

Solarize Hudson Valley

Request for Qualifications

(RFQ)

For the Installation of Residential and Small Business Solar PV Systems in designated partner communities

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Issued by: Solarize Hudson Valley,
a program of Catskill Mountainkeeper
and Sustainable Hudson Valley.

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About Solarize Hudson Valley

Solarize Hudson Valley is a community solar initiative focused on facilitating a significant and sustained increase in the rate of solar electric adoption by homeowners and small businesses in the Hudson Valley of New York State.

Solarize campaigns work to overcome market barriers through consumer education, well-publicized community events and neighbor-to-neighbor marketing. Specifically, the program will reach its goals by simplifying the purchase process, building consumer confidence and discounting system costs for a limited time through a reduction in the soft costs of customer acquisition for installers.

Solarize Hudson Valley is a program of Catskill Mountainkeeper and Sustainable Hudson Valley, which are organized as private not-for-profit corporations in New York State. Solarize Hudson Valley is supported by NYSERDA through the Cleaner, Greener Communities program.

Opportunity Summary

Solarize Hudson Valley is seeking proposals from qualified firms to provide the design, procurement, and installation of solar photovoltaic (PV) energy systems for homeowners and organizational building owners (businesses, non-profits, apartments) in 5 Hudson Valley counties: Ulster, Orange, Rockland, Dutchess and Putnam.

The intent of this RFQ is to select qualified Solar PV Installation firms to serve the Solarize Hudson Valley program throughout its 3-year duration, 2015 - 2017. It is intentionally rigorous and detailed, but it is required only once for the three-year program. If conditions change, or the scope of the program expands (anticipated), only the relevant portion of the document will need to be updated.

This RFQ will be followed by a Request for Proposals (RFP) for participation in specific campaign “waves” of Solarize campaigns. The much shorter RFP is designed for flexibility as installer partners identify their specific offerings for the localities and timing of each campaign.

Copies of this RFQ document may be downloaded from <http://www.solarize-hudsonvalley.org>

Important Note: There is no set deadline for this RFQ, however, to be eligible to submit a response to any of our campaign-specific RFPs, each firm must be pre-qualified 1) by NYSERDA and 2) through approval of this RFQ submission.

Questions Relating to the RFQ

We invite your questions in writing (via email) to Program Manager John Wackman at jwackman.solarize@gmail.com. If the question is relevant to more than the individual, Solarize Hudson Valley may post the question and answer via email to all on our list. Questions or requests may lead to a formal amendment of the RFQ. Prompt notice of such changes will also be emailed to all the firms on our list.

Submittal of RFQ

Please submit proposals electronically, in PDF format, to jwackman.solarize@gmail.com. Note: the PDF documents should be separated by category, not submitted as one lengthy PDF file. (i.e., core narrative, balance sheet and income statement, sample contract and lease agreement, marketing samples, etc.) All proposal submitters will receive an email confirming receipt. If you do not receive a prompt confirmation email, please contact John Wackman at 646-302-5835.

Proposals must be signed with a digitally captured signature or via a scanned document with signature. Submission of a signed proposal will be interpreted to mean that the proposer has agreed to all terms and conditions set forth in this solicitation document. Costs for developing the proposal, including any costs incurred during the interview process, if applicable, are entirely the responsibility of the proposer.

Proposals may be withdrawn at any time before the due date via an emailed request. Any modification to a response already submitted must be received by the due date and have the words *"This modification amends and supersedes the prior offer"* written on page 1 of the modification.

All communications shall be through the Project Manager listed on the RFQ Cover Sheet. Communications with any other members of the Solarize Hudson Valley staff, the staff or Board of Directors of Catskill Mountainkeeper or Sustainable Hudson Valley for the purpose of unfairly influencing the outcome of this RFQ may be cause for the proposal to be disqualified from further consideration. Submitted proposals become the property of Sustainable Hudson Valley.

Program Structure

The Solarize Hudson Valley program is modeled on successful "Solarize" projects in other

states and in every region of New York State. The program incorporates important elements of the general “Solarize” model (Solarize Guidebook, US DOE 2011, <http://www.nrel.gov/docs/fy12osti/54738.pdf>), but has been modified to meet the needs of a large region. Specifically, Solarize Hudson Valley has the following features:

- The program serves 5 counties: Ulster, Orange, Rockland, Dutchess and Putnam.
- The program is funded for 3 years: 2015 - 2017 and will roll out in successive campaign “waves”, each incorporating communities located throughout the 5 counties.
- For each “Service Area” (such as a county or defined multi-county area), we will select a small number of Installers that best fit the stated priorities and market conditions of the particular communities. We will give preference to “local” installers (as defined below) who demonstrate the capacity to operate at the scale necessary for the campaign.
- For each Service Area we will select one or more Residential Installers and one Commercial Installer. Note that Commercial Installers must be trained in PACE Financing through the Energy Investment Corporation’s Energize NY program.
- Firms may choose to collaborate to submit a joint RFP proposal. We are interested in consortium applications as a way to manage capacity and effectively respond to large numbers of customer leads.
- The Solarize program enables lower-than-market-pricing from Installers due to the high volume of leads it generates with a greater-than-standard market conversion rate. Firms will provide their installed per-watt pricing for any roof-mounted system between 3 kW and 10 kW in size (DC), and specify the percentage discount they will offer at 3 different “program tiers.” The discount must be at least 10% below your standard pricing (i.e., “market price”) at program start. Solarize Hudson Valley no longer offers “tiered pricing” as part of its program.
- This pricing and system information (normally proprietary for firms) will be made available for comparison purposes in a “comparison table” that will be posted on the Solarize website and distributed at all Community events.
- Each Installer must specify their “Solarize discount” as a line item in the proposals they submit to customers.
- Prior to the launch of each campaign wave, each selected Installer will sign a Memorandum of Understanding (MOU) which confirms the pricing and system package they are offering for the program. The pricing and system components submitted in RFP

responses are final, and may not be adjusted or changed except in extraordinary circumstances (i.e. a specific panel is no longer available at a reasonable price).

Additional Important Program Details

- Every Solarize program relies on the integrity of the installers chosen to participate. The trust and confidence of the public are the heart of the program, and any breach of that confidence will compromise the program.
- Solarize Hudson Valley requires its participating installers to adhere to a set of minimum best practice installation standards for all solar PV systems sold through it and these standards are based on respected third-party industry sources. Please see Exhibit B for details.
- The program also has a basic minimum set of business ethics and customer relations standards. Please see Exhibit C for details.
- Definition of “Local”
The definition of “local installers” for the Solarize Hudson Valley Program is any New York State-based company with a physical place of business (home office or service center) within 60 miles of one or more of the communities in a given campaign “wave.”
 - Installer partners will be presented as one unified and integrated program on the Solarize Hudson Valley website, in community meetings, and generally in all marketing.
- Solarize Hudson Valley Marketing Campaign
 - A typical campaign cycle in Solarize Hudson Valley will serve 2 - 6 communities with 6 or more informational “community workshops.” These workshops are the primary opportunity for customer registrations. A minimum of two staff members from each Installer are required per meeting for the first event in each community. Firms must schedule at least one staff member for all subsequent events.
 - In addition to the Workshops, Installers will identify previous customers willing to host a Solar Open House and will coordinate scheduling of those events. Firms are encouraged to work with their most enthusiastic customers to secure testimonials, installation photos, home tour opportunities and the like.

- Solarize Hudson Valley will coordinate production of fliers, banners, posters, yard signs, radio ads, newspaper articles, social media, and neighbor-to-neighbor community outreach. Hard costs for many items will be shared equally among our participating installers, with Solarize Hudson Valley responsible for one equal share. Our SolarizeHudsonValley.org website will include full information on the program and on our installation firms.
- Community Workshops Structure
 - Workshops are led by Solarize Hudson Valley staff and trained volunteers.
 - People attending receive an information packet at the door and a one-page registration form.
 - A typical workshop is 90 minutes, and begins with a welcome and power point presentation of how the program works and its benefits.
 - A representative for each Installer will introduce themselves and describe the history and character of their company. This is not a standard sales pitch.
 - Open questions are invited after the presentation.
 - Finally, there is a “Meet and Mingle” time with the Installers at their tables with interested people one-on-one and in small groups.
 - Attendees are encouraged to register in the Solarize program during the workshop.
 - The registration form (either on our website or on paper form) includes a “checkbox” to select the Installer for their free site assessment. We will encourage attendees to check **only one** potential partner box on the registration form to get started. However we cannot require it, and will allow registrants to select “both.”
 - Program registration is available 24/7 on our Solarize Hudson Valley website. www.solarize-hudsonvalley.org
 - Everyone who registers with our program will receive an immediate follow-up email from Solarize Hudson Valley thanking them for their interest, and a phone call from a community volunteer within one week.
- Lead Distribution
 - Leads will come from the community workshops and through website registration. Solarize Hudson Valley will distribute leads to the program’s Installers based on the selection or preference marked by the potential Customer.
 - Our primary “call to action” is for people to “sign up for a free, no obligation solar site assessment.” Prior to the start of a campaign, the Program Manager will assure that each installer’s definition of this offer is acceptable and consistent.
 - When an Installer reaches its capacity commitment (the number of installations able to be completed within the campaign timeframe), Solarize Hudson Valley will direct Leads accordingly.

Summary of Requirements for RFQ Response

Proposing firms must respond to each section of this Request for Qualifications to outline their ability to meet and surpass minimum requirements of the program:

- NYSERDA requires pre-qualification of installers before campaign-specific RFPs are submitted. To determine your status, send an email to communitysolar@nyserda.ny.gov with the subject “Request for Solarize Hudson Valley Pre-qualification.” The email must include the following information: Name of Company, Physical Address, FEIN, and Installer ID Numbers. Further information is available at <http://ny-sun.ny.gov/For-Installers/Eligibility-and-Training>

Note that Pre-qualification by NYSERDA can take up to two weeks, so please initiate that process in good time. Installers who receive approval of their pre-qualification request can forward the email confirmation from NYSERDA to John Wackman at jwackman.solarize@gmail.com. If your company has already been pre-qualified by NYSERDA for another Solarize program and that pre-qualification approval is not more than four months old, you may simply forward the previously received pre-qualification approval.

New to this RFQ: With your response, please submit a balance sheet and income statement for your company’s most recent fiscal year. Submit these documents as a PDF file separate from your core narrative.

This pre-qualification requires Installers to have at least one NABCEP Certified Installation Professional and one NYSERDA eligible PON 2112 installer on their team. NYSERDA also accepts UL or IBEW certification.

- Offer roof-mounted, ground-mounted and pole-mounted systems. Installers are not required to offer all, however, the Program as a whole must have roof and ground mounted options, and proposals that facilitate this will be looked upon favorably.
- Installer Partners are not required to offer both a purchase option and a lease option, however, the Program as a whole must have purchase and lease options, and proposals that facilitate this will be looked upon favorably.

- Maintain at least \$1 million in general liability insurance coverage, and also demonstrate that any and all subcontractors they use have coverage as well.
- Be compliant with all applicable OSHA requirements . Technical personnel must have a 10Hr OSHA training card.
- Adhere to the Solarize Hudson Valley’s Minimum Best Practice Installation Standards and Business Ethics/Customer Service Standards.
- Installers commit to having at least one staff person on hand for all of our community events (mutually scheduled). These are the primary opportunities for customer enrollment.
- Firms will offer competitive discount-pricing, quoted as installed cost per watt for systems from 3 to 10 kW in size. Solarize programs have shown that the lower margin on small systems should average out within the program.
- For each Customer contract, Installer Partners will be responsible for securing all required permits, completing and submitting the NYSERDA incentive application, completing the net-metering agreement with the utility, and scheduling and passing all jurisdictional inspections.
- Accept the terms included with this RFP as part of your future agreement with Solarize Hudson Valley and with the Customers you acquire through the program. A Memorandum Of Understanding will be executed between Solarize Hudson Valley and each participating firm before the campaign commences. SHV reserves the right to negotiate the final MOU in the best interests of the program.

RFQ Response (Statement of Qualifications): Evaluation Criteria

Again, please note that all firms wishing to participate in a Solarize campaign in New York State must be pre-qualified by NYSERDA.

All sections and subparts listed below must be complete or the application may not be considered. We appreciate streamlined responses. Documents excluding appendices shall not exceed 25 pages. Submittals will be scored based on the following weighted criteria:

Section	Points
I.Cover Letter	0
II.Table of Contents	0
III.Proposing Firm Profile <ul style="list-style-type: none"> ● Stability & capabilities (Balance sheet & Income Statement) ● Employment practices 	30

<ul style="list-style-type: none"> ● Professional standing ● Quality and safety record 	
IV. Qualifications of the Project Team including key personnel, certification, employee training, subcontractors.	20
V. Sales & Marketing Practices incl. Lead follow-up, site assessment, breadth of marketplace experience, incentive and loan assistance, references.	20
VI. Customer Service policies for quality assurance, complaint response, warranty resolution.	20
VII. Community Practices incl. local engagement, sustainability practices, workforce diversity & development, corporate citizenship.	10
Total	100

I. Cover letter (0 points)

Section I shall be a signed cover letter summarizing the highlights, key features, and distinguishing points of the proposal. Please tell us specifically why you want to work with the Solarize Hudson Valley program. Include the name and address of the firm submitting the proposal, together with the name, address, telephone number, and email address for the authorized representative for the firm. Also include the firm's federal tax identification number, North American Board of Certified Energy Practitioners (NABCEP) certification number(s), and NYSERDA eligible installer number(s).

II. Table of Contents (0 points)

Section II shall be a Table of Contents that organizes your responses in the same format as this RFQ, i.e., by section reference number and section title as described herein.

III. Proposing Firm Profile (30 points)

Section III shall be the firm's detailed profile. As mentioned above, Solarize Hudson Valley welcomes proposals from single firms, or from consortia of partnering firms submitting a joint proposal.

- A. Identify the proposing firm's size and organizational structure within the United States, New York State, and Hudson Valley region.
- B. Briefly describe the firm's mission, history and purpose.
- C. Please provide a) indicators of financial stability, b) current standing with suppliers and subcontractors, c) number of current employees (broken down by number of salespersons, engineers, project managers, and full-time installers and site assessors) and d) any other information you think relevant to demonstrate that the firm has the financial resources and stability to participate in and complete their commitments to this program successfully.
- D. Describe the demonstrated experience of the firm in developing, designing, and installing residential solar electric systems, and how that would apply to this program. Has your firm received recognition within the industry?
- E. Provide a statement describing the firm's capability to service a significant number of sales opportunities ("Leads"), and complete all installations brought under contract during the 4-month sales & marketing period for each "campaign wave."
- F. If an expansion of the proposing firm would be necessary to handle the maximum capacity being offered, please explain how the firm will accomplish that. If possible, provide an example.
- G. Provide information about employment practices, including average wages for relevant positions and standard benefits (to employees and their families). Our program requires compliance with all New York State and Federal laws. Solarize Hudson Valley also strongly encourages and prefers firms that are committed to paying a living wage to full- and part-time employees who are directly involved in the provision of the Solarize Hudson Valley project, including employees of subcontractors engaged to assist in providing service.
- H. Summarize the firm's safety record and practices.

- I. Provide information on the level of insurance the firm has, such as General Liability and Auto coverage for residential work (including Broad Form Property Damage, Contractual Liability, No Collapse or Underground Exclusions and Stop Gap Coverage), and demonstrate the level of insurance of any and all subcontractors. Please also provide information on your Workers' Compensation coverage, and demonstrate that any and all subcontractors have full Worker's Compensation coverage.
- J. For our information (not a requirement): Does your company expect to be active in Community Generated Distribution (shared solar, community solar) projects in 2017? Solarize Hudson Valley expects to play a limited role in CDG projects. Can you briefly describe the role you might take in this emerging marketplace?

IV. Qualifications of the Project Team (20 points)

- A. Please include documentation of having at least one NABCEP, UL or IBEW Certified Installation Professional and one NYSERDA eligible PON 2112 installer on staff.
- B. Identify key personnel for this project and specify their expected roles in the day-to-day operations of the Solarize Hudson Valley project. Please list their experience, licenses and certificates. Key personnel should include: Owners/Principals; Project Managers; Engineers; Presenters at Solarize Hudson Valley public meetings, and others who will regularly interact with or provide data to Solarize Hudson Valley per the program's Scope of Work (Exhibit A).
- C. Describe your firm's participation to date in employee training, or certification and credential-granting programs, as well as any training models that you intend to continue or implement.
- D. Please describe your policy for engaging subcontractors for your projects. Describe their role, their value to the project, and provide background information on your management, licensing and oversight of subcontractors.

V. Sales and Marketing Practices (20 points)

- A. Describe your standard site assessment practices and procedures. At what point and for what reason is a customer asked for an initial payment of any kind?
- B. Provide a representative copy of the customer purchase and/or lease contracts you plan to use in the Solarize Hudson Valley program.
- C. Describe what assistance you provide your customers to ensure they receive the maximum incentives and tax credits available to them. Describe your experience with NYSERDA's "Affordable Solar" incentive program.
- D. How do you introduce potential clients to low-interest loan opportunities and help with the loan application process?

Note: you will not be expected to write a contract with any customer who does not meet your credit requirements; that is your decision.

Please address how you will work with potential Customers who may need a new roof, and whether, for example, you will have a roofing partner you could work with.

- E. Provide references from 3 residential installations including size, date of installation and location, with a contact name and telephone number. At least one reference should be from a customer whose solar system was installed within the last year. If your firm has participated in a Solarize campaign elsewhere, or similar community marketing campaign, please include a reference from that campaign.

VI. Customer Service (20 points)

- A. We have found that timely and effective follow-up with sales Leads is the most critical part of the Solarize program. Please tell us how you will assure that every Lead generated through a Solarize campaign will receive excellent customer service. What Customer Relationship Management system do you use?
- B. Provide your expected average timeline for your customer management process from initial contact through installation. How would your qualification and sales teams handle a significant increase in opportunities?
- C. Describe your firm's practices during installation regarding how you will minimize disruption and the disturbance of neighbors, landscaping, structures,

- and clients' living arrangements during preparation, installation, and clean up.
- D. Describe quality control procedures throughout the installation process as well as final testing and sign-off procedures, including punch lists, inspections, and other necessary requirements.
 - E. Describe the checkout you provide the homeowner or small business owner, including materials or manuals, project walk-throughs, and/or support for later system performance.
 - F. Provide information about your firm's experience with system monitoring and whether it's included in your proposal. If it is included, please explain how the firm uses this data to provide long-term system performance and quality assurance.
 - G. Please describe your policy and protocol for handling service calls, customer grievances, and warranty issues. Discuss your typical response time to calls, your hours of coverage for customer service calls, and process for providing status reports after an incident is logged. Discuss any reported issues the firm has experienced to date, and how they have been resolved. List any complaints received by the Better Business Bureau or the New York Attorney General's office over the last 3 years.

VII. Community Practices (10 points)

- A. A Solarize campaign is itself a potent form of community outreach. Provide information about your firm's community engagement within the Hudson Valley of New York, including organizational commitments and other examples of good corporate citizenship.
- B. Describe your firm's sustainability practices, as well as those of subcontractors, significant suppliers, etc. Such practices might include renewable energy powered buildings, waste management and recycling practices, use of local products, and policies to minimize travel-related carbon dioxide emissions from employee commuting, as well as from workday operations.
- C. Please identify your current diversity of workforce and describe your firm's commitments to providing equal employment opportunities.
- D. Discuss your anticipated needs for expanding your workforce in response to the demand generated by this campaign, and how you will assure the adequate training of new employees.

Note that Solarize Hudson Valley is working with community partners to offer a Workforce Development component to Installer Partners called the Solar Workforce Support Program (SWSP). This collaboration between Sustainable Hudson Valley, SUNY-Ulster's Continuing education program, and the NYS Department of Labor (TBC) would offer Installer Partners a pre-qualified workforce from which to hire workers if they need short-term help during the program. The collaborative organizations would work with the candidates to make them job-ready, and Installer Partners would submit qualifications for personnel they are looking for; the SWSP would provide a list of qualified candidates to choose from.

Details of this program will be provided as they become available. Interest in this workforce development partnership is not a requirement for Solarize qualifying firms, but informs our planning.

VIII. Appendix (0 points)

The Appendix may include any supporting information, such as resumes, references, or other data that will support your firm's proposal.

Proposal Scoring and Evaluation

During this RFQ evaluation process, Solarize Hudson Valley may request and require any clarification it needs in order to understand the Proposer's information or approach. Proposals will be ranked on a common point scoring system based on the categories outlined above. Solarize Hudson Valley will then interview selected Proposers. After the evaluation of proposals and interviews, Solarize Hudson Valley will select several (no set number) Installer Partners based on RFP responses, interviews, and programmatic needs, and extend offers to each partner in the program. All Proposers will be notified of the selection outcome.

Conditions and Reservations

Solarize Hudson Valley is not obligated as a result of the submission of a proposal to enter into a contract with any proposer, and has no financial obligation to any proposer arising from

this RFQ. Furthermore, Solarize Hudson Valley reserves all rights regarding this RFQ, including, without limitation, the right to:

- Amend, delay or cancel the RFQ without liability if the team finds it is in the best interest of the program to do so. In the event it becomes necessary to amend any part of this RFQ, notice will be provided in the same manner as notice of the original solicitation;
- Reject any or all Proposals received upon finding that it is in the best interest of the project to do so;
- Waive any minor informality or non-conformance with the provisions or procedures of the RFQ, and seek clarification of any Proposal, if required;
- Reject any Proposal that fails substantially to comply with all prescribed RFQ procedures and requirements;
- Negotiate and/or amend the Scope of Work to serve the best interest of the project.

All contracts will be executed only between the home or small business owner and the selected Installer Partner. The contract between the owner and the selected Installer Partner will state that Solarize Hudson Valley, Renewable NY, Sustainable Hudson Valley, and Catskill Mountainkeeper and the Town or Municipality bodies or officials are not parties to the contract, and that the selected contractor will be solely liable for any claims, losses or damages arising out of the contract.

The Installer partners will be expected to sign a Memorandum of Understanding (MOU) with Solarize Hudson Valley to confirm each organization's roles and responsibilities prior to work starting.

Statement of Confidentiality Statement

Solarize Hudson Valley will protect the confidentiality of all proposals (RFQ and RFPs).

Statement of Indemnification

The Installer Partners shall indemnify, hold harmless, and defend the individuals associated with Solarize Hudson Valley, Renewable NY, Sustainable Hudson Valley, and Catskill Mountainkeeper (in total referred to as the Solarize Hudson Valley Parties), and the officers, employees, agents and elected officials of all Municipalities and Towns in which the campaigns operate from and against any and all claims and actions brought against such parties and its officers, employees, agents and elected officials for injury or death to any person or persons or

damage to property arising out of the performance of this Solarize Hudson Valley project work by the contractor, its employees, subcontractors or agents, except all actions and claims arising out of the negligent activities of the Solarize Hudson Valley Parties.

Exhibit A - Scope of Work

Services Provided by Selected Installer Partners

- A. From the launch of each local campaign through the contract signing deadline, the selected Installers are expected to have a table presence at and staff available to participate in up to 20 public meetings around the Hudson Valley. Installers will also participate in bi-weekly conference calls with Solarize Hudson Valley managers and community team leaders to allow effective program planning and coordination.
- B. As people register in the Solarize Hudson Valley program at the public meetings and through the form on the Solarize Hudson Valley website, the Installers will receive these Leads based on the selection marked by the potential Customer. Installers are required to update and report the status of their leads bi-weekly. Updates must include the following for all leads:
 - Initial contact date
 - Dates of follow-up and method (i.e. email, phone, etc)
 - Lead Status: contacted; qualified/unqualified; site visit scheduled or completed; proposal Given; closed/won; closed/lost; installed.
- C. The Installers will provide system proposals and basic site assessments (satellite based or on-site) to all interested program participants assigned to them. Proposals must specify the Solarize discount as a line item. Customer estimates should explain system location, sizing, materials, cost and incentives, and installation options. Individual system designs should be aesthetically pleasing or neutral, taking into consideration the preferences of a given customer, while minimizing project costs and maximizing solar energy production. Full in-person site assessments will include an exact analysis of the impact of shading, tilt, and orientation on annual energy production, and note any electrical, mechanical, or structural considerations that may incur costs above and beyond the standard pricing schedule for the project.
- D. When a project is sold, Installers are expected to finalize the contract and other related paperwork, complete the engineering, submit the NYSERDA application, and begin the

scheduling and procurement process. Installer Partners will be expected to start processing the paperwork, submit NYSERDA applications, and commence installations on a real-time rolling basis.

E. At the conclusion of a Solarize program, Installers will submit a final report to NYSERDA (copying the Solarize Program manager). For each Solarize contract account, that report will include:

Contract name (utility customer)

Address

Installation status (i.e., permitted, installation complete, utility interconnect complete)

System size (kW)

PowerClerk or Salesforce number (depending on current NYSERDA usage)

- F. Installations will be carried out by the Installers in conformance with the Solarize Hudson Valley minimum installation best practice standards, all applicable laws, codes, interconnection requirements for net-metered installations, NYSERDA installation requirements, and any other existing rules and timelines required for PV installations. For each customer contract, the Installers will be responsible for securing all required permits, completing and submitting the NYSERDA incentive application, completing the net-metering agreement with the utility, and scheduling and passing all jurisdictional inspections.

Exhibit B – Minimum Set of Best Installation Practices

Basic Equipment Standards

1. Photovoltaic Panels

- a. Panels must be included on the California Energy Commission (CEC) list entitled, “Incentive Eligible Photovoltaic Modules in Compliance with SB1 Guidelines”, which requires ANSI/UL 1703 safety certification and 3rd party laboratory testing (www.gosolarcalifornia.ca.gov/equipment/pv_modules.php). If panels are not currently listed, then there must be a good reason why they aren’t (for example, the panel is a new model) and then they must be on the CEC list before they are used in any installations.

- b. Panels should have efficiencies of no less than 14%, and STC power ratings equal to or more than 240 W.
- c. Panels must have at least a 10 year warranty on material and workmanship from the manufacturer.
- d. Panels must have at least 25 year power warranty from the manufacturer with a specified performance degradation curve showing acceptable levels of performance or replacement and allow a minimum of 80% of the nameplate rated power at STC by year 25.
- e. Panels must have only a positive power tolerance.
- f. Independent of the mounting systems, panels must be rated for snow load up to 5400 PA and wind load up to 2400 PA.
- g. Panels must have a maximum Power Temperature Coefficient (P_{MAX} or P_{mppt}) equal or less than -0.46% / °C.
- h. If modules are branded and being sold under any name besides the original manufacturer's name, the original manufacturer's name, part number, and specification sheet must be provided to Solarize Hudson Valley Program Director. This information will be treated as confidential, but as part of the proposal's review process discussions will be had with the Proposer about whether this is proprietary information and the business reasons for such a classification.
- i. Modules can't have been produced by a manufacturer that is now bankrupt, unless that manufacturer has been absorbed by another manufacturer who has legally bound themselves to honor the original manufacturer's warranties.

2. Inverters

- a. Inverters must be included in the California Energy Commissions "List of Eligible Inverters per SB1 Guidelines", which requires that inverters have safety certification (UL 1741) from a Nationally Recognized Testing Laboratory (NRTL) and submit conversion efficiency data tested by a NRTL (<http://www.gosolarcalifornia.ca.gov/equipment/inverters.php>)
- b. Inverters must have a warranty of a minimum of 10 years for string inverters and 15 years for micro inverters, and these warranties must cover shipping of the defective and replacement equipment for the Customer.
- c. Inverters must have integrated arc-fault circuit interruption (AFCI).
- d. Inverters must have integrated capacity for web-based monitoring that is or can be available to Customers. This monitoring should display at a minimum: error messages, current operating power, historical operating power at hourly or less intervals going back for at least 2 years for string inverters or 7 days for microinverters, daily energy production, monthly energy production, and annual energy production. Preference will be given to monitoring that also shows DC voltage, DC current, AC voltage, AC current, AC frequency, irradiance, and/or

- module temperature.
- e. Preference will be given to inverters that have a grade of A++, A+, A, or B in the 2011 PHOTON Inverter Test at both medium and high irradiation (http://www.photon.info/upload/Inverter_TestInfo_EN_971.pdf), or that have demonstrated similar weighted efficiency performance.

Roof Mounting System Standards

- a. Mounting systems must be certified to be in compliance with the 2009 or 2006 International Building Code (IBC), or the 2010 New York State Building Code.
- b. Mounting systems must be pre-engineered and professionally manufactured and appropriately engineered to take into account wind loads and additional roof loading. These systems must be attached with an appropriate fastener type and frequency that spreads loads in a uniform manner.
- c. The mounting system must be mounted directly to the building structure or structural blocking. If a system is anchored to the roof deck, the roof deck should be shown capable of accommodating the imposed loads or should be reinforced with adequate blocking.
- d. The adequacy of the building structure and roof must be verified if there is more than one layer of shingles on the roof, the house pre-dates 1980, the visual attic inspection reveals rot and/or other significant damage, or the local Authority Having Jurisdiction (AHJ) requires it.
- e. As mounting systems that penetrate a roof are potential sources of water infiltration, different techniques are required depending on the roof type:
 - i. For asphalt shingle roofs, rooftop penetrations for attaching the mounting system are required to be flashed. Flashing refers to thin, continuous pieces of sheet metal or other impervious material installed to prevent the passage of water into a structure from an angle or joint. The flashing slides over the attachment fastener, under the shingle above it, and over the shingle below it. The flashings should be made of quality material and compatible with the roof system. Sealants used with these flashings should not be exposed to sunlight. **The use of caulking and/or sealants as the only means to seal a roof penetration through a roof system is not an acceptable method of waterproofing roof penetrations.**¹
 - ii. For metal panel roofs, rooftop penetrations for attaching the mounting

¹“PV Racking and Attachment Criteria for Effective Asphalt Shingle Roof System Integration”, The Center PV Taskforce, January 14, 2014, http://www.roofingcenter.org/syncshow/uploaded_media/PV%20TF%20Criteria%20Asphalt%20Shingle%20Roof%20Systems%20-%20First%20Public%20Review%20Version%20%281_14_2013%29%283%29.pdf

- system are required to use a mounting device with a non-curing isobutylene polymer tape or compatible sealant between the mounting device and the metal panel for fasteners in or out of the drainage plane. Curing compounds like silicone or EPDM rubber gaskets can also be used with fasteners that are not in the drainage plane. Sealant should be protected from over-compression, and exposure to sunlight should be minimized.²
- iii. For standing-seam metal roofs, non-penetrating standing seam clamps that compress seam material to establish a friction connection to the standing seam (friction clamps), or that use setscrews that establish a mechanical interlock with the standing seam (interlocking clamps) are required to be used. For standing seam roof panels that have one-piece concealed clips, the non-penetrating clamps should be located on standing seams at locations that are far enough away from concealed clips to not prohibit thermal movement of the panels. Standing seam clamps must be made from a material that is metallurgically compatible with the roof and roof coatings.³
 - f. Separate from the attachment of the mounting system, any other components in contact with the roof (such as junction boxes, combiner boxes, rooftop conduit, wire chases, and cable tray supports that use wood blocking, rubber pads, or polycarbonate) should be flashed or sealed to prevent moisture intrusion, or they should be able to allow water to pass underneath them to prevent moisture entrapment.
 - g. The placement/installation of PV components should not impede the water-shedding characteristic of any roof system (i.e. drainage should be preserved as should any existing water management system such as gutters).
 - h. Mounting systems must enable thermal movement of racking components without transferring loads and stresses to the flashing or roof system. This is typically enabled in the manufacturer's mounting design and through the use of expansion joints when spans of rail exceed a certain length.

Ground Mounting System Standards

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“PV Racking and Attachment Criteria for Effective Low-Slope Metal Panel Roof System Integration”, Center PV Taskforce, July 8, 2013

http://www.roofingcenter.org/syncshow/uploaded_media/Documents/PV%20Racking%20and%20Attachment%20Criteria%20for%20Metal%20Panel%20Roof%20Systems%20%28dated%207.8.2013%29.pdf

³ “PV Racking and Attachment Criteria for Effective Low-Slope Metal Panel Roof System Integration”, Center PV Taskforce, July 8, 2013

http://www.roofingcenter.org/syncshow/uploaded_media/Documents/PV%20Racking%20and%20Attachment%20Criteria%20for%20Metal%20Panel%20Roof%20Systems%20%28dated%207.8.2013%29.pdf

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- a. Mounting systems must be pre-engineered and professionally manufactured, and appropriately engineered to take into account wind loads and snow loads.
- b. When ground-mounted systems are installed, the re-grading of the installation site to at least “construction grade” is required. Straw and reseeded are also required if requested by the home or business owner.

Electrical Standards

For ensuring the best, most up-to-date electrical practices, all solar PV systems installed through the Solarize Hudson Valley program must be in compliance with the 2011 National Electric Code (NEC), except in the case where a local New York AHJ specifically and directly requests compliance only with NEC 2008, which is still currently the last formally adopted NEC version in New York.

Fire Standards

For ensuring the best fire safety practices, all solar PV systems installed through the Solarize Hudson Valley program must be compliant with the current NY State Fire Code, as well as local building permit requirements.

Safety Standards

All Installer Partners are required to follow all relevant OSHA standards while building projects through the Solarize Hudson Valley program, and to have one member of each installation crew with OSHA 10 Certification. The areas of OSHA regulation that are most relevant include: Fall Protection, Electrical Safety, Lockout/Tagout, Crane and Hoist Safety, Heat/Cold Stress, and Personal Protective Equipment.⁴ All Installer Partners must also develop and implement a long-term fall protection plan to allow safe access to the PV system for ongoing system maintenance.

Exhibit C – Minimum Set of Business Ethics and Customer Service Standards

⁴ “Green job Hazards – Solar Energy”, OSHA, <https://www.osha.gov/dep/greenjobs/solar.html>

Business Ethics Standards⁵

Installer Partners are expected to conduct themselves with the highest level of business and personal ethics. While working in the Solarize Hudson Valley program, Installer Partners must:

- a. Agree to interact and cooperate wholeheartedly and enthusiastically with the Solarize Hudson Valley, program team, and all other partnering solar PV firms towards the common goal of a successful program.
- b. Hold paramount the safety, health and welfare of the public in the performance of their duties.
- c. Act in professional matters for each client as faithful agents or trustees.
- d. Refrain from directly or indirectly injuring the professional reputation and practices of other Installer Partners, and from criticizing other Installer Partners.
- e. Maintain the highest ethical standards of advertising, selling, installation and service guided by the principals of honesty and integrity.
- f. Avoid deceptive acts in the solicitation of solar work.
- g. Present honestly the capabilities, performance, and energy savings potential of solar products and systems.
- h. Employ well-trained sales personnel to provide customers with up-to-date, understandable product information.
- i. Quote realistic prices and completion dates, and absent any unforeseeable factors, shall strive to fulfill the estimates.
- j. Observe and foster the highest standard of safety and working conditions for employees.
- k. Endeavor to extend public knowledge and appreciation of solar energy systems, their achievements and effect on the environment and to protect the solar energy profession from misrepresentation and misunderstanding.
- l. Avoid all practices which are likely to discredit the profession or deceive the public.

Customer Service Standards⁶

In addition to the above, Installer Partners will be required to provide a high standard of customer service at all times. This includes:

- a. Regular frequent availability to Customers or potential Customers

⁵ CalSEIA Code of Ethics, <http://www.calseia.org/ethics>

⁶ "Excellent Customer Service – A Dozen Best Practices", <http://cnr.ncsu.edu/rrs/pdfs/CSHandout%20-%20Dozen%20Practices.pdf>

- a. Keep standard hours of operation and post these hours publicly
- b. Provide Customers or potential Customers several ways of reaching your team
i.e. phone, email, etc
- b. Responsiveness to Customers or potential Customers
 - a. Deliver products and services at the agreed upon time to all customers. Listen to, accept, and act upon customer feedback.
- c. Courtesy to Customers or potential Customers
 - a. Always be neatly dressed and well presented for customers
 - b. Always be polite.
 - c. Always do what you say you are going to do.
- d. Consistency and accuracy in information to Customers or potential Customers
 - a. Assist all customers in defining their needs and requests, and then deliver the highest quality products and service with the goal of exceeding customer expectations.
- e. Value and support employee job satisfaction.