

**FORM EIA-63A
ANNUAL SOLAR THERMAL COLLECTOR MANUFACTURERS SURVEY**

GENERAL INFORMATION AND INSTRUCTIONS

I. Purpose

Form EIA-63A is designed to provide the data necessary for the Energy Information Administration (EIA), U.S. Department of Energy (DOE), to carry out its responsibilities for tracking collector shipments in the solar collector manufacturing industry and for providing information concerning the size and status of the industry. The data collected will be published in the Renewable Energy Annual and also be available through EIA's Internet site at <http://www.eia.doe.gov/fuelrenewable.html>.

II. Who Should Respond to This Survey

This report is mandatory and required pursuant to the authority granted to the Department of Energy (DOE) by the Federal Energy Information Administration Act of 1974 (Public Law 93-275). Form EIA-63A is to be submitted by companies in the U.S. (including U.S. territories and possessions) (1) that manufactured and shipped (including exporting) solar thermal collectors/reflectors and/or (2) that imported and shipped solar thermal collectors/reflectors during the survey year. If you are completing this survey form for the first time but were active in the industry during the previous survey year, please photocopy the entire form and provide us with data for the previous year also.

III. Where to Submit Completed Forms

Submit your data electronically using EIA's Internet Data Collection (IDC) system. All respondents for whom EIA has an e-mail address will be notified of the procedure for submitting using the IDC system.

If you need an alternate means of filing your response or have questions about the data requested on Form EIA-63A, please contact the Survey Manager, Peter Wong at peter.wong@eia.doe.gov or (202) 586-7574.

Please retain a completed copy of this form for your files.

IV. When to Submit Completed Forms

The survey year is from January 1 through December 31 each year. Respondents have **60** days from receipt of notification to comply to submit the Form EIA-63A.

V. Sanctions

The timely submission of Form EIA-63A by those required to report is mandatory under Section 13(b) of the Federal Energy Administration Act of 1974 (FEAA) (Public Law 93-275), as amended. Failure to respond may result in a penalty of not more than \$2,750 per day for each

civil violation, or a fine of not more than \$5,000 per day for each criminal violation. The government may bring a civil action to prohibit reporting violations, which may result in a temporary restraining order or a preliminary or permanent injunction without bond. In such civil action, the court may also issue mandatory injunctions commanding any person to comply with these reporting requirements. **Title 18 U.S.C. 1001 makes it a criminal offense for any person knowingly and willingly to make to any Agency or Department of the United States any false, fictitious, or fraudulent statements as to any matter within its jurisdiction.**

VI. Provisions Regarding Confidentiality of Information

The information reported on this form will be protected and not disclosed to the public to the extent that it satisfies the criteria for exemption under the Freedom of Information Act (FOIA), 5 U.S.C. §552, the Department of Energy regulations, 10 C.F.R. §1004.11, implementing the FOIA, and the Trade Secrets Act, 18 U.S.C. §1905.

The Federal Energy Administration Act requires the EIA to provide company-specific data to other Federal agencies when requested for official use. The information reported on this form may also be made available, upon request, to another component of the Department of Energy (DOE); to any Committee of Congress, the Government Accountability Office, or other Federal agencies authorized by law to receive such information. A court of competent jurisdiction may obtain this information in response to an order. The information may be used for any nonstatistical purposes such as administrative, regulatory, law enforcement, or adjudicatory purposes.

Disclosure limitation procedures are applied to the statistical data published from Form EIA-63A survey information on the dollar value of shipments and complete systems to ensure that the risk of disclosure of identifiable information is very small.

For all other data published from the Form EIA-63A, disclosure limitation procedures are not applied. Thus, there may be some statistics that are based on data from fewer than three respondents, or that are dominated by data from one or two large respondents. In these cases, it may be possible for a knowledgeable person to estimate the information reported by a specific respondent.

VII. Filing Forms with Federal Government and Estimated Reporting Burden

Respondents are not required to file or reply to any Federal collection of information unless it has a valid OMB control number. Public reporting burden for this collection of information is estimated to average 4.5 hours per response including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to the Energy Information Administration, Statistics and Methods Group, EI-70, 1000 Independence Ave., S.W., Washington, D.C. 20585-0670, and the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503.

SPECIFIC INSTRUCTIONS

For the purpose of this report, solar thermal collectors that use mirrors to reflect and concentrate sunlight onto receivers that collect the solar energy and convert it to heat --such as concentrators, compact linear fresnel reflectors, heliostats, parabolic dishes, and parabolic troughs-- are one of the main types of solar thermal collector technologies. Please see the EIA glossary at <http://www.eia.doe.gov/glossary/index.html>.

Item Instruction

1.1 Enter the responding company's principal business office address and preparer's office address.

1.2 Provide the name, title, and contact information for the principal people in your company to whom questions should be addressed regarding this submission.

2.1 (a-d) Mark as appropriate the manufacturing activity conducted by your company during the current reporting period. If you answer "**Yes**" to any one of item 2.1 (a) through (d) please begin with Item 3.0 and complete the remainder of this form. If you answer "**No**" to all of item 2.1 (a) through (d) please complete only items 2.2 and 7.0.

2.2 If you answer "**No**" to all of items 2.1 (a) through (d), please report whether your company plans to manufacture, import, or ship solar thermal collectors in the future and, if **yes**, in what year.

3.1 (a-i) Report only on activities that are solar-related.

3.2 (a-e) Mark as appropriate if you are planning to introduce a new solar-related product. A new solar-related product is differentiated from a modified existing product if the "new" product is different enough to warrant a new model number and requires retesting or recertification under existing industry standards.

3.3 Enter the total number of person-years expended on solar-related activities during the survey year. (See glossary of "Person Year" on page 7.)

3.4 "Solar-related activities" includes all activities listed in Item 3.1.

4.1 Enter the square footage (not the number of collectors), in whole numbers (i.e., no decimals), of solar collectors by type shipped for final consumption or to another organization for resale (including exports and imports) in the appropriate collector type column. Total (column i) should be the total square footage of all collector types in that row.

4.2 Enter the total value received for the total collector shipments in Item 4.1 by type. The value reported should be the total value received for collectors only (not complete systems) at your company's net billing price, freight-on-board factory, including charges for cooperative advertising and warranties. Do not include excise taxes, freight, or transportation. Report values to the nearest dollar. Total (column i) should be the total value of all collector types in that row.

4.3 Enter the average thermal performance rating (energy output of the solar collector under standard conditions) in Btu per square foot per day (Btu/ft² day).

4.4 For each appropriate sector, enter the square footage of domestic shipments (total shipments minus exports) by collector type as precisely as possible.

The sector categories in Item 4.4 are:

4.4 (1) Residential - Solar applications related to any building used for residential occupancy that has a system for heating or cooling, or both.

4.4 (2) Commercial - Solar applications for use in businesses where services (rather than products) are provided, such as wholesale and retail trade or health and educational services.

4.4 (3) Industrial - Solar applications for use in businesses where products (rather than services) are provided, such as the manufacture and processing of goods and basic materials.

4.4 (4) Electric Power - Shipments of solar thermal collectors to electric power sector for use in power generation or for experimental applications (includes gas and electric utilities). Includes central stations, decentralized systems or experimental applications.

4.4 (5) Transportation - Shipments of solar thermal collectors to transportation sector for use in transportation purposes such as railroads and railways.

4.4 (6) Total domestic shipments by sector - Sum sector quantities and enter a total for each row [4.4 (1)-(5)] in column i. Next, sum columns a through i and enter a total in row 4.4 (6) for each column. These column totals should equal shipment totals entered under Item 4.1 by column, minus exports.

4.5 For each end use, enter the square footage of domestic shipments (total shipments minus exports) by collector type as precisely as possible.

The end-use categories in Item 4.5 are:

4.5 (1) Pool Heating - Self-explanatory.

4.5 (2) Hot Water - Domestic shipments of solar thermal collectors used only for water heating.

4.5 (3) Space Heating - Domestic shipments of solar thermal collectors used only for space heating.

4.5 (4) Combined space and water heating – Domestic shipments of solar thermal collectors are used in combination for space and water heating.

4.5 (5) Space cooling - Domestic Shipments of solar thermal collectors used for space cooling (air conditioning) or for space cooling in combination with water and/or space heating.

4.5 (6) Process heating - Domestic shipments of solar thermal collectors used for industrial process heating.

4.5 (7) Electricity Generation - Domestic shipments of solar thermal collectors such as concentrators, compact linear fresnel reflectors, heliostats, parabolic dishes, and parabolic troughs used as steam generators to power electric generators.

4.5 (8) Total end use - Sum end-use quantities and enter a total for each row [4.5 (1)-(8)] in column i. Next, sum columns a through i and enter a total in row 4.5 (8) for each column. These column totals should equal shipment totals entered under Item 4.1 by column, minus exports.

4.6 Enter the square footage by collector type. This amount represents the portion of total collector shipments entered in Item 4.1 that were imported and shipped by your company.

4.7 Enter the square footage by collector type. This amount represents the portion of total collector shipments entered in Item 4.1 that were manufactured for export and shipped (sold) to another country.

4.8 List the country(ies) from which solar collectors reported in Item 4.6 were imported, and square feet of imports in Item 4.6 for each country listed.

4.9 List the country(ies) to which solar collectors reported in Item 4.7 were exported, and square feet of exports in Item 4.7 for each country listed.

4.10 For each customer type, enter the square footage of domestic shipments (total shipments minus exports) by collector type as precisely as possible.

Report (in square feet) the recipients of solar thermal collectors immediately following manufacturing or warehousing. If recipients overlap (for example, the recipient is both a wholesale distributor and an installer) report the recipients in the higher category (i.e., a is higher than b, b is higher than c, etc.).

5.1 Enter number of complete systems shipped from the total in Item 4.1(i).

5.2 Of the collectors reported in Item 4.1(i), enter the square footage that was sold as complete systems. (A complete system is defined as unit with all the necessary functional components, except for installation materials. These include thermosiphon systems, integral collector storage systems, packaged systems, or system kits.)

5.3 The value reported should be total value received for the complete systems (not the value for the collectors/reflectors as reported on item 4.2) at your company's net billing price, freight-on-board factory, including charges for cooperative advertising and warranties. (It should include the value of associated collectors.) Do not include excise taxes, freight or transportation charges, or installation charges. Report values to the nearest dollar.

6.1 Please check the box for each State/U.S. territory or possession in which you manufactured. If you imported collectors also mark the "Imported" (Code 00) box. Then report the square footage of your company's collectors manufactured/imported. Report the square footage of your company's collectors manufactured in the State/U.S. territories listed below under Code 01-78. If some collectors were imported from another country, please indicate under Code 00 the square footage and report details about the country of import in question 4.8.

6.2 Please check the box for each State/U.S. territory or possession to which you shipped. If you exported collectors also mark the "Exported" (Code 00) box. Then report the square footage of your company's collectors shipped/exported. Report the square footage of your company's collectors shipped in the State/U.S. territories listed below under Code 01-78. If some collectors were exported to another country, please indicate under Code 00 the square footage and report details about the country of export in question 4.9.

7.0 This item provides additional space for comments. For clarification purposes, identify item, line number and column (if applicable) for each comment.

GLOSSARY

Air collector: A medium-temperature collector used predominantly in space heating, utilizing pumped air as the heat-transfer medium.

Compact Linear Fresnel Reflector (CLFR): A type of linear concentrator that is similar to parabolic trough collector, but uses flat or slightly curved mirrors mounted on trackers on the ground and is configured to reflect sunlight onto a receiver tube positioned above these mirrors.

Concentrator: A reflective or refractive device that focuses incident insolation onto an area smaller than the reflective or refractive surface, resulting in increased insolation at the point of focus.

Evacuated-tube collector: A collector in which solar thermal heat is captured by use of a collector fluid that flows through an absorber tube contained inside an evacuated glass tube.

Export (solar): A shipment of solar thermal collectors and/or photovoltaic devices sent from the United States and any of its territories to a foreign country.

Flat plate pumped: A medium-temperature solar thermal collector that typically consists of a metal frame, glazing, absorbers (usually metal), and insulation and that uses a pumped liquid as the heat-transfer medium: predominant use is in water-heating applications.

Heliostat Field Collector: A type of concentrator that uses flat, sun-tracking mirrors to reflect and concentrate sunlight onto receivers that collect the solar energy and convert it to heat at the top of a tower.

High-temperature collector: A solar thermal collector designed to operate at a temperature of 180 degrees Fahrenheit or higher.

Import (solar): A shipment of solar thermal collectors and/or photovoltaic devices into the United States and any of its territories from foreign countries.

Integral collector storage (ICS): A solar thermal collector in which incident solar radiation is absorbed directly by the storage medium.

Liquid collector: A medium-temperature solar thermal collector, employed predominantly in water heating, which uses pumped liquid as the heat-transfer medium.

Low temperature collectors: Metallic or nonmetallic collectors that generally operate at temperatures below 110 degrees Fahrenheit and use pumped liquid or air as the heat transfer medium. They usually contain no glazing and no insulation, and they are often made of plastic or rubber, although some are made of metal.

Medium-temperature collector: A collector designed to operate in the temperature range of 140 degrees to 180 degrees Fahrenheit, but that can also operate at a temperature as low as 110 degrees Fahrenheit. The collector typically consists of a metal frame, metal absorption panels

with integral flow channels (attached tubing for liquid collectors or integral ducting for air collectors), and glazing and insulation on the sides and back.

Parabolic dish: A high-temperature (above 180 degrees Fahrenheit) solar thermal concentrator, generally bowl-shaped, with two-axis tracking.

Parabolic Dish Reflector: A type of concentrator that uses circular conical surface (dish-shaped) mirrors to reflect and concentrate sunlight onto receivers that collect the solar energy and convert it to heat. The dish is mounted on a structure that tracks the sun continuously throughout the day to reflect the highest percentage of sunlight possible onto the thermal receiver.

Parabolic trough: A high temperature (above 180 degrees Fahrenheit) solar thermal concentrator with the capacity for tracking the sun using one axis of rotation.

Parabolic Trough Collector: A type of linear concentrator that uses long rectangular, curved (U-shaped) mirrors to reflect and concentrate sunlight onto receivers that collect the solar energy and convert it to heat. The receiver tube is positioned along the focal line of each parabola-shaped reflector.

Person-year: One whole year, or fraction thereof, worked by an employee, including contracted manpower. Expressed as a quotient (to two decimal places) of the time units worked during a year (hours, weeks, or months) divided by the like total time units in a year. For example: 80 hours worked is 0.04 (rounded) of a person-year; 8 weeks worked is 0.15 (rounded) of a person-year; 12 months worked is 1.0 person-year. Contracted manpower includes survey crews, drilling crews, consultants, and other persons who worked under contract to support a firm's ongoing operations.

Solar thermal collector: A device designed to receive solar radiation and convert it to thermal energy. Normally, a solar thermal collector includes a frame, glazing, and an absorber, together with appropriate insulation. The heat collected by the solar collector may be used immediately or stored for later use. Solar collectors are used for space heating; domestic hot water heating; and heating swimming pools, hot tubs, or spas.

Solar thermal collector performance rating: An analytically derived set of number representing the characteristic all-day energy output of the solar collector under standard rating conditions measures in Btu per square foot per day (Btu/ft² day).

Thermosiphon system: A solar collector system for water heating in which circulation of the collection fluid through the storage loop is provided solely by the temperature and density difference between the hot and cold fluids.