|  |  |
| --- | --- |
| **2018 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**  (11-08-14)  OMB Approval No. 1905-0169  Expires: xx/xx/xxxx  Burden: 9.2 hours  **Report Electronically:** [econhelp.census.gov/](http://www.census.gov/)mecs  Username:  Password:  Reporting electronically allows you to save your work as you go through the form and could 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.  Title 18 U.S.C. 1001 makes it a criminal offense for any person knowingly and willingly to make to any Agency or Department of the United States any false, fictitious, or fraudulent statements as to any matter within its jurisdiction.  Per the Paperwork Reduction Act of 1995, you are not required to respond to any Federally sponsored collection of information unless it displays a valid OMB Approval Number. The valid OMB Approval Number for this information collection (1905-0169) is displayed at the top left of this page. | |
| Instructions and Frequently Asked Questions can be found at [econhelp.census.gov/mecs.](http://www.census.gov/econhelp/mecs) | |

# Contact Information

**Date (mm-dd-yyyy)** Area Code

#### Telephone

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:

* 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.
* 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.
* 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.
* Report dollar amounts rounded to the nearest dollar (e.g., report $1,257.59 as $1,258).
* If you do not maintain book records for particular items, please use carefully prepared estimates.
* Enter zeros in the data columns if the value is zero or none.
* Complete all applicable sections of the questionnaire.
* 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 for all energy sources within a question before moving on to the next question.
* 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 Use 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 2018 and indicate the period covered by this filing, whether the calendar year or other period.

# Instructions for Completing Form EIA-846, cont.

#### Energy Sources (Fuels)

Reporting Criteria

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

* the energy source was consumed as a fuel, (that is, for heat, power, or electricity generation); **or**
* the energy source was consumed as a nonfuel (feedstock, raw material input); **or**
* for selected energy sources, the energy source was shipped offsite from this establishment. The energy sources for which you will be asked to supply shipments data are:  
  + 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 2018 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 energies 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

Breeze Coal Coke

* Anthracite
* Bituminous and subbituminous
* Lignite

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)
* Tire-Derived Fuel (TDF)
* 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 Energy Source

#### Energy Sources Reporting Examples

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

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

#### Fuel-Switching Capability

These questions are intended to measure the short-term capability of your establishment to use substitute energy sources in place of those actually consumed in 2018. 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 2018 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 that 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 xx), 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 2018.   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 2018.   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 2018?** | "Census | No  * **Yes: Establishment was sold during the year.** *Complete all sections of this questionnaire for activities that*   *occurred in 2018 prior to the sale.*   * **Yes: Establishment was bought during the year.** *Complete all sections of this questionnaire for activities that occurred in 2018 after the sale.* | |
| Use Only" |
| 00011 |
| **2.** | **What best describes this establishment at the end of 2018?** | 00010 | In operation: Skip to question 6.  * **Ceased operation: Answer question 3 then skip to question 6.** * **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 2018.**  **Name of new owner or operator**  00015  **Address City**  00017 00018  **State Zip Code Zip + 4 Employer Identification Number**  00019 00020 00021 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, 2018 to December 31, 2018.** | 00022 | **From:** | (mm-dd-yyyy) |
| 00023 | **To:** | (mm-dd-yyyy) |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Electricity: Total Purchased*** | | | | | |
| **7.** | **Enter the total quantity of electricity purchased by** | "Census | Kilowatthours | | |
| Use Only" |
|  | **and delivered to this establishment during 2018,**  **regardless of when payment was made.** | 10061 |
|  |
| **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.  U.S. Dollars | Dol. |
| ***Electricity: Source of Purchase*** | | | | | |
| **9.** | **During 2018, 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 | 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** | | |
|  | owned by your company. |
| **10.** | **Please specify the utility/non-utility provider from whom you purchased your electricity:**  If this establishment purchases from more than 10016  one provider, please provide the largest provider. | | | | |
| **11.** | **Enter the quantity of your total purchased electricity that was purchased from a local utility during 2018.** | 10010 | Kilowatthours | | |
| **12.** | **Enter the total expenditures of your purchased electricity that was paid to a local utility.** | 10020 | $Bil. | Mil. Thou.  U.S. Dollars | Dol. |
| ***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?**  If you answer “Yes,” please answer question 14. Otherwise, skip to question 15. | 10052 | 1. **Yes** 2. **No** | | |
| **14.** | **How much of this additional electricity was received from the other establishment.** | 10050 | Kilowatthours | | |
|  | | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| ***Electricity: Generated On-Site*** | | | |
| **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.* | "Census Use Only" | Kilowatthours |
| 10070 |  |
| * **Solar Power** | 10081 |  |
| * **Wind Power** | 10082 |  |
| * **Hydropower** | 10083 |  |
| * **Geothermal Power** | 10084 |  |
| * **Other (for example, electricity generated by diesel generators, fuel cells, or microturbines)** | 10090 |  |
| |  |  |  |  | | --- | --- | --- | --- | | **16.** | **Does your establishment’s generators together have a total nameplate capacity of less than one megawatt?** | 10053 | 1. **Yes** 2. **No** 3. **Don’t know** | | | | |
| ***Electricity: Sales and Transfers Offsite*** | | | |
| **17.** | **Enter the quantity of electricity sold or transferred out of this establishment to utilities during 2018.** | 10110 | Kilowatthours |
|  | 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. |
| **18.** | **Enter the quantity of electricity sold or transferred out of this establishment to any non-utilities during 2018.**  **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 17 + 18) [Sales and Transfers Offsite]* | | | |
| **19.** | **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: 10761  **Please specify:** | 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., fork lifts) | 10800 | % |
| * **Other non-process use:**   10821  **Please specify:** | 10820 | % |
| **TOTAL 100%** | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Natural Gas: Units*** | | | | | |
| **20. 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 | Therms  1. **Decatherms (Dth)** 2. **1,000 Cubic Feet (Mcf)** 3. **100 Cubic Feet (Ccf)** 4. **Million British Thermal Units (MMBtu)** | | |
| ***Natural Gas: Total Purchased*** | | | | | |
| **21.** | **Enter the total quantity of natural gas purchased by** | 30010 | Units | | |
|  | **and delivered to this establishment during 2018,** |
|  | **regardless of when payment was made.** |
| **22.** | **Enter total expenditures; including all applicable taxes and any delivery, management, and demand charges, for the purchased natural gas reported in question 21.** | 30020 | $Bil. | Mil. Thou.  U.S. Dollars | Dol. |
| ***Natural Gas: Source of Purchase*** | | | | | |
| **23.** | **During 2018, 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 24 then skip to question 27.** 2. **All non-utility: Answer question 24 then skip to question 27.** 3. **Both** | | |
| **24.** | **Please specify the utility/non-utility provider from whom you purchased your natural gas:**  If this establishment purchases from more than 30016  one provider, please provide the largest provider. | | | | |
| **25.** | **Enter the quantity of your total purchased natural gas that was purchased from a local utility during 2018.** | 31010 | Units | | |
| **26.** | **Enter the total expenditures of your purchased natural gas that was paid to a local utility.** | 31020 | $Bil. | Mil. Thou.  U.S. Dollars | Dol. |
|  | | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| ***Natural Gas: Transferred In and Produced On-site*** | | | |
| **27.** | **Excluding the quantity reported in question 21, did this establishment receive any additional natural gas from another establishment that was not purchased?**  If you answer “Yes,” please answer question 28. Otherwise, skip to question 29. | "Census | 1. **Yes** 2. **No** |
| Use Only" |
| 30031 |
| **28.** | **How much of this additional natural gas was received from the other establishment.** | 30030 | Units |
| **29.** | **Enter the quantity of natural gas that was both produced on-site during 2018 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*** | | | |
| **30.** | **Enter the total quantity of natural gas consumed as a fuel at this establishment during 2018.** | 30060 | Units |
|  | 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**. |
| **31.** | **Enter the total quantity of natural gas consumed for any purpose other than fuel use at this establishment during 2018.**  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 30 *(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.** | | | |
| **32.** | **Enter the percentage of total natural gas (from question 30) 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: 30761  **Please specify:** | 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., fork lifts) | 30800 | % |
| * **Conventional electricity generation** | 30810 | % |
| * **Other non-process use:**   30821  **Please specify:** | 30820 | % |
| **TOTAL 100%** | | |

|  |
| --- |
| ***Diesel and Distillate Fuel Oil*** |
| **33. Enter the total quantity purchased by and delivered to this establishment during 2018, regardless of when payment was made.**  010 **Diesel (exclude off-site highway use)** (28) **Distillate (numbers 1, 2, & 4)** (29)  Barrels Barrels |
| **34. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 33.**  020 **Diesel** (28) **Distillate** (29)  $Bil. Mil. Thou. Dol. $Bil. Mil. Thou. Dol..  U.S. Dollars U.S. Dollars |
| **35. Excluding the quantity reported in question 33, 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 36. Otherwise, skip to question 37.)  031 **Diesel** (28) **Distillate** (29)  Yes Yes  No No |
| **36. How much of this additional material was received from the other establishment?**  030 **Diesel** (28) **Distillate** (29)    Gallons Gallons |
| **37. Enter the quantity produced on-site during 2018.**  040 **Diesel** (28) **Distillate** (29)  Barrels Barrels |
| **38. Enter the total quantity consumed as a fuel at this establishment during 2018.** 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 |
| **39. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2018.**  **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 |

|  |
| --- |
| ***Diesel and Distillate Fuel Oil*** |
| **40. Enter the quantity shipped off-site during 2018.**  080 **Diesel** (28) **Distillate** (29)  Barrels Barrels |
| **41. Enter the shell or design storage capacity of all the storage tanks located on-site as of 12/31/2018.**  090 **Diesel** (28) **Distillate** (29)  Barrels Barrels |

|  |  |  |  |
| --- | --- | --- | --- |
| ***Diesel and 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 38 *(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.** | | | |
| **42.** | **Enter the percentage of total diesel and distillate (question 38 column 1 + question 38 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: 22762  **Please specify:** | 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., fork lifts) | 22800 | % |
| * **Conventional electricity generation** | 22810 | % |
| * **Other non-process use:**   22822  **Please specify:** | 22820 | % |
| **TOTAL 100%** | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***Residual Fuel Oil: Total Purchased, Transferred, and Produced*** | | | | | | |
| **43.** |  | | "Census | **Residual Fuel Oil** | | |
| Use Only" |
| **(numbers 5, 6, Navy Special** | | |
| **and Bunker C)** | | |
| ↓ | | |
| **Enter the total quantity of residual fuel purchased by and delivered to this establishment during 2018, regardless of when payment was made.** | | 21010 | Barrels | | |
| **44.** | **Enter total expenditures; including all applicable taxes and fees for the purchased residual fuel reported in question 43.** | | 21020 | $Bil. | Mil. Thou.  U.S. Dollars | Dol. |
| **45.** | **Excluding the quantity reported in question 43, did this establishment receive any additional residual fuel oil from another establishment that was not purchased?**  If you answer “Yes,” please answer question 46. Otherwise, skip to question 47. | | 21031 | 1. **Yes** 2. **No** | | |
| **46.** | **How much of this additional residual fuel oil was received from the other establishment.** | | 21030 | Barrels | | |
| **47.** | **Enter the quantity of residual fuel produced on-site during 2018.** | | 21040 | Barrels | | |
| ***Residual Fuel Oil: Consumption, Shipments, and Storage Capacity*** | | | | | | |
| **48.** | **Enter the total quantity of residual fuel consumed as a** | 21060 | | Barrels | | |
|  | **fuel at this establishment during 2018.** |
|  | Include all uses that were used for the heat, power, and electricity generation. |
| **49.** | **Enter the total quantity of residual fuel consumed for any purpose other than fuel use at this establishment during 2018.**  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 | | |
| **50. Enter the quantity of residual fuel shipped off-site during 2018.** | | 21080 | | Barrels | | |
| **51. Enter the shell or design storage capacity of all the storage tanks located on-site as of 12/31/18.** | | 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 48 *(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.** | | | |
| **52.** | **Enter the percentage of total residual fuel (from question 48) 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: 21762  **Please specify:** | 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:**   21822  **Please specify:** | 21820 | % |
| **TOTAL 100%** | | |

|  |
| --- |
| ***Butane, Ethane, and Propane*** |
| **53. Enter the total quantity purchased by and delivered to this establishment during 2018, regardless of when payment was made.**  010 **Butane** (36) **Ethane** (37) **Propane** (38)  Gallons Gallons Gallons |
| **54. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 53.**  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 |
| **55. Excluding the quantity reported in question 53, 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 56. Otherwise, skip to question 57.)  031 **Butane** (36) **Ethane** (37) **Propane** (38)  Yes Yes Yes  No No No |
| **56. How much of this additional material was received from the other establishment?**  030 **Butane** (36) **Ethane** (37) **Propane** (38)  Gallons Gallons Gallons |
| **57. Enter the quantity produced on-site during 2018.**  040 **Butane** (36) **Ethane** (37) **Propane** (38)  Gallons Gallons Gallons |
| **58. Enter the total quantity consumed as a fuel at this establishment during 2018.**  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 |
| **59. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2018.**  **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 |
| **60. Enter the quantity shipped off-site during 2018.**  080 **Butane** (36) **Ethane** (37) **Propane** (38)  Gallons Gallons Gallons |

|  |
| --- |
| ***Total Mixtures and Other LPG*** |
| **61. Enter the total quantity purchased by and delivered to this establishment during 2018, regardless of when payment was made.**  010  **Other Liquefied Petroleum Gases (LPG)   and Natural Gas Liquids (NGL)**   **Mixtures of Butane, Ethane and Propane** (34) (e.g., butylene, ethylene, and propylene) (35)      Gallons Gallons |
| **62. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 61.**  020 **Mixtures of Butane, Ethane and Propane** (34) **Other LPGs and NGLs** (35)  $Bil. Mil. Thou. Dol. $Bil. Mil. Thou. Dol.  U.S. Dollars U.S. Dollars |
| **63. Excluding the quantity reported in question 61, 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 64. Otherwise, skip to question 65.)  031 **Mixtures of Butane, Ethane and Propane** (34) **Other LPGs and NGLs** (35)  Yes Yes  No No |
| **64. How much of this additional material was received from the other establishment?**  030 **Mixtures of Butane, Ethane and Propane** (34) **Other LPGs and NGLs** (35)  Gallons Gallons |
| **65. Enter the quantity produced on-site during 2018.**  040 **Mixtures of Butane, Ethane and Propane** (34) **Other LPGs and NGLs** (35)  Gallons Gallons |
| **66. Enter the total quantity consumed as a fuel at this establishment during 2018.** 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) **Other LPGs and NGLs** (35)  Gallons Gallons |

|  |  |
| --- | --- |
| |  | | --- | | ***Total Mixtures and Other LPG*** | |
| **67. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2018.**  **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 NGL**(35)  Gallons Gallons |
| **68. Enter the quantity shipped off-site during 2018.**  080 **Mixtures of Butane, Ethane and Propane** (34) **Other LPGs and NGL**(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 58 + 66 *(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.** | | | |
| **69.** | **Enter the percentage of Total LPG and NGL (question 58 column 1 + question 58 column 2 + question 58 column 3 + question 66 column 1 + question 66 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: 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 process use: 24762  **Please specify:** | 24760 | % |
| *Non-process: non-process use includes usage for facility lighting and space-conditioning equipment (HVAC).* | | |
| 1. **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., fork lifts) | 24800 | % |
| * **Conventional electricity generation** | 24810 | % |
| 1. **Other non-process use:**   24822  **Please specify:** | 24820 | % |
| **TOTAL 100%** | | |

|  |
| --- |
| ***Coal*** |
| **70. Enter the total quantity purchased by and delivered to this establishment during 2018, regardless of when payment was made.**  010 **Anthracite** (40) **Bituminous and Subbituminous**(41) **Lignite**(42)  Short tons Short tons Short tons |
| **71. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 70.**  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 |
| **72. Excluding the quantity reported in question 70, 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 73. Otherwise, skip to question 74.)  031 **Anthracite** (40) **Bituminous and Subbituminous**(41) **Lignite**(42)  Yes Yes Yes  No No No |
| **73. 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 |
| **74. Enter the quantity produced on-site during 2018.**  040 **Anthracite** (40) **Bituminous and Subbituminous**(41) **Lignite**(42)  Short tons Short tons Short tons |
| **75. Enter the total quantity consumed as a fuel at this establishment during 2018.**  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 |
| **76. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2018.**  **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 75 *(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.** | | | |
| **77.** | **Enter the percentage of total coal (question 75 column 1 + question 75 column 2 + question 75 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 process use: 46761  **Please specify:** | 46760 | % |
| *Non-process: non-process use includes usage for facility lighting and space-conditioning equipment (HVAC).* | | |
| * **Facility heating, ventilation, and air conditioning** | 46770 | % |
| 1. **Facility support other than that reported above** (e.g., cooking, water heating, office equipment) | 46790 | % |
| Conventional electricity generation | 46810 | % |
| 1. **Other non-process use:**   46821  **Please specify:** | 46820 | % |
| **TOTAL 100%** | | |

|  |
| --- |
| ***Breeze and Coal Coke*** |
| **78. Enter the total quantity purchased by and delivered to this establishment during 2018, regardless of when payment was made.**  010 **Breeze** (44) **Coal Coke** (43)  Short tons Short tons |
| **79. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 78.**  020 **Breeze** (44) **Coal Coke** (43)  $Bil. Mil. Thou. Dol. $Bil. Mil. Thou. Dol.  U.S. Dollars U.S. Dollars |
| **80. Excluding the quantity reported in question 78, 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 81. Otherwise, skip to question 82.)  031 **Breeze** (44) **Coal Coke** (43)  Yes Yes  No No |
| **81. How much of this additional material was received from the other establishment?**  030 **Breeze** (44) **Coal Coke** (43)  Short tons Short tons |
| **82. Enter the quantity produced on-site during 2018.**  040 **Breeze** (44) **Coal Coke** (43)  Short tons Short tons |
| **83. Enter the total quantity consumed as a fuel at this establishment during 2018.** 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) **Coal Coke** (43)  Short tons Short tons |
| **84. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2018.**  **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) **Coal Coke** (43)  Short tons Short tons |
| **85. Enter the quantity shipped off-site during 2018.**  080 **Breeze** (44) **Coal Coke** (43)  Short tons Short tons |

|  |
| --- |
| ***Petroleum Cokes*** |
| **86. Enter the total quantity of purchased by and delivered to this establishment during 2018, regardless of when payment was made.**  010 **Marketable Petroleum Coke- Marketable Petroleum Coke -**   **Unrefined or Green** (78) **Calcined** (79)  Short tons Short tons |
| **87. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 86.**  020  **Unrefined or Green** (78) **Calcined** (79)  $Bil. Mil. Thou. Dol. $Bil. Mil. Thou. Dol.  U.S. Dollars U.S. Dollars |
| **88. Excluding the quantity reported in question 86, 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 89. Otherwise, skip to question 90.)  031  **Unrefined or Green** (78) **Calcined** (79)  Yes Yes  No No |
| **89. How much of this additional material was received from the other establishment?**  030  **Unrefined or Green** (78) **Calcined** (79)  Short tons Short tons |
| **90. Enter the quantity of produced on-site during 2018.**  040  **Unrefined or Green** (78) **Calcined** (79)  Short tons Short tons |
| **91. Enter the total quantity consumed as a fuel at this establishment during 2018.** 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)  Short tons Short tons |
| **92. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2018.**  **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)  Short tons Short tons |
| **93. Enter the quantity shipped off-site during 2018.**  080  **Unrefined or Green** (78) **Calcined** (79)  Short tons Short tons |

|  |
| --- |
| ***Kerosene and Motor Gasoline*** |
| **94. Enter the total quantity purchased by and delivered to this establishment during 2018, regardless of when payment was made.**  010 **Kerosene** (27) **Motor Gasoline (exclude off-site highway use)** (23)  Barrels Gallons |
| **95. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 94.**  020  **Kerosene** (27) **Motor Gasoline** (23)  $Bil. Mil. Thou. Dol. $Bil. Mil. Thou. Dol.  U.S. Dollars U.S. Dollars |
| **96. Excluding the quantity reported in question 94, 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 97. Otherwise, skip to question 98.)  031  **Kerosene** (27) **Motor Gasoline** (23)  Yes Yes  No No |
| **97. How much of this additional material was received from the other establishment?**  030  **Kerosene** (27) **Motor Gasoline** (23)  Barrels Gallons |
| **98. Enter the quantity produced on-site during 2018.**  040 **Kerosene** (27) **Motor Gasoline** (23)  Barrels Gallons |
| **99. Enter the total quantity consumed as a fuel at this establishment during 2018.** 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) **Motor Gasoline** (23)  Barrels Gallons |
| **100. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2018.**  **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) **Motor Gasoline** (23)  Barrels Gallons |
| **101. Enter the shell or design storage capacity of all the storage tanks located on-site as of 12/31/2018.**  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.** |
| **102. Enter the total quantity purchased by and delivered to this establishment during 2018, regardless of when payment was made.**  010 **Naphtha and Heavier Gas Oils used for Bitumen** (67)  **Petrochemical Feedstocks** (75)    Short Tons Short Tons |
| **103. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 102.**  020 **Naphtha and Heavier Gas Oils** (75) **Bitumen** (67)  $Bil. Mil. Thou. Dol. $Bil. Mil. Thou. Dol.  U.S. Dollars U.S. Dollars |
| **104. Excluding the quantity reported in question 102, 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 105. Otherwise, skip to question 106.)  031 **Naphtha and Heavier Gas Oils** (75) **Bitumen** (67)  Yes Yes  No No |
| **105. How much of this additional material was received from the other establishment?**  030 **Naphtha and Heavier Gas Oils** (75) **Bitumen** (67)  Short Tons Short Tons |
| **106. Enter the quantity produced on-site during 2018.**  040 **Naphtha and Heavier Gas Oils** (75) **Bitumen** (67)  Short Tons Short Tons |
| **107. Enter the total quantity consumed as a fuel at this establishment during 2018.** 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) **Bitumen** (67)  Short Tons Short Tons |

|  |
| --- |
| ***Naphtha and Heavier gas oils used for Petrochemical Feedstocks or Bitumen*** |
| **108. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2018.**  **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) **Bitumen** (67)  Short Tons Short Tons |
| **109. Enter the quantity shipped off-site during 2018.**  080 **Naphtha and Heavier Gas Oils** (75) **Bitumen** (67)  Short Tons Short Tons |

|  |  |
| --- | --- |
| ***Acetylene and Hydrogen*** | |
| **110. Enter the total quantity purchased by and delivered to this establishment during 2018, regardless of when payment was made.**  010 **Acetylene** (64) **Hydrogen** (63)  Cubic Feet Million Btu | |
| **111. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 110.**  020  **Acetylene** (64) **Hydrogen** (63)  $Bil. Mil. Thou. Dol. $Bil. Mil. Thou. Dol.  U.S. Dollars U.S. Dollars | |
| **112. Excluding the quantity reported in question 110, 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 113. Otherwise, skip to question 114.)  031  **Acetylene** (64) **Hydrogen** (63)  Yes Yes  No No | |
| **113. How much of this additional material was received from the other establishment?**  030  **Acetylene** (64) **Hydrogen** (63)  Cubic Feet Million Btu | |
| **114. Enter the quantity produced on-site during 2018.**  040  **Acetylene** (64) **Hydrogen** (63)  Cubic Feet Million Btu | |
| **115. 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 |
| **116. Enter the total quantity consumed as a fuel at this establishment during 2018.** 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) **Hydrogen** (63)  Cubic Feet Million Btu | |

|  |  |
| --- | --- |
| |  | | --- | | ***Acetylene and Hydrogen*** | |
| **117. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2018.**  **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 |
| **118. Enter the quantity shipped off-site during 2018.**  080  **Acetylene** (64) **Hydrogen** (63)  Cubic Feet Million Btu |

|  |  |  |  |
| --- | --- | --- | --- |
| ***Wood Harvested Directly from Trees: Total Purchased, Transferred, and Produced*** | | | |
| **119.**  **120.**  **121.**  **122.**  **123.** | **Enter the total quantity of wood harvested directly from trees purchased by and delivered to this establishment during 2018, for fuel uses only, regardless of when payment was made.** | "Census Use Only"  83010 | Million Btu |
| **Enter total expenditures; including all applicable taxes and any delivery, management, transportation, and demand charges, for the quantity reported in**  **question 119.** | 83020 | $Bil. Mil. Thou. Dol.  U.S. Dollars |
| **Excluding the quantity reported in question 119, did this establishment receive any additional material from another establishment that was not purchased?**  If you answer “Yes,” please answer question 122. Otherwise, skip to question 123. | 83031 | 1. **Yes** 2. **No** |
| **How much of this additional material was received from the other establishment?** | 83030 | Million Btu |
| **Enter the quantity of wood harvested directly from trees produced on-site during 2018.** | 83040 | Million Btu |
| **124.** | **Enter the total quantity of wood harvested directly from trees consumed as a fuel at this establishment during 2018.**  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 127.** |
| **125. Did this establishment produce any blast furnace or coke oven gases in 2018?**  Yes (60001)  No |
| **126. Was an electric arc furnace used at this establishment in 2018?**  Yes ( 60002)  No |
| **127. Enter the total quantity purchased by and delivered to this establishment during 2018, regardless of when payment was made.**  010 **Blast Furnace** (60) **Coke Oven Gas** (61)  Million Btu Million Btu |
| **128. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 127.**  020 **Blast Furnace** (60) **Coke Oven Gas** (61)  $Bil. Mil. Thou. Dol. $Bil. Mil. Thou. Dol.  U.S. Dollars U.S. Dollars |
| **129. Excluding the quantity reported in question 127, 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 130. Otherwise, skip to question 131.)  031 **Blast Furnace** (60) **Coke Oven Gas** (61)  Yes Yes  No No |
| **130. How much of this additional material was received from the other establishment?**  030  **Blast Furnace** (60) **Coke Oven Gas** (61)  Million Btu Million Btu |
| **131. Enter the quantity produced on-site during 2018.**  040 **Blast Furnace** (60) **Coke Oven Gas** (61)  Million Btu Million Btu |

|  |
| --- |
| ***Blast Furnace Gas and Coke Oven Gas*** |
| **132. Enter the total quantity consumed as a fuel at this establishment during 2018.** 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) **Coke Oven Gas** (61)  Million Btu Million Btu |
| **133. Enter the quantity shipped off-site during 2018.**  080 **Blast Furnace** (60) **Coke Oven Gas** (61)  Million Btu Million Btu |

|  |
| --- |
| ***Waste Oils and Tars, and Waste Byproduct Gases*** |
| **134. Enter the total quantity purchased by and delivered to this establishment during 2018, regardless of when payment was made.**  010 **Waste Oils and Tars** (71) **Waste and Byproduct Gases(e.g., refinery gas,  (excluding Coal Tar) off gas, vent gas, plan gas, still gas)** (62)    Million Btu Million Btu |
| **135. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 134.**  020 **Waste Oils and Tars** (71) **Waste and Byproduct Gases** (62)  $Bil. Mil. Thou. Dol. $Bil. Mil. Thou. Dol.  U.S. Dollars U.S. Dollars |
| **136. Excluding the quantity reported in question 134 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 137. Otherwise, skip to question 138.)  031 **Waste Oils and Tars** (71) **Waste and Byproduct Gases** (62)  Yes Yes  No No |
| **137. How much of this additional material was received from the other establishment?**  030  **Waste Oils and Tars** (71) **Waste and Byproduct Gases** (62)  Million Btu Million Btu |
| **138. Enter the quantity produced on-site during 2018.**  040 **Waste Oils and Tars** (71) **Waste and Byproduct Gases** (62)  Million Btu Million Btu |
| **139. Enter the total quantity consumed as a fuel at this establishment during 2018.** 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) **Waste and Byproduct Gases** (62)  Million Btu Million Btu |
| **140. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2018.**  **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) **Waste and Byproduct Gases** (62)  Million Btu Million Btu |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***Tire-Derived Fuel (TDF): Total Purchased, Transferred, and Produced*** | | | | | | |
| **141.** |  | | "Census | **Tire-Derived Fuel (TDF)** | | |
| Use Only" |
|  | | |
|  | | |
| ↓ | | |
| **Enter the total quantity of tire-derived fuel purchased by and delivered to this establishment during 2018, regardless of when payment was made.** | | 65010 | Short Tons | | |
| **142.** | **Enter total expenditures; including all applicable taxes and fees for the purchased tire-derived fuel reported in question 141.** | | 65020 | $Bil. | Mil. Thou.  U.S. Dollars | Dol. |
| **143.** | **Excluding the quantity reported in question 141, did this establishment receive any additional tire-derived fuel from another establishment that was not purchased?**  If you answer “Yes,” please answer question 144. Otherwise, skip to question 145. | | 65031 | 1. **Yes** 2. **No** | | |
| **144.** | **How much of this additional tire-derived fuel was received from the other establishment.** | | 65030 | Short Tons | | |
| **145.** | **Enter the quantity of tire-derived fuel produced on-site during 2018.** | | 65040 | Short Tons | | |
| **146.** | **Does the quantity of tire-derived fuel reported in question 145 represent the product or byproduct of another energy source consumed on-site?** | | 65050 | Yes, product or byproduct  1. 2. No | | |
| ***Tire-Derived Fuel (TDF): Consumption, Shipments, and Storage Capacity*** | | | | | | |
| **147.** | **Enter the total quantity of tire-derived fuel consumed a** | 65060 | | Short Tons | | |
|  | **as a fuel at this establishment during 2018.** |
|  | Include all uses that were used for the heat, power, and electricity generation. |
|  |  |  | |  | | |

|  |
| --- |
| ***Pulping Black Liquor and Agricultural Waste*** |
| **148. Enter the total quantity purchased by and delivered to this establishment during 2018, regardless of when payment was made.**  010 **Pulping Black Liquor** (73) **Agricultural Waste (e.g., bagasse,   rice hulls, nut shells, orchard prunings)** (90)    Million Btu Million Btu |
| **149. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 148.**  020 **Pulping Black Liquor** (73) **Agricultural Waste** (90)  $Bil. Mil. Thou. Dol. $Bil. Mil. Thou. Dol.  U.S. Dollars U.S. Dollars |
| **150. Excluding the quantity reported in question 148, 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 151. Otherwise, skip to question 152.)  031 **Pulping Black Liquor** (73) **Agricultural Waste** (90)  Yes Yes  No No |
| **151. How much of this additional material was received from the other establishment?**  030  **Pulping Black Liquor** (73) **Agricultural Waste** (90)  Million Btu Million Btu |
| **152. Enter the quantity produced on-site during 2018.**  040 **Pulping Black Liquor** (73) **Agricultural Waste** (90)  Million Btu Million Btu |
| **153. Enter the total quantity consumed as a fuel at this establishment during 2018.** 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) **Agricultural Waste** (90)  Million Btu Million Btu |

|  |
| --- |
| ***Wood Residues and Byproducts from Mill Processing or Wood / Paper-Related Refuse*** |
| **154. Enter the total quantity purchased by and delivered to this establishment during 2018, regardless of when payment was made.**  010 **Wood Residues and Byproducts** (84) **Wood / Paper-Related Refuse (e.g., scrap,** (72) **from Mill Processing (e.g., sawdust, shavings, slabs, bark) wastepaper, wood pallets, packing materials)**  Million Btu Million Btu |
| **155. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 154.**  020 **Wood Residues and Byproducts** (84) **Wood / Paper-Related Refuse** (72) **from Mill Processing**  $Bil. Mil. Thou. Dol. $Bil. Mil. Thou. Dol.  U.S. Dollars U.S. Dollars |
| **156. Excluding the quantity reported in question 154, 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 157. Otherwise, skip to question 158.)  031 **Wood Residues and Byproducts** (84) **from Mill Processing Wood / Paper-Related Refuse** (72)Yes Yes  No No |
| **157. How much of this additional material was received from the other establishment?**  030 **Wood Residues and Byproducts** (84) **from Mill Processing Wood / Paper-Related Refuse** (72)  Million Btu Million Btu |
| **158. Enter the quantity of produced on-site during 2018.**  040 **Wood Residues and Byproducts** (84) **from Mill Processing Wood / Paper-Related Refuse** (72)  Million Btu Million Btu |
| **159. Enter the total quantity consumed as a fuel at this establishment during 2018.** 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** (84) **from Mill Processing Wood / Paper-Related Refuse** (72)  Million Btu Million Btu |

|  |
| --- |
| ***Steam and Industrial Hot Water*** |
| **160. Enter the total quantity purchased by and delivered to this establishment during 2018, regardless of when payment was made.**  061 **Steam** (11) **Industrial Hot Water** (12)  Million Btu Million Btu |
| **161. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 160.**  062  **Steam** (11)  **Industrial Hot Water** (12)  $Bil. Mil. Thou. Dol. $Bil. Mil. Thou. Dol.  U.S. Dollars U.S. Dollars |
| **162. During 2018, 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 163 then  skip to question 166.** 2. **All non-utility: Answer question 163 then  skip to question 166.** 3. **Both (**11015) |
| **163. 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) |
| **164. Enter the quantity of your total purchased steam that was purchased from a local utility during 2018.**  **Steam** (11010)    Million Btu |
| **165. Enter the total expenditures of your purchased steam that was paid to a local utility.**  **Steam** (11020)  $Bil. Mil. Thou. Dol.  U.S. Dollars |
| **166. Excluding the quantity reported in question 160, 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 167. Otherwise, skip to question 168.)  051 **Steam** (11) **Industrial Hot Water** (12)  Yes  **Yes**  No  **No** |

|  |  |
| --- | --- |
| ***Steam and Industrial Hot Water*** | |
| **167. How much of this additional material was received from the other establishment?**  050 **Steam** (11) **Industrial Hot Water** (12)  Million Btu Million Btu | |
| **168. Enter the quantity of steam generated on-site from each of the following:** | |
| **Steam** (11) **Industrial Hot Water** (12) | |
| * **Solar Power**  (081) * **Wind Power**  (082) * **Hydropower**  (083) * **Geothermal Power**   (084)Million Btu | * **Solar Power**  (081) * **Wind Power**  (082) * **Hydropower**  (083) * **Geothermal Power**   (084)Million Btu |
| **169. Enter the quantity sold or transferred out of this establishment during 2018. 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*** | | |
| **170. 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) | | |
| **171. Enter the total quantity purchased by and delivered to this establishment during 2018, regardless of when payment was made.**  010 Units (91) Units (93) Units (95) | | |
| **172. Enter total expenditures; including all applicable taxes and fees for the quantity reported in question 171.**  $Bil. Mil. Thou. Dol. $Bil. Mil. Thou. Dol. $Bil. Mil. Thou. Dol.  020 U.S. Dollars (91) U.S. Dollars (93) U.S. Dollars (95) | | |
| **173. Excluding the quantity reported in question 171, did this establishment receive any additional material from another establishment which was not purchased?** (If you answer “Yes” to any of the alternatives below, please answer question 174. Otherwise, skip to question 175.)  031  Yes (91) Yes (93) Yes (95)  No No No | | |
| **174. How much of this additional material was received from the other establishment?**    030 Units (91) Units (93) Units (95) | | |
| **175. Enter the quantity produced on-site during 2018.**  040 Units (91) Units (93) Units (95) | | |
| **176. Does the quantity reported in produced on-site represent the product or byproduct of another energy source consumed on-site?** | | |
| Yes, product or byproduct No (91050) | Yes, product or byproduct No (93050) | Yes, product or byproduct No (95050) |
| **177. Enter the total quantity consumed as a fuel at this establishment during 2018.**  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) | | |
| **178. Enter the total quantity consumed for any purpose other than fuel use at this establishment during 2018.**  **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 2018, 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 2018.

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.
* 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. | | | | | |
| **179.**  **180.**  **181.**  **182.**  **183.**  **184.**  **185.**  **186.** | Referring back to the Electricity section, question 7 page 8. Please enter the quantity of reported purchased electricity. | | |  | |
| Referring back to the Electricity section, question 14 page 8. Please enter the quantity of reported transferred electricity. | | |  | |
| **Add lines from question 179 and 180**  **(question 179 + question 180). Enter the total in the box.** | | | 10503 | |
| Referring back to the Natural Gas section, question 30 page 12. Please enter the quantity of reported natural gas consumed. Enter the figure in the box. | | | 30503 | |
| Referring back to the Coal section, question 75 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) | (30) | (46) |
| **Total Electricity Received**  **Purchases + transfers**  ↓ | **Total Natural Gas**  ↓ | **Total ALL Coal**  **(excluding Coal Coke**  **& Breeze)**  ↓ |
| **Enter the total quantity of the energy source (column) you reported as consumed during 2018.**  Copy this figure from the above worksheet questions. | 500 | Kilowatthours  **Enter figure from question 181.** | Units  **Enter figure from question 182.** | Short tons  **Enter figure from question 183.** |
| **Is the total quantity reported in question 184 greater than zero?** | 501 | Yes  1. **No: Skip to question 184, next column.** | 1. **Yes** 2. **No: Skip to question 184, next column.** | 1. **Yes** 2. **No: Skip to next section.** |
| **Enter the amount of the total quantity you reported in question 184 that could NOT have been replaced within 30 days by another energy source during 2018.**  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*** | | | | | |
| **187.**  **188.** |  | "Census Use Only" | (10) | (30) | (46) |
| **Total Electricity Received**  **Purchases + transfers**  ↓ | **Total Natural Gas**  ↓ | **Total ALL Coal**  **(excluding Coal Coke**  **& Breeze)**  ↓ |
| **Is the total quantity in question 186 equal to zero?** | 511 | Yes: Skip to question 189.  1. **No** | * **Yes: Skip to question 189.** * **No** | * **Yes: Skip to question 189.** * **No** |
| **Referring to the quantity shown in question 186, 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*** | | | | | |
| **189.** |  | "Census Use | (10) | (30) | (46) |
| Only" | **Total Electricity Received**  **Purchases + transfers**  ↓ | **Total Natural Gas**  ↓ | **Total ALL Coal**  **(excluding Coal Coke**  **& Breeze)**  ↓ |
|
| **Enter the results of subtracting the quantity reported in question 186 from the quantity reported in question 184.**  This represents the total quantity of energy consumption that could have been replaced in 30 days by one or more alternative energy sources in 2018.  Note: the sum of the quantities in questions 191 through 198 should equal or exceed this quantity. | 520 | Kilowatthours | Units | Short tons |
| **190.** | **Is the total quantity reported in question 189 greater than zero?** | 521 | Yes  1. **No: Skip to next column.** | 1. **Yes** 2. **No: Skip to next column.** | 1. **Yes** 2. **No: Skip to next section.** |
| **191.** | **Of the quantity switchable in question 189 what is the maximum amount that could have been replaced by electricity?** | 530 |  | Units | Short tons |
| **192.** | **Of the quantity reported as switchable in question 189 what is the maximum amount that could have been replaced by total coal, excluding coal coke and breeze?** | 670 | Kilowatthours | Units |  |
| **193.** | **Of the quantity reported as switchable in question 189 what is the maximum amount that could have been replaced by total coal coke and breeze, excluding coal?** | 690 | Kilowatthours | Units |  |
| **194.** | **Of the quantity reported as switchable in question 189 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*** | | | | | |
| **195.**  **196.**  **197.**  **198.** |  | "Census Use Only" | (10) | (30) | (46) |
| **Total Electricity Received**  **Transfers + purchase**  ↓ | **Total Natural Gas**  ↓ | **Total ALL Coal**  **(excluding Coal Coke**  **& Breeze)**  ↓ |
| **Of the quantity reported as switchable in question 189 what is the maximum amount that could have been replaced by total diesel fuel and distillate fuel oil?** | 590 | Kilowatthours | Units | Short tons |
| **Of the quantity reported as switchable in question 189 what is the maximum amount that could have been replaced by liquefied petroleum gas (LPG)?** | 610 | Kilowatthours | Units | Short tons |
| **Of the quantity reported as switchable in question 189 what is the maximum amount that could have been replaced by residual fuel oil?** | 630 | Kilowatthours | Units | Short tons |
| **Of the quantity reported as switchable in question 189 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 2018 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:   1. Percent of Price Difference = ((PC-PA)/PC) \* 100% 2. Where PC = Price per British thermal unit of current fuel 3. PA = Price per British thermal unit of alternative fuel | | | | | |
| **199.** |  | "Census Use Only"  622 | (10) | (30) | (46) |
| **Total Electricity Received**  **Transfers + purchase**  ↓ | **Total Natural Gas**  ↓ | **Total ALL Coal**  **(excluding Coal Coke**  **& Breeze)**  ↓ |
| **Check one for each energy source (column) reported** | | |
| **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 2018, 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 2018.

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.
* 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. | | | | | |
| **200.**  **201.**  **202.**  **203.**  **204.**  **205.**  **206.**  **207.** | Referring back to the LPG section, question 58 page 19. Please add the quantity of reported butane, ethane, and propane consumed. | | |  | |
| Referring back to the LPG section, question 66 page 20. Please add the quantity of reported mixtures and other LPG &NGL consumed. | | |  | |
| **Add lines from question 200 and 201**  **(question 200 + question 201). Enter the total in the box.** | | | 24503 | |
| Referring back to the Diesel and Distillate Fuel section, question 38 page 14. Please add the reported quantity of diesel and distillate fuel consumed. Enter the figure in the box. | | | 22503 | |
| Referring back to the Residual Fuel section, question 48 page 17. Please enter the reported quantity of residual fuel consumed. Enter the figure in the box. | | | 21503 | |
|  | "Census Use Only" | (24) | (22) | (21) |
| **Total LPG & NGL**  ↓ | **Total Diesel Fuel**  **& Distillate Fuel Oil**  ↓ | **Residual Fuel Oil**  ↓ |
| **Enter the total quantity of the energy source (column) you reported as consumed during 2018.**  Copy this figure from the above worksheet questions. | 500 | Gallons  **Enter figure from question 202.** | Barrels  **Enter figure from question 203.** | Barrels  **Enter figure from question 204.** |
| **Is the total quantity reported in question 205 greater than zero?** | 501 | Yes  1. **No: Skip to question 205, next column.** | 1. **Yes** 2. **No: Skip to question 205, next column.** | 1. **Yes** 2. **No: Skip to next section.** |
| **Enter the amount of the total quantity you reported in question 205 that could NOT have been replaced within 30 days by another energy source during 2018.**  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*** | | | | | |
| **208.**  **209.** |  | "Census Use Only" | (24) | (22) | (21) |
| **Total LPG & NGL**  ↓ | **Total Diesel Fuel**  **& Distillate Fuel Oil**  ↓ | **Residual Fuel Oil**  ↓ |
| **Is the total quantity in question 207 equal to zero?** | 511 | Yes: Skip to question 210.  1. **No** | * **Yes: Skip to question 210.** * **No** | 1. **Yes: Skip to question 210.** 2. **No** |
| **Referring to the quantity shown in question 207, 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*** | | | | | |
| **210.** |  | "Census Use | (24) | (22) | (21) |
| Only" | **Total LPG & NGL**  ↓ | **Total Diesel Fuel**  **& Distillate Fuel Oil**  ↓ | **Residual Fuel Oil**  ↓ |
|
| **Enter the results of subtracting the quantity reported in question 207 from the quantity reported in question 205.**  This represents the total quantity of energy consumption that could have been replaced in 30 days by one or more alternative energy sources in 2018.  Note: the sum of the quantities in question 212 through 219 should equal or exceed this quantity. | 520 | Gallons | Barrels | Barrels |
| **211.** | **Is the total quantity reported in question 210 greater than zero?** | 521 | Yes  1. **No: Skip to next column.** | 1. **Yes** 2. **No: Skip to next column.** | 1. **Yes** 2. **No: Skip to next section.** |
| **212.** | **Of the quantity switchable in question 210 what is the maximum amount that could have been replaced by electricity?** | 530 | Gallons | Barrels | Barrels |
| **213.** | **Of the quantity reported as switchable in question 210 what is the maximum amount that could have been replaced by total coal, excluding coal coke and breeze?** | 670 | Gallons | Barrels | Barrels |
| **214.** | **Of the quantity reported as switchable in question 210 what is the maximum amount that could have been replaced by total coal coke and breeze, excluding coal?** | 690 | Gallons | Barrels | Barrels |
| **215.** | **Of the quantity reported as switchable in question 210 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*** | | | | | |
| **216.**  **217.**  **218.**  **219.** |  | "Census Use Only" | (24) | (22) | (21) |
| **Total LPG & NGL**  ↓ | **Total Diesel Fuel**  **& Distillate Fuel Oil**  ↓ | **Residual Fuel Oil**  ↓ |
| **Of the quantity reported as switchable in question 210 what is the maximum amount that could have been replaced by total diesel fuel and distillate fuel oil?** | 590 | Gallons |  | Barrels |
| **Of the quantity reported as switchable in question 210 what is the maximum amount that could have been replaced by liquefied petroleum gas (LPG)?** | 610 |  | Barrels | Barrels |
| **Of the quantity reported as switchable in question 210 what is the maximum amount that could have been replaced by residual fuel oil?** | 630 | Gallons | Barrels |  |
| **Of the quantity reported as switchable in question 210 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 2018 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:   1. Percent of Price Difference = ((PC-PA)/PC) \* 100% 2. Where PC = Price per British thermal unit of current fuel 3. PA = Price per British thermal unit of alternative fuel | | | | | |
| **220.** |  | "Census Use Only"  622 | (24) | (22) | (21) |
| **Total LPG & NGL**  ↓ | **Total Diesel Fuel**  **& Distillate Fuel Oil**  ↓ | **Residual Fuel Oil**  ↓ |
| **Check one for each energy source (column) reported** | | |
| **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 221 through 225:**  **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, 2018 and December 31, 2018.**  **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) |
| **221. Energy audit or assessment** | 1  2 | Yes ➔  No (060) | 3 | 4 | 7 | 8 | 9 |
| **222. Technical assistance** (e.g., consultation, demonstrations, engineering design or analysis) | 1  2 | Yes ➔  No (070) | 3 | 4 | 7 | 8 | 9 |
| **223. Technical information** (e.g., software, reference material) | 1  2 | Yes ➔  No (072) | 3 | 4 | 7 | 8 | 9 |
| **224. Training** (e.g., workshops, seminars, presentations) | 1  2 | Yes ➔  No (074) | 3 | 4 | 7 | 8 | 9 |
| **225. Financial assistance** (e.g., loans, tax credits, rebates, subsidies) | 1  2 | Yes ➔  No (076) | 3 | 4 | 7 | 8 | 9 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ***Energy-Management Activities*** | | | | | | | |
| **For Questions 226 through 232:**  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, 2018 and December 31, 2018. 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 221. | | | | | | | |
| **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) |
| **226. Steam systems** (e.g., boilers, burners, insulation, piping, steam traps) | 1  2 | Yes ➔  No (120) | 3 | 4 | 7 | 8 | 9 |
| **227. Compressed air systems**  (e.g., compressor controls, drain traps, leak management, compressor or treatment equipment replacement)? | 1  2 | Yes ➔  No (450) | 3 | 4 | 7 | 8 | 9 |
| **228. Process heating systems** (e.g., insulation  repair, burner controls, furnace repair,  refractory replacement) | 1  2 | Yes ➔  No (140) | 3 | 4 | 7 | 8 | 9 |
| **229. Process cooling and refrigeration**  **systems** (e.g., insulation repair, use of free cooling, implementation of VSDs, refrigerant pressure balancing) | 1  2 | Yes ➔  No (160) | 3 | 4 | 7 | 8 | 9 |
| **230. Machine drive** (e.g., variable speed drives, ramp speeds, motors, pumps, fans) | 1  2 | Yes ➔  No (180) | 3 | 4 | 7 | 8 | 9 |
| **231. Facility HVAC system** (e.g., check filters, belts, duct maintenance, setback controls, equipment replacement and upgrade) | 1  2 | Yes ➔  No (200) | 3 | 4 | 7 | 8 | 9 |
| **232. Facility lighting** (e.g., occupancy controls,   daylight harvesting, efficient lamp upgrade) | 1  2 | Yes ➔  No (220) | 3 | 4 | 7 | 8 | 9 |

|  |  |  |  |
| --- | --- | --- | --- |
| ***Energy-Management Activities*** | | | |
| **For Questions 233 through 255:**  **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, 2018 and December 31, 2018.** | | | |
| **233.** | 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 2. Management from time to time has supported projects to improve use and consumption 3. Energy use and consumption are rarely a part of management decision making |  | (13501) |
| **234.** | 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 2. Better Buildings, Better Plants 3. ENERGY STAR 4. Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 5. None of the above |  | (13502) |
| **235.** | Is this establishment aware of ISO 50001?  (13503) | 1  2 | Yes  No, Skip to   question 237 |
| **236.** | Is this establishment implementing ISO 50001?  (13504) | 1  2 | Yes    No |
| **237.** | Is energy efficiency a part of this establishment’s purchasing decision?  (13506) | 1  2  3  4 | Yes, Always  Yes, Sometimes  No  Don’t Know |

|  |  |  |  |
| --- | --- | --- | --- |
| ***Energy-Management Activities*** | | | |
| **238.** | Does this establishment have an energy use baseline for comparing energy use in future years?  (13507) | 1  2  3 | Yes  No  Don’t Know |
| **239.** | Does this establishment set goals for improving energy use?    (13508) | 1  2  3 | Yes  No, Skip to question 242  Don’t Know, Skip to question 242 |
| **240.** | Are these goals quantitative (e.g., 10% improvement)?  (13509) | 1  2  3 | Yes  No  Don’t Know |
| **241.** | Which of the following policies influenced energy usage goals set for this establishment (check all that apply):  (13510) | 1. Legal requirement 2. Voluntary   programs 3. Corporate policy 4. Customer   requirements 5. Government incentives | |
| **242.** | Does management at this establishment assign a representative(s) to be responsible for energy management?  (13512) | 1  2  3 | Yes  No, Skip to question 244  Don’t Know, Skip to question 244 |
| **243.** | 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% | |
| **244.** | Does this establishment have submetering (metering beyond the main utility, revenue or supplier meter)?  (13514) | 1 Yes  2 No, Skip to question 246 | |  |
| **245**. | For which energy source(s) does this establishment use submetering?  (13515) | 1. Electric 2. Natural Gas 3. Other \_\_\_\_\_\_\_\_\_\_\_ | |

|  |  |  |  |
| --- | --- | --- | --- |
| ***Energy-Management Activities*** | | | |
| **246**. | Between January 1, 2018 and December 31, 2018, has the establishment conducted an audit on any energy system to identify potential energy saving opportunities?  (13518) | 1  2  3 | Yes  No, Skip to question 248  Don’t Know, Skip to question 248 |
| **247**. | Which systems (check all that apply)?  (13519) | 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 | |
| **248**. | 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*** | | | | | | |
| **249.** | | Does your establishment measure oxygen and carbon dioxide (or combustible)  levels in boiler and other fuel fired heating equipment flue gasses to “tune” the  burners? | | 1  2  3 | | Yes  No (13476)  Don’t Know |
| **250.** | | Does your establishment use the flue gases from fuel fired heating equipment to preheat combustion air, preheat charge equipment/material, or provide heat for  other processes in your establishment? | | 1  2  3 | | Yes  No (13477)  Don’t Know |
| **251.** | Does your establishment’s process heating system maintenance program include the following activities? | | |  |  | |
| a. | | Furnace inspections to seal openings and repair cracks and damaged insulation in furnace walls, doors, etc. | 1  2  3 | Yes  No (13478)  Don’t Know | |
| b. | | Cleaning of heat transfer surfaces to avoid build up of soot, scale, or other material. | 1  2  3 | Yes  No (13479)  Don’t Know | |
| c. | | Inspecting, calibrating, and adjusting temperature/pressure sensors,  controllers, valve operators, etc. | 1  2  3 | Yes  No (13480)  Don’t Know | |
| **252.** | | Do you keep an inventory of all motors in your establishment? | | 1  2  3 | | Yes  No (13481)  Don’t Know |
| **253.** | | Does your establishment have staff or equipment dedicated to detecting and  controlling compressed air system leaks? | | 1  2  3 | | Yes  No (13483)  Don’t Know |
| **254.** | | Does your establishment track the amount of energy spent in compressed  air systems? | | 1  2  3 | | Yes  No (13484)  Don’t Know |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Energy Technologies*** | | | | | | | | | |
| **255.** | | Were any of the following technologies in use at your establishment anytime during 2018? | | "Census Use Only" |  | | | |
|  | | **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  2  3 | | | Yes No  Don’t know |
|  | | **c.** | Waste heat recovery. | 14030 | 1  2  3 | | | Yes No  Don’t know |
|  | | **d.** | Adjustable-speed motors. | 14040 | 1  2  3 | | | Yes No  Don’t know |
|  | | **e.** | Oxy-fuel firing. | 14950 | 1  2  3 | | | Yes No  Don’t know |
| **256.** | 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  2  3 | Yes  No  Don’t Know | | |
| **257.** | 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  2  3 | Yes  No  Don’t Know | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Energy Technologies*** | | | | | |
| **258.** | Were any of the following technologies associated with cogeneration in use at your establishment anytime during 2018? | | "Census Use Only" |  | |
| **a.**  **b.**  **c.**  **d.**  **e.** | Steam turbines supplied by either conventional or fluidized bed boilers. | 14042 | 1  2  3 | Yes No  Don’t know |
| Conventional combustion turbines with heat recovery. | 14043 | 1  2  3 | Yes No  Don’t know |
| Combined-cycle combustion turbines. | 14044 | 1  2  3 | Yes No  Don’t know |
| Internal combustion engines with heat recovery. | 14045 | 1  2  3 | Yes No  Don’t know |
| Steam turbines supplied by heat recovered from high-temperatures processes. | 14046 | 1  2  3 | Yes No  Don’t know |
| ***Establishment Size*** | | |  |  | |
| **259.**  **260.** | **How many buildings were on this establishment site as of December 31, 2018?**  **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). | | "Census Use Only"  17010 | **Number of Buildings** | |
| **What was the approximate total enclosed square footage of the buildings located on this establishment site as of December 31, 2018?** | | 13010 | **Total square feet** | |
|  | | | | |

|  |  |
| --- | --- |
| ***Remarks*** | |
| **261.** | **Please use this space for any explanations that may be essential in understanding your reported data. If additional space is needed, attach a separate sheet, including the 10-digit Survey ID located on the mailing label on the front of this questionnaire.**  15990 |
| 15991 |
| 15992 |
| 15993 |
| 15994 |
| 15995 |
| 15996 |
| 15997 |
| 15998 |
| 15999 |
| 16000 |
| **Thank You – Your Response is Important**  Accurate and timely statistical information could not be produced without your continued cooperation  and goodwill. Thank you.  We estimate that it will take 9.2 hours to complete this form. This includes time to read instructions, develop or assemble materials, conduct tests, organize and review the information, and maintain and report the information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Energy Information Administration, Office of Survey Development and Statistical Integration, EI-21, Forrestal, 1000 Independence Ave., SW, Washington, DC 20585; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.  You may e-mail comments to Paperwork@census.gov; use "Paperwork Project 0607-0912" as the subject.  PLEASE MAKE A COPY OF THIS FORM FOR YOUR RECORDS AND RETURN THE ORIGINAL |