorandum, the DG Board is being asked to support REG Quality Assurance services for up to **\$159,940.00**, on installed and interconnected REG projects in the 2022 Program Year. These services will be performed by Natural Power, which was selected through a competitive bidding process (three years) in 2019.

The Board will be asked to take two votes: 1) Natural Power's Quality Assurance Budget for Program Year 2022 and 2) Natural Power and OER's quality assurance recommendations for the 2022 Program Year.

OER recommends that the DG Board support.

Background

In 2019, OER went out to bid for a quality assurance vendor to perform inspections on installed and interconnected Renewable Energy Growth projects for a new three-year contract. Prior to Natural Power's award and contract, Cadmus performed quality assurance work from 2017-2019¹.

In 2020, due to COVID, Natural Power's first year of work, including customer surveys and inspections, was deferred to 2021. The total cost of Natural Power's work for all nine tasks for the 2020/21 program year \$146,400. The nine tasks included in the approved budget for Natural Power's work in 2019 were as follows:

- Task 1 – Small Scale PV Inspections*
- Task 2 – Medium Scale PV Inspections*
- Task 3 – Commercial/Large Scale PV Inspections*
- Task 4 – (optional) Small Scale Solar projects + battery storage inspections*
- Task 5 – (optional) Wind, Hydro, and Anaerobic Digester inspections*
- Task 6 – Customer Feedback Survey*
- Task 7 – Draft Quality Assurance Report*
- Task 8 – Final Quality Assurance Report*
- Task 9 – Presentations (three are required)*

Tasks 4 and 5 were optional and no inspections of battery storage projects or wind, hydro, anaerobic digestors took place in 2021. In fact, the approved 2019 budget assumed no inspections of PV and battery storage projects.

Timeline

The 2021 Quality Assurance work was delayed this year due to COVID, delays associated with executing an MOU between OER/Natural Power/National Grid, and subsequent data sharing. These issues have since been resolved, however, inspection scheduling was delayed by approximately two months. The DG Board meeting for November includes Natural Power's interim report presentation as well as votes on the

¹ Cadmus's Quality Assurance Reports for years 2017-2019 can be found here: <http://www.energy.ri.gov/policies-programs/programs-incentives/reg-program.php>

recommendations Natural Power and OER have drafted for the 2022 program year based on Natural Power’s findings from work completed in 2021. Additionally, there is a vote on Natural Power’s budget for continued work for the 2022 program year. These two Board votes are not typically sought in one meeting and, in future years, will be spread over the fall months.

OER and Natural Power anticipate the final 2021 Quality Assurance Report to be complete by the end of January 2022.

2022 Budget Proposal

The budget for quality assurance work for the 2022 program year takes into account two years of labor increases and other costs associated with the pandemic. Additionally, OER has directed Natural Power to inspect at least six solar and energy storage projects, 3 DC coupled and 3 AC coupled.

Task 1 –Inspection of Small Scale PV systems.

Unit Price per Inspection	Estimated Quantity	Anticipated Cost
\$880	90	\$79,200

OER NOTE – the cost per inspection in 2019/20 was \$800 per inspection for 90 inspections.

Task 2 – Inspections of medium scale PV systems.

Unit Price per Inspection	Estimated Quantity	Anticipated Cost
\$1,980	10	\$19,800

OER NOTE – the cost per inspection in 2019/20 was \$1,800 for 20 projects.

Task 3 – Inspections of commercial and large PV systems:

For a 500kW PV System

Unit Price per Inspection	Estimated Quantity	Anticipated Cost
\$2,200	2	\$4,400

OER NOTE – the cost per inspection in 2019/20 was \$2,000 for 2 projects.

For a 1MW PV System

Unit Price per Inspection	Estimated Quantity	Anticipated Cost
\$2,200	2	\$4,400

OER Note – the cost per inspection in 2019/20 was \$2,000 for 2 projects.

For a 3MW PV System

Unit Price per Inspection	Estimated Quantity	Anticipated Cost
\$2,200	2	\$4,400

OER Note – the cost per inspection in 2019/20 was \$2,000 for 2 projects.

Task 4 – Inspection of Small Scale PV System with battery storage.

Unit Price per Inspection	Estimated Quantity	Anticipated Cost
\$2,200	6	\$13,200

OER Note – there were no inspections of small-scale PV and battery storage projects in 2019/20.

Task 5 – There are no line items in the in the 2022 quality assurance budget for wind, hydro or anaerobic digester projects as there were no awarded projects by National Grid anticipated to be interconnected in 2022.

Task 6 - Customer Feedback Survey will cost \$7,700. In the 2019/20 budget this was \$7,000.

Task 7 – Draft Quality Assurance Report will cost \$11,000. In the 2019/20 budget this was \$10,000.

Task 8 – Final Quality Assurance Report will cost \$4,400. In the 2019/20 budget this was \$4,000.

Task 9 – Presentations (anticipated to be three) will cost \$5,940 plus \$1500 for travel for a total of \$7,440. In the 2019/20 this budget line item was \$5,400.

Task 10 (NEW) – Trainings: The quality assurance recommendations for 2022 include a training for installers related to interconnection. OER requested a quote for this cost for the 2022 budget and Natural Power quoted \$4,000.

Total Requested Quality Assurance Budget for 2022: \$159,940

The cost of the 2019/20 quality assurance work was \$146,400.