NATURAL GAS

ANNUAL QUESTIONNAIRE

2017-2021

AND HISTORICAL REVISIONS

July 2019

Attached is the annual questionnaire for natural gas which provides for the submission of 2017-2021 data and historical revisions where applicable.

Countries reporting to the IEA are requested to complete the questionnaire at the latest by **30 September**. Earlier submissions are welcome.

Countries reporting to Eurostat are requested to complete the questionnaire by **30 November** (Regulation (EC) No 1099/2008 on energy statistics). Earlier submissions are welcome.

Please send your questionnaire to:

- International Energy Agency (IEA/OECD), Energy Data Centre
  (the IEA will forward the data to the United Nations Economic Commission for Europe in Geneva).
- European Commission, Eurostat, Energy Statistics
  (for EU Member States, European Economic Area countries, EU Candidate Countries and Potential Candidates, Energy Community Contracting Parties)
- United Nations Statistics Division, Energy Statistics Section

Transmission details are provided in the "Data communication procedures" section.

Data communication procedures

IEA

9 rue de la Fédération, 75739, Paris, Cedex 15, France

Please complete data for your country on the Energy Validation Outlet:

https://evo.iea.org

Alternatively send the completed questionnaire in a CSV or Excel file as an e-mail attachment. to gasaq@iea.org

For questions regarding the questionnaire, contact gasaq@iea.org

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Eurostat

European Commission – Eurostat, Unit E.5: Energy, L-2920 Luxembourg
(for EU Member States, European Economic Area countries, EU Candidate Countries and Potential Candidates, Energy Community Contracting Parties)

The completed **MS Excel** questionnaire should be transmitted via the Single Entry Point following the implementing procedures of EDAMIS (Electronic Data Files Administration And Management Information System): https://webgate.ec.europa.eu/edamis/ selecting the electronic data collection **ENERGY_NTGAS_A**.

Countries reporting to Eurostat are reminded of the *Revision Policy for Energy Statistics*. If you plan to revise historic data, please remember to transmit to Eurostat the *Revision pre-announcement form* as soon as possible.

All countries reporting to Eurostat are required to indicate "**years to load**". Countries can select either the most recent period(s), full time series or any combination of years. Eurostat will load into its database only the time periods marked.

For questions regarding the questionnaire, contact estat-energy-annual@ec.europa.eu. The fuel manager will get back to you.

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United Nations

United Nations Statistics Division, Energy Statistics Section
2 UN plaza, DC2-1414, New York, NY 10017, USA

The completed questionnaire should be transmitted by e-mail to:
Mr. Leonardo Souza, Chief, Energy Statistics Section, United Nations Statistics Division

E-MAIL ADDRESS energy_stat@un.org

FAX (1-212)-963-0623

REPORTING INSTRUCTIONS

Data should be reported for calendar years. If fiscal year data have to be used, please state this clearly and specify the period covered.

For consistency between administrations and to conform with computer software, the data reported in this questionnaire should be numerical with precision of up to 3 decimal places in the unit shown for each table.

A consistent reporting scheme should be used (of 0, 1, 2 or 3 decimal places), and communicated in the Remarks page in order to ensure understanding that 18.130 is 18.130, rather than 18.132, rounded to 18.13, thus displaying as 18.130.

Reporting should be consistent across all time series for any given year, avoiding any inconsistencies between flows or products or technologies.

The definitions and reporting conventions used in this questionnaire are the same as those used in the other annual questionnaires (Coal (Solid fossil fuels and manufactured gases), Oil, Renewables and wastes and Electricity and heat). Please ensure that data on fuel used for electricity and heat production reported in this questionnaire are consistent with those reported for the same categories in the Electricity and heat questionnaire.

Please report all data using Gross calorific values except when specifically mentioned that Net calorific values should be used.

Where data are not available, estimates should be given and identified as such in the Remarks page. Any data reported under Not elsewhere specified should be explained in the Remarks page.

UNITS

Data should be reported in **Terajoules (TJ) on the basis of Gross calorific values (GCV) and in million cubic metres (at 15^{o}C and 760 mm Hg, i.e. Standard Conditions)** except for Table 2, **Consumption by sector,** which is requested in TJ (GCV) only and for Tables 5 and 6, where further specific reporting units apply for certain data (see more explanations below).

Report all figures with up to 3 decimal numbers of million cubic metres and terajoules.

(Examples: 18, 436,156 cubic meters should be reported as "18.436 million cubic meters" ("18", "18.4", "18.44"); 1,728,830 cubic meters should be reported as "1.729 milion cubic meters " ("2", "1.7", "1.73"))

Please note that you should also report the average net calorific values (NCV) in Table 1. Figures for calorific values should be reported to the nearest whole number of kilojoules per cubic meter.

INTERNATIONAL STANDARD INDUSTRIAL CLASSIFICATION

In 2008, the United Nations and the European Commission have published in parallel their revised classification codes.

- United Nations:
  International Standard Industrial Classification of all Economic Activities – ISIC, Rev.4
- European Commission:
  Statistical classification of economic activities in the European Community – NACE, Rev.2

DEFINITION OF 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 in the Renewables annual questionnaire, while gas works gas and other manufactured gases production should be reported in the Coal annual questionnaire. Transfers of such production to the natural gas network will be reported as "Receipts from other sources".

GEOGRAPHICAL NOTES

Australia excludes the overseas territories;

Denmark excludes the Faroe Islands and Greenland;

France includes Monaco and also includes the French overseas departments Guadeloupe, Martinique, French Guiana, Réunion, and Mayotte;

Italy includes San Marino and the Vatican (Holy See);

Japan includes Okinawa;

The Netherlands excludes Aruba, Curaçao and the other former Netherland Antilles (Bonaire, Saba, Saint Eustatius and Sint Maarten);

Portugal includes the Azores and Madeira;

Spain includes the Canary Islands, the Balearic Islands, and Ceuta and Melilla;

United States includes the 50 states and the District of Columbia.

ELEMENTS NOT COVERED BY REGULATION (EC) No 1099/2008

The following elements are not covered by Regulation (EC) No 1099/2008 on energy statistics. Therefore, its transmission to Eurostat is not mandatory:

Table 1: Cushion gas closing stock level

Table 2a: Transformation sector - of which GTL technology

Table 2a: Energy sector - of which GTL technology

Table 2b: Transport sector – Road - of which biogas

Table 5b: Above/Below ground

Table 5b: No. of vaporisers

Table 5b: No. of tanks

Table 5c: Above/Below ground

Table 5c: No. of trains

Table 5c: No. of tanks

Table 6: all positions

INSTRUCTIONS FOR COMPLETING INDIVIDUAL TABLES IN THE QUESTIONNAIRE

TABLE 1
SUPPLY OF NATURAL GAS

1. Indigenous production

All dry marketable production within national boundaries, including offshore production. Production is measured after purification and extraction of NGLs and sulphur. Extraction losses and quantities reinjected, vented or flared are not included. Production includes quantities used within the natural gas industry; in gas extraction, pipeline systems and processing plants. Quantities vented and/or flared- on the production site or at the gas processing plant should be shown separately as memo items on table 1 (lines 17 and 18).

- Associated gas: natural gas produced in association with crude oil.
- Non-associated gas: natural gas originating from fields producing hydrocarbons only in gaseous form.
- Colliery and coal seam gas: methane produced at coal mines or from coal seams, piped to the surface and consumed at collieries or transmitted by pipeline to consumers.

2. Receipts from other sources:

Report supplies of fuel of which production is covered in other fuel energy balances, but which are blended with natural gas, and consumed as a blend. Further details of this component are to be provided as memo items:

Memo items: Receipts from other sources

- **Oil**: LPG blended with natural gas to upgrade the quality e.g. heat content
- **Coal**: manufactured gas blended with natural gas
- **Renewables**: biogas blended with natural gas

3. Imports and Exports

Amounts are regarded as imported or exported when they have crossed the political boundaries of the country, whether customs clearance has taken place or not. Data should be taken from any relevant sources, including declarations from importers and exporters, although these may not be identical with customs data. Imports of liquefied natural gas should cover only dry marketable equivalent, including amounts used as own consumption in the regasification process. The amounts used as own consumption during

regasification should be reported under Liquefaction/regasification in the Energy sector. Any gas liquids (e.g. LPG) extracted during the regasification process should be reported under inputs "Receipts from other sources" of "Other hydrocarbons" in the Annual oil questionnaire.

- Tables 3 and 4 concern imports of gas by ultimate origin for use in the country, and exports of domestically produced gas by ultimate destination.
- Imports and Exports reported in Table 1 should correspond to Total imports and Total exports on Tables 3 and 4 respectively.

4. International marine bunkers

Report the quantities of LNG or natural gas used by ships of all flags that are engaged in international navigation. The international navigation may take place at sea, on inland lakes and waterways, and in coastal waters. Exclude consumption by ships engaged in domestic navigation (to be reported under Not elsewhere specified – Transport). The domestic/international split should be determined on the basis of port of departure and port of arrival, and not by the flag or nationality of the ship. Exclude consumption by fishing vessels (see Other sectors - Fishing) and consumption by military forces (see Not elsewhere specified – Other sectors).

5. Stock changes

This is the change in stock level of recoverable gas; the difference between opening stock level at the first day of the year and closing stock level at the last day of the year of stocks held on national territory. A stock build is shown as a negative number and a stock draw as a positive number. Note that additions to and withdrawals from LNG storage should also be included here.

6. Inland consumption (Calculated)

This is defined as:

+ Indigenous production
+ Receipts from other sources
+ Imports (Balance)
- Exports (Balance)
- International marine bunkers
+ Stock changes

7. Statistical difference

This is equal to the difference between the calculated gross consumption (as defined above) and the observed gross consumption which corresponds to the Final energy and non-energy consumption plus the Transformation sector, the Energy sector and Distribution losses. National administrations sometimes obtain the data components of domestic availability from a variety of sources. Owing to differences in concepts, coverage, timing and definitions, observed and calculated inland consumption are often not identical. Reasons for any major statistical difference should be stated in the section provided for on the Remarks page.

8. Inland consumption (Observed)

This category represents deliveries of marketable gas to the inland market, including gas used by the gas industry for heating and operation of their equipment (i.e. consumption in gas extraction, in the pipeline system and in processing plants) and including losses in transport, distribution and storage on the national territory.

Note: Inland consumption as reported on Table 1 (cell 12B) should correspond to inland consumption of Table 2a (cell 1A). Please note the method by which this item is calculated: inland consumption of natural gas includes all ***own use.***

9. Recoverable gas

Total volume of gas in excess of cushion gas that is available for delivery during any input-output cycle.

10. Stock levels

Stock levels: this refers to recoverable natural gas stored in special storage facilities (depleted gas and/or oil field, aquifer, salt cavity, mixed caverns, or other) as well as liquefied natural gas storage. Cushion gas should be excluded.

Opening and Closing stock levels (national territory): Please report all natural gas stored on your national territory whether it belongs to your country or to another country.

Opening and Closing stock levels (held abroad): Please report all natural gas that is stored in a third country but belongs to your country. The remarks page should be used to indicate in which country these stocks are held. These quantities are not included in the stock levels reported in "Opening and Closing stock levels [National Territory]".

11. Gas vented

The volume of gas released into the air on the production site or at the gas processing plant.

12. Gas flared

The volume of gas burned in flares on the production site or at the gas processing plant.

13. Cushion gas

Total volume of gas required as a permanent inventory to maintain adequate underground storage reservoir pressures and deliverability rates throughout the output cycle.

Note for countries reporting to Eurostat: This element is not covered by Regulation (EC) No 1099/2008 on energy statistics. Therefore it is not mandatory to transmit it to Eurostat.

TABLE 2
CONSUMPTION BY SECTOR

I. TRANSFORMATION SECTOR:

For a proper appreciation of the reporting of ***natural gas*** used in the generation of electricity and heat, respondents are urged to read the notes relating to this sector in Annex 1.

1. Main activity producer electricity

Report quantities of natural gas used to produce electricity by all main activity producers. For countries reporting to Eurostat, reported quantities should be aggregated by type of unit and not by type of plant.

2. Autoproducer electricity

Report quantities of natural gas used to produce electricity by all autoproducers. For countries reporting to Eurostat, reported quantities should be aggregated by type of unit and not by type of plant. Otherwise, fuel used by plants containing at least one CHP unit is to be reported under *Autoproducer CHP*.

3. Main activity producer combined heat and power (CHP)

Report quantities of natural gas used to produce electricity and heat by all main activity producers. For countries reporting to Eurostat, reported quantities should be aggregated by type of unit and not by type of plant.

4. Autoproducer combined heat and power (CHP)

Report quantities of natural gas that correspond to the quantity of electricity produced and heat sold by all autoproducers. For countries reporting to Eurostat, reported quantities should be aggregated by type of unit and not by type of plant.

5. Main activity producer heat

Report quantities of natural gas used to produce heat by all main activity producers. For countries reporting to Eurostat, reported quantities should be aggregated by type of unit and not by type of plant.

6. Autoproducer heat

Report quantities of natural gas that correspond to the quantity of heat sold by all autoproducers. For countries reporting to Eurostat, reported quantities should be aggregated by type of unit and not by type of plant.

7. Gas works (and other conversion to gases)

Report quantities of natural gas used to produce gas at gas works and gasification plants. Fuel used for heating and operation of equipment should not be reported here, but reported as consumption in the Energy sector.

8. Coke ovens

Report quantities of natural gas used in coke ovens. Fuel used for heating and operation of equipment should not be reported here, but reported as consumption in the Energy sector.

9. Blast furnaces

Report quantities of natural gas used in blast furnaces. Natural gas used for heating and operation of equipment should not be reported here, but reported as consumption in the Energy sector. To avoid double counting, natural gas used in blast furnaces should not be reported in the Iron and steel sector.

10. Gas-to-liquids (GTL)

Report quantities of natural gas converted to liquids. The output of liquids from this transformation process should be reported under inputs as Other hydrocarbons, "Receipts from other sources" in the Annual oil questionnaire.

Of which GTL technology: refers to a process featuring reaction of methane with oxygen or steam to produce syngas (a mixture of hydrogen and carbon monoxide) followed by synthesis of liquid products (such as diesel and naphtha) from the syngas using Fischer-Tropsch catalytic synthesis. The process is similar to those used in coal-to-liquids. **Note for countries reporting to Eurostat:** This element is not covered by Regulation (EC) No 1099/2008 on energy statistics. Therefore it is not mandatory to transmit it to Eurostat.

Natural gas used as raw material for methanol production, should be reported as non-energy use in the chemical sector (Table 2b), except if the methanol is further used for energy purposes by refineries. In this exception case, then reporting is in the non-specified transformation relating only to the portion of gas transformed to methanol to be further used by refineries (Table 2a). In the oil questionnaire (Table 1), the output of this transformation is reported in additives/oxygenates under from other sources natural gas

11. Not elsewhere specified – Transformation

Report natural gas converted to liquids not included in the categories above. Natural gas used as raw material for methanol production, should be reported as non-energy use in the chemical sector (Table 2b), except if the methanol is further used for energy purposes by refineries. In this exception case, then reporting is in the non-specified transformation relating only to the portion of gas transformed to methanol to be further used by refineries (Table 2a). In the oil questionnaire (Table 1), the output of this transformation is reported in additives/oxygenates under from other sources natural gas.

II. ENERGY SECTOR

Report natural gas consumed by the Energy sector to support extraction (mining, oil and gas production) or plant operation of transformation activities. For example: natural gas consumed for heating, or

operating pumps or compressors. This Energy sector includes ISIC[1] divisions 05, 06, 19, 35, group 091, classes 0892 and 0721 (NACE[2] divisions 05, 06, 19, 35, group 09.1, classes 08.92 and 07.21).

Quantities of natural gas transformed into another energy form should be reported under the Transformation sector. Natural gas consumed in support of the operation of oil and gas transport pipelines should be reported in the Transport sector.

The Energy sector includes the manufacture of chemical materials for atomic fission and fusion and the products of these processes.

1. Coal mines

Report natural gas consumed as fuel to support the extraction and preparation of coal within the coal mining industry.

2. Oil and gas extraction

Report natural gas consumed as fuel in the oil and gas extraction process and in natural gas processing plants. Pipeline losses should be reported as Distribution losses.

3. Oil refineries

Report natural gas consumed as fuel at oil refineries.

4. Coke ovens

Report natural gas consumed as fuel at coking plants.

5. Blast furnaces

Report natural gas consumed in blast furnaces operations.

6. Gas works (and other conversion to gases)

Report natural gas consumed as fuel at gas works and coal gasification plants.

7. Own use in electricity, CHP and heat plants

Report natural gas consumed as fuel at electricity plants, combined heat and power plants, and heat plants, for activities supporting the generation of electricity and /or heat. This includes natural gas used for producing heat not sold but used instead by the electricity, CHP and/or heat plants themselves.

8. Liquefaction (LNG) / regasification

Report natural gas consumed as fuel at gas liquefaction and regasification plants.

9. Gas-to-liquids (GTL)

Report natural gas consumed as fuel at the Gas-to-liquids conversion plants.

Of which GTL technology: Report natural gas consumed as fuel at the GTL technology plants.

Note for countries reporting to Eurostat: This element is not covered by Regulation (EC) No 1099/2008 on energy statistics. Therefore it is not mandatory to transmit it to Eurostat.

10. Not elsewhere specified – Energy

Data should be reported here only as a last resort. Report energy activities not included elsewhere. If a final breakdown into the above sectors is not available, administrations should explain on the Remarks page the basis for any estimates. Natural gas used for operating the operating pumps or compressors of the distribution grid / network should be included here.

1. International Standard Industrial Classification of All Economic Activity, Series M, No. 4/Rev.4 United Nations, New York, 2008.
2. Statistical classification of the economic activities in the European Community (NACE Rev.2) EC-Eurostat 2008.

III. DISTRIBUTION LOSSES:

Please report losses due to transport, distribution and storage, as well as any other pipeline losses. Natural gas used to operate the pipelines of the transport network / system should be reported in the Transport sector. Please include quantities lost as "boil-off".

IV. TOTAL FINAL CONSUMPTION

Final consumption is the sum of consumption by the different end-use sectors (in the Transport, Industry and Other sectors). It includes both energy and non-energy use. It excludes deliveries for transformation and/or use by the energy producing industries, distribution losses and statistical differences.

Energy use: Report by sector all energy use of natural gas. Report amounts of energy consumed as fuel for petrochemical processes such as steam cracking, ammonia production and methanol production.

Non-energy use: Report by sector non-energy use of natural gas. This category includes use of natural gas as a raw material in processes such as cracking and reforming for the purpose of producing ethylene, propylene, butylene, aromatics, butadene and other non-energy hydrocarbon-based raw materials. Do not include amounts of energy consumed as fuel for petrochemical processes such as steam cracking, ammonia production and methanol production.

V. TRANSPORT SECTOR

Report natural gas used for all transport activity irrespective of the economic sector, in which the activity occurs (except for military fuel use, see Not elsewhere specified - Other). Fuels used for heating and lighting at railway and bus stations and airports should be reported in Commercial and public services.

1. Road

Report natural gas for use in road vehicles. Include natural gas used by agricultural vehicles on highways. Exclude natural gas consumed in stationary engines, which should be reported under the relevant economic sector.

of which biogas: Report amounts of biogas (blended with natural gas) included in road consumption.

Note for countries reporting to Eurostat: This element is not covered by Regulation (EC) No 1099/2008 on energy statistics. Therefore it is not mandatory to transmit it to Eurostat.

2. Pipeline transport

Report natural gas used as energy in the support and operation of pipelines transporting gases, liquids, slurries and other commodities, including the energy used for pump stations and maintenance of the pipeline. Please note that this only covers the natural gas used for operating the pipelines of the transport network. Natural gas used as energy for the pipeline distribution network of natural or manufactured gas, and heat (in the form of hot water or steam – ISIC 35) from the distributor to final users is excluded and should be reported in the Energy sector (Not elsewhere specified – Energy), while the gas used for the final distribution of water (ISIC 36) to households, industrial, commercial and other users should be included in the Commercial/public sector. Losses occurring during this transport between distributor and final users should be reported as Distribution losses.

3. Not elsewhere specified – Transport

Report natural gas used for transport activities not included elsewhere. Please state on the Remarks page what is included under this heading. This category currently includes natural gas used as fuel by ships for domestic navigation

VI. INDUSTRY SECTOR

Report natural gas consumed by the industrial undertaking in support of its primary activities.

Report quantities of natural gas consumed by autoproducers of heat and CHP to generate heat used by the plant itself. Quantities of natural gas consumed for the production of heat that is sold, and for the production of electricity, should be reported under the appropriate Transformation sector.

1. **Iron and steel**

   ISIC group 241 and class 2431 (NACE groups 24.1, 24.2, 24.3 and classes 24.51 and 24.52). To avoid double counting, natural gas used in blast furnaces should be reported in the Energy or Transformation sector, depending on its use.

2. **Chemical and petrochemical**

   ISIC and NACE divisions 20 and 21. Includes gas used as fuel (energy use) and feedstock (non-energy use) in the petrochemical industry.

3. **Non-ferrous metals**

   ISIC group 242 and class 2432 (NACE group 24.4 and classes 24.53, 24.54).

4. **Non-metallic minerals**

   ISIC and NACE division 23. Report glass, ceramic, cement and other building materials industries.

5. **Transport equipment**

   ISIC and NACE divisions 29 and 30.

6. **Machinery**

   ISIC and NACE divisions 25, 26, 27 and 28. Report fabricated metal products, machinery and equipment other than transport equipment.

7. **Mining (excluding energy producing industries) and quarrying**

   ISIC divisions 07, 08 and group 099 (NACE divisions 07, 08 and group 09.9).

8. **Food, beverages and tobacco**

   ISIC and NACE divisions 10, 11 and 12.

9. **Paper, pulp and printing**

   ISIC and NACE divisions 17 and 18. Includes reproduction of recorded media.

10. **Wood and wood products (other than pulp and paper)**

    ISIC and NACE division 16.

11. **Construction**

    ISIC and NACE divisions 41, 42 and 43.

12. **Textile and leather**

    ISIC and NACE divisions 13, 14 and 15.

13. **Not elsewhere specified – Industry**

    If your country's industrial classification of natural gas consumption does not correspond to the above ISIC (or NACE) codes, please estimate the breakdown by industry and include in Not elsewhere specified only consumption in sectors which is not covered above. ISIC and NACE divisions 22, 31 and 32.

VII. OTHER SECTORS

1. **Commercial and public services**

   ISIC and NACE divisions 33, 36-39, 45-47, 52, 53, 55, 56, 58-66, 68-75, 77-82, 84 (excluding ISIC class 8422, NACE class 84.22), 85-88, 90-96 and 99. Report natural gas consumed by businesses and offices in the public and private sectors.

Note: Natural gas used for heating and lighting at railway, bus stations, shipping piers and airports is to be reported in this category and should not be shown in the Transport sector.

2. Residential

ISIC and NACE divisions 97 and 98. Report natural gas consumed by all households including "households with employed persons".

3. Agriculture and forestry

ISIC and NACE divisions 01 and 02. Report natural gas consumed by users classified as agriculture, hunting and forestry.

4. Fishing

Report natural gas used for inland, coastal and deep-sea fishing. Fishing should cover fuels delivered to ships of all flags that have refueled in the country (include international fishing). Also include energy used in the fishing industry as specified in ISIC and NACE division 03.

5. Not elsewhere specified – Other

Report activities not included elsewhere. This category includes military fuel use for all mobile and stationary consumption (e.g. ships, aircraft, road and energy used in living quarters), regardless of whether the fuel delivered is for the military of that country or for the military of another country. Please specify on the Remarks page what is included under this heading.

TABLES 3 AND 4
IMPORTS BY ORIGIN AND EXPORTS BY DESTINATION

For geographical coverage of OECD countries, please refer to page 3. The following geographical definitions are used in Tables 3 and 4.

In general imports and exports should be reported on the following basis:

Imports: Imports of gas should be reported by ultimate origin (the country in which the natural gas was produced). Only imports destined for use in the country are considered.

Exports: Only report exports of domestically produced gas. Exports should be reported by ultimate destination (the country in which the natural gas will be consumed). Gas transiting your country should not be included.

The following particular points should also be noted:

- **Swap deals**: Where a country has agreed to swap gas with another country then both countries are to report the import and origin of the gas physically imported for use within the country. For example, country A has a contract with Algeria to import gas, but swaps this gas with country B for gas from Norway. Country A reports imports from Norway, country B reports the imports from Algeria.
- **Spot purchases**: Please report the ultimate origin and ultimate destination of spot purchase. In the case of purchases from an exchange point or hub, please report amounts imported from each origin on the basis of the average supply to the hub or exchange point.
- **Trade destined for a third country after a change of physical state**:
    - **Regasified LNG**: This particular case may be handled by the reporting country as follows: Imported LNG which is regasified in your country and subsequently exported to another country should be considered as an import of LNG into your country and as an export of gas to the country of destination.
    - **Liquefied gas**: The same concept applies for gas that is imported in gaseous form and is liquefied in your country for being exported as LNG. In this case, the gas should be considered as an import of gaseous gas into your country and as an export of LNG from your country (country of conversion of the gas in the form in which it is subsequently traded).

Please use data from any relevant source, including declarations of importers and exporters, although these may not be identical to customs data.

Only in cases where it is impossible to identify or estimate (from physical flows for example) the ultimate origin and/or destination should the non-specified regional aggregates (Other Africa, Other Asia Oceania, etc.) or the category "Not elsewhere specified" be used.

TABLE 5
NATURAL GAS STORAGE CAPACITY

Gas security is becoming an increasingly important energy policy issue in gas consuming countries. For this reason, it is important that the gas storage capacity and the peak output is known. Please complete this table with data at end-2017-2021 (if data are not available for this period, please report the latest available data and indicate the relevant period). This table should be completed with details of both gaseous natural gas storage and liquefied natural gas storage. From the 2018 edition of the natural gas JAQ, the storage data for gaseous gas, import LNG terminals and export LNG terminals is split into three different tables. If an LNG terminal is technically suitable for both imports and exports, then it should be reported in both tables 5b and 5c, with the respective technical characteristics inserted in each of the two tables (split between import dedicated facilities of the terminal in 5b and export dedicated facilities in 5c). In case such split is not possible or not available (same facilities used indistinctly for both import and export activities), please ensure that the capacities are not double-counted (e.g. for the storage capacity, you can report half of the capacity in table 5b and the other half in table 5c). Please ensure that storage capacity not directly related to either imports or export facilities are only counted in one of the tables.

I. GASEOUS GAS STORAGE CAPACITY (Table 5a)

In the first column, **Name**, please indicate the location or site of the storage.

In the second column please indicate which **Type** of storage the gas is held in. There are three main types of storage in use:

- **Depleted oil and gas fields** are naturally capable of containing the gas and have existing installations for the injection and withdrawal of the gas.
- **Aquifers** may be used as storage reservoirs provided that they have suitable geological characteristics. The porous sedimentary layer must be overlaid by an impermeable cap rock.
- **Salt cavities** may exist naturally or be formed by injecting water and removing the brine. They are generally smaller than the reservoirs provided by depleted oil and gas fields or aquifers but offer very good withdrawal rates and are well suited for peak-shaving requirements.

In the third column please indicate the **Storage capacity** of the storage facility in million cubic metres (Million m^3).

- **Storage capacity**: total gas storage capacity minus cushion gas.
- **Cushion gas**: total volume of gas required as a permanent inventory to maintain adequate underground storage reservoir pressures and deliverability rates throughout the output cycle.

The fourth column should show the **peak output** in million cubic metres per day (Million m^3/day).

- **Peak output**: the maximum rate at which gas can be withdrawn from storage. This corresponds to the maximum withdrawal capacity.

II. LNG IMPORT TERMINALS (Table 5b)

In the first column, **Name,** please indicate the location of the LNG import terminal.

Please indicate in the second column whether the storage is **above**, **in** or **below** ground.

> **Note for countries reporting to Eurostat:** This element is not covered by Regulation (EC) No 1099/2008 on energy statistics. Therefore it is not mandatory to transmit it to Eurostat.

In the third column please indicate the **Regasification capacity**. This is the maximum rate (billion m^3/year) at which gas can be regasified (name plate capacity).

In the fourth column, please indicate the **number of vaporisers** in the LNG terminal.

> **Note for countries reporting to Eurostat:** This element is not covered by Regulation (EC) No 1099/2008 on energy statistics. Therefore it is not mandatory to transmit it to Eurostat.

Please report the **Storage capacity** in column five. This volume should be reported in million cubic meters of gaseous gas equivalent, not the volume of LNG that can be stored in the facility. Please keep in mind that information on LNG storage facilities should no longer be reported in table 5a.

In the sixth column, please include the **number of tanks** for LNG storage in the facility.

> **Note for countries reporting to Eurostat:** This element is not covered by Regulation (EC) No 1099/2008 on energy statistics. Therefore it is not mandatory to transmit it to Eurostat.

In the last column, please report the **Peak output flow capacity** in million cubic metres per day (Million m^3/day) of gas that can be injected in gaseous form into the grid from the LNG terminal. This corresponds to the maximum withdrawal capacity of the LNG storage.

III. LNG EXPORT TERMINALS (Table 5c)

In the first column, **Name,** please indicate the location of the LNG export terminal.

Please indicate in the second column whether the storage is **above**, **in** or **below** ground.

> **Note for countries reporting to Eurostat:** This element is not covered by Regulation (EC) No 1099/2008 on energy statistics. Therefore it is not mandatory to transmit it to Eurostat.

In the third column please indicate the **Liquefaction capacity**. This is the maximum rate (billion m^3/year) at which gas in gaseous form can be liquefied (name plate capacity).

In the fourth column, please indicate the **number of trains** in the LNG terminal.

> **Note for countries reporting to Eurostat:** This element is not covered by Regulation (EC) No 1099/2008 on energy statistics. Therefore it is not mandatory to transmit it to Eurostat.

Please report the **Storage capacity** in column five. This volume should be reported in million cubic meters of gaseous gas equivalent, not the volume of LNG that can be stored in the facility. Please keep in mind that information on LNG storage facilities should no longer be reported in table 5a.

In the sixth column, please include the **number of tanks** to store LNG in the facility.

> **Note for countries reporting to Eurostat:** This element is not covered by Regulation (EC) No 1099/2008 on energy statistics. Therefore it is not mandatory to transmit it to Eurostat.

In the last column, please report the **Peak output flow capacity** in million cubic metres per day (Million m^3/day) of gaseous gas that can be extracted from the grid into the LNG terminal. This corresponds to the maximum injection capacity of the LNG storage.

TABLE 6
NETWORK CAPACITY

In the first column, Border point, please indicate the name of the borderpoint as it is officially defined by the reporting country.

In the second column, please indicate the bordering country for the specific border point.

In the third column, please indicate the Type of the borderpoint as per the specification found below:

Interconnector Types:

- **Entry:** Refers to interconnectors which are used exclusively for physical imports, namely where the gas can flow only into the reporting country.
- **Exit:** Refers to interconnectors which are used exclusively for physical exports, namely where the gas can flow only out of the reporting country.
- **Entry + virtual reverse flow:** Refers to interconnectors which are used exclusively for physical imports, but the TSO offers virtual capacity for outflows from the reporting country.
- **Exit + virtual reverse flow:** Refers to interconnectors which are used exclusively for physical exports, but the TSO offers virtual capacity for inflows to the reporting country.
- **Bi-directional:** Refers to interconnectors which can be used both for physical imports and exports of gas.

In the fourth column, please indicate the maximum physical capacity of gas flow in million cubic metres per day (Million m^3/day) for the primary/only direction of flow.

In the fifth column, please indicate the maximum physical capacity of reverse gas flow in million cubic metres per day (Million m^3/day). If the interconnector is unidirectional, please report the reverse capacity as 0.

Note for countries reporting to Eurostat: No element from Table 6 is covered by Regulation (EC) No 1099/2008 on energy statistics. Therefore it is not mandatory to transmit data to be reported in Table 6 to Eurostat.

ANNEX1: DEFINITIONS FOR ELECTRICITY AND HEAT

The questionnaires seek information on the fuel requirements for, and the generation of electricity and heat according to producer and generating plant types.

Types of producer:

Producers are classified according to the purpose of production:

- ***Main activity producer*** undertakings generate electricity and/or heat for sale to third parties, *as their primary activity*. They may be privately or publicly owned. Note that the sale does not need to take place through the public grid.
- ***Autoproducer*** undertakings generate electricity and/or heat, wholly or partly for their own use as an activity which supports their primary activity. They may be privately or publicly owned.

Types of Units:

Units are classified according to their technical design:

- ***Electricity unit*** refers to a unit designed to produce/generate electricity only.
- ***Combined heat and power (CHP) unit*** refers to a unit which is designed to produce/generate both heat and electricity simultaneously. It is sometimes referred to as a co-generation unit.
- ***Heat unit*** refers to a unit which is designed to produce/generate only heat.

Types of Plants:

Plant is defined as a set of units. Plants are classified according to the combination of units:

- ***Electricity plant*** refers to a plant which is composed of electricity units only.
- ***Heat plant*** refers to a plant which is composed of heats units only.
- ***Combined heat and power (CHP) plant*** refers to all other combinations of units. For example, it can be a plant that has one CHP unit. Another example of CHP plant is a combination of one electricity unit and one heat unit.

Reporting conventions for Electricity and Heat:

It should be noted that:

- ***Electricity*** production reported for *Autoproducers* should be the total quantity of electricity generated.
- All ***heat*** production from *Main activity producers* should be reported. However, heat production reported for *Autoproducers* should comprise only the heat sold to third parties. Heat consumed by autoproducers should not be reported as heat production and heat consumption.
- Report in the transformation sector only those quantities of fuels used to generate the amounts of electricity and heat reported in the questionnaire. Thus the quantities of fuel consumed for the production of heat by autoproducers which is not sold will remain in the figures for the final consumption of fuels by the relevant sector of economic activity.

The reporting requirements for *transformation sector* activities can be summarised schematically as follows:

<table>
<tr><th></th><th>Electricity</th><th>CHP</th><th>Heat</th></tr>
<tr><td>Main activity producer</td><td rowspan="2">Report all production and all fuel used</td><td>Report all electricity and heat produced and all fuel used</td><td>Report all heat produced and all fuel used</td></tr>
<tr><td>Autoproducer</td><td>Report all electricity produced and only heat sold and corresponding fuel used</td><td>Report only heat sold and corresponding fuel used</td></tr>
</table>

In this questionnaire, the term **Combustible fuels** refers to fuels that are capable of igniting or burning, i.e. reacting with oxygen to produce a significant rise in temperature.

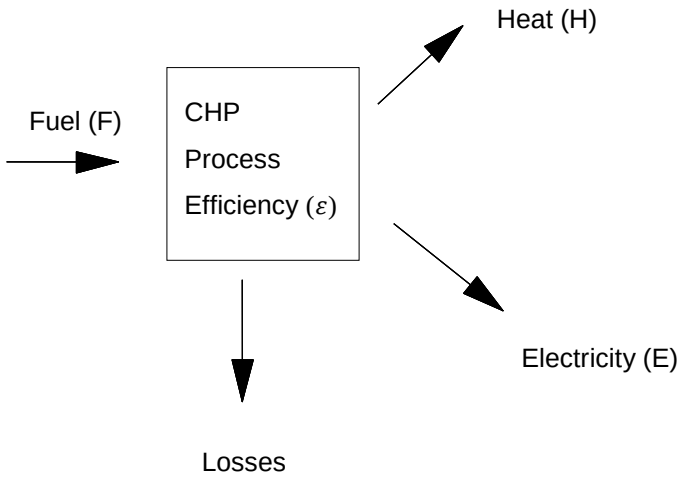
Reporting to **Eurostat** on the basis of **units** is **mandatory**; please see Regulation (EC) No 1099/2008 on energy statistics. To the maximum extent feasible, consistency of reported figures should be ensured with data reported in the *CHP questionnaire* to Eurostat (Directive 2012/27/EU on energy efficiency). Please see the reporting instructions for Eurostat's CHP questionnaire.

Reporting to the **IEA**: If possible, fuel inputs and electricity/heat outputs should be reported on a unit basis rather than on a plant basis. However, if data are not available on a unit basis, the convention for defining a plant noted above should be adopted.

METHODOLOGY FOR APPORTIONING FUEL INPUT IN A CHP PLANT/UNIT

In cases where national administrations have not adopted a more accurate methodology for this purpose, the following approach is proposed where the fuel input is divided between electricity and heat in proportion to their shares of the CHP useful energy output.

In CHP units the relationship between the fuel input and the output electricity and heat, without regard to the type of thermodynamic process, may be modelled simply in the diagram below.



The following relationship defining overall efficiency (ε) is:

$$\varepsilon = (H + E) / F$$

The definition given proposes that the imputed fuel use for electricity, F_e , and (as a consequence) that for heat, F_h , are:

$$F_e = F - H / \varepsilon = F (E / (E + H))$$
$$F_h = F - E / \varepsilon = F (H / (E + H))$$

The formula should be used only where national administrations have not already adopted a methodology for the purpose of reporting CHP on a unit basis. Please note that reporting to Eurostat on the basis of units is mandatory. Please see the reporting instructions for Eurostat's CHP questionnaire.

ANNEX 2: LIST OF ABBREVIATIONS

CHP	combined heat and power (plant / unit)
CNG	compressed natural gas
EU	European Union
GCV	gross calorific value
GTL	gas-to-liquids
IEA	International Energy Agency
ISIC	International Standard Industrial Classification
kJ/m3	kilojoule per cubic metre
LNG	liquefied natural gas
LPG	liquefied petroleum gas; refers to propane, butane and their isomers, which are gases at atmospheric pressure and normal temperature
m3	cubic metres
mm Hg	millimetres of mercury
NACE	Statistical Classification of Economic Activities in the European Community
NCV	net calorific value
NGL	natural gas liquids
OECD	Organisation for Economic Co-Operation and Development
TJ	terajoules
UN	United Nations
UNSD	United Nations Statistics Division

ANNEX 3: TABLE RELATIONS IN THE NATURAL GAS QUESTIONNAIRE