### **Cover Sheet**

	2010 Manufacturing Energy Consumption Survey Sponsored by the Energy Information Administration U.S. Department of Energy
	Administered and Compiled by the Bureau of the Census U.S. Department of Commerce
Form EIA-846	
OMB Approval No. 1905-0169	
Expires: 10/31/2013	
1-800-528-3049. your establishm	Return the completed questionnaire in the enclosed envelope. Please staple all sections and pages of ent's questionnaire to this cover sheet. Please include one cover sheet for each establishment that
nas a label. If th	ne envelope has been misplaced, please mail to:  Bureau Of The Census
	1201 East 10 <sup>th</sup> Street
	Jeffersonville, IN 47132-0001
93-275, and unde	<b>irement:</b> This survey is <b>mandatory</b> under the Federal Energy Administrative Act of 1974, Pub. Law No. or Title 3, Subtitle B, of the Omnibus Budget Reconciliation Act of 1986, Pub. Law No. 99-509, as e 1, Subtitle G, of the Energy Policy Act of 1992, Pub. Law No. 102-486.
	001 makes it a criminal offense for any person knowingly and willingly to make any Agency or
	e United States false, fictitious, or fraudulent statements as to any matter within its jurisdiction. Public
reporting burden	for this collection of information is estimated to average 9.2 hours per response, including the time for
	ctions, searching existing data sources, gathering and maintaining the data, and completing and reviewing
the collection of	information.  Reduction Act of 1995, you are not required to respond to any Federally-sponsored collection of
	ss it displays a valid OMB Approval Number. The valid OMB Approval Number for this information
	0169) is displayed at the top left of this page.
Instructions and	Frequently Asked Questions can be found at <a href="https://www.census.gov/econhelp/mecs">www.census.gov/econhelp/mecs</a> .

# Contact Information

Con	tact Information		
Date		Telephor	ne
	Area Code	Number	Ext.
		-	
Name of person to co	ontact regarding th	is questionnai	re
Title of	contact person (abo	ove)	
Add	ress (number and street)		
City		State	Zip Code + 4
	E-mail address		

### Instructions for Completing Form EIA-846

### General Instructions:

- 1. Individuals most familiar with the plant energy systems and operations, such as engineers, should complete the questionnaire especially for the end use and fuel switching sections.
- 2. Use the units specified on the questionnaire for reporting all quantities. See the Btu conversion factors PDF on the Census Bureau's Business Help Site for a comprehensive list of various energy conversion factors. If your establishment uses more precise conversion values for your operations, use them, and indicate in the "Remarks" at the end of each section, the conversion factor(s) used.
- 3. Do <u>not</u> consolidate establishments. The reporting boundaries for your establishment should correspond to those used in the Economic Census Manufacturing (EC-M).
  - To resolve any consolidation problems, match the 10-digit identification number, which is located on the Manufacturing Energy Consumption Survey (MECS) questionnaire mailing label, with the first 10-digits of the identification number appearing on the EC-M mailing label.
  - Responses to the MECS questions should be the same activities as those considered when responding to the matching EC-M.
- 4. Report dollar amounts rounded to the nearest dollar,- (e.g., report \$1,257.59 as \$1,258).
- 5. If you do not maintain book records for particular items, please use carefully prepared estimates.
- 6. Enter zeros in the data columns if the value is zero or none.
- 7. Complete all applicable sections of the questionnaire.
- 8. The sections of this questionnaire are designed so all questions associated with the particular energy source should be completed before going on to the next energy source. Therefore, within each section, the questionnaire should be answered from the top to the bottom of the same column, before moving on to the next energy source (column).
- 9. The energy sources that are preprinted on the questionnaire are considered the most frequently consumed, but they do not represent a complete list of applicable energy sources. If your establishment has energy sources that meet the criteria for reporting, but are not preprinted on the questionnaire, please specify those energy sources in the "Other Energy Sources" section and enter the data there.

### Section-Specific Instructions:

### **Company Information**

In this section, indicate any changes in the company name, address, or zip code.

### **Contact Information**

Enter address and other contact information for the person most knowledgeable about completing this questionnaire, and the person whom we should contact if we have any questions concerning this filing.

#### **Establishment Information**

In this section, indicate any changes in the establishment ownership during 2010 and indicate the period covered by this filing, whether the calendar year or other period.

### Instructions for Completing Form EIA-846, cont.

#### **Establishment Size**

This section asks for the number of buildings and total square footage associated with this establishment. See specific instructions in this section for the definition of what should be counted as a building.

#### **Fuels Used**

In this section, indicate which energy sources (fuels) are used at the establishment for:

- heat, power, electricity generation, and on-site transportation;
- material inputs, feedstock, and "nonfuel" use; and
- shipments offsite from this establishment when required.

If you are using PDF's to complete this questionnaire, this section will help you to determine which energy source PDF's need to be printed off from the Business Help Site and completed. However, if you are using Census Taker to complete this questionnaire, the programming will automatically take you to the energy sources which you have checked in this section.

### **Energy Sources (Fuels)**

Reporting Criteria

An energy source (fuel) should be reported on this questionnaire if:

- the energy source was consumed as a fuel, (that is, for heat, power, or electricity generation); or
- the energy source was consumed as a nonfuel (feedstock, raw material input); or
- for selected energy sources, the energy source was shipped offsite from this establishment. The energy sources for which you will be asked to supply shipments data are:
  - o LPG
  - o Coal coke
  - o Petroleum coke
  - o Breeze
  - o Coke oven gas
  - o Blast furnace gas
  - o Acetylene
  - o Hydrogen
  - o Distillate fuel oil; and
  - o Residual fuel oil.

If your <u>only</u> means of an energy source during 2010 was a byproduct (or product) of an energy source used as a feedstock (or raw material input) that byproduct energy source should be reported <u>only if it was at least partially consumed onsite as a fuel or shipped offsite.</u> If the byproduct (or product) energy source was only itself consumed as a nonfuel (feedstock), it should be excluded.

Estimated end-use percent consumption is also collected for selected energy sources. These questions are intended to provide information on the purposes for which the energy are used in the manufacturing sector. More specific instructions for completing these parts are included in the questionnaire.

Data are collected for the following energy sources (fuels):

Electricity

Natural Gas

Diesel Fuel Oil (excluding off-site highway use)

Distillate Fuel Oil (e.g., Numbers 1, 2, 4)

Residual Fuel Oil (e.g., Numbers 5, 6, Navy Special, Bunker C)

Propane and Liquefied Petroleum Gases (LPG) and Natural Gas Liquids (NGL)

• Butane

### Instructions for Completing Form EIA-846, cont.

- Ethane
- Propane
- Mixtures of Butane, Ethane, and Propane
- Other LPG and NGL which includes butylenes, ethylene, and propylene

Coal

Breeze

Coal Coke

Petroleum Coke

Motor Gasoline (excluding off-site highway use)

Acetylene

Hydrogen

Kerosene

Wood Harvested directly from trees (e.g., roundwood, wood chips)

**Byproduct Energy Source** 

- Blast Furnace Gas
- Coke Oven Gas
- Waste Oils and Tars (excluding Coal Tar)
- Waste and Byproduct Gases (e.g., flue gas, off gas, plant gas, refinery gas, still gas, vent gas)
- Agricultural Waste (e.g., bagasse, nut shells, orchard prunings, rice hulls)
- Pulping and Black Liquor
- Wood Residues and Byproducts from mill processing (e.g., sawdust, shaving, slabs, bark)
- Wood/Paper-related Refuse (e.g., scrap, wastepaper, wood pallets, packing materials)

Steam (excluding steam generated in an onsite boiler from CHP or other fossil fuel, wood, or combustible source) Industrial Hot Water

Other Energy Source

#### **Energy Sources Reporting Examples**

**Example 1** – Your establishment depended entirely on electricity for heat and power, and no combustible energy sources were consumed. In this instance, complete the "Electricity" section. No data should be entered in any other energy source (fuel) section. Go to the "Fuel-Switching Capability" section and complete the remainder of the questionnaire.

**Example 2 -** Butane is used as a feedstock to produce butylenes onsite. The butylene is then used as a feedstock to produce butadiene which is shipped offsite. Report the butane used as a feedstock because it is not used as a fuel or shipped offsite. Butylene would not be reported because its only means of supply was as a byproduct and it was only used as a feedstock. Butadiene would not be reported as a shipment because it is not an identified energy source.

#### **Fuel-Switching Capability**

These questions are intended to measure the short-term <u>capability</u> of your establishment to use substitute energy sources in place of those actually consumed in 2010. These substitutions are limited to those that could actually have been introduced <u>within 30 days without extensive modifications</u>. More specific instructions for completing this section are included in the questionnaire.

### **Energy-Management Activities**

In this section, indicate whether your establishment participated in the listed energy-management activities during 2010 and the source(s) of the financial support to implement the energy-management activity.

### **Technologies**

Indicate any of the general technologies and technologies related to cogeneration present in this establishment.

#### Remarks

Please provide any explanations that may be helpful to us in understanding your reported data, including any Btu conversion factors used, if different from those provided in the enclosed table.

If you are filing this questionnaire using the PDF's on the Business Help Site and additional space is needed, attach a separate sheet, including the 10-digit identification number located on the mailing label on the front page of this questionnaire.

### **Conversion Factors Table**

To the right are Btu conversion factors that should be used <u>only</u> if you do not know the actual Btu factor of the fuels consumed at your establishment site.

If your establishment uses more precise conversion values for your operations, use them in place of the approximations given below. However, please identify in Section: Remarks, the conversion factor(s) used, if different from those listed to the right.

### General Definitions:

Btu = British thermal unit(s) One barrel = 42 gallons One short ton = 2,000 pounds

Examples of conversion from physical quantities to Btu include:

• Your establishment consumed 250 cubic feet of hydrogen in 2010.

The Btu equivalent is: (250 cubic feet) x (325.11 Btu/cubic foot)

= 81,277.5 Btu

= 0.0813 million Btu

• Your establishment consumed 300 pounds of hydrogen in 2010.

The Btu equivalent is:

(300 pounds) x (61,084 Btu/pound)

= 18,325,200 Btu

= 18.325 million Btu

Energy Source	<b>Conversion Factor(s)</b>
Acetylene	21,600 Btu/pound
Bagasse	1,500 Btu/cubic foot 4,081 Btu/pound
	•
Biomass	5,300 Btu/pound
Breeze	19.8 million Btu/short ton
Butane	4.326 million Btu/barrel 0.10300 million Btu/gallon
Coal	22.489 million Btu/short ton
Coal (use for coke plants only)	27.426 million Btu/short ton
Coal Coke	24.8 million Btu/short ton
Distillate Fuel Oil	5.825 million Btu/barrel
Electricity	3,412 Btu/kilowatt-hour
Ethane	3.082 million Btu/barrel
	0.07338 million Btu/gallon
Hydrogen	61,084 Btu/pound
	325.11 Btu/cubic foot
Industrial Hot Water	35,600 Btu gallon 140 Btu/pound
industrial Hot water	7.84 pounds/gallon
Isobutane	3.974 million Btu/barrel
isobutaire	0.09462 million Btu/gallon
Liquefied Petroleum Gas (LPG)	3.616 million Btu/barrel
, , ,	0.08610 million Btu/gallon
	4.5 pounds/gallon
Natural Gas	1.027 million Btu/ 1,000 cubic feet
Data la con Cala	10.27 therms/1,000 cubic feet
Petroleum Coke	6.024 million Btu/barrel 30.12 million Btu/short ton
	5 barrels/short ton
Propane	3.836 million Btu/barrel
Tropune	0.09133 million Btu/gallon
Pulping and/or Black Liquor	11 million Btu/short ton
Residual Fuel Oil	6.287 million Btu/barrel
Roundwood	21.5 million Btu/cord
	17.2 million Btu/short ton
	0.014 million Btu/board foot
Sawdust (7% moisture)	8,000 Btu/pound
Steam	1,200 Btu/pound
Still, Refinery, and/or Waste Gas	6 million Btu/barrel
Waste Materials (Wastepaper)	1,029 Btu/cubic foot 7,500 Btu/pound
Waste Oils and Tars	6 million Btu/barrel
(Green) Wood Chips (50% moistr	10 million Btu/short ton
Wood Waste (50% moisture)	9 million Btu/short ton
(	

## **Establishment Information**

	Establishment Informa	tion	
1.	Did ownership of this establishment change during 2010?	"Census Use Only"	<ul> <li>□ 1. No</li> <li>□ 2. Yes: Establishment was sold during the year. Complete all sections of this questionnaire for activities that occurred in 2010 prior to the sale.</li> <li>□ 3. Yes: Establishment was bought during the year. Complete all sections of this questionnaire for activities that occurred in 2010 after the sale.</li> </ul>
2.	What best describes this establishment at the end of 2010?	00010	<ul> <li>□ 1. In operation: Skip to question 6</li> <li>□ 2. Ceased operation: Answer question 3 then skip to question 6.</li> <li>□ 3. Sold or leased to another operator: Skip to question 4.</li> </ul>
3.	Enter the date in which your establishment ceased operation.	00013	Enter Date (mm-dd-yyyy)
4.	Enter the date in which your establishment was either sold or leased to another operator.	00014	Enter Date (mm-dd-yyyy)

## **Establishment Information**

	Establishment Information					
5.	Enter the following information only if this establishment was sold or leased to another operator during 2010.					
	00015		Name of ne	w owner or	operator	
	00013					
	00017			Address		
	City					
	00019	State	Zip (Zip +4) 00020 00021		Em	aployer Identification Number (9 Digit EIN)
6.	on this	s questionnaire. nstances like tho	Unless there are special see reported above, this	l reporting	00022	From: (mm-dd-yyyy)
	period 2010.	i snould be from	January 1, 2010 to Dec	ember 31,	00023	To: (mm-dd-yyyy)

# Electricity

Electricity: Total Pur	cnasea	
Enter the total quantity of electricity purchased by and delivered to this establishment during 2010, regardless of when payment was made.	"Census Use Only" 10061	Kilowatthours
Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the purchased electricity reported in question 1.	10062	\$ U.S. Dollars
Electricity: Source of F	Purchase	2
During 2010, where did this establishment's purchased electricity come from?  Local utility: the company in your local area that produces and/or delivers electricity and is legally obligated to provide service to the general public within its franchise area.  Non-utility: includes generators of electricity such as independent power producers, small power producers. It also includes brokers, marketers, marketing subsidiaries of utilities, or co-generators not owned by your company.	10015	1. All local utility: Answer question 4 then skip to question 7  2. All non-utility: Answer question 4 then skip to question 7  3. Both
Please specify the utility/non-utility provider from w	hom you	purchased your electricity:
If this establishment purchases from more than one provider, 10016 please provide the largest provider.		
Enter the quantity of your total purchased electricity that was purchased from a local utility during 2010.	10010	Kilowatthours
Enter the total expenditures of your purchased electricity that was paid to a local utility.	10020	\$ U.S. Dollars
Electricity: Transfe	rs In	
Enter the total quantity of electricity transferred in or otherwise received on-site without a direct open market purchase.  Include quantities:  • For which payment, if any, does not represent an open-market transaction;  • For which payment was made in-kind (i.e., barter);  • Received from an entity in which your establishment or company has a share of ownership or special sharing of revenue (e.g., in a performance service contract).	10050	Kilowatthours
	Enter the total quantity of electricity purchased by and delivered to this establishment during 2010, regardless of when payment was made.  Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the purchased electricity reported in question 1.  Electricity: Source of I During 2010, where did this establishment's purchased electricity come from?  Local utility: the company in your local area that produces and/or delivers electricity and is legally obligated to provide service to the general public within its franchise area.  Non-utility: includes generators of electricity such as independent power producers, small power producers. It also includes brokers, marketers, marketing subsidiaries of utilities, or co-generators not owned by your company.  Please specify the utility/non-utility provider from was left this establishment purchases from more than one provider, please provide the largest provider.  Enter the quantity of your total purchased electricity that was purchased from a local utility during 2010.  Enter the total expenditures of your purchased electricity that was paid to a local utility.  Electricity: Transfer Enter the total quantity of electricity transferred in or otherwise received on-site without a direct open market purchase.  Include quantities:  • For which payment, if any, does not represent an open-market transaction;  • For which payment was made in-kind (i.e., barter);  • Received from an entity in which your establishment or company has a share of ownership or special sharing of	Enter the total quantity of electricity purchased by and delivered to this establishment during 2010, regardless of when payment was made.  Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the purchased electricity reported in question 1.  Electricity: Source of Purchase During 2010, where did this establishment's purchased electricity come from?  Local utility: the company in your local area that produces and/or delivers electricity and is legally obligated to provide service to the general public within its franchise area.  Non-utility: includes generators of electricity such as independent power producers, small power producers. It also includes brokers, marketers, marketing subsidiaries of utilities, or co-generators not owned by your company.  Please specify the utility/non-utility provider from whom you fit this establishment purchases from more than one provider, 10016 please provide the largest provider.  Enter the quantity of your total purchased electricity that was purchased from a local utility during 2010.  Enter the total expenditures of your purchased electricity that was paid to a local utility.  Electricity: Transfers In  Enter the total quantity of electricity transferred in or otherwise received on-site without a direct open market purchase.  Include quantities:  • For which payment, if any, does not represent an open-market transaction;  • For which payment was made in-kind (i.e., barter);  • For which payment an entity in which your establishment or company has a share of ownership or special sharing of

## Electricity

	Electricity: Generated	On-site	
	Enter the quantity of electricity generated on-site fr	om each o	of the following:
		"Census Use Only"	Kilowatthours
	Combined Heat and Power     (CHP)/Cogeneration  Cogeneration is the production of electric energy and another form of useful energy (such as heat or steam) through the sequential use of energy.	10070	
	Solar Power	10081	
	Wind Power	10082	
	Hydropower	10083	
	Geothermal Power	10084	
	Other (for example, electricity generated by diesel generators)	10090	
	Enter the quantity of electricity sold or transferred out of this establishment to utilities during 2010.	10110	fsite
	Include quantities exchanged for the same or any other energy source.		Kilowatthours
	Exclude sales to independent power producers, small power producers, or co-generators not located at this establishment.		
•	Enter the quantity of electricity sold or transferred out of this establishment to any non-utilities during 2010.	10120	
	Include		Kilowatthours
	Include:  • Sales to independent power producers, small power producers, brokers, marketers, marketing subsidiaries of utilities, or co-generators not located at this establishment.		
	Quantities exchanged for the same or any other energy source.		

### **Electricity**

### Electricity: Estimated End-Use Percent Consumption

The following questions refer to how this establishment consumed the electricity that was previously reported (please enter as a percentage of total consumption for each end use performed). A plant engineer or someone who is familiar with energy flows at this establishment should report this data.

 $Total\ Consumption = Question\ 1\ [Purchases] + Question\ 7\ [Transfers] + Question\ 8\ [Generated] - (Question\ 9+10)[Sales\ and\ Transfers\ Offsite]$ 

### Enter the percentage of total electricity that this establishment consumed for the following:

11.

		S
Indirect Uses – Boilers: indirect use is the transformation of energy to another usable energy source, as in a boiler, gas turbine, or combustion turbine.	"Census Use Only"	Electricity
Boiler fuel (includes fuels used for thermal outputs)	10710	%
Direct Uses – Process: direct process use includes usage in motors, ovens, kilns, and strip heaters.		
• Process heating (e.g., kilns, furnaces, ovens, strip heaters)	10720	%
Process cooling and refrigeration	10730	%
Machine drive (e.g., motors, pumps, etc. associated with manufacturing process equipment)	10740	%
• Electro-chemical processes (e.g., reduction process)	10750	%
• Other direct process use:  10761  Please specify:	10760	%
Direct Uses – Non-process: direct non-process use includes usage for facility lighting and space-conditioning equipment (HVAC).		
• Facility heating, ventilation, and air conditioning	10770	%
Facility lighting	10780	%
• Facility support other than that reported above (e.g.: cooking, water heating, office equipment)	10790	%
On-site transportation, excluding highway usage	10800	%
Other direct non-process use:      10821     Please specify:	10820	%
		TOTAL 100%

## **Natural Gas**

	Natural Gas: Units		
1.	Please indicate the units for the quantity that you will be reporting below.  ** Please use this unit for reporting the remainder of the Natural Gas quantity questions.	"Census Use Only"	☐ 1. Therms ☐ 2. Decatherms (Dth) ☐ 3. 1,000 Cubic Feet (Mcf) ☐ 4. 100 Cubic Feet (Ccf) ☐ 5. Million British Thermal Units (MMBtu)
	Natural Gas: Total Purch	ased	
2.	Enter the total quantity of natural gas purchased by and delivered to this establishment during 2010, regardless of when payment was made.	30010	Units
3.	Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the purchased natural gas reported in question 2.	30020	\$ U.S. Dollars
	Natural Gas: Source of Pu	rchase	
4.	During 2010, where did this establishment's purchased natural gas come from?  Local utility: the company in your local area that produces and/or delivers natural gas and is legally obligated to provide service to the general public within its franchise area.  Non-utility: include independent producers, brokers, marketers, and any marketing subsidiaries of utilities.	30015	☐ 1. All local utility: Answer question 5 then skip to question 8 ☐ 2. All non-utility: Answer question 5 then skip to question 8 ☐ 3. Both
5.	Please specify the utility/non-utility provider from whom	you purc	hased your natural gas:
	If this establishment purchases from more than one provider, please provide the largest provider.  30016		
6.	Enter the quantity of your total purchased natural gas that was purchased from a local utility during 2010.	31010	Units
7.	Enter the total expenditures of your purchased natural gas that was paid to a local utility.	31020	\$ U.S. Dollars

## **Natural Gas**

	Natural Gas: Transferred In and Pr	oduced	On-site
8.	Enter the total quantity of natural gas transferred in or otherwise received on-site without a direct open market purchase.  Include quantities:  • For which payment, if any, does not represent an open-market transaction;  • For which payment was made in-kind (i.e., barter);  • Received from an entity in which your establishment or company has a share of ownership or special sharing of revenue (e.g., in a performance service contract).	"Census Use Only" 30030	Units
9.	Enter the quantity of natural gas that was both produced on-site during 2010 as output from a captive (on-site) well, and was at least partially consumed on-site (as a fuel or nonfuel).	30040	Units
	Natural Gas: Consumpt	ion	
10.	Enter the total quantity of natural gas consumed as a fuel at this establishment during 2010.  Include all uses that were used for the heat, power, and electricity generation. Also, include fuel consumed by vehicles intended primarily for use on-site.	30060	Units
11.	Enter the total quantity of natural gas consumed for any purpose other than fuel use at this establishment during 2010.  Include all quantities consumed as lubricants, solvents, or as feedstocks, raw materials, additives, or ingredients for products manufactured by this establishment, or any other nonfuel purpose.  Exclude all off-site dispositions such as sales and transfers to other establishments.	30070	Units

### **Natural Gas**

### Natural Gas: Estimated End-Use Percent Consumption

The following questions refer to how this establishment consumed the natural gas that was previously reported in question 10 (please enter as a percentage of total consumption for each end use performed). A plant engineer or someone who is familiar with energy flows at this establishment should report this data.

Enter the percentage of total natural gas (from question 10) that this establishment consumed as the following:

12.

Indirect Uses – Boilers: indirect use is the transformation of energy to another usable energy source, as in a boiler, gas turbine, or combustion turbine.	"Census Use Only"	Natural Gas
Boiler fuel in a Combined Heat and Power (CHP) and/or cogeneration process	30705	%
Other boiler fuel (not included above) (includes fuels used for thermal outputs only)	30710	0/0
Direct Uses- Process: direct process use includes usage in motors, ovens, kilns, and strip heaters.		
• Process heating (e.g., kilns, furnaces, ovens, strip heaters)	30720	%
Process cooling and refrigeration	30730	%
<ul> <li>Machine drive (e.g., motors, pumps, etc. associated with manufacturing process equipment)</li> </ul>	30740	%
• Other direct process use:  Please specify:	30760	%
Direct Uses – Non-process: direct non-process use includes usage for facility lighting and space-conditioning equipment (HVAC).		
Facility heating, ventilation, and air conditioning	30770	%
• Facility support other than that reported above (e.g.: cooking, water heating, office equipment)	30790	%
On-site transportation, excluding highway usage	30800	%
Conventional electricity generation	30810	%
• Other direct non-process use:  30821 Please specify:	30820	%
		TOTAL 100%

### Diesel or Distillate Fuel Oil

	Diesel or Distillate Fuel Oil: To		te Fuel Oil chased, Transferred o	and Produced
		"Census Use Only"	(28)  Total Diesel Fuel  (exclude off-site highway)  ↓	(29)  Total Distillate Fuel (numbers 1, 2, & 4)  ↓
1.	Enter the total quantity of the energy source (column) purchased by and delivered to this establishment during 2010, regardless of when payment was made.	010	Barrels	Barrels
2.	Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the quantity reported in question 1.	020	\$ U.S. Dollars	\$ U.S. Dollars
3.	Enter the total quantity of the energy source transferred in or otherwise received on-site without a direct open market purchase.  Include quantities:  •For which payment, if any, does not represent an open-market transaction; •For which payment was made in-kind (i.e., barter); •Received from an entity in which your establishment or company has a share of ownership or special sharing of revenue (e.g., in a performance service contract.)	030	Barrels	Barrels
4.	Enter the quantity of the energy source produced on-site during 2010.	040	Barrels	Barrels

# Diesel or Distillate Fuel Oil

	Diesel or Disti	llate Fu	el: Consumption	
		"Census Use Only"	(28)	(29)
		Olliy	Total Diesel Fuel	<b>Total Distillate Fuel</b>
			(exclude off-site highway) ↓	(numbers 1, 2, & 4) ↓
5.	Enter the total quantity of the energy source consumed as a fuel at this establishment during 2010.	060		
	Include all uses that were used for the heat, power, and electricity generation. Also, include fuel consumed by vehicles intended primarily for use on-site.		Barrels	Barrels
6.	Enter the total quantity of the energy source consumed for any purpose other than fuel use at this establishment during 2010.  Include all quantities consumed as lubricants, solvents, or as feedstocks, raw materials, additives, or ingredients for products manufactured by this establishment, or any other nonfuel purpose.  Exclude all off-site dispositions such as sales and	070	Barrels	Barrels
	transfers to other establishments.	stillata I	Tuel: Shipments	
7.	Enter the quantity of the energy	iiiiaie r	det. Snipments	
,.	source shipped off-site during 2010.	080		
		080	Barrels	Barrels
	Diesel or Distill	ate Fue	: Storage Capacity	
8.	Enter the shell or design storage capacity of all the storage tanks located on-site as of 12/31/10.	090	Barrels	Barrels

### Diesel or Distillate Fuel Oil

### Diesel or Distillate Fuel Oil: Estimated End-Use Percent Consumption

The following questions refer to how this establishment consumed the energy source that was previously reported in question 5 (please enter as a percentage of total consumption for each end use performed). A plant engineer or someone who is familiar with energy flows at this establishment should report this data.

Enter the percentage of the total energy source (question 5 column that this establishment consumed as the following:	umn 1 + quest	ion 5 column
Indirect Uses – Boilers: indirect use is the transformation of energy another usable energy source, as in a boiler, gas turbine, or combustion turbine.	"Census Use Only"	Diesel and Distillate
•Boiler fuel in a Combined Heat and Power (CHP) and/or cogeneration process	22705	
•Other boiler fuel (not included above) (includes fuels used for thermal outputs only)	22710	
Direct Uses –Process: direct process use includes usage in motors ovens, kilns, and strip heaters.	S,	
•Process heating (e.g., kilns, furnaces, ovens, strip heaters)	22720	
•Process cooling and refrigeration	22730	
•Machine drive (e.g., motors, pumps, etc. associated with manufacturing process equipment)	s 22740	
•Other direct process use: 22762 Please specify:	22760	
Direct Uses – Non-process: direct non-process use includes usage facility lighting and space-conditioning equipment (HVAC).	e for	
•Facility heating, ventilation, and air conditioning	22770	
• Facility support other than that reported above (e.g.: cooking, wat heating, office equipment)	ter 22790	
•On-site transportation, excluding highway usage	22800	
•Conventional electricity generation	22810	
•Other direct non-process use: 22822	22820	
Please specify:		

**TOTAL 100%** 

# **Residual Fuel Oil**

	Residual Fuel Oil: Total Purchased, Tr	ansferre	ed and Produced
		"Census Use Only"	Residual Fuel Oil (numbers 5, 6, Navy Special and Bunker C)
1.	Enter the total quantity of residual fuel purchased by and delivered to this establishment during 2010, regardless of when payment was made.	21010	Barrels
2.	Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the purchased residual fuel reported in question 1.	21020	\$ U.S. Dollars
3.	Enter the total quantity of residual fuel transferred in or otherwise received on-site without a direct open market purchase.  Include quantities:	21030	
	<ul> <li>For which payment, if any, does not represent an open-market transaction;</li> <li>For which payment was made in-kind (i.e., barter);</li> <li>Received from an entity in which your establishment or company has a share of ownership or special sharing of revenue (e.g., in a performance service contract.)</li> </ul>		Barrels
4.	Enter the quantity of residual fuel produced onsite during 2010.	21040	Barrels
	Residual Fuel Oil: Cons	umption	i
5.	Enter the total quantity of residual fuel consumed as a fuel at this establishment during 2010.  Include all uses that were used for the heat, power, and electricity generation. Also, include fuel consumed by vehicles intended primarily for use on-site.	21060	Barrels
6.	Enter the total quantity of residual fuel consumed for any purpose other than fuel use at this establishment during 2010.  Include all quantities consumed as lubricants, solvents, or as feedstocks, raw materials, additives, or ingredients for products manufactured by this establishment, or any other nonfuel purpose.	21070	Barrels
	Exclude all off-site dispositions such as sales and transfers to other establishments.		

# **Residual Fuel Oil**

	Residual Fuel Oil: Shi	pments			
7.	Enter the quantity of residual fuel shipped off-site during 2010.	21080		Barr	els
	Residual Fuel Oil: Storag	e Capac	ity		
8.	Enter the shell or design storage capacity of all the storage tanks located on-site as of 12/31/10.	21090		Barr	els
	Residual Fuel Oil: Estimated End-Use	Percen	t Consu	mption	
previous perfor should	ollowing questions refer to how this establishment conpusly reported in question 5 (please enter as a percenta (med). A plant engineer or someone who is familiar will report this data.	ge of tota th energy	l consun flows at	<i>aption for</i> t this esta	each end use blishment
9.	Enter the percentage of total residual fuel (from que consumed as the following:	estion 5) t	hat this (	establishr	nent
	Indirect Uses – Boilers: indirect use is the transformation another usable energy source, as in a boiler, gas turbin turbine.	0.	"Census use Only"	Residual Fuel	
	•Boiler fuel in a Combined Heat and Power (CHP) a cogeneration process	nd/or		21705	%
	•Other boiler fuel (not included above) (includes fuels us outputs)	ed for therm	al	21710	%
	Direct Uses – Process: direct process use includes usage ovens, kilns, and strip heaters.	ge in moto	ors,		
	• Process heating (e.g., kilns, furnaces, ovens, strip heaters)			21720	%
	•Process cooling and refrigeration			21730	%
	•Machine drive (e.g., motors, pumps, etc. associated with manufact equipment)	turing proces	s	21740	%
	•Other direct process use:			21760	
	Please specify:				%

# **Residual Fuel Oil**

Direct Uses – Non-process: direct non-process use includes usage for facility lighting and space-conditioning equipment (HVAC).	"Census use Only"	Residual Fuel
•Facility heating, ventilation, and air conditioning	21770	%
• Facility support other than that reported above (e.g.: cooking, water heating, office equipment)	21790	%
•Conventional electricity generation	21810	%
•Other direct non-process use:  Please specify:	21820	%
		TOTAL 100%

	Butane, Ethane, or Propane: Purchased, Transferred and Produced					
		"Census Use Only"	(36)	(37)	(38)	
			Butane ↓	Ethane ↓	Propane	
1.	Enter the total quantity of the energy source (column) purchased by and delivered to this establishment during 2010, regardless of when payment was made.	010	Gallons	Gallons	Gallons	
2.	Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the quantity reported in question 1.	020	\$ U.S. Dollars	\$ U.S. Dollars	\$ U.S. Dollars	
3.	Enter the total quantity of the energy source transferred in or otherwise received on-site without a direct open market purchase.  Include quantities:  •For which payment, if any, does not represent an open market transaction; •For which payment was made in-kind (i.e., barter); •Received from an entity in which your establishment or company has a share of ownership or special sharing of revenue (e.g., in a performance service contract.)	030	Gallons	Gallons	Gallons	
4.	Enter the quantity of the energy source produced on-site during 2010.	040	Gallons	Gallons	Gallons	

			copane: Consul	mption	
		"Census Use Only"	(36)	(37)	(38)
			Butane ↓	Ethane 🗸	Propane ↓
5.	Enter the total quantity of the energy source consumed as a fuel at this establishment during 2010.  Include all uses that were used for the heat, power, and electricity generation. Also, include fuel consumed by vehicles intended primary for use on-site.	060	Gallons	Gallons	Gallons
6.	Enter the total quantity of the energy source consumed for any purpose other than fuel use in this establishment during 2010.  Include all quantities consumed as lubricants, solvents, or as feedstocks, raw materials, additives, or ingredients for products manufactured by this establishment, or any other nonfuel purpose.  Exclude all off-site dispositions such as sales and transfers to other establishments.	070	Gallons	Gallons	Gallons
7.	Enter the quantity of the energy source shipped off-site during 2010.	ane or F	Propane: Shipm	Gallons	Gallons

	Total Mixtures or Othe	er LPG:	Purchased, Transfe	rred
		"Census Use Only"	(34)	(35)
			Mixtures of Butane, Ethane and Propane	Other Liquefied Petroleum Gases (LPG) and Natural Gas Liquids (NGL) (e.g. butylenes, ethylene, and propylene)
8.	Enter the total quantity of the energy source (column) purchased by and delivered to this establishment during 2010, regardless of when payment was made.	010	Gallons	Gallons
9.	Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the quantity reported in question 8.	020	\$ U.S. Dollars	\$ U.S. Dollars
10.	Enter the total quantity of the energy source transferred in or otherwise received on-site without a direct open market purchase.  Include quantities:  •For which payment, if any, does not represent an open-market transaction;  •For which payment was made in-kind (i.e., barter);  •Received from an entity in which your establishment or company has a share of ownership or special sharing of revenue (e.g., in a performance service contract.)	030	Gallons	Gallons

	Total Mixtures or Other LPG:		ed, Consumption an	d Shipments
		"Census Use Only"	(34)	(35)
			Mixtures of Butane, Ethane and Propane	Other Liquefied Petroleum Gases (LPG) and Natural Gas Liquids (NGL) (e.g.
			<b>↓</b>	butylenes, ethylene, and propylene)
11.	Enter the quantity of the energy source produced on-site during 2010.	040	Gallons	Gallons
12.	Enter the total quantity of the energy source consumed as a fuel at this establishment during 2010.  Include all uses that were used for the heat, power, and electricity generation. Also, include fuel consumed by vehicles intended primarily for use on-site.	060	Gallons	Gallons
13.	Enter the total quantity of the energy source consumed for any purpose other than fuel use in this establishment during 2010.  Include all quantities consumed as lubricants, solvents, or as feedstocks, raw materials, additives, or ingredients for products manufactured by this establishment, or any other nonfuel purpose.  Exclude all off-site dispositions such as sales and transfers to other establishments.	070	Gallons	Gallons
14.	Enter the quantity of the energy source shipped off-site during 2010.	080	Gallons	Gallons

### Total LPG and NGL: Estimated End-Use Percent Consumption

The following questions refer to how this establishment consumed the energy source that was previously reported question 5 + 12 (please enter as a percentage of total consumption for each end use performed). A plant engineer or someone who is familiar with energy flows at this establishment should report this data.

15. Enter the percentage of total energy source (question 5 column 1 + question 5 column 2 + question 5 column 3 + question 12 column 1 + question 12 column 2) that this establishment consumed as the following:

question 12 column 1   question 12 column 2) that this establishment consumed a		··· <del>8</del> ·
Indirect Uses- Boilers: indirect use is the transformation of energy to another usable energy source, as in a boiler, gas turbine, or combustion turbine.	"Census Use Only"	Total LPG and NGL
•Boiler fuel in a Combined Heat and Power (CHP) and/or cogeneration process	24705	%
•Other boiler fuel (not included above) (includes fuels used for thermal outputs only)	24710	%
Direct Uses- Process: direct process use includes usage in motors, ovens, kilns, and strip heaters.		
•Process heating (e.g., kilns, furnaces, ovens, strip heaters)	24720	%
•Process cooling and refrigeration	24730	%
● Machine drive (e.g., motors, pumps, etc. associated with manufacturing process equipment)	24740	%
• Other direct process use: 24762 Please specify:	24760	%
Direct Uses- Non-process: direct non-process use includes usage for facility lighting and space-conditioning equipment (HVAC).		
•Facility heating, ventilation, and air conditioning	24770	%
• Facility support other than that reported above (e.g.: cooking, water heating, office equipment)	24790	%
•On-site transportation, excluding highway usage	24800	%
•Conventional electricity generation	24810	%
• Other direct non-process use: 24822 Please specify:	24820	%
		TOTAL 100%

## Coal

	Coal: Purchas	ed, Tran	sferred, and Pi	roduced	
		"Census Use Only"	(40)	(41)	(42)
			Anthracite	Bituminous and Subbituminous	Lignite
			$\downarrow$	<b>\</b>	↓
1.	Enter the total quantity of the				
	energy source (column)	010			
	purchased by and delivered to				
	this establishment during 2010, regardless of when payment was		Short tons	Short tons	Short tons
	made.				
2.	Enter the total expenditures;				
	including all applicable taxes	020	\$	\$	\$
	and delivery, management,		U.S. Dollars	U.S. Dollars	U.S. Dollars
	transportation, and demand charges, for the quantity				
	reported in question 1.				
3.	Enter the total quantity of the				
	energy source transferred in or				
	otherwise received on-site	030			
	without a direct open market				
	purchase.		Short tons	Short tons	Short tons
	Include quantities:				
	•For which payment, if any, does not				
	represent an open-market transaction; •For which payment was made in-kind (i.e.,				
	barter);				
	•Received from an entity in which your establishment or company has a share of				
	ownership or special sharing of revenue (e.g., in a performance service contract.)				
4.	Enter the quantity of the energy				
	source produced on-site during				
	2010.	040			
			Short tons	Short tons	Short tons

## Coal

		"Census Use Only"	(40)	(41)	(42)
			Anthracite	Bituminous and Subbituminous	Lignite
			↓ ↓	<b>\</b>	$\downarrow$
5.	Enter the total quantity of the energy source consumed as a fuel in this establishment during 2010.  Include all uses that were used for the heat, power, and electricity generation. Also, include fuel consumed by vehicles intended primarily for use on-site.	060	Short tons	Short tons	Short tons
6.	Enter the total quantity of the energy source consumed for any purpose other than fuel use in this establishment during 2010.  Include all quantities consumed as lubricants, solvents or as raw materials, feedstocks, additives, or ingredients for products manufactured by this establishment, or any other nonfuel purpose.  Exclude all off-site dispositions such as sales and transfers to other establishments.	070	Short tons	Short tons	Short tons



## Coal: Estimated End-Use Percent Consumption

The following questions refer to how this establishment consumed the energy source that was previously reported question 5 (please enter as a percentage of total consumption for each end use performed). A plant engineer or someone who is familiar with energy flows at this establishment should report this data.

	<u> </u>							
7.	Enter the percentage of the total energy source (question 5 column 1 + question 5 column 2 + question 5 column 3) that this establishment consumed as the following:							
	Indirect Uses – Boilers: indirect use is the transformation of energy to another usable energy source, as in a boiler, gas turbine, or combustion turbine.	"Census Use Only"	TOTAL COAL (exclude coal coke and breeze)					
	Boiler fuel in a Combined Heat and Power (CHP) and/or cogeneration process	46705	%					
	Other boiler fuel (not included above) (includes fuels used for thermal outputs only)	46710	%					
	Direct Uses – Process: direct process use includes usage in motors, ovens, kilns, and strip heaters.							
	• Process heating (e.g., kilns, furnaces, ovens, strip heaters)	46720	%					
	Process cooling and refrigeration	46730	%					
	•Machine drive (e.g., motors, pumps, etc. associated with manufacturing process equipment)	46740	%					
	•Other direct process use:  Please specify:	46760	%					
	Direct Uses – Non-process: direct non process use includes usage for facility lighting and space-conditioning equipment (HVAC).							
	•Facility heating, ventilation, and air conditioning	46770	%					
	• Facility support other than that reported above (e.g.: cooking, water heating, office equipment)	46790	%					
	•Conventional electricity generation	46810	%					
	•Other direct non-process use:  Please specify:	46820	%					
			TOTAL 100%					

## Breeze or Coal Coke

	Breeze or Coal Coke: Pur	rchased,	Transferred, and Pr	roduced
		"Census Use Only"	(44)	(43)
			Breeze	Coal Coke
			$\rightarrow$	<b>→</b>
1.	Enter the total quantity of the energy source (column) purchased by and delivered to this establishment during 2010, regardless of when payment was made.	010	Short tons	Short tons
2.	Enter the total expenditures; including all applicable taxes and	020	\$	ф
	delivery, management, transportation, and demand charges, for the quantity reported in question 1.		U.S. Dollars	\$ U.S. Dollars
3.	Enter the total quantity of the energy source transferred in or otherwise received on-site without a direct open market purchase.	030		
	Include quantities:  •For which payment, if any, does not represent an open-market transaction; •For which payment was made in-kind (i.e., barter); •Received from an entity in which your establishment or company has a share of ownership or special sharing of revenue (e.g., in a performance service contract.)		Short tons	Short tons
4.	Enter the quantity of the energy source produced on-site during 2010.	040		
			Short tons	Short tons

## Breeze or Coal Coke

	Breeze or Co	al Coke	: Consumption	
		"Census Use Only"	(44)	(43)
			Breeze	Coal Coke
			↓	$\downarrow$
5.	Enter the total quantity of the energy source consumed as a fuel in this establishment during 2010.	060		
	Include all uses that were used for the heat, power, and electricity generation. Also, include fuel consumed by vehicles intended primarily for use on-site.		Short tons	Short tons
6.	Enter the total quantity of the energy source consumed for any purpose other than fuel use in this establishment during 2010.	070		
	Include all quantities consumed as lubricants, solvents or as raw materials, feedstocks, additives, or ingredients for products manufactured by this establishment, or any other nonfuel purpose.		Short tons	Short tons
	Exclude all off-site dispositions such as sales and transfers to other establishments.			

## Petroleum Cokes

	Petroleum Cokes: Purchased	, Transf	ferred, and Produc	ced
		"Census Use Only"	(78)	(79)
			Marketable Petroleum Coke- Unrefined or Green	Marketable Petroleum Coke- Calcined ↓
1.	Enter the total quantity of the energy source (column) purchased by and delivered to this establishment during 2010, regardless of when payment was made.	010	Barrels	Barrels
2.	Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the quantity reported in question 1.	020	\$ U.S. Dollars	\$ U.S. Dollars
3.	Enter the total quantity of the energy source transferred in or otherwise received on-site without a direct open market purchase.	030		
	<ul> <li>Include quantities:</li> <li>For which payment, if any, does not represent an openmarket transaction;</li> <li>For which payment was made in-kind (i.e., barter);</li> <li>Received from an entity in which your establishment or company has a share of ownership or special sharing of revenue (i.e., in a performance service contract).</li> </ul>		Barrels	Barrels
4.	Enter the quantity of the energy source produced on-site during 2010.	040	Barrels	Barrels
5.	Petroleum Cokes  Enter the total quantity of the energy source consumed as a fuel at this establishment during 2010.  Include all uses that were used for the heat, power, and electricity generation. Also, include fuel consumed by vehicles intended primarily for use on-site.	: <b>Const</b>	Barrels	Barrels

## Petroleum Cokes

		"Census Use Only"	(78)	(79)
			Petroleum Coke- Unrefined or Green	Marketable Petroleum Coke- Calcined ↓
6.	Enter the total quantity the energy source consumed for any purpose other than fuel use at this establishment during 2010.	070		
	Include all quantities consumed as lubricants, solvents, or as feedstocks, raw materials, additives, or ingredients for products manufactured by this establishment, or any other nonfuel purpose.		Barrels	Barrels
	Exclude all off-site dispositions such as sales and transfers to other establishments.			
	Petroleum Coke	es: Ship	ments	
7.	Enter the quantity of the energy source shipped off-site during 2010.	080		
			Barrels	Barrels

## Kerosene or Motor Gasoline

		"Census Use Only"	(27)	(23)
			Kerosene ↓	Motor Gasoline (exclude off-site highway use)  \$\int \$
1.	Enter the total quantity of the energy source (column) purchased by and delivered to this establishment during 2010, regardless of when payment was made.	010	Barrels	Gallons
2.	Enter the total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the quantity reported in question 1.	020	\$ U.S. Dollars	\$ U.S. Dollars
3.	Enter the total quantity of the energy source transferred in or otherwise received on-site without a direct open market purchase.  Include quantities:  •For which payment, if any, does not represent an open-market transaction;  •For which payment was made in-kind (i.e., barter);  •Received from an entity in which your establishment or company has a share of ownership or special sharing of revenue (e.g., in a performance service contract.)	030	Barrels	Gallons
4.	Enter the quantity of the energy source produced on-site during 2010.	040	Barrels	Gallons

# Kerosene or Motor Gasoline

	Kerosene, or Mot	or Gaso	line: Consumption	
		"Census Use Only"	(27)	(23)
			Kerosene	Motor Gasoline (exclude off-site highway use)
			<b>↓</b>	<b>↓</b>
5.	Enter the total quantity of the energy source consumed as a fuel at this establishment during 2010.  Include all uses that were used for the heat, power, and electricity generation. Also, include fuel consumed by vehicles intended primarily for use on-site.	060	Barrels	Gallons
6.	Enter the total quantity of the energy source consumed for any purpose other than fuel use at this establishment during 2010.  Include all quantities consumed as lubricants, solvents or as feedstocks, raw materials, additives, or ingredients for products manufactured by this establishment, or any other nonfuel purpose.  Exclude all off-site dispositions such as sales and transfers to other establishments.	070	Barrels	Gallons
	Kerosene, or Motor	· Gasolii	ne: Storage Capacity	,
7.	Enter the shell or design storage capacity of all the storage tanks located on-site as of 12/31/10.	090		Gallons

# Acetylene or Hydrogen

	Acetylene or Hy	drogen:	Total Purchased	
		"Census Use Only"	(64)	(63)
			Acetylene	Hydrogen
			<b>↓</b>	<b>↓</b>
1.	Enter the total quantity of the energy source (column) purchased by and delivered to this establishment during 2010, regardless of when payment was made.	010	Cubic Feet	Million Btu
2.	Enter the total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the quantity reported in question 1.	020	\$ U.S. Dollars	\$ U.S. Dollars
3.	Enter the total quantity of the energy source transferred in or otherwise received on-site without a direct open market purchase.  Include quantities:  •For which payment, if any, does not represent an open-market transaction; •For which payment was made in-kind (i.e., barter); •Received from an entity in which your establishment or company has a share of ownership or special sharing of revenue (i.e., in a performance service contract.)	030	Cubic Feet	Million Btu
4.	Enter the quantity of the energy source produced on-site during 2010.	040	Cubic Feet	Million Btu
5.	Does the quantity of hydrogen reported in produced on-site above represent the product or byproduct of another energy source consumed on-site?	050		1. Yes, product or byproduct  2. No

# Acetylene or Hydrogen

	Acetylene or H	lydrogei	n: Consumption	
		"Census Use Only"	(64)	(63)
			Acetylene	Hydrogen
			↓	$\downarrow$
6.	Enter the total quantity of the energy source consumed as a fuel at this establishment during 2010.			
	Include all uses that were used for the heat, power, and electricity generation. Also, include fuel consumed by vehicles intended primarily for use on-site.	060	Cubic Feet	Million Btu
7.	Enter the total quantity of the energy source consumed for any purpose other than fuel use at this establishment during 2010.	070		
	Include all quantities consumed as lubricants, solvents or as feedstocks, raw materials, additives, or ingredients for products manufactured by this establishment, or any other nonfuel purpose.		Cubic Feet	Million Btu
	Exclude all off-site dispositions such as sales and transfers to other establishments.			
	Acetylene or	Hydrog	en: Shipments	
8.	Enter the quantity of the energy source shipped off-site during 2010.	080		
			Cubic Feet	Million Btu

# Wood Harvested Directly from Trees (e.g. roundwood, wood chips)

W	ood Harvested Directly from Trees: Total Purc	hased, T	Fransferred and Produced
1.	Enter the total quantity of wood harvested directly from trees purchased by and delivered to this establishment during 2010, for fuel uses only, regardless of when payment was made.	"Census Use Only" 83010	Million Btu
2.	Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the quantity reported in question 1.	83020	\$ U.S. Dollars
3.	Enter the total quantity of wood harvested directly from trees transferred in or otherwise received onsite without a direct open market purchase.  Include quantities:  •For which payment, if any, does not represent an open-market transaction; •For which payment was made in-kind (i.e., barter); •Received from an entity in which your establishment or company has a share of ownership or special sharing of revenue (e.g., in a performance service contract.)	83030	Million Btu
4.	Enter the quantity of wood harvested directly from trees produced on-site during 2010.  Wood Harvested Directly From Trees.	83040 ees: Co	Million Btu nsumption
5.	Enter the total quantity of wood harvested directly from trees consumed as a fuel at this establishment during 2010.  Include all uses that were used for the heat, power, and electricity generation. Also, include fuel consumed by vehicles intended primarily for use on-site.	83060	Million Btu

# Blast Furnace Gas or Coke Oven Gas

	Blast Furnace Gas or Coke Oven Gas: Purchased, Transferred and Produced				
		"Census Use Only"	(60)	(61)	
			Blast Furnace ↓	Coke Oven Gas ↓	
1.	Enter the total quantity of the energy source (column) purchased by and delivered to this establishment during 2010, regardless of when payment was made.	010	Million Btu	Million Btu	
2.	Enter the total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the quantity reported in question 1.	020	\$ U.S. Dollars	\$ U.S. Dollars	
3.	Enter the total quantity of the energy source transferred in or otherwise received on-site without a direct open market purchase.  Include quantities:  •For which payment, if any, does not represent an open-market transaction; •For which payment was made in-kind (i.e., barter); •Received from an entity in which your establishment or company has a share of ownership or special sharing of revenue (e.g., in a performance service contract.)	030	Million Btu	Million Btu	
4.	Enter the quantity of the energy source produced on-site during 2010.	040	Million Btu	Million Btu	

# Blast Furnace Gas or Coke Oven Gas

	Blast Furnace Gas or	· Coke O	ven Gas: Consumpt	ion
		"Census Use Only"	(60)	(61)
			Blast Furnace ↓	Coke Oven Gas ↓
5.	Enter the total quantity of the energy source consumed as a fuel at this establishment during 2010.  Include all uses that were used for the heat, power, and electricity generation. Also, include fuel consumed by vehicles intended primarily for use on-site.	060	Million Btu	Million Btu
	Blast Furnace Gas o	or Coke	Oven Gas: Shipmen	ts
6.	Enter the quantity of the energy source shipped off-site during 2010.	080	Million Btu	Million Btu

# Waste Oils, Tars or Waste Byproduct Gases

	Waste Oils and Tars, or Waste Byproduct Gases: Purchased, Transferred, and Produced				
		"Census Use Only"	(71)	(62)	
			Waste Oils and Tars (excluding Coal Tar) ↓	Waste and Byproduct Gases  (e.g. refinery gas, off gas, vent gas, plant gas, still gas)	
1.	Enter the total quantity of the energy source (column) purchased by and delivered to this establishment during 2010, regardless of when payment was made.	010	Million Btu	Million Btu	
2.	Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the quantity reported in question 1.	020	\$ U.S. Dollars	\$ U.S. Dollars	
3.	Enter the total quantity of the energy source transferred in or otherwise received on-site without a direct open market purchase.  Include quantities:  •For which payment, if any, does not represent an open-market transaction; •For which payment was made in-kind (i.e., barter); •Received from an entity in which your establishment or company has a share of ownership or special sharing of revenue (e.g., in a performance service contract.)	030	Million Btu	Million Btu	
4.	Enter the quantity of the energy source produced on-site during 2010.	040	Million Btu	Million Btu	

# Waste Oils, Tars or Waste Byproduct Gases

	Waste Oils and Tars, or We	"Census Use Only"	(71)	(62)
			Waste Oils and Tars  ↓	Waste and Byproduct Gases  (e.g. refinery gas, off as, vent gas, plant gas, still gas)
5.	Enter the total quantity of the energy source consumed as a fuel at this establishment during 2010.  Include all uses that were used for the heat, power, and electricity generation. Also, include fuel consumed by vehicles intended primarily for use on-site.	060	Million Btu	Million Btu
6.	Enter the total quantity of the energy source consumed for any purpose other than fuel use at this establishment during 2010.  Include all quantities consumed as lubricants, solvents, or as feedstocks, raw materials, additives, or ingredients for products manufactured by this establishment, or any other nonfuel purpose.  Exclude all off-site dispositions such as sales and transfers to other establishments.	070	Million Btu	Million Btu

# Pulping Black Liquor or Agricultural Waste

Pu	lping Black Liquor or Agricultural	Waste:	Purchased, Transfe	erred and Produced
		"Census Use Only"	(73)	(90)
			Pulping Black Liquor ↓	Agricultural Waste (e.g., bagasse, rice hulls, nut shells, orchard prunings)
1.	Enter the total quantity of the energy source (column) purchased by, and delivered to this establishment during 2010, regardless of when payment was made.	010	Million Btu	Million Btu
2.	Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the quantity reported in question 1.	020	\$ U.S. Dollars	\$ U.S. Dollars
3.	Enter the total quantity of the energy source transferred in or otherwise received on-site without a direct open market purchase.  Include quantities:	030		
	<ul> <li>For which payment, if any, does not represent an open-market transaction;</li> <li>For which payment was made in-kind (i.e., barter);</li> <li>Received from an entity in which your establishment or company has a share of ownership or special sharing of revenue (e.g., in a performance service contract.)</li> </ul>		Million Btu	Million Btu
4.	Enter the quantity of the energy source produced on-site during 2010.	040	Million Btu	Million Btu

# Pulping Black Liquor or Agricultural Waste

	Pulping Black Liquor or Agricultural Waste: Consumption				
		"Census Use Only"	(73)	(90)	
			Pulping Black Liquor ↓	Agricultural Waste ↓	
5.	Enter the total quantity of the energy source consumed as a fuel at this establishment during 2010.  Include all uses that were used for the heat, power, and electricity generation. Also, include fuel consumed by vehicles intended primarily for use on-site.	060	Million Btu	Million Btu	

### Wood Residues and Byproducts from Mill Processing or Wood/Paper-Related Refuse

# Wood Residues and Byproducts from Mill Processing or Wood/Paper-Related Refuse: Purchased, Transferred, and Produced

	Purchased, Transferred, and Produced				
		"Census Use Only"	(84)	(72)	
			Wood Residues and Byproducts from Mill Processing (e.g., sawdust, shavings, slabs, bark)	Wood / Paper-Related Refuse  (e.g., scrap, wastepaper, wood pallets, packing materials)  ↓	
1.	Enter the total quantity of the energy source (column) purchased by and delivered to this establishment during 2010, regardless of when payment was made.	010	Million Btu	Million Btu	
2.	Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the quantity reported in question 1.	020	\$ U.S. Dollars	\$ U.S. Dollars	
3.	Enter the total quantity of the energy source transferred in or otherwise received on-site without a direct open market purchase.  Include quantities:  •For which payment, if any, does not represent an open-market transaction; •For which payment was made in-kind (i.e., barter); •Received from an entity in which your establishment or company has a share of ownership or special sharing of revenue (e.g., in a performance service contract.)	030	Million Btu	Million Btu	
4.	Enter the quantity of the energy source produced on-site during 2010.	040	Million Btu	Million Btu	

### Wood Residues and Byproducts from Mill Processing or Wood/Paper-Related Refuse

#### Wood Residues and Byproducts from Mill Processing or Wood/Paper-Related Refuse: Consumption "Census (84)(72)Use Only" Wood / Paper-Related **Wood Residues and Byproducts from** Refuse **Mill Processing** $\downarrow$ 5. Enter the total quantity of the energy source consumed as a fuel at this establishment during 2010. 060 Include all uses that were used for the heat, power, and electricity generation. Also, include fuel Million Btu Million Btu consumed by vehicles intended primarily for use on-site.

### Steam or Industrial Hot Water

Steam or Industrial Hot Water: Total Purchased				
		"Census Use Only"	(11)	(12)
			Steam	Industrial Hot Water
			<b>↓</b>	$\downarrow$
1.	Enter the total quantity of the energy source (column) purchased by and delivered to this establishment during 2010, regardless of when payment was made.	061	Million Btu	Million Btu
2.	Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the quantity reported in question 1.	062	\$ U.S. Dollars	\$ U.S. Dollars
Ste	am, Industrial Hot Water: Purcha	sed fron	n Local Utility and N	Ion-Utility Sources
3.	During 2010, where did this establishment's purchased steam come from?  Local utility means the company in your local area that produces and/or delivers steam and is legally obligated to provide service to the general public within its franchise area.  The term "non-utility" includes generator of steam such as independent power producer, small power producers, brokers, marketers, marketing subsidiaries of utilities, or co-generator not owned by your company.	015	1. All local utility: Answer question 4 then skip to question 7  2. All non- utility: Answer question 4 then skip to question 7  3. Both:	
4.	Please specify the utility/non-utility provider from whom you purchased your steam:  If this establishment purchases from more than one provider, please provide the largest provider.	016		
5.	Enter the quantity of your total purchased steam that was purchased from a local utility during 2010.	010	Million Btu	

### Steam or Industrial Hot Water

		"Census Use Only"	(11)	(12)
			Steam	Industrial Hot Water
			<b>\</b>	<b>↓</b>
6.	Enter the total expenditures of your purchased steam that came from a	020	\$	
	local utility.		U.S. Dollars	
	Steam or Indust	rial Hot	Water: Transfers	
7.	Enter the total quantity of the energy source transferred in or otherwise received on-site without a direct open market purchase.			
	Include quantities:	050		
	<ul> <li>For which payment, if any, does not represent an open –market transaction;</li> <li>For which payment was made in-kind (i.e., barter);</li> <li>Received from an entity in which your establishment or company has a share of ownership or special sharing of revenue (e.g., in a performance service contract)</li> </ul>	050	Million Btu	Million Btu
	Steam or Industrial	Hot Wai	ter: Generated On-si	te
8.	Enter the quantity of steam or hot wa			
	•Solar Power			
	•Solar Power	081	Million Btu	Million Btu
	•Wind Power	082		
			Million Btu	Million Btu
	•Hydropower	083		
			Million Btu	Million Btu
	.C. d. I.B.	084		
	•Geothermal Power		Million Btu	Million Btu

Business Help Site: Steam and Industrial Hot Water

### Steam or Industrial Hot Water

	Steam or Industrial Hot Water: Sales and Transfers Off-site				
		"Census Use Only"	(11)	(12)	
			Steam	Industrial Hot Water	
			↓	<b>↓</b>	
9.	Enter the quantity of the energy source transferred out of this establishment during 2010.				
	Include quantities exchanged for the same or any other energy source.  Exclude sales to independent power producers, small power producers, or co-generators not located at this establishment.	110	Million Btu	Million Btu	

# Other Energy Sources

	Other Energy Sources: To	otal Pur	chased, Transfe	erred and Produ	uced
		"Census Use Only"	(91)	(93)	(95)
			Other   ↓	Other   ↓	Other   ↓
1.	Specify the name and units (e.g., gallons, million Btu, cubic feet, etc.) of any energy source purchased or consumed in this	980	Energy source	Energy source	Energy source
	establishment that has not been previously asked.  *Do not include: oxygen, carbon	981	Units	Units	Units
2.	dioxide, nitrogen, argon, or helium.  Enter the total quantity of the other energy source (column) purchased by and delivered to this establishment during 2010, regardless of when payment was made.	010	Units	Units	Units
3.	Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the quantity reported in question 2.	020	\$ U.S. Dollars	\$ U.S. Dollars	\$ U.S. Dollars
4.	Enter the total quantity of the other energy source transferred in or otherwise received on-site without a direct open market purchase.  Include quantities:  •For which payment, if any, does not represent an open-market transaction; •For which payment was made in-kind (i.e., barter); •Received from an entity in which your establishment or company has a share or ownership or special sharing of revenue (e.g.,	030	Units	Units	Units
5.	in a performance service contract.)  Enter the quantity of the other energy source produced on-site during 2010.	040	Units	Units	Units

# Other Energy Sources

	Other Energy Source: Consumption							
		"Census Use Only"	(91)	(93)	(95)			
			Other ↓	Other ↓	Other ↓			
6.	Does the quantity reported in produced on-site represent the product or byproduct of another energy source consumed on-site?	050	1. Yes, product or byproduct 2. No	1. Yes, product or byproduct 2. No	1. Yes, product or byproduct 2. No			
7.	Enter the total quantity of the other energy source consumed as a fuel at this establishment during 2010.  Include all uses that were used for the heat, power, and electricity generation. Also, include fuel consumed by vehicles intended primarily for use on-site.	060	Units	Units	Units			
8.	Enter the total quantity of the other energy source consumed for any purpose other than fuel use at this establishment during 2010.  Include all quantities consumed as lubricants, solvents, or as feedstocks, raw materials, additives, or ingredients for products manufactured by this establishment, or any other nonfuel purpose.  Exclude all off-site dispositions such as sales and transfers to other establishments.	070	Units	Units	Units			

### Fuel Switching Capability: Electricity, Natural Gas and Total Coal

- Capability to use substitute energy sources means that this establishment's combustors (for example, boilers, furnaces, ovens, blast furnaces) had the equipment, either in place or available for installation in 2010, so that substitutions could actually have been introduced within 30 days without extensive modifications.
- Include switching capability that could have resulted from the use of redundant and/or standby combustors, and from combustors that were already equipped to fire alternative fuels.
- In addition to the capability of your equipment, when formulating your estimates:
  - o Make sure to consider both the equipment limitations of your boilers, heaters, and combustors and any other practical reasons when determining the availability of supply during 2010.

#### Equipment limitations include:

- The boilers, heaters, or other fuel-consuming equipment are not capable of using anything other than specify fuel for at least part of the operations.
- Although the boilers, heaters, or combustors would allow using another fuel, doing so would adversely affect a product. Ex. altering the pigment in a paint-drying application.

#### Practical reasons include:

- There is no ready supply of an alternative energy source.
- Environmental restrictions related to air quality limit the amount of the physically usable alternative fuel that could be used instead.
- A long-term contract in-place that requires the purchase of certain amounts of the energy source in any case.
- Storage of alternative fuels is not available due to potential environmental impact of storage tanks.
- Do not limit your estimated capability by differences in relative prices of energy sources.
- This section is intended to measure your capability to switch, not whether you would switch if you could.
- When estimating your capability to substitute other fuels for electricity receipts, please consider the fuels that could be used to generate electricity onsite, as well as those that could be directly substituted in combustors.
- If records of fuel-switching capability are not regularly maintained, reasonable approximations are acceptable.
- Enter a zero if the fuel could not be switched for the specific energy source.
- Please proceed through this section column-by-column.

#### The next four questions are designed as a worksheet. You will need to refer back to some sections of the form that you have already filled out to record the figures you have reported. Referring back to the Electricity section, question 1 page 1. Please 1. enter the quantity of reported purchased electricity. 2. Referring back to the Electricity section, question 7 page 1. Please enter the quantity of reported transferred electricity. Add lines from question 1 and 2 (question 1 + question 2). Enter the 3. total in the box. 10503 4. Referring back to the Natural Gas section, question 10 page 2. Please enter the quantity of reported natural gas consumed. Enter 30503 the figure in the box. Referring back to the Coal section, question 5 page 2. Please add 5. 46503 the quantity of reported anthracite, bituminous and subbituminous and lignite consumed. Enter the total in the box. "Census (10)(30)(46)Use Only" **Total Total Natural** Total ALL **Electricity** Gas Coal (excluding Received Coal Coke & Breeze) Transfers + purchase 6. Enter the total quantity of the energy source (column) you 500 reported as consumed during Kilowatthours 1,000 cubic Short tons 2010. feet **Enter figure from** Enter figure from Enter figure from Copy this figure from the above worksheet question 3. question 4. question 5. Is the total quantity reported in 7. 1. Yes 1. Yes 1. Yes question 6 greater than zero? 501 2. No: Skip 2. No: Skip **2. No:** Skip to question 6, to question 6, to next section. next column. next column. 8. Enter the amount of the total quantity you reported in 510 question 6 that could NOT have 1,000 cubic Kilowatthours Short tons been replaced within 30 days by feet another energy source during 2010. Consider both the equipment limitations of your boilers, heaters, and combustors and any other practical reason. Do not consider differences in energy prices when estimating the amount.

Fuel Switching Capability: Electricity, Natural Gas and Total Coal

	Fuel Switching Capability	: Electi	ricity, Natural (	Gas and Total C	Coal
		"Census Use Only"	(10)  Total Electricity Received Transfers + purchase	(30)  Total Natural Gas	(46)  Total ALL Coal (excluding Coal Coke & Breeze)  ↓
9.	Is the total quantity in question 8 equal to zero?	511	1. Yes: Skip to question 11. 2. No	1. Yes: Skip to question 11. 2. No	1. Yes: Skip to question 11. 2. No
10.	Referring to the quantity shown in question &	, please che	ck all the reasons that i	nade this quantity uns	witchable.
	The boilers, heaters, or other fuel-consuming equipment are NOT <u>capable</u> of using another fuel for at least part of the operations during the year.	526			
	Switching to the usable alternatives would adversely affect the products.	528		□₁	<b></b> 1
	Although the heating equipment could use another fuel, there was no readily available supply of it during at least part of the year.	533			
	Environmental restrictions related to air quality limit the amount of the physically usable alternative fuel that could be used instead.	534			
	A long-term contract is in-place that requires the purchase of certain amounts of this fuel in any case.	536	<b></b> 1		
	Storage of usable alternative fuels is not available due to potential environmental impact of storage tanks.	537			
	Other	999			
	Please specify: Other	999			
	Don't know	539			1

	Fuel Switching Capability	: Electr	ricity, Natural (	Gas and Total C	Coal
		"Census Use Only"	(10)	(30)	(46)
			Total Electricity Received Transfers + purchase	Total Natural Gas ↓	Total ALL Coal (excluding Coal Coke & Breeze)
11.	Enter the results of subtracting the quantity reported in question 8 from the quantity reported in question 6.	520	Kilowatthours	1,000 cubic feet	Short tons
	This represents the total quantity of energy consumption that could have been replaced in 30 days by one or more alternative energy sources in 2010.				
	Note: the sum of the quantities in question 13 through 20 should equal or exceed this quantity.				
12.	Is the total quantity reported in question 11 greater than zero?	521	1. Yes 2. No: Skip to next column.	1. Yes 2. No: Skip next column.	1. Yes 2. No: Skip to next section.
13.	Of the quantity switchable in question 11 what is the maximum amount that could have been replaced by electricity?	530		1,000 cubic feet	Short tons
14.	Of the quantity reported as switchable in question 11 what is the maximum amount that could have been replaced by total coal, excluding coal coke and breeze?	670	Kilowatthours	1,000 cubic feet	
15.	Of the quantity reported as switchable in question 11 what is the maximum amount that could have been replaced by total coal coke and breeze, excluding coal?	690	Kilowatthours	1,000 cubic feet	
16.	Of the quantity reported as switchable in question 11 what is the maximum amount that could have been replaced by <u>natural gas</u> ?	570	Kilowatthours		Short tons

	Fuel Switching Capability	: Electi	ricity, Natural (	Gas and Total C	Coal
			(10)	(30)	(46)
		"Census Use Only"	Total Electricity Received Transfers + purchase	Total Natural Gas ↓	Total ALL Coal (excluding Coal Coke & Breeze)
17.	Of the quantity reported as switchable in question 11 what is the maximum amount that could have been replaced by total diesel fuel and distillate fuel oil?	590	Kilowatthours	1,000 cubic feet	Short tons
18.	Of the quantity reported as switchable in question 11 what is the maximum amount that could have been replaced by <u>liquefied</u> <u>petroleum gas (LPG)</u> ?	610	Kilowatthours	1,000 cubic feet	Short tons
19.	Of the quantity reported as switchable in question 11 what is the maximum amount that could have been replaced by <u>residual fuel oil</u> ?	630	Kilowatthours	1,000 cubic feet	Short tons
20.	Of the quantity reported as switchable in question 11 what is the maximum amount that could have been replaced by any other energy source not already asked about?	650	Kilowatthours	1,000 cubic feet	Short tons
	Please Specify:	990			

### Fuel Switching Capability: Electricity, Natural Gas and Total Coal

What is the lowest percentage of price difference of the less expensive substitute that would cause your establishment to switch from this fuel, regardless of whether or not your establishment actually switched energy sources during 2010 or did so because of a less expensive substitute? (If you have more than one possible alternative for the energy source, choose the fuel that would be your most preferred alternative.)

The formula for percentage of price difference is:

- Percent of Price Difference = ((PC-PA)/PC) \* 100%
- Where PC=Price per British thermal unit of current fuel
- PA=Price per British thermal unit of alternative fuel

		"Census Use Only"	(10)	(30)	(46)
622		Total Electricity Received Transfers + purchase	Total Natural Gas ↓	Total ALL Coal (excluding Coal Coke & Breeze)	
			Check one for eac	ch energy source (	column) reported
21.	1. Would not switch regardless of price difference.		<b></b> 1	<u></u> 1	□ ı
	Would switch at price difference 1 percent.	l-10			
	Would switch at price difference 1 percent.	11-25		$\square_3$	$\square_3$
	Would switch at price difference 2 percent.	26-50		$\square_4$	$\square_4$
	Would switch at price difference over 50 percent.		$\square_5$	<b></b> 5	$\square_5$
	Reasonable estimates cannot be pr	easonable estimates cannot be provided.			$\square_6$
	Would switch to the more expension substitute if price premium were reasonable.	ve			

### Fuel Switching Capability: Total LPG & NGL, Diesel & Distillate and Residual

- Capability to use substitute energy sources means that this establishment's combustors (for example, boilers, furnaces, ovens, blast furnaces) had the equipment, either in place or available for installation in 2010, so that substitutions could actually have been introduced within 30 days without extensive modifications.
- Include switching capability that could have resulted from the use of redundant and/or standby combustors, and from combustors that were already equipped to fire alternative fuels.
- In addition to the capability of your equipment, when formulating your estimates:
  - o Make sure to consider both the equipment limitations of your boilers, heaters, and combustors and any other practical reasons when determining the availability of supply during 2010.

#### Equipment limitations include:

- The boilers, heaters, or other fuel-consuming equipment are not capable of using anything other than specify fuel for at least part of the operations.
- Although the boilers, heaters, or combustors would allow using another fuel, doing so would adversely affect a product. Ex. altering the pigment in a paint-drying application.

#### Practical reasons include:

- There is no ready supply of an alternative energy source.
- Environmental restrictions related to air quality limit the amount of the physically usable alternative fuel that could be used instead.
- A long-term contract in-place that requires the purchase of certain amounts of the energy source in any case.
- Storage of alternative fuels is not available due to potential environmental impact of storage tanks.
- Do not limit your estimated capability by differences in relative prices of energy sources.
- This section is intended to measure your capability to switch, not whether you would switch if you could.
- When estimating your capability to substitute other fuels for electricity receipts, please consider the fuels that could be used to generate electricity onsite, as well as those that could be directly substituted in combustors.
- If records of fuel-switching capability are not regularly maintained, reasonable approximations are acceptable.
- Enter a zero if the fuel could not be switched for the specific energy source.
- Please proceed through this section column-by-column.

#### The next four questions are designed as a worksheet. You will need to refer back to some sections of the form that you have already filled out to record the figures you have reported. Referring back to the LPG section, question 5 page 2. Please add 1. the quantity of reported butane, ethane and propane consumed. 2. Referring back to the LPG section, question 12 page 4. Please add the quantity of reported mixtures and other LPG & NGL consumed. Add lines from question 1 and 2. (question 1 + question 2) Enter the 3. total in the box. 24503 4. Referring back to the Diesel and Distillate Fuel section, question 5 page 2. Please add the reported quantity of diesel and distillate fuel 22503 consumed. Enter the figure in the box. Referring back to the Residual Fuel section, question 5 page 1. 5. 21503 Please enter the reported quantity of residual fuel consumed. Enter the figure in the box. "Census (24)(22)(21)Use Only" **Total LPG & Total Diesel Residual Fuel** NGL Fuel & Oil **Distillate Fuel** Oil Enter the total quantity of the 6. energy source you reported as 500 consumed during 2010. Gallons Barrels Barrels **Enter figure from Enter figure from Enter figure from** Copy this figure from above worksheet question 3. question 4. question 5. questions. 7. Is the total quantity reported in 1. Yes 1. Yes 1. Yes question 6 greater than zero? 501 2. No: Skip **2. No:** Skip 2. No: Skip to question 6, to question 6, to next section. next column. next column. 8. Enter the amount of the total 510 quantity you reported in question 6 that could NOT have Gallons Barrels Barrels been replaced within 30 days by another energy source during 2010. Consider both the equipment limitations of your boilers, heaters, and combustors and any other practical reason. Do not consider differences in energy prices when estimating the amount.

Fuel Switching Capability: Total LPG & NGL, Diesel & Distillate and Residual

1	Fuel Switching Capability: Tota	al LPG d	& NGL, Diesel	& Distillate and	l Residual
		"Censu s Use Only"	(24)	(22)	(21)
			Total LPG & NGL	Total Diesel Fuel & Distillate Fuel Oil	Residual Fuel Oil
			↓	<b>↓</b>	<b>↓</b>
9.	Is the total quantity in question 8 equal to zero?	511	1. Yes: Skip to question 11.	1. Yes: Skip to question 11.	1. Yes: Skip to question 11.
			2. No	2. No	2. No
10.	Referring to the quantity shown in quantity show	iestion 8,	please check all the	e reasons that made	e this quantity
	The boilers, heaters, or other fuel- consuming equipment are NOT <u>capable</u> of using another fuel other than this fuel for at least part of the operations during the year.	526			
	Switching to the usable alternatives would adversely affect the products.	528			<b></b> 1
	Although the heating equipment could use another fuel, there was no readily available supply of it during at least part of the year.	533			<b></b> 1
	Environmental restrictions related to air quality limit the amount of the physically usable alternative fuel that could be used instead.	534			<b></b> 1
	A long-term contract is in-place that requires the purchase of certain amounts of this fuel in any case.	536			<b></b> 1
	Storage of usable alternative fuels is not available due to potential environmental impact of storage tanks.	537			
	Other	999			
	Please specify: Other	999			
	Don't know	539			

1	Fuel Switching Capability: Tota	al LPG &	& NGL, Diesel	& Distillate an	d Residual
		"Census Use Only"	(24)	(22)	(21)
			Total LPG & NGL	Total Diesel Fuel & Distillate Fuel Oil	Residual Fuel Oil
11.	Enter the results of subtracting the quantity reported in question 8 from the quantity reported in question 6.	520	Gallons	Barrels	Barrels
	This represents the total quantity of energy consumption that could have been replaced in 30 days by one or more alternative energy sources in 2010.  Note: the sum of the quantities in question 13				
	through 20 should equal or exceed this quantity.				
12.	Is the total quantity reported in question 11 greater than zero?	521	1. Yes 2. No: Skip to next column.	1. Yes 2. No: Skip to next column.	1. Yes 2. No: Skip to next section.
13.	Of the quantity switchable in question 11 what is the maximum amount that could have been replaced by electricity?	530	Gallons	Barrels	Barrels
14.	Of the quantity reported as switchable in question 11 what is the maximum amount that could have been replaced by total coal, excluding coal coke and breeze?	670	Gallons	Barrels	Barrels
15.	Of the quantity reported as switchable in question 11 what is the maximum amount that could have been replaced by total coal coke and breeze, excluding coal?	690	Gallons	Barrels	Barrels

1	Fuel Switching Capability: Tota	al LPG &	& NGL, Diesel	& Distillate an	d Residual
		"Census Use Only"	(24)	(22)	(21)
			Total LPG & NGL	Total Diesel Fuel & Distillate Fuel Oil	Residual Fuel Oil
			$\downarrow$	<b>\</b>	<b>\</b>
16.	Of the quantity reported as switchable in question 11 what is the maximum amount that could have been replaced by <u>natural gas</u> ?	570	Gallons	Barrels	Barrels
17.	Of the quantity reported as switchable in question 11 what is the maximum amount that could have been replaced by total diesel fuel and distillate fuel oil?	590	Gallons		Barrels
18.	Of the quantity reported as switchable in question 11 what is the maximum amount that could have been replaced by <u>liquefied</u> <u>petroleum gas (LPG)</u> ?	610		Barrels	Barrels
19.	Of the quantity reported as switchable in question 11 what is the maximum amount that could have been replaced by <u>residual fuel oil</u> ?	630	Gallons	Barrels	
20.	Of the quantity reported as switchable in question 11 what is the maximum amount that could have been replaced by any other energy source not already asked about?	650	Gallons	Barrels	Barrels
	Please Specify:	990			

### Fuel Switching Capability: Total LPG & NGL, Diesel & Distillate and Residual

What is the lowest percentage of price difference of the less expensive substitute that would cause your establishment to switch from this fuel, regardless of whether or not your establishment actually switched energy sources during 2010 or did so because of a less expensive substitute? (If you have more than one possible alternative for the energy source, choose the fuel that would be your most preferred alternative.)

The formula for percentage of price difference is:

- Percent of Price Difference = ((PC-PA)/PC) \* 100%
- Where PC=Price per British thermal unit of current fuel
- PA=Price per British thermal unit of alternative fuel

		"Census Use Only"	(24)	(22)	(21)
		622	Total LPG & NGL	Total Diesel Fuel & Distillate Fuel Oil	Residual Fuel Oil
			<b>+</b>	<b>+</b>	<b>*</b>
			Check one for eac	ch energy source (d	column) reported
21.	1. Would not switch regardless of price difference.				
	Would switch at price difference 1 percent.	l-10			
	Would switch at price difference 1 percent.	1-25	$\square_3$	$\square_3$	$\square_3$
	Would switch at price difference 2 percent.	26-50			$\square_4$
	Would switch at price difference over 50 percent.  Reasonable estimates cannot be provided.		<b></b> 5	<b></b> 5	
	Would switch to the more expensi substitute if price premium were reasonable.	ve			

### Energy-Management Activities

### **Energy-Management Activities**

### For questions 1 through 8:

Indicate with a "yes" or a "no" under the "Participate?" column whether your establishment participated in or used the specified type of energy-management assistance between January 1, 2010 and December 31, 2010.

For any assistance for which you marked "yes", please mark the source(s) of assistance.

- "In-house" means your establishment or company provided the energy-management assistance.
- "Utility/Energy Supplier" refers to either your electricity, natural gas, or other energy supplier/provider.
- "Product or Service Provider" includes any other third party product or service provider/supplier such as an equipment vendor, energy service company, or maintenance service company.
- "Federal Program" includes assistance provided by federal government programs or agencies such as the Department of Energy (DOE), the Environmental Protection Agency (EPA), and the National Institute of Standards and Technology (NIST) Manufacturing Extension Partnership (MEP).
- "State or Local Program" includes all assistance provided by a state, city, or county government program or agency.

				Source	of Assistance	(check all the	at apply)	
	Type of Energy- Management	Participate?	In-house	Utility/ Energy	Product or Service	Federal Program	State or Local	Don't Know
	Assistance	{13}	{15}	Supplier {16}	Provider {17}	{18}	Program {19}	{32}
1.	Energy audit or assessment	<sub>1</sub> □Yes→ <sub>2</sub> □ No {060}	3□	4	7	8 🗆	9□	6
2.	Technical assistance (e.g., consultation, demonstrations, engineering design or analysis)	<sub>1</sub> □Yes→ <sub>2</sub> □ No {070}	3□	4 🗆	7□	8	9□	6
3.	Technical information (e.g., software, reference material)	<sub>1</sub> □Yes→ <sub>2</sub> □ No {072}	3□	4	7 🗆	8 🗆	9	6
4.	Training (e.g., workshops, seminars, presentations)	<sub>1</sub> □Yes→ <sub>2</sub> □ No {074}	3 🗆	4	7 🗆	8 🗆	9	6
5.	Financial assistance (e.g., loans, tax credits, rebates, subsidies)	<sub>1</sub> □Yes→ <sub>2</sub> □ No {076}	3 🗆	4	7 🗆	8 🗆	9	6
6.	Electricity load control	<sub>1</sub> □Yes→ <sub>2</sub> □ No {080}	3□	4□	7 🗆	8 🗆	9□	6
7.	Power factor correction or improvement	<sub>1</sub> □Yes→ <sub>2</sub> □ No {380}	3 🗆	4	7 🗆	8 🗆	9 🗆	6
8.	Equipment installation or retrofit for the primary purpose of using a different energy source (e.g., electrification)  Exclude modifications made primarily for energy efficiency; those should be included in questions 12 – 18.	<sub>1</sub> □Yes→ <sub>2</sub> □ No {240}	3□	4□	7□	8□	9□	6□

### Energy-Management Activities

	Type of Energy-			Source o	of Assistance	(check all tha	at apply)	
	Management Assistance	Participate? {13}	In-house {15}	Utility/ Energy Supplier {16}	Product or Service Provider {17}	Federal Program	State or Local Program {19}	Don't Know
9.	Standby generation program	<sub>1</sub> □Yes→ <sub>2</sub> □ No {260}	3 🗆	4□	7	8	9□	6
10.	Special rate schedule (e.g., interruptible or time-of-use)	<sub>1</sub> □Yes→ <sub>2</sub> □ No {100}		4□	7 🗆			6
11.	Interval metering needed to manage energy use for programs such as real-time pricing	<sub>1</sub> □Yes→ <sub>2</sub> □ No {250}		4□	7			6□

### For Questions 12 through 18:

Indicate with a "yes" or a "no" under the "Installed Equipment or Retrofit?" column whether your establishment installed equipment or any retrofits for the primary purpose of improving energy efficiency for the indicated system between January 1, 2010 and December 31, 2010. For any activity for which you marked "yes" please mark the source (s) of financial support for the activity. Please use the sources defined above question 1.

			Source of Assistance (check all that apply)						
	System		In-house	Utility/	Product	Federal	State or	Don't	
		Installed Equipment or Retrofit? {13}	{15}	Energy Supplier {16}	or Service Provider {17}	Program {18}	Local Program {19}	<b>Know</b> {32}	
12.	Steam production/system (e.g., boilers, burners, insulation, piping)	<sub>1</sub> □Yes→ <sub>2</sub> □ No {120}	3□	4□	7 🗆	8	9□	6	
13.	Compressed air systems (e.g., compressors, sizing, leak reduction)	<sub>1</sub> □Yes→ <sub>2</sub> □ No {450}	3□	4□	7	8	9□	6	
14.	Direct/indirect process heating	<sub>1</sub> □Yes→ <sub>2</sub> □ No {140}	3□	4□	7 🗆	8	9 🗆	6	
15.	Direct process cooling, refrigeration	<sub>1</sub> □Yes→ <sub>2</sub> □ No {160}	3□	4□	7 🗆	8	9 🗆	6	
16.	Direct machine drive (e.g., adjustable-speed drives, motors, pumps, fans)	1□Yes→ 2□ No {180}	3	4 🗆	7□	8	9□	6	
17.	Facility heating, ventilation, and air conditioning	<sub>1</sub> □Yes→ <sub>2</sub> □ No {200}	3 🗆	4 🗆	7 🗆	8	9 🗆	6	
18.	Facility lighting	<sub>1</sub> □Yes→ <sub>2</sub> □ No {220}	3□	4	7 🗆	8	9□	6	

# Energy-Management Activities

For Questions 19 through 30: Please mark only one answer for each energy-management question.				
19.	Does this establishment have an energy mana direct or plan energy strategies relating to enewithin the establishment)	1□Yes → 2□ No {13460} 3□ Don't Know		
20.	Does your establishment set goals for improving energy efficiency?		<sub>1</sub> □Yes → <sub>2</sub> □ No {13470} <sub>3</sub> □ Don't Know	
21.	Does your establishment measure and monitor how much steam is used to produce a unit of product? (i.e. lbs of steam needed per unit of product produced)		1□ Yes → 2□ No {13471} 3□ Don't Know 4□ Not Applicable (NA)	
22.	Does your establishment have dedicated staff monitor and maintain the condition of steams	1□Yes → 2□ No {13472} 3□ Don't Know 4□ Not Applicable (NA)		
23.	Does your establishment have a formal steam system maintenance program that includes the following activities:	a. At least annual testing of all steam traps	1□Yes → 2□ No {13473} 3□ Don't Know 4□ Not Applicable (NA)	
		b. Maintaining a steam trap database	1□Yes → 2□ No {13474} 3□ Don't Know 4□ Not Applicable (NA)	
		c. At least annual inspections and repairs of steam leaks	1□Yes → 2□ No {13475} 3□ Don't Know 4□ Not Applicable (NA)	
24.	Does your establishment measure oxygen and carbon dioxide (or combustible) levels in boiler and other fuel fired heating equipment flue gasses to "tune" the burners?		<sub>1</sub> □Yes → <sub>2</sub> □ No {13476} <sub>3</sub> □ Don't Know	
25.	Does your establishment use the flue gases from fuel fired heating equipment to preheat combustion air, preheat charge equipment/material, or provide heat for other processes in your establishment?		1□Yes → 2□ No {13477} 3□ Don't Know	
26.	Does your establishment's process heating system maintenance program include the following activities?	a. Furnace inspections to seal openings and repair cracks and damaged insulation in furnace walls, doors, etc.	1□ Yes → 2□ No {13478} 3□ Don't Know	
		b. Cleaning of heat transfer surfaces to avoid build up of soot, scale, or other material.	1□Yes → 2□ No {13479} 3□ Don't Know	
		c. Inspecting, calibrating, and adjusting temperature/pressure sensors, controllers, valve operators, etc.	1□Yes → 2□ No {13480} 3□ Don't Know	
27.	Do you keep an inventory of all motors in your establishment?		1□Yes → 2□ No {13481} 3□ Don't Know	
28.	Have you conducted a plant-wide study to identify the major energy consuming pump systems in your establishment?		<sub>1</sub> □Yes → <sub>2</sub> □ No {13482} <sub>3</sub> □ Don't Know	
29.	Does your establishment have staff or equipment dedicated to detecting and controlling compressed air system leaks?		1□Yes → 2□ No {13483} 3□ Don't Know	
30.	Does your establishment track the amount of	energy spent in compressed air systems?	1□Yes → 2□ No {13484} 2□ Don't Know	

### **Energy Technologies**

Energy Technologies					
1.	Were any of the following technologies in use at your establishment anytime during 2010?				
a.	Computer control of building-wide environment (e.g., space-heating equipment, cooling equipment, lights).	14010	1 Yes 2 No		
			3 Don't Know		
b.	Computer control of processes or major energy-using equipment (e.g., boilers, furnaces, conveyors used in the manufacturing process).	14020	1 Yes 2 No 3 Don't Know		
c.	Waste heat recovery.	14030	1 Yes 2 No 3 Don't Know		
d.	Adjustable-speed motors.	14040	1 Yes 2 No 3 Don't Know		
e.	Oxy-fuel firing.	14950	1 Yes 2 No 3 Don't Know		
2.	Were any of the following technologies associated with cogeneration in use at your establishment anytime during 2010?				
a.	Steam turbines supplied by either conventional or fluidized bed boilers.	14042	☐ 1 Yes ☐ 2 No ☐ 3 Don't Know		
b.	Conventional combustion turbines with heat recovery.	14043	☐ 1 Yes ☐ 2 No ☐ 3 Don't Know		
c.	Combined-cycle combustion turbines	14044	☐ 1 Yes ☐ 2 No ☐ 3 Don't Know		
d.	Internal combustion engines with heat recovery.	14045	☐ 1 Yes ☐ 2 No ☐ 3 Don't Know		

### **Energy Technologies**

e.	Steam turbines supplied by heat recovered from high-		$\square_1$ Yes	
temperatures processes.	temperatures processes.	14046	$\square_2$ No	
			3 Don't Know	

### **Establishment Size and Remarks**

1. How many buildings were on this establishment site as of December 31, 2010?  Buildings include: structures enclosed by walls extending from the foundation to the roof, parking garages, even if not totally enclosed level.  Exchade buildings are: structures (orbit has the exceptions noted above) that are not totally enclosed by walls and a roof, mobile homes and trailers, even if they house manufacturing activity, structures not ordinarily intended to be entered by humans, such as storage tanks, or non-buildings that consume energy (such as pumps and constructions sites).  2. What was the approximate total enclosed square footage of the buildings located on this establishment site as of December 31, 2010?  Remarks  3. Please use this space for any explanations that may be essential in understanding your reported data. If additional space is needed, attach a separate sheet, including the 10-digit Survey ID located on the mailing label on the front of this questionnaire.  15990  15991  15993  15994  15995			Establishment Size		
to the roof, parking garages, even if not toially enclosed by walls and a roof, or structures created on pillars to elevate the first fully enclosed level.  Excluded buildings are: structures (other than the exceptions noted above) that are not totally enclosed by walls and a roof, mobile homes and trailers, even if they house manufacturing activity, structures no ordinarily intended to be entered by humans, such as storage tanks, or non-buildings that consume energy (such as pumps and constructions sites).  2. What was the approximate total enclosed square footage of the buildings located on this establishment site as of December 31, 2010?    Number of Buildings	1.		·		
that are not totally enclosed by walls and a roof, mobile homes and trailers, even if they house manufacturing activity, structures not ordinarily intended to be entered by humans, such as storage tanks, or non-buildings that consume energy (such as pumps and constructions sites).  2. What was the approximate total enclosed square footage of the buildings located on this establishment site as of December 31, 2010?  Remarks  Please use this space for any explanations that may be essential in understanding your reported data. If additional space is needed, attach a separate sheet, including the 10-digit Survey ID located on the mailing label on the front of this questionnaire.  15990  15991  15992  15993  15994  15996  15997		to the ro	of, parking garages, even if not totally enclosed by walls and a roof, or	17010	Number of Buildings
be entered by humans, such as storage tanks, or non-buildings that consume energy (such as pumps and constructions sites).  2. What was the approximate total enclosed square footage of the buildings located on this establishment site as of December 31, 2010?  Remarks  Please use this space for any explanations that may be essential in understanding your reported data. If additional space is needed, attach a separate sheet, including the 10-digit Survey ID located on the mailing label on the front of this questionnaire.  15990  15991  15992  15993  15994  15995  15996  15999		that are not totally enclosed by walls and a roof, mobile homes and trailers, even if they house manufacturing activity, structures not ordinarily intended to be entered by humans, such as storage tanks, or non-buildings that consume			
footage of the buildings located on this establishment site as of December 31, 2010?  Remarks  3. Please use this space for any explanations that may be essential in understanding your reported data. If additional space is needed, attach a separate sheet, including the 10-digit Survey ID located on the mailing label on the front of this questionnaire.  15990  15991  15992  15993  15994  15996  15997				17020	☐ 1 Don't Know.
Remarks  3. Please use this space for any explanations that may be essential in understanding your reported data. If additional space is needed, attach a separate sheet, including the 10-digit Survey ID located on the mailing label on the front of this questionnaire.    15990	2.	footag	ge of the buildings located on this establishment	13010	Total square feet
3. Please use this space for any explanations that may be essential in understanding your reported data. If additional space is needed, attach a separate sheet, including the 10-digit Survey ID located on the mailing label on the front of this questionnaire.    15990		Sicc as	, of Beeemser 51, <b>2</b> 010.	13011	
3. Please use this space for any explanations that may be essential in understanding your reported data. If additional space is needed, attach a separate sheet, including the 10-digit Survey ID located on the mailing label on the front of this questionnaire.    15990			Romarks		
1591  1592  1593  1594  1595  1596  1597  1598	3.	additional space is needed, attach a separate sheet, including the 10-digit Survey ID located on the mailing			
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