

**FRONT PORCH SUNSHINE  
REQUEST FOR QUOTATIONS  
CONTRACTOR AND SYSTEM QUALIFICATIONS**

The Florida Solar Energy Research and Education Foundation, Inc. (FlaSEREF) is seeking the services of solar companies to install solar water heaters on low income households in Florida. This program, designated "Front Porch Sunshine," is being conducted in cooperation with the Florida Solar Energy Center and with funding from the Florida Energy Office

**1. FRONT PORCH SUNSHINE WORK OBJECTIVE/SCOPE OF WORK**

The goal of the Front Porch Sunshine Program is to provide reliable, low- or no- maintenance solar water heating systems on pre-approved low-income residences in Florida's designated Front Porch communities. Responsive bidders will:

- A. Quote the turn-key price for installed solar water heating systems which are to be retrofitted to existing electric or gas water heaters. System price shall not include the cost of the storage tank.
- B. Quote separately the price of installing a new electric or gas water heater. In the event the existing water heater requires replacement, weatherization funds will be allocated to cover this cost.
- C. Identify which of the 20 Front Porch Florida Communities to be served. Successful respondents will be expected to assist in the final site selection using a pre-approved list of clients with suitable household and building characteristics (such as number of occupants, solar access, structural integrity of roof, etc.)

Bids that are subject to incentive payments from a third party must report the incentive payment in their bid and deduct the amount of the incentive from price of the system. [Note: the State of Florida solar rebate and Federal Tax Credits will not apply to these recipients.]

**2. SUBMISSION OF BIDS/REQUESTS FOR CLARIFICATION/AMENDMENTS**

All bids must be submitted in a sealed envelope. Do not include more than one bid per envelope. The face of the envelope shall contain the bid title "Front Porch Sunshine." All bids are subject to the conditions specified herein. Those which do not comply with these conditions are subject to rejection. Bid opening shall be public and shall take place at the Florida Solar Energy Center on March 28, 2007 at 3:30 p.m. It is the bidders responsibility to assure that its bid is delivered at the proper time and place of the bid opening. Bids which for any reason are not so delivered will not be considered. Offers by fax, telephone or email are not acceptable. Bids shall be addressed to:

Florida Solar Energy Center  
Attention: John Harrison  
1679 Clearlake Road  
Cocoa, FL 32922  
Telephone: 321-638-1000

A bid may not be altered after opening of the bids. Firm prices shall be bid and include all services rendered to FlaSEREF.

This RFQ will be posted at <http://www.fsec.ucf.edu/solar/projects/frontporch/frontporch.htm>. Interested parties may submit questions regarding this RFQ via email or telephone. All questions and responses shall be posted on the website. Technical questions should be directed to John Harrison, [harrison@fsec.ucf.edu](mailto:harrison@fsec.ucf.edu), or 321-638-1506. All other questions should be directed to Colleen Kettles, [cmkettles@cfl.rr.com](mailto:cmkettles@cfl.rr.com) or 407-786-1799. While not anticipated, any amendments to this RFQ will be posted on the website. To receive a copy of an amendment by mail or fax, prospective bidders must notify FlaSEREF of their intent to bid prior to bid opening. Notification of Intent to Bid shall be directed to Colleen Kettles, FlaSEREF, 101 Cove Lake Drive, Longwood, FL 32779, Fax 407-786-1772.

### **3. INVOICING**

The contractor shall be paid upon submission of properly certified invoices to FlaSEREF at the prices stipulated in the bid as accepted, after installation and acceptance of each solar water heating system. Invoices shall contain: the name and address of the residence which has had a solar water heater system installed; the model number of the system; a copy of the building permit; and photos of the site and installation, including the final installation, work in progress, interior (tank and tank area solar plumbing) and exterior shots (collector and collector mount) of the system, and, with permission, the family occupying the residence. Invoices shall be signed and dated and addressed to: FlaSEREF, 101 Cove Lake Drive, Longwood, FL 32779.

### **4. AWARDS**

As the best interest of the Front Porch Sunshine program may require, the right is reserved to make awards on a geographical basis or on a statewide basis with one or more suppliers; to reject any or all bids; or waive any minor irregularity or technicality in bids received.

### **5. INSTALLATION CONTRACTOR QUALIFICATIONS**

- A. Respondents to this RFQ must show evidence of the following experience and qualifications on the part of their company and any of their subcontractors in order to meet the qualifications for evaluating the RFQ.
- B. License. Bidders must be a Florida state certified solar contractor, solar specialty contractor, locally licensed solar contractor or state certified plumbing contractor. A copy of the current license must be included with the bid.
- C. Experience. Bidders must demonstrate capabilities to install residential solar water heating systems. A narrative of the bidders experience must be included with the bid.
- D. Bidders must provide continuous post-installations service to the areas in which they will be installing solar water heating systems.
- E. State and Local Codes and Ordinances. Bidders must comply with all applicable state and local codes and ordinances. Appropriate city or county building permits will be obtained for each system installation.
- F. Insurance. Bidders must have current liability and workers compensation insurance coverage, or a certificate of exemption. Successful bidders will be expected to provide a certificate of insurance to FlaSEREF.
- G. Warranties. The solar collector be covered by a full manufacturer's warranty for a period of ten years. The contractor shall provide a full warranty on the system for a minimum of one year. The system warranty shall cover failure of the installed solar system

including any component or assembly, where such failure is caused by a defect in materials, manufacture, or installation. The warranty shall cover the full cost of all parts, labor, shipping and handling necessary to remedy the defect, including, if necessary, replacement at the site. In those installations in which the solar system is retrofitted to an existing electric water heater and the water heater fails due to normal circumstances during the one year warranty period, the system warranty will exclude replacement of the tank. Warranties need not cover defects of any kind resulting from exposure to harmful materials, fire, flood, lightning, hurricane, tornado, hailstorm, windstorm, earthquake or other acts of nature, or vandalism, explosions, harmful chemicals, acidic or caustic water, or other fluids, fumes or vapors, operation of the collector under excessive flow rates, misuse, abuse, negligence, accident, alteration, falling objects or any other cause beyond the control of the contractor or manufacturer. The manufacturer and contractor's name, address, and phone number must be appear conspicuously on all warranties. Copies of all warranties shall be included with the bid.

## **6. SOLAR SYSTEM SPECIFICATION REQUIREMENTS**

- A. Respondents to this RFQ must show evidence that they can deliver solar water heating systems that meet the following minimum threshold requirements for evaluating the RFQ.
- B. System Approval. All solar domestic hot water systems shall be approved and listed per Florida Solar Energy Center (FSEC).
- C. System Design. Passive integral collector storage (ICS) systems are recommended for use in this program. The Solar Weatherization Assistance Program (SWAP - the precursor to this program) system inspection process has indicated that passive ICS systems, because of their technical simplicity and lack of ancillary components, are the ideal system for low income solar clients. The SWAP program and the on-going inspections of systems installed under this program have revealed that active systems are more likely to require periodic service and maintenance, which low-income clients do not have the financial resources to undertake. Experience with a variety of active systems indicates that certain variations and/or components are not suitable for use with low income clients.
- D. In the alternative, contractors may submit FSEC approved active systems that they consider applicable for this program. The vendor shall provide a written explanation of how their proposed system will provide reliable, long term operation, and require no interaction or additional expenditures on the part of the client. This might include extended warranty coverage and service contracts within the cost of the quoted system price.
- E. System sizing. Because of the overall system procurement funds and the uncertainty of the selected residences' occupancy levels, it is the intent of this program to standardize systems. Vendors are encouraged to submit quotes for various system sizes and quantities. A final evaluation will be made based on the system size, performance, and cost. Bidders must keep in mind that these systems will be retrofits to existing water heaters or, if required, replacement conventional electric water heaters.
- F. Supplemental System Requirements. Installation requirements will follow the criteria set forth in Chapter VII of the FSEC document "Florida Standard Practice for Design and Installation of Solar Domestic Water and Pool Heating Systems."

## 7. ADDITIONAL REQUIREMENTS

The following additional system requirements shall also be required for systems installed under Front Porch Sunshine.

### A. Insulation

- i. Insulation rated at R-2.6 or greater shall be installed on all interconnecting hot and cold water piping installed in attics, unconditioned garages, other unconditioned indoor spaces as well as all conditioned spaces. Rubber type insulation is required.
- ii. ICS systems installed in Central Florida will be installed with ¾" wall thickness rubber type insulation (Rubatex, etc.) on attic and exterior piping. ICS systems installed in North Florida will be installed with 1" wall thickness rubber type insulation. Systems other than ICS submitted for review will specify the insulation that will be used.
- iii. Although a requirement to protect exterior pipe insulation is stipulated in the FSEC system standards, special care must be taken by the installer to insure that external insulation is well protected from ultra violet ray degradation and does not degrade. Exterior insulation will be protected from ultra violet ray degradation by a suitable extended durability exterior paint, or preferably, by air conditioning industry type metal foil tape.
- iv. Pipe insulation joints shall be well butted and end sections properly adhered. In the event of 90 degree connections, the insulation cuts will be properly mitered and sealed.

### B. Temperature control

- i. Designated systems will require a scald prevention valve as and if required by local codes. The valve will provide a means of limiting the temperature of the hot water at the fixtures to a selectable temperature. The range of selectability shall include 122 to 140 degrees F. (Scald prevention valves used must meet A.S.S.E. Std 1017, *Temperature Actuated Mixing Valves for Primary Domestic Use.*)
- ii. Unless required by local codes, it is the intent of this program that scald prevention valves not be used on ICS systems. Active systems submitted for review will be evaluated for their need of a scald prevention valve.

### C. Replacement water heaters

- i. All systems will be retrofit to existing electric water heaters.
- ii. In the event the existing water heater needs to be replaced during the installation of an ICS system, a 40-gallon water heater will be used. Exceptions will be made in the event the existing water heater was a smaller unit used because of space restrictions.
- iii. If active systems are submitted for review, they shall be designed for use with a 52-gallon water heater.
- iv. Replacement tank insulation shall have a minimum R-16 rating. An exterior insulation blanket may be used to satisfy this requirement. When installing insulation blankets, care must be taken to provide access to the two thermostat/element doors as well as the tank's nameplate.
- v. Water heaters that need replacing will be paid for by the local weatherization agencies. FlaSEREF will assist contractors with the procurement and replacement of the water heaters through the local weatherization agencies. Bids for the SWH system shall not include the cost (labor and materials) of the storage tank. Bidders shall however quote a separate price for cost of storage tank in the event it is indicated.

- D. System collector loop piping
- i. Both collector supply and return lines shall be at least 3/4 inch (O.D.) Type L or K Soft copper tube for ICS units. One continuous run of soft copper tubing shall be used from the water heater area valves connections to the solar system roof plumbing. There shall be no soldered joints within enclosed attics. Once at the roof, hard copper sections may then be used.
  - ii. The installer shall attempt to have a minimum of exposed roof piping whenever logistically possible. Long exterior pipe runs that could have been installed in attic space will not be allowed.
  - iii. It is recommended that escutcheons be used at ceiling pipe penetrations.
- E. Roof pipe flashing
- i. Solar industry standard copper flashing with a flashing collar soldered to the piping shall be used. The copper flashing base must be 4-6" wide.
  - ii. Vendors may submit, for review and possible acceptance, ancillary flashing materials that they consider applicable for this program.
- F. Collector mounting
- i. Collectors will be mounted flush to the roof using the collector manufacturer's mounting hardware and methods. Wood mounting materials will not be allowed.
  - ii. Collectors will be mounted facing south or at plus or minus 45 degrees east or west of south. (There may be circumstances in which the residence is ideal for solar yet the roof orientations are east/west facing. In those cases, the collector shall be mounted flush on the west facing roof.)
  - iii. In the event the collector is mounted on a flat roof, the unit will be tilted to the site's latitude using the manufacturer's mounting hardware and methods.
  - iv. A 1-1/2" to 3" gap between the bottom of the collector and the roof will be required.
- G. Freeze protection
- i. All systems must be FSEC approved. Therefore all approved systems incorporate acceptable freeze protection mechanisms as specified in the FSEC system standards document.
  - ii. ICS systems will not require a freeze prevention valve. Instead, installed ICS systems must also meet the requirements listed above in Sections A (Insulation) and D (System collector loop piping).
- H. Water quality
- The bidders will determine that the local water quality is suitable (per the manufacturer's guidelines) for the installation of the solar system. In the event the water quality is found to be inferior, the bidders will have the option to terminate all installations in the affected area, or to seek remedial action from the appropriate water utility to avoid damage to the solar unit
- I. System owner's manual
- The manual must be affixed to the client's electric water heater either with an adhesive pocket or attached to one of the tank area plumbing valves.
- J. Valve labels
- Ball valves used for solar/solar by-pass options will have a label attached that simply states which position the valve should be set at for solar and for solar by-pass operation. For ICS systems, this will include a simple cardboard label stating that for solar, the valve should be in a vertical position, and for solar by-pass, in a horizontal position (or reverse if that is the case).