

Rhode Island Energy

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| Rhode Island Pre-Application Report | Applicant: | 00462217 Southern Sky Renewable Energy Rhode Island, LLC | | |
| | Pre-Application Request Date: | 12/15/2022 | Preparation Date: | 12/7/2022 |
| | Prepared by: | Gary Langevin | Revision # (if any): | 0 |

I. Executive Summary:

- A. Interconnection Application: The Applicant (noted above), has submitted a request for a Pre-Application Report (Report) for the interconnection of a generation system (located at the proposed location(s) noted below) to the Rhode Island Energy (Company) Electric Power System (EPS).
- B. **Pre-Application Process:** The proposed location was reviewed (as per the Standards for Interconnecting Distributed Generation referenced below) to: (1) determine the characteristics of the existing Company EPS near the proposed location(s), (2) identify the aggregate amount of other proposed and existing generation capacity connected to the nearby Company EPS, and (3) identify other potential system constraints or critical items that may impact the proposed generation system(s).
- C. Further Inquiries: All additional questions and comments related to this report should be directed to Rhode Island Energy's Distributed Generation Services email account: Distributed.Generation@RIEnergy.com.

II. Proposed Location Information:

The proposed location information provided in the table below is based on the information provided by the Applicant (i.e. Interconnecting Customer) in the **Exhibit B** - Pre-Application Report Form, which has been attached to this Report.

| | | | | | |
|---|--------------|-----------------------------------|-----------|-----------|-------|
| Table of Proposed Location Information | | Proposed kW(AC): | 400 kW | Phase | 3 |
| Proposed Energy Source: | Solar | Existing Account (if applicable): | N/A | | |
| Street Address: | Sharpe Drive | X- Street: | N/A | | |
| City: | Cranston | State: | RI | Zip Code: | 02920 |
| GPS (North): | -71.455503 | GPS (West): | 41.736474 | | |

III. The Company's Electric Power System (EPS):

- A. As required by the Standards for Interconnecting Distributed Generation (referenced below), the Company must identify feeders within ¼ mile of the proposed interconnection site. Since many locations may not have any adequate feeders within ¼ mile, the Company may elect to provide information for the nearest adequate feeder(s) to the proposed location.

| | | | |
|--|-------------|------------------------|-------------|
| Table of Information for Nearest Feeder | | | |
| Feeder Number: | 53-27F1 | Radial or Network?: | radial |
| Substation: | Pontiac | Voltage at Substation: | 12.47 kV kV |
| Voltage (near location): | 12.47 kV kV | Phase (near location): | 3 |
| Distance to three-phase (if not within 1/4 mile of proposed location): | 200 | | |
| DG on Feeder: | 372 kW | Pending DG: | 62 kW |
| <i>Included in total above:</i> | | Existing DG: | 310 kW |
| | | Pending PV: | 62 kW |
| | | Existing PV: | 310 kW |

| | | | |
|--|-------------|------------------------|-------------|
| Table of Information for Second Nearest Feeder (if available) | | | |
| Feeder Number: | 53-27F2 | Radial or Network?: | radial |
| Substation: | Pontiac | Voltage at Substation: | 12.47 kV kV |
| Voltage (near location): | 12.47 kV kV | Phase (near location): | 3 |
| Distance to three-phase (if not within 1/4 mile of proposed location): | 500 | | |
| DG on Feeder: | 959 kW | Pending DG: | 170 kW |
| <i>Included in total above:</i> | | Existing DG: | 789 kW |
| | | Pending PV: | 170 kW |
| | | Existing PV: | 789 kW |

B. Other Known System Constraints:

1. A conceptual grade cost estimate of the required system modifications will be determined during the System Impact Study (SIS). The cost for line extensions / re-conductoring of radial feeders can approach or exceed \$500,000/mile depending on the level of complexity. State and Federal taxes apply to payments for system modifications, including feeder line extensions. The Point of Interconnection, circuit characteristics, and/or other projects may affect feasibility of installing the proposed generation capacity on this circuit at the proposed location. Also, the available distributed generation capacity is open to other project proponents unless and until a complete application is received.
2. Additional system constraints particular to the proposed location (if applicable):

Thank you for your interest in interconnecting to Rhode Island Energy's Electric Power System. We look forward to working with you to progress your application through the interconnection process.

Pontiac is 12.47kV Grd'd Wye/ effectively grounded.

Feeder 53-27F1 and 53-27F2 have hosting capacity.
Proposed Site Location is adjacent to the Pontiac Substation, so multiple feeders are available to interconnect.
Final determination would be during Impact Study.
Pontiac Substation 3V0 is in-service. Customer cost sharing may be required.
Site is in a non-network area.

This proposed site location is adjacent to the Pontiac Substation and existing railroad tracks.
Easements should be observed before progressing- Refer to the ESB for further requirements.

3. This Pre-Application Report is a non-binding report of existing Rhode Island Energy electrical facilities in the area of your proposed project. This report shall not be used to infer the ability to interconnect any project to any of the existing Rhode Island Energy facilities. That determination can only be made following receipt of a completed Interconnection Application and Rhode Island Energy completing the applicable review process as outlined in the Tariff.

References:

Rhode Island Energy's Narragansett Distributed Generation Websites:

Rhode Island Energy's Rhode Island for Interconnecting Distributed Generation:
<https://ngus.force.com/RI/s/>

Design Standards:

ESB 756 (Appendix D) - Requirements for Parallel Generation:

<https://ngus.force.com/servlet/servlet.FileDownload?file=0150W00000Cqbm4>

ESB 750 - Specifications for Electrical Installations:

<https://ngus.force.com/servlet/servlet.FileDownload?file=0150W00000E6VoY>

Interconnection Documents and Processes:

<https://ngus.force.com/RI/s/article/RI-Interconnection-Documents>

Rhode Island Energy's Witness Test Procedure Guideline:

<https://ngus.force.com/servlet/servlet.FileDownload?file=0150W00000DOKRQ>

Design Standards:

Rhode Island Energy's Phone Line Installation Guide:

<https://ngus.force.com/servlet/servlet.FileDownload?file=0150W00000E6VvZ>

| Requirement | MDPU 1320 / RIPUC 2180 ESB 756C / ESB 756D | 250kW - 500kW | 500kW and Above | CHP | Template Comments |
|--|--|---------------|-----------------|--------------------------------|---|
| Portal front page requirements | | | | | |
| Has the Application Fee been processed? | MPDU 1320 Section 3.0 RIPUC 2180 Section 3.0 | Required | Required | Required | |
| Does the Total AC Rating and value for the Assets match? | | Required | Required | Required | CHP needs KW/KVA vs PF with curve |
| Technical Details Section | | | | | |
| If the project includes AC or DC coupled storage has the Total Energy Storage Energy AC (kWh) been populated with the correct value? | | Required | Required | Required | |
| Confirm that the Feeder 1 line has the feeder listed in the pre-application if one exists. If no feeder is written, add the nearest 3-phase feeder to the site using GIS. | | Required | Required | Required | |
| The address and system size must be consistent with the remainder of the application. | | Required | Required | Required | |
| Application | | | | | |
| Signature | | Required | Required | Required | |
| The system size | | Required | Required | Required | |
| Does the Address of Facility match what is found on the one-line and the site plan? | | Required | Required | Required | |
| Generating unit type information must be clearly shown, showing all relevant AC ratings that match information shown on the spec sheet. Include fuel type for rotating | | Required | Required | Required | Synchronous, Induction, Turbine, Inverter, Fuel Cell, Hydro or Wind |
| One-line | | | | | |
| Electrical P.E. Stamp and stamp date | MPDU 1320 Exhibit C RIPUC 2180 Exhibit C ESB750 1.7.2.1 | Required | Required | Required | |
| Does the address match the portal and the application? | | Required | Required | Required | |
| Aggregate AC kW/kVA Nameplate Rating of Generators should be shown | ESB756C Exhibit 4 ESB756D Exhibit 4 Figure 2 | Required | Required | Required | Generator and Prime mover |
| Generator Type, Manufacturer, Model Number(s) must be shown | ESB756C Exhibit 4 ESB756D Exhibit 4 Figure 2 | Required | Required | Required | |
| Rotating Machines: Nameplate rating of the generator (as opposed to the nameplate rating of generator-set) should be shown including generator reactance | ESB756C 7.0 ESB756D 7.0 ESB756C Exhibit 4 ESB756D Exhibit 4 Figure 2 | N/A | N/A | Required | Need impedances from the cut sheet for modeling purposes |
| Inverter: Nameplate rating of the inverter and relay settings should be shown, DG above 500kW to have redundant relay or PTR settings for 27,59,81 O/U settings. DG above 1000MW to have PTR. | ESB756C 7.0 ESB756D 7.0 ESB756C 7.6.3 ESB756D 7.6.3 ESB756C Exhibit 4 ESB756D Exhibit 4 Figure 2 | Required | Required | Required if inverter based CHP | Some rotating machines are behind an inverter. All requirements would apply if they are looking to omit some of our requirements. Otherwise they are subject to screening that is considered "non-listed" |
| Interconnecting Transformer -Winding Configuration (N/A if utility owned) -X/R Ratio & Impedance (N/A if utility owned) -Ratings: kVA, primary voltage, secondary voltage -The core structure of the interface transformer for grounding requirements to be shown | ESB756C 7.3.2 ESB756D 7.3.2 ESB756C Exhibit 4 ESB756D Exhibit 4 | Required | Required | Required | |
| Effective Grounding (not required <500kW) Effective grounding may be accomplished with the following configurations: 1. A wye-grounded to wye-grounded transformer with a grounded generator source. 2. A wye-grounded connected primary winding with a fully insulated neutral and the secondary winding to have a delta connection. The insulated neutral is to establish provisions for the addition of a grounding reactor or grounding resistor in the event the generator's contribution to faults on the Company's EPS results in undesirable fault current values. 3. A wye-grounded to wye-grounded transformer with an associated grounding transformer. 4. A delta primary winding with a primary side grounding transformer and having any secondary configuration. 5. A wye-grounded primary with wye-ungrounded secondary with a primary side grounding transformer. 6. A wye-ungrounded primary with wye-grounded or wye-ungrounded secondary with a primary side grounding transformer. | ESB756C 7.3.2.1 ESB756D 7.3.2.1 ESB756C Exhibit 4 ESB756D Exhibit 4 | N/A | Required | Required | This is critical for rotating machines If the customer is proposing a grounding transformer, the kVA rating, X/R ratio, Z% and winding configuration needs to be shown. If a neutral grounding reactor is used, the proposed size (in ohms) needs to be indicated. |
| Service entrance rating is shown | ESB756C 7.2.1 ESB756D 7.2.1 | Required | Required | Required | |

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| The PCC line of demarcation (customer vs. utility equipment) | ESB756C Exhibit 6 ESB756D Exhibit 6 Figure 4 | Required | Required | Required | |
| Interrupting Device (recloser, breaker, fuse, etc.) shall be shown, including make, model, voltage and current rating | ESB756C 7.5 ESB756D 7.5 | Required | Required | Required | |
| Element 32 should be shown if customer has AC Coupled BESS and would like to limit the output | | Required for Storage | Required for Storage | Required for Storage | |
| Relaying for Interrupting Device (including Make and Model, voltage and current rating of device) should be shown (Also > 500kW can opt to use NG PTR and fuses instead of redundant relay) -Relay Elements and settings shown (27,59,810/U,etc) | ESB756C 7.6.3 - 7.6.12 ESB756C Table 7.6.11.1-1 ESB756D 7.6.3 - 7.6.12 ESB756D Table 7.6.11.1-1 | N/A | Required | Required | Rotating will most likely include 51, 51G OR 51N settings on their relays. A narrative on how they will operate in times of an outage helps us determine how the interlocks will work. Will they island them selves away from utility if so trip the main. If they do not then trip the generator breaker. Rotating machines without an inverter will require a sync check relay(25) in their relay protection scheme and any device that can open in between the utility and the generator. If rotating determines they will not export(different type of study) what is that minimum import they will need to watch when tripping(32 relay setting) |
| Rather 3 wire ungrounded EPS - Delta High-Side Customer-Owned Transformer: Customer 3V0 relay & instrument transformers | ESB756C-7.1.5 ESB756D-7.1.5 | N/A | Required | Required | |
| VT & CT configurations rating/ratio, accuracy, burden class, 3 PTRs Wye-Wye | ESB756C 7.6.4 ESB756D 7.6.4 | N/A | Required | Required | |
| DC Power Supply for Relaying (including fail-safe controls) should be shown including utility restoration settings Also needs a note saying battery is rated to last for >8 hours | ESB756C 7.5.2 ESB756D 7.5.2 | N/A | Required | Required | |
| Main Service Breaker or Fused Disconnect (if behind customer load) should be shown | ESB756C Exhibit 4 ESB756D Exhibit 4 | N/A | Required | Required | |
| Customer-owned Manual Generator Disconnecting Means (gang operated, visible break when opened, utility lockable in open position, accessible 24/7 to the utility) should be shown They must include the Voltage/Current/Make/Model of the switch unless it is custom made | ESB756C 7.4 ESB756D 7.4 ESB756C Exhibit 4 ESB756D Exhibit 4 | N/A | Required | Required | |
| Utility Revenue Meter should be shown | ESB756C 7.2 ESB756D 7.2 ESB756C Exhibit 4 ESB756D Exhibit 4 | Required | Required | Required | |
| Utility Recloser shown (if > 1000kW) should be shown or > 500kW if customer opts for NG PTR in place of customer redundant relay | ESB756C 7.6.12.3 ESB756D 7.6.12.3 ESB756C Exhibit 4 & 6 ESB756D Exhibit 4 & 6 | N/A | Required | Required | if project>1MW |
| Utility Disconnect Means shown | ESB756C Exhibit 4 & 6 ESB756D Exhibit 4 & 6 | Required | Required | Required | |
| Internal DG Protective Device Settings (Both Primary and Secondary/Redundant Relay Settings) | ESB756C-7.6 ESB756D-7.6 ESB756C-Figure 4&2 ESB756D-Figure 4&2 | Required | Required | Required if inverter based CHP | Only if the rotating engine is behind an inverter is this needed. Generally there will be a redundant protective device over 500 kW |
| Site plan | | | | | |
| Does the site address match the portal and the application? Is it in NG footprint? | | Required | Required | Required | |
| Are the property lines shown? Any easement issues-ROW, Rail track, waterway, pvt land etc. | ESB756C 5.1.1.3 ESB756D 5.1.1.3 | Required | Required | Required | |
| Cardinal direction 'north' shown | ESB756C 5.1.1.3 ESB756D 5.1.1.3 | Required | Required | Required | |
| Site plan to scale with scale bar | ESB756C 5.1.1.3 ESB756D 5.1.1.3 | Required | Required | Required | |
| Are all streets near the project site shown and labeled? | | Required | Required | Required | |
| All meters (utility- and customer-owned) shown | ESB756C 5.1.1.3 ESB756D 5.1.1.3 | Required | Required | Required | |
| Interfacing Transformer(s) | ESB756C 5.1.1.3 ESB756D 5.1.1.3 | Required | Required | Required | |
| Interrupting Device(s) | ESB756C 5.1.1.3 ESB756D 5.1.1.3 | Required | Required | Required | |
| Isolation device(s) (e.g. generator disconnect) (24/7 accessible, lockable) | ESB756C 5.1.1.3 ESB756D 5.1.1.3 | Required | Required | Required | |
| Point of Common Coupling (PCC) | ESB756C 5.1.1.3 ESB756D 5.1.1.3 | Required | Required | Required | |
| Company pole number nearest to the proposed PCC | ESB756C 5.1.1.3 ESB756D 5.1.1.3 | Required | Required | Required | |
| Existing and proposed access road(s) including, at a minimum, road material, and dimensions at least 20' to confirm Company personnel and equipment access requirements are met (The access road must be adjacent to company equipment, equipment for new service must be located on private property (e.g. cannot have recloser/load break/meter along a street)) | ESB756C 5.1.1.3 ESB756D 5.1.1.3 | Required | Required | Required | |
| Restricted access, fences, gates, and access controls | ESB756C 5.1.1.3 ESB756D 5.1.1.3 | Required | Required | Required | |
| Generator location | ESB756C 5.1.1.3 ESB756D 5.1.1.3 | Required | Required | Required | |
| Existing services | ESB756C 5.1.1.3 ESB756D 5.1.1.3 | Required | Required | Required | |

| Battery Energy Storage System (BESS) | | | | | |
|---|------------------------------------|----------|----------|--------------------------------|--|
| The customer owned relay will need to include relay element 32 if the customer has AC coupled BESS and would like to limit the output. | | Required | Required | Required | Only Customers applying for Storage |
| Did the customer provide an element 32 calculation for the relay? | | Required | Required | Required | Only Customers applying for Storage |
| Has the customer completed the ESS Data Collection excel file? | | Required | Required | Required | Only Customers applying for Storage |
| Has the customer completed Section 4 of "Supporting Documentation_DER_Islanding and Fault Data Request.doc" or Battery Storage Narrative | | Required | Required | Required | Rotating machines will only need this if they have an inverter |
| Documentation | | | | | |
| Technical Specification for all Inverters/Generating Equipment | ESB756C 5.1.1.2 ESB756D 5.1.1.2 | Required | Required | Required | |
| Curtailment letter should be on Manufacturer letterhead if the inverter is sized larger than the designed output | ESB756C 7.0 ESB756D 7.0 | Required | Required | Required | |
| Relevant Certificate of Compliance, mostly for inverters, to ensure equipment is UL 1741 SA certified. | | N/A | Required | Required for only UL certified | |
| Anti-Islanding Letter should all be on Manufacturer (> 500kW) Required for all projects going to Impact Study | ESB756C 5.1.1.2 ESB756D 5.1.1.2 | N/A | Required | N/A | This is required for only UL certified. This is not required for rotating unless they are behind an inverter. If it does not qualify then it will follow a non-listed path in the screening. |
| Prove Site Control for Standalone systems (i.e. a letter form the billing account/landowner, deed, etc) for IPP | | Required | Required | N/A | |
| Wireless Signal Strength Test Form (Required if the customer would like to install a wireless meter) | | | | Required | Required if the customer would like to install a wireless meter |
| LROV Letter should be on Manufacturer letterhead (> 500kW) Required for all projects going to Impact Study | | N/A | Required | Required for only UL certified | |