



Together We Make a World of Difference



Solar Water Heater (SWH) Rebate Application

Thank you for your interest in the Blue Ridge Electric (BRE) Solar Water Heater (SWH) Rebate Program. The information you need to apply for a solar water heater rebate follows. In addition to this rebate program, additional funding may be available through federal and state tax incentives. For an updated list of these energy incentives visit the Database of State Incentives for Renewable Energy website at www.dsireusa.org. Below are some basic steps to help you through the rebate process.

1. **Complete a domestic hot water assessment.** It is suggested, at minimum, that the residence should be equipped with low flow plumbing fixtures to conserve hot water, 120 degrees F maximum hot water temperature, and adequate insulation on the existing hot water heater and accessible hot water pipes to minimize losses. An investment in energy efficiency should always be considered the first step prior to renewable energy measures.
2. **Solicit bids.** BRE recommends soliciting at least two bids for your solar water heating system from professional installers. You should look for a solar installer who provides comprehensive design, equipment, and installation services. An estimate should include the cost of permitting, hardware, shipping, installation, and travel. BRE maintains a list of "Authorized Installers", which can be found at www.BlueRidgeEMC.com. Only installers who meet the requirements set forth in this application are eligible to participate in the SWH rebate program.
3. **Complete a Solar Water Heating Site Assessment.** An Authorized Installer can set up a site assessment and confirm that your home meets the minimum criteria for a solar water heating system (installers may charge a fee for this assessment). A site assessment using a solar shading analysis tool (typically completed by the Authorized Installer) helps determine if a solar water heating system is suitable for your location and budget. This assessment is strongly suggested to participate in the program. The installer will check your home for solar water heating system viability by reviewing questions such as:
 - a) Is the orientation of the home's roof appropriate for a SWH system?
 - b) Are there trees or plants that would shade a SWH system?
 - c) How long until the roof may need to be replaced?
 - d) What is your typical pattern of hot water use? (How many occupants, number of laundry cycles, dishwasher loads, etc.)
4. **Review Rebate Program Guidelines.** Review the Terms and Conditions, and System Requirements associated with the BRE SWH Rebate Program. Also consider the requirements for the federal and state tax credits. The NC Energy Office is considering a \$1,000 rebate program for the installation of residential solar water heating systems. Will the system you plan to install meet the requirements of these various programs and satisfy the eligibility criteria necessary to receive all of the rebates and tax credits? Review these issues and concerns with the Authorized Installer prior to your selection of a contractor. A number of additional publications and links to related information are available at the BRE website and should be consulted. BRE staff will NOT be available to answer specific questions regarding Member SWH systems.
5. **Proceed with your solar water heater system installation.** Upon completion of the installation, review the operation guidelines with the installer and complete the BRE Rebate Application and mail it to Blue Ridge Electric, Attn: Solar Water Heater Rebate, P. O. Box 112, Lenoir, NC 28645-0112. Member will have six months (184 days) from the completion of installation of the solar water heating system to submit the rebate application. Please allow one month (30 days) to process the application.

TERMS AND CONDITIONS

Eligibility: Eligible solar water heating (SWH) units must be installed in an owner-occupied, single-family home, which is the Member's primary residence. Participants must be Blue Ridge Electric (BRE) Members with good credit worthiness. Only one (1) rebate is allowed per residential account. Vacation homes and investment properties will not qualify for a rebate as a residential project. The primary function of the system is to provide domestic hot water and at least half of the energy used to heat the dwelling's water must be from solar in order to be eligible for the rebate. The SWH system must be saving or displacing electricity. SWH systems saving or displacing other fuels are not eligible for the BRE rebate. At minimum, a SWH system must be designed for a family of four. Heating is permitted if connected to domestic hot water, but the space heating load is not eligible for an incentive in addition to the rebate.

Location of System: The SWH system must be installed on the property of a BRE Member and located in the service area of the cooperative. You must receive electric service from BRE in your home. Members must have a previously operable electric hot water heater in service in the participating residence prior to the installation of the SWH system, as certified by the Authorized Installer. The SWH system must incorporate electric water heating backup as part of the system design. Gas hot water back-up heaters do not qualify for the rebate.

Shading: The solar collectors (panels/tubes) must be at least 80% shade free as calculated from the middle of the lowest edge of the collector(s) as shown by the SWH site assessment. If the system pump(s) are powered by a photovoltaic (PV) module, there should be no shading of the PV module year round. To ensure power delivery to the DC pump corresponds with solar incidence on the thermal collectors, the PV panel must be attached to the frame of the solar hot water collectors or mounted adjacent to the collectors. Member agrees to manage trees and/or other potential shade sources in order to prevent future shading of the collector array.

Ineligible Systems: Ineligible Systems—Solar pool heating systems of all types, including spas, are ineligible for a rebate. Additional solar thermal technologies such as solar heating, ventilation and air conditioning equipment are also excluded. The SWH system must be new. All solar water heating components (collectors, valves, piping, tanks, pumps, controllers, etc.) must be new and must not have been previously placed in service in any other location for any other application. Rebuilt, refurbished, or relocated equipment is not eligible for a rebate.

Assignment of Renewable Energy Credits: Member must sign an agreement, which allows BRE the rights to any Renewable Energy Credits (RECs) produced from the solar water heating unit in exchange for the rebate. By participating in this rebate program, the Member/homeowner agrees that BRE shall have the sole right to obtain and retain ownership of, and to qualify for and receive the full benefit of, any and all existing and future credits, certificates, benefits, environmental attributes, emission reductions, offsets and/or allowances, however entitled, attributable to the installation and/or operation of the eligible solar water heating system. The owner of the SWH system shall not be allowed to sell or transfer the Renewable Energy Credits/Certificates or Environmental Attributes to any other party or representative.

Member Responsibilities: Rebates are conditional on meeting all guidelines outlined in the SWH Rebate Program. The Member must correctly complete and submit an application form and agree to the terms and conditions listed in the application form. Member agrees to maintain the installed SWH system in proper working condition for a minimum period of five years. Failure to do so may constitute a repayment of a prorated portion of the rebate that shall become due and payable to Blue Ridge Electric. In addition, customer agrees to allow Blue Ridge Electric to perform SWH equipment inspection(s) upon scheduled notification.

Time Frame: The solar water heating system must have been installed and placed in service after 1/01/2007 to qualify for the rebate. For systems installed prior to 9/01/2009, the rebate application must be filed prior to 7/31/2010. For systems installed after 9/01/2009, the rebate application must be filed within 184 days (six months) of the date the system was placed in service.

Incentive Amount: The SWH rebate will not exceed \$500 for single family homes. System must be checked for compliance by an authorized Blue Ridge Electric employee or designated representative before a rebate is issued. Checks are issued monthly and will be made to the BRE Member and mailed to the address of record. Please allow 2-3 weeks to process this application and schedule an appointment to request access to your property in order to perform a visual verification of you system. Permission to inspect the SWH system will be requested, advance notice will be provided, and care will be taken to minimize an inconvenience for the Member. The BRE inspection does not include any kind of safety review or code enforcement and should not be relied upon as one.

System Requirements: The solar energy system must be designed and installed to meet the "System Requirements" described in this application. You must notify BRE if there are deviations to the system requirements set forth in the System Requirements and this may result in the SWH system being ineligible for a rebate.

Authorized Installers: Members must select an approved Contractor/Installer as referenced in the List of Authorized Installers that is maintained and updated by BRE. Building permits for the installation of the thermal solar system must be obtained by the commercial contractor. No incentive will be paid for a homeowner installed or non permitted system. BRE does not make recommendations of contractors, however for informational purposes, it is suggested that you visit the website of the Installers to learn more about SWH options.

Consumer Education: Authorized Installer must provide system owner with instructions and a maintenance schedule and information about how to identify whether the system is working properly. An owner's manual must be given to the Member in order to receive a rebate.

Tax Liability: Members who receive a rebate from BRE may be subject to tax liability for the rebate received pursuant to state or federal tax codes. BRE is not responsible for any imposed tax liability and it is the Member's responsibility to determine applicability.

Privacy: BRE will not share your personal information with third parties for the purpose of solicitation. BRE may from time to time send surveys regarding the operation and performance of the SWH system and completion of the requested information would be greatly appreciated.

Disclaimer: Acceptance of this rebate by the Member does not constitute the approval, acceptance, warranty, guarantee or endorsement of BRE. The Member understands and agrees that BRE is not a party to any contract pertaining to the SWH system installation. BRE makes no representations or warranties, expressed or implied, regarding the design, sizing, installation, construction, reliability, efficiency, performance, operation, maintenance, or use of any SWH system or any make or model of equipment analyzed, discussed, selected, rejected, installed or otherwise considered by the Member. Any decisions regarding the selection, design, installation, use and operation of the SWH system and equipment shall be at the sole discretion and are the sole responsibility of the Member. BRE is not liable or responsible for any act or omission of any contractor whatsoever.

Additional Terms: Blue Ridge Electric reserves the right to:

- a) Inspect or monitor the system to ensure that it is consistent with rebate program guidelines.
- b) Withhold the rebate until any identified problems with the solar system are resolved.
- c) Alter the program at any time without notice. Check the www.blueridgeemc.com for the most current terms.

MEMBER AND AUTHORIZED INSTALLER CERTIFICATION AND VERIFICATION

Under penalty of perjury, I certify that the information contained in this application is true and correct and that it meets the BRE SWH Rebate Program guidelines and requirements. I understand that the information is subject to audit and investigation by Blue Ridge Electric (BRE) and an on-site verification will be completed prior to payment of the \$500 rebate. Furthermore, as a qualified BRE Member and purchaser of the solar water heater system, I understand that I must sign this Rebate 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 BRE if I fail to ensure BRE that the SWH system equipment is properly maintained and operated at the BRE address originally listed within this application. I agree to sign an agreement, which allows BRE the rights to any Renewable Energy Credits (RECs) produced from the solar water heating system in exchange for the rebate. By participating in this rebate program, I agree that BRE shall have the sole right to obtain and retain ownership of, and to qualify for and receive the full benefit of, any and all existing and future credits, certificates, benefits, environmental attributes, emission reductions, offsets and/or allowances, however entitled, attributable to the installation and/or operation of the eligible solar water heating system. As the owner of the SWH system I understand that I shall not be allowed to sell or transfer the Renewable Energy Credits/Certificates or Environmental Attributes to any other party or representative.

I certify that I have reviewed the information contained in this application and any accompanying documentation, and the information is reasonable and accurate. I further certify that I own the SWH system and the real property upon which the SWH system is located and that the system is installed at the address listed in the application. I have read the Terms and Conditions associated with the BRE SWH Rebate program. I am providing the requested information solely to be eligible to participate in the BRE SWH Rebate program and request that the personal information supplied by me be treated as confidential to the maximum extent possible. I hereby acknowledge that all of SWH system equipment was installed to my satisfaction and that the Authorized Installer has provided me with an owner's manual and maintenance schedule and is responsible for all warranties. I also understand that BRE is not responsible for any contractual and/or construction disputes between the Authorized Installer and myself.

Member Name (please print): _____

Member Signature: _____

Date: _____

I acknowledge by my signature that the SWH system that I installed as indicated in this BRE SWH Rebate Application and on the residence of the Member listed in this application meets the specified minimum SWH System Requirements. I certify as the installer that I have done the installation work required to connect the SWH system in accordance with the relevant building codes, standards and other government requirements. I certify that this SWH system is for domestic water heating purposes (excluding swimming pools, spas or similar). I certify that the information provided by me is truthful and correct.

Name of Authorized Installer (please print): _____

Signature of Authorized Installer; _____

Company Name: _____

Date: _____

BLUE RIDGE ELECTRIC, AND ITS OFFICER, DIRECTORS, AND EMPLOYEES (I) DISCLAIM ALL RESPONSIBILITY AND SHALL NOT BE LIABLE TO ANY MEMBER FOR ANY LOSS, INJURY, CLAIM, LIABILITY OR DAMAGE OR ANY KIND RESULTING FROM, ARISING OUT OF, OR IN ANY WAY RELATED TO, ANY SOLAR WATER HEATING SYSTEM OR THE ACTS OR OMISSIONS OF ANY AUTHORIZED INSTALLER; AND (II) DISCLAIM AND MAKE NO REPRESENTATION, WARRANTY OR GUARANTEE OF ANY KIND, EXPRESSED OR IMPLIED, WITH RESPECT TO THE QUALITY, CONDITION OR DELIVERY OF ANY MATERIALS, EQUIPMENT OR LABOR OF ANY KIND PROVIDED OR SUPPLIED BY, WORK OF ANY KIND PERFORMED BY, OR SERVICES OF ANY TYPE OR NATURE RENDERED BY ANY AUTHORIZED INSTALLER, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

SYSTEM REQUIREMENTS

- 1. Professional Installation:** SWH systems must be installed to meet these *System Requirements* by an Authorized Installer working with a licensed plumber. The Installer who contracts for the installation must have a minimum \$50,000 of liability insurance. Product literature, system description, schematic, and maintenance instructions must be provided to the customer in the form of an owner's manual. Self installations are not eligible to participate in the rebate program. The solar energy system must comply with all applicable federal, state and local codes and obtain the appropriate permits. Installation requirements may vary from jurisdiction to jurisdiction. Plumbing connections between potable and non-potable water must be performed by a licensed plumber. You must notify BRE if there are deviations to the System Requirements as this may make the SWH system ineligible for a rebate.
- 2. Collectors:** All solar collectors (panels/tubes) must have OG-100 certification by the Solar Rating and Certification Corporation (SRCC) or the equivalent rating (GP-5-80) from the Florida Solar Energy Center (FSEC). There should be labeling indicating either SRCC or FSES certification on the flat plate panels or evacuated tubes as well as a certification number. Collectors must have a minimum five-year warranty from the manufacturer. Flat plate panels must have tempered glass glazing. Home built systems are not eligible.
- 3. SRCC OG300 Pre-Assembled Systems:** Entire systems rated by the Solar Rating and Certification Corporation (SRCC) and assembled by the manufacturer may be installed as received from the manufacturer in lieu of the *System Requirements* for those components. It is highly recommended that the overall solar water heating systems have SRCC OG-300 certification. This latter requirement may be necessary to obtain rebates from the North Carolina Energy Office and qualify for specific federal and state tax credits. It is the responsibility of the Member to determine if the system installed qualifies for any other rebates or tax credits. The OG-300 system rating is NOT required for the BRE rebate.
- 4. Collector Orientation and Mounting:** Collectors must be oriented to face within 45 degrees of due South. Collectors oriented East, West or that are flat mounted, must be correctly sized using a corrective factor formula as determined by the Authorized Installer. Collectors must be mounted at an angle of at least 35 degrees but no more than 60 degrees from horizontal. Collectors must be securely fastened to their mounting structure. In some cases it may be necessary to reinforce the roofing structure. If a tilt rack raises the top of the collectors above the roof, the mounting hardware must be bolted to reinforced framing members in the roof or rafter where the bolt has a minimum of three inches grab (if reinforced framing is less than three inches, bolts must have nut and washer). If it is not possible to reinforce the roofing system, a rail may be added to the top of the roof, the rail lag bolted to the roof rafters and the collectors bolted to the rail.
- 5. Comply with all Applicable Codes:** The SWH system must be installed, operated, and maintained in accordance with all applicable codes, laws, ordinances, and rules, and all necessary permits must be obtained prior to installation.
- 6. Shading:** A solar shade analysis must be completed as part of a system performance calculation to show that the system produce no less than 80 percent of the annual output of a system with optimal placement and orientation.
- 7. Secondary Water Electric Water Heating Tank:** If the SWH system incorporates a two tank design, the use of existing electric hot water storage tanks will be allowed if the tank is less than five years old at time of installation. Tanks over four years old must be flushed prior to system activation. If the tank is in good operating order and older than five years, a hot water heater wrapper/jacket is recommended and will satisfy this requirement.
- 8. Labeling:** At minimum, the following system components must be labeled: potable water and non-potable pipe. Include a schematic with the owner's manual and with this application.
- 9. Pressurized Systems:** All piping between the collectors and the heat exchanger and return piping within 10 feet of the collector must be copper or stainless steel and insulated with insulation rated to withstand over 250 degrees and jacketing capable of withstanding moisture, ultraviolet radiation and environmental exposure. The balance of system piping may be either copper, stainless steel or cross-linked polyethylene (PEX) (rated to at least 200 degrees F at 100 pounds per square inch) and insulated with insulation rated to withstand 200 degrees F and jacketing capable of withstanding moisture, ultraviolet radiation and environmental exposure. All piping must be supported every eight feet for copper, stainless steel pipe and aluminum PEX pipe or every three feet of PEX pipe. A back check valve must be installed in the solar loop to prevent thermosyphoning. All fittings, valves and gauges must be copper, bronze, stainless steel or brass. The closed loop must be fitted with the following components: pressure relief valve, expansion tank and pressure gauge. A pressure relief

valve must be installed in the collector loop in the mechanical room on the collector side of ANY shut-off array valves. System pressures must not exceed 75 pounds per square inch.

10. **High temperature propylene glycol antifreeze solution must be used.** To reduce risk of health hazard and to protect system components from corrosion and freezing, high temperature rated propylene glycol, mixed with distilled or de-ionized water must be used in all pressurized systems. The heat transfer fluid must provide burst protection to at least -60 degrees F for pressurized systems.
11. **Drainback Systems:** All piping between the collectors and the heat exchanger must be copper, stainless steel and insulated with insulation rated to withstand over 200 degrees and jacketing capable of withstanding moisture, ultraviolet radiation and environmental exposure. The balance of system piping may be either copper, stainless steel or cross-linked polyethylene (PEX) (rate to at least 180 degrees F at 100 pounds per square inch) and insulated with insulation rated to withstand 180 degrees F and jacketing capable of withstanding moisture, ultraviolet radiation and environmental exposure. All fittings, valves and gauges must be copper, bronze, stainless steel or brass. All drainback piping to and from collectors must have at least a ¾ inch inside diameter and be mounted with at least a ¼ inch drop per foot. The collectors must also have a ¼ inch drop per foot. All piping must be supported every eight feet for copper, stainless steel and aluminum PEX pipe and every three feet for PEX pipe.
12. **Balance of System:** The SWH system must incorporate back-up electric water heating. The domestic hot water piping must be fitted with a thermostatic tempering valve to limit the maximum temperature of the hot water delivered to a set point of 120 degrees F (adjustable). A temperature monitoring gauge must be installed at the outlet of the storage tank on the feed to the back-up water heater and downstream of the tempering valve. The system must use a double wall heat exchanger.
13. **Two-Year Installation Warranty:** The SWH system must include at least a two-year installation warranty that covers any defect in the workmanship of the installation at no charge to the owner.
14. **One-Year Equipment Warranty:** All major SWH system components must have at minimum a one-year warranty. Collectors (panels/tubes) must have a minimum five-year warranty.
15. **Consumer Education.** Installer must provide system owner with instructions, a maintenance schedule and information about how to know whether the system is working properly. An owner's manual specific to the system must be delivered to the Member in order to receive a rebate.
16. **Performance Testing.** BRE reserves the right to test systems prior to the rebate and for up to two years if required to do so in order to meet any future requirements mandated by the either the North Carolina Utilities Commission as part of the Renewable Energy and Energy Efficiency Portfolio Standards (REPS) compliance or the North Carolina Energy Office as part of their requirements of a proposed SWH Rebate Program. The SWH system must be tested between 10AM and 2PM on a mostly sunny day to verify that the system is in service. Performance testing will be provided at no cost to the Member and will consist of checking those items set out in the System Requirements. If the SWH system does not pass, the Member will be notified immediately of the deficiencies and given 60 days to correct deficiencies (and still be eligible for the rebate). The second performance test will be at the Authorized Installers expense. Eligibility for the BRE rebate after 30 days will be at the discretion of BRE. In addition, BRE may request system performance information from the Member for up to seven (7) years through surveys and interviews.

Please sign and mail your completed Application form to the following address:

Blue Ridge Electric
Attn: SWH Rebate Program
P. O. Box 112
Lenoir, NC 28645-0112

Questions regarding this application should be directed to bcrutchfield@blueridgeemc.com

For BRE Internal Use
Date Application Received:
Member Verification:
Authorized Installer Verification:
Date of Visual Inspection:
Performed By:
Results / Feedback:
REC Agreement Received:
Approval Letter / Check Sent to Member:
SWH Project Listed with NCUC for RECs:
Incentive Payment to Authorized Installer:
Other Issues: <hr/> <hr/> <hr/> <hr/>
Resolution of Issues: <hr/> <hr/> <hr/>