INDUSTRY

FINAL ENERGY CONSUMPTION QUESTIONNAIRE

January 2024

The annual questionnaire for final energy consumption in industry allows for data transmission of 2020 data onwards, and historical revisions from 2017 where applicable. Under the Regulation (EC) 1099/2008 on energy statistics, the data transmission deadline for the EU Member States, the European Economic Area and the candidate countries reporting to the European Commission - Eurostat is 31 March of Y+2 for reference year Y. Earlier data transmission with definitive data is welcome.

Please send your questionnaire to:

- European Commission, Eurostat, Energy Statistics
  (for Member States of the European Union, EU Candidate Countries and EFTA Countries)

Transmission details are provided below:

The completed questionnaire should be transmitted to Eurostat via the **Single Entry Point (SEP)** following the implementing procedures of **eDAMIS** (electronic Data files Administration and Management Information System), selecting the electronic data collection ENERGY_ESIND_A and indicating the submission year.

E-MAIL ADDRESS estat-energy-annual@ec.europa.eu

NOTE

For questions regarding the questionnaire, contact Ms Tena Gnjatovic
e-mail: tena.gnjatovic@eu.europa.eu Telephone: + 352 4301-30619

DEFINITIONS

1. Final energy consumption in the industry sector

The main goal of this questionnaire is to report fuel quantities consumed by the industrial sector in support of its primary activities.

For heat only or CHP units, only quantities of fuels consumed for the production of heat used by the entity itself (heat auto-consumed) are to be reported. Quantities of fuels consumed for the production of heat sold, and for the production of electricity, should be reported under the appropriate Transformation sector.

Energy consumption associated with agricultural economic activities is not included.

Energy used in all transport activities should be reported in the *Transport sector* and not in the *Industry sector*.

The total figures (total for each fuel or energy product, as well as for each relevant sector) should be equal to what is reported under *Final energy consumption* for *Industry* and for each sector in the respective annual questionnaires.

Mandatory reporting includes the divisions covered by Section B and C of the NACE [Mining and Quarrying (NACE 05-09) and Manufacturing industries (NACE 10-33), excluding Division 33 (Repair and installation of machinery and equipment) to be reported in the *Services sector*]. The data should only refer to the final energy consumption per se.

The following sectors are part of the mandatory annual reporting:

- Mining of metal ores [final energy consumption in NACE Div. 07; excludes energy use by NACE class 07.21 (Mining of uranium and thorium ores)]
- Other mining and quarrying [NACE Div. 08; excludes Extraction of peat 08.92]
- Mining support service activities [NACE Div. 09; excludes Support activities for petroleum and natural gas extraction 09.1]
- Manufacture of food products [NACE Div. 10]
- Manufacture of beverages [NACE Div. 11]
- Manufacture of tobacco products [NACE Div. 12]
- Textile and Leather [NACE Div. 13, 14 and 15; includes Manufacture of textiles, Manufacture of wearing apparel and Manufacture of leather and related products]
- Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials [NACE Div. 16]
- Manufacture of paper and paper products [NACE Div. 17]. **More detailed data** should be reported for the following products:
    - Pulp [class 17.11]
    - Other paper and paper products [other classes in Div. 17]
- Printing and reproduction of recorded media [NACE Div. 18]
- Manufacture of chemicals and chemical products [NACE Div. 20]
- Manufacture of basic pharmaceutical products and pharmaceutical preparations [NACE Div. 21]
- Manufacture of rubber and plastic products [NACE Div. 22]
- Manufacture of other non-metallic mineral products [NACE Div. 23] **More detailed data** should be reported for the following products
    - Cement (incl. Clinker) [group 23.5]
    - Glass [gr. 23.1]
    - Other non-metallic mineral products [other groups in Div. 23]

- Manufacture of basic metals [NACE Div. 24 – A: Iron and Steel: NACE Groups 24.1, 24.2, 24.3 and Classes 24.51 and 24.52]
- Manufacture of basic metals [NACE Div. 24 – B: Non-ferrous metals industries; NACE Group 24.4 and Classes 24.53 and 24.54] **More detailed data** should be reported for the following products:
    - Aluminium [cl. 24.42]
    - Other non-ferrous metals industries [other classes in gr. 24.4]
- Manufacture of fabricated metal products, except machinery and equipment [NACE Div. 25]
- Manufacture of computer, electronic and optical products [NACE Div. 26]
- Manufacture of electrical equipment [NACE Div. 27]
- Manufacture of machinery and equipment n.e.c. [NACE Div. 28]
- Transport Equipment: Industries related to the equipment used for transport [NACE Div. 29 and 30; includes Manufacture of motor vehicles, trailers and semi-trailers and Manufacture of other transport equipment]
- Manufacture of furniture [NACE Div. 31]
- Other manufacturing [NACE Div. 32]

The following NACE divisions are not part of the mandatory annual reporting and should be **reported on a voluntary basis**:

- *Mining of coal and lignite [NACE Div. 05]*
- *Extraction of crude petroleum and natural gas [NACE Div. 06]*
- *Manufacture of textiles [NACE Div. 13]*
- *Manufacture of wearing apparel [NACE Div. 14]*
- *Manufacture of leather and related products [NACE Div. 15]*
- *Manufacture of coke and refined petroleum products [NACE Div. 19]*
- *Manufacture of motor vehicles, trailers and semi-trailers [NACE Div. 29]*
- *Manufacture of other transport equipment [NACE Div. 30]*
- *Electricity, gas, steam and air conditioning supply [NACE Div. 35]*
- *Construction of buildings [NACE Div. 41]*
- *Civil Engineering [NACE Div. 42]*
- *Specialised construction activities [NACE Div. 43]*

The following NACE subdivisions are not part of the mandatory annual reporting and should be **reported on a voluntary basis**:

- *Mining of uranium and thorium ores [NACE cl. 07.21]*
- *Extraction of peat [NACE cl. 08.92]*
- *Support activities for petroleum and natural gas extraction [NACE gr. 09.1]*
- *Basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms [NACE gr. 20.1]*
- *Pesticides and other agrochemical products [NACE gr. 20.2]*
- *Paints, varnishes and similar coatings, printing ink and mastics [NACE gr. 20.3]*
- *Soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations [NACE gr. 20.4]*
- *Other chemical products (such as explosives, glues, essential oils etc) [NACE gr. 20.5]*
- *Man-made fibres [NACE gr. 20.6]*

2. End uses

Countries are encouraged to report the final energy consumption **by end use on a voluntary basis**. The following specific **definitions** apply for this **questionnaire**:

- ***Energy used for heat production.*** *It covers both the process and non-process use of energy for heating, including energy used for space heating when office buildings are heated with energy produced by the process or residual from it. It includes both the low and medium temperature heat (<=200°C), as well as the high temperature heat (>200°C)*
- ***Energy used for cold production (refrigeration).*** *It covers both the process and non-process use of energy for cold production, including energy used for cooling when office buildings are cooled with energy produced by the process or residual from it.*
- ***Electrochemical use of energy.*** *It covers all energy used to convert electrical energy to chemical energy and vice-versa. It includes fuel cells, photo electrochemicals, and energy storage systems such as batteries, super-capacitors or ultra-capacitors.*
- ***Mechanical energy use (engines).*** *It would cover all electricity or fuels used to power any engines (stationary or traction), be them related to the process or not.*
- ***Energy used for space heating and cooling (air conditioning) and water heating in office buildings.*** *If a complete split between process and non-process use of energy for heating and cold production is not possible (for instance if office buildings are heated or cooled with energy produced by the process or residual from it), this category would cover only the part of the energy used by the industrial branch which can be identified as non-process related (such as offices that are separated from the main industrial buildings, or that use separate sources of energy).*
- ***Energy used for lighting and electrical appliances (including ICT [Information and communications technology]-related).*** *Quantity of energy not directly and specifically used for purposes specified previously in the questionnaire (heating, cooling, electrochemical and mechanical processes). Electricity used for process-related purposes could be estimated based on the type of technology used, the capacity of the production tool, or any other relevant method.*
- ***Non-specified use of energy.*** *Any energy not used for any of the purposes described in the previous categories.*

3. Energy products to be reported

- **SOLID FOSSIL FUELS.** Solid fuels cover hard coal and derivatives *(anthracite, coking coal, other bituminous coal, coke oven coke, coal tar),* brown coal and derivatives *(lignite, sub-bituminous coal, BKB (brown coal briquettes)),* peat and derivatives *(peat, peat products)* and oil shale and oil sands.
    - **Anthracite.** High rank coal used for industrial applications. It has generally less than 10 % volatile matter and a high carbon content (about 90 % fixed carbon). Its gross calorific value is greater than 24 000 kJ/kg on an ash-free but moist basis.
    - **Coking coal.** Bituminous coal with a quality that allows the production of a coke (coke oven coke) suitable to support a blast furnace charge. Its gross calorific value is greater than 24 000 kJ/kg on an ash-free but moist basis.

- **Other bituminous coal.** Coal used for steam raising purposes and includes all bituminous coal that is not included under coking coal nor anthracite. It is characterised by higher volatile matter than anthracite (more than 10 %) and lower carbon content (less than 90 % fixed carbon). Its gross calorific value is greater than 24 000 kJ/kg on an ash-free but moist basis.
- **Sub-bituminous coal.** Refers to non-agglomerating coal with a gross calorific value between 20 000 kJ/kg and 24 000 kJ/kg containing more than 31 % volatile matter on a dry mineral matter free basis.
- **Lignite.** Lignite is a non-agglomerating coal with a gross calorific value less than 20 000 kJ/kg and greater than 31 % volatile matter on a dry mineral matter free basis.
- **Coke oven coke.** The solid product obtained from carbonisation of coal, principally coking coal, at high temperature, it is low in moisture and volatile matter. Coke oven coke is used mainly in the iron and steel industry acting as energy source and chemical agent. Coke breeze and foundry coke are to be reported in this category. Semi-coke (a solid product obtained from carbonisation of coal at low temperature) should be included in this category. Semi-coke is used as a heating fuel or by the transformation plant itself. This category also includes coke, coke breeze and semi-coke made from lignite.
- **Coal tar.** One of the results of the destructive distillation of bituminous coal. Coal tar is the liquid by-product of the distillation of coal to make coke in the coke oven process or is produced from brown coal ('low-temperature tar').
- **BKB.** BKB (Brown Coal Briquettes) is a composition fuel manufactured from lignite or sub-bituminous coal, produced by briquetting under high pressure without the addition of a binding agent, including dried lignite fines and dust.
- **Peat.** Peat is a combustible soft, porous or compressed, sedimentary deposit of plant origin with high water content (up to 90 % in the raw state), easily cut, of light to dark brown colour. Peat includes sod peat and milled peat. Peat used for non-energy purposes is not included.
- **Peat products.** Products such as peat briquettes derived directly or indirectly from sod peat and milled peat.
- **Oil shale and Oil sands.** Oil shale and oil sands are sedimentary rock that contains organic matter in the form of kerogen. Kerogen is a waxy hydrocarbon-rich material regarded as a precursor of petroleum. Oil shale may be burned directly or processed by heating to extract shale oil. Shale oil and other products derived from liquefaction should be reported as other hydrocarbons within petroleum products.
- Note: The sum of products listed above does not have to sum up to the total of the category *Solid fossil fuels* as other energy products are part of this category without being reported here *(Patent fuel, etc.)*.

- **OIL AND PETROLEUM PRODUCTS.** This category (blended with biofuels) covers mainly the following petroleum products: *Natural gas liquids, Refinery gas, Liquefied petroleum gas, Motor gasoline, Naphtha, Kerosenes, Gas/Diesel oil, Residual fuel oil, White spirit and SBP* and *Petroleum coke*.
  - **NGL.** Natural gas liquids (NGL) are liquid or liquefied hydrocarbons recovered from natural gas in separation facilities or gas processing plants. NGL include ethane, propane, butane (normal and iso-), (iso) pentane and pentanes plus (sometimes referred to as natural gasoline or plant condensate).

- **Refinery gas.** Refinery gas includes a mixture of non-condensed gases mainly consisting of hydrogen, methane, ethane and olefins obtained during distillation of crude oil or treatment of oil products (e.g. cracking) in refineries. This also includes gases which are returned from the petrochemical industry.
- **LPG.** Liquefied petroleum gases (LPG) are light paraffinic hydrocarbons derived from the refinery processes, crude oil stabilisation and natural gas processing plants. They consist mainly of propane (C3H8) and butane (C4H10) or a combination of the two. They could also include propylene, butylene, isobutene and isobutylene. LPG are normally liquefied under pressure for transportation and storage.
- **Motor gasoline.** Motor gasoline consists of a mixture of light hydrocarbons distilling at between 35 °C and 215 °C. It is used as a fuel for land-based spark ignition engines. Motor gasoline may include additives, oxygenates and octane enhancers, including lead compounds. Includes motor gasoline blending components (excluding additives/oxygenates), e.g. alkylates, isomerate, reformate, cracked gasoline destined for use as finished motor gasoline. Motor gasoline is a product aggregate equal to the sum of blended biogasoline (biogasoline in motor gasoline) and non-biogasoline.
- **Kerosene type jet fuel.** Distillate used for aviation turbine power units. It has the same distillation characteristics at between 150 °C and 300 °C (generally not above 250 °C) and flash point as kerosene. In addition, it has particular specifications (such as freezing point) which are established by the International Air Transport Association. Includes kerosene blending components. Kerosene type jet fuel is a product aggregate equal to the sum of blended bio jet kerosene (bio jet kerosene in kerosene type jet fuel) and non-bio jet kerosene.
- **Other kerosene.** Other kerosene comprises refined petroleum distillate and is used in sectors other than aircraft transport. It distils between 150°C and 300°C.
- **Naphtha.** Naphtha is a feedstock destined for either the petrochemical industry (e.g. ethylene manufacture or aromatics production) or for gasoline production by reforming or isomerisation within the refinery. Naphtha comprises material in the 30 °C and 210 °C distillation range or part of this range.
- **Gas/Diesel oil.** This category covers gas/diesel oil used in the Industrial sector. It mainly consits of heating gasoil. It is primarily a medium distillate distilling between 180°C and 380°C. Several grades are available depending on uses:
    - Road diesel: on-road diesel oil for diesel compression ignition (cars, trucks, etc.), usually of low sulphur content;
    - Heating and other gasoil: light heating oil for industrial uses;
    - Marine diesel and diesel used in rail traffic;
    - Other gas oil including heavy gas oils which distil between 380°C and 540°C and which are used as petrochemical feedstocks.

  This category includes blending components (e.i blended biodiesel).
- **Fuel oil.** All residual (heavy) fuel oils (including those obtained by blending). Kinematic viscosity is above 10 cSt at 80 °C. The flash point is always above

50 °C and density is always more than 0,90 kg/l. Fuel oil is a product aggregate equal to the sum of low sulphur fuel oil and high sulphur fuel oil.

- **White spirit and SBP.** White spirit and SBP are defined as refined distillate intermediates with a distillation in the naphtha/kerosene range. They include industrial spirit (also called SBP; light oils distilling at between 30 °C and 200 °C in 7 or 8 grades of industrial spirit, depending on the position of the cut in the distillation range — the grades are defined according to the temperature difference between the 5 % volume and 90 % volume distillation points, which is not more than 60 °C) and white spirits (industrial spirit with a flash point above 30 °C and the distillation range between 135 °C and 200 °C).
- **Petroleum coke.** Black solid by-product, obtained mainly by cracking and carbonising petroleum derived feedstock, vacuum bottoms, tar and pitches in processes such as delayed coking or fluid coking. It consists mainly of carbon (90 to 95 %) and has a low ash content. It is used as a feedstock in coke ovens for the steel industry, for heating purposes, for electrode manufacture and for production of chemicals. The two most important qualities are 'green coke' and 'calcinated coke'. Includes 'catalyst coke' deposited on the catalyst during refining processes; this coke is not recoverable and is usually burned as refinery fuel.
- **Other oil products.** All other products not specifically mentioned above, for example: tar and sulphur. Includes aromatics (e.g. BTX or benzene, toluene and xylene) and olefins (e.g. propylene) produced within refineries. To note: this category defines ""other products"" as in the Regulation (point 3.4.24 of Annex A) and as such does not include oil categories not covered in this particular questionnaire (bitumen, ethane, additives/oxygenates, etc.) See note below.
- Note: The sum of products listed above does not have to sum up to the total of the category *Oil and petroleum products* as other energy products are part of this category without being reported here (*Bitumen, Ethane*, etc.).

- **GAS.** This category covers the natural gas and manufactured gases *(Coke oven gas, Blast furnace gas, Gas works gas and Other recovered gases).*
  - **Natural gas.** *Natural gas* comprises gases, occurring in underground deposits, whether liquefied or gaseous, consisting mainly of methane. It includes both ""non-associated"" gas originating from fields producing hydrocarbons only in gaseous form, and ""associated"" gas produced in association with crude oil as well as methane recovered from coal mines (colliery gas) or from coal seams (coal seam gas). Biogases produced by anaerobic digestion of biomass (e.g. municipal or sewage gas) should be reported under Renewables and wastes.
  - **Manufactured gases.** Manufactured gases is a product aggregate equal to the sum of coke oven gas, blast furnace gas, gas works gas and other recovered gases.
    - **Coke oven gas.** Coke oven gas is obtained as a by-product from the manufacture of coke oven coke for the production of iron and steel. The quantity of fuel should be reported on a gross calorific value basis.
    - **Blast furnace gas.** Blast furnace gas is produced during the combustion of coke in blast furnaces in the iron and steel industry. It is recovered and used as a fuel partly within the plant and partly in other steel industry processes or in power stations equipped to burn it. The

quantity of recuperated fuel should be reported on a gross calorific value basis. In addition, off-gases from all iron-production reduction processes utilising air as the oxygen source (such as Direct reduced iron) should be reported here.

- **Gas works gas.** Covers all types of gases produced in public utility or private plants whose main purpose is the manufacture, transport and distribution of gas. It includes gas produced by carbonisation (including gas produced by coke ovens and transferred to gas works gas), by total gasification with or without enrichment with oil products (LPG, residual fuel oil, etc.), and by reforming and simple mixing of gases and/or air, including blending with natural gas which will be distributed and consumed through the natural gas grid. The amount of gas resulting from transfers of other coal gases to gas works gas should be reported as the production of the gas works gas.The quantity of recuperated fuel should be reported on a gross calorific value basis.
- **Other recovered gases.** Other recovered gases are by-products of the production of steel in an oxygen furnace, recovered on leaving the furnace. The gases are also known as converter gas, LD gas or BOS gas. The quantity of recuperated fuel should be reported on a gross calorific value basis. Also covers non-specified manufactured gases, such as combustible gases of solid carbonaceous origin recovered from manufacturing and chemical processes not elsewhere defined.

- Note: The sum of products listed above does not have to sum up to the total of the category *Gas*, as other energy products can be part of this category without being reported here.

- **RENEWABLES ENERGIES.** Renewable energies cover solar thermal energy, bio products, renewable municipal waste and geothermal energy.
  - **Solar thermal.** Heat from solar radiation (sunlight) exploited for useful energy purposes. By the way of example, this includes solar thermal-electric plants and active systems for the production of sanitary hot water or for space heating of buildings. This energy production is the heat available to the heat transfer medium, i.e. the incident solar energy less the optical and collectors losses. Solar energy captured by passive systems for heating, cooling and lighting of buildings is not to be included; only solar energy in relation to the active systems is to be included.
  - **Primary solid biofuels (excluding Charcoal).** Solid biofuels (excluding charcoal) or solid biomass cover organic, non-fossil material of biological origin which may be used as fuel for heat production or electricity generation. It does not include charcoal as charcoal has its own category.

    - *Fuelwood or firewood* (in log, brushwood, pellet or chip form) obtained from natural or managed forests or isolated trees. Included are wood residues used as fuel and in which the original composition of wood is retained; wood pellets are included. Charcoal and black liquor are excluded. The quantity of fuel used should be reported on a net calorific value basis.
    - *Wood pellets* are a cylindrical product which has been agglomerated from wood residues by compression.
    - *Black liquor* is reported as the energy from the alkaline-spent liquor obtained from the digesters during the production of sulphate or soda

pulp required for paper manufacture. The quantity of fuel used should be reported on a net calorific value basis.

- *Bagasse* is a fuel obtained from the fibre which remains after juice extraction in sugar cane processing. The quantity of fuel used should be reported on a net calorific value basis.

- *Animal waste* are defined as the energy from excreta of animals, meat and fish residues which when dry is used directly as a fuel. This excludes waste used in anaerobic fermentation plants. Fuel gases from these plants are included under biogases.

- *Other vegetal materials and residuals* are biofuels not specified elsewhere and including straw, vegetable husks, ground nut shells, pruning brushwood, olive pomace and other wastes arising from the maintenance, cropping and processing of plants.

- *The renewable portion of industrial waste* is the solid renewable portion of industrial waste combusted directly at specific installations for meaningful energy purposes (for example but not only, the portion of natural rubber in waste rubber tires or the portion of natural fibres in textile waste – from waste categories 07.3 and 07.6, respectively, as defined in Regulation (EC) No 2150/2002 on waste statistics). The quantity of fuel used should be reported on a net calorific value basis.

- **Charcoal.** Charcoal is a manufactured fuel from solid biofuels — the solid residue of the destructive distillation and pyrolysis of wood and other vegetal material.
- **Biogas.** Gases composed principally of methane and carbon dioxide produced by anaerobic fermentation of biomass, or by thermal processes.

  - *Landfill gas*: formed by the anaerobic digestion of landfill waste. The quantity of fuel used should be reported on a net calorific value basis.

  - *Sewage sludge gas*: produced from the anaerobic fermentation of sewage sludge. The quantity of fuel used should be reported on a net calorific value basis.

  - *Other biogases from anaerobic digestion*: such as biogases produced from the anaerobic fermentation of animal slurries and of waste in abattoirs, breweries and other agro-food industries. The quantity of fuel used should be reported on a net calorific value basis.

  - *Biogases from thermal processes*: biogases produced from thermal processes (by gasification or pyrolysis) of biomass.The quantity of fuel used should be reported on a net calorific value basis.

  Blended gas in the gas grid should be reported in “Natural gas”.
- **Renewable municipal waste.** Wastes produced by the industrial sector and resembles household waste. It is combusted directly at specific installations for meaningful energy purposes. The quantity of fuel used should be reported on a net calorific value basis. Waste incinerated without any energy recovery is excluded. This particular category includes the portion of municipal waste which is of biological origin.
- **Liquid biofuels (excluding Biodiesel).** This category includes all liquid fuels of natural origin (e.g. produced from biomass and/or the biodegradable fraction of waste) suitable to be blended with or to replace liquid fuels from fossil origin. The quantities of liquid biofuels reported in this category should include the quantities of pure biofuel that were not blended with fossil fuels. In

the particular case of imports and exports of liquid biofuels, only trade of quantities that have not been blended with transport fuels (i.e. in their pure form) is relevant; trade of liquid biofuels blended into transport fuels should be reported within the oil category of products. Only liquid biofuels used for energy purposes — combusted directly or blended with fossil fuels — are to be reported. This category does not include biodiesels as biodiesels have their own category. The fuels that are included in this category are the following:

- *Biogasoline* are liquid biofuels suitable to be blended with or to replace motor gasoline from fossil origin.
- *Bioethanol* is ethanol as part of biogasoline.
- *Bio jet kerosene* are liquid biofuels suitable to be blended with or to replace jet kerosene from fossil origin.
- *Other liquid biofuels* are liquid biofuels not included in any of the previous categories (not including biodiesels).

  - **Biodiesel.** Liquid biofuels suitable to be blended with or to replace gas/diesel oil from fossil origin. This category includes only pure biodiesel.
  - **Geothermal.** Energy available as heat emitted from within the earth's crust, usually in the form of hot water or steam; excluding ambient heat captured by ground source heat pumps. Geothermal energy production is the difference between the enthalpy of the fluid produced in the production borehole and that of the fluid eventually disposed of.
  - **Ambient heat.** Heat energy at a useful temperature level extracted (captured) by means of heat pumps that need electricity or other auxiliary energy to function. This heat energy can be stored in the ambient air, beneath the surface of solid earth or in surface water. The reported values shall be on the basis of the same methodology as used for the reporting heat energy captured by heat pumps pursuant to Directive 2009/28/EC; however, all heat pumps should be included regardless their performance level.
  - Note: The sum of products listed above does not have to sum up to the total of the category *Renewable Energies* as other energy products are part of this category without being reported here (*Hydro*, *Wind*, etc.).

- **NON-RENEWABLE WASTE.** Non renewable waste covers non-renewable industrial and municipal waste.
  - **Industrial waste (non-renewable).** Report wastes of industrial non-renewable origin combusted directly at specific installations for meaningful energy purposes. The quantity of fuel used should be reported on a net calorific value basis. Waste incinerated without any energy recovery is excluded. The renewable portion of industrial waste should be reported in the biofuels category that best describes them. If the renewable portion cannot be accurately reported this way, it should be part of "Primary solid biofuels".
  - **Non-renewable municipal waste.** Wastes produced by the industrial sector and resembles household waste. It is combusted directly at specific installations for meaningful energy purposes. The quantity of fuel used should be reported on a net calorific value basis. Waste incinerated without any energy recovery is excluded. This particular category includes the portion of municipal waste which is of non-biological origin.
- **DERIVED HEAT.** Derived heat covers the total heat production in heating plants and in combined heat and power plants. It includes the heat used by the auxiliaries of

the installations using hot fluid (space heating, liquid fuel heating, etc.) and the losses in the installation/network heat exchanges.

- **ELECTRICAL ENERGY.** Electricity covers electrical energy generated by all types of facilities (e.g. in nuclear, thermal, hydro, wind, photovoltaic or other plants) to be distributed to consumers through the grid or consumed locally.

4. Calorific values (CV)

***Net** Calorific values* (NCV) should be reported for the following:

- Anthracite
- Coking coal
- Other bituminous coal
- Sub-bituminous coal
- Lignite
- Coke oven coke
- Coal tar
- BKB
- Peat
- Peat products
- Oil shale and Oil sands
- NGL
- Refinery gas
- LPG
- Motor gasoline
- Kerosene type jet fuel
- Other kerosene
- Naphtha
- Gas/diesel oil
- Fuel oil
- White spirit and SBP
- Petroleum coke
- Other oil products
- Charcoal
- Biodiesel
- Liquid biofuels (excluding biodiesel)

For aggregates representing totals made up of several energy products (*Solid fossil fuels*; *Oil and petroleum products* and *Renewable energies*), **weighted average NCV** should be reported, based on the quantities consumed. If minor energy products which do not have their individual NCV or sheet are reported in the aggregate, their NCVs should be taken into account in the weighted average NCV of the aggregate.

5. Reporting units

- **GWh** Gigawatt-hour
- **kt** Kilotonne
- **MJ/t** Megajoule per tonne

- **TJ** Terajoule
- **GCV** Gross Calorific Value
- **NCV** Net Calorific Value

STRUCTURE OF THE QUESTIONNAIRE

1. New reporting template

The questionnaire uses a new template introduced in 2022. When opening this questionnaire, a *Cover* page and an *Instructions* page are visible. **Technical instructions on how to use the new questionnaire are included in the *Instructions* sheet of the questionnaire.**

The new reporting template adds the possibility to flag data for various states ('estimated', 'not available', etc.). **Countries are encouraged to get acquainted with the flags in the *Instructions* sheet and to use them accurately for their data.**

2. Tables

The Tables specific to the *Industry* questionnaire are the following:

- **Table 1:** a derived pivot table, summarising in a dynamic way the data reported in the time series (TS) sheets.
- **Calorific values:** a data input sheet for reporting the calorific values for the relevant energy products. For aggregates representing totals, weighted average calorific values should be reported. For your convenience, the calorific values representing totals are already calculated based on the reporting of each product, however, those formulas can be overwritten. (Please take into account that a country not able to report the consumption of the sub-fuels may report the total consumption per fuel)
- **TS:** the time series sheets include both the total of products ('all energy products'), the families of fuels (sum of several products, e.g. 'oil and petroleum products') and the detailed products (e.g. 'natural gas', 'fuel oil', 'coke oven coke', etc.), where data should be entered in specific reporting units (i.e. kt for oil products, GWh for electricity...).

3. TS sheets

Reporting countries will have to report the actual data on final energy consumption in the industry sector in the TS sheets. Aggregates are automatically calculated in every sheet and reported in the sheets for the families of fuels (such as 'oil and petroleum products'), serving as total aggregated energy products for a single family of fuels.

Reporting countries should enter the data for each energy product for which they report final energy consumption in industry. For each energy product, reporting countries can report data for each industrial sector or product.

In each TS sheet, the list of industrial sectors/products is split between two main blocks:

- The upper block covers the positions that are **mandatory** in the Energy Statistics Regulation.

- The lower block covers the positions (listed as 'Voluntary items') where only a **voluntary** reporting is planned for the time being.

In the upper block, most totals are industrial sub-sectors used in the main annual energy questionnaires. If an industrial subsector also appears in the lower block of the memo items, the data reported in the upper block is automatically filled in the lower block.

In the lower block, one finds a more detailed breakdown of the industrial sub-sectors where final energy is consumed, and a disaggregation by type of end use (for specific sub-sectors), based on the following structure:

- Energy used for heat production (Refers to energy used for heating purposes within an industrial production process)
    - Low and medium temperature heat [<=200°C]
    - High temperature heat [>200°C]
- Energy used for cold production [refrigeration]
- Electrochemical use of energy
- Mechanical energy use [engines]
- Energy used for space heating and cooling [air conditioning] buildings and for water heating in office buildings
- Energy used for lighting and electrical appliances
- Non-specified use of energy

The voluntary reporting also includes NACE Section F ('Construction'), part of the industry sector in energy statistics while being a distinct section (F) in the NACE.

Reporting countries should use the specific units for reporting the data in the time series. However, complementary to that, they should also fill in the sheet dedicated to the calorific values, for those energy products where relevant.

Once data is filled in for each relevant energy product, six more tables, referring to **total aggregated energy products belonging to the same family of fuels can be automatically calculated**:

- Solid fossil fuels
- Gas
    - Manufactured gases
- Oil and petroleum products
- Renewable energies
- Non-renewable wastes

Nonetheless, the formulas summing up the different energy products to calculate the quantities of total aggregated energy products can be overwritten to allow the reporting country to enter a different value. This is particularly useful if disaggregated data is not available for all energy products (especially the quantitatively less representative / important).

Important note: not all possible fuels are listed in this questionnaire; however the consumption of all fuels, including the fuels not specifically listed above, should be included in the reporting of the aggregate of the corresponding family of fuels. You are encouraged to report an individual fuel if it takes up a significant portion of the whole of your Industry sector.

For most of these total aggregated energy products, all data is provided in the same reporting unit for all their components (energy products). The only exception is renewables, which

have two different units (TJ and kt, depending on the product). In this case, the relevant calorific values are necessary to calculate the aggregate.

Finally, the final TS table, ‘All energy products’, cannot be modified, as it inputs the sum of all fuels reported in the questionnaire.

4. Table 1

With the data entered in the time series sheets and the calorific values provided, reporting countries can have a more general view of their reporting via **Table 1**. It shows **the final energy consumption of all products** in the energy units used in the time series for a selected reference year, with the total of ‘All energy products’ shown in TJ. You can also report calorific values for a given year in Table 1.

At the bottom of Table 1, the total consumption of each fuel in the industry sector is calculated.