This article provides a picture of trade in energy products between the European Union (EU) and the rest of the world (extra-EU trade), and between the Member States (intra-EU trade). Special focus is given to Russia as the main supplier of petroleum oils and natural gas to the EU. Coal, lignite, peat and coke are the other key energy products considered hereafter.

Annual data from 2015 up to June 2019 are included, thus reflecting the most recent developments. Priority was given to trade in value (expressed in millions of euros) and net mass (weight without packaging expressed in tonnes). Supplementary information like trade in terajoules for natural gas can be found in Eurostat databases.

This article is part of an online publication providing recent statistics on international trade in goods, covering information on the EU’s main partners, main products traded, specific characteristics of trade as well as background information.
Figure 1: Extra-EU28 imports of energy products, monthly averages, 2015 - first semester 2019

The latest figures show the downward trend of the energy bill from 2015 to 2016 reversing in 2017 and 2018 but falling again in the first semester of 2019 (Figure 1). The average monthly value of imports in energy products rose from EUR 17.4 billion per month in 2016 to EUR 27.6 billion per month in 2018 but fell to EUR 25.8 billion in 2019. However, the energy bill is still higher than in 2015 when it was EUR 22.0 billion per month. The development of the volume of energy products showed much less fluctuation, it was highest in 2017 (78.7 million tonnes) and lowest in 2016 (76.3 million tonnes).
Main suppliers of natural gas and petroleum oils to the EU

Crude oil is by far the largest imported energy product (70% of total EU energy imports in the first half of 2018) ahead of natural gas in gaseous state (17%), as shown in Figure 2. For crude oil this was 0.7 percentage points less than in 2018. The share of natural gas in gaseous states dropped by 2.1 percentage points while the share of liquefied natural gas increased by 2.9 percentage points.
Russia was the largest supplier of natural gas to the EU, both in 2018 and 2019 (Figure 3 and Map 1); the only other partners with a significant share in total extra-EU imports were Norway and, at some distance Algeria, Qatar and Nigeria. The global share of all the other countries exporting natural gas to the EU was 4.8 % in 2018 and 8.8 % in 2019 in terms of trade value.
As can be seen in Figure 4 and Map 2, Russia was less dominant in petroleum oils than in natural gas but still far ahead of the second largest supplier, Norway. They were followed by Iraq, Kazakhstan, Nigeria and United States. The share of the top six rose from 67.9% in 2018 to 69.2% in 2019.

Figure 4: Extra-EU imports of petroleum oil from main trading partners, 2018 and first semester 2019 (share (%) of trade in value)
Map 2: Petroleum_oil,_main_partners,_first_semester_2019(share (%) of trade in value)

The detailed tables for main importers of petroleum oils and natural gas are available here.

**Trend in extra-EU imports of energy products**

The EU imports of natural gas from Russia and the rest of the world, expressed in value and net mass, are shown in Figure 5. In value, the extra-EU total fell between 2015 and 2016 but picked up in 2017 and 2018. When measuring in net mass, between 2015 and 2016 there was an increase but between 2016 and 2018 there was little change.

![Figure 5: Extra-EU-28 imports of natural gas, 2015 - first semester 2019](image)

For petroleum oils, the trend of total extra-EU imports in value is largely similar to the trend observed for natural gas (see Figure 6). However, in value, the fall between 2014 and 2016 and rise between 2016 and 2018
are more pronounced.

Figure 6: Extra-EU-28 imports of petroleum oils, 2015 - first semester 2019 (EUR billion and million tonnes)

Share of energy products in total EU imports

Figure 7 shows the share in total EU imports of the key energy products considered in this article. This share was 15% in 2015. It dropped down to 12% in 2016 but rose again to 17% in 2018. It dropped to 15% in the first semester of 2019. The lion’s share of imports of energy products comes from petroleum oils whose share is three times as much as for natural gas and more than ten times as much as for solid fuels in 2019.

Figure 7: Share of energy products in total EU-28 imports, trade in value, 2015 - first semester 2019

When considering only the EU imports from Russia, the share of the key energy products was 4.7% in the first semester of 2019 which was equal to what it was in 2015 and 2017. In between it was 4.1% in 2016 and 5.2% in 2018 (Figure 8).
Energy imports to the EU from Russia as a share of total imports dropped 1 percentage point from 60% in 2015 to 59% in the first semester of 2019 (see Figure 9). In this period the share for petroleum oils and natural gas fell by 1 percentage point while the share for solid fuels increased by 1 percentage point.

The detailed tables for extra-EU and Russian shares of energy imports in total imports are available [here](#).
Member States’ trade in petroleum oils and natural gas

Table 1 shows the share of each Member State in extra-EU imports of petroleum oils and natural gas. Note that only interval information is provided in order to avoid revealing confidential figures. The redistribution of imports among the Member States after import into the EU, as measured by intra-EU trade, is not taken into account. Six Member States: Germany, Spain, France, Italy, the Netherlands and the United Kingdom have shares of more than 5 % in total extra-EU imports for both petroleum oils and natural gas. Two of those, Germany and the Netherlands have shares of more than 5 % in total imports from Russia for both products, which is also the case for Poland. For Italy this share is more than 20 % only for natural gas.

Table 1: Share of extra-EU imports of petroleum oils and natural gas by Member State, first semester 2019 (share (%) of trade in value)

<table>
<thead>
<tr>
<th>Country</th>
<th>Share (%) in total extra-EU-28 imports</th>
<th>Share (%) in extra-EU-28 imports from Russia</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Petroleum oils</td>
<td>Natural gas</td>
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<td>Belgium</td>
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<td>Bulgaria</td>
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<td>Denmark</td>
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<td>Germany</td>
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<td>Estonia</td>
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<td>Greece</td>
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<tr>
<td>United Kingdom</td>
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</tbody>
</table>

Source: Eurostat database (Comext) and Eurostat estimates
By combining tables 1 and 2 we are able to check the dependency on Russia for the largest importers of petroleum oils and natural gas in the EU. For petroleum oils, the largest importers from the extra-EU were Germany, Spain, France, Italy the Netherlands, and the United Kingdom (all between 10 % and 20 %). Of those, the share of Russia in national imports was less than 25 % for Spain, France, Italy and the United Kingdom and between 25 % and 50 % for the Netherlands and Germany.

For natural gas the largest importers were Germany, Italy, the Netherlands and the United Kingdom (between 10 % and 20 % of EU imports). Of those four the share of Russia was less than 25 % for the United Kingdom, between 25 % and 50 % for Italy and the Netherlands and between 50 % and 75 % for Germany.

Part of the petroleum oils and natural gas imported from Russia and elsewhere is also traded in the EU Internal Market. Table 3 gives some indicative figures for this effect, but no indication is given of the origin of the energy products that are subsequently part of intra-EU trade flows. The shares of imports of petroleum oils are between 0-5 % for all but three of the 28 EU Member States. The exceptions were Belgium, Germany and the Netherlands, with shares of more than 20 %. For natural gas, Germany (more than 20 %), France (10-20 %) , Belgium, Italy and the Netherlands (all three 5-10 %) are the exceptions. For intra-EU exports of petroleum oils only the Netherlands and the United Kingdom have shares above 20 %. For natural gas the exceptions are Germany, the Netherlands (more than 20 %), Belgium (10-20%) and France (5-10%).
Table 3: Share of each Member State in intra-EU imports and exports of petroleum oils and natural gas, first semester 2019 (share (%) of trade in value)

**Data sources**

Trade in energy products being very sensitive, real trade figures may need to be made confidential. In the context of this article, Eurostat has carried out some estimation in order to provide more accurate information while not disclosing confidential figures. Note that those estimated data cannot be retrieved from Eurostat databases or found in other publications. When going through the figures, it should also be kept in mind that confidentiality treatments may impact the data consistency. In particular, total values may slightly diverge from the sum of their subcomponents.

**Reporting countries** This article is based on the international trade in goods statistics provided by the EU-28 Member States to Eurostat. Trade of Croatia is included even for the period prior to joining the EU, i.e. before July 2013.

**Partner country — Definitions**

**Extra-EU trade** — The partner country is the country of last known destination for exports and the country of origin for imports. The country of last known destination is the non-EU country to which it is known, at the time of release into the customs procedure or customs approved treatment, that the goods are to be delivered. The country of origin means the country where the goods originate; the origin of goods wholly obtained or produced in a country is attributed to that country.

**Intra-EU trade** — The partner Member State is the Member State of destination for exports and the Member State of consignment for imports. The Member State of consignment is the Member State from which goods were dispatched to the reporting Member State, without any halts or legal operations which are not inherent in their transport taking place in any intermediate Member State.

**Energy products** This article analyses the EU imports of the following energy products, as classified according to the Combined Nomenclature (CN):

- 27090010: Petroleum oils from natural gas condensates;
- 27090090: Petroleum oils and oils obtained from bituminous minerals, crude;
- 27111190: Natural gas, liquefied;
• 27112100: Natural gas in gaseous state;
• 2701: Coal;
• 2702: Lignite;
• 2703: Peat; and
• 2704: Coke.

To give a full picture of the EU trade in energy products, it should be noted that Chapter 27 of the Combined Nomenclature (mineral fuels, mineral oils) contains more products than the ones considered in this article.

**Petroleum oils** correspond to the aggregation of the CN8 codes 27090010: Petroleum oils from natural gas condensates and 27090090: Petroleum oils and oils obtained from bituminous minerals, crude.

**Natural gas** corresponds to the aggregation of the CN8 codes 27111100: Natural gas, liquefied and 27112100: Natural gas in gaseous state.

**Data sources** This article is based on data available in Eurostat database (COMEXT) and on Eurostat estimation. Those data are issued from the European concept and definitions as set up by the EU legislation. Figures estimated by Eurostat cannot be found in Comext nor in other Eurostat databases or publications.

Note that data collected on the basis of Regulation (EC) No 1099/2008 relating to energy statistics are not considered in this article. More information on those statistics can be found in the Energy Dedicated Section. With regards to imports and exports of energy products, there are methodological reasons for differences between figures from energy statistics and figures presented in this article originating from international trade in goods statistics (ITGS):

- The sources for ITGS are the Intrastat declarations for intra-EU trade and the customs declarations for extra-EU trade. Additional data sources like data from national grid operators can also be used for natural gas and electricity. The sources for energy statistics are special statistical surveys, administrative data and estimations.
- In ITGS the partner country is the country of consignment for intra-EU imports and the country of origin for extra-EU imports. In energy statistics the partner country is the country of origin for both intra- and extra-EU imports.
- Imports and exports are available in quantities and values broken down by partner in ITGS while only the quantities without partner breakdown are available in energy statistics.
- In ITGS the value is collected or estimated (estimation based on collected invoice value or, for natural gas and electricity, on additional data sources) while in energy statistics the value is not collected but estimated using quantities and retail prices.

**Units of measure**

- **Trade values** correspond to the statistical value, i.e. to the amount which would be invoiced in case of sale or purchase at the national border of the reporting country. It is called a FOB value (free on board) for exports and a CIF value (cost, insurance, freight) for imports.
- **Quantities** correspond to the net mass, i.e. to the mass without any packaging. Note that values of 0 or 0.0 mean very small values.

**Data limitations**

- A bias in the geographical allocation of extra-EU flows — Extra-EU imports and exports are reported by the Member State where the customs declaration is lodged, usually the place where the goods cross the EU external frontier (here referred to as the exit/entry Member State). This is not necessarily the Member State of actual import or export. The geographical allocation of an extra-EU flow is biased in the case the entry/exit Member State is not the actual importing/exporting Member State. In such a case, the extra-EU trade will be allocated to the entry/exit Member State and the actual importing/exporting Member State will report only intra-EU flows with the exit/entry Member State. This issue particularly impacts the extra-EU imports of Member States having important ports for transshipment of goods like Antwerp in Belgium and Rotterdam in the Netherlands.
Missing EU data — This article is mostly based on collected data (confidential and non-confidential). Wherever necessary, estimates for missing indicators have been compiled on the basis of other available indicators and EU averages for similar trade. Because of confidentiality, total values may differ from the sum of individual components.

Trade and consumption — This article focuses on imports and exports of energy products and does not consider EU domestic energy production. Part of the energy products consumed in the EU is produced in the EU. According to energy statistics, in 2014, 33 % of natural gas consumption was supplied from a source within the EU. Similarly about 54 % of coal (all coals) and about 13 % of oil (crude oil and all petroleum products) consumed in the EU was supplied from a source within the EU.

Context

Having a secure supply of energy is crucial for the well-being of European citizens and the economy. The EU works to ensure that energy supplies are uninterrupted and energy prices remain stable.

In response to the political crisis in Ukraine and the overall importance of a stable and abundant supply of energy for the EU’s citizens and economy, the European Commission released an EU energy security strategy on 28 May 2014.

This strategy is based on an in-depth study of Member States’ energy dependence and addresses medium and long-term security of supply challenges.

Source data for tables and graphs

The excel file below contains all figures and tables shown in the article as well as the detailed tables referred to in the text.

- Tables and figures energy 2019

Publications

- Statistical analysis of EU trade in energy products, with focus on trade with the Russian Federation - Statistics in focus 13/2014
- Energy production and imports
- Energy, transport and environment indicators - 2016 edition
- Extra-EU trade in primary goods

Data visualisations

- Top 5 partners in trade in goods
- My Country in a bubble

Main tables

- International trade in goods (t_ext_go), see:
  - International trade in goods - long-term indicators (t_ext_go_lti)
  - International trade in goods - short-term indicators (t_ext_go_sti)
Database

- International trade in goods (ext_go), see:
  
  International trade in goods - aggregated data (ext_go_agg)
  
  International trade in goods - long-term indicators (ext_go_lti)
  
  International trade in goods - short-term indicators (ext_go_sti)

  International trade in goods - detailed data (detail)

Dedicated section

- International trade in goods

Methodology

- International trade in goods statistics - background
  
  International trade in goods (ESMS metadata file — ext_go_agg_esms)

- User guide on European statistics on international trade in goods

Legislation

- Regulation (EC) No 1099/2008 of 22 October 2008 on energy statistics

- Regulation (EC) No 471/2009 of 6 May 2009 on Community statistics relating to external trade with non-member countries

- Summaries of EU Legislation: Extrastat: statistics relating to trade with non-EU countries


- Summaries of EU Legislation: Intrastat: statistics relating to the trading of goods between EU countries


External links

- European Energy Security Strategy