



Commerce Rhode Island Solar PV + Energy Storage Self-Inspection Report



version: 2022-4-18

Instructions

The prompts in this self-inspection report are intended to collect key system installation characteristics, including photographs, which will allow Commerce Rhode Island staff and contractors to conduct a reasonable due diligence review, as a substitute for an onsite inspection. This report includes a self-inspection checklist and a descriptive photograph sheet. **Installers wishing to complete a self-inspection must fill out all applicable fields, including all photos. Forms with missing information will be returned to the installer.** In cases where multiple pieces of equipment (e.g., two different types of PV modules) are used, please copy/paste the relevant information table and fill it out for both sets of equipment. Installers are encouraged, but not required, to attach an as-built electrical design drawing to this report.

Once completed, please submit this form in PDF format via email to ref@commerceri.com.

For technical questions on completing this self-inspection report, contact QAInspections.RI@cadmusgroup.com.

System Information

Grant Number	#-###
System Owner Last Name	
Installation Company	
Installer Last Name	
Person Completing This Report	
Phone	
Email	
Report Date	

Self-Inspection Checklist

Array and PV Modules

Inspection Item	Value
System Capacity (kW _{DC})	
System Lifetime Energy Production (kWh)	
TSRF(%)	
Module Quantity	
Module Manufacturer	
Module Model Number	
Modules per String (or per circuit for microinverters)	
Number of Strings per Input Circuit	
Conductor Size/Insulation Type	

Racking and Grounding

Inspection Item	Value		
PV Racking manufacturer			
Model			
Grounding, If WEEBs (or equivalent) used, indicate number used per module.			
Conductors supported and protected from damage.	Yes	No	N/A
All enclosures and splicing means rated for outdoor/wet location use (e.g., no indoor wire nuts).	Yes	No	N/A
All roof penetrations are properly flashed and sealed (note that sealant is a supplement, not a replacement, to flashing).	Yes	No	N/A
DC conduit labeled as containing PV circuits (NEC 690.31(D)(2)).	Yes	No	N/A

Microinverter

Inspection Item	Value
Quantity (enter 0 if not present)	
Manufacturer	
Model Number	
Mount Type	Rack or Module Frame
Grounding	Microinverter bonding hardware or other
Inverter Breaker/Fuse Current Rating (A)	20A

Optimizer

Inspection Item	Value
Quantity (enter 0 if not present)	
Manufacturer	
Model Number	
Mount Type	Rack or Module Frame
Grounding	Optimizer bonding hardware or other

Rooftop Junction Box 1(Copy and Paste if Multiple)

Inspection Item	Value		
Number of Strings in JB			
Conductor Size/Insulation Type			
Enclosure rated for outdoor/wet location use.	Yes	No	N/A
Conductors supported and protected from damage.	Yes	No	N/A
Splice means rated for outdoor/wet location use (e.g., no indoor wire nuts).	Yes	No	N/A
All roof penetrations are properly and sealed	Yes	No	N/A
DC conduit labeled as containing PV circuits (NEC 690.31(D)(2)).	Yes	No	N/A

Rooftop Junction Box 2(Copy and Paste if Multiple)

Inspection Item	Value		
Number of Strings in JB			
Conductor Size/Insulation Type			
Enclosure rated for outdoor/wet location use.	Yes	No	N/A
Conductors supported and protected from damage.	Yes	No	N/A
Splice means rated for outdoor/wet location use (e.g., no indoor wire nuts).	Yes	No	N/A
All roof penetrations are properly and sealed	Yes	No	N/A
DC conduit labeled as containing PV circuits (NEC 690.31(D)(2).	Yes	No	N/A

Standalone DC Disconnect

Inspection Item	Value		
Max DC Ratings	Voltage		Current
Location			
DC disconnect located near inverter and readily accessible.	Yes	No	N/A
DC characteristics label present (NEC 690.53).	Yes	No	N/A
Disconnects all ungrounded conductors (note that ungrounded arrays must disconnect both positive and negative conductors).	Yes	No	N/A

Backup Power System

Inspection Item	Value	
System Type (Select All Applicable Configurations if Multiple are present)	Entire Facility	Genset
	Partial Facility	Genset
	Dedicated Backed up Subpanel	AC Coupled ESS/Multimode Inverter
	Dedicated Backed up Subpanel	DC Coupled ESS/Multimode Inverter
	Entire Facility	Microgrid Interconnection Device/Gateway
	Partial Facility	Microgrid Interconnection Device/Gateway
Location(s)	Garage	

String Inverter

Inspection Item	Value	
Quantity (enter 0 if not present)		
Manufacturer		
Model Number		
AC Conductor size/Rating		
Inverter Type	Transformerless	Transformer
Integrated Energy Storage	Yes	No
Rapid Shutdown device	Inverter Integrated	Other
If Other, enter manufacturer/model		

Continuous grounding electrode conductor originates at designated inverter terminal. (Applicable for Transformer based inverters)	Yes	No	N/A
Inverter is grounded.	Yes	No	N/A
Integrated AC disconnect or External Disconnect within sight (10ft)	Yes	No	N/A
DC fuse rating (if combining 3 or more strings)	Voltage	Current	N/A
DC characteristics label present (NEC 690.53).	Yes	No	N/A

AC Combiner or ESS AC Combiner

Inspection Item	Value		
Max Enclosure Ratings (AC)	Voltage V		Current A
Location (enter N/A for not present)			N/A
Front panel included labels that identify each circuit/source (NEC 408.4(A))	Yes	No	N/A
Combiner enclosure is grounded.	Yes	No	N/A
PV and/or ESS Disconnect ID label(s)/ AC characteristics label(s) present (NEC 690.54),706.15(C)).	Yes	No	N/A
Multiple sources & overcurrent device ratings warning label present (NEC 705.12(D)).	Yes	No	N/A

AC Disconnect (Other than Interconnection) (Copy and Paste if Multiple)

Inspection Item	Value		
Max Enclosure Ratings (AC)	Voltage		Current
Location (enter N/A for not present)	N/A		N/A
Disconnects all ungrounded conductors.	Yes	No	N/A
Utility conductors connected to "Line" side of PV disconnecting means.	Yes	No	N/A
PV disconnect identification label present (NEC 690.13(B)).	Yes	No	N/A
Disconnect enclosure is grounded.	Yes	No	N/A
AC disconnect door latch secured (NEC 690.15(A))	Yes	No	N/A

Energy Storage System

Inspection Item	Value		
Coupling	AC or DC		
Manufacturer	LG CHEM		
Model	RESU10H		
Quantity	1		
Battery (If external how many units?)	Internal/External	Qty:	
Total ESS Rating (kW and kWh)	Output Power kW:5	Capacity kWh:9.3	
Gateway Model (enter N/A if not present)			N/A
Critical Load/Backed-Up Load Subpanel Busbar Rating (A) (enter N/A if not present)	A		N/A

Critical Load /Backed-Up Load Subpanel Breaker Rating (A) (select MLO if main lug only or N/A if not present,)	A	MLO	N/A
Location (enter N/A for not present)			N/A
Integrated disconnect or External Disconnect within sight (10ft) (NEC 706.15).	Yes	No	N/A
ESS disconnect identification label present (NEC 706.15(C)).	Yes	No	N/A
Directories/labeling present per 706.21(A), 705.10, 712.10.	Yes	No	N/A
Enclosure is grounded.	Yes	No	N/A

Interconnection (fill in one of the three sections below)

	Inspection Item	Value		
SUPPLY SIDE CONNECTION	PV Service Disconnect Location	House exterior adjacent to electrical utility meter		
	Enclosure Rating	Voltage V	Current A	
	Fuse Rating	Voltage V	Current A	
	Conductor Size/Type	Line	Load	
	Utility conductors connected to "Line" side of disconnecting means.	Yes	No	N/A
	Interconnection wiring method compliant with NEC 230.43.	Yes	No	N/A
	Grounded conductor bonded to enclosure (NEC 250.24(C)).	Yes	No	N/A
	AC characteristics label present (NEC 690.54)	Yes	No	N/A
FEEDER TAP CONNECTION	AC disconnect door latch secured (NEC 690.15(A))	Yes	No	N/A
	Directories/labeling present on all service disconnects per NEC 230.2(E), 230.70(B), 705.10, and 690.56(B).	Yes	No	N/A
	Primary Source Overcurrent Device Rating (A)			
	Existing Feeder Conductor Size/Type			
	Main panel or subpanel Busbar Rating (A)			
	Main panel or subpanel Breaker Rating (A) (enter MLO for if main lug only)			N/A (main lug)
	PV Disconnect Location			
	Enclosure Rating	Voltage	Current	
	Fuse Rating	Voltage	Current	
	Conductor Size/Type	Line	Load	
	Utility conductors connected to "Line" side of PV disconnecting means.	Yes	No	N/A
	AC characteristics label present (NEC 690.54)	Yes	No	N/A
PV disconnect identification label present (NEC 690.13(B)).	Yes	No	N/A	
AC disconnect door latch secured (NEC 690.15(A))	Yes	No	N/A	
Directories/labeling present on all service disconnects per NEC 230.2(E), 230.70(B), 705.10, and 690.56(B).	Yes	No	N/A	
LOAD SIDE CONNECTION	Main Breaker Rating (A)			
	Main Breaker Location	Top	Bottom	Other
	Backfeed Breaker Rating (A)			
	Backfeed Breaker Location	Top	Bottom	Other
	Panel Busbar Rating (A)			
	PV Conductor Size/Type			
	Combined Rating of Other Current Sources (A)-if applicable			
	Panelboard labeled to indicate presence of all power sources (NEC 705.12(C)).	Yes	No	N/A
	AC characteristics label present (NEC 690.54)	Yes	No	N/A
	"Do not relocate" label present at PV breaker (NEC 705.12)(B)(3)(2).			
	AC disconnect door latch secured (NEC 690.15(A))	Yes	No	N/A
	Directories/labeling present on all service disconnects per NEC 230.2(E), 230.70(B), 705.10, and 690.56(B).	Yes	No	N/A

Photos Required (Multiple photos may be needed)

Module Nameplate Photo
Insert Photo(s) Here Notes:
Module Close-up Connector Mating/Compatibility Photo
Insert Photo(s) Here Notes:
Full Array Image(s) Multiple photos may be needed to include all modules for verifying system capacity
Insert Photo(s) Here Notes:
Horizon Profile Photos From a single point near the middle of the either the bottom or top row of each array, start by pointing the camera to the left side of the array. Include a little of the array's left edge, then take successive overlapping photos rotating to the right side of the array typically 4 or 5 photos per array. If more than one array, take another set if the array faces another direction not seen in the previous set. Identify the associated cardinal direction per set. (i.e. E, ESE, SE, SSE, S, SSW, SW, WSW, W, etc)
Insert Photo(s) Here Notes:
Array Mounting/Flashing Detail Close shot of mounting bracket connection to roof and associated use of flashing/sealant
Insert Photo(s) Here Notes:
Under-Array Wire Management Close up photo showing the wire management under each array. Multiple photos may be necessary
Insert Photo(s) Here Notes:
Module Clamping and Grounding Show typical grounding hardware installation, including ground rails, ground lugs, module clamping, and rail splices, if applicable
Insert Photo(s) Here Notes:
Microinverter Nameplate Photo
Insert Photo(s) Here Notes:
Microinverter Mounting Show mounting method and mounting/grounding hardware
Insert Photo(s) Here Notes:

<u>Optimizer Nameplate Photo</u>
Insert Photo(s) Here Notes:
<u>Optimizer Mounting</u> Show mounting method and/or mounting/grounding hardware
Insert Photo(s) Here Notes:
<u>Rooftop Junction and/or Combiner Box Wiring</u> Show splice/termination method, conductor fittings
Insert Photo(s) Here Notes:
<u>Cable/Conduit Runs</u> Show indoor and outdoor cable and conduit runs towards inverters, AC combiners, and/or raceways and troughs Include wiring of building penetration LBs
Insert Photo(s) Here Notes:
<u>Raceway/Trough/Junction Box Exterior</u> Show labeling , conduit fittings, and conduits Multiple photos may be needed
Insert Photo(s) Here Notes:
<u>Raceway/Trough/Junction Box Wiring</u> Show wiring, splice/termination methods, grounding hardware, and/or conductor fittings, LB building penetration
Insert Photo(s) Here Notes:
<u>Standalone DC Disconnect/Combiner Exterior</u> Show nameplate/labeling details Multiple photos may be needed
Insert Photo(s) Here Notes:
<u>Standalone DC Disconnect/Combiner Wiring</u> Show wiring details
Insert Photo(s) Here Notes:
<u>String Inverter Exterior</u> Show sufficient detail to verify labeling
Insert Photo(s) Here Notes:
<u>String Inverter Nameplate Photo</u>
Insert Photo(s) Here Notes:
<u>String Inverter Wiring</u> Show all wiring terminations
Insert Photo(s) Here Notes:

<u>AC Combiner Exterior</u> Show nameplate/labeling details
Insert Photo(s) Here Notes:
<u>AC Combiner Front Panel</u> Show front panel unique descriptive breaker/circuit ID. labeling
Insert Photo(s) Here Notes:
<u>AC Combiner Wiring</u> Show all wiring details and terminations
Insert Photo(s) Here Notes:
<u>ESS Gateway Exterior</u> Show gateway enclosure and proximity to disconnects.
Insert Photo(s) Here Notes:
<u>ESS Gateway Nameplate and Front Panel labeling photo(s)</u>
Insert Photo(s) Here Notes:
<u>ESS Gateway Wiring</u> Show all wiring details and terminations Multiple photos may be needed
Insert Photo(s) Here Notes:
<u>ESS & PV AC Combiner Panel</u> Show Exterior and Front panel labeling Multiple photos may be needed
Insert Photo(s) Here Notes:
<u>ESS & PV AC Combiner Panel Wiring Photo(s)</u> Show all wiring details and terminations Multiple photos may be needed
Insert Photo(s) Here Notes:
<u>Critical Loads/Backed-Up Loads Subpanel</u> Show labeling with door closed and open,
Insert Photo(s) Here Notes:
<u>Critical Loads/Backed-Up Loads Subpanel Wiring</u> Nameplate photo ,Show wiring details and terminations Multiple photos may be needed
Insert Photo(s) Here Notes:
<u>ESS/Battery Exterior</u> Show enclosure and proximity to disconnects.
Insert Photo(s) Here Notes:
<u>ESS/Battery Nameplate</u>

<p>Insert Photo(s) Here</p> <p>Notes:</p>
<p><u>Battery Pack/Bank (External)</u></p> <p>Show all wiring details and terminations</p> <p>Multiple photos may be needed</p>
<p>Insert Photo(s) Here</p> <p>Notes:</p>
<p><u>Battery Wiring</u></p> <p>Show all wiring details and terminations</p> <p>Multiple photos may be needed</p>
<p>Insert Photo(s) Here</p> <p>Notes:</p>
<p><u>Production Meter Exterior</u></p> <p>Show production meter enclosure, nameplate ratings, and production reading</p> <p>Multiple photos may be needed</p>
<p>Insert Photo(s) Here</p> <p>Notes:</p>
<p><u>Production Meter Wiring</u></p> <p>Show wiring of production meter enclosure</p> <p>Multiple photos may be needed</p>
<p>Insert Photo(s) Here</p> <p>Notes:</p>
<p><u>Standalone AC Disconnect Exterior</u></p> <p>Show nameplate/labeling details</p>
<p>Insert Photo(s) Here</p> <p>Notes: Remote Rapid Shutdown Device</p>
<p><u>Standalone AC Disconnect Wiring</u></p> <p>Show all wiring details, nameplate, and terminations</p>
<p>Insert Photo(s) Here</p> <p>Notes:</p>

<p><u>Load Side Connection Main Service Panel Exterior (Door Open and Closed)</u></p> <p>Show labeling detail, Main breaker rating , System Backfeed Breaker</p>
<p>Insert Photo(s) Here</p> <p>Notes:</p>
<p><u>Load Side Connection Main Service Panel Wiring</u></p> <p>Show full wiring detail inside panel and Nameplate photo</p>
<p>Insert Photo(s) Here</p> <p>Notes:</p>
<p><u>Feeder Tap Connection</u></p> <p>Show feeder tap interconnection wiring/splice connector detail</p>
<p>Insert Photo(s) Here</p> <p>Notes:</p>
<p><u>Feeder Tap Connection Disconnect Exterior</u></p> <p>Show labeling/nameplate detail</p>
<p>Insert Photo(s) Here</p> <p>Notes:</p>

<p><u>Feeder Tap Connection Disconnect Wiring</u> Show all wiring, termination, nameplate, and fuse details</p>
<p>Insert Photo(s) Here Notes:</p>
<p><u>Feeder Tap Connection Load panel/Panel Disconnect</u> Show labeling, nameplate detail, main breaker</p>
<p>Insert Photo(s) Here Notes:</p>
<p><u>Supply Side Connection Disconnect Exterior</u> Show labeling/nameplate detail</p>
<p>Insert Photo(s) Here Notes:</p>
<p><u>Supply Side Connection Disconnect Wiring</u> Show all wiring, termination, nameplate, and fuse details. Ensure neutral terminal and green ground bonding screw are visible</p>
<p>Insert Photo(s) Here Notes:</p>
<p><u>Interconnection Standalone Main Service Disconnect</u> Photo showing the busbar rating</p>
<p>Insert Photo(s) Here Notes:</p>
<p><u>Supply Side Connection</u> Show service entrance conductor interconnection/spice connector detail, main/service OCPD Include images of genset / automatic transfer switches if present</p>
<p>Insert Photo(s) Here Notes:</p>
<p><u>Interconnection Standalone Main Service Disconnect</u></p>
<p>Insert Photo(s) Here Notes:</p>
<p><u>Balance of System (BOS) Overview Photos</u> Show general location/configuration of DC disconnect, inverter, production meter, panelboards, and other co-located equipment, indoor and outdoor Multiple photos may be needed</p>
<p>Insert Photo(s) Here Notes:</p>
<p><u>Balance of System (BOS) Utility Meter Photo</u> Show location and labeling and Meter reading</p>
<p>Insert Photo(s) Here Notes:</p>
<p style="text-align: center;">Additional Photos</p>
<p>Notes:</p>