



Customer's Guidelines Packet for BTU Solar PV System Installations

I. Introduction

Congratulations on taking the first step to becoming an advocate for distributed renewable energy production! This Informational packet is intended to discuss and clarify everything you will need to know from the time you contact BTU or call a company requesting information about Solar PV systems through the final inspection and ultimately certification of a completed PV system. It is our hope that through the exchange of information and ideas, along with an efficient means of communication involving you the customer, the contractor, and BTU, we can work together with you to help promote an environmentally friendly alternative to energy production through the use of renewable energy sources here in the Brazos Valley.

II. Making contact with BTU and a Contractor

Beginning a project such as installing a Solar PV system is a long and complex process. The first order of business in obtaining a Solar PV Rebate is to have BTU perform a preliminary site survey of your property. This is a service that BTU provides, and will help eliminate the need for a company located far away to make a costly initial survey of the site. We will be able to determine from this preliminary site assessment whether or not a solar PV system would be an effective way of cutting costs and reducing your carbon footprint, and where on your property such a system would receive the maximum amount of sunlight, adhering to the rebate guidelines of at least 80% unobstructed sunlight to the proposed area during peak hours. These visits normally take about 30 minutes and would involve both surveying the roofline itself as well as going over any questions you may have about the program or technology.

BTU Initial Site Survey:

1. A Solar inspector conducts preliminary site survey of the structure using aerial photography.
2. Eligibility requirements include:
 - A. Deed restrictions must not prohibit the installation of solar photovoltaics on property.
 - B. Solar PV array azimuth must be within acceptable limits as put forth in Solar PV Rebate Table.
 - C. Solar PV array tilt must be within acceptable limits as put forth in Solar PV Rebate Table.
 - D. Sun selector plot must show shading to be within acceptable limits.
3. If structure qualifies for the solar program:
 - A. Customer is informed and provided with a summary of the inspection results ("talking points" handout), List of Registered Solar Contractors, Rebate Application, REC Agreement, Solar Program Guidelines, Customer Discussion Points, FAQ's, Helpful

- Websites, Federal Tax Credit Information, Procedures, Cost Benefit Analysis and the DG Tariff Ordinance.
- B. Inspector communicates to customer preliminary recommendations.
 - C. Field inspector enters appropriate survey data in program database.
4. If the structure does not qualify:
- A. Inspector verifies that no trees shown in aerial photos have been removed.
 - B. Inspector verifies that the home has not been modified in a manner that will increase solar window.
 - C. Customer is informed that should the condition of their site change and the solar window is made available they will be able to participate in the rebate program.
5. If the Aerial assessment is inconclusive an on-site survey will be performed.
- A. We have been using the Solar Pathfinder tool to locate the area of maximum efficiency and will continue to improve our methods of obtaining valuable data.
 - B. This is the best time to discuss any questions or concerns you may have, and when the program itself can be reviewed.



The solar altitude determines what angle the sun will rise and fall throughout the year.

Solar Altitude
 Bryan, Texas
 30 41' 18.80" N
 96 22' 19.02" W



The Solar Pathfinder shows what areas of the site are obstructed by trees or other things that would prevent the full amount of sunlight from reaching the panels throughout the year as the sun changes its path.

After the initial site assessment has been performed by BTU, and we have concluded that a Solar PV system would be viable, we will inform you and give you a packet of all of the pertinent information. This will be the best time to begin contacting contractors to obtain pricing and system information. It is a good idea to get multiple quotes from a variety of vendors in order to determine what you will be able to afford and what will work on your home the best.

III. Discussing the requirements and rebate guidelines with your Contractor

The following is a set of guidelines for installation, warranties, the rebate funding and other requirements that should be discussed with your contractor once your site has been evaluated and determined to be a viable location for a solar PV system. The contractor should have a copy of these guidelines as well so that they can go through the information with you at the appropriate time.

Installation and Warranties

- All work must be performed in accordance with all applicable federal, state, and local, manufacturer's codes and standards as well as BTU Interconnection Guidelines.
- Rebate applicants must use a BTU registered installer. A list of registered installers will be found on BTU's website. Installers must be certified by NABCEP (North American Board of Certified Energy Practitioners) within two years of becoming registered with BTU. For details on how to become NABCEP certified, please visit their website.
- Only eligible PV modules qualify for rebates under the BTU program. A list of eligible PV modules and eligible list of inverters is found on the CEC website:
<http://www.gosolarcalifornia.org/equipment/index.html>

***NOTE: BTU is not a manufacturer, supplier or guarantor of the PV system or installers, and BTU, whether by making available a list of registered installers and equipment sources or otherwise, has not made and makes no representations or warranties of any nature, directly or indirectly, express or implied, as to performance of the installer or reliability, performance, durability, condition or quality of the PV system selected and purchased.**

- All PV systems installed must carry a 5-year warranty from the installer in addition to a 10-year manufacturer warranty on inverters in residential applications without battery back-up.
- Licensed electrical contractors must obtain appropriate permits and perform all electrical interconnections.
- All inverters and solar modules must be new.
- PV system installations on flat roof residential structures and all commercial buildings must also obtain appropriate City of Bryan building permits.
- All PV systems must be interconnected, at customer's expense, to BTU's electrical grid. The PV system will comply with current BTU guidelines governing interconnection with BTU electric system, and any subsequent revisions to these guidelines.
- If re-roofing is required, PV system removal and reinstallation is at customer expense.
- Batteries are not covered under the rebate.

Rebate Funding

- Rebate funding is offered on a first-come, first-served basis.
- Participation in the Solar Rebate Program does not affect customer participation in other BTU conservation programs.
- BTU must perform a pre-inspection of the site; results of the pre-inspection will determine rebate eligibility. Solar Pathfinder plot must demonstrate minimal shading by trees, buildings and other structures. BTU retains the right to deny rebates based on excessive shading and or poor orientation of the solar array.
- The requested rebate amount will be calculated as:

$$[\text{Number of PV Modules}] \times [\text{STC Rating per Module (Watts)}] \times [\text{Inverter Efficiency}] \times [\text{\$2.00/W}]$$
- The standard rebate level for qualifying equipment is \$2.00 per Watt. *IRS designated Non-Profits are also eligible for the \$2.00 per watt rebate level.*
- The final rebate level will be determined following verification of the installed system by BTU solar field inspector.

- The maximum rebate per customer is capped at 80% of invoice cost or \$6,000 “per fiscal year” (October – September) for each customer site.
- Customers have the option to assign the rebate directly to the PV system installer/supplier or other third party.
- In custom homes, the rebate check goes to the builder, unless the customer can prove that he or she specified the equipment, in which case the check would go to the customer.
- New construction rebate checks can be issued before the Certificate of Occupancy is released.
- Individual condominium owners applying must obtain Condo Association permission.
- Condo Associations must be connected to a commercial meter.
- Apartments qualify and must be under a single rebate application.

Additional Requirements

- Deed restrictions must not prohibit the installation of solar photovoltaics on the property.
- The customer must transfer to BTU; all renewable energy credits (RECs) and other environmental attributes from power generated by PV systems receiving rebates from BTU. RECs may be retained if the proper documents are submitted proving that the RECs are required to achieve LEED certification. (See BTU Renewable Energy Credit Agreement).
- Customer must have an active BTU electric account number.
- Customers currently participating in the self-read meter program must provide BTU access to the new solar and revenue meters.
- PV system cannot be removed from BTU service territory.
- Customer must sign the rebate refund agreement on the Solar Rebate Application form.
- BTU guidelines and rebate levels are subject to change without notice, and BTU reserves the right to refuse any application/request for incentive payment that does not meet BTU’s requirements.

Refund Agreement

- A refund shall become due and payable to BTU if the customer fails to ensure BTU that the rebated equipment is properly maintained and operated at a BTU metered address.
- The refund will be calculated by reducing the rebate paid by 20% per year for each of the five years following final inspection and approval (first 20% reduction to occur on the anniversary date of rebate payment).

It is your responsibility as a contractor to discuss these points fully with the customer so that they know what is expected of both them as well as you in order to successfully obtain the Solar Rebate.

IV. Before the installation begins: Initial wiring diagram and design specifications

If you decide that you would like to purchase and install a solar PV system, BTU will require a copy of the wiring diagram as well as a document detailing the basic system design including its major components and layout on the property before any of the actual installation process begins. This allows us to properly prepare for any conflicts which may arise, gives us

the details necessary to ensure a system is installed which meets all of the design requirements to be eligible for the rebate, and will speed up the certification process at the completion of the installation. These technical specifications will likely be obtained from your contractor, and by familiarizing yourself with the technical aspects of the system, you will become more aware and informed of the process of converting sunlight to electricity and of the PV system itself.

You can refer to the document Titled “**Bryan Texas Utilities’ Technical Requirements for Distributed Generation Interconnection for Facilities Under 100 kW**”(Appendix A) located in this packet to become familiar with all of the technical and electrical specifications needed for these solar PV systems to be eligible for the rebate incentives. An Example of a generic, completed **Wiring diagram** is included as well. (Appendix B) Any questions regarding these specifications can be directed to the Solar PV Rebate Program at BTU.

V. Installation and Inspection before approval of rebate

The following information will give you a general idea on the order of processes which will likely occur during the installation process. It is important to make sure these steps are followed to ensure the quickest turn around time possible, minimizing hassle for you, the contractor performing the installation, and BTU.

1. Installation

- A. Contractor pulls required permit(s).
- B. Contractor installs PV system and receives approved City inspection(s).
- C. Addresses of all PV installations will be flagged on BTU’s GIS.
- D. Contractor contacts BTU field inspector to schedule final inspection.
- E. Contractor calls BTU Meter Shop to have meter installed.

2. Final Inspection

- A. Field inspector verifies:
 - i. Panel and inverter model numbers.
 - ii. Orientation and tilt of panels.
 - iii. DC side connections.
 - iv. Performs acceptance test per Inspection Guidelines.
 - v. Electrical permit is reviewed.
 - vi. Checks to insure system trips off when power to building is lost.
- B. Field inspector collects:
 - i. Paid customer invoice.
 - ii. Five-year warranty statement.
 - iii. Signed Check Request form.

3. Final Inspection Processing – Please have the following forms ready for BTU by the day that we arrive to complete the final installation.

- A. Field Inspector will review and insure account folder contains:
 - i. Rebate Application – completed and Signed
 - ii. PV module and inverter specification sheets

- iii. Interconnection Agreement – Signed
- iv. REC Agreement – Signed by appropriate parties
- v. Ten-year warranty
- vi. Installation invoice
- vii. Check Request Form - Signed

VI. Procedures after the Final Inspection is completed

If all of the aforementioned requirements are met on the day we complete the Final Inspection, the rebate process will enter into processing. This is the point that the Field Inspector prepares and signs final inspection form and submits account folder to Administrative Assistant for rebate processing. The rebate check will be written and sent to the appropriate parties as soon as it is processed.

We hope that this packet contains all of the information you may need if you do make the decision to implement a solar PV system at your home. The initial cost of these systems is large, but with the growing volatility of the energy market as well as knowing the stability of solar power and its free fuel cost, the benefits of implementing a system can be even larger. The added property value, ability to significantly reduce your utility bills, a conscious awareness of the power you are producing and consuming at any given time, and reduction in your “carbon footprint” are the truly worthwhile benefits of incorporating renewable energy and energy efficiency into your home and lifestyle.



This rooftop Solar PV system is likely large enough to eliminate any utility bill this house would have otherwise!