

SMART SourceSM Solar PV Program Guidebook

for



AEP-Texas North Company
AEP-Texas Central Company

and



Southwestern Electric Power Company

Program Year 201~~2~~4

Program website:

www.txreincntives.com/apv

The SMART SourceSM Solar PV Program is provided by AEP Texas Central Company, AEP Texas North Company, and Southwestern Electric Power Company as part of these utilities' commitment to reduce energy consumption, energy demand, and carbon emissions. Frontier Associates and Clean Energy Associates work on behalf of AEP Texas Central Company, AEP Texas North Company, and Southwestern Electric Power Company to implement the SMART SourceSM Solar PV Program. For more information visit www.txreincntives.com/apv.

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1. Program Overview

1.a. Program Description

The SMART SourceSM Solar PV Program (hereafter, "Program") offers financial incentives for the installation of eligible distributed solar energy generating equipment on the premises of Customers served by AEP Texas Central Company (AEP TCC), AEP Texas North Company (AEP TNC), and Southwestern Electric Power Company (SWEPCO) (individually, the "Utility"; together, "the Utilities"). The Program is provided by the Utilities as part of their commitment to reduce energy consumption, energy demand, and carbon emissions.

This Guidebook presents Program participation guidelines applicable to Customers, Service Providers, and projects submitted through December 31, 2011.

The Program participation process, in summary, is as follows:

1. Customers work with participating Service Providers to determine eligibility, define the technical specifications of a solar electric system suitable for their property, and obtain approval from the Utility for grid connection.
2. The selected Service Provider completes an incentive application, submitting technical details of the proposed system to the Program Manager for review. The Program Manager reviews the incentive application, and either approves the application or informs the Customer/Service Provider of the reasons for denial. Approvals indicate the incentive dollar amount reserved and the period of time the incentive reservation is valid.
3. The Service Provider constructs the proposed system, submits a final application form, and passes a Program inspection (if selected for inspection). The Program Manager sends an incentive check directly to the Customer or their selected Service Provider.

The Program is just one of many programs offering financial incentives, educational resources, and information on renewable energy systems, energy efficiency measures, and combined heat and power technologies. These programs are available to Utility Customers, including residential Customers, businesses, and schools. Information about these programs can be found at the Utility's website, www.aepefficiency.com.

1.b. Program Management and Contacts

For questions about the status of your Service Provider or your project application, please contact:

Cece Hyslop
cece@cleanenergyassociates.com
(800) 381-6552 – ext. 103

Anne Castello
acastello@frontierassoc.com
512-372-8778 ext. 127

Anne Castello
acastello@frontierassoc.com
512-372-8778 ext. 127 **Elisabeth Long**
elong@cleanenergyassociates.com
(800) 381-6552 – Ext 102

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For all other questions please contact the Program Manager:

Steve Wiese, Program Manager

SMART SourceSM Solar PV Program
1515 S Capital of Texas Highway, Suite 110
Austin, Texas 78746
(512) 653-9651
steve.wiese@cleanenergyassociates.com

Frontier Associates and Clean Energy Associates work on behalf of the Utilities to implement the Program, and are referred to as the Program Manager. For questions regarding Frontier Associates' and Clean Energy Associates' relationship to the Utilities and the Program, you may contact one of AEP's Energy Efficiency departments:

- **AEP TCC:** **Jim Fowler**
 jjfowler@aep.com
 361-881-5790

- **AEP TNC:** **Jim Fowler**
 jjfowler@aep.com
 361-881-5790

- **SWEPCO:** **Jeff Thigpen**
 jdthigpen@aep.com
 318-673-3514

1.c. Program Changes

This document is intended to provide a detailed and consistent reference on Program design and implementation processes to market participants, but does not address every possible situation or complication which may arise during Program implementation. When instances requiring clarification are identified, the Program Manager will attempt to provide guidance consistent with Program intent as well as with other goals and priorities.

The Utilities and the Solar PV Program Manager reserve the right to change Program guidelines, processes, requirements, budgets, budget allocations and other Program details at any time without prior notice to market participants. However, the Utility and Program Manager will strive to provide timely notice of such changes.

2. Eligibility

2.a. Customers

For the purposes of this Program, “Customers” are defined as the entity with financial responsibility for paying the electric bill for the meter behind which the distributed solar energy equipment is to be installed.

Any Texas Customer served by AEP TCC or, AEP TNC, and any Texas residential Customer serviced by SWEPCO is eligible to participate in the Program. Incentives may be received for new systems proposed for multiple points of service (i.e., locations with unique meter ESI-IDs or meter numbers). Each Customer and point of service is eligible to participate in the Program multiple times, subject to other limitations set forth in this guidebook.

The map at right shows the AEP TCC, AEP TNC, and SWEPCO service areas in Texas. This map is provided for reference only, as Customers located within these service areas may or may not receive electric service from the Utilities.

AEP TCC and AEP TNC are both located in the Texas competitive retail market. Their Customers’ bills may reflect that they purchase electricity from one of many retail electric providers, but AEP TCC and AEP TNC may be identified by the Electric Service Identifier number (ESI-ID) printed on their electric bill or meter as shown below.



AEP Texas Central Company (AEP TCC) ESI-ID

100327894 **01234567**
Company code Premise ID#

AEP Texas North Company (AEP TNC) ESI-ID

102040497 **01234567**
Company code Premise ID#

SWEPCO is located outside the Texas competitive retail market. SWEPCO will be clearly identified on all Customer electric bills, a copy of which must be submitted along with the incentive application.

2.b. Registered Service Providers

All applications for Program funding must be submitted by a registered solar PV installation company. A list of registered Service Providers will be made available on the Program website and can be requested from the Program Manager. In order to be eligible to participate in the Program, all registered Service Providers must:

- A. Carry liability insurance with the following coverages:
 - \$500,000 Combined Single Limit;
 - Bodily Injury and Property Damage/\$500,000 General Aggregate; and,
- B. Agree that only licensed electrical contractors and electricians will offer, perform, and permit all electrical work in accordance with applicable state and local requirements (see

the Texas Department of Licensing and Regulation's website at <http://www.license.state.tx.us/> for more information); and,

- C. Agree they have read the Program Guidebook and understand that it is the Applicant's responsibility to comply with all Program requirements, processes, policies and guidelines; and,
- D. Meet at least one of the eligibility requirements listed below:
 - (1) The Applicant is a licensed Texas Electrical Contractor or Master Electrician who:
 - (a) Employs at least one full-time regionally-based employee who is currently certified by the North American Board of Certified Energy Practitioners (NABCEP) as a PV Installer (note: this is the NABCEP PV Installer certification, not the entry level certification also offered by NABCEP);
 - or,
 - (b) Employs at least one full-time regionally-based employee who has been determined by NABCEP to be eligible to sit for the NABCEP PV Installer exam (please see www.nabcep.org for more details on eligibility requirements);
 - or,
 - (c) Employs at least one full-time regionally-based employee who has successfully completed at least 40 hours of PV installation training provided by a third party;
 - or,
 - (2) The Applicant is not a licensed Texas Electrical Contractor or Master Electrician and:
 - (a) Employs at least one full-time regionally-based employee who is currently certified by the North American Board of Certified Energy Practitioners (NABCEP) as a PV Installer (note: this is the NABCEP PV Installer certification, not the entry level certification also offered by NABCEP).

Alternative qualifications may be accepted at the Program Manager's discretion if there is an insufficient number of local installers enrolled in a Program or region, as determined by the Program Manager.

Please note that it is the intention of the Program Manager to encourage (though not require) NABCEP PV Installer certification or an equivalent professional certification, and to require full compliance with all Texas electrical licensing requirements, by all Service Providers participating in the Program.

In order to maintain eligibility to participate in the Program, registered Service Providers must also meet ongoing quality control/quality assurance requirements detailed in Section 5, must attend a minimum number of technical training sessions offered by the Program Manager, and must attend periodic Program update conference calls and webinars. Dates for the training/webinars can be found on the Program website.

Do-it-Yourself or Self-Installations

Customers who wish to install systems by themselves may do so only if they become a registered Service Provider in the Program, meeting all eligibility requirements applicable to registered Service Providers, or contract with a registered Service Provider who will apply for funding, oversee the installation and applicable permitting, and provide the required warranty. Service Providers are required by the Program to have a lead role in every project in order to promote safety and quality in the design and installation process, and to maintain consistency with Texas interconnection and net metering rules.

Customers with Unique Purchasing Processes or Requirements

Some eligible Customers, such as large companies and government agencies such as municipalities and schools, may need to register their project and receive a letter confirming pre-approval of the requested incentive amount prior to selecting a registered Service Provider. These Customers may work directly with the Program Manager to submit an incentive reservation request on their behalf. In these cases, the Program Manager will act as a proxy registered Service Provider until the Customer has selected a registered Service Provider; at that time, the project will be transferred to the registered Service Provider.

In general, the Program Manager will act as a proxy registered Service Provider for Customers with unique purchasing processes or requirements as long as the Customer:

- Demonstrates funding availability and appropriate authorization for the proposed project;
- Commits to using a registered Service Provider for the installation; and,
- Agrees to complete the installation within the applicable incentive reservation period.

2.c. Equipment and Installation

Major Equipment (Modules, Inverters)

Only new eligible solar photovoltaic equipment providing energy to the customer premise through an interconnection on the customer's side of the electric meter qualifies for incentives under this Program.

NOTE: The Utility is not a manufacturer, supplier or guarantor of the PV system or Service Providers, and the Utility, whether by making available a list of registered Service Providers and equipment sources or otherwise, have not made and make no representations or warranties of any nature, directly or indirectly, express or implied, as to performance of the Service Provider or reliability, performance, durability, condition or quality of the PV system selected and purchased.

Photovoltaic Modules

All installed photovoltaic modules must be new and certified to UL 1703 by a Nationally Recognized Testing Laboratory (NRTL) to ensure safety and reliability. Eligible modules must be warranted for at least 10 years to produce at least 90% of their rated power output, and for at least 20 years to produce at least 80% of their rated power output.

Inverters

All installed inverters, including micro-inverters, must be new and certified to UL 1741 standards by a Nationally Recognized Testing Laboratory (NRTL). When an inverter is integral to and wholly contained within a solar electric generator (PV module), the

inverter shall not be required to be separately certified to UL 1741 if UL 1741 testing is performed as part of a full safety certification by a NRTL for the solar electric generator.

AC Disconnect

A visible, lockable, labeled, utility-accessible AC disconnect is required and must be located within 10 feet of the Utility meter. The AC disconnect must provide a visible break between the conductors when in the open position. Any exceptions to this requirement must be negotiated with the Utility's distributed generation interconnection manager. Pullout switches (commonly used on HVAC systems) and distribution panel breakers do not meet the Utility's AC disconnect requirement.

Revenue-Grade Solar (or "REC") Meter

Service Providers must supply a revenue-grade electrical meter to measure the energy produced by the solar electric system.

- Service providers shall, as part of their installation, provide a compatible meter socket (meter can or base) to accommodate the Service Provider-supplied solar meter.
- The meter socket shall be subject to, and shall pass or have passed, all required electrical inspections, including both locally-required code inspections and any Program inspections.
- For systems with integrated battery backup capability, the solar meter requirement may be modified at the discretion of the Program Manager. Service providers must contact and notify the Program Manager and work to identify a suitable metering solution.

Note the solar meter is not the "smart meter" or "inflow-outflow meter" owned by the electric utility and installed at the point of service demarcation. Note also that inverter-based metering typically does not meet the standard referenced above.

Mounting Systems

All installations shall utilize mounting/racking systems and hardware specifically designed for use with photovoltaic systems, incorporating rust and corrosion-resistant components, appropriately engineered to withstand anticipated structural and wind loading conditions, and installed in accordance with manufacturers' requirements. Custom mounting solutions may be necessary in some cases: in these cases, the proposed mounting system shall be properly engineered and stamped drawings submitted to the Program Manager.

Minimum Performance Threshold

To be eligible to receive an incentive payment, the estimated annual electrical energy output of a solar electric system, as modeled by PVWATTS and considering an appropriate factor for shading, must be at least eighty percent (80%) of the estimated annual energy output for an optimally-sited, unshaded system of the same DC capacity. Systems which do not meet the minimum performance threshold will not receive an incentive. For the purpose of this section, a system is defined as any DC string of modules feeding into an inverter.¹

The estimated annual electrical energy output of an optimally-sited, unshaded system can be determined by selecting an appropriate location, entering the system capacity in kWdc, and

¹ Therefore, each "AC module" or module employing micro-inverters are considered a complete string, and each module must individually meet the minimum performance threshold.

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accepting default parameters for tilt (latitude tilt), orientation (due south), and derating factor (0.77) into the National Renewable Energy Laboratory's PVWatts calculator, available online at http://redc.nrel.gov/solar/codes_algs/PVWATTS/.

The estimated annual electrical energy output of a proposed system shall be derived from PVWatts or equivalent software and shall consider separately the effects of tilt, orientation and shading on each array and/or string, as appropriate. The effect of shading shall be determined using a Solar Pathfinder or equivalent instrumentation. As a general rule, multiple shading measurements should be made along the lower or southern edge of an array, and/or at locations where shading is most prevalent.

Installations which do not meet the minimum performance threshold will not receive an incentive. Prorated incentives are not available. Service Providers are strongly discouraged from pursuing borderline systems, and are encouraged to contact Program administrators and clearly document shading measurements whenever clarification or pre-approval is needed.

Interconnection

All PV systems must be interconnected, at Customer's expense, to the Utility's electrical grid. The PV system must comply with interconnection requirements for distributed generation systems as defined by the Texas Public Utility Commission.

Arrangements with the Utility regarding interconnection must be made with the Utility interconnection contact as soon as possible after an incentive commitment is made, and prior to beginning construction of the project.

The Utility contacts are:

- **AEP TCC:** Blake Burchard, 325-657-2733, rbburchard@aep.com
- **AEP TNC:** Blake Burchard, 325-657-2733, rbburchard@aep.com
- **SWEPCO:** Scott Hampton, 903-234-7333, sahampton@aep.com

The Program Manager will work with Service Providers to communicate and distribute updates to these requirements as necessary.

Manufacturer's Instructions

All equipment must be installed and maintained in accordance with manufacturer's instructions.

Best Practices

All aspects of system design and installation shall conform with industry best practices as regionally appropriate. The Program Manager may convene technical working groups to identify and document expected best practices.

Ineligible Equipment

Any solar electric systems that do not deliver energy to a building's electric distribution system which is connected to the Utility is ineligible for participation. Portable systems, systems of a temporary nature, and off-grid systems are not eligible for participation.

2.d. Warranties

Eligible 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 Service Provider may provide the required warranty in conjunction, covering major system components and labor, respectively. An owner's manual, including warranty documentation, must be provided to the Customer on completion of the installation. Additional equipment warranty requirements are referenced in Section 2.c. above.

2.e. Codes/Standards/Permits

All PV system installations must obtain appropriate local building permits and pass all required local inspections, and must be in full compliance with the National Electric Code. Work must be performed in accordance with all applicable federal, state, and local, codes and standards.

2.f. Free Ridership

Incentive eligibility is limited to proposed projects that are wholly contingent upon a commitment of incentive funding. Projects contracted without the express written assumption of incentive funding availability are ineligible to receive such funding, as are projects for which construction has begun prior to the commitment of incentive funds.

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2.g. Additional Considerations

- **Incentive Assignments:** The incentive may be assigned by the Customer to the Service Provider, equipment supplier, or other third party.
- **Other Restrictions:** Deed restrictions, homeowners associations, neighborhood covenants or local regulations must not prohibit the installation of solar photovoltaics on property.
- **Condominiums/joint ownership associations:**
 - Individual condominium owners applying must obtain Condominium Association permission.
 - Condominium Associations can apply under the commercial section of the incentive Program, and must be connected to a commercial meter.
- **Apartments/rentals/leased properties:**
 - These qualify as commercial projects and must be under a single incentive application. Applicant must demonstrate project approval by building owner.
- **New construction:**
 - The program accepts applications from entities seeking to install PV on new construction buildings.
 - Program funds may be committed only after a temporary meter service has been established at the installation property, and may be disbursed only after a permanent meter account has been established.
 - Funding may be secured and delivered at the residential incentive level only if the permanent meter account is established in the individual homeowner's name prior to the time the Final Application Form is submitted.
 - ~~Applicants should be aware of the free-ridership restrictions placed on all energy efficiency funding (see section 2.f.). The Program does not prohibit pre-applications for new construction projects that otherwise conform to all Program requirements. However, there may be complications with new construction~~

~~proposals which do not strictly adhere to Program guidelines and processes. In these cases, Service Providers are encouraged to contact the Program Manager before submitting a pre-application. Typically, funding may be committed to a project on a premise with a valid temporary meter, but incentives will not be paid until a permanent metered account is established.~~

3. Incentive Design and Delivery

3.a. Total Funding and Customer Classes

In Program Year 2011, the total amount of incentive funding and its allocation to customer classes is shown below:

<u>AEP-TCC</u>	<u>AEP-TNC</u>	<u>SWEPCO</u>
\$360,000 total	\$180,000 total	\$121,500 total
\$180,000 residential	\$90,000 residential	\$121,500 residential
\$180,000 non-residential	\$90,000 non-residential	\$121,500 non-residential

3.b. Incentive Levels

Incentive levels for Program year 2011 are as follows (all are in \$/watt dc-stc):

<u>AEP-TCC</u>	<u>AEP-TNC</u>	<u>SWEPCO</u>
Residential: \$1.75 \$2.00 /watt	Residential: \$1.75 \$2.25 /watt	Residential: \$1.75 \$2.00 /watt
Other Non-residential:	Other Non-residential:	Other: \$1.75/watt
\$1.5075 /watt	\$1.50200 /watt	

Incentives are calculated based on the total DC capacity of a solar electric system, determined by sum of the DC(stc) capacity of all modules installed.

$$\text{Incentive} = \text{Number of PV Modules} \times \text{DC-STC Rating per Module (Watts)} \times \text{Incentive Level}$$

The final incentive level will be determined following verification of the installed system by a solar field inspector. Systems not meeting all Program requirements, including the minimum design threshold requirement, are ineligible for incentives.

3.c. System Size/Capacity Limits

Systems less than 1 kW (dc-stc) capacity are not eligible for funding unless they are proposed for educational use by schools.

System size/capacity is limited by applicable rules regarding interconnection and net metering (see appendices). Systems estimated to produce more energy on an annual basis (including both the proposed system and any existing system or systems already present) than is consumed by the customer at the interconnected meter are not eligible for incentives.

3.d. Incentive Reservation/Payment Limits

Incentive reservations/payments for systems installed by residential customers are limited to the applicable incentive level for a 10 kWdc system (i.e., ~~\$17,520,000~~ for a residential installation at the ~~\$1.752-00~~/watt incentive level).

Incentive reservations/payments for systems installed by non-residential customers are limited to the applicable incentive level for a ~~2550 kW (AEP-TCC) or 20 kW (AEP-TNC), or 10 kW (SWEPCO)~~ system, as shown in the table below.

3.e. Limits on Participation

The table on the next page summarizes limits on incentive reservations by customer class applicable to customers and Service Providers with multiple projects ~~beginning with this Program Guidebook~~. The table entries indicate the maximum amount of available incentive funds that may be reserved by a single customer or Service Provider for each Program year.

2012 Program Limits

AEP-TCC

AEP-TNC

SWEPCO

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Maximum Incentive per Project (per interconnected meter, per Program year)

Residential Projects:	<u>\$17,500</u> (@ <u>\$1.75/watt, equivalent to a 10 kW system</u>)	<u>\$17,500</u> (@ <u>\$1.75/watt, equivalent to a 10 kW system</u>)	<u>\$17,500</u> (@ <u>\$1.75/watt, equivalent to a 10 kW system</u>)
	<u>\$20,000</u> (@ <u>\$2.00/watt, equivalent to a 10 kW system</u>)	<u>\$22,500</u> (@ <u>\$2.25/watt, equivalent to a 10 kW system</u>)	<u>\$20,000</u> (@ <u>\$2.00/watt, equivalent to a 10 kW system</u>)
Non-residential Projects:	<u>\$87,500</u> <u>\$37,500</u> (@ <u>\$1.50/watt, equivalent to a 25 kW system</u>)	<u>\$37,500</u> <u>\$40,000</u> (@ <u>\$1.50/watt, equivalent to a 25 kW system</u>)	<u>\$17,500</u> (@ <u>\$1.75/watt, equivalent to a 10 kW system</u>) <u>NA</u>

Maximum Incentive per Customer (multiple projects, per Program year)

Residential Projects:	<u>\$17,500</u> (@ <u>\$1.75/watt, equivalent to a 10 kW system</u>)	<u>\$17,500</u> (@ <u>\$1.75/watt, equivalent to a 10 kW system</u>)	<u>\$17,500</u> (@ <u>\$1.75/watt, equivalent to a 10 kW system</u>)
	<u>\$20,000</u> (@ <u>\$2.00/watt, equivalent to a 10 kW system</u>)	<u>\$22,500</u> (@ <u>\$2.25/watt, equivalent to a 10 kW system</u>)	<u>\$20,000</u> (@ <u>\$2.00/watt, equivalent to a 10 kW system</u>)
Non-residential Projects:	<u>\$37,500</u> (@ <u>\$1.50/watt, equivalent to a 25 kW system</u>) <u>\$87,500</u> (@ <u>\$1.75/watt, equivalent to a 50 kW system</u>)	<u>\$37,500</u> (@ <u>\$1.50/watt, equivalent to a 25 kW system</u>) <u>\$40,000</u> (@ <u>\$2.00/watt, equivalent to a 20 kW system</u>)	<u>\$17,500</u> (@ <u>\$1.75/watt, equivalent to a 10 kW system</u>) <u>NA</u>

Maximum Incentive Reservation per Service Provider/Project Owner

All projects

\$990,000 res+ \$90,000 non-res (25 50% of annual incentive budget in each category)	\$9045,000 res+ \$45,000 non-res (50% of annual incentive budget in each category)	\$60,750750 res+ \$60,750 non-res (50% of annual incentive budget in each category)
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3.f. Open Season

Beginning July 1, 2012 the limits on customers and service providers/project owners will no longer be enforced.

3.gf. First-Come, First-Served Policy

Incentive funding is offered to eligible Customers with complete applications on a first-come, first-served basis.

3.hg. Incentive Reservation Period

All incentive reservations expire in 6 calendar months after the date of acceptance. A complete final application must be received by the Program Manager prior the expiration date. All incentive commitments will expire by November 30, 2012, regardless of when the project initially applied or was awarded funding.

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3.ih. Quarterly Milestone Reporting

All projects greater than 10 kWdc will be required to demonstrate progress toward completing financing and construction on a quarterly basis. Failure to report quarterly or to demonstrate progress in quarterly reports may result in termination of the incentive reservation.

3.ji. Extensions

Extensions will be granted for residential projects only if the Service Provider requests an extension prior to the incentive reservation period's expiration date and provides documentation that construction is complete and utility interconnection and local permits have been applied for prior to the incentive reservation period's expiration date. If these conditions are not met, Service Providers will need to re-apply for incentive funding with a new application subject to funding availability at the time of reapplication.

Commercial/industrial and government/non-profit customers who cannot complete their project within the incentive reservation period may apply for an extension. Extension requests must be received before 5:00 PM Mountain Time on the expiration date, and must include detailed documentation regarding the reasons for the delay. Progressive documentation of issues to the Program Manager as they occur throughout the project will significantly improve the case for a project extension.

The Program Manager will consider extensions in cases where significant progress has been made toward completion of the project, and where the delay was unavoidable and unforeseeable at the time of the initial application. Approval of any extension will depend on the totality of circumstances related to reasonable progress toward each of the items listed below and the reason why the delay was unavoidable and unforeseeable as demonstrated through documentation provided with the extension request.

- a) Physical construction has started at the customer's site, which means that:
 - i. construction permits have been granted (where applicable);
 - ii. project materials are either onsite or in storage; and
 - iii. installation work has started;
- b) Irrevocable orders have been placed with the manufacturers of the major items of equipment (PV modules and inverters);
- c) Construction permits have been approved by the authority having jurisdiction (where applicable);

- d) Engineering and design work has been started and progressed to a significant degree;
- e) Material and/or equipment have been received from the manufacturer, and are either onsite or in storage.

If granted, the extension will be for a period no greater than 6 months, and shall not extend beyond the end of the Program calendar year. No additional extensions are permitted. If a project exceeds the extended deadline, the Service Provider will need to re-apply for incentive funding with a new application, subject to availability of funding at the time of the new application.

3.kj. Designation of Incentive Recipient

Service Providers may designate the customer, themselves, or a manufacturer or supplier to receive the incentive payment. The designation of incentive recipient can be made as part of the initial application or in writing thereafter.

3.lk. Other Utility Programs

Participation in the Solar PV Program does not affect a Customer's eligibility to participate in other Utility-sponsored energy efficiency/conservation Programs.

4. Participation Process

4.a. Overview

The Program utilizes several forms, including the Service Provider Information Form, Project Pre-Approval Application, and Final Application Form. These forms are provided to the Program Manager at pvapps@frontierassoc.com by registered Service Providers.

4.b. Detailed Description of Process Steps

Participating in the Solar PV Program consists of three main steps:

1. Service Provider registration;
2. Project pre-approval application; and,
3. Final application.

1. Service Provider Registration

Only eligible and approved Service Providers may apply for incentive funding. Eligible Service Providers must apply for approval by filling out and submitting the Service Provider Information form and by providing proof of current licensing, insurance, and NABCEP status to the Program Administrator. When this information is deemed to be complete, the Service Provider will be able to register projects for Pre-Approval. The Service Provider Information form may be obtained from the Program website www.txreincentsives.com/apv or by contacting the Program Manager.

2. Project Pre-Approval Application

Service Providers must fill out and submit a complete Project Pre-Approval Application for each proposed Customer project, except in cases where the Program Manager acts as a proxy Service Provider for Customers with unique purchasing processes or requirements (see section 2.b.).

The Program Manager will review each Project Pre-Approval Application to ensure eligibility of the proposed project. If the project is determined to be eligible for participation, the Program Manager will confirm pre-approval with a letter to the Service Provider providing a registration number and stating the pre-approved incentive amount and the incentive reservation period.

If the Project Pre-Approval Application is determined to be incomplete or the proposed project ineligible for participation, the Program Manager will inform the Service Provider of the deficiencies, and the Service Provider may modify and/or resubmit the Application. Construction may begin only after funding approval is received.

3. Final Application

When construction is complete, all local inspections have been passed, and the Customer has received a signed Interconnection Application from the Utility, the Service Provider must submit a Final Application to the Program Manager. The Final Application is used to document any differences from the Project Pre-Approval Application and to provide proof that the project has passed all required local inspections.

The Program Manager will review each Final Application for completeness and eligibility, in the case of projects which have changed in any way from what was submitted in the Project Pre-Approval Application. A copy of the fully executed Interconnection Agreement with the Utility is due with the Final Application.

Once determined to be complete and eligible, the Program Manager will select a sampling of projects for on-site inspection, and will work with the Customer and/or Service Provider to schedule such inspections. The primary purpose of the Program inspections will be to verify accuracy of the information submitted in the Final Application and to ensure the system is installed and operating in accordance with all Program guidelines.

Projects that are not selected for inspection, or projects that are selected for and pass their Program inspection, are then reported to the Utility for incentive check delivery. Customers or their designated check recipients should expect about 6-8 weeks for incentive check delivery after final approval.

4.c. Differences Between Pre-Applications and Final Applications

The Final Application is used to identify changes between project specifications detailed in the Project Pre-Approval Application from those specified in the Final Application. All changes in project specifications potentially trigger review of a project's eligibility to receive incentives and of the Interconnection Application, so Service Providers should clearly communicate any such changes in advance with the Program Manager to determine the effect, if any, on project eligibility and/or the Customer incentive amount.

Changes which decrease the total capacity of a project will reduce the incentive amount.

Changes which increase the total capacity of a project may increase the incentive amount, but additional incentive funds are subject to availability at the time the Program Manager is notified of the change. Service Providers are encouraged to clearly communicate any such changes in advance with the Program Manager and Utility interconnection staff to determine the effect, if any, on project eligibility and/or the Customer incentive amount.

5. Quality Control / Quality Assurance

5.a. Application Review

The Program Manager will perform a review of all projects for which a Project Pre-Approval Application has been submitted, provided that unreserved incentives remain. The application review process will entail an off-site evaluation of the proposed site for the PV system to verify that the orientation and shading of the building are appropriate for adequate solar energy conversion. Depending on the situation, this evaluation will be performed using the satellite and street view applications of Google Maps or an equivalent online mapping service. It is expected that a remote evaluation using online mapping tools will be sufficient for the vast majority of pre-inspections. The data collected through the pre-inspection process will be combined with the system specifications submitted by the Program applicant to produce the proper inputs for the modeling software, PV Watts v1, used to evaluate whether the proposed system meets minimum design threshold requirements.

5.b. Post-Installation Inspections

The second stage of measurement and verification will consist of post-installation inspections of approximately 40% of projects installed. Most projects will be randomly selected for inspection, but for large projects, projects installed by new Service Providers, or projects installed by Service Providers who are not in good standing with the Program, the probability of inspection may be increased at the Program Manager's discretion.

For the selected projects, the Program inspector will perform a thorough inspection of the installed system within two weeks of installation. This post-installation inspection will serve to verify that the system has been installed as proposed in the application and that it conforms to the Program guidelines and best practices as described in the Program guidebook. The inspector will also conduct a real-time system performance test to check that the system performs at an acceptable level compared to its rated output. Finally, the inspector will verify that the solar meter is connected and functioning and record the meter reading at the time of inspection.

5.c. Persistence Inspections

The final stage of measurement and verification will be follow-up inspections of installed systems that have been in operation for at least one year. All systems will be eligible for follow-up inspections, regardless of previous inspections. Real-time performance tests and solar meter readings will be performed to quantify system degradation and establish long-term energy production levels. The data gathered during these inspections will be used to tailor model inputs used in estimating demand and energy savings to reflect as accurately as possible the performance of systems installed under the Program.

5.d. Inspection Failures

Applicants with projects that are found to be unlikely to produce acceptable levels of solar energy conversion through the pre-inspection process will be notified of the issues regarding their project design and will be allowed to re-submit an application. The second application will be treated as a new application and no special treatment (i.e., holding their position in the order of applicants) will be given.

Applicants with projects that fail the post-installation inspections will have 1 month to correct the problems with the system and either submit evidence of correction or schedule a second inspection, at the Program Manager's discretion. Service Providers that fail to correct

deficiencies in a timely manner may be removed from the Program and/or be denied an incentive.

6. Service Provider Performance Standards

6.a. Service Provider Standing

All Service Providers must maintain good standing with the Program. Service Providers in good standing are defined as those:

- Who have attended all required Service Provider meetings, technical training sessions and other mandatory events;
- Whose three most recent installations subject to a Program inspection have passed those inspections on the first attempt;
- Who have maintained and documented to the Program Manager proper and current licensure, certificates, insurance, and other eligibility requirements;
- Who have provided all required progress reports in a timely fashion;
- Who have completed more than 80% of approved projects within the applicable incentive reservation period; and,
- Who work in good faith with the Program Manager to resolve any Customer disputes or complaints and to change business practices as appropriate to reduce the likelihood of future disputes or complaints.

Service Providers who are not in good standing may have their Service Provider listing removed from the Program website. They will be notified by the Program Manager of their status and will be required to work with the Program Manager to develop a plan to correct the problem(s). A lack of progress on this plan may lead to disqualification.

6.b. Service Provider Disqualification

All Service Providers are required to maintain proper licensure, certificates, insurance, and other eligibility requirements as listed in the Service Provider Information Form. The Program Manager will also determine and maintain metrics of Service Provider performance which may be used to disqualify Service Providers from participation in the Program. Service Provider performance metrics include, but are not limited to:

- High rates of Customer complaints handled by Program Management staff;
- Low rates of passing Program inspections;
- Low rates of completing pre-approved projects within the incentive reservation period;
- Failure of the Service Provider to maintain attendance at technical training sessions and periodic Program update conference calls and webinars.

6.c. Dispute Resolution

Unresolved disputes hurt the success of the Program. In this respect, the overriding objective of all the participants in the Program is to achieve 100% Customer satisfaction and to satisfactorily resolve any and all disputes at the lowest level possible.

Disputes, concerns or complaints arising from Customers should, in general, be addressed at the lowest level possible. Most of the time, this means the problem should be resolved between the Service Provider and Customer.

Issues that cannot be addressed by the Service Provider and Customer and are brought to the attention of the Program Manager may be addressed by the Program Manager. The Program Manager's first level response shall be to document the date and nature of the complaint and the specific details. This shall include contact information, name, address, phone number and/or email of all parties involved. The Program Manager will maintain all contact and status records. This will open the issue; next an appropriate action step must be completed for it to be resolved and closed. The Program Manager shall be responsible to delegate or take action to resolve the issue within 2 weeks.

Disputes, concerns or complaints arising between Service Providers and the Program Manager shall follow a similar path. The Program Manager's first level response shall be to document the date and nature of the complaint and the specific details. Again, this will include contact information, name, address, phone number, and/or email of all parties involved. The Program Manager will maintain all contact and status records. This will open the issue; next an appropriate action step must be completed for it to be resolved and closed.

The Program Manager shall be responsible to delegate or take action to resolve the issue within 2 weeks. Disputes that cannot be resolved or have future action agreed to by all parties during initial contact may be brought to the second level or to the Energy Efficiency Program Manager.

7. Technical Training/Technical Assistance

The Program Manager intends to provide and support technical training and technical assistance opportunities to Service Providers, local code officials, and potential Customers. In addition, the Program Manager is developing periodic Program update conference calls for Service Providers and periodic Customer information sessions for Customers. Attendance by Service Providers at a minimum number of technical training and Program update events is mandatory. Details of available training opportunities will be made available as they arise.

8. Additional Considerations

8.a. Interconnection

Service Providers must submit all of the necessary paperwork for the Utility Interconnection Agreement to the Utility once a proposed project has been approved for Program funding. This Interconnection Agreement should be approved by the Utility prior to beginning construction on any project. All Final Applications must contain a fully executed Interconnection Agreement.

8.b. Metering for Distributed Renewable Generation

The Utility is responsible for installing and maintaining metering equipment that tracks energy inflows (energy delivered from the distribution system to the Customer) and outflows (energy delivered from the Customer to the distribution system) on separate registers, in compliance with rules developed by the Public Utility Commission of Texas.

8.c. Compensation for Energy Delivered to the Distribution System (Outflows)

AEP TCC and AEP TNC

AEP TCC and AEP TNC are located within the competitive retail electric market in Texas. As such, these Utilities can not engage in the purchase or retail sale energy inflows or outflows from any Customers, including Customers with distributed renewable generation. Customers of these Utilities purchase energy from a Retail Electric Provider (REP). The Customer's REP is responsible for retail sales of energy provided to the Customer (inflows), and may contract with the Customer for the purchase of energy provided to the distribution system by the Customer

(outflows). Customers should contact their REP for more information about the availability and terms of compensation for outflows, and may switch to another REP if, in the Customer's determination, a more suitable option is available.

SWEPSCO

SWEPSCO is located outside the competitive retail electric market in Texas, and is directly responsible for metering and crediting the value of outflows for Customers in the billing process.

More information regarding the Utilities' role in metering distributed renewable generation is available on the Program website.

8.d. Renewable Energy Credits

Once operational, owners of distributed renewable generation systems may be eligible to earn, sell, and/or retire renewable energy credits in accordance with applicable laws and rules. Owners of distributed renewable generation facilities also own all renewable energy credits (RECs) or other environmental credits associated with projects receiving incentives under this Program. Distributed renewable generation owners may register their generating units and create solar renewable energy credits on a monthly basis as provided by the Texas Public Utility Commission.

8.e. Tax Considerations

Program participants should consult a tax professional regarding taxation and potential tax benefits of REC payments received, the eligibility of their installation for federal tax credits, treatment of incentive funds provided by the Utility, depreciation and all other tax matters.