Solar Thermal Incentive Program Manual

PON 2149

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New York State Energy and Research Development Authority

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1.0 PROGRAM SUMMARY

1.1 What Is The Solar Thermal (ST) Program?

The New York State Energy Research and Development Authority (NYSERDA) provide incentives for the installation of new Solar Thermal (ST) systems for the production of hot water to displace electrically heated domestic hot water. Incentives for displaced kWhs are capped at $4,000 per site/meter for residential systems and $25,000 per site/meter for nonresidential applicants. Funding for the displaced kWh incentive in the Solar Thermal Program ("Program") has been allocated by the New York State Public Service Commission through the Renewable Portfolio Standard (RPS) and Regional Greenhouse Gas initiative (RGGI). . Incentives funded through the RPS and RGGI will be granted on a first-come, first-served basis, and applications will be accepted through December 31, 2015, or until funds are fully committed, whichever comes first. RPS funding is only available for solar thermal systems that retain electric backup heating systems. The Program does not provides incentives or financing for solar thermal systems used for space heating, pool heating or combination systems (systems that provide domestic hot water (DHW) and space heating).

1.2 How Does the Solar Thermal Program Work?

Financial incentives are available for qualified customers who wish to install Solar Thermal systems through applications submitted by an Eligible Installer/Contractor. The Eligible Installer/Contractor has signed a participation agreement with NYSERDA, agreeing to abide by the terms and conditions of the Program. The full amount of the approved NYSERDA incentive must appear in the customer purchase agreement in the form of a reduction in the customer's out-of-pocket cost. Incentives are paid directly to the Contractor. Installers/Contractors are responsible for preparing and submitting all necessary incentive paperwork to NYSERDA. Solar Thermal customers may be eligible to finance the purchase of their Solar Thermal system through NYSERDA's Green Jobs/Green New York (GJGNY) Program using either a Smart Energy Loan or On-Bill Recovery. Residential Customers: may apply online or download an application at www.energyfinancesolutions.com.

Commercial Customers: Visit: www.nyserda.ny.gov/small-commercial-financing. see PON 2293 for further information on financing: PON 2293.

On average, incentives for a typical residential or commercial system are expected to cover approximately 15 to 20% of the installed cost of a ST Systems.

1.3 INSTALLER QUALIFICATIONS

To be considered for eligibility to participate in the Program, the applicant must provide the requested information in the following areas:

Applicants may qualify for eligibility to participate under sections 1, 2, or 3 below:

1. NABCEP Certification (North American Board of Certified Energy Practitioners):

Installers who choose to become credentialed through NABCEP must fulfill one of the following requirements:

A. Hold the NABCEP Solar Heating Installer Certification
Or
B. Have completed both the NABCEP Solar Heating Entry Level Program, by completing coursework offered by a registered NABCEP Entry Level Exam Provider, **and** passed the NABCEP Solar Heating Entry Level Exam.
NOTE: Installers who choose 'B' as a participation path must, within 24 months of their becoming a participant in the Program, comply with 'A'. Failure to meet this deadline could result in a loss of eligibility.

2. Journeymen that have completed an approved NYS DOL Apprenticeship Program through the United Association of Plumbers, Fitters, Welders, and HVAC Service Techs Apprentice Program including UA approved solar thermal training.

3. A Solar Thermal manufacturer's certification which includes 18 hours of manufacturer's specific training and demonstration of equivalent experience.

Experience – Installer will be evaluated on past performance in NYSERDA Programs; areas of responsibility within their firm or organization; installation experience; experience in performing shading analysis; credentials; employment history; customer satisfaction; and other relevant experience. References and contact information to allow verification must be provided.

Customer References – Provide three (3) written and signed business references for completed ST installations. References for installations where the installer had a primary role in installing the system are preferred. Verifiable references for specific projects should be accompanied by a brief description of the systems installed and the applicant's role in the project.

Performance Under Other NYSERDA Programs – An Installer Application will not be processed if the applicant is listed as the Installer on a delinquent system or where unresolved customer or performance issues exist on any similar NYSERDA program.

1.4 Contractor Qualifications

Interested qualified companies, together with a qualified installer, may apply to participate in the Program at any time while the program is open. When making application, contractor should provide resumes of key personnel including ownership, management, sales, installation and design/engineering. Contractors must also provide three company references. Once a company becomes a participant in the ST Program, they may submit project applications for qualified customers to the ST Program and qualify for financial incentives and/or financing.

A Participating Contractor may use any business structure that is legal for conducting this type of business in the State of New York (corporation, LLC, sole proprietorship, etc.). To become a participating Contractor, the Contractor must be able to meet all ST Program requirements including required insurance coverage and have the capability to provide warranty services on all ST systems installed, as required by the ST Program and NY State law.

Participating Contractor must comply with all local authority requirements for registration and licensing that apply to the installation of ST systems.

Participating Contractors must employ, or hire subcontractors that employ, installers who meet one of the credentialing requirements detailed in Section 1.3.

A System installed by a Contractor who is not a participant in the Program is not eligible for Program incentives.

2.0 GENERAL PROGRAM RULES

2.1 Program Incentives - Incentive applied to the total project cost based on displaced kWh. The Incentive is only available for ST systems that displace electrically heated domestic hot water. The Incentive is available on a first-come, first-served basis. The Incentive will only be reserved for customers once an application has been approved by NYSERDA. The Incentive will continue to be available through December 31, 2015, or until funds are fully expended, whichever occurs first. The current Incentive rate is $1.50 per displaced kWh; the incentive rate may be adjusted as necessary based on available budget or market conditions. The maximum incentive amount available per site/meter is of $4,000 for a residential system and $25,000 for a non-residential system

The Incentive is reserved for Solar Thermal Systems installed by participating Installers/Contractors. The Incentive is available only for new equipment and Solar Thermal Systems that have not been installed (partially or completely) prior to an incentive application achieving a Program status of 'Submitted via internet'. . The Incentive will not be provided directly to customers purchasing or installing Solar Thermal systems.

The full amount of the approved NYSERDA Incentive must appear in the customer purchase agreement in the form of a reduction in the customer's out-of-pocket cost.

When approved, the incentive amount will appear on the approval letter that Installer/Contractor receives from NYSERDA. Installers/Contractors are responsible for sending a copy of the approval letter to the customer. This amount will not change assuming the ST System is installed, as approved**,** and within the Terms and Conditions of NYSERDA's Solar Thermal Program.

The RPS incentive for Solar Thermal systems installed through the Solar Program is available for qualified customers only. Qualified customers are those who pay the Renewable Portfolio Standard (RPS)/System Benefits Charge (SBC) as part of their electricity bills. Homeowners whose systems qualify for the Incentive through this PON are prohibited from receiving incentives through another funding source or NYSERDA program for the same system. NYSERDA reserves the right to limit the number of incentives per customer/site/meter.

The Incentive is based on displaced electrical usage based upon Solar Rating and Certification Corporation (SRCC) OG-300 estimates of system production and/or standard industry software such as RETScreen, or SolarPathfinder thermal program. For solar collector manufacturers who have SRCC OG-100 collector ratings and have applied for a SRCC OG-300 system rating but have not yet received a rating, an estimate based on the panel's SRCC OG-100 rating and along with calculations from RETscreen, Solar Pathfinder Thermal or other approved method may be provided. NYSERDA will review the energy production data to determine the accuracy of the estimated production. In addition to system output, the Installer/Contractor must identify and quantify the DHW thermal load to be offset. Estimates of system production and or thermal load

that are determined to be highly inaccurate may result in the manufacturer or installer being disqualified from participation in the Program.

NYSERDA reserves the right to make changes in the incentive level. Any revisions in the incentive level will be posted on NYSERDA's website, and Installers/Contractors will also be informed via email. A customer's application received by NYSERDA after an incentive change will be automatically changed and processed at the new incentive level. Installers/Contractors and customers are prohibited from cancelling submitted applications and re-applying if incentives are increased the following months.

2.2 Incentive Calculations

Incentives are calculated based upon estimated displaced electrical usage. Typical Solar Thermal systems can only displace 50-80% of the thermal load. Therefore, the displaced kWh cannot exceed 80% of the total calculated existing thermal load.

Example: The Solar family has an annual electrical usage of 12,259 kWh as detailed on their utility bill. They currently have an electric hot water heater, there are 4 persons living in the residence. A RETScreen analysis indicates that 3,309 kWh or 27% of that yearly electric bill is attributed to hot water The ST system proposed by Installer is expected to displace 76% (76%<80%) of their hot water load.

Example: 3309 kWh * 0.76 = 2515 kWh displaced @ $1.50= $3,772.50 as the maximum incentive.

2.3 Total Capacity Limit

NYSERDA reserves the right to establish and enforce a per month capacity limit on Installers and Contractors. Applications received after this limit is reached will not be accepted.

2.4 Cancellation Requests

A request to cancel a project must be submitted to NYSERDA using the NYSERDA Change Request Form. The form must be sent to STForms@nyserda.ny.gov and use the subject line naming convention provided below.

Cancellation Request, ST *(4 digit installer # + Application #) - Name of Customer*

Should a project wish to move forward after cancellation, the Installer/ Contractor must submit a new project application. In this case, the incentive level and all rules in effect at the time the new project application is received will apply.

2.5 90-Day Project Extensions

A project extension may be granted, upon written request, on a case-by-case basis if there are ***legitimate and verifiable reasons*** related to new construction or equipment availability. Project extensions may be granted in 90-day increments. To request an extension, Installer/Contractor must submit and have approved by NYSERDA Change Request Form. The form must be sent to STForms@nyserda.ny.gov and use the subject line naming convention provided below.

90 Day Project Extension, ST (4 digit installer # + Application #) - Name of Customer

2.6 Change Orders

Any system modifications or equipment changes **must be approved** by NYSERDA in writing

before a system is installed. Failure to get NYSERDA approval on any and all modifications may result in revocation of the incentive reservation or nonpayment of the incentive.

Change order requests shall state the reason for the change, the original equipment quantity and catalog numbers, the proposed equipment quantity and catalog numbers, changes in cost, changes in incentive amount and any changes in the collector configuration, piping, controls or insulation levels. All proposed change requests must include the customer's signed acknowledgement of the proposed changes.
Submittal of a Change Request Form is required for all system modifications. The form must be sent to STForms@nyserda.ny.gov and use the subject line naming convention provided below.

Change Order Form, ST *(4 digit installer # + Application #) - Name of Customer*

For projects accessing the Green Jobs Green New York (GJGNY) financing, a new Pro Forma tool must be submitted along with Change Order Form, and the subject line must also include the following information in the format provided below.

Proforma Tool, ST (4 digit installer # + Application #) - Name of Customer

You will receive an e-mail approval for change orders resulting in an increase in the incentive amount. All other changes will be approved in PowerClerk. Please check PowerClerk before contacting NYSERDA regarding change order approvals.

2.7 Incentive Payments

The Incentive will be paid to the Contractor in one final payment and will be tied to the completion of the installation and acceptance by the Authority Having Jurisdiction (AHJ). The NYSERDA incentive payment will not be paid until all documentation for all applicable utility, state, city or town permits and other inspections and approvals, as appropriate, are obtained and submitted to NYSERDA together with the Incentive Payment Request Form" and approved by NYSERDA. Installers/Contractors have 120 days from the date of award by NYSERDA to complete the installation.

All incentive payment requests must be e-mailed to STinvoices@nyserda.ny.gov and use the following subject line naming convention.

100%, ST (4 digit installer # + Application #) - Name of Customer

Each scanned incentive request should be named **using the same naming convention as outlined above and all documents must be scanned together as a single pdf.** Please do NOT include packing lists.

2.8 Incentive Structure

Where necessary, NYSERDA reserves the right to structure incentive payments differently to accommodate unique situations as determined by NYSERDA.

2.9 Clipboard Audits

For Residential Projects: A Clipboard Energy Efficiency Audit must be performed. A clipboard energy audit consists of two components: an interview of the home/building owners to determine energy use habits and the age of the building, and an inspection of the building to identify energy saving opportunities.

The inspection component of the Clipboard Audit includes an assessment of the hard-wired lighting systems and free-standing light fixtures, appliance ages and whether they are ENERGY STAR® qualified, the presence of advanced power strips, existence of "vampire loads" related to consumer electronics and battery chargers, use of programmable thermostats or timers for air conditioners, age and condition of the doors and windows, and details on recent energy efficiency upgrades, such as installation of insulation. The Clipboard Audit should take no more than 60 minutes.

The Clipboard audit also includes a debriefing, during which the Contractor will review with the homeowner the results of the Clipboard Audit. At the end of the debriefing the installer will leave a copy of the Clipboard Audit Report ('Report') with the owner, which will include a description of the home. The contractor will also leave a list of Home Performance Contractors that could install more comprehensive energy efficiency measures, and informational brochures with details of utility or NYSERDA energy efficiency programs.

Customers will not be required to implement energy efficiency measures as a pre-requisite to participating in the ST program. A copy of the Clipboard Audit must accompany the application and be uploaded into Power Clerk at time of application.

2.10 Non Residential Energy Assessment

For Non-Residential Projects: Building owners are provided with information on ENERGY STAR's Portfolio Manager Benchmarking Tool or other equivalent tool. If requested by the building owner, the Participating Contractor shall assist them to enter utility bill information into the Tool in order to produce a EUI (Energy Use Index) and, where applicable, an ENERGY STAR score. Customers will not be required to benchmark or implement energy efficiency measures as a pre-requisite to participating in the ST Program.

A copy of the signed acknowledgement letter must accompany the application and be uploaded into Powerclerk at time of application.

2.11 System Losses

Applications shall indicate all potential ST system output losses (actual thermal energy generated and equivalent kilowatt hours or kWh displaced after all equipment losses are applied) associated with shading, system orientation, tilt angle, etc. and must be analyzed and detailed by the Installer/Contractor for each ST System. A system that is shaded by trees, that faces east or west, or that is installed on a flat roof, will have outputs that will be less than ideal. All impacts on system output must be quantified and will be considered during the review of the project application submitted by the Installer/Contractor.

2.12 Coordination with other NYSERDA Programs

NYSERDA reserves the right to restrict applications for the ST Program where the applicant's participation in another NYSERDA program would constitute "double dipping" or a conflict between programs.

2.13 Financing

Solar Thermal customers may be eligible to finance the purchase of their Solar Thermal system through NYSERDA's Green Jobs/Green New York (GJGNY) financing Program using either a Smart Energy Loan or On-Bill Recovery. Customers whose ST system received the displaced kWh incentive are eligible to finance the balance of their system cost through GJGNY financing. GJGNY financing is also 'fuel neutral' and, therefore, is available for projects that displace either electrically, or fossil fuel, heated domestic hot water.

Residential Customers: Residential customers may apply for GJGNY financing online or download an application at **www.energyfinancesolutions.com.** The GJGNY financing is only available for residential PV systems installed on **existing homes of four units or less.** Customers can apply online or download an application at www.energyfinancesolutions.com.

Non-Residential Customers: (includes Not-for-Profit and Small Business Customers)**:** Non-Residential customers may also be eligible low-interest small commercial financing offered through GJGNY. These customers must request that a NYSERDA Participating Contractor submit a Request for Financing to NYSERDA on their behalf. After the project application has been reviewed, a letter will be sent to customers notifying them of the project's financing eligibility status (approved/denied). Customers whose ST projects are approved for financing will then take the NYSERDA approval letter to a participating lender to apply for financing. For more information on NYSERDA's low-interest loan options for small business and not-for-profit customer's visit: www.nyserda.ny.gov/small-commercial-financing.

To access the GJGNY loan, Participating Contractors must register with the GJGNY loan servicer, Energy Finance Solutions (EFS). To register, Participating Contractors must complete and submit an *EFS Contractor Application Packet.* The Contractor Packet consists of the following documentation:

- EFS Contractor Application
- EFS Participation Agreement
- ACH Authorization Form (allows for electronic transfer of loan proceeds –optional)
- IRS form W-9
- Certificate of Insurance

Contractors email a complete *EFS Contractor Application Packet* to: efs@energyfinancesolutions.com and should expect a response within 5 days that will either:

- Notify Participating Contractors of Approval
- Request additional information

2.14 Tax Credits

Customers may also be eligible for State and Federal tax credits. It is recommended that ST Program participants contact a tax adviser to determine eligibility for tax credits.

3.0 SPECIFIC PROGRAM RULES

3.1 New Components

All components installed as part of an approved ST System must be new. With the exception of the monitoring meter(s), the use of used or refurbished equipment is not permitted under the Program.

3.2 Qualified Solar Collectors

All ST Collectors must be certified as meeting all applicable standards of the Solar Rating and Certification Corporation and detailed in the eligible list found on PowerClerk. PowerClerk is a database used to track applications.

4.0 SYSTEM REQUIREMENTS

4.1 Displaced Electrical Usage

Solar Thermal projects funded under the Renewable Portfolio Standard (RPS) must demonstrate the method used for establishing the existing thermal load, and displaced electrical usage calculated in kWh. The thermal Energy generated by the ST System must offset the customer's electricity purchases (or BTU's purchased for fossil fuel systems receiving GJGNY financing).

Thermal Energy generated by the ST System must offset the customer's electricity (or fossil fuel) purchases but not to exceed 80% of the existing load.

4.2 Approved System Design

ST Systems must be installed in accordance with the design and ST System components submitted in the application and approved by NYSERDA. Any change in ST System design from the approved design must be approved in writing by NYSERDA prior to installation of the ST System. Incentives will not be paid for ST Systems that are installed prior to the project achieving 'Submitted via Internet' status, or for ST Systems that are not installed according to the design submitted to and approved by NYSERDA.

4.3 Code Compliant Interconnection

The Installer/Contractor is required to ensure that all approved ST Systems that are designed to be interconnected to the heating or domestic hot water systems have a code compliant interconnection.

4.4 Other Plumbing and Electrical Components

All other Plumbing and electrical components of each ST System including, but not limited to, piping, fittings, insulations, tanks, vessels, valves, controls, safety devices, and associated wiring must be certified as meeting the requirements of all relevant national and New York State codes and standards.

4.5 Compliance with Laws and Codes

All approved ST Systems, system components, and installations must comply with any and all manufacturers' installation requirements, applicable laws, regulations, codes, licensing and permit requirements including, but not limited to, the New York State Environmental Quality Review (SEQR), the New York State Building Code, New York State Plumbing Code, the National Electric Code, Fire Codes and all applicable State, city, town, or local ordinances or permit requirements.

4.6 ST System Warranty

The Installer and the Contractor must provide the purchaser of the ST System with a full five year transferable warranty. The warranty must cover all components of the generating system against breakdown or degradation in thermal output of more than ten percent from the original rated thermal output. The warranty shall cover the full costs, including labor, of repair or replacement of defective components or systems. The Installer and the Contractor are responsible for providing warranty coverage in a timely manner regardless of the level of support from the equipment manufacturer.

4.6 Annual Follow up Visits

The Installer or the Contractor must conduct annual follow up visits for the first two years of operation in order to verify that the system is operating properly and make any necessary adjustments to improve system performance.

4.7 Maintenance Manual

Upon final completion of the installation, the Installer or Contractor shall provide the customer with a maintenance manual containing manufacturer information on all the major components along with a schedule or any regular required system maintenance to be performed.

4.8 Mechanical Execution of Work

All solar thermal equipment and accessories shall be installed in a neat and professional manner.

5.0 APPLICATION PROCESS

Each Application for Incentives must include a complete and accurate copy of each of the following:

5.1 Project Application Form

The Installer/Contractor must submit all application documents electronically, using PowerClerk.

5.2 Site Map

The site map must include the location of all ST System components including collectors and water tanks, roof type, system orientation and tilt angle, point of connection with existing plumbing system, customer name and address, and Installer/Contractor name and Installer number.

5.3 Photos

There must be photo(s) of the collector location from both the ground and roof level. Photos from the ground must be taken looking south, north, east, and west.
The installer must submit photos of the major system components, including the collectors, tank, and circulator pump. A manufacturer's equipment datasheet may satisfy this requirement.

5.4 Schematics Drawing

All applications will require a legible diagram using unique line characteristics and standard symbols to clearly describe the solar thermal system as installed. The one line diagram shall include, but not be limited to, the collectors, water tanks, heat exchanger(s), pumps, meters, piping lengths and sizes, controls, insulation requirements, associated wiring. Manufacturers' catalog numbers for the key components and other relevant equipment as applicable shall be provided. For SRCC OG-300 rated systems, the diagram on the SRCC certification document may be used to satisfy this requirement.

5.5 Existing Thermal Load and System Production

Calculation or data detailing the exiting thermal load for DHW usage must accompany an estimate of annual system production (displaced kWh) and be submitted as part of the application process.

For residential systems installed on one to four family homes, the SRCC OG-300 system rating may be used to size and estimate the annual system production in kWh if the properly sized system falls within Program guidelines for maximum displaced load of 80%.

For all calculations, installers shall assume a storage tank water temperature of 120 degrees in the design. Should the installer use a higher temperature, they must provide justification of the higher value with the application.

For larger non-residential systems, non OG-300 or residential systems using OG-100 components, a more detailed estimate of system production, and existing thermal load calculations will need to be provided in conjunction with a more detailed system design including a one-line drawing as noted above. Calculations and methods used to determine the system production in nonresidential systems must be included in the application.

5.6 System Loss Analysis

Installers must calculate all potential system output losses (kilowatt hours or kWh, or equivalent BTUh for fossil fuel based systems), generated after all equipment losses associated with shading, system orientation, tilt angle, etc are applied. Such losses must be detailed using industry accepted shading and orientation tools, verifiable assumptions, and calculations. Incentives will not be approved where losses due to system shading and orientation exceed 25% of what the ideal system for that location would be without any site losses. In cases where trees or any other obstruction must be removed or moved in order to meet the program rules, incentive payment will not be made until a new system loss analysis and photos have been submitted and reviewed by NYSERDA.

5.7 Domestic Hot Water - Gallons Used

When calculating the usage for residential, the number of persons in the household shall be used. For new construction or where the number is not known, use the number of bedrooms plus one.

Example: A three bedroom house would be sized for four people. In order to determine the number of gallons, use the formula 20+ [15(residents-1)].

20+ [15(4-1)] =
20+ [15(3)]
20+45=65 gallons per day

Commercial systems may require more detailed calculations. Installers/Contractors may need to account for water temperature and seasonal use patterns in their calculations.
Example: A commercial carwash washes 50 cars per day, and each car takes about 10 gallons of hot water.
50 cars × 10 gallons per car = 500 gallons per day.

5.8 Utility Bill for Non-Residential Applicants Only

For systems accessing the displaced kWh incentive, a copy of the customer's utility bill or other proof (for new construction applications) that the customer pays (or will pay, in the case of new construction) the Renewable Portfolio Standard/System Benefits Charge must be included. The site address on the utility bill must match the installation site address on the Project Application Form. The customer's historic usage for the past twelve (12) months will be required. For new construction, information on anticipated electric usage, including that

usage to be displaced by the ST system is required. The Installer/Contractor must submit detailed calculations for review. Please provide evidence of other fuel billing for fossil-fuel, non-RPS funding.

5.9 Permits

Copies of all necessary permits, approvals, certificates, etc. must be attached for all non-residential systems. Residential customers may submit permits with the application or with the incentive request. Incentive requests for ST Systems without permits will be rejected. All permits must clearly reference installation of the approved ST System at the customer site. If permit(s) are not needed for installation, a signed letter from the Town Code Officer or Authority Having Jurisdiction (AHJ) must be submitted stating that no building permit is required. These systems may also require plumbing and electrical permits.

5.10 Addendum to Customer Purchase/Lease Agreement

Addendum to Customer Purchase Agreement in the form provided must be completed and signed by both the customer and the Contractor.

NOTE: Although not part of a project application, the Customer Purchase Agreement is an important document as it is the contract between the homeowner and Contractor. The Customer Purchase Agreement should include the following and be signed by both parties.

- Installation location including town, street, and number, if applicable;
- Installation schedule (a realistic installation schedule that takes into account NYSERDA review requirements). For example, project applications should not have an expected installation date that does not include adequate time for NYSERDA to receive, review, and notify the Contractor and the customer regarding the status or approval of an application;
- System description, including a description of the ST System being purchased and an outline of system specifications, the make and model of major system components, identification and SRCC Certification;
- Estimate of annual thermal usage and energy displaced in kWh or equivalent BTUh for non-RPS funding that summarizes the results of the System Loss Analysis;
- Total system and itemized costs broken down as follows: cost of collector(s), cost of water tanks(s), balance of system (piping, fittings, insulation, controls, etc.), and labor and overhead (labor, permitting, etc.);
- Applicable incentives. The Customer Purchase Agreement must clearly show the full amount of approved NYSERDA Incentive.
- An explanation and estimate of any and all costs that the customer will incur associated with the development, installation, and commissioning of ST Systems that are not included in the Contractor's price quote;
- Payment schedule;
- ST System Warranty. A full warranty to the purchaser of the ST generation system installed under the Agreement for a period of five years after installation. The warranty must cover all components of the ST System

against breakdown or degradation in thermal output of more than ten percent from the original rated thermal output. The warranty must cover the full costs, including labor and repair or replacement of defective components or systems.

NOTE: Although not part of a project application, the Lease Agreement is an important document as it is the contract between the homeowner and Contractor. The Lease Agreement should include the following and be signed by both parties.

- Installation location; including town, street, and number, if applicable;
- Installation schedule (a realistic installation schedule that takes into account NYSERDA and utility review requirements. For example, project applications should not have an expected installation date that does not include adequate time for NYSERDA to receive, review, and notify the Contractor regarding the status or approval of an application;
- System description, including a description of the ST System being purchased and an outline of system specifications, the make and model of major system components, identification and SRCC Certification (if applicable).
- Estimate of annual energy used to heat hot water and energy displaced in kWh or equivalent BTUs for non-RPS funding that summarizes the results of the System Loss Analysis;
- Total system cost and applicable incentives. The Lease or Power Purchase Agreement must reflect the entire amount of the approved NYSERDA Incentive;
- An explanation and estimate of any and all costs that the customer will incur associated with the development, installation, and commissioning of ST System that are not included in the Contractor's price quote;
- Payment schedule;
- Warranty: At a minimum, the Contractor shall offer a full parts and labor warranty to the Customer for the initial term of the Lease Agreement. Under no circumstance will Customers be responsible for any labor and repair or replacement costs of defective components or systems over the initial term of the Lease Agreement, and the customer shall not be responsible for lease payments during periods when the system is in disrepair and not functioning. Should the customer sell the site at which this ST project is located, the production guarantee is fully transferrable to a new lessee, consistent with the terms of the lease agreement.

6.0 QUALITY ASSURANCE AND COMPLIANCE

NYSERDA maintains the integrity of its ST Program through an independent Quality, Standards and Compliance (QSC) team which manages the quality assurance system for the ST Program. The quality assurance system has several components including review of qualifications and credentials, paperwork audits, establishment of program standards and a comprehensive field inspection. QA Field inspection includes verification of contracted scope of work, accuracy of site analysis, comparison of installation to submitted design drawings and the delivered quality of the ST installation. NYSERDA QSC or its representatives may make a reasonable number of visits to the customer site before, during and/or after installation of a ST System.

Field QA inspections are typically conducted by a qualified independent third party chosen by NYSERDA.

Such visit(s) will be at a time convenient to the customer. The customer is given the option of having the Installer or contractor attend the field inspection. If the customer declines to have the installer or contractor present at the time of the field inspection, no notice of scheduled field inspections is sent out. If the customer accepts the attendance of the installer and contractor, a notice of the scheduled field inspections will be sent to both a week in advance. We will make an effort to accommodate the schedule of the installer and contractor, but the customer's schedule and efficient scheduling of inspections take precedence.

6. 1 Field Inspection of Completed Projects

NYSERDA selects specific "completed" projects for QA field inspection following a sampling protocol. The sampling protocol utilizes random sampling of completed units with sampling rates primarily based upon the current ST program status of the Eligible Installer and "Contractor.".

NYSERDA intends to conduct field inspections on 15% of units installed by full status installers and contractors. Probationary and Suspended status installers and contractors will be subjected to 30% inspection overall and up to 100% inspection on specific units for cause.
Provisional installers and contractors will initially be subjected to up to 100% inspection and after demonstrated competency their inspection rate will be lowered to 30%.

The purpose of the site visit(s) is to provide NYSERDA with an opportunity to evaluate the accuracy of the site analysis, design paperwork, and the installed ST System in order to determine the actual kWh displaced for program evaluation purposes and to verify that the ST System was installed according to all ST Program requirements including applicable code.

Following the QA Field Inspection NYSERDA will produce a detailed report and determine whether the project fully complies with all program requirements and meets acceptable standards of workmanship. The report will be made available to the installer and contractor approximately 15 days after the inspection following an internal review and scoring by NYSERDA. The report will be made available to the owner upon submission of a request directly to NYSERDA.

NYSERDA may select any completed project at any point in the future for Field Inspection based upon customer complaints, warranty related issues or a review of the work done by an Installer or Contractor under status review or program disciplinary action.

6. 2 Handling Non-Conformance and Corrective Action

The QA report generated from the field inspection will provide details of all evaluated elements of the project and list any non-conformances that were identified. The report will identify the overall score of the project and whether this result passes or fails program requirements.

Projects that have non-conformances related to critical (Health & Safety) or major (System Performance) attributes will automatically fail. Projects that have only non-conformances to minor or incidental attributes may pass or fail based upon their overall merits.

All non-conformances are expected to be addressed and corrected with regard to future work conducted in the ST program. Acknowledgement and plans for preventing future problems may be requested with the report.

While some non-conformances cannot be corrected post installation, others can be remedied through corrective action to the documentation, incentive applied to the project or remediation of the installation or its components.

When NYSERDA seeks specific corrective action, a Corrective Action notice will be provided with the QA report. The Corrective Action notice must be either disputed within 15 days by contacting NYSERDA or remedied within 30 days. Sufficient evidence of the remediation must be provided to NYSERDA to document the completion of the required corrective action. NYSERDA may at its option conduct a field verification of the remediated installation.

NYSERDA retains the right to provide a copy of the QA report or specific information from the QA Field Inspection directly to the owner, all authorities having local jurisdiction or the interconnecting utility based upon health, safety and compliance concerns. In an emergency NYSERDA or its representatives may shut down the system. NYSERDA will notify the installer or contractor whenever it takes such action as soon as is practicable.

NYSERDA may, at NYSERDA's discretion, communicate by voice and/or written format with any ST System customer with respect to any matter relevant to a proposed or installed ST System. Such communications may be in reply to an inquiry from a customer or at NYSERDA's initiation.

6. 3 Prescriptive Probation and Disciplinary Action

When an installer or contractor either fails to consistently complete projects which pass NYSERDA's QA evaluation or fails to respond to or remedy Corrective Action notices, NYSERDA will review the contractor or installer status in the ST Program.

An installer or contractor may be moved to either a probation status in which specific results and a timeline for demonstrating those results will be prescribed and monitored or to a disciplinary status such as suspension or termination from the ST Program.

The complete details of the Participation Status and Review Process are stated in Article 6 of the SOLAR ST PROGRAM PARTICIPATION AGREEMENT.

7.0 NYSERDA LOGO AND PARTNER PORTAL

7.1 Use of Logo

NYSERDA has very strict policies with regard to our logo. There are very few companies that are eligible to use a version of NYSERDA's logo on their marketing materials. For these purposes, we have established three distinctive attribution marks: Sponsored by NYSERDA, Supported by NYSERDA, and an Independent Contractor to NYSERDA. These attribution marks are distributed by NYSERDA and are evaluated on an individual basis for their appropriateness.

The Sponsored by NYSERDA logo is specifically for Events that NYSERDA has provided funding to sponsor. The Supported by NYSERDA is intended specifically for companies that have received a contract award from NYSERDA, and NYSERDA is funding specific research, development, or deployment of an energy efficient technology, or service. The Independent contractor logo is reserved for those contractors who have been tasked specifically with customer outreach on NYSERDA's behalf.

In the case of Solar Installers, ESCOs, participating builders, building contractors, and other organizations that have been qualified by NYSERDA, but not contracted, or funded by NYSERDA, it is not appropriate for them to use NYSERDA's logo on their organizations' website, or any marketing materials including business cards. In the future, should you have a need for NYSERDA's logo, you may request one at the following website: http://www.nyserda.ny.gov/About/Resources/Logo-Requests.aspx

7.2 Partner Portal

NYSERDA has a *Partner Portal* on NYSERDA's website for eligible Solar Thermal Installers/Contractors who participate in the PON 2112 PV Incentive Program. Partner Portal: http://cmsapps.nyserda.ny.gov/PartnerPortal/

Currently the Partner Portal contains information such as past Solar Thermal conference call/webinar summaries, upcoming training announcements and other documents and links pertaining to the Solar Thermal Incentive Program. Your user name is your email address, and your password is the same. After logging in, choose "Advanced Technologies."