

FORM EIA-846C

(5-1-89)

U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
ACTING AS COLLECTING AND COMPILING AGENT FOR  
UNITED STATES DEPARTMENT OF ENERGY  
ENERGY INFORMATION ADMINISTRATION



Public reporting burden for this collection of information is estimated to average 8 hours per response, including the time of 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, Office of Statistical Standards, EI-73, Mail Station: 1H-023 Forrestal, 1000 Independence Avenue, SW, Washington, DC 20485; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

In correspondence pertaining to this report, please refer to this Census File Number (CFN).

**Chemicals and Allied Products;  
Steel Works, Blast Furnaces,  
and Rolling Mills; Products of  
Petroleum and Coal**

**1988  
MANUFACTURING ENERGY  
CONSUMPTION SURVEY**

**NOTICE** — This survey is **mandatory** under the Federal Energy Administration Act of 1974, P.L. 93-275, and under Title 3, Subtitle B of the Omnibus Budget Reconciliation Act of 1986, P.L. 99-509. Failure to respond may result in criminal fines, civil penalties, and other sanctions as provided by law. The **confidentiality** of your response to this survey is **protected by law** (title 13, U.S. Code). Your response may be seen only by sworn Census employees and may be used only for statistical purposes. The law also provides that copies retained in your files are **immune from legal process**.

Please correct errors in name, address, and ZIP Code. ENTER street and number if not shown.

PLEASE COMPLETE THIS  
FORM AND RETURN TO

BUREAU OF THE CENSUS  
1201 East Tenth Street  
Jeffersonville, IN 47132

**NOTE**

Please read the enclosed  
instructions before filling  
out this form. Complete  
each item. If you have  
any questions, call (301)  
**763-7066**.

**DUE DATE:**

If you cannot file by the due date, a time extension request should be sent to the above address; please include your 11-digit Census File Number (CFN).

**Section I — NONCOMBUSTIBLE ENERGY SOURCES**

Item description (1)	Electricity 109 (2)			Steam 117 (3)			Industrial hot water 125 (4)		
	Mil.	Thou.	kWh	Million Btu			Million Btu		
1a. During 1988, what amount of each energy source was purchased by this establishment from utilities and delivered to this establishment site?									
1b. What was the total expenditure for the purchased energy sources reported on line 1a?	Mil.	Thou.	Dol.	Mil.	Thou.	Dol.	Mil.	Thou.	Dol.
2a. During 1988, what amount of electricity and steam was purchased from nonutility suppliers by this establishment and delivered to this establishment site?	Mil.	Thou.	kWh	Million Btu			Million Btu		
2b. What was the total expenditure for the purchased electricity and steam reported on line 2a?	Mil.	Thou.	Dol.	Mil.	Thou.	Dol.	Mil.	Thou.	Dol.
3. During 1988, what amount of each energy source was transferred from outside establishments and delivered to this establishment site? Do not include the purchases reported in lines 1a or 2a.	Mil.	Thou.	kWh	Million Btu			Million Btu		
4. <b>TOTAL</b> electricity receipts. (Sum of lines 1a, 2a, and 3). <b>NOTE</b> — Copy this quantity to column 2, line 1 of Section III — FUEL SWITCHING.									
5. During 1988, how much electricity was generated on this establishment site by cogeneration?									
6. During 1988, how much of each energy source was generated onsite from solar power, wind power, hydropower, and geothermal sources?							Million Btu		Million Btu
7. During 1988, how much electricity was generated onsite by processes other than those covered on lines 5 and 6?									
8. During 1988, how much electricity was sold or transferred to utilities?									
9. During 1988, how much of each energy source was sold or transferred to establishments other than utilities?							Million Btu		Million Btu

1 Name of energy supplier

Address — Number and street

City \_\_\_\_\_ State \_\_\_\_\_ ZIP Code \_\_\_\_\_ Phone number ( ) \_\_\_\_\_

10. If line 3, column 2 has a nonzero entry, and any of your electricity suppliers was another establishment of your company, identify that establishment at right. If you received electricity transfers from more than one establishment of your company, provide their identifying information in the "Remarks" section.

Questions 11 and 12 below should be answered if this establishment generated any electricity onsite in 1988. If no electricity was generated onsite (column 2 has zero entries for lines 5, 6, and 7), omit questions 11 and 12 and proceed directly to Section II — Combustible Energy Sources.

11. Was this establishment electrically interconnected with an electric utility (that is, able to deliver electricity to the grid as well as receive electricity) as of December 31, 1988? . . . . .
12. Was this establishment designated as a Qualifying Facility (QF) under Public Utility Regulatory Policies Act of 1978 (PURPA) as of December 31, 1988? . . . . .

1  Yes 2  No

1  Yes 2  No

## Section II - COMBUSTIBLE ENERGY SOURCES

A. SOLIDS					
Energy sources	Census Use Only	Units used for reporting quantities	Quantity delivered to this establishment	Mill. Thou.	Dol. (6)
Total other receipts (transfers in and out)			Total expenditure, including delivery charges, of the energy sources received in 1988	406	
1. Anthracite			2. Bituminous and subbituminous coal	414	
2. Bituminous and subbituminous coal			3. Breeze	448	
3. Breeze			4. Coal coke	430	
4. Coal coke			5. Lignite	422	
5. Lignite			6. Total coal and coke (Sum of anthracite, bituminous and subbituminous coal, breeze, coal coke and lignite)	455	
7. Biomass			8. Petroleum coke	703	
8. Petroleum coke			9. Roundwood (wood cut specifically for fuel use)	802	
9. Roundwood (wood cut specifically for fuel use)			10. Waste materials (wastepaper, packing materials, etc.)	729	
10. Waste materials (wastepaper, packing materials, etc.)			11. Wood chips, bark, and wood waste	810	
11. Wood chips, bark, and wood waste			12. Other solids (Specify)	919	
12. Other solids (Specify)			1. Natural gas	307	
1. Natural gas			2. Acetylene	646	
2. Acetylene			3. Blast furnace gas	604	
3. Blast furnace gas			4. Coke oven gas	612	
4. Coke oven gas			5. Hydrogen	638	
5. Hydrogen			6. Waste and byproduct gases (e.g., refinery off gas, vent gas, plant gas, still gas)	620	
6. Waste and byproduct gases (e.g., refinery off gas, vent gas, plant gas, still gas)			7. Other gases (Specify)	935	
7. Other gases (Specify)			1. Distillate fuel oil (numbers 1, 2, and 4 fuel oils and diesel)	943	
1. Distillate fuel oil (numbers 1, 2, and 4 fuel oils and diesel)			2. Kerosene	273	
2. Kerosene			3. LPG (ethane, propane, propylene, butane, butylene)	240	
3. LPG (ethane, propane, propylene, butane, butylene)			4. Motor gasoline	232	
4. Motor gasoline			5. Pulping or black liquor	737	
5. Pulping or black liquor			6. Residual fuel oil (numbers 5, 6, navy special, and bunker C)	216	
6. Residual fuel oil (numbers 5, 6, navy special, and bunker C)			7. Waste oils and tars	711	
7. Waste oils and tars			8. Other liquids (Specify)	950	
8. Other liquids (Specify)			9. Ethane/propane/butane/butylene fuel oil, ethane/ethylene, isobutane, petroleum coke, propane/propane, and residual fuel oil	968	
9. Ethane/propane/butane/butylene fuel oil, ethane/ethylene, isobutane, petroleum coke, propane/propane, and residual fuel oil			1. Total Btu content of energy source products shipped during 1988	182	
1. Total Btu content of energy source products shipped during 1988			2. Total Btu value of all energy source inventories as of December 31, 1987		
2. Total Btu value of all energy source inventories as of December 31, 1987			3. If the answer to question 1 is zero, omit questions 2a and 2b and proceed directly to question 3 on page 3.		
3. If the answer to question 1 is zero, omit questions 2a and 2b and proceed directly to question 3 on page 3.			4. Total Btu value of all energy source inventories as of December 31, 1988.		
4. Total Btu value of all energy source inventories as of December 31, 1988.			5. Total Btu value of all energy source inventories as of December 31, 1988.		

**Please enter this establishment's 11-digit Census File Number**

## **Section II – COMBUSTIBLE ENERGY SOURCES – Continued**

Energy sources produced onsite in 1988		Energy sources consumed onsite in 1988		Energy sources (11)	Census Use Only (12)
Quantity produced onsite (7)	Does the entry in col. (7) represent the product or byproduct of another energy source consumed onsite? (8)	Quantity consumed as a fuel (9)	Quantity consumed for all nonfuel purposes (10)		
				<b>A. SOLIDS</b>	
				1. Anthracite	406
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No			2. Bituminous and subbituminous coal	414
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No			3. Breeze	448
				4. Coal coke	430
				5. Lignite	422
				6. Total coal and coke (Sum of anthracite, bituminous and subbituminous coal, breeze, coal coke and lignite)	455
				7. Biomass	901
				8. Petroleum coke	703
				9. Roundwood (wood cut specifically for fuel use)	802
				10. Waste materials (wastepaper, packing materials, etc.)	729
				11. Wood chips, bark, and wood waste	810
				12. Other solids	919
					927
				<b>B. GASES</b>	
				1. Natural gas	307
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No			2. Acetylene	646
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No			3. Blast furnace gas	604
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No			4. Coke oven gas	612
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No			5. Hydrogen	638
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No			6. Waste and byproduct gases (e.g., refinery off gas, vent gas, plant gas, still gas)	620
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No			7. Other gases	935
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No				943
				<b>C. LIQUIDS</b>	
				1. Distillate fuel oil (numbers 1, 2, and 4 fuel oils and diesel)	224
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No			2. Kerosene	273
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No			3. LPG (ethane, ethylene, propane, propylene, butane, butylene)	240
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No			4. Motor gasoline	232
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No			5. Pulping or black liquor	737
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No			6. Residual fuel oil (numbers 5, 6, navy special, and bunker c)	216
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No			7. Waste oils and tars	711
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No			8. Other liquids	950
	1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No				968

- 3. Enter the total design storage capacity located onsite as of December 31, 1988 for:**

**3a.** Distillate fuel oil 224 \_\_\_\_\_ Barrels

**3b. Residual fuel oil** \_\_\_\_\_ 216 \_\_\_\_\_ Barrels

**3c. LPG** \_\_\_\_\_ 240 \_\_\_\_\_ Gallons

### **Section III — FUEL SWITCHING**

Quantity Consumed — Copy the total electricity received from line 4 of section 1, and the quantities of coal and coke, natural gas, distilled fuel oil, LPG, and residual fuel oil consumed outside as a fuel from column (9) of section 11.		
Quantity nonswitchable — Enter the amount of electricity with nonzero entries in line 1. Do not consider differences in energy prices when estimating amounts.		
Kilowatthours	Short tons	
1. Quantity consumed — Copy the total electricity received from line 4 of section 1, and the quantities of coal and coke, natural gas, distilled fuel oil, LPG, and residual fuel oil consumed outside as a fuel from column (9) of section 11.	(1)	Term description
109	(2)	Total coal and coke (3)
Kilowatthours	Short tons	
2. Quantity nonswitchable — Enter the amount of electricity with nonzero entries in line 1. Do not consider differences in energy prices when estimating amounts.	(4)	Now answer lines 2 and 3 as appropriate for one column before starting another.
3. Quantity switchable — Subtract line 2 from line 1 and enter the results. This represents the total quantity of energy consumption that COULD HAVE BEEN replaced within 30 days by another energy source after the results in line 1 that could NOT have been replaced within 30 days by another energy source in 1988.	(5)	Now answer lines 4 through 10 as appropriate for one column before entering another.
4a. Of the amount shown in line 3, what is the maximum amount that could have been replaced by coal and coke?	(6)	4b. What is the minimum lead time required to make the switch to coal and coke?
5a. Of the amount shown in line 3, what is the maximum amount that could have been replaced by natural gas?	(7)	6a. What is the minimum lead time required to make the switch to natural gas?
6b. What is the minimum lead time required to make the switch to distillate fuel oil?	(8)	7b. What is the minimum lead time required to make the switch to distillate fuel oil?
7a. Of the amount shown in line 3, what is the maximum amount that could have been replaced by LPG?	(9)	8a. What is the minimum lead time required to make the switch to LPG?
8b. What is the minimum lead time required to make the switch to residual fuel oil?	(10)	9a. Of the amount shown in line 3, what is the maximum amount that could have been replaced by residual fuel oil?
9b. What is the minimum lead time required to make the switch to residual fuel oil?	(11)	10b. What is the minimum lead time required to make the switch to that energy source?

**Please enter this establishment's 11-digit Census File Number**

### **Section III – FUEL SWITCHING – Continued**

<p><b>Section IV — REMARKS</b> — Please use this space or attach a separate sheet for any explanations that may be essential in understanding your reported data. Be sure to include the name, address, and telephone number of power generating establishments of your company that transferred or delivered electricity or steam to your establishment in 1988 if you did not have enough room in section I.</p>					
<p><b>Section V — CERTIFICATION</b> — The data in this report have been prepared in accordance with the instructions.</p>					
<p>Name of person to contact regarding this report — Print or type _____</p>					
<p>Address — Number and street _____</p>					
<p>Telephone _____ Area code _____ Number _____ Extension _____</p>					
<p>Period covered by this report TO: Mo. Day Year</p>					
<p>Period covered FROM: Mo. Day Year</p>					
<p>Signature of authorized person _____ State _____ ZIP Code _____ Date _____</p>					