

EU imports of energy products - recent developments

Statistics Explained

Data extracted in October 2017. Planned article update: April 2018.

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](#)). A 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 2011 up to 2016 as well as provisional figures for the first semester of 2017 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.

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.

Main statistical findings

With the exception of peat and coke, the European Union is a net importer (imports higher than exports) of energy products. [Crude oil](#) largely dominates the EU imports in energy products with a share of 69 % in the first half of 2017, followed by natural gas in gaseous state with a share of 20 % in 2017. Both almost equal to the shares they had in 2016.

The monthly average value of energy products decreased from 2012 to 2016 but increased in the first half of 2017 by 31 % compared with 2016. These changes are mainly due to the rise in prices on world markets, as the imports in net mass remained relatively stable over the same period, increasing only 4 % between 2016 and 2017, still well below the peak level of 2012.

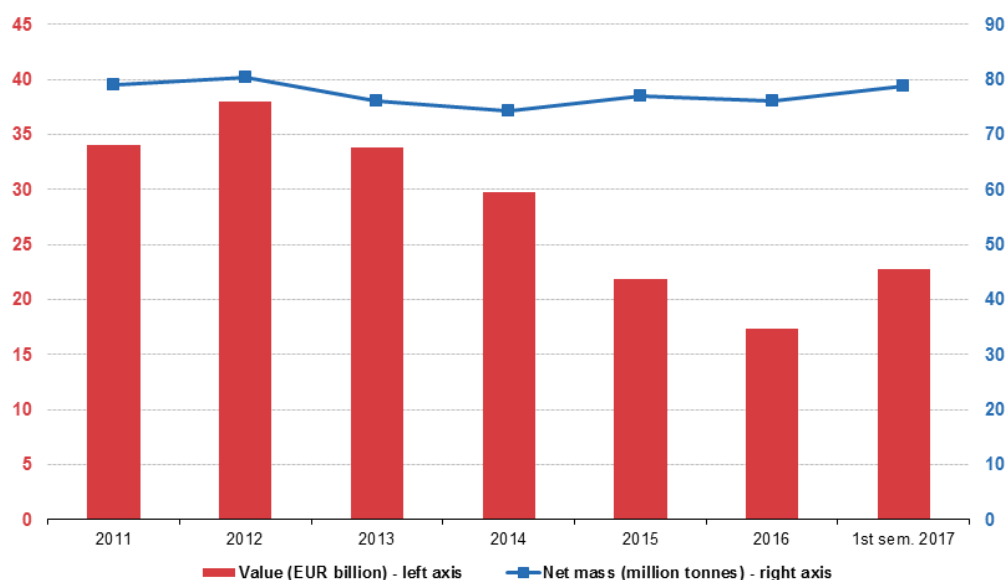


Figure 1: Extra-EU imports of energy, monthly averages

The latest figures show the downward trend of the energy bill from 2012 to 2016 reversing in the first half of 2017 (Figure 1). The average monthly value of imports in energy products rose by 31 % compared with 2016 (from 17.3 billion per month to 22.7 billion). Compared with 2012, the energy bill decreased by 40 %, from 38.0 billion per month to 17.3 billion in the first half of 2017, while at the same time the nett mass only decreased 2 %. As regards the origin of the energy products, Russia remains the largest supplier of natural gas and petroleum oils to the EU, ahead of Norway. In 2017, Russia's share in the EU imports of natural gas stood at 37.4 % (39.5 % in 2016) and its share in EU imports of petroleum oils at 30.9 % (31.7 % in 2016), measured in value.

Main suppliers of natural gas and petroleum oils to the EU

Figure 2 shows that crude oil is by far the largest imported energy product (69.3 % of total EU energy imports in the first half of 2017) ahead of natural gas in gaseous state (20.3 %). For crude oil this was 1 percentage point more than in 2016 while for natural gas it was 1 percentage point less.

Energy products	Value (billion EUR)		Net mass (million tonnes)		Share (%) of value in total	
	Extra-EU Imports	Extra-EU Exports	Extra-EU Imports	Extra-EU Exports	Extra-EU Imports	Extra-EU Exports
27090010: PETROLEUM OILS FROM NATURAL GAS CONDENSATES	2.4	0.0	7.4	0.1	1.2	0.3
27090090: PETROLEUM OILS AND OILS OBTAINED FROM BITUMINOUS MINERALS, CRUDE	142.5	3.7	512.0	11.8	68.4	63.5
27111100: NATURAL GAS, LIQUEFIED	5.5	0.3	26.0	1.2	2.7	4.5
27112100: NATURAL GAS IN GASEOUS STATE	44.4	0.7	201.2	2.9	21.3	12.5
2701: COAL	10.3	0.2	149.6	3.0	4.9	4.0
2702: LIGNITE	0.0	0.0	0.5	0.2	0.0	0.2
2703: PEAT	0.0	0.2	0.3	1.2	0.0	2.8
2704: COKE	0.3	0.4	2.3	2.8	0.1	7.4
TOTAL	208.3	5.8	912.2	24.0	100.0	100.0

Table 1a: Extra-EU imports and exports of energy products, 2016

Energy products	Value (billion EUR)		Net mass (million tonnes)		Share (%) of value in total	
	Extra-EU Imports	Extra-EU Exports	Extra-EU Imports	Extra-EU Exports	Extra-EU Imports	Extra-EU Exports
27090010: PETROLEUM OILS FROM NATURAL GAS CONDENSATES	1.6	0.0	4.0	0.1	1.2	0.8
27090090: PETROLEUM OILS AND OILS OBTAINED FROM BITUMINOUS MINERALS, CRUDE	93.4	3.9	264.6	10.0	69.3	77.2
27111100: NATURAL GAS, LIQUEFIED	3.8	0.1	14.5	0.1	2.8	1.2
27112100: NATURAL GAS IN GASEOUS STATE	27.4	0.5	106.5	1.7	20.3	9.8
2701: COAL	8.4	0.1	76.0	0.8	6.2	1.8
2702: LIGNITE	0.0	0.0	0.3	0.1	0.0	0.0
2703: PEAT	0.0	0.1	0.1	0.7	0.0	2.0
2704: COKE	0.2	0.3	1.0	1.4	0.2	6.4
TOTAL	134.8	5.0	473.1	15.4	100.0	100.0

Table 1b: Extra-EU imports and exports of energy products, 1st semester 2017

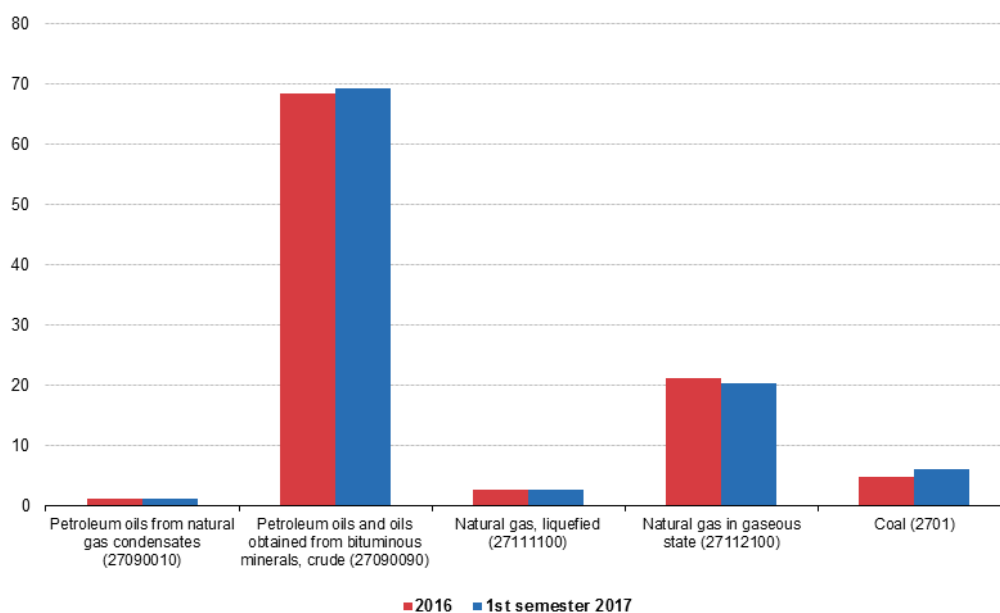


Figure 2: Share (%) of each product in extra-EU imports in energy, in value

Figure 3 shows that Russia was the largest supplier of natural gas to the EU, both in 2016 and 2017, and that the only other partners with a significant share in total extra-EU imports were Norway and, at some distance Algeria and Qatar. The global share of all the other countries exporting natural gas to the EU was 6 % in 2016 and 8 % in 2017 in terms of trade value.

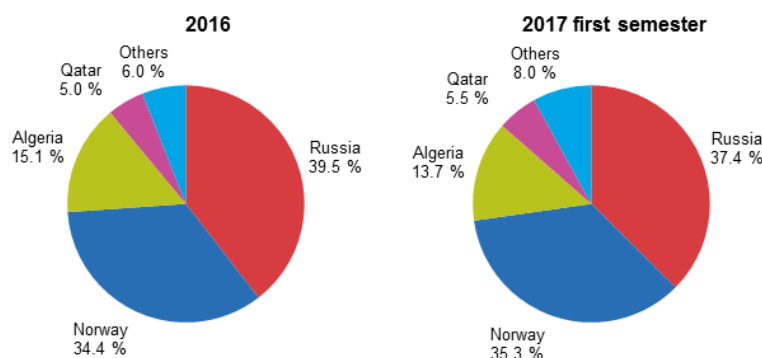


Figure 3: Extra-EU imports of natural gas, shares (%) of main trading partners

Figure 4 shows that Russia was less dominant in petroleum oils than in natural gas but still far ahead of the

second largest supplier, Norway. Kazakhstan, Iraq and Saudi Arabia were third, fourth and fifth. Other suppliers accounted for roughly one third of imports, much more than was the case for natural gas, showing that the market for petroleum oils is more fragmented. Russia's share dropped by 0.8 percentage points in 2017 compared with 2016, from 31.7 % to 30.9 %.

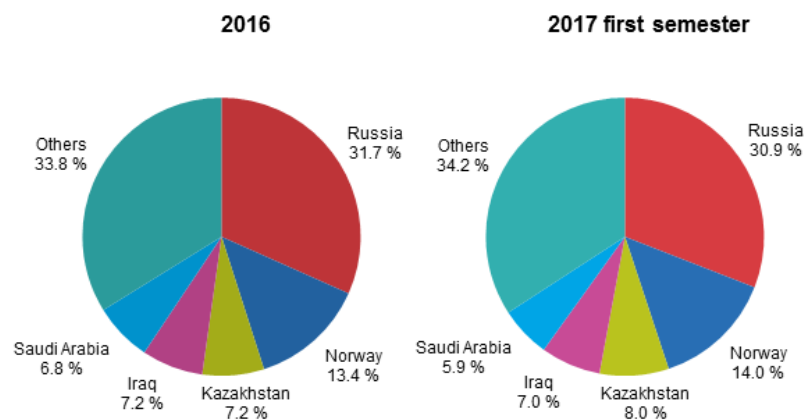


Figure 4: Extra-EU imports of petroleum oils, shares (%) of main trading partners

The detailed tables for main importers of petroleum oils and natural gas are available [here](#).

Trend in extra-EU imports of energy products

Figure 5 shows the EU imports from the rest of the world and from Russia of natural gas expressed in value and net mass. In value the extra-EU total fell between 2012 and 2016 but picked up in 2017. If the trend of the first half of 2017 is repeated in the second half (which obviously is by no means certain) imports will be higher than they were in 2016. When measuring in net mass, the decline started a year earlier and ended a year sooner, following a U-shape with the lowest point in 2014. Thus there is a decline in value while the net mass increased from 2014 to 2015 and from 2015 to 2016 while the reverse happened from 2011 to 2012. Russian imports over the same period varied more from year to year but appear to be heading towards an increase in 2017 compared with 2016.

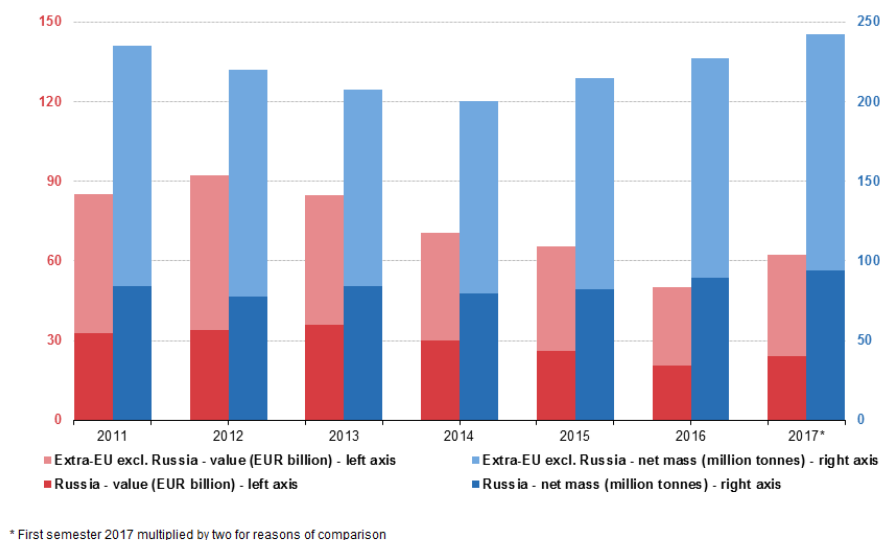


Figure 5: Extra-EU28 imports of natural gas, (EUR billion)

Figure 6 shows that for petroleum oils the trend of total extra-EU imports in value is largely similar to the trend observed for natural gas. However in net mass there are more ups and downs although never far from 500

million tonnes while in value the changes are more pronounced. If the trend observed for the first half of 2017 continues, total 2017 imports in net mass will surpass the previous high of 2012. In value the share of Russia which was 34 % in 2011, fell to 28 % in 2015 but was up to 31 % in the first semester of 2017.

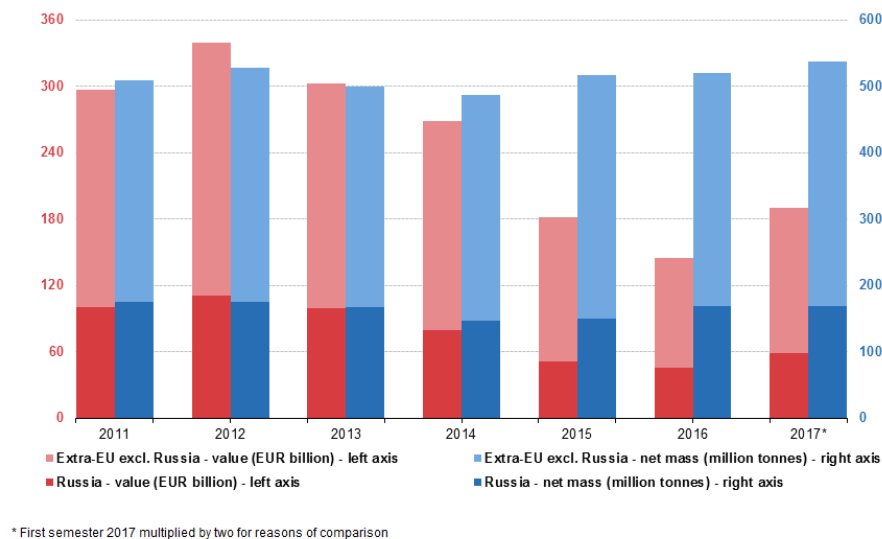


Figure 6: Extra-EU28 imports of petroleum oils, (EUR billion)

The detailed tables for extra-EU and Russian imports of energy products are available [here](#).

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 between 24 % and 25 % between 2011 in 2013 and then dropped down to 12 % in 2016 but rose again to almost 15 % in the first half of 2017. The lion's share of imports of energy products come from petroleum oils whose share is three times as much as for natural gas and ten times as much as for solid fuels in in the first half of 2017.

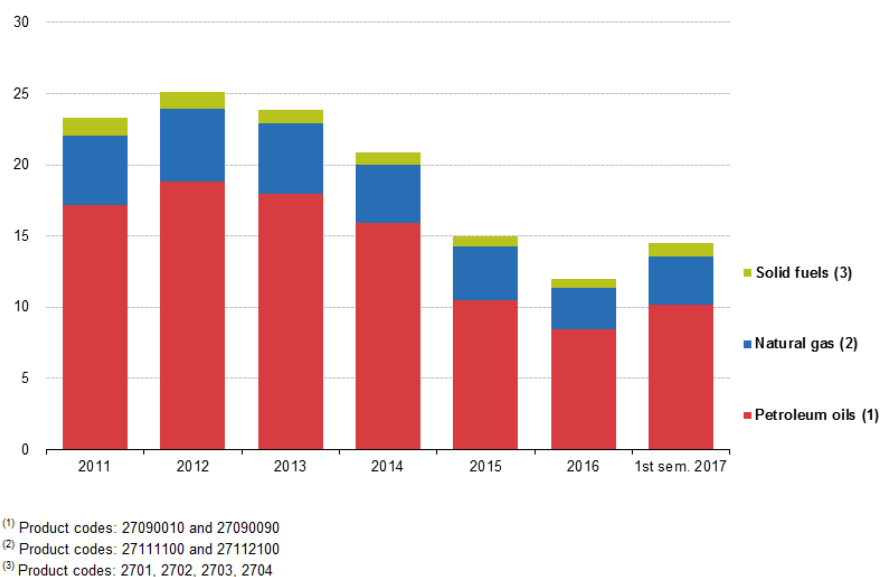
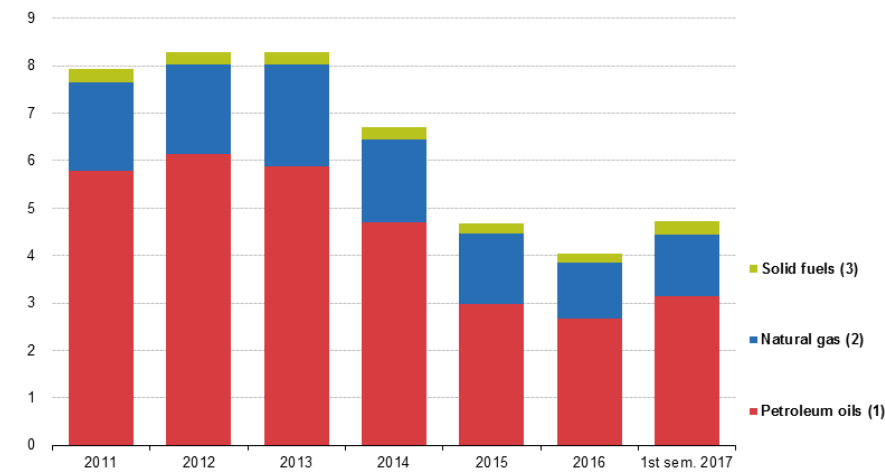


Figure 7: Share (%) of energy products in total EU-28 imports, in value

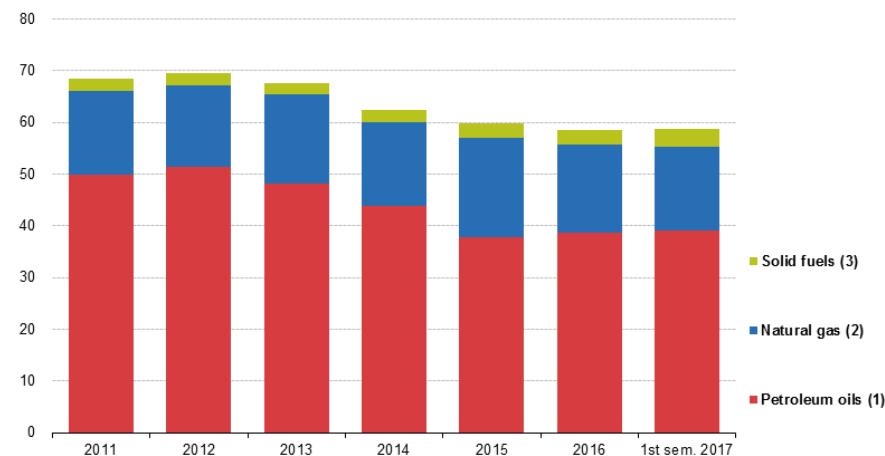
When considering only the EU imports from Russia, the share of the key energy products amounted to 4.8 % in in the first semester of 2017, which was 0.7 percentage pointshigher than in 2016 but 3.5 percentage pointslower than it was in 2012 and 2013 when it reached a peak of 8.3 % (Figure 8).



(1) Product codes: 27090010 and 27090090
(2) Product codes: 27111100 and 27112100
(3) Product codes: 2701, 2702, 2703, 2704

Figure 8: Share (%) of energy products from Russia in total EU-28 imports, in value

Figure 9 considers energy imports to the EU from Russia as a share of total imports to the EU from Russia. It shows that since 2015 energy products made up almost 60 % of all imports, which was about 10 percentage points less than it had been in 2011 and 2012. Considering the last seven years, petroleum oils' share peaked in 2012 at 51 % while natural gas highest share of 19 % occurred in 2015.



(1) Product codes: 27090010 and 27090090
(2) Product codes: 27111100 and 27112100
(3) Product codes: 2701, 2702, 2703, 2704

Figure 9: Share (%) of energy products in total EU-28 imports from Russia, in value

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 10 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. Five Member States, Germany, Spain, Italy, the Netherlands and the United Kingdom) have shares of more than 5 % in total EU imports for both petroleum oils and natural gas. Three of those, Germany, Italy and the Netherlands have shares of more than 5 % in total imports from Russia for both products, which is also the case for Poland.

Country	Share (%) in extra-EU28 imports from Russia		Share (%) in total extra-EU28 imports	
	Petroleum oils	Natural gas	Petroleum oils	Natural gas
Belgium	0-5	0-5	0-5	5-10
Bulgaria	0-5	0-5	0-5	0-5
Czech Republic	0-5	0-5	0-5	0-5
Denmark	0-5	0-5	0-5	0-5
Germany	10-20	> 20	10-20	> 20
Estonia	0-5	0-5	0-5	0-5
Ireland	0-5	0-5	0-5	0-5
Greece	0-5	0-5	0-5	0-5
Spain	0-5	0-5	10-20	10-20
France	0-5	0-5	10-20	0-5
Croatia	0-5	0-5	0-5	0-5
Italy	5-10	> 20	10-20	10-20
Cyprus	0-5	0-5	0-5	0-5
Latvia	0-5	0-5	0-5	0-5
Lithuania	0-5	0-5	0-5	0-5
Luxembourg	0-5	0-5	0-5	0-5
Hungary	0-5	0-5	0-5	0-5
Malta	0-5	0-5	0-5	0-5
Netherlands	> 20	5-10	10-20	5-10
Austria	0-5	5-10	0-5	0-5
Poland	10-20	5-10	0-5	0-5
Portugal	0-5	0-5	0-5	0-5
Romania	0-5	0-5	0-5	0-5
Slovenia	0-5	0-5	0-5	0-5
Slovakia	0-5	0-5	0-5	0-5
Finland	5-10	0-5	0-5	0-5
Sweden	0-5	0-5	0-5	0-5
United Kingdom	0-5	0-5	5-10	10-20

Table 2: Share (%) of each Member State in extra-EU imports of petroleum oils and natural gas, 2016, in value

All Member States imported petroleum oils and natural gas in 2016. For seven Member States (Bulgaria, Estonia, Lithuania, Hungary, Poland, Slovakia and Finland), more than 75 % of their imports in petroleum oils came from Russia (Table 3). Eleven Member States (Bulgaria, the Czech Republic, Estonia, Latvia, Hungary, Austria, Poland, Romania, Slovenia, Slovakia and Finland) imported more than 75 % of total national imports of natural gas from Russia. In both cases these are predominantly countries that are in close proximity of Russia. The countries with a share below 25 % of imports from Russia in either product are more distant from Russia with the exception of Latvia for petroleum oils.

Country	Share (%) of Russia in national extra-EU28 imports	
	Petroleum oils	Natural gas
Belgium	25-50	0-25
Bulgaria	75-100	75-100
Czech Republic	50-75	75-100
Denmark	0-25	0-25
Germany	25-50	50-75
Estonia	75-100	75-100
Ireland	0-25	0-25
Greece	0-25	50-75
Spain	0-25	0-25
France	0-25	0-25
Croatia	0-25	0-25
Italy	0-25	25-50
Cyprus	0-25	0-25
Latvia	0-25	75-100
Lithuania	75-100	25-50
Luxembourg	0-25	0-25
Hungary	75-100	75-100
Malta	0-25	0-25
Netherlands	25-50	25-50
Austria	0-25	75-100
Poland	75-100	75-100
Portugal	0-25	0-25
Romania	25-50	75-100
Slovenia	0-25	75-100
Slovakia	75-100	75-100
Finland	75-100	75-100
Sweden	25-50	0-25
United Kingdom	0-25	0-25

Table 3: Share (%) of Russia in national extra-EU imports of each Member State, 2016, in value

By combining tables 2 and 3 we are able to check the dependency on Russia for the largest importers of petroleum oils and natural gas in the EU. For natural gas, the largest importers from the extra-EU were Germany (>20 % of EU imports) followed by Italy, Spain and the United Kingdom (between 10 % and 20 %) and the Netherlands and Belgium (between 5 % and 10 %). Of those, the share of Russia in national imports was less than 25 % for Belgium, Spain and the United Kingdom, between 25 % and 50 % for Italy and the Netherlands and between 50 % and 75 % for Germany. For petroleum oils the five largest importers were Germany, Spain, France, Italy and the Netherlands (between 10 % and 20 % of EU imports) followed by the United Kingdom (between 5 % and 10 %). Of those six, 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 Germany and the Netherlands.

Part of the petroleum oils and natural gas imported from Russia and elsewhere is also traded in the EU Internal Market. Table 4 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 and natural gas are between 0-5 % for all but three of the 28 EU Member States. The exceptions for petroleum oils are Belgium, Germany (both more than 20 %) and the Netherlands (10-20 %). In all three cases these countries import 25-50 % of their petroleum oils from Russia (shown in Table 3). For natural gas again Belgium (10-20 %) and Germany (more than 20 %) now accompanied by France (also more than 20 %) are the exceptions. Belgium and France import 0-25 % from Russia of their natural gas, while for Germany the share of Russian imports is 50-75 %.

Country	Share (%) in total intra-EU imports		Share (%) in total intra-EU exports	
	Petroleum oils	Natural gas	Petroleum oils	Natural gas
Belgium	> 20	10-20	0-5	10-20
Bulgaria	0-5	0-5	0-5	0-5
Czech Republic	0-5	0-5	0-5	0-5
Denmark	0-5	0-5	5-10	0-5
Germany	> 20	> 20	0-5	> 20
Estonia	0-5	0-5	0-5	0-5
Ireland	0-5	0-5	0-5	0-5
Greece	0-5	0-5	0-5	0-5
Spain	0-5	0-5	0-5	0-5
France	0-5	> 20	0-5	5-10
Croatia	0-5	0-5	0-5	0-5
Italy	0-5	0-5	0-5	0-5
Cyprus	0-5	0-5	0-5	0-5
Latvia	0-5	0-5	0-5	0-5
Lithuania	0-5	0-5	0-5	0-5
Luxembourg	0-5	0-5	0-5	0-5
Hungary	0-5	0-5	0-5	0-5
Malta	0-5	0-5	0-5	0-5
Netherlands	10-20	0-5	> 20	> 20
Austria	0-5	0-5	0-5	0-5
Poland	0-5	0-5	0-5	0-5
Portugal	0-5	0-5	0-5	0-5
Romania	0-5	0-5	0-5	0-5
Slovenia	0-5	0-5	0-5	0-5
Slovakia	0-5	0-5	0-5	0-5
Finland	0-5	0-5	0-5	0-5
Sweden	0-5	0-5	0-5	0-5
United Kingdom	0-5	0-5	> 20	5-10

Table 4: Share (%) of each Member State in intra-EU imports and exports of petroleum oils and natural gas, 2016, in value

Data sources and availability

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;
- 27111100: 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.

Further Eurostat information

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 visualisation

- [International trade in a nutshell](#)
- [Top 5 partners in trade in goods](#)
- [My Country in a bubble](#)

Main tables

- [International trade in goods](#) (textgo), see:

[International trade in goods - long-term indicators](#) (textgolti)

[International trade in goods - short-term indicators](#) (textgosti)

Database

- [International trade in goods](#) (extgo), see:

[International trade in goods - aggregated data](#) (extgoagg)

[International trade in goods - long-term indicators](#) (extgolti)

[International trade in goods - short-term indicators](#) (extgosti)

[International trade in goods - detailed data](#) (detail)

Dedicated section

- [International trade in goods](#)

Methodology / Metadata

- [International trade in goods statistics - background](#)
- [International trade in goods](#) (ESMS metadata file — extgoaggesms)
- [User guide on European statistics on international trade in goods](#)

Source data for tables, figures and maps (MS Excel)

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

- [Download Excel file](#)

Other information — Legal background

- [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
- [Regulation \(EU\) No 92/2010](#) of 2 February 2010 implementing Regulation (EC) No 471/2009, as regards data exchange between customs authorities and national statistical authorities, compilation of statistics and quality assessment
- [Regulation \(EU\) No 113/2010](#) of 9 February 2010 implementing Regulation (EC) No 471/2009 , as regards trade coverage, definition of the data, compilation of statistics on trade by business characteristics and by invoicing currency, and specific goods or movements.
- [Regulation \(EC\) No 638/2004](#) of 31 March 2004 on Community statistics relating to the trading of goods between Member States and repealing Council Regulation (EEC) No 3330/91.
- [Commission Regulation \(EC\) No 1982/2004](#) of 18 November 2004 implementing Regulation (EC) No 638/2004 of the European Parliament and of the Council on Community statistics relating to the trading of goods between Member States and repealing Commission Regulations (EC) No 1901/2000 and (EEC) No 3590/92.

External links

- [European Energy Security Strategy](#)

View this article online at http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_imports_of_energy_products_-_recent_developments