

TRANSPORT
FINAL ENERGY CONSUMPTION
QUESTIONNAIRE

March 2024

The annual questionnaire for final energy consumption in transport allows for data transmission of 2022 data onwards, and historical revisions from 2020 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_ESTRA_A and indicating the submission year.

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

NOTE

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DEFINITIONS

1. Final energy consumption in the transport sector

The main goal of this questionnaire is to facilitate the reporting of fuel quantities consumed by the transport sector, aligning with the Regulation (EC) 1099/2008. The focus is on providing a comprehensive overview of energy consumption associated with various transport activities.

Energy used in all transport activities should be reported irrespective of the NACE category in which activity occurs. Fuels used for heating and lighting at railway stations, bus stations, shipping piers and airports should be reported under the *Services sector* and not in the Transport sector.

Vehicle categories N2, N3, M2 and M3 are defined accordingly to the European classification for vehicle category, based on UNECE standards.

The total figures (total for each fuel and transport mode) should be equal to what is reported under Final energy consumption for transport in the respective annual questionnaires, except for “International aviation” which should be equal to its value in the line with the same name in the supply part of the respective annual questionnaires.

2. Flows to be reported

2.1. Mandatory reporting

2.1.1. Total Road:

Aggregate category covering all road transportation.

Quantities of fuels used in road vehicles, including fuel used by agricultural vehicles on highways and lubricants for use in road vehicles.

Excludes energy used in stationary engines, for non-highway use in tractors, military use in road vehicles, bitumen used in road surfacing and energy used in engines at construction sites.

a. Heavy-duty Vehicles Carrying Freight:

Quantities of fuels used in trucks over 3,5 t load capacity, carrying freight (categories N2 and N3 vehicles according to the European classification for vehicle category, based on UNECE standards).

Motor vehicles with at least four wheels designed and constructed for the carriage of goods with a maximum mass exceeding 3.5 metric tons.

b. Collective Transport:

Quantities of fuels used in large vehicles, carrying passengers, such as buses, coaches, large vans, etc. (categories M2 and M3 vehicles according to the European classification for vehicle category, based on UNECE standards).

Motor vehicles designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat.

c. Cars and Vans:

Quantities of fuels used in small vehicles, such as cars and vans, carrying passengers or freight (categories M1 and N1 vehicles according to the European classification for vehicle category, based on UNECE standards).

Motor vehicles with at least four wheels designed and constructed for the carriage of goods or passengers with a maximum mass not exceeding 3.5 metric tons.

d. Other road transport:

Quantities of fuels used for transport activities not included elsewhere. Includes fuels used by airlines for their road vehicles and fuels used in ports for ships' unloaders, various types of cranes. If used, what is included under this heading should be explained in the report.

2.1.2. Total Rail:

Quantities of fuels used by rail traffic, including industrial railways and rail transport as part of urban or suburban transport systems (for example trains, trams, metros). Excluding fuels used for heating and lighting at railway stations and metro stations.

a. High-speed Rail:

Energy used by trains running on lines where speed can exceed 200 kilometres per hour.

b. Conventional Rail:

Energy used by rail traffic, excluding high-speed rail and metro and tram.

i. Conventional Rail - Passenger Transport:

Energy used by rail for the transport of passengers, meaning for the movement of passengers using railway vehicles between the place of embarkation and the place of disembarkation. passenger is any person excluding members of the train crew, who makes a trip by rail.

ii. Conventional Rail - Freight Transport:

Energy used by rail for the transport of goods, meaning for the movement of goods using railway vehicles between the place of loading and the place of unloading.

c. Metro and Tram:

Energy used by metro, tram, light rail and other elevated or underground urban railway systems.

2.1.3. Calorific Values:

The calorific values of reported fuels used in the specified transport categories.

2.2. Voluntary reporting

2.2.1. Cars and Vans:

a. Cars and Vans - Carrying Passengers (M1):

Passenger cars and vans specifically designed for carrying passengers.

Motor vehicles with at least four wheels designed and constructed for the carriage of passengers.

b. Cars and Vans - Carrying Freight (N1):

Vans and other M1 category vehicles designed for transporting freight.

Motor vehicles with at least four wheels designed and constructed for the carriage of goods with a maximum mass not exceeding 3.5 metric tons.

2.2.2. Other Road Transport:

a. Other Road Transport - 2-wheeled Vehicles:

Two-wheeled vehicles, including motorcycles and scooters.

2.2.3. Total Road (Fuels Used in the Country's Territory):

This category aligns with the same division as road transport in the mandatory section but focuses specifically on reporting fuel consumed domestically. Fuels sold within the country's territory but utilized for transport activities abroad should not be reported under this category.

2.2.4. Total Aviation:

Aggregate category covering all aviation activities.

Includes fuel used for purposes other than flying, e.g. the bench testing of engines, supply of electricity to planes at the airport. The domestic/international split should be determined based on departure and landing locations and not on the nationality of the airline. This includes journeys of considerable length between two airports in a country with overseas territories. Excludes fuels used by airlines for their road vehicles and military use of aviation.

2.2.5. Domestic Aviation:

Quantities of fuels delivered to aircraft for domestic aviation. Departure and landing locations are on the country territories.

a. Domestic Aviation - Passenger Transport:

Air transport specifically designed for passenger travel within the country.

b. Domestic Aviation - Freight Transport:

Air transport specifically designed for the transportation of freight within the country.

2.2.6. International Aviation:

Quantities of fuels delivered to aircraft for international aviation. Departure or landing location is not on the country territories.

a. International Aviation - Passenger Transport:

Air transport specifically designed for passenger travel internationally.

b. International Aviation - Freight Transport:

Air transport specifically designed for the transportation of freight internationally.

2.2.7. Total Domestic Navigation:

Aggregate category covering all domestic navigation activities.

This category includes shore side electricity supply to ships.

Report fuels delivered to vessels of all flags not engaged in international navigation. Domestic navigation is determined on the basis of port of departure and port of arrival and not by the flag or nationality of the ship. Note that this may include journeys of considerable length between two ports in a country (e.g. San Francisco to Honolulu).

a. Maritime:

Maritime navigation activities, including both passenger and freight transport.

i. Maritime - Passenger Transport:

Maritime transport specifically designed for passenger travel.

ii. Maritime - Freight Transport:

Maritime transport specifically designed for the transportation of freight.

b. Inland Waterways:

Navigation activities on inland waterways.

i. Inland Waterways - Passenger Transport:

Transport on inland waterways specifically designed for passenger travel.

ii. Inland Waterways - Freight Transport:

Transport on inland waterways specifically designed for the transportation of freight.

Ensure that the total figures for each fuel or energy product align with the overall reporting under Final Energy Consumption for the Transport sector, except for International aviation which is reported in the supply.

3. Energy products to be reported

The transport sector reporting encompasses a variety of energy products, each playing a crucial role in fuelling different modes of transportation. You are encouraged to report an individual fuel if it takes up a significant portion of the whole of your Transport sector.

- **ALL ENERGY PRODUCTS.** Aggregate category covering all energy products used in the transport sector.
- **OIL AND PETROLEUM PRODUCTS.** Sum of petroleum products used as fuels in the transport sector which includes *Gas/Diesel Oil, Motor Gasoline excl. Biofuel Portion, LPG, Kerosene-type Jet Fuel excl. Biofuel Portion, Aviation Gasoline and Fuel Oil.*
 - **Gas/Diesel oil.** This is primarily a medium distillate distilling between 180°C and 380°C. In transport, road diesel oil is used, for diesel compression ignition (cars, trucks, etc.), usually of low sulphur content. This category includes Biodiesels.
 - **Motor gasoline excl. Biofuel portion.** This consists of a mixture of light hydrocarbons distilling between 35°C and 215°C. It is mainly used as a fuel for land based spark ignition engines. Motor gasoline may include additives, oxygenates and octane enhancers, including lead compounds such as TEL (tetraethyl lead) and TML (tetramethyl lead). This category includes motor gasoline blending components e.g. alkylates, isomerate, reformat, cracked gasoline destined for use as finished motor gasoline. This category excludes Biogasoline.
 - **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.
 - **Kerosene type jet fuel excl. Biofuel portion.** This is a distillate used for aviation turbine power units. It has the same distillation characteristics between 150°C and 300°C (generally not above 250°C) and flash point as kerosene. In addition, it has other specifications (such as freezing point) which

- are established by the International Air Transport Association (IATA). This category excludes Bio jet kerosene.
- **Aviation gasoline.** This is motor spirit prepared especially for aviation piston engines, with an octane number suited to the engine, a freezing point of -60°C and a distillation range usually within the limits of 30°C and 180°C .
 - **Fuel oil.** This covers 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.
 - **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.
 - **RENEWABLES AND BIOFUELS.** Aggregate category covering renewable and biofuel sources used in the transport sector, which includes: *Blended Biodiesels, Blended Biogasoline, Blended Bio Jet Kerosene, Pure Biodiesels, Pure Biogasoline, Pure Bio Jet Kerosene* and *Biogases*.
 - **Blended biodiesels.** This category includes liquid biofuels blended with gas/diesel oil from fossil origin. For example it includes: biodiesel (a methyl-ester produced from vegetable or animal oil, of diesel quality), biodimethylether (dimethylether produced from biomass), Fischer Tropsch (Fischer Tropsch produced from biomass), cold pressed biooil (oil produced from oil seed through mechanical processing only).
 - **Blended biogasoline.** This category includes liquid biofuels blended with motor gasoline from fossil origin. For example it includes: bioethanol (ethanol produced from biomass and/or the biodegradable fraction of waste), biomethanol (methanol produced from biomass and/or the biodegradable fraction of waste), bioETBE (ethyl-tertio-butyl-ether produced on the basis of bioethanol: the percentage by volume of bioETBE that is calculated as biofuel is 47%) and bioMTBE (methyl-tertio-butyl-ether produced on the basis of biomethanol: the percentage by volume of bioMTBE that is calculated as biofuel is 36%).
 - **Blended bio jet kerosene.** Liquid biofuels blended with Jet kerosene from fossil origin.
 - **Pure biodiesels.** Liquid biofuels in their pure form suitable for use as gas/diesel oil substitutes.
 - **Pure biogasoline.** Liquid biofuels in their pure form suitable for use as motor gasoline substitutes.
 - **Pure bio jet kerosene.** Liquid biofuels in their pure form suitable for use as jet kerosene substitutes.
 - **Biogases.** Gases composed principally of methane and carbon dioxide produced by anaerobic fermentation or thermal processes.
 - **Note:** The sum of products listed above does not have to sum up to the total of the category *Renewable and Biofuels* as other energy products are part of this category without being reported here (etc.).
 - **ELECTRICAL ENERGY.** Electrical energy used as a fuel in the transport sector.
 - **NATURAL GAS.** Gaseous or liquefied natural gas used in the transport sector.
 - **SOLID FOSSIL FUELS.** Solid fuels such as coal and derivatives used in the transport sector.

4. Calorific values (CV)

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

- Gas/diesel oil
- Motor gasoline excl. biofuel portion
- LPG
- Kerosene-type jet fuel excl. biofuel portion
- Aviation gasoline
- Fuel oil
- Renewables and biofuels
- Blended biodiesels
- Blended biogasoline
- Blended bio jet kerosene
- Pure biodiesels
- Pure biogasoline
- Pure bio jet kerosene

For aggregates representing totals made up of several energy products (*Oil and petroleum products* and *Solid fossil fuels*), **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. Table 1

A table with all modes of transport and all fuels for one reporting period. Reporting period can be selected by pop-down selection on the left side of the 'Table 1' button. Please remember to use flags when needed. Flags can be selected from the left-top selection box.

3. Time Series sheets

Reporting countries will have to report the actual data on final energy consumption in the transport 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 transport. For each energy product, reporting countries can report data for each mode of transport or fuel.

- **TS:** the time series sheets are divided between modes of transport:
 - **Time series ROAD,**
 - **Time series ROAS (Voluntary items)** – the same table as **Time series ROAD**, but to be used to report fuels used in the country's territory,
 - **Time series MARI,**
 - **Time series RAIL,**
 - **Time series AVIA.**

Each mode includes 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 where data should be entered in specific reporting units (i.e. kt for oil products, GWh for electricity...). In each mode of transport only relevant fuels are available in time series.

- **Calorific values (Table 2):** a data input sheet for reporting the calorific values for the relevant energy products. For the aggregate 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 subfuels may report the total consumption per fuel)

GEOGRAPHICAL NOTES

Denmark excludes the Faroe Islands and Greenland;

France includes Monaco and the French overseas departments of Guadeloupe, Martinique, Guyane, Reunion and Mayotte;

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

The Netherlands excludes the Antillean constituent countries of the Kingdom of the Netherlands (Aruba, Curaçao and Sint Maarten) and the special municipalities of the Caribbean Netherlands (Bonaire, Sint Eustatius and Saba);

Portugal includes the Açores and Madeira;

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

Switzerland does not include Liechtenstein.