State Energy Conservation Office (SECO)
Municipally Owned Utility (MOU) or Electric Cooperative (Co-op)
SB-924 Energy Efficiency Report
Data Entry Form

MOU or Co-op:	Bryan Texas Utilities (BTU)
County:	Brazos, Burleson, Robertson
Contact:	Vicki Reim
Contact Title:	Manager, Customer Service & Key Accounts
Address:	P.O. Box 1000
City:	Bryan
Zip:	77805
Phone:	(979) 821-5717
Fax:	(979) 821-5795
E-mail Address:	vreim@btutilities.com

1) Is your MOU or Co-op hereby reporting on energy efficiency as required by SB-924, PURA Sections 39.9051 and 39.9052? [X] Yes [ ] No

2) Energy Efficiency Goals: Please tell us about the goals that your MOU or Co-op has related to energy efficiency:

Instructions: Provide a brief description of your MOU or Co-op's energy efficiency goals for the previous calendar year. Examples may include information about energy efficiency for MOU or Co-op customers or utility facilities. Supplemental information may be provided at your option on any long-term energy efficiency goals that your MOU or Co-op might have. Please use a separate sheet of paper if you need more space.

BTU has a goal to offset more than ten percent of its load growth with energy efficiency. BTU has established energy efficiency goals that include educating customers about energy efficiency and encouraging them to consume energy wisely by offering a variety of energy efficiency programs. BTU has seven rebate programs in place to encourage customers to consider purchasing equipment or installing systems that will, over their lifetime, save energy. The rebates generally offset the increased upfront cost of the more efficient systems. Local contractors also help promote the programs and use the incentive to further educate their clients. Educating customers about energy efficiency is accomplished through the BTU website, print media, direct customer contact via the lobby, phone and key account visits. Specifically print media includes newsletters (bill inserts) and a monthly magazine which is mailed to all BTU customers and includes articles about BTU programs, electric system updates, technology changes and energy conservation tips. Educating youth is also a goal; we accomplish this through an annual calendar contest for elementary students. The calendar includes students artwork, a list of energy tips and important energy related reminders throughout the calendar. BTU employees are out and about in the community presenting to classes and organizations about energy and energy efficiency.

3) Your MOU or Co-op's Energy Efficiency Programs:

Instructions: Input information as applicable; add fields as necessary. For the previous calendar year, please list energy efficiency programs and provide applicable estimated achieved savings – energy

and/or demand, or other program performance metric (for example participation.) Add additional lines as needed.

Energy Efficiency Program	Estimated Energy Savings or	Estimated Demand Savings or	Other Program Performance Metric
HVAC Loan Program		65.52 KW	
Commercial Lighting Rebate Program		78.49 KW	
Residential CFL Rebate Program		16.12 KW	
Residential LED Rebate Program		3.88 KW	
HVAC Rebate Program		648.96 KW	
Solar PV Rebate Program		86.27 KW	
Solar Thermal Rebate Program		2.0 KW	
Reflective Roof Coating Rebate Program			17,450 sq. ft. covered
Totals		901.24 KW	

4) Program Materials / Additional Information

Instructions: Public information about your energy efficiency programs (brochures, website information, etc.) may be attached and provided with this form.

5) Please submit this form to SECO at: SB924.Reporting@cpa.state.tx.us

Commercial Lighting Rebate Program and Rebate Application

Commercial Lighting Rebate Program

Commercial Lighting Guidelines
How to Apply
Site Survey Request
Rebate Application
Requirements

Lighting is the largest portion of a business' energy bill. On the average, interior lighting accounts for 43 percent of a company's energy consumption. However, with advanced lighting technologies, there has never been a better time to upgrade the lighting in your facility, building, or institution.

High-efficiency upgrades can save you energy and money, while improving the light quality and output in your buildings. In many lighting upgrades, you can expect to see a payback on the investment within approximately 12 months.

BTU offers a commercial lighting rebate to encourage businesses to replace old, inefficient equipment with new, qualifying energy-efficient lighting equipment.

Review the guidelines and requirements needed to take advantage of this rebate

This rebate only applies to building improvements or retrofit projects. It is not available for new construction projects.

Get Your Commercial Rebate

- Guidelines for Commercial Lighting Rebate
- How to Apply for a Commercial Lighting Rebate
- Commercial Lighting Site Survey Request
- Commercial Lighting Rebate Application
- Requirements for Commercial Lighting Rebates

Top of Page

Guidelines for Commercial Lighting Rebates

Commercial Lighting Guidelines
How to Apply
Site Survey Request
Rebate Application Requirements

The following guidelines must be met before a BTU Commercial lighting rebate can be approved and processed:

- Pre-site survey is completed
- Application for Commercial Lighting Rebate is signed and completely filled out
- Retrofit is complete within 6 months of site survey and within 4 months of application being received by BTU
- Rebate amount is based upon demand (kW) reduction
- To apply, complete the Commercial Lighting Rebate Application and send the application to:

  BTU
  Commercial Lighting Rebate
  PO Box 1000
  Bryan, TX 77805

How to Apply for a Commercial Lighting Rebate

Commercial Lighting Guidelines
How to Apply
Site Survey Request
Rebate Application
Requirements

If you are interested in applying for a Commercial Lighting Rebate as part of BTU's Green Energy Plus Program, follow these steps to complete the application process:

Complete and submit the online BTU Commercial Lighting Site Survey Request for the proposed lighting retrofit. All Commercial Lighting Site Survey Requests must be completed online. Fill out all fields. Designate one person at your company as the primary contact. Final verification must be given by the primary contact with the authority to sign on behalf of the company.

After completing the site survey request, an electronic confirmation will be sent to the Primary Contact e-mail address provided. BTU will not complete customer-required documentation. If no confirmation is received, please call 979-821-5859.

Upon completion of the site survey request, a BTU representative will contact you and schedule a time to conduct the site survey. The site survey request and the site survey do not guarantee or reserve rebate funds. You will have 6 months from this time to complete the Commercial Lighting Application and complete the lighting retrofit project.

Once the site survey is completed the BTU representative will give you a Commercial Lighting Rebate Application form or direct you online to print the form off. Once the signed, completed application form is received by BTU, you will have 4 months to complete the project and funds will be held during these 4 months. The completed, signed application will need to be faxed to (979) 821-5775 or mailed to:

BTU
Commercial Lighting Rebate
PO BOX 1000
Bryan, TX 77805

Commercial Lighting Site Survey Request

Commercial Lighting Guidelines
How to Apply
Site Survey Request
Rebate Application
Requirements

Name of Business:
Phone:
Contact Name:
Email:
Account #:

Site Information

Type of Business:
Approx. square footage:
Address:
Additional Comments about Property:

Submit Reset

Requirements for Commercial Lighting Rebates

Commercial Lighting Guidelines
How to Apply
Site Survey Request
Rebate Application Requirements

Commercial customers interested in participating in BTU's Green Plus Energy Rebate Program are required to follow these guidelines to ensure eligibility:

- All work must be performed in accordance with all applicable federal, state, local, and manufacturers' codes and standards
- Customer is responsible for the proper disposition of any hazardous wastes (i.e., PCB ballasts, fluorescent lamps, CFLs, etc) in compliance with federal, state, local laws, ordinances, and regulations
- All installed equipment must be new
- Rebate funding is offered on a first-come, first served basis
- Rebates are payable to the commercial customer who is the end user of the new lighting
- BTU Green Plus Rebate programs are subject to change without notice
- Maximum rebate amount of $5000.00

BTU Commercial Lighting Rebate Application

FY2011

- A commercial customer must contact a BTU account manager for a lighting survey of existing facilities.
- A signed BTU Lighting Rebate Application form must be submitted and a pre-site survey completed in order to receive a project approval. **Upon approval**, lighting retrofit may begin.
- No rebate shall be paid until retrofit is 100% complete and customer has submitted rebate request and invoices for equipment and services.
- Customers may elect to self – install lamps
- Ballasts and/ or fixtures replacement must be performed by a licensed electrician.
- All applicable state or city codes must be followed.
- Upon receipt of the rebate request and 100% completion of the project, a BTU account manager will make the final inspection.
- The actual replacement / installation and count of lamps and ballasts will then be confirmed and eligible rebate payment determined.
- Final disposal of old lamps will be the responsibility of the contractor in accordance with local solid waste regulations and disposal of all old ballasts will be in accordance with EPA and TCEQ regulations.
- The rebate amount cannot exceed 50% of cost excluding labor, tax, and shipping charges if the retrofit is over 5kW.
- The number of rebates in a fiscal year is not guaranteed, nor the availability of funds for a rebate.
- Once the budgeted funds are distributed the program is on hold until additional funding is approved.
- Customer has 4 months to complete project and pass inspection.

BTU Commercial Lighting Rebate Application

FY2011

Customer

Name _____ Address _____ Zip _____

Mailing Address (if different) _____ Zip _____

Electric Account # _____ Email Address _____

Day Phone # (____) _____ Wk. Phone # _____

Contact Person _____

BTU Pre-Site Survey Completed ☐ Yes ☐ No Application Review Date _____

BTU Post-Site Survey Completed ☐ Yes ☐ No Application Review Date _____

Upon signing this agreement I understand that I have four (4) months to complete the project and have it pass inspection. If the project is not completed in the four month time frame, I understand that the funds for this project will be released back into the general Commercial Lighting Rebate budget and will be reassigned to the next project in waiting. I also understand and accept that I may reapply for the Commercial Lighting Rebate if the allotted four month time frame has expired, but BTU does not guarantee that funds will be available at anytime. BTU also reserves the right to cancel or change this or any other program at anytime without cause or notice.

Customer's Signature **Date**

As the BTU representative and Program Manager for the Commercial Lighting Rebate Program, I have reviewed the above information have and found it to be correct and true to the best of my knowledge. I have completed a Pre-Site Survey and have approved this site for a Commercial Lighting rebate.

BTU Program Manager's Signature **Date**

BTU Commercial Lighting Program

Lighting can account for 30% to 50% of the average commercial electric consumption. In an ongoing effort to assist BTU customers and reduce KW demand, the Commercial Lighting Rebate Program is designed to assist existing facilities reduce their lighting loads. Through the promotion of upgraded installations and conversions to more efficient lighting, BTU can help commercial customers achieve and benefit from substantial savings in lighting costs. Reduction of lighting load and its heat generation can also result in air conditioning savings to the customer.

HOW THE BTU COMMERCIAL LIGHTING REBATE PROGRAM WORKS

- A commercial customer must contact a BTU account manager for a lighting survey of existing facilities.
- A BTU Lighting Rebate form must be submitted for project approval complete with the customer's signatures. **Upon approval**, lighting retrofit may begin.
- No rebate shall be paid until retrofit is 100% complete and customer has submitted rebate request and invoices for equipment and services.
- Customers may elect to self – install lamps
- Ballasts and/ or fixtures replacement must be preformed by a licensed electrician.
- All applicable state or city codes must be followed.
- Upon receipt of the rebate request and 100% completion of the project, a BTU account manager will make the final inspection.
- The actual replacement / installation and count of lamps and ballasts will then be confirmed and eligible rebate payment determined.
- Final disposal of old lamps will be the responsibility of the contractor in accordance with local solid waste regulations and disposal of all old ballasts will be in accordance with EPA and TEQC regulations.
- The number of rebates in a fiscal year is not guaranteed, nor the availability of funds for a rebate.
- Once the budgeted funds are distributed the program is on hold until additional funding is approved.

BRYAN TEXAS UTILITIES
BTU
THE ENERGY TO SERVE YOU SINCE 1919

BTU
COMMERCIAL LIGHTING REBATE FORM

CUSTOMER INFORMATION:

Name:		
Owner/Manager /Representative:		
BTU Account Number:		
Address:		
City:	**State:**	**Zip:**
Office#:	**Cell#:**	
Email:		
Type of Facility:	**Approx. Sq Ft:**	
Date of Initial Survey:	**Date of Final Survey:**	

Inventory of existing lights:

Style	Size	Total # Lamps	Watt per lamp	Total kW	Hours on a day	Hours on a month	kWh per month	kW Savings	kWh savings per month
Existing									
Total Existing									
New									
Total New									
Savings									

BRYAN TEXAS UTILITIES
BTU
THE ENERGY TO SERVE YOU SINCE 1919

BTU Commercial Lighting Program

Any fixture or lamp:

That is at least 15% more energy efficient than the existing item, must be Energy Star rated, & UL approved

Rebate Calculations:

More efficient fluorescent:
kW saved_____ * $125 = $_____

LED:
kW saved_____ * $175 = $_____

Less than 5kW saved:
Cost of lights $_____ * 25% = $_____

Total Rebate:

Signatures:

Account Manager: _____ Date_____

Division Manager: _____ Date_____

Group Manager: _____ Date_____

- Rebates are subject to change without notice
- All rebates are subject to approval and are contingent upon fund availability
- Limit 6 Rebates per Customer Account per 5 year time frame

BRYAN TEXAS UTILITIES
BTU
THE ENERGY TO SERVE YOU SINCE 1919

CFL Information,

CFL Rebate Program Details and Rebate Application

Green+ Compact Fluorescent Light Bulb Program

CFL Bulb Program
Rebate Application
CFL FAQ
CFL vs Incandescent
Lamp Color

If every American replaced ONE incandescent bulb with a CFL, we would:

Prevent greenhouse gases equivalent to the emissions of 800,000 cars

Save enough energy to power 3 million homes for a year

Save $600 million in annual energy costs

BTU is proud to announce the Compact Fluorescent Lighting (CFL) Rebate Program!

BTU residential customers are eligible to receive a credit on their utility bill by purchasing a qualifying package of CFL bulbs. The credit will equal 25% of the cost of the qualifying CFL bulbs.

Here's how to receive your rebate:

Step 1.

Read about compact fluorescent lighting on our website and determine what type of CFL best fits your needs.

- General Information
- CFL vs. Incandescent
- Lamp Color
- CFL FAQ

Step 2.

Purchase your package of CFIs. Eligible bulbs must be Energy Star rated (the Energy Star logo will be on the package) and purchases must be made from a vendor within the BTU service territory, that includes Bryan, Snook, Kurten. If you're not sure if they are a retailer in the BTU service territory, check with them or email or call us.

Step 3.

Complete the Rebate Voucher that you can download from our website. Rebate Application

Step 4.

Mail or drop-off at the BTU Utility Building the following items to receive a credit on your bill.

- The sales receipt from purchase, which includes: date, retailers name, product description, and price.
- The completed rebate voucher.
- The Energy Star logo from the CFL packaging.

Step 5.

Start enjoying the savings and peace of mind that comes from saving money and helping our Earth!

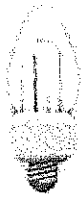
Each BTU residential customer may receive six (6) rebates over a five (5) year period.

Top of Page

BRYAN TEXAS UTILITIES

THE ENERGY TO SERVE YOU SINCE 1919

Compact Fluorescent Light Bulb Rebate Voucher



Account # _____

Name _____

Address

_____

_____

_____

Code # **Date**

CSR **RC**

Date

_____

Email

_____

Phone

_____

Signature

x _____

BRYAN TEXAS UTILITIES

THE ENERGY TO SERVE YOU SINCE 1919

Compact Fluorescent Light Bulb Rebate Voucher

25%

Rebate on any Energy Star Rated Package of CFL Bulbs

Number and Size of Incandescent Bulbs Replaced	Number and Size of CFLs Installed
40watt_____	_____watt_____
60watt_____	_____watt_____
75watt_____	_____watt_____
100watt_____	_____watt_____
150watt_____	_____watt_____
Other_____	_____watt_____

If every American replaced ONE incandescent bulb with a CFL we would:

- Prevent greenhouse gases equivalent to the emissions of 800,000 cars
- Save $600 million in annual energy costs
- Save enough energy to power 3 million homes for a year

- This program is only available to BTU residential customers.
- CFLs must be purchased in the BTU territory.
- The most any one account could receive would be no more than 30 lamps in a 5 year time frame.
- Vouchers only apply to purchases of any quantity of CFLs
- The customer must return the voucher with the proof of purchase and the Energy Star logo off of the product packaging to qualify for the rebate.
- Rebate will be made for 25% of the purchase price of the CFLs

This voucher is good for any quantity of compact fluorescent light bulbs for residential use for Customers of Bryan Texas Utilities only. Voucher has No Cash Value

Green+ Compact Fluorescent FAQ

CFL Bulb Program
Rebate Application
CFL FAQ
CFL vs Incandescent
Lamp Color

How does a compact fluorescent light bulb work?

Fluorescent light bulbs (including compact fluorescents) are more energy-efficient than regular bulbs because of the different method they use to produce light. Regular bulbs (also known as incandescent bulbs) create light by heating a filament inside the bulb; the heat makes the filament white-hot, producing the light that you see. A lot of the energy used to create the heat that lights an incandescent bulb is wasted. A fluorescent bulb, on the other hand, contains a gas that produces invisible ultraviolet light (UV) when the gas is excited by electricity. The UV light hits the white coating inside the fluorescent bulb and the coating changes it into light you can see. Because fluorescent bulbs don't use heat to create light, they are far more energy-efficient than regular incandescent bulbs.

What's the difference between a compact fluorescent light bulb and a fluorescent bulb?

The primary difference is in size; compact fluorescent bulbs are made in special shapes (which require special technologies) to fit in standard household light sockets, like table lamps and ceiling fixtures. In addition, most compact fluorescent lamps have an "integral" ballast that is built into the light bulb, whereas most fluorescent tubes require a separate ballast independent of the bulb. Both types offer energy-efficient light.

What compact fluorescent light bulb do I buy to replace a 60-, 75-, 100- or 150-watt regular bulb? How are the watts calculated?

While a regular (incandescent) light bulb uses heat to produce light, a fluorescent bulb creates light using an entirely different method that is far more energy-efficient — in fact, 4-6 times more efficient. This means that you can buy a 15-watt compact fluorescent bulb that produces the same amount of light as a 60-watt regular incandescent bulb.

Don't worry about the math, though — we make it easy for you to figure out which compact fluorescent bulb to buy by displaying the equivalent regular watts you're used to prominently on the package. Just look for the wattage you would normally buy in a regular bulb.

In case you're curious, here are the watts needed by regular incandescent bulbs and compact fluorescent bulbs to produce the same amount of light.

Standard Bulb	CFL Bulb
60w	13w-15w
75w	20w
100w	26w-29w
150w	38w-42w

Because the wattage of a CFL bulb is much lower than that of an incandescent, you can use higher wattage CFL giving you the equivalent light of a higher wattage incandescent. For example: If your fixture says not to exceed 60 watts, you can use a 15 watt CFL to get the same amount of light as an incandescent bulb or use up to a 42 watt CFL and increase the amount of light.

Can I use a compact fluorescent light bulb with a dimmer switch?

To use a compact fluorescent bulb on a dimmer switch, you must buy a bulb that's specifically made to work with dimmers (check the package).

Can I use a compact fluorescent light bulb on my 3-way lamp?

Check the package for this application. If a regular CFL is used in a 3-way switch, it will work on the middle (medium) setting and it should not damage the bulb.

Why does my compact fluorescent light bulb flicker or appear dim when I first turn it on?

The first compact fluorescent bulbs flickered when they were turned on because it took a few seconds for the ballast to produce enough electricity to excite the gas inside the bulb. Today, CFL technology has improved and the flicker that you used to see should not be a factor. However, CFL's do require a short warm-up period before they reach full brightness, which is why they may appear dim when first turned on. Compact fluorescent bulbs are best used in fixtures that are left on for longer periods of time, rather than in fixtures that are turned off and on frequently.

Can I use a CFL in applications where I will be turning the lights on/off frequently?

Compact fluorescent light bulbs work best if they are left on for more than 15 minutes each time they are turned on. These types of lamps can take up to 3 minutes to warm-up. Warm-up will probably not be noticeable from a users stand point, but the lamp needs to warm-up in order to reach the point of most efficient operation. Frequently switching them on and off will shorten the life of the product. If the life of the lamp is shortened significantly, you will not reap the financial benefits (includes energy & life of lamp), that are common to CFL lamps.

Can I use a CFL in any position?

Yes, CFL bulbs can be used in any operating position unless there is text printed on the lamp or packaging that indicates a required operating position.

Can I use a CFL in applications involving vibration such as a ceiling fan or garage door opener?

Generally it is not recommended to use CFLs in vibrating environments. Vibration can cause the electronics in the CFL to fail. There is one CFL bulb (FLE11) that is available for use in a ceiling fan. Check the package for this application.

Can compact fluorescent bulbs create interference with electronic equipment, such as radios?

Many electronic devices, such as radios, televisions, wireless telephones, and remote controls, use infrared light to transmit signals. Infrequently, these types of electronic devices accidentally interpret the infrared light coming from a compact fluorescent bulb as a signal, causing the electronic device to temporarily malfunction or stop working. (For example, your television might suddenly change channels.) Fortunately, this only happens when light is produced at the same wavelength as the electronic device signals, which is rare.

To reduce the chance of interference, avoid placing compact fluorescent bulbs near these kinds of electronic devices. If interference occurs, move the bulb away from the electronic device, or plug either the light fixture or the electronic device into a different outlet.

Can I use a compact fluorescent light bulb with an electronic timer or photocell (AKA electric eye)?

Some electronic timers and photocells contain parts that are incompatible with compact fluorescent light bulbs; using these bulbs in incompatible products will result in a shorter light bulb life. To find out if an electronic timer or photocell is compatible with compact fluorescent bulbs, check with the manufacturer of the timer or photocell.

Does the EPA recommend the use of CFL bulbs?

Yes. CFLs, when compared with standard incandescent bulbs, offer many benefits. First, they help save energy and money. They use 2/3 less energy than standard incandescent light bulbs, and last up to 10 times longer. Replacing a 60-watt incandescent with a 13-watt CFL can save you at least $30 in energy costs over the life of the bulb. Second, CFLs offer convenience, because they last longer, and come in different sizes and shapes to fit almost any fixture. In addition, CFLs produce about 70% less heat than standard incandescent bulbs, so they're safer to operate and can help cut energy costs associated with home cooling. When shopping, always look for ENERGY STAR qualified CFLs.

Is it true that CFLs contain mercury? Why and how much?

CFLs contain a very small amount of mercury sealed within the glass tubing - an average of 5 milligrams (roughly equivalent to the tip of a ball-point pen). Mercury is an essential, irreplaceable element in CFLs and is what allows the bulb to be an efficient light source. By comparison, older home thermometers contain 500 milligrams of mercury and many manual thermostats contain up to 3000 milligrams. It would take between 100 and 600 CFLs to equal those amounts.

There is currently no substitute for mercury in CFLs; however, manufacturers have taken significant steps to reduce mercury used in their fluorescent lighting products over the past decade.

Should I be concerned about using CFLs in my home or should I take any special precautions?

CFLs are safe to use in your home. No mercury is released when the bulbs are in use and they pose no danger to you or your family when used properly. However, CFLs are made of glass tubing and can break if dropped or roughly handled. Be careful when removing the lamp from its packaging, installing it, or replacing it. Always screw and unscrew the lamp by its base, and never forcefully twist the CFL into a light socket by its tubes. Used CFLs should be disposed of properly.

What do I do with a CFL when it burns out? What is the proper disposal of a CFL bulb?

Follow these guidelines to dispose your CFL properly:

- Like paint, batteries, thermostats, and other hazardous household items, CFLs should be disposed of properly. Do not throw CFLs away in your household garbage if better disposal options exist. To find out what to do first check www.earth911.org (where you can find disposal options by using your zip code) or call 1-877-EARTH911 for local disposal options. Another option is to check directly with your local waste management agency for recycling options and disposal guidelines in your community. Additional information is available at www.lamprecycle.org. Finally, IKEA stores take back used CFLs, and other retailers are currently exploring take back programs.

- If your local waste management agency offers no other disposal options except your household garbage, place the CFL in a plastic bag and seal it before putting it in the trash. If your waste agency incinerates its garbage, you should search a wider geographic area for proper disposal options. Never send a CFL or other mercury containing product to an incinerator.
- ENERGY STAR qualified CFLs have a two-year warranty. If the bulb fails within the warranty period, return it to your retailer.

What should I do if a CFL breaks?

Because there is such a small amount of mercury in CFLs, your greatest risk if a bulb breaks is getting cut from glass shards. Research indicates that there is no immediate health risk to you or your family should a bulb break and it's cleaned up properly. You can minimize any risks by following these proper clean-up and disposal guidelines:

- Sweep up—don't vacuum—all of the glass fragments and fine particles.
- Place broken pieces in a sealed plastic bag and wipe the area with a damp paper towel to pick up any stray shards of glass or fine particles. Put the used towel in the plastic bag as well.
- If weather permits, open windows to allow the room to ventilate.

How much heat (or infrared radiation) is emitted by regular, halogen, and compact fluorescent light bulbs?

Regular light bulbs, known as incandescent bulbs, create light by heating a filament inside the bulb; the heat makes the filament white-hot, producing the light that you see. Halogen light bulbs create light through the same method. Because incandescent and halogen bulbs create light through heat, about 90% of the energy they emit is in the form of heat (also called infrared radiation). To reduce the heat emitted by regular incandescent and halogen light bulbs, use a lower watt bulb (like 60 watts instead of 100).

Fluorescent light bulbs use an entirely different method to create light. Both compact fluorescent bulbs and fluorescent tubes contain a gas that, when excited by electricity, hits a coating inside the fluorescent bulb and emits light. (This makes them far more energy-efficient than regular incandescent bulbs.) The fluorescent bulbs used in your home emit only around 30% of their energy in heat, making them far cooler.

What is the white powder I see inside my fluorescent bulb?

The white powder that you see inside a fluorescent lamp is called phosphor, which is a substance that emits white, visible light whenever it absorbs light waves. Both compact fluorescent bulbs and fluorescent tubes contain a gas that gives off invisible light when excited by electricity. This invisible light travels to the phosphor coating on the bulb, where it is transformed into light visible to the human eye.

Top of Page

Green+ CFL vs Incandescent

CFL Bulb Program
Rebate Application
CFL FAQ
CFL vs Incandescent
Lamp Color

A fluorescent lamp consists of a sealed glass tube. The tube contains a small amount of mercury and an inert gas, like argon, kept under very low pressure. In these electric-discharge lamps, a fluorescing coating on the glass—called phosphor powder—transforms some of the ultraviolet energy generated into light. Fluorescent lamps also require a ballast to start and maintain their operation.

Early fluorescent lamps were sometimes criticized as not producing enough warm colors, making them appear as too white or uncomplimentary to skin tones. A cool white fluorescent lamp has a CRI of 62. But today there are lamps available with CRIs of 80 and above that simulate natural day lighting and incandescent light. They also are available in a variety of CCTs: 2900 to 7000 (about CRI and CCT).

The "T" designation for fluorescent lamps stands for tubular—the shape of the lamp. The number after the "T" gives the diameter of the lamp in eighths of an inch. The T8 lamp—available straight or U-shaped—has become the standard for new construction. It also commonly serves as a retrofit replacement for 40-watt T12 lamps, improving efficacy, CRI, and efficiency.

In some cases, T10 and T9 lamps offer advantages over both T12 and T8 lamps, including higher efficacy, higher CRI values, a wider selection of CCTs, and compatibility with several ballast types.

Then there are T5FT fluorescent lamps. These lamps produce maximum light output at higher ambient temperatures than those that are linear or U-shaped.

Linear fluorescent lamps often are less expensive than compact fluorescent lamps. They can also produce more light, are easier to dim, and last longer.

Cold cathode fluorescent lamps are one of the latest technological advances in fluorescent technology. The "cold" in cold cathode means there is no heating filament in the lamp to heat up the gas. This makes them more efficient. Also, since there's no filament to break, they're ideal for use in rough service environments where a regular lamp may fail. They are often used as backlights in LCD monitors. They are used in exit signs too.

Compact fluorescent lamps (CFLs) are small-diameter fluorescent lamps folded for compactness. There are several styles of CFLs: two-, four-, and six-tube lamps, as well as circular lamps. Some CFLs have the tubes and ballast permanently connected. Others have separate tubes and ballasts.

Some CFLs feature a round adaptor, allowing them to screw into common electrical sockets and making them ideal replacements for incandescent lamps. They last up to 10 times longer than incandescent lamps, and they use about one-fourth the energy, producing 90% less heat.

However, typical 60-100 watt incandescent lamps are no more than 5.3-inches long, while standard CFLs are longer than 6 inches. Therefore, sub-CFLs have been developed. No more than 4.5 inches long, sub-CFLs fit into most incandescent fixtures.

Because of their energy efficiency, brightness, and low heat output, CFLs are also good replacements for halogen lamps in torchieres.

A standard incandescent lamp consists of a fairly large, thin, frosted glass envelope. Inside the glass is an inert gas such as argon and/or nitrogen. At the center of the lamp is a tungsten filament. Electricity heats the filament. The heated tungsten emits visible light in a process called incandescence.

Most standard light bulbs are incandescent lamps. They have a CRI of 100 and CCTs between 2600-3000, making them attractive lighting sources for many applications (about CRI and CCT). However, these bulbs are typically inefficient, converting only about 10% of the energy into light while transforming the rest into heat.

Another type of incandescent lamp is the halogen lamp. Halogen lamps also have a CRI of 100. But they're slightly more energy efficient, and they maintain their light output over time.

A halogen lamp also uses a tungsten filament. However, the filament is encased inside a much smaller quartz envelope. And the gas inside the envelope is from the halogen group. If the temperature is high enough, the halogen gas will combine with tungsten atoms as they evaporate and redeposit them on the filament. This recycling process lets the filament last a lot longer. In addition, it's now possible to run the filament hotter. This means you get more light per unit of energy. Because the quartz envelope is so close to the filament, it becomes about four times hotter than a standard incandescent lamp. As a result of this wasted heat energy, halogen lamps—popular in torchieres—really aren't too energy efficient. The exposed heat from halogen torchieres can also pose a serious fire risk, especially near flammable objects. Today, because of their inefficiency and risk, manufacturers have developed torchieres that can use other lamps, such as compact fluorescent lamps.

Lamps—commonly called light bulbs—produce light. When comparing lamps, it's important to understand the following performance characteristics:

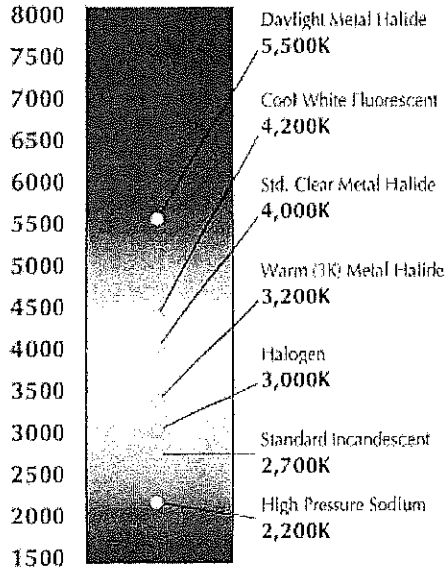
- Color Rendering Index (CRI) — a measurement of a light source's accuracy in rendering different colors when compared to a reference light source with the same correlated color temperature. The highest attainable CRI is 100. Lamps with CRIs above 70 are typically used in office and living environments
- Correlated Color Temperature (CCT) — a measurement on the Kelvin (K) scale that indicates the warmth or coolness of a lamp's color appearance. The higher the color temperature, the cooler the color appearance. Typically, a CCT rating below 3200 K is considered warm, while a rating above 4000 K is considered cool.
- Efficacy — the ratio of light output (lumens) to input power (watts). The higher the efficacy, the more efficient the lamp.

Basically, you should try to use the most efficient lamp possible while maintaining the proper color rendering qualities required by a specific lighting application.

Top of Page

Green+ Lamp Color

CFL Bulb Program
Rebate Application
CFL FAQ
CFL vs Incandescent
Lamp Color



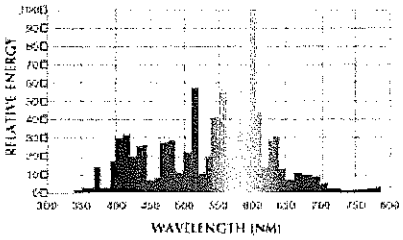
One of the most important attributes of metal halide lamps is their ability to provide crisp white light in a variety of different color temperatures to accommodate users' needs. High pressure sodium and mercury lamps are very limited in the color and quality of light they produce. The colors they generate are often unpleasing or inappropriate for many applications. This helps explain why the use of metal halide lamps continues to increase dramatically each year around the world.

The color of light sources is a complicated relationship deriving from a number of different factors, including Correlated Color Temperature (CCT), Color Rendering Index (CRI), and spectral distribution.

Correlated Color Temperature (CCT)

The first factor in choosing a lamp color is to determine the associated Kelvin temperature. For example, if a retail store wants accent lighting to blend in with warm halogen incandescent lamps, they may choose a Venture MP 100/C/U/27K which has a Correlated Color Temperature (CCT) of 2700 Kelvin. This "temperature" is not simply an arbitrary number, but is correlation with actual thermal temperature. Anyone who has seen a piece of metal being heated will notice that as the temperature of the metal increases, the color of the metal changes. This is a rough explanation of how the CCT of high intensity discharge and fluorescent light sources is measured. CCT is defined as the absolute temperature (expressed in degrees Kelvin) of a theoretical black body whose chromaticity most nearly resembles that of its light source. From this standpoint, the CCT rating is an indication of how "warm" or "cool" the light source is. The higher the number, the cooler the lamp. The lower the number, the warmer the lamp.

TYPICAL SPECTRAL ENERGY DISTRIBUTION
400W, 4000K METAL HALIDE LAMP



Spectral Energy Distribution When we look at a light source, we "perceive" a single color. In reality, we are seeing literally thousands of colors and hues of colors made up of a combination of different wavelengths of light. These different combinations, and the relative intensity of various wavelengths of light, can be used to determine a light source's CRI.

Color Rendering Index (CRI) In general, CRI is an indication of a lamp's ability to show individual colors relative to a standard. This value is derived from a comparison of the lamp's spectral distribution compared to a standard (typically a black body) at the same color temperature.

Incandescent lighting is the only light source that follows a true black body curve. Other sources (i.e. metal halide) are rated with a Correlated Color Temperature (CCT). The CCT, however, does not provide information on the quality of color. For this, a Color Rendering Index (CRI) is also necessary. In general, the higher the CRI rating of a lamp, the better different colors will show. However, this guideline can be misleading with certain lamp types because a high CRI sometimes makes different colors easier to distinguish, but standard colors may appear different than they actually are. The following is an example of how the color "white" may appear under different light sources.

Standard	"Hylux"	Color Corrected
Metal Halide	Metal Halide	White HPS
4000K	5500K	2300K
CRI - 65	CRI - 90	CRI - 90

White is	White is	White is
White	Bluish-green	Yellow

Color Shift and Variation Different colors are achieved in metal halide lamps by using different arc tube designs and by introducing various chemicals inside of the lamp arc tube. New lamps need to have these chemicals "burn-in" for approximately 100 hours before they reach their optimum color and light level. This is why new lamps can sometimes be unstable or vary in color.

As metal halide lamps age, chemical changes occur in the lamp causing shifts in the chromaticity of the lamps. Different lamp designs shift in different ways, and different lamps from the same group may shift in different amounts. Generally, over economic life lamps will shift 200K to 300K in color temperature. After economic life, a lamp may change as much as 500K to 600K. As a group of lamps ages together in a facility, the lamps will generally shift at the same rate causing very little color variation from lamp to lamp. However, if new replacement lamps are introduced into the group of lamps, color differences may be more noticeable, because the new lamps have not aged and shifted with the remainder of lamps. This is just one of the reasons why many users of metal halide lamps prefer to group relamp as opposed to spot relamping. There are many other advantages to group relamping as outlined in the section on group relamping.

The Different Colors The advantage of the many colors of lamps offered by Venture Lighting is that they can be used in virtually any lighting application. Outlined below are the various colors currently available:

27K - 2700 Kelvin	Often used as accent lighting to blend in with fluorescent 2700K applications.
3K - 3200 Kelvin	Used as a primary light source for retail applications.
3700 Kelvin	Coated lamps. Used where a "softer" metal halide light source is desired.
4000 Kelvin:	Used in general lighting; factories: parking lots, warehouses
5K - 5500 Kelvin	Daylight lamps: horticulture, aquariums, high color definition.
Special Colors	Blue, Green, Magenta, Pink, Yellow. Special applications where color is needed without light loss due to filters.

Top of Page

Lighting Changes

The 2007 Energy Bill has regulations concerning Incandescent A-line bulbs. A-line bulbs are the typical light bulbs found in a home. The federal regulations will start to take effect January 1, 2012. The new regulations are:

Current Wattage	New Required Wattage	Effective Date
100W	72W	January 1, 2012
75W	53W	January 1, 2013
60W	43W	January 1, 2014
40W	29W	January 1, 2014

The new regulations require reduced wattage with similar lumen output and 1000 hours minimum life. According to GE representatives, manufacturers will start using the Halogen technology to accomplish the goals set for them by the 2007 Energy Bill. The same GE representatives are expecting the price of the light bulbs to increase as well. They are expecting the price to be equivalent of the current Compact Fluorescent Lamps (CFL). Decorative and Specialty lamps are going to be generally exempted from the requirements put forth by the 2007 Energy Bill.

Another change that is being proposed to the lighting manufacturers is how they label their products. The US Department of Energy is proposing Lighting Facts. More information on Lighting Facts can be found at www.lightingfacts.com. Consumers will need to know some basic lighting terms in order to read the labeling. Packaging for light bulbs is starting to become more complex than grabbing a box of 40W bulbs off the shelf. Manufacturers are starting to put the color temperature, lumen output, CRI, etc. Many of these terms are going to be new to a lot of consumers. Here are some common terms and their definitions that you will need to know as the lighting world conforms to the new regulations and labeling:

Color Temperature or Kelvin Temperature – The temperature of a filament or blackbody that would mimic the color balance—the degree of "warmth" or "coolness" of the source. Yellowish-white sources have lower color temperatures (typically 2800 to 3000 Kelvin for filament lamps); while white and bluish white sources have higher color temperatures. "Daylight" has a color temperature of around 6000 Kelvin.

Lumens – The international unit of luminous flux or "quantity" of light emitted by a source. A "standard" candle emits 13 lumens; a 100-watt incandescent lamp emits 1600 to 1700 lumens.

Color Rendering Index (CRI) – A number assigned to a light source representing how colors look under the light source as compared to a standard source of the same color temperature. CRI's usually range from 0 to 100.

Halogen Lamp – In incandescent filament surrounded by some halogen gas (bromine, iodine.) The halogen participates in a tungsten transport cycle, returning evaporated tungsten to the filament and prolonging lamp life. Halogen lamps come in a bulb made either of quartz or special high-temperature glass.

Incandescent Lamp – A source that emits light from a hot solid object, usually a tungsten or carbon filament heated by an electrical current.

LED (Light Emitting Diode) – A solid that directly converts electrical impulses into light. Some LED's today incorporate fluorescent materials to change the color characteristics of the emitted light

CFL (Compact Fluorescent Lamp) – A general term that applies to families of smaller-diameter fluorescent lamps. SELF-BALLASTED LAMPS (also known as SCREW-IN lamps or INTEGRAL lamps) have built-in ballasts and screw-like bases that allow the lamps to connect directly to the electrical line, typically as replacements for incandescent lamps. PLUG-IN CFL lamps have separately-wired ballasts as well as bulb modules that plug into unique bases designed for specific wattages. Plug-in lamps create "dedicated" sockets and eliminate incandescent relamp.

LED Information and Rebate Application

Green+ Why purchase LED Lighting?

LED Rebate Application

Using LED (Light Emitting Diode) you'll save more than 90% of the energy you would typically use in regular light. Bright and colorful! LED lighting is unlike anything you have seen. The colors are brilliant and vibrant. The whites are dynamic as well and come in warm white and pure white. Plus, the LED's are virtually indestructible and last more than 100,000 hours. (Compare that to your regular incandescent bulbs that only last 2000-3000 hours, if you don't step on them or break them if they drop.) So a set of LED lights can be expected to outlive many incandescent sets, and without any maintenance. The following are some key points about LED lighting.

LEDs produce more light per watt than do incandescent bulbs; this is useful in battery powered or energy-saving devices.

LEDs can emit light of an intended color without the use of color filters that traditional lighting methods require. This is more efficient and can lower initial costs.

The solid package of an LED can be designed to focus its light. Incandescent and fluorescent sources often require an external reflector to collect light and direct it in a usable manner.

When used in applications where dimming is required, LEDs do not change their color tint as the current passing through them is lowered, unlike incandescent lamps, which turn yellow.

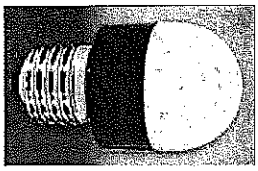
LEDs are ideal for use in applications that are subject to frequent on-off cycling, unlike fluorescent lamps that burn out more quickly when cycled frequently, or HID lamps that require a long time before restarting.

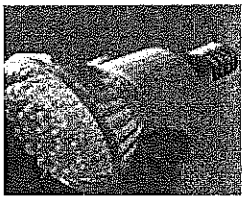
LEDs, being solid state components, are difficult to damage with external shock. Fluorescent and incandescent bulbs are easily broken if dropped on the ground.

LEDs have an extremely long life span. One manufacturer has calculated the ETTF (Estimated Time To Failure) for their LEDs to be between 100,000 and 1,000,000 hours. Fluorescent tubes typically are rated at about 30,000 hours, and incandescent light bulbs at 1,000-2,000 hours.

LEDs mostly fail by dimming over time, rather than the abrupt burn-out of incandescent bulbs.

LEDs are environmentally friendly; they do not contain mercury





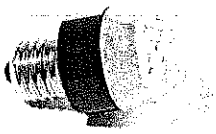
Top of Page

BRYAN TEXAS UTILITIES

BTU

THE ENERGY TO SERVE YOU SINCE 1919

LED
(Light Emitting Diode) Light Bulb Rebate Voucher



Account # _____

Name _____

Address

_____

_____

_____

Code # **Date**

CSR **RC**

Date _____

Email _____

Phone _____

Signature

X _____

BRYAN TEXAS UTILITIES

BTU

THE ENERGY TO SERVE YOU SINCE 1919

LED
(Light Emitting Diode) Light Bulb Rebate Voucher

25% of the purchase price Up to $20.00 Rebate on any Energy Star Rated LED Bulb

Number and Size of Incandescent Bulbs Replaced	Number and Size of LED's Installed
40watt_____	____watt_____
60watt_____	____watt_____
75watt_____	____watt_____
100watt_____	____watt_____
150watt_____	____watt_____
Other_____	____watt_____

- This program is only available to BTU residential customers.
- The most any one account could receive would be no more than 5 vouchers in a 1 year time frame.
- The customer must return the voucher with the proof of purchase and the product specifications off of the packaging to qualify for the rebate.

According to the Department of Energy, in the next 20 years rapid adoption of LED lighting in the U.S. can:

- Reduce electricity demands from lighting by 62 percent.
- Eliminate 258 million metric tons of carbon emissions.
- Avoid building 135 new power plants.
- Anticipate financial savings that could exceed $115 billion.

Benefits of LED's

- Extremely low power consumption-LEDs use a fraction of the power (80% - 90%) required by conventional filament bulbs
- Very efficacious-convert energy to light, not heat
- Extremely long life span (50,000-100,000 hours)
- Durable, insensitive to vibration
- Dimmable and programmable, in many cases
- Super-fast turn-on, unlike compact fluorescents
- Lightweight and compact
- Color, without the use of filters and lenses
- No reflectors are required to direct the light
- Very environmentally friendly—no mercury or other toxics. Recyclable

This voucher is good for LED light bulbs for residential use for Customers of Bryan Texas Utilities only.

Voucher has No Cash Value

Reflective Roof Coating Rebate Program and Application

Reflective Roof Coating Program

Rebate Application
Check Request

QUALIFICATIONS / GUIDELINES

- Must be a BTU electric customer with service to a commercial building.
- Rebate only applies to location with BTU electric service.
- Qualifying businesses must operate a minimum of four (4) consecutive hours daily between 2 p.m. and 8 p.m. weekdays, May 1 through October 31.
- A pre-inspection must be performed by BTU before the new equipment is installed to determine the existing R-value of the roof or verify the existing roof is not reflective.
- The area where insulation or roof coating will be added must be over a mechanically cooled space.
- Roof coating must be applied by a roofing contractor.
- Rebate Application must be completed and turned in to BTU before the new product is installed. The rebate application must be accompanied by the manufacturer's rating information verifying the proposed R-values, rated reflectivity and warranty information within 30 days of purchase.
- All installed roofing materials require a minimum one-year installation warranty and three-year product warranty.
- A BTU representative will schedule an inspection to verify the installation and determine the final rebate amount.
- The customer will receive a rebate check or a credit on their account 4 to 6 weeks from the date of the final inspection.
- The reflectiveness of the coating or the integrated, white, single-ply membrane must be measured by test methods ASTM E424-71, E903-96, C1549-04, E1918-97 or a solar spectrum reflectometer and have a minimum reflectivity of 75%.
- ASTM test result data verifying the 75% reflectivity must accompany the rebate application.

RESTRICTIONS

- Rebates are subject to change without notice
- All rebates are subject to approval and are contingent upon fund availability
- Limit one (1) Reflective Roof Coating Rebate per Customer Account

---

REFLECTIVE ROOF COATING – PARTICIPATION GUIDE

How To Apply For A Rebate

Step 1 – Pre-Qualification Form

Complete and submit a Pre-Qualification Form.
A BTU Representative will contact you to schedule an initial assessment of your facility. Project related documentation, applications and additional energy related saving opportunities will be discussed during the initial assessment.
After you decide which energy conservation measures to install, the next step is to solicit a minimum of three bids and select the appropriate vendors/contractors.

Step 2 - Rebate Application Process & Installation

Existing Construction/Retrofits/Renovations

A Rebate Application accompanied by all required technical documentation on the proposed equipment must be submitted before any new equipment is installed.

BTU must perform a preliminary inspection of your existing facility.

After receiving and reviewing your Rebate Application, you will receive approval to schedule installation of your equipment.

Upon notification of project completion, a BTU representative will schedule a final inspection to verify product application.

New Construction

Rebate Applications must be submitted before 50% of the construction phase is completed. Preferably, rebate applications should be submitted before the new building receives its construction permit through the Development Review and Inspection Department.

Step 3 - Rebate Payments

If your project passes the final inspection, you will receive and sign a Check Request form to process your rebate.

BTU will process your rebate payment based on the installed equipment as documented on your Rebate Application.

All rebates are made payable to the commercial end-user as listed on the Check Request form.

The maximum rebate per customer is $2,500 per fiscal year (October - September) for each customer facility site. The rebate payment for each energy project cannot exceed 50% of the total job cost, including equipment, installation and tax.

You will receive your rebate check 4 to 6 weeks from the date all the required documentation is received and the project has passed the final inspection.

Top of Page

GREEN PLUS PROGRAM

Reflective Roof Coating – Commercial Rebate Application

If you have any questions about this rebate application or any other services provided by our Rebate Program, please call 979-821-5700 or visit our website at www.btutilities.com

BTU Account #			
Installation Address (Street, etc.)	Zip Code	Installation Date	
Social Security # or Tax ID #		Vendor's Name	
Business Name: Contact:	Day Phone #	Vendor's Address	Zip Code
Customer's Mailing Address (if different from above)		Vendor's Representative	Day Phone #
City, State	Zip Code	Facility Name:	

REFLECTIVE ROOF COATING

I certify the existing roof is non-reflective.
BTU Representative Signature:_____Date:_____

Type of Coating: ☐Spray-on ☐Membrane		Manufacturer:
Rated Reflectivity (75% min.):	R-Value (if any):	Rated reflectivity test method: ☐ASTM E-424-71 ☐ASTM E-903-96 ☒ASTM C-1549-04 ☐ASTM E-1918-97 ☐Solar Spectrum Reflectometer Test result data verifying reflectivity and warranty must accompany application.
Total project square footage installed:	Square footage over air conditioned space.	

Rebate Calculation: $0.10 x Roof SF = $Rebate $0.10 x _____ = $_____0.00	***New Construction projects qualify for reflective roof coating rebates.***
BTU Representative Signature:	**Date:**

I certify that the above listed product was installed in accordance with the guidelines and requirements of the Commercial Rebate Program and that all documentation is true and correct to the best of my knowledge.

Vendor/Contractor Signature:_____**Date:**_____

ADDITIONAL CUSTOMER AGREEMENT CLAUSE

As a qualified BTU customer, I understand that the rebate I am applying for will under no circumstance exceed 50% of the installed cost of the work. I also agree to retain all qualifying equipment at the location in which it was originally installed, identified as the "installation address" on this application. The Customer is responsible for maintaining the operational efficiency of all qualifying measures for a period of no less than five (5) years from the date of this agreement. The Customer agrees to allow a BTU Representative to inspect the referenced facility for compliance with this requirement for the duration of this agreement.

Customer Signature:_____**Date:**_____

BTU – Green Plus Program – Commercial Rebate
205 E. 28th Street, Bryan, TX 77845
Phone (979) 821-5700, Fax (979) 821-5775
website: www.btutilities.com

GREEN PLUS PROGRAM

Commercial Rebates

Reflective Roofing Rebate Program

Check Request Form

Office Use Only

File Name: _____ Ref. Number: _____

BTU Rep.: _____ Inspection Date: _____ Rebate Amount: $_____

Square Footage Coated: _____ Cost / kW: _____

Program Coordinator: _____ Review Date: _____

I, (print name)_____agree to have BTU process my Reflective Roofing Rebate Program rebate check and issue the rebate check to me.

THE FOLLOWING MUST BE COMPLETED BY PARTY RECEIVING REBATE

Make Check Payable To: _____

Legal Status: (circle one) Private Individual Corporation Partnership Sole Proprietorship

Federal Tax Identification Number or Social Security Number:_____

Mailing Address:

City: _____ State: _____ Zip Code: _____

Attention: _____

Comments: _____

Customer Signature: _____ Date: _____

Contractor Signature: _____ Date: _____

I certify that the above information is true and correct to the best of my knowledge. In addition, I agree with the rebate amount as listed in the above box.
Your rebate check will arrive 4 to 6 weeks from the inspection date as listed above.

www.btutilities.com

HVAC and Heat Pump Rebate Information and Rebate Application

GREEN PLUS CENTRAL AIR AND HEAT PUMP REBATE PROGRAM

REBATE INFORMATION

- **All installations must be for accounts served by BTU.**
- An application form can be accessed online at www.BTUtilities.com or picked up at BTU main office at 205 E 28th Bryan Texas. Local A/C contractors should have copies as well.

To qualify for a rebate:

- Units must be new and a have a minimum Seasonal Energy Efficiency Rating of **14 or higher**.
- Rebates are for HVAC unit's sized 5 tons or smaller.
- Rebates can be for replacing existing older units and for new construction.
- Both the evaporator coil (inside unit) and the condensing unit (outside unit) must be replaced as a matching system as rated in the Air-Conditioning & Refrigeration Institute directory. **The A.R.I. reference number must be noted on the application.**
- A/C replacement must be sized to at least 12,000 Btu's (1 Ton) for every 500 square feet of conditioned space.
- A/C equipment model, serial numbers and **Job Permit Number** should be provided by the installer and disclosed on the application form. *Job Permit numbers are not required outside of the Bryan city limits.*
- Once the application is completely filled out, including required signatures, either deliver the application to our BTU Office at 205 E 28th Street, Bryan, Texas or mail it to PO Box 1000 Bryan, TX 77805, Attn: **HVAC rebate program**.
- BTU reserves the right to schedule a time to meet with you to inspect the HVAC system before issuing the rebate.
- Once all requirements are met, the rebate check will be mailed **directly to you** within three to four weeks. Max rebate per location is $2600.00

Central Air and Heat Pump Rebates

SEER RATING	14	15	16	18 & up
Central A/C Rebate	$200	$400	$500	$600
Heat Pump Rebate	$250	$450	$550	$650

Central Air Conditioning and Heat Pump Rebate Program

Today's energy efficient air conditioners use as much as 40% less electricity than older models. This reduced consumption results in major savings, with the same or greater levels of comfort. If an air conditioning unit is 10 years or older it is likely an upgrade to a new more efficient system will save money on your monthly electric bills.

BTU offer rebates to customers who install high efficiency HVAC equipment and do not require you have an energy audit to qualify.

What can be rebated?

Central Split Systems and Heat Pumps (14 SEER or greater)

What does SEER/EER mean?

The Seasonal Energy Efficiency Ratio, or SEER, is the measure of a unit's average energy efficiency over a cooling season. In January 2006, the federal energy-efficiency standard for new equipment changed from 10.0 SEER to 13.0 SEER. Units manufactured after January 23, 2006 must have a SEER rating of 13.0 or higher. While 13.0 SEER equipment may be more efficient than your current system, it is now considered standard efficiency.

Energy Efficiency Ratio (EER) is a measurement of how energy-efficient an air conditioner remains at high outdoor temperatures and persistent use. Many central air conditioners do not operate efficiently at high outdoor temperatures (95°F and above). A high EER rating ensures that your unit is operating efficiently at all temperatures.

The SEER is defined as the total cooling output (in British thermal units or Btu) provided by the unit during its normal annual usage period divided by its total energy input (in watt-hours) during the same period.

To calculate for EER, take the Btu's divide by the number of watts consumed by the unit. So for a 12,000 Btu unit that consumes 1200 watts, the EER is a 10.

What is a Central Air Conditioning system?

Central air conditioners circulate cool air through a system of supply and return ducts. Supply ducts and registers (i.e., openings in the walls, floors, or ceilings covered by grills) carry cooled air from the air conditioner to the home. This cooled air becomes warmer as it circulates through the home; then it flows back to the central air conditioner through return ducts and registers.

Air conditioners help to dehumidify the incoming air, but in extremely humid climates or in cases where the air conditioner is oversized, it may not achieve a low humidity.

Running a dehumidifier in your air conditioned home will increase your energy use, both for the dehumidifier itself and because the air conditioner will require more energy to cool your house.

Types of Central Air Conditioners

A central air conditioner is either a split-system unit or a packaged unit.

In a split-system central air conditioner, an outdoor metal cabinet contains the condenser and compressor, and an indoor cabinet contains the evaporator. In many split-system air conditioners, this indoor cabinet also contains a furnace or the indoor part of a heat pump. The air conditioner's evaporator coil is installed in the cabinet or main supply duct of this furnace or heat pump. If your home already has a furnace but no air conditioner, a split-system is the most economical central air conditioner to install.

In a packaged central air conditioner, the evaporator, condenser, and compressor are all located in one cabinet, which usually is placed on a roof or on a concrete slab next to the house's foundation. This type of air conditioner also is used in small commercial buildings. Air supply and return ducts come from indoors through the home's exterior wall or roof to connect with the packaged air conditioner, which is usually located outdoors. Packaged air conditioners often include electric heating coils or a natural gas furnace. This combination of air conditioner and central heater eliminates the need for a separate furnace indoors.

What are Heat Pumps and are they more efficient?

Three types of heat pumps are typically available for residences: (1) air-to-air, (2) water source, and (3) ground source. Heat pumps collect heat from the air, water, or ground outside your home and concentrate it for use inside. Heat pumps operate in reverse to cool your home by collecting the heat inside your house and effectively pumping it outside. Heat pumps have both heating and cooling ratings-both in terms of capacity and efficiency. Capacity ratings are generally in British thermal unit (Btu) per hour or tons (one ton equals 12,000 Btu/hr). Heating efficiency for air source heat pumps is indicated by the heating season performance factor (HSPF). The HSPF tells you the ratio of the seasonal heating output in Btu's divided by the seasonal power consumption in Watt-hours. A heat pump can supply 2 to 3 times as much heat as it consumes in electricity because it moves energy from outside to inside (or vice versa). Heat pump efficiency varies with outdoor temperature. The performance of an air source heat pump in heating mode decreases with the drop in outside air temperature. The actual seasonal efficiency (as opposed to the rating) is therefore higher in a mild climate than in a severe cold climate. In the cooling mode, a heat pump operates exactly like a central air conditioner. The seasonal energy efficiency ratio (SEER) is analogous to the HSPF but tells you the seasonal cooling performance.

Why Buy Energy Efficient Heat Pumps?

If you use electricity to heat your home, consider installing an energy-efficient heat pump system. Heat pumps are the most efficient form of electric heating in mild and moderate climates, providing two to three times more heating than the equivalent amount of energy they consume in electricity. Air source heat pumps are recommended for mild and moderate climate regions, where the winter temperatures usually remain above 30°F. Ground source (also known as geothermal) heat pumps are more efficient and economical to operate when compared to conventional air source heat pumps, especially in climates with similar heating and cooling loads.

Does my HVAC system need Maintenance?

There are some other very good reasons to properly maintain your HVAC system, including:

- Lower utility costs.
- Increase the service life of the HVAC equipment (reduce replacement costs).
- Greater comfort for the building's occupants.

Common best practices for maintaining an HVAC system are as follows:

Select Best Filter Capacity

Replace Filters (every month)'

Clean Evaporator and Condenser Coils (once or twice a year)

Fix Leaks in Cabinet and Supply Duct (annually)

Clean and Adjust Dampers (annually)

Inspect Fan, Bearings and Belts (twice annually)

Clean Air Ducts (Inspect every 2 years)

BTU HVAC REBATE APPLICATION

Green Plus Program - Residential and Commercial Rebate

If you have any questions about this rebate application please call 979-821-5715 or visit www.btutilities.com

CUSTOMER INFORMATION Electric Account Number:	Email:
Customer Name / Business Name:	Day Phone:
Contact Name:	Cell Phone:
Installation Address (No.; Street; City; Zip)	What time and day is most convenient for you to meet with a BTU inspector? (please circle one) M T W TH F Morning (9-12) Afternoon (1-4)
Mailing Address (if different from above):	
Installation Date:	Building Permit No. (required in city limits)
VENDOR / INSTALLER INFORMATION Vendor's Name:	Phone:
Vendor's Representative	Alt. Phone:
Vendor's Address:	**ARI Reference Number:** (please attach ARI certificate if you have one)

REQUIREMENTS: * units eligible for rebates are those installed after January 1, 2010

* Both the condenser unit (outside) and evaporator coil (inside) must be replaced at the same time.
* Minimum of a 14 - SEER unit must be installed. * Max rebate per location of $2600.00
* Each individual unit installed must not exceed 5 tons or 60,000 btu's.
* A minimum of 500 square feet must be cooled for every one ton of A/C. Said another way, 4 tons of a/c cooling a 2000 square foot home will qualify for a rebate while 5 tons cooling 2000 square feet would not. * Window units and pre-fabricated homes are not eligible.

REBATE AMOUNTS:	**14 Seer**	**15 Seer**	**16 Seer**	**18 + Seer**
Central air conditioner	$ 200.00	$ 400.00	$ 500.00	$ 600.00
Heat Pump	$ 250.00	$ 450.00	$ 550.00	$ 650.00

Conditioned Area Square Footage:

Type of Heating (circle one): Electric Gas / Propane Heat Pump

Unit location (circle): Roof Attic Ground

# of units	Brand	Condenser Model #	Tons	SEER	Evaporator Coil #	HVAC Cost $

Customer Signature: **Date:**

(As a qualified BTU customer, I agree to allow a BTU representative to inspect the referenced facility for compliance with this application)

BTU Comments

Processor

Solar PV Information, Rebate Program Requirements and Rebate Application

Green+ Solar Photovoltaics

Solar Photovoltaics
Survey Request
PV Technical Requirements
PV Choosing a Contractor
Registered Contractor Requirements
List of Certified Installers
DG Agreement
REC Agreement
Solar PV Rebate Application

The Residential Solar PV Rebate Program is now open for the Fiscal Year 2011.

The BTU fiscal year runs from Oct 1, thru Sept 30.

Please read through the Solar Photovoltaic (PV) Rebate Program Guidelines Document at this link to about learn new changes to the BTU Solar Rebate program!

BTU has allotted additional funding for the 2011 Solar PV Rebate Program and we will begin accepting applications immediately. Please be aware that the rebate has changed to $2.00 per A/C watt installed with a 3kW maximum.

Another important program change is that each customer may be issued only one solar PV rebate regardless of the size of the installed system. This is a change from the recurring rebates each fiscal year for larger (>3kW) systems. Therefore, multiple rebates per customer will no longer be processed for the solar program.

All applications must be submitted on the new form to be considered for the rebate. All other rules and guidelines of the BTU Solar PV Rebate Program apply and can be found here on our website, www.btutilities.com

When completed applications and required documentation are submitted, customers are given four months to complete their solar installation. Applications and documentation are time and date stamped when we receive them.

If projects are not completed within the four month period, those reserved funds are again available for the next complete project submitted.

Projects are approved based on the paperwork submitted. It is reviewed for accuracy and that it is complete.

The program works on a "First Come, First Serve Basis".

Please check back on the BTU website www.btutilities.com for an updated status report on the program.

For more information please contact Allen Wood at: awood@btutilities.com or call 979-821-5753

Use the Sun's Energy to produce Electricity through Solar Photovoltaic (PV)

BTU is excited to announce the Green Plus PV rebate. We strive to be environmentally responsible and have decided to help customers implement solar photovoltaic technology in their homes and businesses. The rebates will be great enough to offset a significant portion of the cost for installing a solar photovoltaic electric system. This program is open to any BTU customer.

The rebate we are offering is highly competitive with other offerings nationwide. The rebate amount of $2.00 per watt will easily cover between 30% and 60% of the cost to install a system. In addition to a Distributed Generation contract this can substantially improve the Return on Investment in the majority of cases.

For a typical residence, the cost of installing a one kilowatt (1,000 watts) solar photovoltaic system—the smallest considered practical—is between $5,000 and $8,000. BTU will rebate up to $2,000 ($2.00 x 1,000 watts) ** of that amount. Installation costs can vary and only a BTU authorized installer will be able to perform the work in order to receive the rebate.

The current max rebate amount for PV is 3000 Watts @ $2.00 per AC watts installed rebate will not cover more than 80% of the installation costs.

** Rebates are based on system Efficiency

Credit for Excess Solar Power

BTU customers with solar energy systems continue to receive electricity as needed from the BTU electric grid.

BTU will provide "net billing" for customers on solar energy systems. Should a solar energy system produce more power at any given moment than the property consumes, the extra power will flow into the BTU electric grid.

If in any month a solar energy system sends more power into the BTU grid than the homes takes from the grid, the difference or net will result in a credit on the customer's electric bill. The credit will be determined by multiplying the net kilowatt-hours (kWh) of electricity fed into the grid by their current electric rate.

Maintenance & Warranties for Solar Energy Systems

Solar energy systems are easy to maintain because they have no moving parts. Solar panels can also be added to an existing system to increase its power capacity.

Solar energy system modules typically carry 20-30 year warranties. Your system inverter typically carries a 5-year warranty. The BTU Solar Rebate program requires that all solar systems installed carry a 5-year warranty in addition to a 10 -year manufacturer warranty on inverters in residential applications without battery back-up.

I. Introduction

This Informational packet is intended to discuss and clarify Solar PV System installation guidelines you will need to know. 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 a preliminary site survey of your property. We will be able to determine from this preliminary site assessment whether or not a solar PV system would be effective at your location. Also the site survey will locate 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.

BTU Initial Site Survey:

A Solar inspector conducts a preliminary site survey of the structure using aerial photography and a number of different tools such as a Solar Pathfinder.

This can be done by BTU or a contractor.

Eligibility requirements include:

Deed restrictions must not prohibit the installation of solar photovoltaics on the property.

Solar PV array azimuth must be within acceptable limits as put forth in Solar PV Rebate Table.

Solar PV array tilt must be within acceptable limits as put forth is Solar PV Rebate Table.

Sun selector plot must show shading to be within acceptable limits.

If structure qualifies for the solar program:

Customer is informed and a List of Registered Solar Contractors, Rebate Application, REC Agreement, Solar Program Guidelines, FAQ's, Helpful Websites.

Inspector communicates to customer preliminary recommendations.

If the structure does not qualify:

Inspector verifies that no trees shown in aerial photos have been removed.

Inspector verifies that the home has not been modified in a manner that will increase solar window.

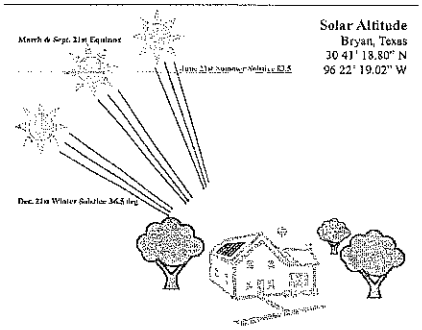
Customer is informed that should the condition of their site change and the solar window is made available they will be able to participate in the rebate program.

If the Aerial assessment is inconclusive an on-site survey will be performed.

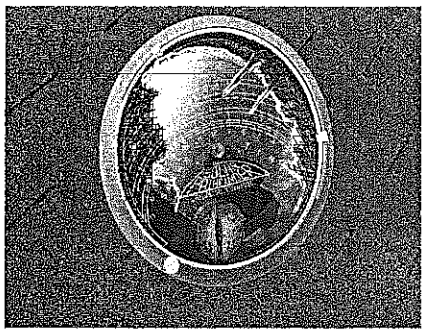
BTU uses the Solar Pathfinder tool to locate the area of maximum efficiency and will continue to improve our methods of obtaining valuable data.

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. 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.



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



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, 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.

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/

*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 warrantee 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 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.

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:

[Number of PV Modules] x [STC Rating per Module (Watts)] x [Inverter Efficiency] x [$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.

New construction rebate checks cannot be issued before the Certificate of Occupancy is released.

Individual condominium owners applying must obtain Condo Association permission.

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 turnaround time possible, minimizing hassle for you, the contractor performing the installation, and BTU.

Installation

Contractor must submit all diagrams and wiring specs per to any work being done.

Contractor pulls required permit(s).

Contractor installs PV system and receives approved City inspection(s).

Addresses of all PV installations will be flagged on BTU's GIS.

Contractor contacts BTU field inspector to schedule final inspection.

Final Inspection

Field inspector verifies:

Panel and inverter model numbers.

Orientation and tilt of panels.

DC side connections.

Performs acceptance test per Inspection Guidelines.

Electrical permit is reviewed.

Checks to insure system trips off when power to building is lost.

Field inspector collects:

Paid customer invoice.

Five-year warranty statement

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

Field Inspector will review and insure account folder contains:

Rebate Application – completed and Signed

PV module and inverter specification sheets

Interconnection Agreement – Signed

REC Agreement – Signed by appropriate parties

Ten-year warranty

Installation invoice

Check Request Form - Signed

VI. Procedures after the Final Inspection is completed

If all of the aforementioned requirements are met on the day BTU completes 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 for rebate processing. The rebate check will be written and sent 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. 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.

Top of Page

BRYAN TEXAS UTILITIES

BTU

THE ENERGY TO SERVE YOU SINCE 1919

Green + Energy Efficiency & Conservation

AGREEMENT FOR INTERCONNECTION AND PARALLEL OPERATION OF COGENERATION OR SMALL POWER PRODUCTION INSTALLATION 100KW OR LESS

CUSTOMER: _____ TELEPHONE: _____

PRODUCER'S GENERATING INSTALLATION: The generating installation to which this agreement applies is described as follows:

Type of Distributed Generation System: _____

Make: _____

Model: _____

Serial Number: _____

Fuel or Energy Source: _____

Operating Voltage: _____

Rated kW or Wattage: _____

Connection: Grid Tie

Installation Address: _____

_____

Requested Date of Interconnection: _____

RECITALS

THIS AGREEMENT is entered into by and between Bryan Texas Utilities, ("BTU") and the above named customer ("Customer").

BTU owns and operates a municipal electric utility engaged in the generation, transmission and distribution of electricity serving the City of Bryan, Texas and portions of Brazos, Robertson and Burleson Counties, Texas; and

Customer intends to construct, own, operate, maintain and connect to BTU's electric distribution system, an on-site distributed generation facility with a maximum capacity of 100 kW (the "DG System").

The parties hereto wish to contract for the purchase and sale of the net electrical output from the distributed generation facility, and the terms of its interconnection with the BTU electric distribution system.

AGREEMENT

THEREFORE, in consideration of the mutual covenants and agreements herein contained, the parties hereby contract and agree with each other as follows:

1. This Agreement shall be effective as of the latter date of execution of the two parties (the "Effective Date") and, subject to the other terms of this Agreement, shall continue in effect for a period of one (1) year, and if not earlier terminated this Agreement will be extended automatically for periods of one (1) year. Either party may terminate the contract with a sixty (60) day written notice of termination to the other party. BTU also may terminate this Agreement by written notice immediately upon (a) the failure or breach of any covenant, warranty or representation given by Customer in this Agreement, or (b) a

material change, as determined by BTU in its sole discretion, in a rule or statute applicable to this Agreement.

2. Customer shall disconnect all Customer owned facilities which tie to BTU equipment upon the termination of this Agreement. After such termination and disconnection, Customer shall not reconnect any Customer facilities to BTU equipment unless Customer and BTU jointly have executed a separate Agreement for the Interconnection and Parallel Operation of Cogeneration or Small Power Production Installation.

3. The DG System will be installed at Customer's premises at the address specified above. The DG System shall not have a generation capacity greater than 100kW. Customer shall install, operate and maintain the DG System. The DG System shall be in full and faithful compliance with all applicable federal, state and local laws, ordinances, rules and regulations, and generally accepted industry codes and standards, including, but not limited to, the National Electrical Safety Code. Customer shall promptly notify BTU upon receipt of any citation or other official notice of alleged violation of law concerning the DG System.

4. Customer warrants and represents that:

- The nameplate rating, generation capacity, voltage and output current of the DG System are as specified above;
- when a DG System Power Conditioning Unit (also referred to as an "inverter") is installed as part of the system, photovoltaic modules and other electrical components and devices meet National Electric Code standards;
- The DG System has passed inspection by the building inspection department of the applicable municipality, county or other political subdivision having jurisdiction, and is compliant with all applicable building codes. The Customer is responsible for obtaining these inspections;
- All equipment used in the DG System and the interconnection with BTU's system has been pre-certified in accordance with PUC Substantive Rules §§ 25.211 and 25.212; and
- All permits, approvals, and/or licenses necessary for the installation or operation of the DG System will be obtained prior to its connection to BTU's electric system; the inverter is UL 1741 listed.

Customer shall provide to BTU, prior to Customer's connecting its facilities to BTU's electric system and from time to time during this Agreement as requested by BTU, manufacturer's data or other written proof acceptable to BTU, and any other information requested by BTU, to verify the accuracy of the foregoing warranties and representations. If any of foregoing warranties and representations should prove to be untrue, or if Customer fails to provide the information requested by BTU, BTU may, in addition to any another available right or remedy, immediately disconnect the DG System from BTU's electric system and terminate this Agreement.

5. BTU will purchase from Customer, and Customer will sell exclusively to BTU the Net Electrical Output made available to BTU at the point of delivery from the DG System. "Net Electrical Output" shall mean the total amount of electricity delivered into the BTU electric system by the DG System less the amount of electricity consumed by Customer as measured at the point of delivery. The point of delivery to BTU for electric power generated by the DG System shall be at the BTU meter. During the term of this Agreement, Customer shall exclusively purchase from BTU its requirements of electricity above the amounts generated by the DG System.

6. BTU shall measure the electricity flow between the DG System and BTU's electric system using BTU installed and owned metering equipment which measures both electricity delivered by the DG System into BTU's electric system and the electricity consumed by Customer from BTU's electric system. The metering equipment will therefore measure the Net Electrical Output of the DG System delivered to BTU, or if Customer's requirements of electricity exceed the amount generated by the DG System, the net amount of electricity being delivered by BTU to Customer. BTU shall read the metering equipment in

accordance with its normal meter reading schedule and procedures.

7. BTU shall pay Customer for the Net Electrical Output at BTU's avoided cost, i.e. the cost per kilowatt hour which, but for the purchase of electricity from the DG System, BTU would incur to purchase that amount of electricity from another source or generate such electricity itself. For determining the cost of generating such electricity itself, BTU's applicable fuel costs shall be the applicable fuel charge for the Customer for that billing period. At BTU's option, BTU will credit the value of all electricity purchased from the Customer's qualifying facility against the bill for service rendered following receipt of the Customer's meter reading for the billing period, or pay the Customer for all electricity purchased from the Customer's qualifying facility within thirty (30) days from receipt of the Customer's meter reading(s) for the billing period, when the amount equals or exceeds $5.00. If in any billing period, Customer's electric load exceeds the output of the DG System such that Customer is a net purchaser of electricity from BTU, Customer shall pay for such electricity at the applicable rates and in accordance with the terms set forth in the Electric Service Agreement, Rate Schedules, and Rules and Regulations then in effect for electric service Customers in like circumstances. If, upon termination of this Agreement, a credit balance exists on Customer's electric utility account, BTU shall pay Customer the amount of such credit balance within thirty (30) days after termination.

8. Customer shall be solely responsible for the design, installation, operation, maintenance, and repair of the DG System and Customer's interconnection facilities. The interconnection of the DG System to BTU's electrical distribution system shall comply with BTU's ***Technical Requirements For Distributed Generation Interconnection for facilities under 100kW***, attached here to as Exhibit A. Customer shall supply BTU with the technical data and operating scheme of the DG System, preferably prior to Customer's purchase of the DG System, but in any event at a minimum of four (4) weeks prior to installation. BTU may inspect the DG System and the interconnection equipment after the requested date of interconnection. Prior to setting the meter, BTU will phase-in the service at the meter. BTU shall not be required to take or pay for any electricity generated by the DG System until the DG System successfully passes BTU's field inspection and Customer shall have reimbursed BTU for all its interconnection costs.

9. **Customer shall be responsible for the costs of the interconnection facility and shall pay all interconnection costs of BTU. These costs shall include without limitation the cost to install all necessary facilities at the time of interconnection or at some future time, and for any system protection facilities which, in BTU's sole opinion, may be required or prudent in order to interconnect with the DG System and protect the BTU electric system due to electricity flow from Customer's equipment into the BTU system.** BTU shall provide to Customer a completed Cost Sheet substantially in the form attached hereto as Exhibit B that estimates the costs involved in providing the interconnection after Customer provides BTU with all service plans, a list of DG System equipment, and the proposed operating scheme.

10. BTU shall not be obligated to accept, and shall have the right to require Customer to temporarily curtail, interrupt, or reduce customer generation and deliveries of electricity in order to construct, install, maintain, repair, replace, remove, investigate, inspect, or test any part of BTU's interconnection facilities, equipment, or any other part of BTU's electric system. BTU may disconnect, without notice, the DG System from the electric distribution system, if, in BTU's opinion, a hazardous condition exists and such immediate action is necessary to protect persons, BTU's facilities or other customers' facilities from damage or interference caused by Customer's DG System or lack of properly operating protective devices.

11. Customer hereby grants BTU access on and across its property to inspect the DG System and the interconnection equipment, to read or test meters and metering equipment, to operate, maintain and repair BTU's facilities and to disconnect the DG system from BTU's electric system, as outlined in paragraph 10 above. No inspection by BTU of the DG System or the interconnection facilities shall impose on BTU any liability or responsibility for the operation, safety or maintenance of the DG System or Customer's interconnection facilities.

12. Any renewable energy credits associated with the DG System granted pursuant to the PUC program contained in PUC Substantive Rule § 25.173 or any similar or successor program ("**RECs**") shall be and are the sole property of BTU, and Customer hereby grants all of its right, title and interest to any current or future RECs associated with the DG System to BTU. BTU shall install and own the metering equipment necessary to measure the amount of electricity generated by the DG System. BTU shall read the metering equipment in accordance with its normal meter reading schedule and procedures.

13. **CUSTOMER SHALL INDEMNIFY, DEFEND AND SAVE HARMLESS BTU, ITS ELECTED AND NON-ELECTED OFFICIALS, OFFICERS, AGENTS AND EMPLOYEES FROM AND AGAINST ANY AND ALL LOSSES, CLAIMS, DAMAGES, ACTIONS, SUITS OR DEMANDS FOR DAMAGES (INCLUDING COSTS AND ATTORNEY'S FEES, BOTH AT TRIAL AND ON APPEAL) ARISING OUT OF, RESULTING FROM, OR IN ANY MANNER CONNECTED WITH THE BREACH OF ANY COVENANT, WARRANTY OR REPRESENTATION MADE BY CUSTOMER IN THIS AGREEMENT, OR IN ANY MANNER CONNECTED WITH THE DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE OR REPAIR OF ANY PART OF CUSTOMER'S DG SYSTEM OR INTERCONNECTION FACILITIES, INCLUDING, WITHOUT LIMITATION LOSSES, CLAIMS, DAMAGES, ACTIONS, SUITS OR DEMANDS FOR DAMAGES FOR OR ON ACCOUNT OF PERSONAL INJURY TO, OR DEATH OF, ANY PERSON, OR DAMAGE TO, OR DESTRUCTION OR LOSS OF, PROPERTY BELONGING TO CUSTOMER, BTU OR ANY THIRD PERSON.**

14. A material failure of either party to fully, faithfully and timely perform its obligations under this Agreement shall be a breach of this Agreement. In the event of a breach which is not cured within thirty (30) days after receipt of written notice by the party in default, the party not in default immediately may terminate this Agreement. If Customer fails to make any payment due hereunder, or is otherwise in breach of this Agreement, and such breach continues for thirty (30) days after receipt of written demand from BTU, BTU immediately may disconnect the DG System or otherwise suspend taking electricity from Customer. If the service is disconnected for any reason, prior to reconnection Customer is responsible for all changes necessary to bring the equipment service up to standards set forth and/or referred to in this DG Agreement, including without limitation the requirement that Customer obtain any necessary permits or inspections for Customer equipment. All rights granted under this section are in addition to all other rights or remedies available at law or under this Agreement or the applicable BTU Electric Service Agreement, Rate Schedules and Rules and Regulations in effect.

15. This Agreement shall inure to the benefit of and be binding upon the heirs, successors, or permitted assigns of each of the parties hereto. Customer may not assign this Agreement without the prior written consent of BTU, which consent may be withheld in BTU's sole discretion. Any assignment without such consent shall be null and void. This contract is non-transferable to subsequent owners or tenants of the property and/or facility covered by this Agreement.

16. This Agreement constitutes the entire agreement and understanding between the parties hereto and can be amended only by agreement between the parties in writing. In the event any provision of this Agreement, or any part or portion thereof, shall be held to be invalid, void or otherwise unenforceable, such unenforceable provision shall have no effect on the remaining provisions of this Agreement and shall be enforced to the maximum extent allowed by law.

17. The failure of either Party to insist in any one or more instances upon strict performance of any provisions of this Agreement, or to take advantage of any of its rights hereunder, shall not be construed as a waiver of any such provision or the relinquishment of any such right or any other right hereunder.

18. This Agreement and all disputes arising hereunder shall be governed by the laws of the State of Texas. Venue for all such disputes shall be proper and lie exclusively in Brazos County, Texas.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the parties hereto have caused their names to appear below, signed by their authorized representatives.

BTU		**CUSTOMER**	
By:	_____	By:	_____
Name:	_____	Name:	_____
Title:	_____	Title:	_____
Date:	_____	Date:	_____

BRYAN TEXAS UTILITIES

BTU

THE ENERGY TO SERVE YOU SINCE 1919

Green + Energy Efficiency & Conservation

Solar PV Rebate Program

Renewable Energy Credit
Assignment Agreement

Under the State's renewable energy goals program, a Renewable Energy Credit (REC) represents the environmental attributes of one thousand kWh of electricity produced by a renewable resource (such as solar or wind). A REC is the commodity used by electric providers in Texas to account for their participation the State's renewal energy goals program. BTU has made a voluntary commitment to the State of Texas to accumulate and register RECs equal to its sales of renewable energy products.

RECs will be generated by your renewable energy system. For example, a three (3) kW solar system generally produces about 4400 kWh of renewable energy annually (for an optimal system), making the current value of the RECs on the open market approximately $50 per year. RECs can be sold on the open market and transferred. You are being asked to assign the RECs generated by your solar system to BTU in order to receive the solar rebate incentive. The RECs will be aggregated with those of other participants in the Solar Rebate Program. They will be used by BTU to meet its voluntary participation commitments to the State's program and in turn, your assignment will benefit all BTU customers.

By signing the REC Assignment Agreement, you are agreeing to assign the RECs generated by your solar system to Bryan Texas Utilities (BTU) in consideration for receipt of a rebate.

I _____(please print) acknowledge that I have read the above explanation and understand by signing this agreement that I agree to assign the RECs generated by my solar system at a meter within BTU's certificated area to BTU in consideration for any solar rebate incentive provided to me.

_____ _____

Customer Signature Company Name (*if applicable*)

_____

Installation Address

_____

Date

Renewable Energy Rebate

RESIDENTAIL SOLAR PV PROGRAM APPLICATION

Customer Name _____ Installation Address _____ Zip_____

Mailing Address (if different) _____ Zip_____

Electric Account # _____ Email Address _____

Wk. Phone # _____ Contact Name _____

PV Module Mfg.* _____	Inverter Mfg.* _____
Model # _____ Qty. _____	Model # _____
STC Rating (watts) _____	Power Rating _____ Efficiency % _____

Number of Modules	x	STC Rating (watts)	x	Inverter Eff. %	=	System Rating (W)	x	Rebate Level	=	Rebate Amount
_____	x	_____	x	_____	=	0	x	$ 2.00	= $	0.00

BTU Site Survey Completed ☐ No ☐ Yes Application Review Date _____ Approved ____ Disapproved ____

I certify that the above listed solar PV equipment meets the program guidelines and requirements of the Solar PV Rebate Program and that all documentation submitted is true and correct to the best of my knowledge. I further certify that the photovoltaic system will be installed in compliance with BTU's technical requirements for distributed generation interconnection (for facilities under 10 kW).

_____

Vendor/Contractor's Signature Date

REFUND AGREEMENT

As a qualified BTU customer and purchaser of the solar system, I understand the rebate for which I am applying will, under no circumstances, exceed the maximum allowed under current Solar PV Rebate Program guidelines. In order to receive the rebate, I understand that the solar system must be inspected and approved by BTU, and I must sign this Refund Agreement that includes, at a minimum, the following conditions. A prorated portion of the rebate, 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 first anniversary date of rebate payment), shall become due and payable to BTU if I fail to ensure BTU that the rebate equipment is properly maintained and operated at a BTU metered address. Project must be completed within four months of the BTU receiving and acceptance of this application. If not the funds will be released and awarded to the next project waiting.

_____

Purchaser's Signature Date

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

Acknowledgment of Receipt by BTU Solar PV/Thermal Program Manager

_____

Program Manager Date

Contractor/Installer

Name _____ Contact Person _____

Email Address _____ Ph. Number (____) _____

Initials_____

Residential System/Installation Price Quote $_____

- All equipment (modules, inverters), as submitted on this application must be listed as eligible equipment under the California Energy Commission's (CEC) Emerging Renewables Program.

- Eligible photovoltaic module list can be found on CEC's website at: http://www.gosolarcalifornia.ca.gov/nshp/eligible_pv.html

- Also, the inverter eligibility list can be found at:

  http://www.consumerenergycenter.org/cgi-bin/eligible_inverters.cgi

- The photovoltaic system must be installed in compliance with BTU's technical requirements for distributed generation interconnection (for facilities under 100 kW).

- In addition to equipment eligibility requirements, solar contractors participating in the Solar Rebate Program must be certified (within two years of BTU Solar Rebate Program registration) through the North American Board of Certified Energy Practitioners (NABCEP). For details on how to become NABCEP certified, please visit their website at: http://www.nabcep.org/nabcep/www/pages/home/index.asp.

- The standard rebate level for qualifying equipment shall not exceed the maximum allowed under current Solar PV Rebate Program Guidelines.

- **Project must be completed within Four months of the Acceptance Letter.**

Initials_____

List of BTU Approved Installers

Akari Energy
510 Bering Drive, Ste. 300
Houston, TX 77057-1400
Phone: (713) 869-2656
Fax: (713) 869-2656
Toll-Free: (866) 972-2656
www.AkariEnergy.com

Alternative Power Solutions
8181 Commerce Park Dr., Ste. 700
Houston, TX 77036
713-595-6375 Ph.
713-595-6382 F
832-758-3433 C
Latricia.Bostic@apowersolutions.com
www.apowersolutions.com

Ameresco Solar
202 South Live Oak, Suite B
Tomball, TX 77375
P: 281-378-2309
F: 281-351-8356
E: mamoore@ameresco.com
Main Line: 281 351 0031
www.amerescosolar.com

Austin Solar Power Company
Serving Bryan College Station
512.934.7478 JP Novak
www.austinsolarpowercompany.com

Circular Energy,LP
PO Box 163734
Austin, TX 78716
512-215-4414
info@circularenergy.com
www.circularenergy.com

Home Star Solar
www.HomeStarSolar.com
832-698-2403 Houston
979-220-3297 College Station

Innotech Engineering Inc.
Maryo: sales support engineer
office: 281-459-0893
cell: 713-303-8244
maryo@innotech-eng.com
www.innotech-eng.com

MERIDIAN ENERGY SYSTEMS
2300 South Lamar Boulevard #107
Austin, TX 78704
www.meridiansolar.com
512-448-0055

NORTH TEXAS RENEWABLE ENERGY INC.
486 W. N. Woody Rd.
Azle, TX 76020
Fort Worth, TX
817-917-0527
www.ntrei.com
Specialties: Solar PV

QA Construction Services, Inc.
5000 Burleson Rd.
Austin, TX 78744
Office: 512.637.6130
Fax: 512.637.6151
Cell: 806.928.4357
lmcquage@qasystems.com

STANDARD RENEWABLE ENERGY
4310 W. 12th Street
Houston, Texas 77055
281-763-2020
Danny De La Torre
940-312-9555
www.sre3.com
Specialties: Solar PV

Sundance Renewables
PO Box 226
Georgetown, Texas 78627-0226
512-863-3783
www.sundancerenewable.com
david@sundancerenewable.com

TEXAS GREEN ENERGY- Adam Burke
979-209-0010
Texas Green Energy, Inc
5930 Piper Lane
College Station, TX 77845
www.txgreenenergy.com
Specialties: Solar PV, Solar Thermal Water Heaters

List of BTU Approved Installers

Tierra Verde Solar Inc
James A. "Hoss" Boyd, LtCol (Ret), CEO
Solar Energy Development and Integration
Energy Efficient Lighting
Office: 210-374-8466
Direct: 210-325-5233
hoss@tierraverdesolar.com
info@tierraverdesolar.com
www.tierraverdesolar.com

Imperial Electric, Inc
5005 Peachtree Road
Balch Springs, Texas 75180
1-877-447-7657
Website: www.imperialelectricinc.com

WATERSHED RENEWABLES
201 Dellwood St.
Bryan, TX 77801
Will Baxter; 979-703-6746,
will.watershed@gmail.com
www.watershedrenewables.com

Wolf Green Technologies
162 Drury Lane
Austin, TX 78737
(512) 900-9653
www.wolfgreentechnologies.com
info@wolfgreentechnologies.com

Green+ Solar Technical Requirements

Solar Photovoltaics
Survey Request
PV Technical Requirements
PV Choosing a Contractor
Registered Contractor Requirements
List of Certified Installers
DG Agreement
REC Agreement
Rebate Application

Bryan Texas Utilities' Technical Requirements for Distributed Generation Interconnection for Facilities Under 100 kW

1. Manual Disconnect

   A manual load break disconnect switch that provides clear indication of the switch position and is appropriate to the voltage level shall be available at the customer's main service point to provide a separation point between the customer's electrical generation system and Bryan Texas Utilities' (BTU) electrical system. BTU will coordinate and approve the location of the disconnect switch. The disconnect switch shall be easily visible, mounted separately from the metering or inverter equipment, readily accessible to BTU personnel at all times, and capable of being locked in the open position with a BTU padlock. Bryan Texas Utilities reserves the right to open the disconnect switch isolating the customer's electrical generating system (which may or may not include the customer's load) from BTU's electrical system for the following reasons:

   a. To facilitate maintenance or repair of BTU's electrical system;
   b. When emergency conditions exist on BTU's electrical system;
   c. When the customer's electrical generating system is determined to be operating in a hazardous or unsafe manner or unduly affecting BTU's voltage waveform;
   d. When the customer's electrical generating system is determined to be adversely affecting other electric consumers on the BTU system;
   e. Failure of the customer to comply with applicable codes, regulations and standards in effect at that time;
   f. Failure to abide by any contractual arrangement or operating agreement with Bryan Texas Utilities.

2. Voltage

   BTU shall endeavor to maintain the distribution voltages on the electrical system but shall not be responsible for factors or circumstances beyond its control. The customer shall provide an automatic method of disconnecting generation equipment from BTU's electrical system within 10 cycles should a voltage deviation greater than +5% or -10% from nominal be sustained for more than 30 seconds (1800 cycles) or a voltage deviation greater than +10% or -30% from nominal be sustained for more than 10 cycles. If high or low voltage complaints or flicker complaints result from the operation of the customer's electrical generation, the customer's generating system shall be disconnected until the problem is resolved.

3. Frequency

   BTU shall endeavor to maintain a 60-hertz nominal frequency on the electrical system. The customer shall provide an automatic method of disconnecting generation equipment from BTU's electrical system within 15 cycles should a deviation in frequency of +0.5Hz or -0.7Hz from nominal occur.

4. Harmonics

   In accordance with IEEE 519, the total harmonic distortion (THD) of voltage shall not exceed 5% of a pure sine wave of 60-hertz frequency or 3% of the 60-hertz frequency for any individual harmonic when measured at the point of interconnection with BTU's electrical system. Also, the total current distortion shall not exceed 5% of the fundamental frequency sine wave. If harmonics beyond the allowable range result from the operation of the customer's electrical generation, the customer's generating system shall be disconnected until the problem is resolved.

5. Flicker

   The distributed generation facility shall not cause excessive voltage flicker on BTU's electrical system. This flicker shall not exceed 3% voltage dip, in accordance with IEEE 519 (Section 10.5), as measured at the point of interconnection.

6. Power Factor

   The customer's electrical generation system shall be designed, operated and controlled at all times to provide reactive power requirements at the point of interconnection from 0.95 lagging to 0.95 leading power factor. Induction generators shall have static capacitors that provide at least 95% of the magnetizing current requirements of the induction generator field. BTU may, in the interest of safety, authorize the omission of capacitors. However, where capacitors are used for power factor correction, additional protective devices may be required to guard against self-excitation of the customer's generator field.

7. Loss of Source

   The customer shall provide UL approved protective equipment necessary to immediately, completely and automatically disconnect the customer's electrical generation equipment from BTU's electrical system in the event of a fault on the customer's system, a fault on BTU's system or loss of source on BTU's system. Such protective equipment

shall conform to the criteria specified in UL 1741. The customer's generating system shall automatically disconnect from the grid within 10 cycles if the voltage on one or more phases falls and stays below 70% of nominal voltage for at least 10 cycles. The automatic disconnecting device may be of the manual or automatic reclose type and shall not be capable of reclosing until after BTU's service voltage and frequency are restored to within the normal operating range and the system is stabilized.

8. Coordination and synchronization

   The customer shall be solely responsible for coordination and synchronization of the customer's electrical generating system with all aspects of BTU's electrical system, and the customer assumes all responsibility for damage or loss that may occur from improper coordination and synchronization of its generating system with BTU's electrical system.

9. Metering

   The actual metering equipment required, its voltage rating, number of phases and wires, size, current transformers, number of input and associated memory is dependent upon the type, size and location of the electric service provided. In situations where power may flow both in and out of the customer's electrical system, power flowing into the customer's electrical system will be measured separately from power flowing out of the customer's electrical system. BTU will provide, subject to existing rate schedules at the time of application, the metering equipment necessary to measure capacity and energy delivered to and from the customer. This includes a separate PV meter for the purpose of measuring the total system output.

10. Interconnection Study

    If BTU determines that an interconnection study is necessary, BTU shall perform (or have performed by an outside engineering firm) the study under terms and conditions agreed upon by both the customer and BTU and at the customer's sole expense. No interconnection study shall be necessary and no study fee will be charged if all of the following apply:

    a. The proposed generation equipment is pre-certified
       i. Generation equipment with capacity less than 100 kW AC shall be considered pre-certified if a UL 1741 listed inverter is used as well as UL 1703 listed PV modules;
    b. The proposed generation system does not export more than 15% of total load on the feeder serving the proposed facility; and
    c. The proposed generation system does not contribute more than 25% of the maximum possible short circuit current of the feeder serving the proposed facility.

11. Protection requirements

    The distributed generation facility must have an interconnection disconnect device and a generator disconnect device, both capable of interrupting the maximum available fault current supplied by the generator and BTU; an over-voltage trip; an under-voltage trip; an over/under frequency trip; and a manual or automatic synchronizing check (for facilities with stand-alone capability). Facilities rated over 10kW, three phase, must also have reverse power sensing and either a ground over-voltage or a ground over-current trip depending on the grounding system. Grounding shall be done in accordance with UL 1741 and NEC Article 250.

12. Additional requirements for three-phase generators
    a. Synchronous machines
       i. The distributed generation facility's circuit breakers shall be three-phase devices with electronic or electromechanical control.
       ii. The Customer is solely responsible for proper synchronization of its generator with BTU's system.
       iii. The excitation system response ratio shall not be less than 0.5.
       iv. The generator's excitation system shall conform to the field voltage versus time criteria specified in ANSI Standard C50.13-1989.
    b. Induction generator
       i. The induction generator used for generation may be brought up to synchronous speed if it can be demonstrated that the initial voltage drop at the point of interconnection is within the flicker limits specified in this document.
    c. Inverters
       i. Line-commutated inverters do not require synchronizing equipment.
       ii. Self-commutated inverters require synchronizing equipment.

13. Conformance to standards

    The distributed generation equipment shall be designed, installed, operated and maintained in accordance with, but not limited to, ANSI standards, UL standards, IEEE standards, the National Electrical Code, ERCOT Operating Guides and any other applicable local, state or federal codes and statutes. In the case of a conflict between the requirements in this document and any of those standards or codes, this document shall prevail.

Adopted: 4-07-08

Solar Thermal Rebate Program

And Application

Green+ Solar Water Heater Program

Solar Water Heater Rebate Application

Program Description

Solar water heaters are a cost-effective and environmentally responsible alternative to conventional methods of producing domestic hot water. Customers benefit from solar technology through utility bill savings and sound environmental stewardship; BTU benefits by reducing its peak demand and reliance on power production from fossil fuels.

Program Guidelines and Eligibility Criteria

- All BTU residential, commercial and municipal customers are eligible to participate. This includes current and new construction.
- Solar water heater collectors must be SRCC (Solar Rating Certification Corporation) certified.
- BTU offers customers the opportunity to receive a one time rebate of $1,500 per system installed for existing homes and $1,000 per system installed for new homes.
- All installations must adhere to the City of Bryan building permit process and new equipment must be installed by licensed contractors.
- All installations must meet all applicable City of Bryan codes.
- Customer will have 90 days (from receipt date of application) to install solar water heating system.
- The solar water heater must preheat water for an electric water heater that is permanently installed at the structure.
- The solar water heater installer is responsible for determining the optimal location of the solar collectors. The proposed location must provide maximum benefits.
- Manufacturer must provide a minimum five (5) year warranty on major components. Additionally, the system shall be designed for frost protection and scale elimination or remediation.
- Installed solar water heating system must be new. Rebates will not be offered retroactively (on systems already installed).
- Use of existing tanks will be allowed if the tank is less than five years old at the time of inspection. Tanks over 4 years old must be flushed prior to system activation.
- Storage tank must be 80 gallons at minimum. Collectors should be sized according to manufacturer recommendation to meet requirements of tank size.
- The rebate application must be submitted before system is installed. The application must be accompanied by SRCC rating data, warranty information and a site sketch showing solar collector location(s).

Participation Process

Step 1

Contact the BTU Solar Program Manager by calling 979-821-5715. They can provide the documents required for applying for available rebates (including a list of Participating Solar Contractors).

Step 2

Contact a Participating Solar Contractor in your area. BTU recommends that you solicit at least three bids for comparative purposes.

Step 3

Complete and submit the Solar Water Heater Application and the Renewable Energy Credit Assignment Agreement. In addition to your signature, the rebate application must also be signed by the installer. The rebate application must be accompanied by the manufacturer's rating and warranty information.

Step 4

BTU will review all Solar Water Heater Applications. After approval, applicant will be notified to begin the solar water heater system installation.

Step 5

Contractor will obtain all necessary City permits and completes equipment installation.

Step 6

Contact BTU's Solar Program Manager by calling 979-821-5715 to schedule a system verification of your installation.

SOLAR THERMAL APPLICATION

Customer Name _____ Installation Address _____ Zip _____

Mailing Address (if different) _____ Zip _____

Electric Account # _____ Email Address _____

Wk. Phone # _____ Contact Name _____

Tank Mfg.: _____

Model #: _____

Location: _____

Solar Collector Mfg.: _____

Model #: _____

Collector Orientation: _____

Residential ☐ Commercial ☐ Multi-Family ☐	Construction: New ☐ Existing ☐	Installed Cost: $_____	Collector Sq. Ft.: _____	Tank Cap. (gal): _____	System SRCC kWh Savings (if available): _____

Rebate Option: ☐ $1,500 Existing Construction ☐ $1,000 New Construction **BTU Approval** _____

I certify that the above listed solar thermal equipment meets the program guidelines and requirements of the Solar Thermal Rebate Program and that all documentation submitted is true and correct to the best of my knowledge.

_____

Vendor/Contractor's Signature Date

REFUND AGREEMENT

As a qualified BTU customer and purchaser of the solar thermal system, I understand the rebate for which I am applying will, under no circumstances, exceed the maximum allowed under current Solar Thermal Rebate Program guidelines. In order to receive the rebate, I understand that the solar system must be inspected and approved by BTU, and I must sign this Refund Agreement that includes, at a minimum, the following conditions. A prorated portion of the rebate, 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 first anniversary date of rebate payment), shall become due and payable to BTU if I fail to ensure BTU that the rebate equipment is properly maintained and operated at a BTU metered address. Project must be completed within 90 days of the BTU receiving and acceptance of this application. If not the funds will be released and awarded to the next project waiting.

_____

Purchaser's Signature Date

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

Acknowledgment of Receipt by BTU Solar PV/Thermal Program Manager

_____

Program Manager Date

Contractor/Installer

Name _____ Contact Person _____

Email Address _____ Ph. Number (____) _____

System/Installation Price Quote $ _____

Please submit by email: awood@btutilities.com or mail to: Solar Thermal Rebate Program 205 E. 28th St Bryan, TX 77803

BRYAN TEXAS UTILITIES

BTU

THE ENERGY TO SERVE YOU SINCE 1919

Green + Energy Efficiency & Conservation

Solar PV Rebate Program

Renewable Energy Credit
Assignment Agreement

Under the State's renewable energy goals program, a Renewable Energy Credit (REC) represents the environmental attributes of one thousand kWh of electricity produced by a renewable resource (such as solar or wind). A REC is the commodity used by electric providers in Texas to account for their participation the State's renewal energy goals program. BTU has made a voluntary commitment to the State of Texas to accumulate and register RECs equal to its sales of renewable energy products.

RECs will be generated by your renewable energy system. For example, a three (3) kW solar system generally produces about 4400 kWh of renewable energy annually (for an optimal system), making the current value of the RECs on the open market approximately $50 per year. RECs can be sold on the open market and transferred. You are being asked to assign the RECs generated by your solar system to BTU in order to receive the solar rebate incentive. The RECs will be aggregated with those of other participants in the Solar Rebate Program. They will be used by BTU to meet its voluntary participation commitments to the State's program and in turn, your assignment will benefit all BTU customers.

By signing the REC Assignment Agreement, you are agreeing to assign the RECs generated by your solar system to Bryan Texas Utilities (BTU) in consideration for receipt of a rebate.

I _____(please print) acknowledge that I have read the above explanation and understand by signing this agreement that I agree to assign the RECs generated by my solar system at a meter within BTU's certificated area to BTU in consideration for any solar rebate incentive provided to me.

_____ _____

Customer Signature Company Name (*if applicable*)

_____

Installation Address

_____

Date

Energy Tips at

www.btutilities.com

Things you can do Without spending any money to save on your electric bill

1) Turn off equipment and appliances – such as lights, televisions, stereos, DVD players, and computers when you're not using them.

2) Heating/Air conditioning system: Keep exterior doors and windows closed when using your system. Set your thermostat according to the manufacturer's instructions for the most efficient use of the heating or air conditioning system. Clean or replace filters monthly during operating season. Keep your system clean, lubricated and properly adjusted. When away from your home during the cooling season, set your air conditioner at 85 degrees. Savings: 5 percent to 12 percent of cooling costs. If you have central air conditioning, do not close vents in unused rooms. This could increase pressure and cause leaks in your ducts. This does not apply to homes or apartments with window units where closing off unused rooms will reduce cooling costs and increase comfort.

3) In winter, open window coverings on sunny days to help warm the rooms. In summer, close them to help keep the room cool during the day. Open the drapes on windows facing south to let the sun shine in. Then at night, close the drapes to retain indoor heat. If you have a large expanse of glass that doesn't receive direct sun, keep the drapes closed. Up to 16 percent of your heat can escape through unprotected windows.

4) Close the damper when not using your fireplace. Turn your heating system down when using your fireplace to prevent heated air from escaping outdoors.

5) Refrigerator: Give the unit breathing room, clean the coils, and don't set the temperature too low. Fresh foods keep at 37 to 42 F; frozen foods at 0 to 5o F. Unplug your second refrigerator and/or freezer.

6) Clothes washer/dryer: Do only full loads when using your clothes washer and dryer. Wash in cold water or wash in warm water and rinse in cold water. Clean the dryer lint trap after each use. Check vents for clogging. Or, line-dry your clothes if possible.

7) Water heater: Lower the water heater temperature to 120o F or "low" (140o F or "medium" if you have a dishwasher without its own heating element).

8) Dishwasher: Wash only full loads. Use the energy saver, air dry cycle, or if possible, open the door and let dishes dry naturally.

9) Oven: Don't preheat your oven. Cook complete meals of several dishes simultaneously in the oven. Use your microwave oven when possible.

10) Swimming pool: Reduce your swimming pool water temperature and the number of months you heat your pool. Keep swimming pool cleaning and heating equipment clean.

11) Defrost refrigerators and freezers before ice buildup becomes 1/4-inch thick. Refrigerator/Freezer: Keep the coils (on the back or the bottom of the appliance) clean.

12) Dress appropriately for the weather, and set your thermostat to the lowest possible comfortable setting. On winter nights, put an extra blanket on the bed and turn down your thermostat more.

Top 10 Tips for Renters!

Even if you rent an apartment, townhouse, or a home, you can make a big difference, too! These tips will show you how to be more energy efficient and save energy, money, and reduce the risks of global warming. If there are things you can't change on your own, share these tips and encourage your landlord to help you make a change for the better.

1) Lighting is one of the easiest places to start saving energy. Replacing your five most frequently used light fixtures or the bulbs in them with ENERGY STAR qualified lights can save more than $60 a year in energy costs. ENERGY STAR qualified compact fluorescent light bulbs (CFLs) provide high-quality light output, use less energy, and last 6–10 times longer than standard incandescent light bulbs, saving money on energy bills and replacement costs.
    a. Remember to always turn off your lights when leaving a room. Turning off just one 60-watt incandescent bulb that would otherwise burn eight hours a day can save about $15 per year!
2) Considering purchasing a room air conditioner? Consider an ENERGY STAR qualified model. They use at least 10 percent less energy than standard models.
    a. In the winter, be sure to insulate room air conditioners from the outside with a tight-fitting a/c unit cover, available at your local home improvement center or hardware store. This keeps heated air from escaping outside. Alternately, you can remove the window unit in the winter months to prevent energy losses.
    b. Be sure the window unit fits tightly in the window so outdoor air is not getting in.
3) If possible, install a programmable thermostat to automatically adjust your home's temperature settings when you're away or sleeping.
    a. When used properly, a programmable thermostat with its four temperature settings can save up to $150 a year in energy costs. Proper use means setting the thermostat at energy-saving temperatures without overriding that setting. You should also set the "hold" button at a constant energy-saving temperature when you're away or on vacation.
4) Consumer electronics play an increasingly larger role in your home's energy consumption, accounting for 15 percent of household electricity use. Many consumer electronics products use energy even when switched off. Electronics equipment that has earned the ENERGY STAR helps save energy when off, while maintaining features like clock displays, channel settings, and remote-control functions.
    a. Unplug any battery chargers or power adapters when not in use (like your cell phone charger!).
    b. Use a power strip as a central "turn off" point when you are done using equipment.
        i. Even when turned off, electronic and IT equipment often use a small amount of electricity. For home office equipment, this stand-by or "phantom" power load can range from a few watts to as much as 20 or even 40 watts for each piece of equipment. Using a power strip for your computer and all peripheral equipment allows you to completely disconnect the power supply from the power source, eliminating standby power consumption.
5) A ten minute shower can use less water than a full bath.
    a. With a new 2.5 gallon-per-minute (low-flow) shower head, a 10-minute shower will use about 25 gallons of water, saving you five gallons of water over a typical bath. A new showerhead also will save energy — up to $145 each year on electricity — beating out both the bath and an old-fashioned showerhead.
    b. To avoid moisture problems, control humidity in your bathroom by running your ventilating fan during and 15 minutes after showers and baths.
6) Make sure all air registers are clear of furniture so that air can circulate freely. If your home has radiators, place heat-resistant reflectors between radiators and walls. In the winter, this will help heat the room instead of the wall.

7) During cold weather, take advantage of the sun's warmth by keeping drapes open during daylight hours. To keep out the heat of the summer sun, close window shades and drapes in warm weather.
8) Save water by scraping dishes instead of rinsing them before loading in the dishwasher. Run your dishwasher with a full load and use the air-dry option if available.
    a. Rinsing dirty dishes before loading your dishwasher uses a lot of water and energy. Most dishwashers today can thoroughly clean dishes that have had food scraped, rather than rinsed, off — the wash cycle and detergent take care of the rest. To make the most efficient use of your dishwasher's energy and water consumption, run the dishwasher only when enough dirty dishes have accumulated for a full load.
9) Wash your laundry with cold water whenever possible. To save water, try to wash full loads or, if you must wash a partial load, reduce the level of water appropriately.
    a. Hot water heating accounts for about 90 percent of the energy your machine uses to wash clothes — only 10 percent goes to electricity used by the washer motor. Depending on the clothes and local water quality (hardness), many homeowners can effectively do laundry exclusively with cold water, using cold water laundry detergents. Switching to cold water can save the average household more than $400 annually (with an electric water heater) and more than $300 annually (with a gas water heater).
    b. Washing full loads can save you more than 3,400 gallons of water each year.
10) Don't over dry your clothes. If your dryer has a moisture sensor that will automatically turn the machine off when clothes are done, use it to avoid over drying. Remember to clean the lint trap before every load. Dry full loads, or reduce drying time for partial loads. Learn more.
    a. It's easy to over dry your clothes, if one setting is used for various fabric types. Try to dry loads made up of similar fabrics, so the entire load dries just as the cycle ends. Many dryers come with energy-saving moisture or humidity sensors that shut off the heat when the clothes are dry. If you don't have this feature, try to match the cycle length to the size and weight of the load. A dryer operating an extra 15 minutes per load can cost you up to $34, every year.
    b. The lint trap is an important energy saver. Dryers work by moving heated air through wet clothes, evaporating and then venting water vapor outside. If the dryer cannot provide enough heat, or move air sufficiently through the clothes, they will take longer to dry, and may not dry at all. One of the easiest things you can do to increase drying efficiency is to clean the lint trap before each and every load. This step also can save you up to $34 each year.

Things that will help that cost very little

1) Replace existing lamps with compact fluorescent lamps (CFLs). You can save up to 75% on your lighting costs by converting to low-wattage lamps and fixtures. They use a quarter of the energy of regular incandescent lighting while delivering similar brightness.

2) Use ENERGY STAR® hardwired indoor and outdoor light fixtures.

3) Use hardwired motion sensors for indoor and outdoor lighting.

4) Use dimmer switches, timers, or motion sensors on incandescent lights.

5) Caulk windows, doors, pipes, and anywhere air leaks in and out. Use weather stripping around windows, doors and pipes.

6) Provide shading for your air conditioner. Use deciduous plants or exterior shading devices, awnings or sun screens. To shade your home and windows facing south and/or west to block heat during summer months.

1) Save up to 8% of your cooling costs. Clean your AC's condenser/evaporator coils at the beginning of the season. Clean coils lower your energy costs, extend the unit's life and provide cleaner air for you to breathe.

2) The fin coils on the outside AC unit can be washed with a hose. Coils on inside units may be difficult to get to and may require a trained technician. Consider new high efficiency air conditioners and heat pumps.

3) They use up to 40% less electricity than older models for the same amount of running time.

7) Computers and electronics: Buy products with the ENERGY STAR label.

4) Visit www.energystar.gov for recommended model names.

8) Fix defective plumbing or dripping faucets. Water faucet drips cause water loss up to

5) 212 gallons a month and hot water drips waste energy as well.

9) Use a swimming pool cover when you're not using the pool. A cover controls water evaporation, keeps the pool warmer, and keeps the pool cleaner so the filter runs less often.

10) Get your central heating/cooling system's ducts tested for air leakage. Up to 30% of the heated or cooled air is lost through leaky ducts. Properly sized, installed, and sealed ductwork will make your heating and cooling systems significantly more efficient, and your home more comfortable.

11) Use whole house fans to cool your house.

12) Insulate your walls and attics. Insulating ceilings to R-30 standards if your attic is less than R-11 can save on your heating and cooling costs.

13) Replace your central natural gas furnace with a 90-94 Annual Fuel Utilization Efficiency (AFUE) rated unit.

14) Purchase a qualifying high efficiency ENERGYSTAR clothes washer. It uses 50% less energy than a standard washer made before 1994, and less water, too.

15) ENERGY STAR-labeled dishwashers save energy by using both improved technology for the primary wash cycle, and by using less hot water.

16) Replace your single-speed pool pump and motor with a new two-speed or variable speed pool pump and motor.

17) Replace your water heater if your model was purchased prior to 1994. Buy a gas water heater with an Energy Factor of 0.62 or higher. Buy an electric water heater with an Energy factor of 0.93 or higher

18) Purchase a new energy-efficient refrigerator if your model was purchased before 1993. Units only 10 years old can use twice as much electricity as a new ENERGY STAR® labeled model.

19) When replacing your home's windows, buy new high performance models. Look for the National Fenestration Rating Council (NFRC) label and choose a product with U-factor of 0.40 or less, Solar Heat Gain Coefficient of 0.40 or less, and Visible Light Transmittance of 0.60 or higher

20) Lemonade and think cool thoughts — like how you'll be freezing next winter and longing for summer again!

Savings by room

Lifestyle makes a difference. You have complete control over how you use your electricity by choosing the ingredients that are necessary for you to maintain your standard of living. Let's take a look around the house for a few energy saving tips.

The Attic

Proper attic ventilation is necessary for both the heating and cooling efficiency of your home.
Consider installing an attic fan to lower the attic temperature.
Close foundation/crawl space vents in the winter and open them in the summer.
Visually inspect your duct system in the crawl space or attic of your home to see if air is escaping.
Repair air leaks with quality UL metal tape or mastic sealant.

The Bathroom

Take shorter showers and install water-saving shower heads. Turn off faucets tightly and fix leaky faucets promptly. A leak of one drop per second wastes more than 250 gallons of water a month, and the energy used to heat it.

The Den

Keep your fireplace damper closed when there's no fire in the fireplace. If you have glass fireplace doors, keep them closed as well. Turn off television sets, stereos and other electric appliances whenever you're not using them.

The Kitchen

Use stove exhaust fans that vent to the outdoors as little as possible during the winter to limit sending heated air outdoors. Keep your refrigerator and freezer stocked. Both operate at peak efficiency when they are full. Run your garbage disposal with cold water. Cook in oven-safe glass or ceramic pans when you can. They allow you to set your oven temperature 25 degrees lower than the recipe calls for. Keep external refrigerator and freezer coils free from dust and lint. A clean refrigerator coil doesn't have to work as hard.

The Laundry Room

Use warm or cold water settings on the washing machine. Limit hot water use to heavily soiled clothes. Each load of laundry washed in cold water saves enough energy to power a television for up to 34 hours. Wash and dry full loads of laundry. It costs an average of $.18 to wash a load of laundry. For a family of four, this cost could add up to nearly $45.50 a month. Keep lint filters and vent hoses clean.

The Living Room

Move furniture away from heating and cooling registers or radiators. Blocking or restricting airflow makes heating and air conditioning systems work harder. Choose light-colored, translucent lampshades. Many lampshades, while decorative, can actually reduce light or send it somewhere you don't need it.

Don't forget the outside of your home

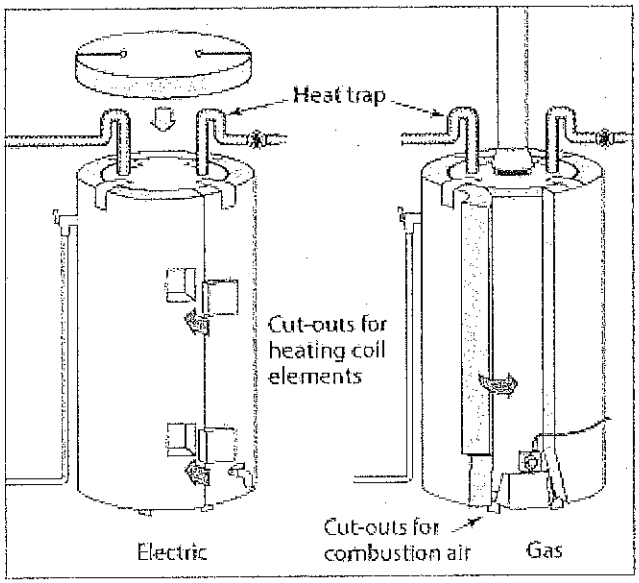
Turn off any outdoor lights that are not needed for security. Eliminate outdoor circulation pumps for ponds. Evergreens are effective for blocking wind. Plant them in a staggered or double line to the northwest of your home. The U.S. Bureau of Statistics reports that a line of evergreens can reduce heat loss and winter fuel bills by up to 20%.

Insulate Your Water Heater Tank for Energy Savings

Unless your water heater's storage tank already has a high R-value of insulation (at least R-24), adding insulation to it can reduce standby heat losses by 25%–45%. This will save you around 4%–9% in water heating costs. If you don't know your water heater tank's R-value, touch it. A tank that's warm to the touch needs additional insulation. Insulating your storage water heater tank is fairly simple and inexpensive, and it will pay for itself in about a year. You can find pre-cut jackets or blankets available from around $10–$20. Choose one with an insulating value of at least R-8.

Insulating an Electric Water Heater Tank

You can probably install an insulating pre-cut jacket or blanket on your electric water heater tank yourself. Read and follow the directions carefully. Leave the thermostat access panel(s) uncovered. Don't set the thermostat above 130°F on electric water heater with an insulating jacket or blanket—the wiring may overheat. You also might consider placing a piece of rigid insulation—a bottom board— under the tank of your electric water heater. This will help prevent heat loss into the floor, saving another 4%–9% of water heating energy. It's best done when installing a new water heater.



Insulating a Gas Water Heater Tank

The installation of insulating blankets or jackets on gas and oil-fired water heater tanks is more difficult than those for electric water heater tanks. It's best to have a qualified plumbing and heating contractor add the insulation. If you want to install it yourself, read and follow the directions very carefully. Keep the jacket or blanket away from the drain at the bottom and the flue at the top. Make sure the airflow to the burner isn't obstructed. Leave the thermostat uncovered, and don't insulate the top of a gas water heater tank—the insulation is combustible and can interfere with the draft diverter.

Related Information

Energy Performance Ratings for Windows, Doors, and Skylights

You can use the energy performance ratings of windows, doors, and skylights to tell you their potential for gaining and losing heat, as well as transmitting sunlight into your home.

Heat Gain and Loss

Windows, doors, skylights can gain and lose heat in the following ways:

- Direct conduction through the glass or glazing, frame, and/or door
- The radiation of heat into a house (typically from the sun) and out of a house from room-temperature objects, such as people, furniture, and interior walls
- Air leakage through and around them.

These properties can be measured and rated according to the following energy performance characteristics:

- U-factor

The rate at which a window, door, or skylight conducts non-solar heat flow. It's usually expressed in units of Btu/hr-ft^2-°F. For windows, skylights, and glass doors, a U-factor may refer to just the glass or glazing alone. But National Fenestration Rating Council U-factor ratings represent the entire window performance, including frame and spacer material. The lower the U-factor, the more energy-efficient the window, door, or skylight.

- Solar heat gain coefficient (SHGC)

A fraction of solar radiation admitted through a window, door, or skylight—either transmitted directly and/or absorbed, and subsequently released as heat inside a home. The lower the SHGC, the less solar heat it transmits and the greater its shading ability. A product with a high SHGC rating is more effective at collecting solar heat gain during the winter. A product with a low SHGC rating is more effective at reducing cooling loads during the summer by blocking heat gained from the sun. Therefore, what SHGC you need for a window, door, or skylight should be determined by such factors as your climate, orientation, and external shading.

Air leakage

The rate of air infiltration around a window, door, or skylight in the presence of a specific pressure difference across it. It's expressed in units of cubic feet per minute per square foot of frame area (cfm/ft^2). A product with a low air leakage rating is tighter than one with a high air leakage rating.

Formula for Estimating Energy Consumption

You can use this formula to estimate an appliance's energy use:
(Wattage × Hours Used Per Day ÷ 1000 = Daily Kilowatt-hour (kWh) consumption
(1 kilowatt (kW) = 1,000 Watts)
Multiply this by the number of days you use the appliance during the year for the annual consumption.
You can then calculate the annual cost to run an appliance by multiplying the kWh per year by your local utility's rate per kWh consumed.
Note: To estimate the number of hours that a refrigerator actually operates at its maximum wattage, divide the total time the refrigerator is plugged in by three. Refrigerators, although turned "on" all the time, actually cycle on and off as needed to maintain interior temperatures.
Examples:
Window fan:
(200 Watts × 4 hours/day × 120 days/year) ÷ 1000
= 96 kWh × 8.5 cents/kWh
= $8.16/year
Personal Computer and Monitor:
(120 + 150 Watts × 4 hours/day × 365 days/year) ÷ 1000
= 394 kWh × 8.5 cents/kWh
= $33.51/year
Wattage

You can usually find the wattage of most appliances stamped on the bottom or back of the appliance, or on its nameplate. The wattage listed is the maximum power drawn by the appliance. Since many appliances have a range of settings (for example, the volume on a radio), the actual amount of power consumed depends on the setting used at any one time. If the wattage is not listed on the appliance, you can still estimate it by finding the current draw (in amperes) and multiplying that by the voltage used by the appliance. Most appliances in the United States use 120 volts. Larger appliances, such as clothes dryers and electric cook tops, use 240 volts. The amperes might be stamped on the unit in place of the wattage. If not, find a clamp-on ammeter—an electrician's tool that clamps around one of the two wires on the appliance—to measure the current flowing through it. You can obtain this type of ammeter in stores that sell electrical and electronic equipment. Take a reading while the device is running; this is the actual amount of current being used at that instant.
When measuring the current drawn by a *motor*, note that the meter will show about three times more current in the first second that the motor starts than when it is running smoothly.
Many appliances continue to draw a small amount of power when they are switched "off." These "phantom loads" occur in most appliances that use electricity, such as VCRs, televisions, stereos, computers, and kitchen appliances. Most phantom loads will increase the appliance's energy consumption a few watt-hours. These loads can be avoided by unplugging the appliance or using a power strip and using the switch on the power strip to cut all power to the appliance.

Typical Wattages of Various Appliances

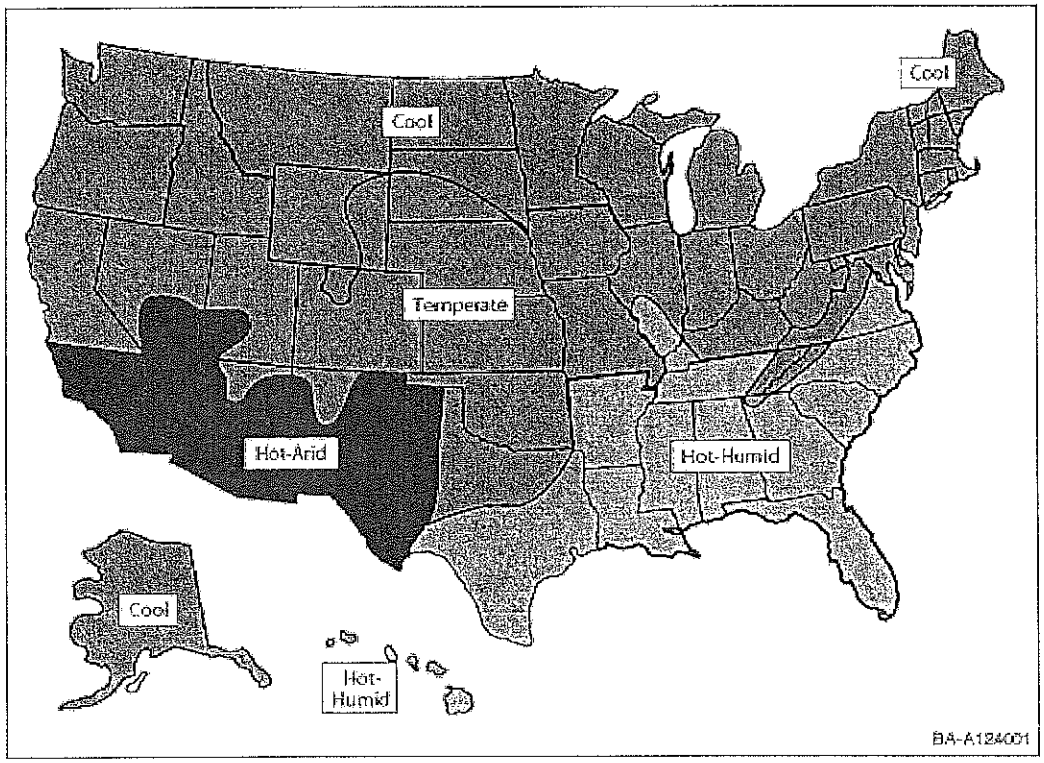
Here are some examples of the range of nameplate wattages for various household appliances:

- Aquarium = 50–1210 Watts
- Clock radio = 10
- Coffee maker = 900–1200
- Clothes washer = 350–500
- Clothes dryer = 1800–5000
- Dishwasher = 1200–2400 (using the drying feature greatly increases energy consumption)
- Dehumidifier = 785
- Electric blanket- *Single/Double* = 60 / 100
- Fans
    - Ceiling = 65–175
    - Window = 55–250
    - Furnace = 750
    - Whole house = 240–750
- Hair dryer = 1200–1875
- Heater *(portable)* = 750–1500
- Clothes iron = 1000–1800
- Microwave oven = 750–1100
- Personal computer
    - CPU - awake / asleep = 120 / 30 or less
    - Monitor - awake / asleep = 150 / 30 or less
    - Laptop = 50
- Radio *(stereo)* = 70–400
- Refrigerator *(frost-free, 16 cubic feet)* = 725
- Televisions (color)
    - 19" = 65–110
    - 27" = 113
    - 36" = 133
    - 53"-61" Projection = 170
    - Flat screen = 120
- Toaster = 800–1400
- Toaster oven = 1225
- VCR/DVD = 17–21 / 20–25
- Vacuum cleaner = 1000–1440
- Water heater *(40 gallon)* = 4500–5500
- Water pump *(deep well)* = 250–1100
- Water bed *(with heater, no cover)* = 120–380

Your Regional Climate

The energy-conserving landscape strategies you use should depend on which region you live in.

The United States can be divided into four approximate climatic regions: temperate, hot-arid, hot-humid, and cool. See the map to find your climatic region. Below you'll find landscaping strategies listed by region and in order of importance.



The climatic region in which you live affects the landscaping strategies you use.

Hot-Humid Region

- Channel summer breezes toward the home.
- Maximize summer shade with trees that still allow penetration of low-angle winter sun.
- Avoid locating planting beds close to the home if they require frequent watering.

2011 Newsletters that Include Energy Efficiency Information

PLUG IN WITH BTU

Bryan Texas Utilities

Would you like to make a difference in the life of a child while doing something fun and physically rewarding? Come out and participate in BTU's 3rd annual Dansby Duo. Proceeds from the event at Lake Bryan will go to Voices for Children, CASA of Brazos Valley.

2011 Dansby Duo

5k Run—12 Mile road bike—5k Run
Saturday, April 30, 2011 @ 8:30 am
Lake Bryan, Texas

CATEGORIES AND COSTS

MEN			WOMEN			RELAY (2-Person team)		
Bracket	Cost Before	Cost After	Bracket	Cost Before	Cost After	Bracket	Cost Before	Cost After
	April 18, 2011			April 18, 2011			April 18, 2011	
18 & Under	$20	$25	18 & Under	$20	$25	Men's	$50	$60
Collegiate	$20	$25	Collegiate	$20	$25	Women's	$50	$60
19-29	$30	$40	19-29	$30	$40	Co-ed	$50	$60
30-39	$30	$40	30-39	$30	$40			
40-49	$30	$40	40-49	$30	$40			
50-59	$30	$40	50-59	$30	$40	www.powerpedal.com		
60+	$30	$40	60+	$30	$40			

FOR MORE INFORMATION AND TO REGISTER VISIT WWW.POWERPEDAL.COM

BRYAN TEXAS UTILITIES
BTU
THE ENERGY TO SERVE YOU SINCE 1919

IN THIS ISSUE

1. 2011 Dansby Duo April 30, 2011
2. Electric Rate Comparisons
3. Kid's Corner
4. Solar Thermal Rebate Program

Texas Appliance Rebate Program

Texans who want to save money on ENERGY STAR® appliances now have a chance to apply for mail-in rebates on those purchases. Texas Comptroller Susan Combs announced the purchase period for the Texas Appliance Mail-In Rebate Program that started on Dec 20. Go to: www.TexasPowerfulSmart.org for more details.

AUTOMATIC BANK DRAFT

Take the hassle out of paying your utility bill. Sign up for automatic bank draft on our website at www.btutilities.com

For more information about any of our Programs please visit our website www.btutilities.com or call 979-821-5715

Kids Corner

Wind is a clean source of energy, and overall, the use of wind for energy has fewer environmental impacts than using many other energy sources. Wind turbines (often called windmills) do not release emissions that pollute the air or water (with rare exceptions), and they do not require water for cooling. They may also reduce the amount of electricity generated from fossil fuels and therefore reduce the amount of air pollution, carbon dioxide emissions, and water use of fossil fuel power plants.

A wind turbine has a small physical footprint relative to the amount of electricity it can produce. Many wind projects, sometimes called wind farms, are located on farm, grazing, and forest land. The extra income from the turbines may allow farmers and ranchers to stay in business and keep their property from being developed for other uses. For example, wind power projects have been proposed as alternatives to mountain top removal coal mining projects in the Appalachian mountains of the U.S. Off-shore wind turbines on lakes or the ocean may have smaller environmental impacts than turbines on land.

Electric Rate Comparisons

As an update to February's bill insert, listed below is the monthly residential cost of twenty power companies in Texas based on 1,000 kWh consumption and using rates that were in effect during the month of December 2010.

	Current Rate	Avg Rate/kWh
BTU	$86.35	$0.08635
Denton Municipal Utilities	$87.61	$0.08761
CPS (San Antonio)	$88.40	$0.08840
Brownsville PUB	$89.61	$0.08961
Austin Energy (City of Austin)	$90.38	$0.09038
City of San Marcos	$90.60	$0.09060
Greenville EUS	$92.50	$0.09250
Oncor TDU REP Avg	$95.13	$0.09513
TNP TDU REP Avg	$97.98	$0.09798
AEP North TDU REP Avg	$98.01	$0.09801
Magic Valley EC	$98.94	$0.09894
Cap Rock Energy	$103.49	$0.10349
CenterPoint TDU REP Avg	$104.65	$0.10465
Garland Power & Light	$106.22	$0.10622
AEP Central TDU REP Avg	$107.50	$0.10750
Entergy Texas	$117.44	$0.11744
Victoria EC	$117.48	$0.11748
Austin Energy Green Choice	$119.85	$0.11985
City of College Station	$123.34	$0.12334
Mid-South Synergy	$127.85	$0.12785

Solar Thermal Rebate Program

The BTU Solar Thermal Rebate Program offers $1,500 to BTU customers who install solar water heating systems in existing homes. Systems installed in new homes being constructed receive a $1,000 rebate. Solar thermal is one of the best opportunities for homeowners to make significant and lasting reductions to their homes energy consumption. Solar thermal units of today are worlds apart from the ones on the market 20-30 years ago. Today's technology is simple and has proven to hold up to the test of the extreme Texas weather. An average system will realize a payback of 5-6 years and generally has a life of more than 15 years. For more information on solar thermal units, the BTU Rebate and for a list of approved contractors, check the BTU website at www.btutilities.com or call (979) 821-5715.

PLUG IN WITH BTU

Bryan Texas Utilities

IN THIS ISSUE

1. HVAC Rebate
2. Energy Efficiency Financing
3. Kids Corner
4. Power Pedal 2011

ENERGY TIP OF THE MONTH

Vacuum refrigerator coils at least twice a year. Open doors only when necessary. Use Energy-Saver mode if available. If you buy a new refrigerator, unplug and recycle the old one.

REMINDER!

The BTU offices will be closed on Monday, September 5th, in observance of the Labor Day Holiday.

For more information about any of our programs please visit our website

www.btutilities.com

or call

979-821-5715

CENTRAL AIR & HEAT PUMP REBATE PROGRAM

BTU would like to invite you to explore the rebate options we have available for exchanging out your old air conditioning or heat pump unit with a new one. Depending upon the type and efficiency of the unit you choose, a rebate from $200-$650 might be available. BTU has these rebate programs to encourage customers to use energy more efficiently. As customers use energy more efficiently, this will postpone our need to construct additional power plants and ultimately reduce our carbon footprint. A complete listing of all BTU rebate programs and qualifications can be found on our website at www.btutilities.com.

Rebate Qualifications

- All installations must be for accounts served by BTU.
- An application form can be accessed online at www.BTUtilities.com or picked up at the BTU main office at 205 E 28th St, Bryan, Texas. Local A/C contractors should have copies as well.
- Units must be new and have a minimum Seasonal Energy Efficiency Rating (SEER) of 14.0 or higher. See our website for an explanation of SEER.
- Rebates can be for replacing existing older units and for new construction.
- Both the evaporator coil (inside unit) and the condensing unit (outside unit) must be replaced as a matching system as rated in the Air-Conditioning & Refrigeration Institute (ARI) directory. The ARI reference number must be noted on the application.
- A/C replacement must be sized to no more than 12,000 Btu's (1 Ton) for every 500 square feet of conditioned space. For example, a 1,500 sq ft house can have a unit up to 3 tons in size and qualify, but a larger unit will not qualify. Do not oversize the unit. A larger unit may seem like a good solution but in reality it can cause moisture problems in your home.
- BTU reserves the right to inspect the installed equipment.

SEER RATING	14	15	16	18 +
Central A/C Rebate	$200	$400	$500	$600
Heat Pump Rebate	$250	$450	$550	$650

Kids Corner

When we use electricity in our home, the electrical power was probably generated by burning natural gas or coal , by a nuclear reaction, or by a hydroelectric plant at a dam. Therefore, gas, coal, nuclear and hydro are called energy sources. When we fill up a gas tank, the source might be petroleum or ethanol made by growing and processing corn.

Energy sources are divided into two groups — renewable (an energy source that can be easily replenished) and nonrenewable (an energy source that we are using up and cannot recreate). Renewable and nonrenewable energy sources can be used to produce secondary energy sources including electricity and hydrogen.

Renewable energy sources include solar, wind, geothermal, biomass, and hydro. Nonrenewable energy sources include natural gas, coal, and oil.

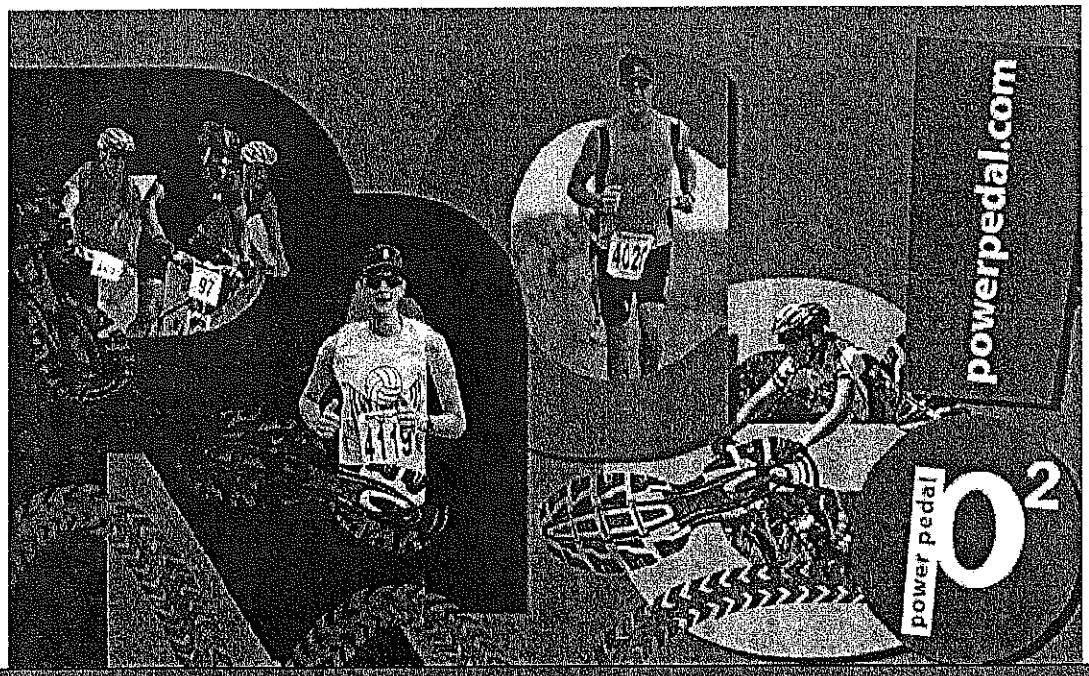
Energy Efficiency Loan Program

BTU's Energy Efficiency Loan Program is a simple way to finance upgrades of energy-efficient products for your home. BTU offers a low 7% annual interest rate with flexible terms from one to five years to help our customers get the most out of their investment. The minimum loan amount is $500 and the maximum loan amount is $10,000. You must have an active BTU account with good credit history and own your home to be eligible. Eligible equipment includes:

- HVAC & Heat Pump Units
- Programmable Thermostats
- Energy-Efficient Appliances (Energy Star rated)
- Insulation
- Low E Windows/Tinting/Solar Shades
- Awnings over west windows

To apply for an energy efficiency loan, go to the BTU website at www.btutilities.com and complete the loan pre-qualification form. Upon approval, you will need to get at least two bids from local contractors. After you select a contractor and the work is completed, contact BTU to schedule an appointment to complete the loan paperwork. BTU will pay the contractor directly. The loan payment will appear as a line item on your BTU bill each month. There is no penalty for making additional principal payments or paying off the loan early.

Save The Date for Power Pedal 2011!

Join us on Saturday, October 8, 2011, at Lake Bryan.

Come participate in Trail Running, Mountain Bike Trail Riding, or both! For more details visit: www.powerpedal.com.