Form Approved
OMB NO. 1902-0292
Expires: 03/31/2005

INSTRUCTIONS FOR FORM EIA-63B, ANNUAL PHOTOVOLTAIC MODULE/CELL MANUFACTURERS SURVEY

GENERAL INFORMATION AND INSTRUCTIONS

I. Purpose

Form EIA-63B 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 results of this survey will be published in aggregate form in the report, "Renewable Energy Annual 2003" and will be available on EIA's Home Page at http://www.eia.doe.gov.

II. Who Should Respond to This Survey

Form EIA-63B is to be submitted by companies that (1) manufactured and shipped (including exporting) photovoltaic cells and modules and/or (2) that imported photovoltaic cells and modules during the survey year (2003). If you are completing this survey form for the first time but were active in the industry during the previous survey year (2002), please photocopy the entire form and provide us with data for the previous year also.

III. Where to Submit Completed Forms

Completed and signed EIA-63B forms should be returned to:

U.S. Department of Energy
Energy Information Administration, BG-094
1000 Independence Ave., SW
Washington, D.C. 20277-7091

Request for further information and/or additional forms may be mailed to the above address or telephoned to the Survey Manager, Kathy Gibbard at (202) 287-1724 and Susan Henry at (202) 287-1792.

IV. When to Submit Completed Forms

Completed EIA-63B forms are due on the date specified in the cover letter. The survey year is from January 1 through December 31 each year.

V. Sanctions

The timely submission of Form EIA-63B 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 civil penalty of not more than $2,500 for each violation, or a fine of not more than $5,000 for each willful 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.

VI. Provisions Regarding Confidentiality Of Information

The Office of Legal Counsel of the Department of Justice concluded on March 20, 1991, that the Federal Energy Administration Act requires the Energy Information Administration to provide company-specific data to the Department of Justice, or to any other Federal agency when requested for official use, which may include enforcement of Federal law. The information contained 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 General Accounting Office, or other Congressional agencies authorized by law to receive such information. A court of competent jurisdiction may obtain this information in response to an order.

The information contained on this form will be kept confidential 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 DOE regulations, 10 C.F.R. §1004.11, implementing the FOIA, and the Trade Secrets Act, 18 U.S.C. §1905.

Upon receipt of a request for this information under the FOIA, the DOE shall make a final determination whether the information is exempt from disclosure in accordance with the procedures and criteria provided in the regulations. To assist us in this determination, respondents should demonstrate to the DOE that, for example, their information contains trade secrets or commercial or financial information whose release would be likely to cause substantial harm to their company's competitive position. A letter accompanying the submission that explains (on an element-by-element basis) the reasons why the information would be likely to cause the respondent substantial competitive harm if released to the public would aid in this determination. A new justification does not need to be provided each time information is submitted on the form, if the company has previously submitted a justification for that information and the justification has not changed.

SPECIFIC INSTRUCTIONS

Item **Instructions**

1.1 (a-d) Make corrections to the company name or address in the spaces provided.

1.2 (a-c) Enter the name, title, and telephone number of a company contact person who may be contacted for additional information 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 (a) through (d) please begin with Item 3.0 and complete the remainder of this form. If you answer "No" to all of (a) through (d) please complete only Items 2.2 and 7.0.

2.2 If you answered "No" to all of Item 2.1, please mark whether you company plans to begin or continue any manufacturing, importing, or exporting activity, and if so, in what year.

3.1 (a-l) Report only on activities that are photovoltaic related.

3.2 (a-h) A new photovoltaic 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 photovoltaic-related activities during the survey year. (See definition of "Person Year" on page 4.)

4.1 Quantity (in peak kilowatts) of photovoltaic module/cell shipments for terrestrial use only. Photovoltaic modules/cells intended for applications in space programs (satellites, military projects, etc.) are to be excluded.

Part (1) ***Total net module shipments*** **- Enter the quantity in peak kilowatts (not the number of modules) of net photovoltaic modules shipped for final consumption or to another organization for resale (including exports and imports) in the appropriate module/cell type column. (Net photovoltaic module is defined on page 4.) When exported, incomplete modules and un-encapsulated cells are also included. Total (column h) should be the total peak kilowatts of all module types in that row.**

Part (2) ***Total net cell shipments*** **- Enter the quantity in peak kilowatts (not the number of cells) of net photovoltaic cells shipped to end-users or non-photovoltaic original equipment manufacturers (including exports and imports) in the appropriate module/cell type column. (Net photovoltaic cell is defined on page 4.) Photovoltaic cells which are shipped to U.S. based photovoltaic module manufacturers should <u>not</u> be reported. Incomplete cells, such as wafers, should <u>not</u> be reported. Total (column h) should be the total peak kilowatts of all module types in that row.**

Total quantity of shipments **- Sum under 4.1(3) the quantities of 4.1(1) and 4.1(2) for all types (columns a through g) and Totals, (column h).**

4.2 Value (in dollars) of photovoltaic module/cell shipments in Item 4.1. The value reported should be total value received for modules/cells only 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.

Part (1) ***Value of net module shipments*** **- Enter under 4.2(1) the total value of net photovoltaic modules in Item 4.1(1). Total (column h) should be the total value of all module types in that row.**
Part (2) ***Value of net cell shipments*** **- Enter under 4.2(2) the total value of net photovoltaic cells in Item 4.1(2). Total (column h) should be the total value of all cell types in that row.**

Total value of shipments **- Sum under 4.2(3) the values of 4.2(1) and 4.2(2) for all types (columns a through g) and Totals, (column h).**

4.3 For each end use, enter the peak kilowatt quantity of module/cell shipments in Item 4.1(3) by type as precisely as possible. The end-use categories in Item 4.3 are:

Part (1) ***Health*** **- Photovoltaic modules/cells used in health/medical applications such as those used for powering medical refrigerators, medical equipment and for water purifications.**
Part (2) ***Water Pumping*** **- Photovoltaic modules/cells used for pumping water for agricultural, land reclamation, commercial and other similar applications where water pumping is the main use.**
Part (3) ***Transportation*** **- Photovoltaic modules/cells used on boats, cars, and recreational vehicles; and those used for transportation support systems such as signs, illumination, warning signals, etc.**
Part (4) ***Communication*** **- Photovoltaic modules/cells employed to power fixed base telecommunications equipment, such as mountain-top repeater stations. Modules/cells issued for space applications are <u>not</u> to be included in this survey.**
Part (5) ***Consumer goods*** **- Photovoltaic modules/cells used to power products such as portable radios, toys, watches, calculators, small battery chargers, etc. (Please specify on the bases of stabilized full sun rating.)**
Part (6) ***Electric Generation*** **- Grid interactive and remote or stand alone power generation for general uses, including those for grid distribution and general remote uses like: residential power and power for mobile homes.**

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4.3 Part (7) ***To original equipment manufacturers (non-PV)*** **- Photovoltaic cells or modules shipped to non-photovoltaic original equipment manufacturers (OEM) that combines the cells into existing or newly developed product lines such as boats, cars, etc.**

Part (8) ***Other uses*** **- Shipments of photovoltaic cells and modules for other uses such as cooking food, desalinization, distilling, etc.**

Total end use **- Sum end-use quantities and enter a total for each row [4.3(1)-(8)] in column h. Next, sum columns a through h and enter a total in row 4.3(9) for each column. These column totals should equal shipment totals entered under Item 4.1(3) by column. The total entered for 4.3(9) in column h should equal the total entered for Item 4.1(3) in column h.**

4.4 For each appropriate sector, enter the peak kilowatt quantity of module/cell shipments in Item 4.1(3) by type as precisely as possible. The market-sector categories in Item 4.4 are:

Part (1) ***Government*** **- Photovoltaic modules/cells for terrestrial use and employed to produce power for any branch of the U.S. Federal, State, and local government (including the military and including such uses as research, development, and demonstration projects). This excludes foreign government, which should be reported in Item 4.4 Part (7), Other sectors.**

Part (2) ***Residential*** **- Photovoltaic modules/cells that are used in distributed, grid connected photovoltaic systems to provide power for residential applications.**

Part (3) ***Commercial*** **- Photovoltaic modules/cells employed to produce power for commercial establishments, such as office buildings, private hospitals, private schools, retail establishments, etc. (Publicly owned schools, hospitals, and other institutions should be listed under government.)**

Part (4) ***Industrial*** **- Photovoltaic modules employed to produce power for industrial applications. Includes both grid and non-grid connected systems.**

Part (5) ***Utility*** **- Photovoltaic modules/cells used to produce power at an utility owned system including central stations, decentralized systems or experimental applications.**

Part (6) ***Transportation*** **- Photovoltaic modules/cells used to produce power on boats, cars, and recreational vehicles; and those used to power transportation support systems such as signs, illumination, warning signals, etc.**

Part (7) ***Other sectors*** **- Self explanatory.**

Total market sector **- Sum market sector quantities and enter a total for each row [4.4(1)-(7)] in column h. Next, sum columns a through h and enter a total in row 4.4(8) for each column. These column totals should equal shipment totals entered under Item 4.1(3) by column. The total entered for 4.4(8) in column h should equal the total entered for Item 4.1(3) in column h.**

4.5 Quantity (in peak kilowatts) of imported photovoltaic modules/cells that represents the portion of photovoltaic shipments entered in Item 4.1 (1) and (2) by module/cell type that were imported and shipped by your company.

Part (1) ***Modules*** **- Enter the peak kilowatts of imported photovoltaic modules by type. This amount represents the portion of total shipments in Item 4.1(1). Total (column h) should be the total peak kilowatts of all imported module types in that row.**

Part (2) ***Cells*** **- Enter the peak kilowatts of imported photovoltaic cells by type. This amount represents the portion of total shipments in Item 4.1(2). Total (column h) should be the total peak kilowatts of all imported cell types in that row.**

Part (3) ***Total Imports*** **- Sum under 4.5(3) the quantities of 4.5(1) and 4.5(2) for all types (columns a through g) and Total, (column h).**

4.6 Quantity (in peak kilowatts) of exported photovoltaic modules/cells that represents the portion of photovoltaic shipments entered in Item 4.1(1) and (2) by module/cell type that were exported by your company.

Part (1) ***Modules*** **- Enter the peak kilowatts of exported photovoltaic modules by type. This amount represents the portion of total shipments in Item 4.1(1). Total (column h) should be the total peak kilowatts of all exported module types in that row.**

Part (2) ***Cells*** **- Enter the peak kilowatts of exported photovoltaic cells by type, including those cells that were shipped to foreign photovoltaic module manufacturers. This amount represents the portion of total shipments in Item 4.1(2). Total (column h) should be the total peak kilowatts of all exported cell types in that row.**

Part (3) ***Total Exports*** **- Sum under 4.6(3) the quantities of 4.6(1) and 4.6(2) for all types (columns a through g) and Total, (column h).**

4.7 List the country(ies) from which photovoltaic modules/cells reported in Item 4.5 were imported.

4.8 List the country(ies) to which photovoltaic modules/cells reported in Item 4.6 were exported, and percent of exports in Item 4.6 for each country listed.

4.9 Of the modules/cells reported in Item 4.1 (1) and (2), report in peak kilowatts, the recipients of modules/cells immediately following manufacturing or warehousing. If recipients overlap (for example, the recipient is both a wholesaler distributor and an installer), report the recipients in the higher category (i.e., a is higher than b, b is higher than c, etc.).

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5.1 Enter the number of complete systems shipped from the total modules in Item 4.1(1) (column h).

5.2 Of the modules reported in Item 4.1(1)(h), enter the peak kilowatts that were sold as complete systems. (Complete system is defined as a unit with all the necessary functional components, except for installation materials.)

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

6.1 Mark as appropriate.

7.0 Self-explanatory.

DEFINITIONS

1. **Amorphous Silicon - An alloy of silica and hydrogen, with an irregular internal atomic arrangement, that can be deposited in thin-film layers (a few micrometers in thickness) by means of a number of deposition methods to produce thin-film photovoltaic cells on glass, metal, or plastic substrates.**

2. **Cast Silicon - Crystalline silicon obtained by pouring pure molten silicon into a vertical mold and adjusting the temperature gradient along the mold volume during cooling to obtain slow, vertically-advancing crystallization of the silicon. The polycrystalline ingot thus formed is composed of large, relatively parallel, interlocking crystals. The cast ingots are sawed into wafers for further fabrication into photovoltaic cells. Cast-silicon wafers and ribbon-silicon sheets fabricated into cells are usually referred to as polycrystalline photovoltaic cells.**

3. **Concentrator - A reflective or refractive device that focuses solar rays onto an area smaller than the reflective or refractive surface, resulting in higher intensity solar rays at the point of focus.**

4. **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.**

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

6. **Peak Kilowatt (kWp) - One thousand peak watts.**

7. **Net Photovoltaic Cell Shipment - The difference between photovoltaic cell shipments and photovoltaic cell purchases.**

8. **Net Photovoltaic Module Shipment - The difference between photovoltaic module shipments and photovoltaic module purchases.**

9. **Peak Watt - A manufacturer's unit indicating the amount of power a photovoltaic cell or module will produce at standard test conditions (normally 1,000 watts per square meter and 25 degrees Celsius).**

10. **Person Year - One whole year, or fraction thereof, worked by an employee. It is expressed as a quotient (to two decimal places) of the time units worked during a year (hours, weeks, months) divided by the like total time units in a year. For example: 80 hours worked is 0.04 (rounded) of a person-year; 3 weeks worked is 0.06 (rounded) of a person-year; 12 months worked is 1.00 person-year.**

11. **Photovoltaic Cell - An electronic device consisting of layers of semiconductor materials fabricated to form a junction (adjacent layers of materials with different electronic characteristics) and electrical contacts, and being capable of converting incident light directly into electricity (direct current).**

12. **Photovoltaic Module - An integrated assembly of interconnected photovoltaic cells designed to deliver a selected level of working voltage and current at its output terminals, packaged for protection against environment degradation, and suited for incorporation in photovoltaic power systems.**

13. **Ribbon Silicon - Sheets of crystalline silicon fabricated by a variety of solidification (crystallization) methods whereby thin silicon sheets are withdrawn from a pool of relatively pure molten silicon. The methods include: edge-defined, film-fed growth (EFG) and dendritic-web growth.**

14. **Silicon - A nonmetallic element with atomic number 14 and valence of 4. It occurs extensively in earth's crust as silica (SiO_2) and silicates (SiO_2 + other elements and/or molecules). As a chemically altered extract, silicon is used in alloys and electronic devices such as photovoltaic cells.**

15. **Single Crystal Silicon (Czochralski) - An extremely pure form of crystalline silicon produced by the Czochralski method of dipping a single crystal seed into a pool of molten silicon under high vacuum conditions and slowly withdrawing a solidifying single crystal boule of silicon. The boule is sawed into thin silicon wafers and fabricated into single-crystal photovoltaic cells.**