

**NRG Residential Solar Solutions, LLC**  
1000 North Post Oak, Suite 240  
Houston, TX 77055

## NRG PV System Installation and Commissioning Checklist

**\*\*Note to Build Partners:** After testing is complete, the system may not be turned back on until after receiving an NTC email from NRG and PTO authorization from the administering utility.

**\*\*Note to Build Partners:** Clear photos are required during the installation process. Please see page 4 for more information.

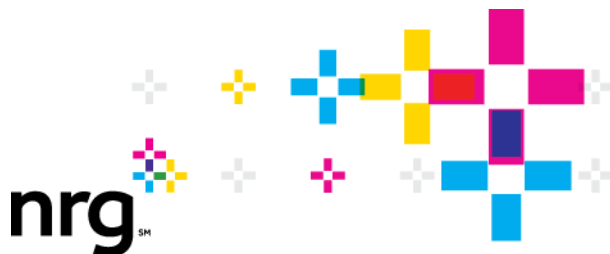
**Complete all fields, attach additional sheets where needed. The NRG PV System Installation and Commissioning Checklist can be downloaded as a single form from the NRG portal. This form can be completed by hand and scanned or completed using Adobe Acrobat.**

Homeowner:		Build Partner:	
Address:		Lease ID:	
		Field Reviewer:	
		Date:	

**Contact Us**  
NRG Residential Solar Solutions, LLC  
Phone: 510-370-3000  
Email: [RSSEngineering@nrgenergy.com](mailto:RSSEngineering@nrgenergy.com)

### INSTALLATION NOTES

Note all variations from original design plans, and submit in the form of As-Built Plans:



## STRING TESTING

For string inverter systems, please complete the table(s) below. Refer to the *String and Inverter Testing Instructions* in the *NRG RSS Engineering Reference Guide* for complete instructions. If more than two string inverters are installed, attach additional string inverter tables, as needed. **This page does not need to be completed for microinverter (Enphase) systems.**

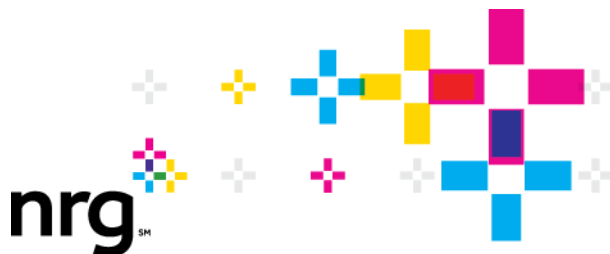
### String Inverter 1:

Label each string:					
Individual String Test Values	$V_{OC}$				
Inverter Input*	$V_{MP}$				
	$I_{MP}$				
Inverter Input MPPT 2 (if used)*	$V_{MP}$				
	$I_{MP}$				
Output Power*	Watts (AC)				

### String Inverter 2:

Label each string:					
Individual String Test Values	$V_{OC}$				
Inverter Input*	$V_{MP}$				
	$I_{MP}$				
Inverter Input MPPT 2 (if used)*	$V_{MP}$				
	$I_{MP}$				
Output Power*	Watts (AC)				

\*As displayed or reported by the inverter. Some output parameters may not be available on some inverters. Only single measurements are required for initial verification of system performance and/or troubleshooting.



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## SYSTEM PRODUCTION TESTING AND MONITORING VERIFICATION

Date (MM:DD:YY)	
Total PV System Size (kW DC STC rating) =	kW
Locus monitor MAC ID	
Locus monitor Serial number	

While the system is operating at a steady state, measure and record the AC power from the inverter every 5 minutes. Refer to the *System Production Testing and Monitor Verification* section in the *NRG RSS Engineering Reference Guide* for complete Locus monitor testing instructions.

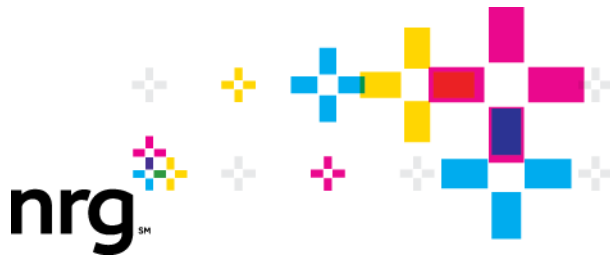
Total System	T <sub>0</sub>	T <sub>5</sub>	T <sub>10</sub>
Time (HH:MM)			
Measured PV System Output Power (kW) or Envoy Reported System Output Power (kW)**			
Locus Reported System Output Power (kW)			

**Note:** If the Locus L-Gate 120 is used, photos of the LCD screen are required for each 5 minute interval (see Photographic Evidence).

**Note:** If the system is Enphase or SolarEdge, additional photos are required (see Photographic Evidence).

### \*\*Enphase Systems only:

- ☐ The system is activated in Enphase Enlighten (<http://enlighten.enphaseenergy.com>) and the email address under "Owner Information" is [monitors@nrgsunlease.com](mailto:monitors@nrgsunlease.com).  
For complete Enphase System Activation Instructions, please see the *Enphase Envoy Activation* section in the *NRG RSS Engineering Reference Guide*.

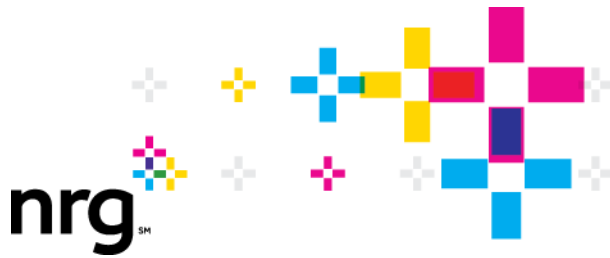


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## PHOTOGRAPHIC EVIDENCE

Please provide ALL of the following photographs and submit as a single PDF, one photo per page. Clear and well zoomed photos of the system components allow for a quicker review. Provide multiple photos for each requirement if needed. Please check each box if photo(s) for the requirement has been provided.

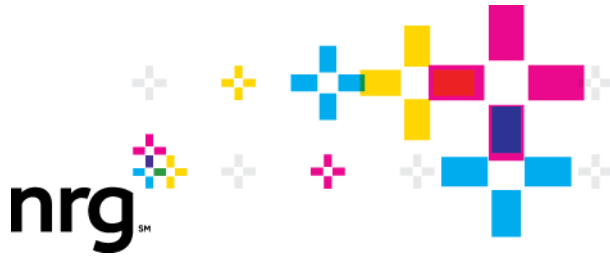
- ☐ All installed arrays – verify that array is installed per Approved Design Plans, include photos for each sub-array
  - Photos of each array to show that the correct number of modules are installed per Approved Design Plans
  - Module placement should match Approved Design Plans, any variations will require as-built plans
  - Photo showing all of the arrays from the street or ground-level
  - Evidence of tree trimming, shade obstruction removal (vents, satellite dishes, etc.), if applicable, and existing shading conditions as per preliminary shading analysis from Site Survey
  - Include any required fire setbacks
- ☐ Clamps to racking – show type of clamps and bolts
  - Evidence of proper use of mid-clamps and end-clamps, clamp is on the frame of the module
  - T-bolts are properly installed, if used
  - Attachment to rail or racking hardware is secure
- ☐ Attachment to roof structure – close-up of full mounting system (including flashing) attached to roof and rail
  - Photo of sealant applied to flashing prior to attachment
  - Proper installation of attachment hardware, use of flashing is correct for the roof type (deck level flashing on tile roofs, flashing is under shingles, or cut out tile)
  - Show how tile hooks are attached to the paper under the tile
- ☐ Area under array from attic, if accessible
  - Evidence of upgraded roof structure, if applicable
  - Evidence of roof damage, if applicable
- ☐ Inter-module wires – show that wires are secure and neat
  - A photo under the array to show that wires are not hanging down or touching the roof surface
  - All wires should be secured with rail clips or zip-ties (no wires should be wrapped around the rails)
  - Photos of interconnected module strings labeled and identified
- ☐ Module grounding
  - WEEB lugs are used or proper module ground lugs
- ☐ Array equipment grounding
  - Show equipment grounding conductor (EGC) attached to all metal components of the array, rail, wiring boxes, conduit grounding bushings
  - Show stainless steel grounding hardware
- ☐ Grounding Electrode Conductor (GEC)
  - Show evidence of continuous (irreversibly spliced) GEC from the inverter to the grounding system bonding location at the point of interconnection or the grounding electrode
- ☐ Mounting of junction or combiner box – show at least 1" around box
  - Evidence that the combiner box or junction box is supported and properly installed
  - Conduit is installed in the correct punchouts of the combiner/junction box



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- Conduit penetrations are water-tight, sealed, and flashed
- Outdoor/waterproof rated splice equipment and box/conduit fittings
- Evidence that the location matches as-built plans, when located beneath the array

- ☐ Wiring inside junction or combiner box
  - Show fuse ratings
  - Show junction or combiner box label
  - Does the junction box or combiner box have proper safety signage?
    - Ensure labels show appropriate warning and safety messages
  - Evidence that box fill is not exceeded
  - Conductors securely fastened in termination blocks, and labeled by string
  - Outdoor-rated wire nuts and sealant are used
  - Show strain relief connectors, LBs, and wire bushings
  - Proper color conductors used for grounding
  - Irreversible splice/crimp of all grounding conductors
- ☐ Inverter(s) – show 10' area around (or attachment to rails for microinverters)
  - Evidence to show where the inverter(s) are installed, does it match the design plan location
  - Proper working clearance and accessibility around the inverter(s)
  - Inverter(s) installed in a permanently shaded location
  - Do the inverter(s) have proper safety signage?
    - Ensure labels show appropriate warning and safety messages
    - Ensure Imp, Vmp, Isc, max system voltage are labeled per NEC 690.53
  - Ensure the NRG sticker with contact telephone # is visible on the inverter or elsewhere, if feasible
  - Microinverters installed in an appropriate way (not exposed to sun, attached to the rails under modules)
- ☐ Enphase systems only
  - Photo of Envoy LCD screen showing the number of microinverters online and AC Power
- ☐ SolarEdge systems only
  - Photos of SolarEdge inverter LCD showing voltage (Vmp) and power (Pac) values, and number of optimizers online
- ☐ Grounding at inverter
  - Photos of array EGC and system GEC/EGC, with correct color conductors
  - Photos of irreversible splices where required, and grounding bushings on all conduit
- ☐ DC Disconnect
  - With cover open, showing color-coded wiring, grounding (include bushings), fuse ratings
  - DC disconnect is properly sized per design plans
  - Location of DC disconnect matches design plans
  - Does the DC disconnect have proper safety signage?
    - Ensure labels show appropriate warning and safety messages
- ☐ AC Disconnect
  - With cover open, showing color-coded wiring, grounding (include bushings), fuse ratings
  - Photo of label indicating ratings, including NEMA ratings for conditions of use
  - AC disconnect is installed in the location per design plans
  - Fuses in AC disconnect are properly sized



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- Does the AC disconnect have proper safety signage?
  - Ensure labels show appropriate warning and safety messages

- ☐ PV Load Center
  - With dead front removed, showing color-coded wiring, grounding (include bushings), fuse ratings
  - PV load center matches information shown in design plans
  - Breakers in PV load center are properly sized and includes Locus monitoring per design plans
  - Location of PV load center matches design plans
  - Does the PV Load Center have proper safety signage?
    - Ensure labels show appropriate warning and safety messages

- ☐ Locus L-Gate 101 monitor only
  - A clear photo of the MAC ID and serial number, either inside the L-Gate or on the side of the box
  - Ethernet cable is installed in the correct port inside the L-Gate
  - Plug links are not used
  - Green light that indicates internet connection is active
  - Two conduits, one entering, one leaving

- ☐ Locus L-Gate 120 monitor only
  - A clear photo of the MAC ID and serial number (on the front of the L-Gate)
  - Wires are running line side to load side
  - If communication cabling is used, evidence showing segregation from power wiring
  - If communication cabling is not used, cabling should be properly stowed inside the monitor
  - Phone icon indicating that data is being uploaded
  - Three photos of the LCD display showing instantaneous kW power - taken at the same consecutive 5 minute intervals as the System Production Testing and Monitoring Verification table (see *Locus L-Gate 120 Installation and Testing Instructions* in the *NRG RSS Engineering Reference Guide*)
  - Photos of the LCD display showing the Voltage, Amperage, and Energy kWh values (can be same photos with instantaneous kW power photos from above)

- ☐ Point of interconnection – close-up of solar breaker or tap blocks
  - Point of interconnection matches design plans, breaker is correctly sized
  - Tap is correctly installed (load or line-side)
  - PV breaker is labeled and Locus CT is visible
  - Include photos of ground wire connections
  - Include photos of upgraded main service panel, if applicable (bus rating and main breaker rating)

- ☐ Homerun conduit – show conduit run from array to point of interconnection
  - Evidence that the conduit run in internal or external
  - Does the conduit have proper safety signage?
    - Ensure labels show appropriate warning and safety messages every ten feet

- ☐ Additional photos
  - Nearby trees, existing roof damage, weather conditions, etc.