

New Jersey's Clean Energy Program™

SREC Registration Program (SRP)

Technical Worksheet

Please carefully read all of the following information. With the help of your installation contractor, fully complete sections A through G, as applicable, of this SRP Solar Technical Worksheet.

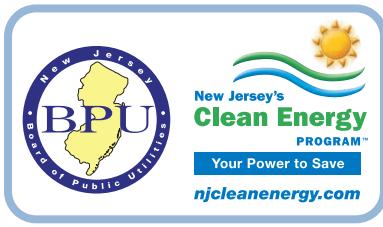
PROGRAM TERMS AND CONDITIONS

Program procedures are subject to change or cancellation without notice. To qualify for acceptance in the SREC Registration Program, the registrant must comply with all SREC Registration Program (SRP) eligibility requirements, terms and conditions, and installation requirements, and submit all completed forms. For more information about NJCEP, or for assistance in completing registrations or forms, please see NJCleanEnergy.com or call 866-NJSMART.

Equipment and the installation must meet the following minimum program requirements in order to qualify for SRECs under the provisions of *New Jersey's Renewable Portfolio Standard*; proposed changes to the requirements will be considered, but they must be documented by the registrant or installer/contractor and approved by the NJCEP prior to installation. These requirements are not all-encompassing and are intended only to address certain minimum safety and efficiency standards.

PROGRAM INSTALLATION REQUIREMENTS

1. The installation must comply with the provisions of the National Electrical Code and all other applicable local, state and federal codes or practices.
2. All required permits must be properly obtained and posted.
3. Installation must be performed by a licensed NJ electrical contractor.
4. The NJCEP program verification or waiver will be performed after the local Building Code Enforcement Office.
5. All required inspections must be performed (i.e., Electrical/NEC, Local Building Codes Enforcement Office, etc.). Note: In order to ensure compliance with provisions of the NEC, an inspection by a state-licensed electrical inspector is mandatory.
6. Modules must be UL Listed and must be properly installed according to manufacturer's instructions.
7. All modules installed in a series string must be installed in the same plane.
8. System wiring must be installed in accordance with the provisions of the NEC.
9. Areas where wiring passes through ceilings, walls or other areas of the building must be properly restored, booted and sealed.
10. All interconnecting wires must be copper. (Some provisions may be made for aluminum wiring; approval must be received from utility engineering departments prior to acceptance).
11. Thermal insulation in areas where wiring is installed must be replaced to "as found or better condition." Access doors to these areas must be properly sealed and gasketed.
12. Wiring connections must be properly made, insulated and weather-protected.
13. All wiring must be attached to the system components by the use of strain relief's or cable clamps, unless enclosed in conduit.
14. All outside wiring must be rated for wet conditions and/or encased in liquid-tight conduit.
15. Insulation on any wiring located in areas with potential high ambient temperature must be rated at 90° C or higher.
16. All wiring splices must be contained in UL-approved workboxes.
17. When reporting data on the Final As-Built Technical Worksheet:
 - The azimuth (orientation) must be within +/- 3 degrees of the degrees.
 - Orientation shall be in degrees true (Ex. 191 magnetic = 180 True South).
 - The tilt must be within +/- 3 degrees.
 - The shading must be within +/- 3%.
18. The inverter and controls must be properly installed according to manufacturer's instructions.
19. The inverter must be certified as compliant with the requirements of IEEE 929 for small photovoltaic systems and with UL 1741 for Level 1 and 2 interconnections only.
20. The system should be equipped with the following visual indicators and/or controls:
 - On/off switch
 - Operating mode setting indicator
 - AC/DC over current protection
 - Operating status indicator
21. Warning labels must be posted on the control panels and junction boxes indicating that the circuits are energized by an alternate power source independent of utility-provided power.
22. Operating instructions must be posted on or near the system, or on file with facilities operation and maintenance documents.
23. The batteries must be installed according to the manufacturer's instructions.
24. Battery terminals must be adequately protected from accidental contact.
25. DC-rated over current protection must be provided in accordance with the provisions of the NEC.
26. Systems must have monitoring capability that is readily accessible to the system owner. This monitoring capability must at minimum display instantaneous and cumulative production to ensure system is operational.
27. **All projects regardless of size must have a revenue grade kilowatt hour production meter that has been certified to the ANSI C.12 standards. Projects participating in other programs, such as the EDC solar contracting programs, may be subject to additional metering requirements applicable to those programs.**



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A: SITE HOST CONTACT INFORMATION

The site host contact name that appears on the SRP Registration form must be the name that appears on this form. Please include site host company name for non-residential projects.

B: PROPOSED EQUIPMENT INFORMATION

1. The equipment listed in this section of the SREC Technical Worksheet must be a true representation of the equipment proposed to install at the site covered by this submittal.
2. For projects that include multiple manufacturers for modules and/or inverters specify all manufacturers, model numbers and power ratings. If additional space is needed, please attach an additional equipment page utilizing the column format below.
3. For systems with multiple arrays specify the number of modules per string and number of strings per inverter.
4. To determine the total array output, multiply the power rating per module by the number of module. This number must be calculated accurately to process the SRP registration.
5. To determine the total inverter output, multiply the inverter's continuous AC rating by the number of inverters. This number must be calculated accurately to process the SRP registration.
6. The Inverter's Peak Efficiency is entered as a percent without decimal, e.g., 97%. Refer to manufacturer's peak efficiency rating.

C: PROPOSED INSTALLATION INFORMATION AND SITE LOCATION

1. Indicate array and inverter locations and the type of tracking that has been used for this installation.
2. If the system consists of multiple planes and/or orientations, indicate the orientation, tilt and modules per string per inverter of each array.
3. Indicate Interconnection Type as either Behind-the-Meter or Direct Grid-Supply.
4. Indicate the percentage of the system that will be located on each of the following land use types; a properly closed sanitary landfill, historic fill, brownfield, farmland or parking lot. Use "other" for any portion of the project not located on one of these listed types. Please consider the broadest definition of each land use type listed in item 6 rather than the definitions contained in the Solar Act.

D: SYSTEM PRODUCTION INFORMATION

All registrations must document the impact of the relevant construction factors present at the site that affect the annual system output. This analysis must be performed by using the NREL PV-Watts Calculator tool, which is located on the internet, and the results provided in Item D must be presented to the customer for their review.

E: SYSTEM COST INFORMATION

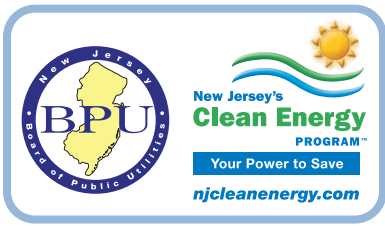
Registrants **must** supply cost information that is accurate and has been updated to reflect the total installed cost of the proposed system as of the date of this submittal. SRP registrations will not be processed without system cost information. Cost data will also be required with any revised worksheets submitted and with the "As-built" Technical Worksheet. Cost can be submitted for protection under OPRA by following the Board's procedures found at www.nj.gov/bpu.

F: EXPECTED CONSTRUCTION SCHEDULE

All Registrants must supply a forecasted construction schedule for completing the solar project.

G: WARRANTY INFORMATION

Behind the meter systems must be covered by an all-inclusive warranty for at least five years from the date of installation to protect the purchaser against component or system breakdown. The warranty must cover all major components of the system against breakdown or degradation in electrical output of more than 10% from their originally rated electrical output during the five-year period. The manufacturer and installer may provide the required warranty in conjunction, covering major system components and labor, respectively. An owner's manual, including warranty documentation, must be delivered to the customer on completion of the installation.



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***REQUIRED FIELDS**

A: SITE HOST CONTACT INFORMATION

Date (Please Select Month/Date/Year): / /

Site Host Contact Name: _____ * (Non-residential use the Company name)

B: EQUIPMENT INFORMATION

1. Solar Electric Module (Provide ratings in DC Watts at STC)

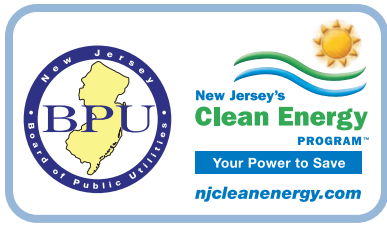
Manufacturer	Model Number	Power Rating	Quantity	Total Array Output	Orientation (°)	Tilt (°)
Total:						

Note: **Total Array Output** = (Power Rating) x (Module Quantity)
Orientation in degrees True (I.e., **True Azimuth**° = (Magnetic Azimuth°) – (Magnetic Declination°))
Tilt in degrees (I.e., flat mount = 0°; vertical mount = 90°)

2. Inverter (Continuous AC Watts Rating)

Manufacturer	Model Number	AC Watts	Quantity	Total Inverter Output	Peak Efficiency (%)	String Count	Modules Per String
					%		
					%		
					%		
					%		
					%		
					%		
					%		
					%		
					%		
					%		
					%		
Total:							

Note: **Total Inverter Output** = (Continuous AC Watts Rating) x (Number of Inverters)
Inverter's Peak Efficiency is entered as a percent without decimal (I.e.: 97%). Refer to manufacturer's peak efficiency rating.



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***REQUIRED FIELDS**

C: PROPOSED INSTALLATION INFORMATION AND SITE LOCATION

1. Array Location:	<input type="checkbox"/> Rooftop	<input type="checkbox"/> Pole Mount	<input type="checkbox"/> Ground Mount	*(Must select at least one)			
2. Tracking:	<input type="checkbox"/> Fixed	<input type="checkbox"/> Single-Axis	<input type="checkbox"/> Double-Axis				
3. Inverter Location:	<input type="checkbox"/> Indoor	<input type="checkbox"/> Outdoor	Location: _____	*			
4. Utility-Accessible AC Disconnect Switch Location:				*			
5. Interconnection Type:	<input type="checkbox"/> Behind-the-Meter	<input type="checkbox"/> Direct Grid-Supply					
Note: direct grid supply is a merchant power generator interconnected to the NJ distribution system managed by PJM Interconnect, the regional transmission operator.							
6. Land Use Type:	Note: List percent of project capacity on each type, total must add up to 100%.						
Properly Closed Sanitary Landfill:	_____ %	Historic Fill:	_____ %	Brownfield:	_____ %	Farmland:	_____ %
Parking Lot:	_____ %	Other:	_____ %				

D: SYSTEM PRODUCTION INFORMATION

Installers must provide the appropriate inputs as described below for the ideal system verses designed system when using the PV WATTS tool to ensure accurate completion of this section.

- When calculating the production estimate for the **ideal system**, use the system size inputs submitted on the SRP Technical Worksheet, but use true south (180 degrees) as the orientation (azimuth) and use the latitude for the location selected for tilt and do not include shading. This demonstrates the best possible system output for this proposed installation.
- When calculating the production estimate for the **designed system**, use the system size inputs, tilt and orientation submitted on the SRP Technical Worksheet. Indicate shading by changing the derate factor only for shading as appropriate. This demonstrates the estimated system output for the designed installation based upon the specific conditions proposed.

1a. Designed system rated kWh output (AC Energy from PVWATTS):	_____ kWh*
1b. Ideal system rated kWh output (AC Energy from PVWATTS):	_____ kWh*
1c. The expected system rated output percent (equals 1a divided by 1b):	_____ %
Note: A value of 100% indicates that the proposed system output equals the ideal system output.	

E: SYSTEM COST INFORMATION

Total Installed System Cost: (Eligible installed system cost includes all equipment, installation, and applicable interconnection costs.) \$ _____*

Registrants **must** supply cost information that is accurate and current as of the registration date. SRP registrations will not be processed without system cost information. Cost data will also be required with the As-Built Technical Worksheet.

Cost can be submitted for protection under OPRA by following the Board's procedures found at www.nj.gov/bpu.

F: EXPECTED CONSTRUCTION SCHEDULE INFORMATION

All Registrants must supply a construction schedule for completing the project.

Expected Construction Start Date (Please Select Month/Date/Year):

Forecasted Project Completion Date (Please Select Month/Date/Year):

G: WARRANTY INFORMATION

1. Module:	_____*	Years at:	_____*	(%) Percent of Rated Power Output.
2. Inverter:	_____*	Years:		
3. Installation:	_____*	Years:		