



CSD LIWP STANDARDS

FOR

SOLAR WATER HEATING - DRAFT

Category	Criteria
1. MEASURE	1.1. Solar water heating uses the power of the sun to heat water for domestic use. When there is adequate sunshine, the solar water heating pre-heats the water that enters the existing gas water heater, resulting in reduced natural gas usage and CO emissions. 1.2. This measure is classified as an Enhanced Measure requiring a solar assessment. 1.3. The following requirements are in addition to all applicable requirements found in the General Installation Guidelines.
2. LICENSING	2.1. This measure requires a C-4 Boiler, Hot Water Heating and Steam Fitting or C-36 Plumbing Contractor or C-46 Solar Contractor license for purposes of the LIWP program.
3. FEASIBILITY CRITERIA	3.1. Install this measure when (<u>ALL</u> of the following shall apply): <ol style="list-style-type: none"> a. Replacement is justified with a SIR of 1.0 or greater as calculated by the following: $SIR = \frac{\text{Annual Therms Saved (from CSI Calculator)} \times \text{Customer Cost/Therm} \times 23.4456}{\text{Total Cost of System} - \text{CSI Rebate}}$ b. Installation must qualify for CSI Solar Thermal Rebate or equivalent leveraged funding. c. The dwelling has: <ul style="list-style-type: none"> - An existing natural gas water heater - Asphalt composition (comp) shingle roof d. The dwelling is single-family. e. Baseline criteria will be met: <ul style="list-style-type: none"> - Solar piping in the attic would maintain a continuous downward slope to the tank (minimum slope of 1/4" per foot). - Windowed access/shade analysis, tilt, and azimuth criteria for the "California Solar Initiative-Thermal Program Handbook" will be met. - Meets criteria as detailed in the AET Permit Package. 3.2. Do <u>NOT</u> install this measure when: <ol style="list-style-type: none"> a. Adequate space for the solar system (collectors, tanks, and components) is not available. b. Roof structure or condition will not support the weight of SWH collectors. c. Dwelling is a mobile home (manufactured housing).
4. ADDITIONAL ASSESSMENT CRITERIA	4.1. Detailed assessment shall be conducted using the LIWP 540 Dwelling Assessment Form.
5. MINIMUM INSTALLATION GUIDELINES	5.1. All Installations <ol style="list-style-type: none"> a. Installation practices and materials shall conform with local code, "California Solar Initiative-Thermal Program Handbook", manufacturer's (AET's) Permit Package and Installation Manuals, and CSD Guidelines. b. A Building Permit is <u>required</u> to be obtained and finalized. 5.2. Weather/Temperature Protection

	a. Placement of storage tank or drainback tank outdoors shall be allowed only in CEC Climate Zones 6-9, and only when located in a code-approved enclosure to prevent weather damage to tanks, controller, pump, or other vulnerable components.
6. POST-INSTALLATION GUIDELINES	6.1. Operational Checks a. Collector model and size must be consistent with SRCC certification, CSI rebate application, and Item 5.1(a). b. Confirmation of measure feasibility is required. c. The SWH system shall be checked for leaks and corrected as needed. d. The SWH system shall function as designed and comply with the installation guidelines above.
7. MATERIAL SPECIFICATIONS	7.1. CSD has procured and approved Alternative Energy Technologies Solar Water Heating Systems, and requires use of one of the following AET solar water heating systems: a. Installation Package (Collectors, Components, Unfired Solar Storage Tank, etc.) - Model #DBS-G2-80-64; SRCC OG300 Certification #2010017C <u>OR</u> - Model #DBS-G2-60-40; SRCC OG300 Certification #30004214 b. AET Spare Parts Kit: Product #: DBS-CAKIT
8. WARRANTY	8.1. Manufacturer Warranty – 10 years

NOTE:

All solar water installations will use the Alternate Energy Technologies (AET) DBS-G2 Drainback, available in two sizes. These systems have already been procured. System model numbers and costs are listed below. Bidders should refer to the AET Installation Operation Maintenance Manual in the Bidder's Library for system details.

System Number	Cost*
Model #DBS-G2-60-40; SRCC OG300 Certification #30004214	\$3,333
Model #DBS-G2-80-64; SRCC OG300 Certification #2010017C	\$3,553
AET Spare Parts Kit: Product #: DBS-CAKIT	\$840

*Note that anyone purchasing an AET system must submit, and have approved, a credit application for both the manufacturer, AET, and the shipper, TTL. Both credit applications are included in the bidder's library for review.

Shipping costs for one system can range from \$200 to \$400. For the purposes of estimating your costs, use an average shipping cost of \$300.