This article provides an overview of oil statistics covering crude oil as well as petroleum products. Energy statistics are available for all 28 EU Member States and 11 non-EU countries. Data are available for the period 1990 to 2017.

For decades, crude oil and petroleum products have had the largest share in gross inland energy consumption in the EU-28. Despite decreasing production and consumption in the EU in recent years, crude oil and its derived products remain the largest contributors to energy consumption.

Production of crude oil

The primary production of crude oil in 2017 in the European Union (EU-28) was 66.7 million tonnes of oil equivalent (Mtoe). This production peaked in 1999 at 169.5 Mtoe and reached a minimum of 64.5 Mtoe in 2014. The top oil producers in the EU-28 in 2017 were the United Kingdom (44.6 Mtoe) followed by Denmark (6.9 Mtoe), Italy (4.1 Mtoe) and Romania (3.5 Mtoe each).
In Norway, one of the key European non-EU crude oil producers, production peaked in 2001 (159.2 Mtoe) and by 2013 it had decreased to less than half (75.1 Mtoe). Since then, Norwegian production increased, reaching 80.7 Mtoe in 2016, but fell in 2017 (79.2 Mtoe). EU candidate countries (Albania, Serbia and Turkey) have some production of crude oil, however on a rather small scale (in total near 4.6 Mtoe in 2017). The Energy Community contracting parties (Ukraine and Georgia) produced in 2017 1.5 Mtoe crude oil. These data are presented in Figure 1.

**Imports of crude oil**

In 2017, total imports of crude oil to the EU-28 amounted to 565.7 million tonnes. The major imports in 2017 came from Russia (163.1 million tonnes), Norway (61.4 million tonnes), Iraq (44.0 million tonnes), Kazakhstan (39.7 million tonnes) and Saudi Arabia (35.6 million tonnes). The Russian imports have remained relatively stable over the past decade. The crude oil imports from Norway have been almost halved over the period 2000-2017, from 114.9 million tonnes to 61.4 million tonnes. On the other hand, Iraq saw a substantial increase from 31.3 million tonnes to 44.0 million tonnes over the same period; the EU imports from Kazakhstan were four times higher in 2017 (39.7 million tonnes) as compared to 2000 (9.7 million tonnes). See Table 1 and Figure 2 for the historic evolution since 2000.
Trade in petroleum products

Imports of crude oil are by far the most important component of trade in oil statistics. The imports of crude oil are complemented by imports of already manufactured petroleum products such as gas/diesel oil (24.1 million tonnes in 2017), kerosene type jet fuel (18.3 million tonnes), naphtha (15.8 million tonnes) and liquefied petroleum gas (12.9 million tonnes). The EU-28 also exports manufactured petroleum products to third countries. In 2017, EU-28 exported 57.9 million tonnes of motor gasoline and 15.7 million tonnes of fuel oil. Trade of other petroleum products (lubricants, bitumen, other hydrocarbons, etc.) is of a smaller magnitude and in 2017 resulted in net exports of 9.5 million tonnes (see Table 2).
Oil imports dependency

Import dependency on oil is calculated as the ratio of net imports (imports minus exports) to gross inland energy consumption (but including international maritime bunkers) of crude oil and petroleum products. Positive values over 100 % indicate a stock build, while negative dependency rates indicate a net exporter country.
Table 3: Oil import dependency, in selected years, 1990-2017 (% of net imports in gross available energy, based on tonnes of oil equivalent) Source: Eurostat (nrg_ind_id)

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( ) not available
(*) This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of independence.

Source: Eurostat (online data code: nrg_ind_id)

The European Union relied on net imports (imports minus exports) for 86.7 % of the oil products consumed in 2017. The dependency on foreign petroleum in the last few years is at its peak, the highest rate being recorded in 2015 (89.2 %). The lowest import dependency for oil was observed in 1995, namely a rate of 73.9 %. Detailed national data are available in Table 3.
Sectoral oil dependency

Sectoral oil dependency refers to the ratio of oil consumption in a specific sector to the total fuel consumption of that sector. The dependence on oil for transport and for fishing is the highest of all sectors, although both decreased in 2017 compared with 1990 (see Table 4). However, the industry sector, residential and services have decreasing dependency rates towards 11-10% dependency on oil.

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Source: Eurostat (online data code: nrg_bal_c)

Table 4: Sectoral oil dependency, EU-28, in selected years, 1990-2017(%) Source: Eurostat (nrg_bal_c)

Use of petroleum products

The production of electricity from fossil fuels, especially from oil products, is slowly diminishing. Many of the existing oil-fired plants are kept only as a part of the power reserve margin, using mainly fuel oil and gas/diesel oil. In 2017 the input of oil into the transformation sector for electricity generation represented less than a quarter of the quantities used in 1990.

In the last five years the final energy consumption of petroleum products (excluding international shipping and aviation) has globally dropped below the 1990’s level. The final energy consumption of individual petroleum products is shown in Figure 3. Gas/diesel oil and gasoline (listed in order of significance) are by far the two most important products throughout the whole 27-year-period, although demonstrating different evolution patterns.

For international aviation the leading petroleum product is kerosene-type jet fuel, which more than doubled since 1990 reaching 51 Mtoe. For international shipping (maritime bunkers) the most consumed product is the fuel oil, which reached 34 Mtoe in 2017 demonstrating an increase of 25% as compared to 1990 (27 Mtoe).
The consumption of petroleum products by sector is shown in Figure 4. In 2017, the transport sector was by far the main consumer of petroleum products. Within the transport sector, road transport is the key consumer with 48.0 %. Petroleum products are also used for non-energy purposes, which is the second highest sector with 14.1 % of consumption after transport. Non-energy consumption includes, for example, bitumen for road surfaces, the use of lubricants for reducing friction as well as the use of oil products in the chemical industry for chemical properties rather than energy content (combustion).
Figure 4: Consumption of oil, EU-28, 2017(%) Source: Eurostat (nrg_bal_c)

Figure 5 and Figure 6 present additional information about oil consumption in the transport sector. This sector has slightly reduced its dependency on oil due to the use of liquid biofuels. Nevertheless, the dependency on oil in 2017 is still very high (93 %) as compared to 1990 (98 %), while in absolute terms the quantities of petroleum products used in the transport sector were roughly 20 % higher in 2017 (303 Mtoe) compared to 1990 (254 Mtoe). All other fuels (e.g. gas, electricity, etc.), despite a small increase over the years, play a minor role in transport.
When looking at the detailed consumption of fuels in transport, we can see a significant change over the last
27 years. Gas/diesel oil overtook motor gasoline as the most used fuel in 1998. In 2017, almost three times as much diesel was consumed for transport compared to gasoline. (Figure 6). The imbalance in the EU production (refinery output) and EU demand (inland consumption) was addressed via international trade (import/export statistics presented earlier in Table 2, which shows exports of gasoline and imports of diesel).

Source data for tables and graphs

- Tables and Figures on Oil and petroleum products

Data sources

Data on energy are submitted on the basis of an internationally agreed methodology in joint annual energy questionnaires (Eurostat - OECD /IEA - UNECE). Data are available for all EU-28 countries and the methodology is harmonised for all reporting countries. Consequently, data comparability across countries is very high.

Context

Crude oil and petroleum products have the highest share of energy consumption in the EU. The EU is the world’s second largest producer of petroleum products (after the United States). Several policy initiatives are tackling the security of energy supplies as well as environmental and climate aspects of oil production and consumption. Consequently, there are several challenges due in part to the decreasing demand in the EU (among others due to structural changes in the economy, more efficient use of oil products and in transport substitution by biofuels or electricity) and imbalance in supply/demand (for example increasing EU gasoil/diesel/jet fuel demand and shrinking gasoline demand).

Other articles

- All articles on energy

Main tables

- Energy (t_nrg), see:

  Energy statistics - main indicators (t_nrg_indic)
  Energy statistics - quantities (t_nrg_quant)

Database

- Energy (nrg), see:

  Energy statistics - quantities, annual data (nrg_quant)

Dedicated section

- Energy

Publications

- Shedding light on energy in the EU - A guided tour of energy statistics
Methodology

- Energy statistics - quantities, annual data (ESMS metadata file)

Legislation

- Regulation (EC) No 1099/2008 on energy statistics
- Summaries of EU legislation: Common system for the production of energy statistics

External links

- European Commission - DG Energy
- International Energy Agency
- FuelsEurope
- Wikipedia: Oil fields of Europe