84614015

2014 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**
(02-10-15)

Report Electronically:
https://econhelp.census.gov/mecs

User ID:

Password:

Reporting electronically allows you to save your work as you go through the form and can save you time.

If you need additional time or have questions about what to report on this questionnaire, please call our processing office at 1-800-528-3049, option 2. Return the completed questionnaire in the enclosed envelope. If the envelope has been misplaced, please mail to:

Bureau Of The Census
1201 East 10th Street
Jeffersonville, IN 47132-0001

Reporting Requirement: This survey is **mandatory** under the Federal Energy Administrative Act of 1974, Pub. Law No. 93-275, and under Title 3, Subtitle B, of the Omnibus Budget Reconciliation Act of 1986, Pub. Law No. 99-509, as amended by Title 1, Subtitle G, of the Energy Policy Act of 1992, Pub. Law No. 102-486.

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Instructions and Frequently Asked Questions can be found at https://econhelp.census.gov/mecs

Contact Information

Date (mm-dd-yyyy)

Telephone

Area Code | Number | Ext.

Name of person to contact regarding this questionnaire

Title of contact person (above)

Address (number and street)

City | **State** | **Zip Code** | **Zip + 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 on page 6 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 the form, the conversion factor(s) used.

3. Do **not** 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 section, before moving on to the next section.

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 Types used as Energy" 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 2014 and indicate the period covered by this filing, whether the calendar year or other period.

Instructions for Completing Form EIA-846, cont.

Energy Sources

Reporting Criteria

An energy source 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:
    - LPG
    - Coal coke
    - Petroleum coke
    - Breeze
    - Coke oven gas
    - Blast furnace gas
    - Acetylene
    - Hydrogen
    - Diesel or distillate fuel oil; and
    - Residual fuel oil.

If your only means of an energy source during 2014 was a byproduct (or product) of an energy source used as a feedstock (or raw material input) that byproduct energy source should be reported only if it was at least partially consumed onsite as a fuel or shipped offsite. 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)
Liquefied Petroleum Gases (LPG) and Natural Gas Liquids (NGL)

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

Coal

- Anthracite
- Bituminous and subbituminous
- Lignite

Breeze
Coal Coke
Petroleum Coke

- Marketable Petroleum Coke - Unrefined or green
- Marketable Petroleum Coke - Calcined

Instructions for Completing Form EIA-846, cont.

Kerosene
Motor Gasoline (excluding off-site highway use)
Naphtha and Heavier Gas Oils
Bitumen
Acetylene
Hydrogen
Wood harvested directly from trees
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)
- Pulping and Black Liquor
- Agricultural Waste (e.g., bagasse, nut shells, orchard prunings, rice hulls)
- 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 Types used as Energy

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 capability of your establishment to use substitute energy sources in place of those actually consumed in 2014. These substitutions are limited to those that could actually have been introduced within 30 days without extensive modifications. 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 2014 and the source(s) of the financial support to implement the energy-management activity.

Technologies

Indicate any of the technologies present in this establishment. Listed technologies include general technologies which may be found in any manufacturing establishment and technologies related to cogeneration.

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.

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.

Conversion Factors Table

To the right are Btu conversion factors that should be used only 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, such as the conversion factors used for the Green House Gas (GHG) Reporting Rule, use them in place of the approximations given below. However, please identify in the Remarks section (page 63), 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 2014.

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 2014.

The Btu equivalent is:
(300 pounds) x (61,084 Btu/pound)

= 18,325,200 Btu
= 18.325 million Btu

Energy Source	Conversion Factor(s)
Acetylene	21,600 Btu/pound 1,500 Btu/cubic feet
Bagasse	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/kilowatthour
Ethane	3.082 million Btu/barrel 0.07338 million Btu/gallon
Hydrogen	61,084 Btu/pound 325.11 Btu/cubic feet 35,600 Btu/gallon
Industrial Hot Water	140 Btu/pound 7.84 pounds/gallon
Isobutane	3.974 million Btu/barrel 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 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 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 1,029 Btu/cubic feet
Waste Materials (Wastepaper)	7,500 Btu/pound
Waste Oils and Tars	6 million Btu/barrel
(Green) Wood Chips (50% moisture)	10 million Btu/short ton
Wood Waste (50% moisture)	9 million Btu/short ton

Establishment Information

1. Did ownership of this establishment change during 2014?

Census Use Only 00011

- ☐ **1. No**
- ☐ **2. Yes: Establishment was sold during the year.** *Complete all sections of this questionnaire for activities that occurred in 2014 prior to the sale.*
- ☐ **3. Yes: Establishment was bought during the year.** *Complete all sections of this questionnaire for activities that occurred in 2014 after the sale.*

2. What best describes this establishment at the end of 2014?

00010

- ☐ **1. In operation: Skip to question 6.**
- ☐ **2. Ceased operation: Answer question 3 then skip to question 6.**
- ☐ **3. Sold or leased to another operator: Skip to question 4.**

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)

5. Enter the following information only if this establishment was sold or leased to another operator during 2014.

Name of new owner or operator

00015

Address

00017

City

00018

State

00019

Zip Code

00020

Zip + 4

00021

Employer Identification Number (9 Digit EIN)

00016 — –

6. Enter the reporting period for the information reported on this questionnaire. Unless there are special circumstances like those reported above, this reporting period should be from January 1, 2014 to December 31, 2014.

00022 **From:** (mm-dd-yyyy)

00023 **To:** (mm-dd-yyyy)

Electricity: Total Purchased

	Census Use Only	
7. Enter the total quantity of electricity purchased by and delivered to this establishment during 2014, regardless of when payment was made.	10061	Kilowatthours
8. Enter total expenditures; including all applicable taxes and any delivery, management, and demand charges, for the purchased electricity reported in question 7.	10062	$Bil. Mil. Thou. Dol. U.S. Dollars

Electricity: Source of Purchase

9. During 2014, 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 or small power producers. It also includes brokers, marketers, marketing subsidiaries of utilities, or cogenerators not owned by your company.

10015

- ☐ **1. All local utility: Answer question 10 then skip to question 13.**
- ☐ **2. All non-utility: Answer question 10 then skip to question 13.**
- ☐ **3. Both**

10. Please specify the utility/non-utility provider from whom you purchased your electricity:

If this establishment purchases from more than one provider, please provide the largest provider. 10016

11. Enter the quantity of your total purchased electricity that was purchased from a local utility during 2014.	10010	Kilowatthours
12. Enter the total expenditures of your purchased electricity that was paid to a local utility.	10020	$Bil. Mil. Thou. Dol. U.S. Dollars

Electricity: Transfers In

13. Excluding the quantity reported in question 7, did this establishment receive any additional electricity from another establishment that was not purchased? 10052

- ☐ **1. Yes**
- ☐ **2. No, skip to question 15.**

14. How much of this additional electricity was received from the other establishment?	10050	Kilowatthours

Electricity: Generated On-Site

	Census Use Only	Kilowatthours
15. Enter the quantity of electricity generated on-site from each of the following:		
• **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	

Electricity: Sales and Transfers Offsite

16. Enter the quantity of electricity sold or transferred out of this establishment to utilities during 2014. Include quantities exchanged for the same or any other energy source. Exclude sales to independent power producers, small power producers, or cogenerators not located at this establishment.	10110	Kilowatthours
17. Enter the quantity of electricity sold or transferred out of this establishment to any non-utilities during 2014. **Include:** • Sales to independent power producers, small power producers, brokers, marketers, marketing subsidiaries of utilities, or cogenerators not located at this establishment. • Quantities exchanged for the same or any other energy source.	10120	Kilowatthours

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 7 [Purchases] + Question 14 [Transfers] + Question 15 [Generated] - (Question 16 + 17) [Sales and Transfers Offsite]

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

Boilers: Boiler use includes 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)	10705	%
Process: 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	%
• **Electrochemical processes** (e.g., reduction process)	10750	%
• **Other process use:** **Please specify:** 10761	10760	%
Non-process: 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** (e.g., forklifts)	10800	%
• **Other non-process use:** **Please specify:** 10821	10820	%

TOTAL 100%

Natural Gas: Units

19. Please indicate the units for the quantity that will be reported below.

***** Please use this unit for reporting the remainder of the Natural Gas quantity questions.***

Census Use Only

31111

- ☐ **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 Purchased

20. Enter the total quantity of natural gas purchased by and delivered to this establishment during 2014, regardless of when payment was made.

30010

Units

21. Enter total expenditures; including all applicable taxes and any delivery, management, and demand charges, for the purchased natural gas reported in question 20.

30020

$Bil.	Mil.	Thou.	Dol.

U.S. Dollars

Natural Gas: Source of Purchase

22. During 2014, 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 23 then skip to question 26.**
- ☐ **2. All non-utility: Answer question 23 then skip to question 26.**
- ☐ **3. Both**

23. Please specify the utility/non-utility provider from whom you purchased your natural gas:

If this establishment purchases from more than one provider, please provide the largest provider.

30016

24. Enter the quantity of your total purchased natural gas that was purchased from a local utility during 2014.

31010

Units

25. Enter the total expenditures of your purchased natural gas that was paid to a local utility.

31020

$Bil.	Mil.	Thou.	Dol.

U.S. Dollars

Natural Gas: Transferred In and Produced On-site

	Census Use Only	
26. Excluding the quantity reported in question 20, did this establishment receive any additional natural gas from another establishment that was not purchased?	30031	☐ **1. Yes** ☐ **2. No, skip to question 28.**
27. How much of this additional natural gas was received from the other establishment.	30030	Units
28. Enter the quantity of natural gas that was both produced on-site during 2014 as output from a captive (onsite) well, and was at least partially consumed on-site (as a fuel or nonfuel).	30040	Units

Natural Gas: Consumption

29. Enter the total quantity of natural gas consumed as a fuel at this establishment during 2014. 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
30. Enter the total quantity of natural gas consumed for any purpose other than fuel use at this establishment during 2014. 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: Estimated End-Use Percent Consumption

The following questions refer to how this establishment consumed the natural gas that was previously reported in question 29 *(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.

31. Enter the percentage of total natural gas (from question 29) that this establishment consumed as the following:

Boilers: boiler 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	%
Process: 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	%
• **Machine drive** (e.g., motors, pumps, etc. associated with manufacturing process equipment)	30740	%
• **Other process use:** **Please specify:** 30761	30760	%
Non-process: 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** (e.g., forklifts)	30800	%
• **Conventional electricity generation**	30810	%
• **Other non-process use:** **Please specify:** 30821	30820	%

TOTAL 100%

Diesel and Distillate Fuel Oil

32. Enter the total quantity purchased by and delivered to this establishment during 2014, regardless of when payment was made.

010 **Diesel** (28) | **Distillate** (29)

Barrels | Barrels

33. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 32.

020 **Diesel** (28): $Bil. Mil. Thou. Dol. — U.S. Dollars

Distillate (29): $Bil. Mil. Thou. Dol. — U.S. Dollars

34. Excluding the quantity reported in question 32, did this establishment receive any additional material from another establishment that was not purchased? (If you answer "Yes" to any of the alternatives below, please answer question 35. Otherwise, skip to question 36.)

031 **Diesel** (28)

☐ **Yes**

☐ **No**

Distillate (29)

☐ **Yes**

☐ **No**

35. How much of this additional material was received from the other establishment?

030 **Diesel** (28) | **Distillate** (29)

Barrels | Barrels

36. Enter the quantity produced on-site during 2014.

040 **Diesel** (28) | **Distillate** (29)

Barrels | Barrels

37. Enter the total quantity consumed as a fuel at this establishment during 2014.

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 **Diesel** (28) | **Distillate** (29)

Barrels | Barrels

Diesel and Distillate Fuel Oil

38. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2014.
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 **Diesel** (28) **Distillate** (29)

Barrels Barrels

39. Enter the quantity shipped off-site during 2014.

080 **Diesel** (28) **Distillate** (29)

Barrels Barrels

40. Enter the shell or design storage capacity of all the storage tanks located on-site as of 12/31/2014.

090 **Diesel** (28) **Distillate** (29)

Barrels Barrels

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

The following questions refer to how this establishment consumed diesel and/or distillate fuel oil that was previously reported in question 37 *(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.

41. Enter the percentage of total diesel and distillate (question 37 column 1 + question 37 column 2) that this establishment consumed as the following:

Boilers: boiler use is the transformation of energy to 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	%
Process: process use includes usage in motors, ovens, kilns, and strip heaters.		
• **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)	22740	%
• **Other process use:** **Please specify:** 22762	22760	%
Non-process: non-process use includes usage for facility lighting and space-conditioning equipment (HVAC).		
• **Facility heating, ventilation, and air conditioning**	22770	%
• **Facility support other than that reported above** (e.g., cooking, water heating, office equipment)	22790	%
• **On-site transportation, excluding highway usage** (e.g., forklifts)	22800	%
• **Conventional electricity generation**	22810	%
• **Other non-process use:** **Please specify:** 22822	22820	%

TOTAL 100%

Residual Fuel Oil: Total Purchased, Transferred, and Produced

	Census Use Only	Residual Fuel Oil (numbers 5, 6, Navy Special and Bunker C) ↓
42. Enter the total quantity of residual fuel purchased by and delivered to this establishment during 2014, regardless of when payment was made.	21010	Barrels
43. Enter total expenditures; including all applicable taxes and fees for the purchased residual fuel reported in question 42.	21020	$Bil. Mil. Thou. Dol. U.S. Dollars
44. Excluding the quantity reported in question 42, did this establishment receive any additional residual fuel oil from another establishment that was not purchased?	21031	☐ **1. Yes** ☐ **2. No, skip to question 46.**
45. How much of this additional residual fuel oil was received from the other establishment?	21030	Barrels
46. Enter the quantity of residual fuel produced on-site during 2014.	21040	Barrels

Residual Fuel Oil: Consumption, Shipments, and Storage Capacity

47. Enter the total quantity of residual fuel consumed as a fuel at this establishment during 2014. Include all uses that were used for the heat, power, and electricity generation.	21060	Barrels
48. Enter the total quantity of residual fuel consumed for any purpose other than fuel use at this establishment during 2014. 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.	21070	Barrels
49. Enter the quantity of residual fuel shipped off-site during 2014.	21080	Barrels
50. Enter the shell or design storage capacity of all the storage tanks located on-site as of 12/31/14.	21090	Barrels

Residual Fuel Oil: Estimated End-Use Percent Consumption

The following questions refer to how this establishment consumed the residual fuel that was previously reported in question 47 *(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.

51. Enter the percentage of total residual fuel (from question 47) that this establishment consumed as the following:

Boilers: boiler use is the transformation of energy to another usable energy source, as in a boiler, gas turbine, or combustion turbine.	Census Use Only	Residual Fuel
• **Boiler fuel in a Combined Heat and Power (CHP) and/or cogeneration process**	21705	%
• **Other boiler fuel (not included above)** (includes fuels used for thermal outputs only)	21710	%
Process: process use includes usage in motors, ovens, kilns, and strip heaters.		
• **Process heating** (e.g., kilns, furnaces, ovens, strip heaters)	21720	%
• **Process cooling and refrigeration**	21730	%
• **Machine drive** (e.g., motors, pumps, etc. associated with manufacturing process equipment)	21740	%
• **Other process use:** **Please specify:** 21762	21760	%
Non-process: non-process use includes usage for facility lighting and space-conditioning equipment (HVAC).		
• **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 non-process use:** **Please specify:** 21822	21820	%

TOTAL 100%

Butane, Ethane, and Propane

52. Enter the total quantity purchased by and delivered to this establishment during 2014, regardless of when payment was made.

010 **Butane** (36) | **Ethane** (37) | **Propane** (38)

Gallons | Gallons | Gallons

53. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 52.

020 **Butane** (36) | **Ethane** (37) | **Propane** (38)

$Bil. Mil. Thou. Dol. | $Bil. Mil. Thou. Dol. | $Bil. Mil. Thou. Dol.

U.S. Dollars | U.S. Dollars | U.S. Dollars

54. Excluding the quantity reported in question 52, did this establishment receive any additional material from another establishment that was not purchased? (If you answer "Yes" to any of the alternatives below, please answer question 55. Otherwise, skip to question 56.)

031 **Butane** (36) | **Ethane** (37) | **Propane** (38)

☐ **Yes** | ☐ **Yes** | ☐ **Yes**

☐ **No** | ☐ **No** | ☐ **No**

55. How much of this additional material was received from the other establishment?

030 **Butane** (36) | **Ethane** (37) | **Propane** (38)

Gallons | Gallons | Gallons

56. Enter the quantity produced on-site during 2014.

040 **Butane** (36) | **Ethane** (37) | **Propane** (38)

Gallons | Gallons | Gallons

57. Enter the total quantity consumed as a fuel at this establishment during 2014.

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 **Butane** (36) | **Ethane** (37) | **Propane** (38)

Gallons | Gallons | Gallons

58. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2014.

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 **Butane** (36) | **Ethane** (37) | **Propane** (38)

Gallons | Gallons | Gallons

59. Enter the quantity shipped off-site during 2014.

080 **Butane** (36) | **Ethane** (37) | **Propane** (38)

Gallons | Gallons | Gallons

Total Mixtures and Other LPG

60. Enter the total quantity purchased by and delivered to this establishment during 2014, regardless of when payment was made.

010 **Mixtures of Butane, Ethane and Propane** (34)

Gallons

Other Liquefied Petroleum Gases (LPG) and Natural Gas Liquids (NGL) (e.g., butylene, ethylene, and propylene) (35)

Gallons

61. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 60.

020 **Mixtures of Butane, Ethane and Propane** (34)

$Bil. Mil. Thou. Dol.

U.S. Dollars

Other LPGs and NGLs (35)

$Bil. Mil. Thou. Dol.

U.S. Dollars

62. Excluding the quantity reported in question 60, did this establishment receive any additional material from another establishment that was not purchased? (If you answer "Yes" to any of the alternatives below, please answer question 63. Otherwise, skip to question 64.)

031 **Mixtures of Butane, Ethane and Propane** (34)

☐ **Yes**

☐ **No**

Other LPGs and NGLs (35)

☐ **Yes**

☐ **No**

63. How much of this additional material was received from the other establishment?

030 **Mixtures of Butane, Ethane and Propane** (34)

Gallons

Other LPGs and NGLs (35)

Gallons

64. Enter the quantity produced on-site during 2014.

040 **Mixtures of Butane, Ethane and Propane** (34)

Gallons

Other LPGs and NGLs (35)

Gallons

65. Enter the total quantity consumed as a fuel at this establishment during 2014.

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 **Mixtures of Butane, Ethane and Propane** (34)

Gallons

Other LPGs and NGLs (35)

Gallons

Total Mixtures and Other LPG

66. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2014.

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

Mixtures of Butane, Ethane and Propane (34)	**Other LPGs and NGLs** (35)
Gallons	Gallons

67. Enter the quantity shipped off-site during 2014.

080

Mixtures of Butane, Ethane and Propane (34)	**Other LPGs and NGLs** (35)
Gallons	Gallons

Total LPG and NGL: Estimated End-Use Percent Consumption

The following questions refer to how this establishment consumed the Total LPG and NGL that was previously reported in questions 57 + 65 *(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.

68. Enter the percentage of Total LPG and NGL (question 57 column 1 + question 57 column 2 + question 57 column 3 + question 65 column 1 + question 65 column 2) that this establishment consumed as the following:

Boilers: boiler 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	%
Process: 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:** **Please specify:** 24762	24760	%
Non-process: 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** (e.g., forklifts)	24800	%
• **Conventional electricity generation**	24810	%
• **Other direct non-process use:** **Please specify:** 24822	24820	%

TOTAL 100%

Coal

69. Enter the total quantity purchased by and delivered to this establishment during 2014, regardless of when payment was made.

010	**Anthracite** (40)	**Bituminous and Subbituminous** (41)	**Lignite** (42)
	Short tons	Short tons	Short tons

70. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 69.

020	**Anthracite** (40)				**Bituminous and Subbituminous** (41)				**Lignite** (42)			
	$Bil.	Mil.	Thou.	Dol.	$Bil.	Mil.	Thou.	Dol.	$Bil.	Mil.	Thou.	Dol.
	U.S. Dollars				U.S. Dollars				U.S. Dollars			

71. Excluding the quantity reported in question 69, did this establishment receive any additional material from another establishment that was not purchased? (If you answer "Yes" to any of the alternatives below, please answer question 72. Otherwise, skip to question 73.)

031	**Anthracite** (40)	**Bituminous and Subbituminous** (41)	**Lignite** (42)
	☐ **Yes**	☐ **Yes**	☐ **Yes**
	☐ **No**	☐ **No**	☐ **No**

72. How much of this additional material was received from the other establishment?

030	**Anthracite** (40)	**Bituminous and Subbituminous** (41)	**Lignite** (42)
	Short tons	Short tons	Short tons

73. Enter the quantity produced on-site during 2014.

040	**Anthracite** (40)	**Bituminous and Subbituminous** (41)	**Lignite** (42)
	Short tons	Short tons	Short tons

74. Enter the total quantity consumed as a fuel at this establishment during 2014.
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	**Anthracite** (40)	**Bituminous and Subbituminous** (41)	**Lignite** (42)
	Short tons	Short tons	Short tons

75. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2014.
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	**Anthracite** (40)	**Bituminous and Subbituminous** (41)	**Lignite** (42)
	Short tons	Short tons	Short tons

Coal: Estimated End-Use Percent Consumption

The following questions refer to how this establishment consumed the coal that was previously reported in question 74 *(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.

76. Enter the percentage of total coal (question 74 column 1 + question 74 column 2 + question 74 column 3) that this establishment consumed as the following:

Boilers: boiler 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	%
Process: 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:** 46761	46760	%
Non-process: 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:** 46821	46820	%

TOTAL 100%

Breeze and Coal Coke

77. Enter the total quantity purchased by and delivered to this establishment during 2014, regardless of when payment was made.

010 **Breeze** (44) Short tons

Coal Coke (43) Short tons

78. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 77.

020 **Breeze** (44)

$Bil. Mil. Thou. Dol.

U.S. Dollars

Coal Coke (43)

$Bil. Mil. Thou. Dol.

U.S. Dollars

79. Excluding the quantity reported in question 77, did this establishment receive any additional material from another establishment that was not purchased? (If you answer "Yes" to any of the alternatives below, please answer question 80. Otherwise, skip to question 81.)

031 **Breeze** (44)

☐ **Yes**

☐ **No**

Coal Coke (43)

☐ **Yes**

☐ **No**

80. How much of this additional material was received from the other establishment?

030 **Breeze** (44) Short tons

Coal Coke (43) Short tons

81. Enter the quantity produced on-site during 2014.

040 **Breeze** (44) Short tons

Coal Coke (43) Short tons

82. Enter the total quantity consumed as a fuel at this establishment during 2014.

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 **Breeze** (44) Short tons

Coal Coke (43) Short tons

83. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2014.

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 **Breeze** (44) Short tons

Coal Coke (43) Short tons

84. Enter the quantity shipped off-site during 2014.

080 **Breeze** (44) Short tons

Coal Coke (43) Short tons

Petroleum Cokes

85. Enter the total quantity purchased by and delivered to this establishment during 2014, regardless of when payment was made.

010

Marketable Petroleum Coke - Unrefined or Green (78)	**Marketable Petroleum Coke - Calcined** (79)
Barrels	Barrels

86. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 85.

020

Unrefined or Green (78)				**Calcined** (79)			
$Bil.	Mil.	Thou.	Dol.	$Bil.	Mil.	Thou.	Dol.
U.S. Dollars				U.S. Dollars			

87. Excluding the quantity reported in question 85, did this establishment receive any additional material from another establishment that was not purchased? (If you answer "Yes" to any of the alternatives below, please answer question 88. Otherwise, skip to question 89.)

031

Unrefined or Green (78)	**Calcined** (79)
☐ **Yes**	☐ **Yes**
☐ **No**	☐ **No**

88. How much of this additional material was received from the other establishment?

030

Unrefined or Green (78)	**Calcined** (79)
Barrels	Barrels

89. Enter the quantity produced on-site during 2014.

040

Unrefined or Green (78)	**Calcined** (79)
Barrels	Barrels

90. Enter the total quantity consumed as a fuel at this establishment during 2014.
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

Unrefined or Green (78)	**Calcined** (79)
Barrels	Barrels

91. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2014.
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

Unrefined or Green (78)	**Calcined** (79)
Barrels	Barrels

92. Enter the quantity shipped off-site during 2014.

080

Unrefined or Green (78)	**Calcined** (79)
Barrels	Barrels

Kerosene and Motor Gasoline

93. Enter the total quantity purchased by and delivered to this establishment during 2014, regardless of when payment was made.

010 **Kerosene** (27) Barrels

Motor Gasoline (23) Gallons

94. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 93.

020 **Kerosene** (27) U.S. Dollars

$Bil. Mil. Thou. Dol.

Motor Gasoline (23) U.S. Dollars

$Bil. Mil. Thou. Dol.

95. Excluding the quantity reported in question 93, did this establishment receive any additional material from another establishment that was not purchased? (If you answer "Yes" to any of the alternatives below, please answer question 96. Otherwise, skip to question 97.)

031 **Kerosene** (27)

☐ **Yes**

☐ **No**

Motor Gasoline (23)

☐ **Yes**

☐ **No**

96. How much of this additional material was received from the other establishment?

030 **Kerosene** (27) Barrels

Motor Gasoline (23) Gallons

97. Enter the quantity produced on-site during 2014.

040 **Kerosene** (27) Barrels

Motor Gasoline (23) Gallons

98. Enter the total quantity consumed as a fuel at this establishment during 2014.

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 **Kerosene** (27) Barrels

Motor Gasoline (23) Gallons

99. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2014.

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 **Kerosene** (27) Barrels

Motor Gasoline (23) Gallons

100. Enter the shell or design storage capacity of all the storage tanks located on-site as of 12/31/2014.

090 **Motor Gasoline** (23) Gallons

Naphtha and Heavier gas oils used for Petrochemical Feedstocks or Bitumen

Naphtha (boiling point below 401F) and heavier gas oils (boiling point above 401F) used as a petrochemical feedstock in the production of other materials should be included in the appropriate boxes in this section. Other oils, including waste oils, that are not used as a petrochemical feedstock should be included elsewhere in the questionnaire.

Bitumen is a material that comes from an oil refinery. Other names for bitumen include asphalt binder, liquid asphalt, and asphalt cement. In reporting your bitumen in the appropriate boxes in this section, please only include that material which most likely comes from an oil refinery.

101. Enter the total quantity purchased by and delivered to this establishment during 2014, regardless of when payment was made.

010 **Naphtha and Heavier Gas Oils used for Petrochemical Feedstocks** (75)

Short tons

Bitumen (67)

Short tons

102. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 101.

020 **Naphtha and Heavier Gas Oils** (75)

$Bil. Mil. Thou. Dol.

U.S. Dollars

Bitumen (67)

$Bil. Mil. Thou. Dol.

U.S. Dollars

103. Excluding the quantity reported in question 101, did this establishment receive any additional material from another establishment that was not purchased? (If you answer "Yes" to any of the alternatives below, please answer question 104. Otherwise, skip to question 105.)

031 **Naphtha and Heavier Gas Oils** (75)

☐ **Yes**

☐ **No**

Bitumen (67)

☐ **Yes**

☐ **No**

104. How much of this additional material was received from the other establishment?

030 **Naphtha and Heavier Gas Oils** (75)

Short tons

Bitumen (67)

Short tons

105. Enter the quantity produced on-site during 2014.

040 **Naphtha and Heavier Gas Oils** (75)

Short tons

Bitumen (67)

Short tons

106. Enter the total quantity consumed as a fuel at this establishment during 2014.

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 **Naphtha and Heavier Gas Oils** (75)

Short tons

Bitumen (67)

Short tons

Naphtha and Heavier gas oils used for Petrochemical Feedstocks or Bitumen

107. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2014.

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 **Naphtha and Heavier Gas Oils** (75)

Short tons

Bitumen (67)

Short tons

108. Enter the quantity shipped off-site during 2014.

080 **Naphtha and Heavier Gas Oils** (75)

Short tons

Bitumen (67)

Short tons

Acetylene and Hydrogen

109. Enter the total quantity purchased by and delivered to this establishment during 2014, regardless of when payment was made.

010 **Acetylene** (64) — Cubic Feet

Hydrogen (63) — Million Btu

110. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 109.

020 **Acetylene** (64)

$Bil. Mil. Thou. Dol.

U.S. Dollars

Hydrogen (63)

$Bil. Mil. Thou. Dol.

U.S. Dollars

111. Excluding the quantity reported in question 109, did this establishment receive any additional material from another establishment that was not purchased? (If you answer "Yes" to any of the alternatives below, please answer question 112. Otherwise, skip to question 113.)

031 **Acetylene** (64)

☐ **Yes**

☐ **No**

Hydrogen (63)

☐ **Yes**

☐ **No**

112. How much of this additional material was received from the other establishment?

030 **Acetylene** (64) — Cubic Feet

Hydrogen (63) — Million Btu

113. Enter the quantity produced on-site during 2014.

040 **Acetylene** (64) — Cubic Feet

Hydrogen (63) — Million Btu

114. Does the quantity of hydrogen reported in produced on-site above represent the product or byproduct of another energy source consumed on-site?

Hydrogen (63050)

☐ Yes, product or byproduct

☐ No

115. Enter the total quantity consumed as a fuel at this establishment during 2014.

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 **Acetylene** (64) — Cubic Feet

Hydrogen (63) — Million Btu

Acetylene and Hydrogen

116. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2014.

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

Acetylene (64)	**Hydrogen** (63)
Cubic Feet	Million Btu

117. Enter the quantity shipped off-site during 2014.

080

Acetylene (64)	**Hydrogen** (63)
Cubic Feet	Million Btu

Wood Harvested Directly from Trees: Total Purchased, Transferred, and Produced

	Census Use Only	
118. Enter the total quantity of wood harvested directly from trees purchased by and delivered to this establishment during 2014, for fuel uses only, regardless of when payment was made.	83010	Million Btu
119. Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the quantity reported in question 118.	83020	$Bil. Mil. Thou. Dol. U.S. Dollars
120. Excluding the quantity reported in question 118, did this establishment receive any additional material from another establishment that was not purchased?	83031	☐ **1. Yes** ☐ **2. No, skip to question 122.**
121. How much of this additional material was received from the other establishment?	83030	Million Btu
122. Enter the quantity of wood harvested directly from trees produced on-site during 2014.	83040	Million Btu
123. Enter the total quantity of wood harvested directly from trees consumed as a fuel at this establishment during 2014. Include all uses that were used for the heat, power, and electricity generation.	83060	Million Btu

Blast Furnace Gas and Coke Oven Gas

Please answer the next two questions only if your establishment is classified in NAICS 331110 (Iron and Steel Mills and Ferroalloy Manufacturing). Otherwise, skip to question 126.

124. Did this establishment produce any blast furnace or coke oven gases in 2014?

☐ **Yes** (60001)

☐ **No**

125. Was an electric arc furnace used at this establishment in 2014?

☐ **Yes** (60002)

☐ **No**

126. Enter the total quantity purchased by and delivered to this establishment during 2014, regardless of when payment was made.

010 **Blast Furnace** (60) | **Coke Oven Gas** (61)

Million Btu | Million Btu

127. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 126.

020 **Blast Furnace** (60) | **Coke Oven Gas** (61)

$Bil.	Mil.	Thou.	Dol.

U.S. Dollars | U.S. Dollars

128. Excluding the quantity reported in question 126, did this establishment receive any additional material from another establishment that was not purchased? (If you answer "Yes" to any of the alternatives below, please answer question 129. Otherwise, skip to question 130.)

031 **Blast Furnace** (60) | **Coke Oven Gas** (61)

☐ **Yes** | ☐ **Yes**

☐ **No** | ☐ **No**

129. How much of this additional material was received from the other establishment?

030 **Blast Furnace** (60) | **Coke Oven Gas** (61)

Million Btu | Million Btu

130. Enter the quantity produced on-site during 2014.

040 **Blast Furnace** (60) | **Coke Oven Gas** (61)

Million Btu | Million Btu

Blast Furnace Gas and Coke Oven Gas

131. Enter the total quantity consumed as a fuel at this establishment during 2014.

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 **Blast Furnace** (60) Million Btu

Coke Oven Gas (61) Million Btu

132. Enter the quantity shipped off-site during 2014.

080 **Blast Furnace** (60) Million Btu

Coke Oven Gas (61) Million Btu

Waste Oils and Tars, and Waste Byproduct Gases

133. Enter the total quantity purchased by and delivered to this establishment during 2014, regardless of when payment was made.

010 **Waste Oils and Tars (excluding Coal Tar)** (71) — Million Btu

Waste and Byproduct Gases(e.g., refinery gas, off gas, vent gas, plan gas, still gas) (62) — Million Btu

134. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 133.

020 **Waste Oils and Tars** (71)

$Bil. Mil. Thou. Dol. — U.S. Dollars

Waste and Byproduct Gases (62)

$Bil. Mil. Thou. Dol. — U.S. Dollars

135. Excluding the quantity reported in question 133, did this establishment receive any additional material from another establishment that was not purchased? (If you answer "Yes" to any of the alternatives below, please answer question 136. Otherwise, skip to question 137.)

031 **Waste Oils and Tars** (71)

☐ **Yes**

☐ **No**

Waste and Byproduct Gases (62)

☐ **Yes**

☐ **No**

136. How much of this additional material was received from the other establishment?

030 **Waste Oils and Tars** (71) — Million Btu

Waste and Byproduct Gases (62) — Million Btu

137. Enter the quantity produced on-site during 2014.

040 **Waste Oils and Tars** (71) — Million Btu

Waste and Byproduct Gases (62) — Million Btu

138. Enter the total quantity consumed as a fuel at this establishment during 2014.

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 **Waste Oils and Tars** (71) — Million Btu

Waste and Byproduct Gases (62) — Million Btu

139. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2014.

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 **Waste Oils and Tars** (71) — Million Btu

Waste and Byproduct Gases (62) — Million Btu

Pulping Black Liquor and Agricultural Waste

140. Enter the total quantity purchased by and delivered to this establishment during 2014, regardless of when payment was made.

010 **Pulping Black Liquor** (73)

Million Btu

Agricultural Waste (e.g., bagasse, rice hulls, nut shells, orchard prunings) (90)

Million Btu

141. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 140.

020 **Pulping Black Liquor** (73)

$Bil. Mil. Thou. Dol.

U.S. Dollars

Agricultural Waste (90)

$Bil. Mil. Thou. Dol.

U.S. Dollars

142. Excluding the quantity reported in question 140, did this establishment receive any additional material from another establishment that was not purchased? (If you answer "Yes" to any of the alternatives below, please answer question 143. Otherwise, skip to question 144.)

031 **Pulping Black Liquor** (73)

☐ **Yes**

☐ **No**

Agricultural Waste (90)

☐ **Yes**

☐ **No**

143. How much of this additional material was received from the other establishment?

030 **Pulping Black Liquor** (73)

Million Btu

Agricultural Waste (90)

Million Btu

144. Enter the quantity produced on-site during 2014.

040 **Pulping Black Liquor** (73)

Million Btu

Agricultural Waste (90)

Million Btu

145. Enter the total quantity consumed as a fuel at this establishment during 2014.

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 **Pulping Black Liquor** (73)

Million Btu

Agricultural Waste (90)

Million Btu

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

146. Enter the total quantity purchased by and delivered to this establishment during 2014, regardless of when payment was made.

010 **Wood Residues and Byproducts from Mill Processing (e.g., sawdust, shavings, slabs, bark)** (84)

Million Btu

Wood / Paper-Related Refuse (e.g., scrap, wastepaper, wood pallets, packing materials) (72)

Million Btu

147. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 146.

020 **Wood Residues and Byproducts from Mill Processing** (84)

$Bil. Mil. Thou. Dol.

U.S. Dollars

Wood / Paper-Related Refuse (72)

$Bil. Mil. Thou. Dol.

U.S. Dollars

148. Excluding the quantity reported in question 146, did this establishment receive any additional material from another establishment that was not purchased? (If you answer "Yes" to any of the alternatives below, please answer question 149. Otherwise, skip to question 150.)

031 **Wood Residues and Byproducts from Mill Processing** (84)

☐ **Yes**

☐ **No**

Wood / Paper-Related Refuse (72)

☐ **Yes**

☐ **No**

149. How much of this additional material was received from the other establishment?

030 **Wood Residues and Byproducts from Mill Processing** (84)

Million Btu

Wood / Paper-Related Refuse (72)

Million Btu

150. Enter the quantity produced on-site during 2014.

040 **Wood Residues and Byproducts from Mill Processing** (84)

Million Btu

Wood / Paper-Related Refuse (72)

Million Btu

151. Enter the total quantity consumed as a fuel at this establishment during 2014.

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 **Wood Residues and Byproducts from Mill Processing** (84)

Million Btu

Wood / Paper-Related Refuse (72)

Million Btu

Steam and Industrial Hot Water

152. Enter the total quantity purchased by and delivered to this establishment during 2014, regardless of when payment was made.

061 **Steam** (11) Million Btu

Industrial Hot Water (12) Million Btu

153. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 152.

062 **Steam** (11)

$Bil. Mil. Thou. Dol.

U.S. Dollars

Industrial Hot Water (12)

$Bil. Mil. Thou. Dol.

U.S. Dollars

154. During 2014, where did this establishment's purchased steam come from? (Select one)

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 or small power producers. It also includes brokers, marketers, marketing subsidiaries of utilities, or cogenerators no owned by your company.

☐ **1. All local utility: Answer question 155 then skip to question 158.**

☐ **2. All non-utility: Answer question 155 then skip to question 158.**

☐ **3. Both** (11015)

155. 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.

Steam (11016)

156. Enter the quantity of your total purchased steam that was purchased from a local utility during 2014.

Steam (11010) Million Btu

157. Enter the total expenditures of your purchased steam that was paid to a local utility.

Steam (11020)

$Bil. Mil. Thou. Dol.

U.S. Dollars

158. Excluding the quantity reported in question 152, did this establishment receive any additional material from another establishment that was not purchased? (If you answer "Yes" to any of the alternatives below, please answer question 159. Otherwise, skip to question 160.)

051 **Steam** (11)

☐ **Yes**

☐ **No**

Industrial Hot Water (12)

☐ **Yes**

☐ **No**

Steam and Industrial Hot Water

159. How much of this additional material was received from the other establishment?

050

Steam (11)	**Industrial Hot Water** (12)
Million Btu	Million Btu

160. Enter the quantity of steam generated on-site from each of the following:

	Steam (11) Million Btu	**Industrial Hot Water** (12) Million Btu
• **Solar Power** (081)		
• **Wind Power** (082)		
• **Hydropower** (083)		
• **Geothermal Power** (084)		

161. Enter the quantity sold or transferred out of this establishment during 2014.

Include quantities exchanged for the same or any other material.

Exclude sales to independent power producers, small power producers, or cogenerators not located at this establishment.

110

Steam (11)	**Industrial Hot Water** (12)
Million Btu	Million Btu

Other Types used as Energy

162. Specify the name and units (e.g., gallons, million Btu, cubic feet, etc.) of any energy source purchased or consumed in this establishment that has not been previously asked.

* Do not include: oxygen, carbon dioxide, nitrogen, argon, or helium.

980

Type (91) | Type (93) | Type (95)

981

Units (91) | Units (93) | Units (95)

163. Enter the total quantity purchased by and delivered to this establishment during 2014, regardless of when payment was made.

010

Units (91) | Units (93) | Units (95)

164. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 163.

020

$Bil.	Mil.	Thou.	Dol.	$Bil.	Mil.	Thou.	Dol.	$Bil.	Mil.	Thou.	Dol.

U.S. Dollars (91) | U.S. Dollars (93) | U.S. Dollars (95)

165. Excluding the quantity reported in question 163, did this establishment receive any additional material from another establishment that was not purchased? (If you answer "Yes" to any of the alternatives below, please answer question 166. Otherwise, skip to question 167.)

031

☐ **Yes** (91) ☐ **No** | ☐ **Yes** (93) ☐ **No** | ☐ **Yes** (95) ☐ **No**

166. How much of this additional material was received from the other establishment?

030

Units (91) | Units (93) | Units (95)

167. Enter the quantity produced on-site during 2014.

040

Units (91) | Units (93) | Units (95)

168. Does the quantity reported in produced on-site represent the product or byproduct of another energy source consumed on-site?

☐ **1.** Yes, product or byproduct
☐ **2.** No (91050)

☐ **1.** Yes, product or byproduct
☐ **2.** No (93050)

☐ **1.** Yes, product or byproduct
☐ **2.** No (95050)

Other Types used as Energy

169. Enter the total quantity consumed as a fuel at this establishment during 2014.

Include all uses for the heat, power, and electricity generation. Also, include fuel consumed by vehicles intended primarily for use on-site.

060

Units (91)	Units (93)	Units (95)

170. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2014.

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 (91)	Units (93)	Units (95)

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 2014, 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 2014.

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. (e.g., 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.

- o 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.
- You will be asked to provide your not switchable amount first, then the switchable.
- Enter a zero if the fuel could not be switched for the specific energy source.
- Please proceed through this section column-by-column.

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

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.

171. Referring back to the Electricity section, question 7 page 8. Please enter the quantity of reported purchased electricity.

172. Referring back to the Electricity section, question 14 page 8. Please enter the quantity of reported transferred electricity.

173. Add lines from question 171 and 172 (question 171 + question 172). Enter the total in the box. 10503

174. Referring back to the Natural Gas section, question 29 page 12. Please enter the quantity of reported natural gas consumed. Enter the figure in the box. 30503

175. Referring back to the Coal section, question 74 page 23. Please add the quantity of any reported anthracite, bituminous and subbituminous and lignite consumed. Enter the total in the box. 46503

	Census Use Only	(10) **Total Electricity Received** **Purchases + transfers** ↓	(30) **Total Natural Gas** ↓	(46) **Total ALL Coal** **(excluding Coal Coke & Breeze)** ↓
176. Enter the total quantity of fuel (column) you reported as consumed during 2014. Copy this figure from the above worksheet questions.	500	Kilowatthours **Enter figure from question 173.**	Units **Enter figure from question 174.**	Short tons **Enter figure from question 175.**
177. Is the total quantity reported in question 176 greater than zero?	501	☐ **1. Yes** ☐ **2. No: Skip to question 176, next column.**	☐ **1. Yes** ☐ **2. No: Skip to question 176, next column.**	☐ **1. Yes** ☐ **2. No: Skip to next section.**
178. Enter the amount of the total quantity you reported in question 176 that could NOT have been replaced within 30 days by another fuel during 2014. 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.	510	Kilowatthours	Units	Short tons

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

	Census Use Only	(10)	(30)	(46)
		Total Electricity Received **Purchases + transfers** ↓	**Total Natural Gas** ↓	**Total ALL Coal** **(excluding Coal Coke & Breeze)** ↓
179. Is the total quantity in question 178 equal to zero?	511	☐ **1. Yes: Skip to question 181.** ☐ **2. No**	☐ **1. Yes: Skip to question 181.** ☐ **2. No**	☐ **1. Yes: Skip to question 181.** ☐ **2. No**
180. Referring to the quantity shown in question 178, please check all the reasons that made this quantity unswitchable.				
The boilers, heaters, or other fuel-consuming equipment are NOT capable of using another fuel for at least part of the operations during the year.	526	☐ 1	☐ 1	☐ 1
Switching to the usable alternatives would adversely affect the products.	528	☐ 1	☐ 1	☐ 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	☐ 1	☐ 1	☐ 1
Environmental restrictions related to air quality limit the amount of the physically usable alternative fuel that could be used instead.	534	☐ 1	☐ 1	☐ 1
A long-term contract is in-place that requires the purchase of certain amounts of this fuel in any case.	536	☐ 1	☐ 1	☐ 1
Storage of usable alternative fuels is not available due to potential environmental impact of storage tanks.	537	☐ 1	☐ 1	☐ 1
Other	999	☐ 1	☐ 1	☐ 1
Please specify other:	998			

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

	Census Use Only	(10)	(30)	(46)
		Total Electricity Received **Purchases + transfers** ↓	**Total Natural Gas** ↓	**Total ALL Coal** **(excluding Coal Coke & Breeze)** ↓
181. Enter the results of subtracting the quantity reported in question 178 from the quantity reported in question 176. This represents the total quantity of energy consumption that could have been replaced in 30 days by one or more alternative energy sources in 2014. Note: the sum of the quantities in question 183 through 190 should equal or exceed this quantity.	520	Kilowatthours	Units	Short tons
182. Is the total quantity reported in question 181 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.**
183. Of the quantity switchable in question 181 what is the maximum amount that could have been replaced by electricity?	530		Units	Short tons
184. Of the quantity reported as switchable in question 181 what is the maximum amount that could have been replaced by total coal, excluding coal coke and breeze?	670	Kilowatthours	Units	
185. Of the quantity reported as switchable in question 181 what is the maximum amount that could have been replaced by total coal coke and breeze, excluding coal?	690	Kilowatthours	Units	
186. Of the quantity reported as switchable in question 181 what is the maximum amount that could have been replaced by natural gas?	570	Kilowatthours		Short tons

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

	Census Use Only	(10)	(30)	(46)
		Total Electricity Received **Transfers + purchase** ↓	**Total Natural Gas** ↓	**Total ALL Coal** **(excluding Coal Coke & Breeze)** ↓
187. Of the quantity reported as switchable in question 181 what is the maximum amount that could have been replaced by <u>total diesel fuel and distillate fuel oil</u>?	590	Kilowatthours	Units	Short tons
188. Of the quantity reported as switchable in question 181 what is the maximum amount that could have been replaced by <u>liquefied petroleum gas (LPG)</u>?	610	Kilowatthours	Units	Short tons
189. Of the quantity reported as switchable in question 181 what is the maximum amount that could have been replaced by <u>residual fuel oil</u>?	630	Kilowatthours	Units	Short tons
190. Of the quantity reported as switchable in question 181 what is the maximum amount that could have been replaced by any other energy source not already asked about?	650	Kilowatthours	Units	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 2014 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 each energy source (column) reported		
191. Would not switch regardless of price difference.		☐ 1	☐ 1	☐ 1
Would switch at price difference 1-10 percent.		☐ 2	☐ 2	☐ 2
Would switch at price difference 11-25 percent.		☐ 3	☐ 3	☐ 3
Would switch at price difference 26-50 percent.		☐ 4	☐ 4	☐ 4
Would switch at price difference over 50 percent.		☐ 5	☐ 5	☐ 5
Reasonable estimates cannot be provided.		☐ 6	☐ 6	☐ 6
Would switch to the more expensive substitute if price premium were reasonable.		☐ 7	☐ 7	☐ 7

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 2014, 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:
    - 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 2014.

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. (e.g., 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.
- You will be asked to provide your not switchable amount first, then the switchable.
- Enter a zero if the fuel could not be switched for the specific energy source.
- Please proceed through this section column-by-column.

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

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.

192. Referring back to the LPG section, question 57 page 19. Please add the quantity of reported butane, ethane, and propane consumed.

193. Referring back to the LPG section, question 65 page 20. Please add the quantity of reported mixtures and other LPG & NGL consumed.

194. Add lines from question 192 and 193 (question 192 + question 193). Enter the total in the box. 24503

195. Referring back to the Diesel and Distillate Fuel section, question 37 page 14. Please add the reported quantity of diesel and distillate fuel consumed. Enter the figure in the box. 22503

196. Referring back to the Residual Fuel section, question 47 page 17. Please enter the reported quantity of residual fuel consumed. Enter the figure in the box. 21503

	Census Use Only	(24) **Total LPG & NGL** ↓	(22) **Total Diesel Fuel & Distillate Fuel Oil** ↓	(21) **Residual Fuel Oil** ↓
197. Enter the total quantity of fuel (column) you reported as consumed during 2014. Copy this figure from the above worksheet questions.	500	Gallons **Enter figure from question 194.**	Barrels **Enter figure from question 195.**	Barrels **Enter figure from question 196.**
198. Is the total quantity reported in question 197 greater than zero?	501	☐ **1. Yes** ☐ **2. No: Skip to question 197, next column.**	☐ **1. Yes** ☐ **2. No: Skip to question 197, next column.**	☐ **1. Yes** ☐ **2. No: Skip to next section.**
199. Enter the amount of the total quantity you reported in question 197 that could NOT have been replaced within 30 days by another fuel during 2014. 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.	510	Gallons	Barrels	Barrels

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

	Census Use Only	(24) Total LPG & NGL ↓	(22) Total Diesel Fuel & Distillate Fuel Oil ↓	(21) Residual Fuel Oil ↓
200. Is the total quantity in question 199 equal to zero?	511	☐ 1. Yes: Skip to question 202. ☐ 2. No	☐ 1. Yes: Skip to question 202. ☐ 2. No	☐ 1. Yes: Skip to question 202. ☐ 2. No
201. Referring to the quantity shown in question 199, please check all the reasons that made this quantity unswitchable.				
The boilers, heaters, or other fuel-consuming equipment are NOT capable of using another fuel for at least part of the operations during the year.	526	☐ 1	☐ 1	☐ 1
Switching to the usable alternatives would adversely affect the products.	528	☐ 1	☐ 1	☐ 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	☐ 1	☐ 1	☐ 1
Environmental restrictions related to air quality limit the amount of the physically usable alternative fuel that could be used instead.	534	☐ 1	☐ 1	☐ 1
A long-term contract is in-place that requires the purchase of certain amounts of this fuel in any case.	536	☐ 1	☐ 1	☐ 1
Storage of usable alternative fuels is not available due to potential environmental impact of storage tanks.	537	☐ 1	☐ 1	☐ 1
Other	999	☐ 1	☐ 1	☐ 1
Please specify other:	998			

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

	Census Use Only	(24) **Total LPG & NGL** ↓	(22) **Total Diesel Fuel & Distillate Fuel Oil** ↓	(21) **Residual Fuel Oil** ↓
202. Enter the results of subtracting the quantity reported in question 199 from the quantity reported in question 197. This represents the total quantity of energy consumption that could have been replaced in 30 days by one or more alternative energy sources in 2014. Note: the sum of the quantities in question 204 through 211 should equal or exceed this quantity.	520	Gallons	Barrels	Barrels
203. Is the total quantity reported in question 202 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.**
204. Of the quantity switchable in question 202 what is the maximum amount that could have been replaced by electricity?	530	Gallons	Barrels	Barrels
205. Of the quantity reported as switchable in question 202 what is the maximum amount that could have been replaced by total coal, excluding coal coke and breeze?	670	Gallons	Barrels	Barrels
206. Of the quantity reported as switchable in question 202 what is the maximum amount that could have been replaced by total coal coke and breeze, excluding coal?	690	Gallons	Barrels	Barrels
207. Of the quantity reported as switchable in question 202 what is the maximum amount that could have been replaced by natural gas?	570	Gallons	Barrels	Barrels

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

	Census Use Only	(24) **Total LPG & NGL** ↓	(22) **Total Diesel Fuel & Distillate Fuel Oil** ↓	(21) **Residual Fuel Oil** ↓
208. Of the quantity reported as switchable in question 202 what is the maximum amount that could have been replaced by <u>total diesel fuel and distillate fuel oil</u>?	590	Gallons		Barrels
209. Of the quantity reported as switchable in question 202 what is the maximum amount that could have been replaced by <u>liquefied petroleum gas (LPG)</u>?	610		Barrels	Barrels
210. Of the quantity reported as switchable in question 202 what is the maximum amount that could have been replaced by <u>residual fuel oil</u>?	630	Gallons	Barrels	
211. Of the quantity reported as switchable in question 202 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 2014 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)
		Total LPG & NGL	**Total Diesel Fuel & Distillate Fuel Oil**	**Residual Fuel Oil**
	622	↓	↓	↓
		Check one for each energy source (column) reported		
212. Would not switch regardless of price difference.		☐ 1	☐ 1	☐ 1
Would switch at price difference 1-10 percent.		☐ 2	☐ 2	☐ 2
Would switch at price difference 11-25 percent.		☐ 3	☐ 3	☐ 3
Would switch at price difference 26-50 percent.		☐ 4	☐ 4	☐ 4
Would switch at price difference over 50 percent.		☐ 5	☐ 5	☐ 5
Reasonable estimates cannot be provided.		☐ 6	☐ 6	☐ 6
Would switch to the more expensive substitute if price premium were reasonable.		☐ 7	☐ 7	☐ 7

Energy-Management Activities

For questions 213 through 217:
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, 2014 and December 31, 2014.

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.

Type of Energy-Management Assistance	Participate? (13)	Source of Assistance (check all that apply)				
		In-house (15)	Utility/ Energy Supplier (16)	Product or Service Provider (17)	Federal Program (18)	State or Local Program (19)
213. Energy audit or assessment	1 ☐ Yes → 2 ☐ No (060)	3 ☐	4 ☐	7 ☐	8 ☐	9 ☐
214. Technical assistance (e.g., consultation, demonstrations, engineering design or analysis)	1 ☐ Yes → 2 ☐ No (070)	3 ☐	4 ☐	7 ☐	8 ☐	9 ☐
215. Technical information (e.g., software, reference material)	1 ☐ Yes → 2 ☐ No (072)	3 ☐	4 ☐	7 ☐	8 ☐	9 ☐
216. Training (e.g., workshops, seminars, presentations)	1 ☐ Yes → 2 ☐ No (074)	3 ☐	4 ☐	7 ☐	8 ☐	9 ☐
217. Financial assistance (e.g., loans, tax credits, rebates, subsidies)	1 ☐ Yes → 2 ☐ No (076)	3 ☐	4 ☐	7 ☐	8 ☐	9 ☐

Energy-Management Activities

For Questions 218 through 224:

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, 2014 and December 31, 2014. For any activity for which you marked "Yes" please mark the source(s) of financial support for the activity. Please use sources defined above question 213.

System	Installed Equipment or Retrofit? (13)	Source of Assistance (check all that apply)				
		In-house (15)	Utility/ Energy Supplier (16)	Product or Service Provider (17)	Federal Program (18)	State or Local Program (19)
218. Steam systems (e.g., boilers, burners, insulation, piping, steam traps)	1 ☐ Yes ➔ 2 ☐ No (120)	3 ☐	4 ☐	7 ☐	8 ☐	9 ☐
219. Compressed air systems (e.g., compressor controls, drain traps, leak management, compressor or treatment equipment replacement)	1 ☐ Yes ➔ 2 ☐ No (450)	3 ☐	4 ☐	7 ☐	8 ☐	9 ☐
220. Process heating systems (e.g., insulation repair, burner controls, furnace repair, refractory replacement)	1 ☐ Yes ➔ 2 ☐ No (140)	3 ☐	4 ☐	7 ☐	8 ☐	9 ☐
221. Process cooling and refrigeration systems (e.g., insulation repair, use of free cooling, implementation of VSDs, refrigerant pressure balancing)	1 ☐ Yes ➔ 2 ☐ No (160)	3 ☐	4 ☐	7 ☐	8 ☐	9 ☐
222. Machine drive (e.g., variable speed drives, ramp speeds, motors, pumps, fans)	1 ☐ Yes ➔ 2 ☐ No (180)	3 ☐	4 ☐	7 ☐	8 ☐	9 ☐
223. Facility HVAC system (e.g., check filters, belts, duct maintenance, setback controls, equipment replacement and upgrade.)	1 ☐ Yes ➔ 2 ☐ No (200)	3 ☐	4 ☐	7 ☐	8 ☐	9 ☐
224. Facility lighting (e.g., occupancy controls, daylight harvesting, efficient lamp upgrade)	1 ☐ Yes ➔ 2 ☐ No (220)	3 ☐	4 ☐	7 ☐	8 ☐	9 ☐

Energy-Management Activities

For Questions 225 through 246:

These questions are intended to assess the awareness and implementation of energy management activities at your establishment. Please answer the following questions with respect to any activities implemented between January 1, 2014 and December 31, 2014.

	Census Use Only	
225. Which statement best describes this establishment's management decision-making process. (Choose one)		
1. Energy use and consumption is increasingly becoming a higher priority for the company		1. ☐
2. Management from time to time has supported projects to improve use and consumption	13501	2. ☐
3. Energy use and consumption are rarely a part of management decision making		3. ☐
226. Is establishment management aware of programs (i.e., public or utility) dedicated to improving energy use and consumption? (Check all that apply)		
1. Superior Energy Performance	13561	1. ☐
2. Better Buildings, Better Plants	13562	2. ☐
3. ENERGY STAR	13563	3. ☐
4. Other - Specify → 13016	13564	4. ☐
5. None of the above	13565	5. ☐
227. Is this establishment aware of ISO 50001?	13503	1 ☐ Yes 2 ☐ No, Skip to question 229
228. Is this establishment implementing ISO 50001?	13504	1 ☐ Yes, Skip to question 229 2 ☐ No
229. Is energy efficiency a part of this establishment's purchasing decision?	13506	1 ☐ Yes, Always 2 ☐ Yes, Sometimes 3 ☐ No 4 ☐ Don't Know
230. Does this establishment have an energy use baseline for comparing energy use in future years?	13507	1 ☐ Yes 2 ☐ No 3 ☐ Don't Know

Energy-Management Activities

	Census Use Only	
231. Does this establishment set goals for improving energy use?	13508	1 ☐ Yes 2 ☐ No, Skip to question 234 3 ☐ Don't Know, Skip to question 234
232. Are these goals quantitative (e.g., 10% improvement)?	13509	1 ☐ Yes 2 ☐ No 3 ☐ Don't Know
233. Which of the following policies influenced energy usage goals set for this establishment (check all that apply):	13566 13567 13568 13569 13570	1. ☐ Legal requirement 2. ☐ Voluntary programs 3. ☐ Corporate policy 4. ☐ Customer requirements 5. ☐ Government incentives
234. Does management at this establishment assign a representative(s) to be responsible for energy management?	13512	1 ☐ Yes 2 ☐ No, Skip to question 236 3 ☐ Don't Know, Skip to question 236
235. What percentage of the designated representative(s) job responsibilities are related to managing energy (if more than one person responsible, use average across all persons)?	13513	1. ☐ < 25% 2. ☐ 25% - 49% 3. ☐ 50% - 74% 4. ☐ >75%
236. Does this establishment have submetering (metering beyond the main utility, revenue or supplier meter)?	13514	1 ☐ Yes 2 ☐ No, Skip to question 236
237. For which energy source(s) does this establishment use submetering?	13515 13580 13581	1. ☐ Electric 2. ☐ Natural Gas 3. ☐ Other - Specify ↙ 13017

Energy-Management Activities

	Census Use Only	
238. Between January 1, 2014 and December 31, 2014, has the establishment conducted an audit on any energy system to identify potential energy saving opportunities?	13518	1 ☐ Yes 2 ☐ No, Skip to question 240 3 ☐ Don't Know, Skip to question 240
239. Which systems (check all that apply)?	13571 13572 13573 13574 13575 13576 13577 13578 13579	1. ☐ Compressed air systems 2. ☐ Process heating systems 3. ☐ Steam systems 4. ☐ Process cooling and refrigeration systems 5. ☐ Computing systems 6. ☐ Facility HVAC 7. ☐ Facility lighting 8. ☐ Machine drives (e.g., motors, pumps, fans) 9. ☐ Plant wide
240. For capital investment projects, what is the establishment's maximum simple payback (time period in years typically calculated as implementation cost divided by annual cost savings) that is currently allowed?	13520	1. ☐ < 1 year 2. ☐ 1-2 years 3. ☐ 2-3 years 4. ☐ 3-4 years 5. ☐ > 4 years 6. ☐ Have no such requirement 7. ☐ Do not know

Energy-Management Activities

	Census Use Only	
241. Does your establishment measure oxygen and carbon dioxide (or combustible) levels in boiler and other fuel fired heating equipment flue gases to "tune" the burners?	13476	1 ☐ Yes 2 ☐ No 3 ☐ Don't Know
242. 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?	13477	1 ☐ Yes 2 ☐ No 3 ☐ Don't Know
243. 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.	13478	1 ☐ Yes 2 ☐ No 3 ☐ Don't Know
b. Cleaning of heat transfer surfaces to avoid build up of soot, scale, or other material.	13479	1 ☐ Yes 2 ☐ No 3 ☐ Don't Know
c. Inspecting, calibrating, and adjusting temperature/pressure sensors, controllers, valve operators, etc.	13480	1 ☐ Yes 2 ☐ No 3 ☐ Don't Know
244. Do you keep an inventory of all motors in your establishment?	13481	1 ☐ Yes 2 ☐ No 3 ☐ Don't Know
245. Does your establishment have staff or equipment dedicated to detecting and controlling compressed air system leaks?	13483	1 ☐ Yes 2 ☐ No 3 ☐ Don't Know
246. Does your establishment track the amount of energy spent in compressed air systems?	13484	1 ☐ Yes 2 ☐ No 3 ☐ Don't Know

Energy Technologies

	Census Use Only	
247. Were any of the following technologies in use at your establishment anytime during 2014?		
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
248. Does your establishment have procedures in place to temporarily reduce electricity consumption in times of critical grid conditions (i.e., when the electric utility has indicated a need to reduce electric demand)?	13516	☐ 1 Yes ☐ 2 No ☐ 3 Don't know
249. Are there controls in place to automate any procedures for reducing electricity demand in times of critical grid conditions (i.e., when the electric utility has indicated a need to reduce demand)?	13517	☐ 1 Yes ☐ 2 No ☐ 3 Don't know

Energy Technologies

	Census Use Only	
250. Were any of the following technologies associated with cogeneration in use at your establishment anytime during 2014?		
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
e. Steam turbines supplied by heat recovered from high-temperatures processes.	14046	☐ 1 Yes ☐ 2 No ☐ 3 Don't know
251. How many buildings were on this establishment site as of December 31, 2014? **Buildings include:** structures enclosed by walls extending from the foundation to the roof, parking garages, even if not totally enclosed by walls and a roof, or structures erected 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 not ordinarily intended to be entered by humans, such as storage tanks, or non-buildings that consume energy (such as pumps and constructions sites).	17010	☐ **Number of Buildings**
252. What was the approximate total enclosed square footage of the buildings located on this establishment site as of December 31, 2014?	13010	☐ **Total square feet**

Remarks

253. 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.

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Thank You – Your Response is Important

Accurate and timely statistical information could not be produced without your continued cooperation and goodwill. Thank you.

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