Chapter 3
Petroleum

Key points

- Production of crude oil and Natural Gas Liquids from the UK's North Sea increased 13.4 per cent in 2015, in contrast with the long-term decline. The rate of decline slowed in 2014 and production increased in 2015 due to the opening of new fields. Production is around a third of the UK's peak of 1999 (Table 3.1, Chart 3.1).

- Net imports of primary oils decreased in 2015 because of the increased production and also because refineries were processing more indigenous crude. Exports increased 2.8 million tonnes in 2015 and imports were down by over 3 million tonnes. (Table 3.1, Chart 3.1).

- UK refinery production increased to 61.0 million tonnes in 2015, up from 60.4 million tonnes in 2014 despite production loss from the closure of Milford Haven refinery in 2014. Production was strong in 2015 against a background of lower crude prices. However many refineries have reduced their distillation capacity in recent years and UK production was still around thirty per cent lower than the peak in 2000 (Table 3.2, Chart 3.4).

- The UK was a net importer of petroleum products in 2015 by nearly 9 million tonnes, the highest such figure since the 1984 miner's strike. Prior to 2013 the UK was consistently a net exporter but has since then been a net importer. Product exports were up marginally on 2014 and imports increased by 9.1 per cent in 2015 (Table 3.2, Chart 3.4).

- Refinery production does not meet demand for every product. Around 55 per cent of the UK's diesel is produced in the UK and just over 40 per cent of jet fuel. Whereas UK refineries continue to produce substantial volumes of petrol (motor spirit), approximately 17 million tonnes, more than sufficient to meet UK demand (Table 3.2, Chart 3.5).

- After several years where final consumption contracted, 2015 saw an increase of 2.9 per cent. This was largely driven by the use of oil for transport, particularly of road fuels, though demand of oil products for use in petrochemical plants also increased (Table 3.2 to 3.4), Chart 3.8).

Introduction

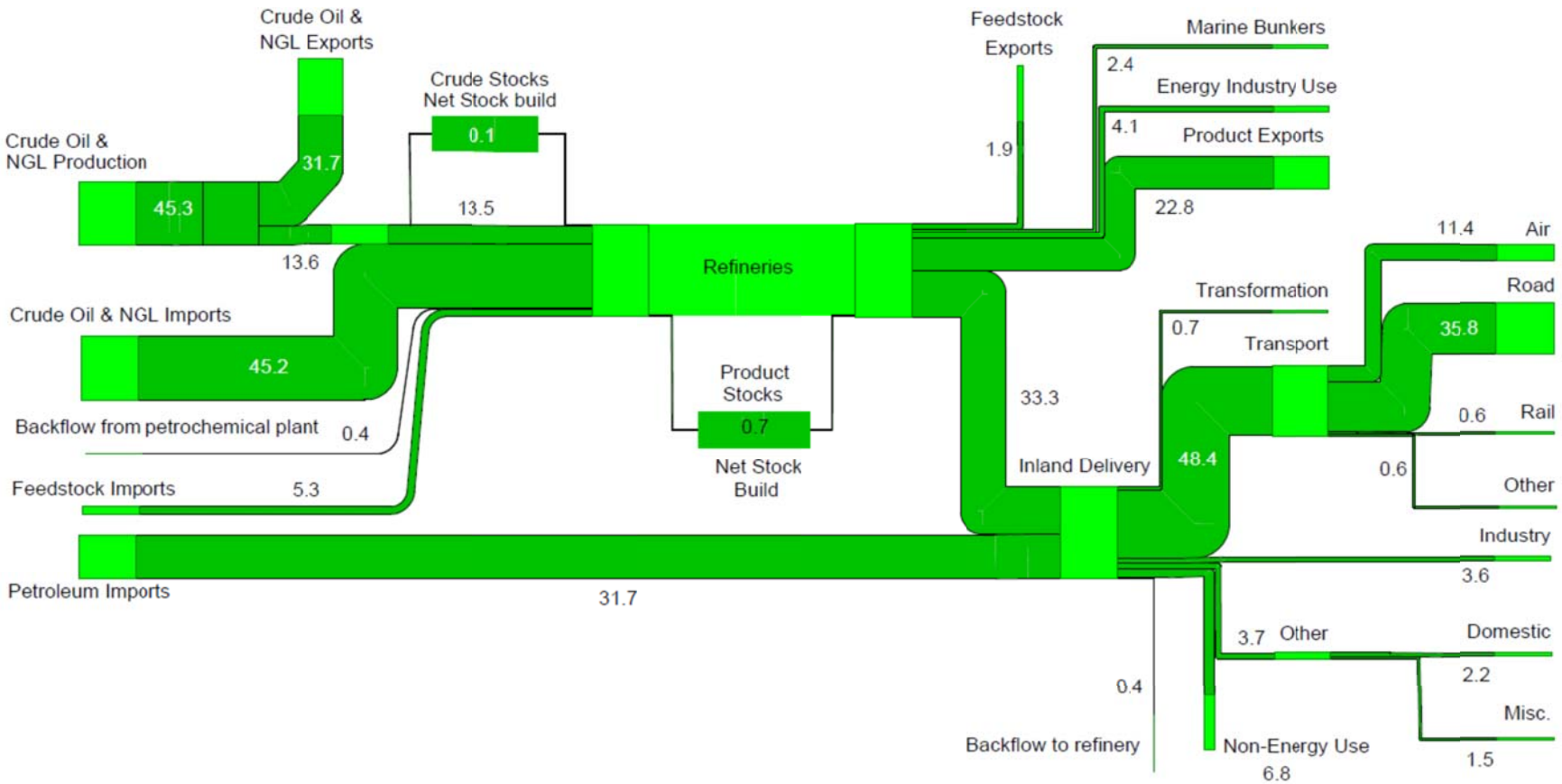
3.1 This chapter covers the supply and demand of primary oils and petroleum products. The first part of the chapter covers the supply and demand of primary oils; crude oil and Natural Gas Liquids (NGLs), and feedstocks. The second part of the chapter covers supply and demand of refined petroleum products.

3.2 The supply and demand of primary oils and petroleum products are shown as commodity balances at the end of the chapter, in Tables 3.1 and 3.2 to 3.4 respectively. Additional tables show information on refinery capacity, as well as additional detail on deliveries into consumption.

3.3 In addition to the information in this chapter, there is considerable data on BEIS's website. Information on long-term trends (Tables 3.1.1 and 3.1.2) and the annex on the oil and gas resources in the UK (Annex F) provide a more complete picture of the UK oil and gas production sector. These tables are only available in the internet version of this publication which can be found on the the GOV.UK website at www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes.

3.4 A flow chart of the movement of primary oils and petroleum products for 2015 is provided, showing the flow from indigenous production and imports to eventual uses. The flows are measured in million tonnes and the widths of the bands are approximately proportional to the size of the flow they represent.

Petroleum Flow Chart 2015 (million tonnes)



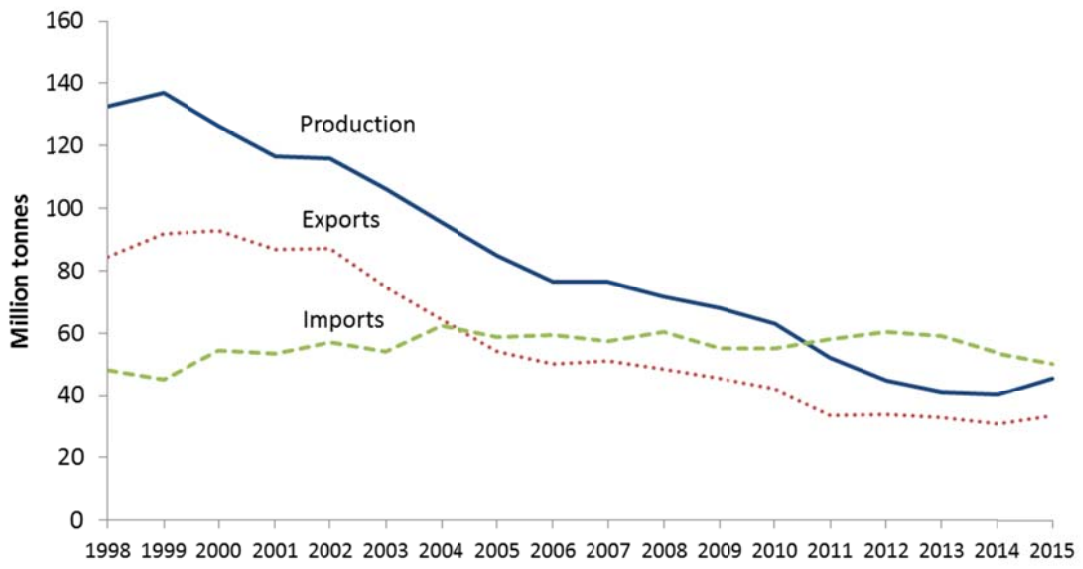
Note:
This flow chart is based on the data that appear in Tables 3.1 and 3.2.
The numbers on either side of the flow chart will not match due to losses in transformation.
Biofuels are not included.

Supply and demand for primary oil (Table 3.1)

3.5 Table 3.1 shows details of the production, supply and disposals of primary oils (crude oil, NGLs and feedstocks) in 2013, 2014 and 2015. The table examines the supply chain from the production of primary oils recorded by individual oil terminals and oil fields, to their disposal either to UK refineries or to export. It also covers the use of these primary oils as recorded by UK refineries.

3.6 From this edition of the Digest, production of feedstocks has been shown for 2013 to 2015 in Table 3.1. This figure represents the backflows of (in the main) petroleum gases from petrochemical companies to refineries where they will be further processed. Given relatively small volumes, these flows are not included in the Chart 3.1.

Chart 3.1: Production, imports and exports of primary oils 1998 to 2015



3.7 Chart 3.1 summarises the main trends since 1998. **Production from the United Kingdom Continental Shelf (UKCS) peaked in 1999 and had been in decline since**, **but rose this year.** In 2015 production of primary oils at 45.3 million tonnes showed a 13.4 per cent increase on 2014 due to the opening of new fields such as Golden Eagle. NGL production has also been strong because the oil being extracted from these new fields contains a higher proportion of NGLs.

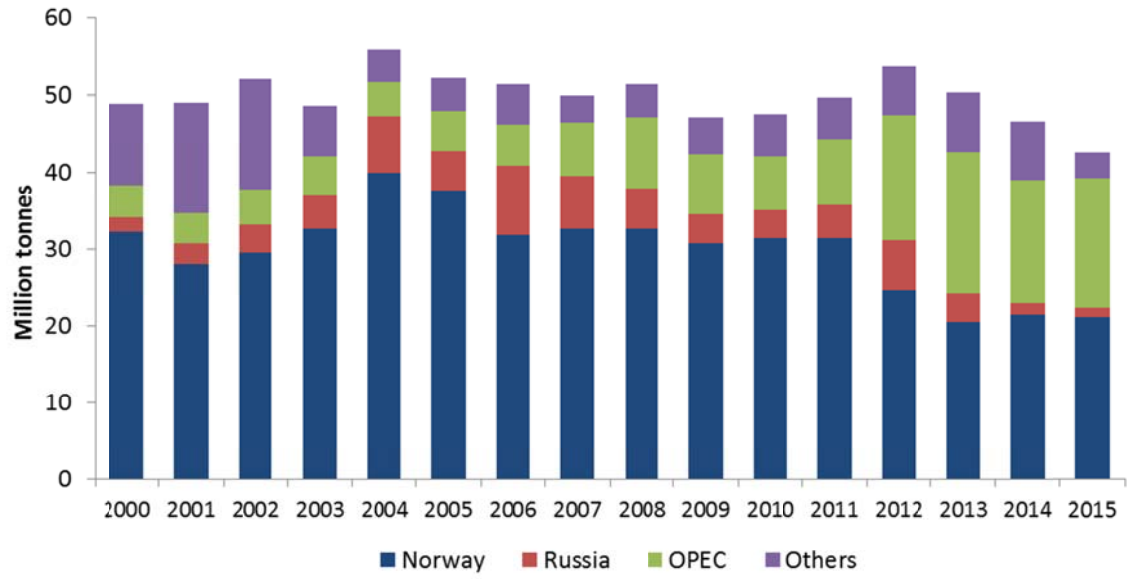
3.8 Whilst production is only around a third of the 1999 peak, the UK produced more oil in 2015 than any other country in the EU, and the second most in the European Economic Area after Norway.

3.9 The Energy Development Unit publishes data on field-by-field production. These are available three months in arrears owing to the need to protect commercially sensitive data. These data can be accessed at www.gov.uk/oil-and-gas-uk-field-data.

3.10 Although the UK's production of crude oil and NGLs would be sufficient to meet two thirds of refinery demand, there is an active trade in oil which leads to significant volumes of oil being imported and exported to meet global and UK demand.

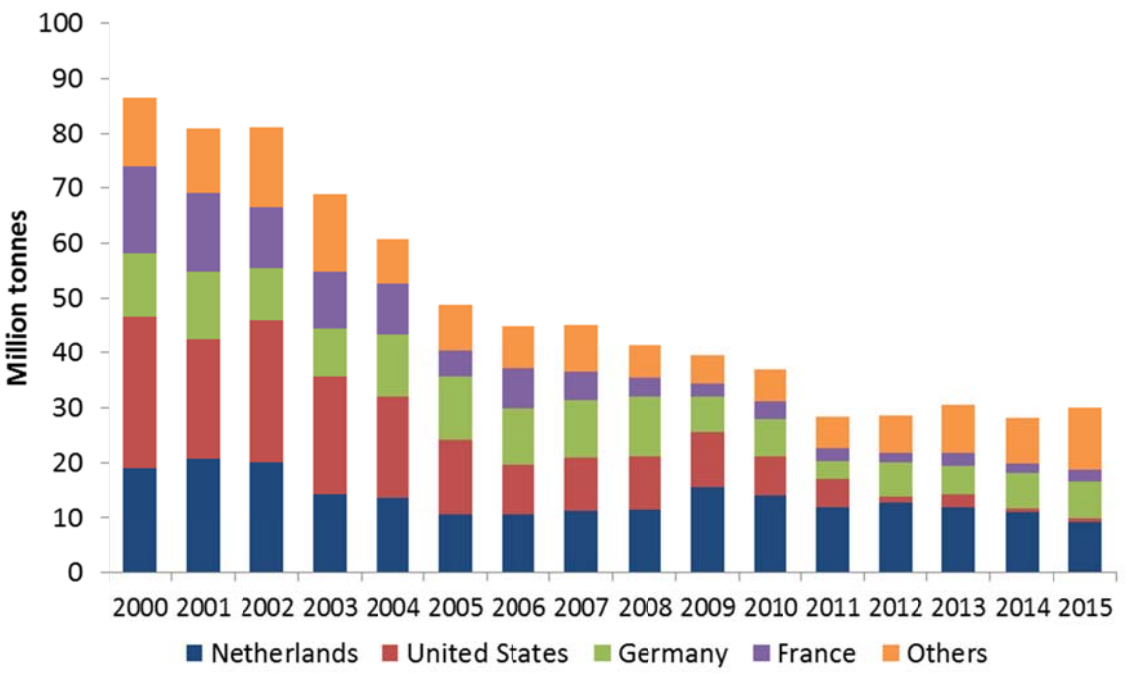
3.11 The sources of crude oil imports from other countries are shown in Chart 3.2. **The principal source of the UK's imports has consistently been Norway,** historically accounting for around 65 per cent of all imports, given not only its proximity to the UK but also the similarity in its crude types. The proportion of crude oil sourced from Norway has dropped in recent years and now stands at 50 per cent. Imports from OPEC countries have increased to make up the difference and now consist of 39 per cent of the UK's crude imports.

Chart 3.2: Source of UK crude oil imports 2000 to 2015



3.12 **Crude oil exports increased in 2015 to reach nearly 30 million tonnes.** However, Chart 3.3 shows that exports are substantially lower than their peak of 87 million tonnes in 2000. Crude oil is principally exported to the Netherlands, Germany, France and historically the US. Exports to the US and Germany remained steady in 2015 whereas exports to the Netherlands reduced by 1.7 million tonnes to account for 31 per cent of total exports, the lowest proportion since 2008. Exports to France and other countries were up.

Chart 3.3: Destination of UK crude oil exports 2000 to 2015



UK refineries

3.13 A significant proportion of the UK's primary oil is processed into petroleum products at the UK's six refineries. Data for refinery capacity as at the end of 2015 are presented in Table 3A, with the location of these refineries illustrated in Map 3A. The location of the UK's petrochemical refineries and major import terminals are also marked.

Map 3A: Distribution of UK refineries and import terminal clusters as at end 2015

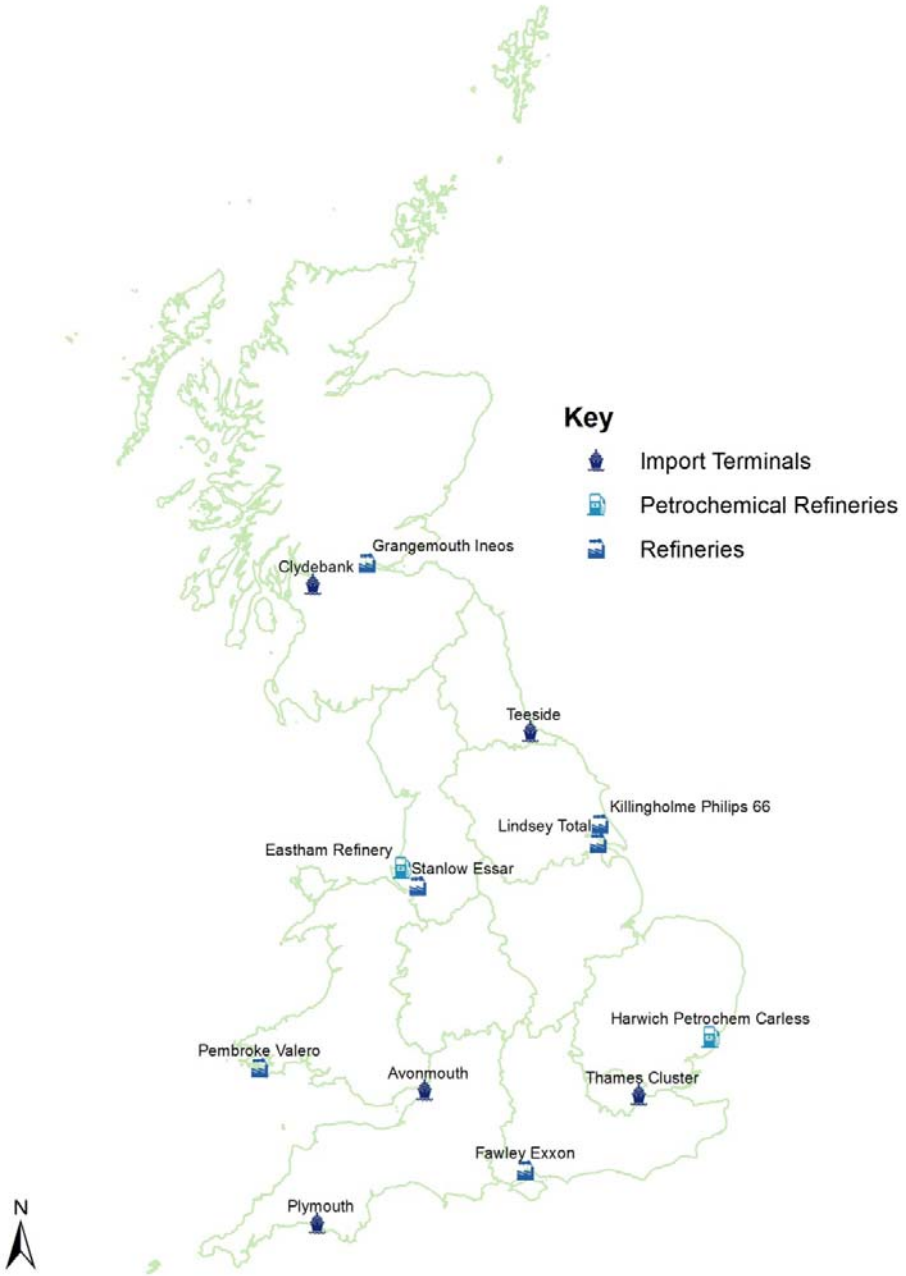


Table 3A: UK refinery processing capacity as at end 2015

Million tonnes per annum

Refinery	Distillation	Reforming	Cracking and Conversion
Fawley Exxon	13.1	4.4	5.0
Stanlow Essar	9.5	1.5	4.0
Pembroke Valero	10.8	1.5	6.3
Grangemouth Ineos	10.0	1.8	3.3
Killingholme Phillips 66	11.9	2.6	10.7
Lindsey Total	10.1	1.4	3.8
Petrochem Refinery	**Distillation**	**Reforming**	**Cracking and Conversion**
Harwich Petrochem Carless	-	-	-
Eastham Refinery	1.2	-	-
Total all refineries	**66.6**	**13.2**	**33.1**

3.14 **Refinery capacity has decreased because of closures in recent years** including Murco at Milford Haven in 2014, as well as the Petroplus Teeside refinery in 2009, and the Petroplus Coryton refinery in 2012. In addition, there has been some rationalisation of capacity at other UK refineries in recent years and refining capacity is down over 25 per cent on its 2008 total.

Supply and demand for petroleum products (Tables 3.2 to 3.4)

3.15 These tables show details of the production, supply and disposal of petroleum products into the UK market in 2013, 2014 and 2015.

3.16 The upper half of the table represents the supply side and calculates overall availability of the various products in the UK by combining production at refineries with trade (imports and exports), stock changes, product transfers and deliveries to international marine bunkers (fuel used by ships travelling to a foreign destination).

3.17 The lower half of the table reports the demand side and covers the uses made of the different products, including the use made within the refining process, and details of the amounts reported by oil companies within the UK as delivered for final consumption.

3.18 Following consultation with industry and expanded data collection, BEIS have made revisions to figures for international bunkers and national navigation. Changes have affected data for years 2013 to 2015. A further development that has been introduced this year is the inclusion of backflows from petrochemical companies to refineries for re-processing. Deliveries to petrochemical plants have been shown under Other Transformation in Table 3.2 to 3.4. The receipt of backflows from petrochemical plants has been shown under production of feedstock in Table 3.1. For more details please see 3.58 – 3.59 of the technical notes.

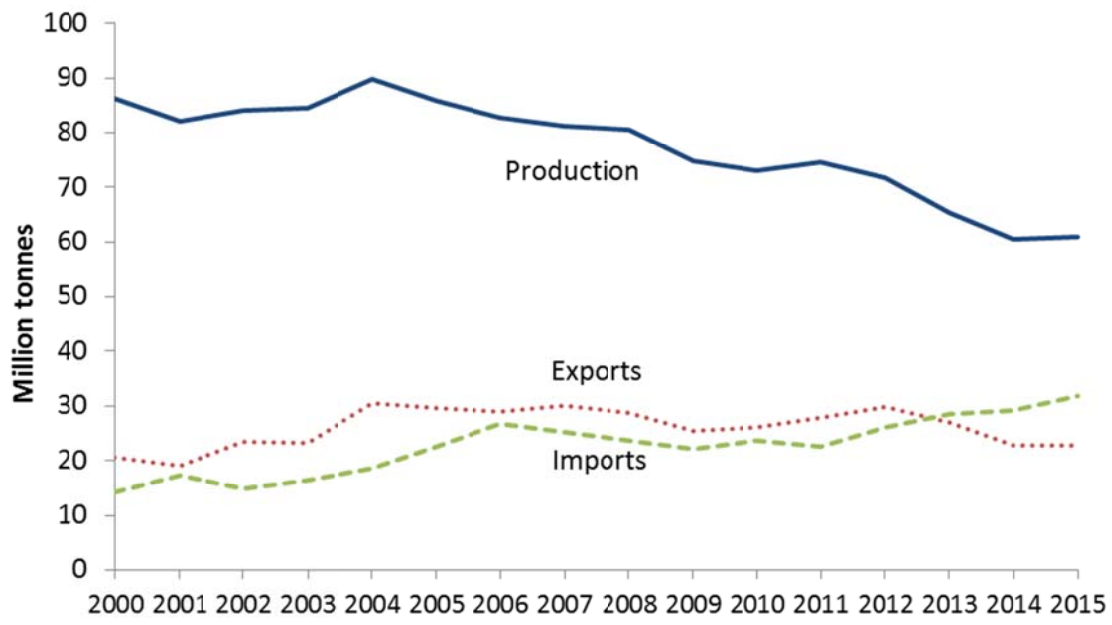
Supply of petroleum products

3.19 Chart 3.4 below shows the production output of petroleum products since 1998. **Despite the recent rationalisation in the sector, the UK's refineries produced 61 million tonnes of product in 2015, up 1.0 per cent on last year.** The price of crude fell in 2015 from $99/bbl to just $52/bbl[1]. The strong production in 2015 was partly attributable to these low prices for crude, and also because very little maintenance was seen through the year overall. The UK's refinery capacity remains substantial with only Germany and Italy having significantly greater capacity than the UK. However in the long term 2015 levels were down 29 per cent from the peak in 2000.

3.20 **In 2015 the UK was a net importer of petroleum products by 8.9 million tonnes, up 40 per cent on last year and the largest figure for net imports since 1984** when industrial action in the coal industry led to greater imports of petroleum products, particularly fuel oil, for power generation. With declining production of key fuels, the UK has been a net importer of petroleum since 2013, reversing the trend of previous decades as a net exporter.

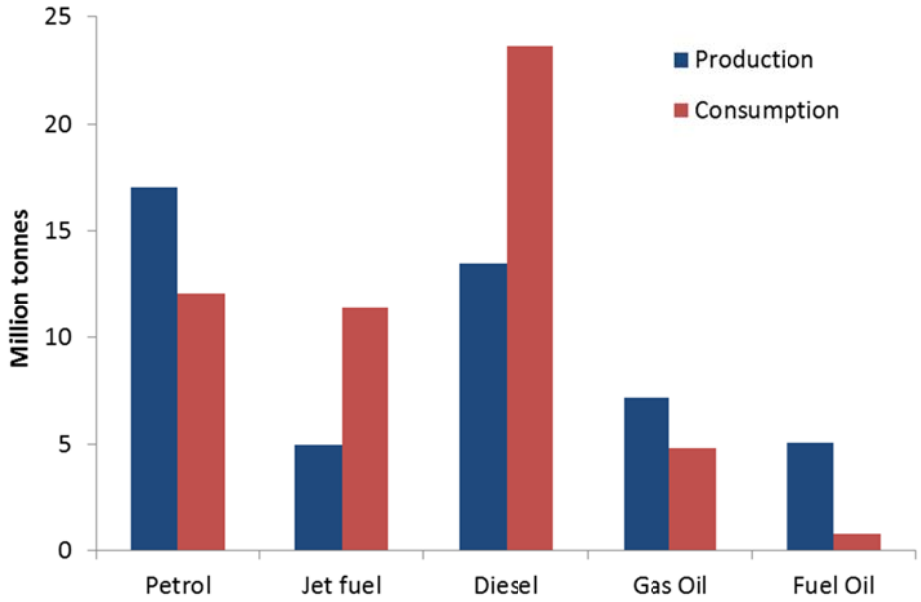
[1] Platts, from the 2015 BP Statistical Review of World Energy

Chart 3.4: Production, imports and exports of petroleum products 2000 to 2015



3.21 Given the recent increase in demand and relatively static refinery output, production is now nearly 7 million tonnes below demand. Furthermore, domestic supply and demand is not matched on a product by product basis. The UK's refineries – in common with many other European countries – are geared to produce petrol (motor spirit) for domestic cars and fuel oil for electricity generation. With the increasing dieselisation of the UK's car fleet, and the switch from fuel oil to other fuels for electricity generation, UK production of individual petroleum products is no longer aligned with market demand. To balance demand the UK trades widely and is one of the largest importers of jet fuel in the OECD and one of the largest exporters of petrol.

Chart 3.5: Production and consumption of key petroleum products 2015



3.22 Chart 3.5 shows production and consumption figures for the key petroleum products, and illustrates

the deficit for jet and diesel fuel, and the surpluses for petrol, gas oil, and fuel oil.

3.23 Chart 3.6 shows the source of transport fuels imported by the UK in 2015. The ten countries shown account for around 82 per cent of the total volume of imports. Historically the bulk of the products have come via the Netherlands, which acts as a major trading hub (the fuel might have been refined from elsewhere in Europe or beyond). However, Russia and Sweden were the biggest sources of transport fuels, being especially large suppliers of diesel as well as the US. The diversity of supply is increasing as demand for key transport fuels increases. The chart shows that there is a clear split between imports from European countries (which are mainly diesel) and imports from Asia (where the bulk of jet fuel is sourced from generally more modern refinery operations than seen in Europe).

Chart 3.6: Source of transport fuel imports 2015

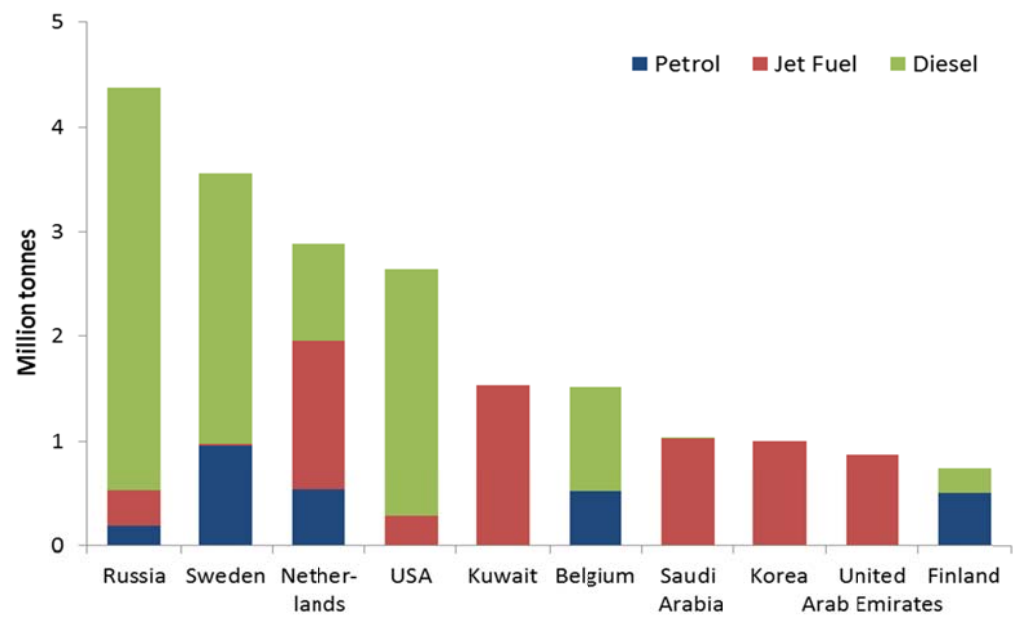
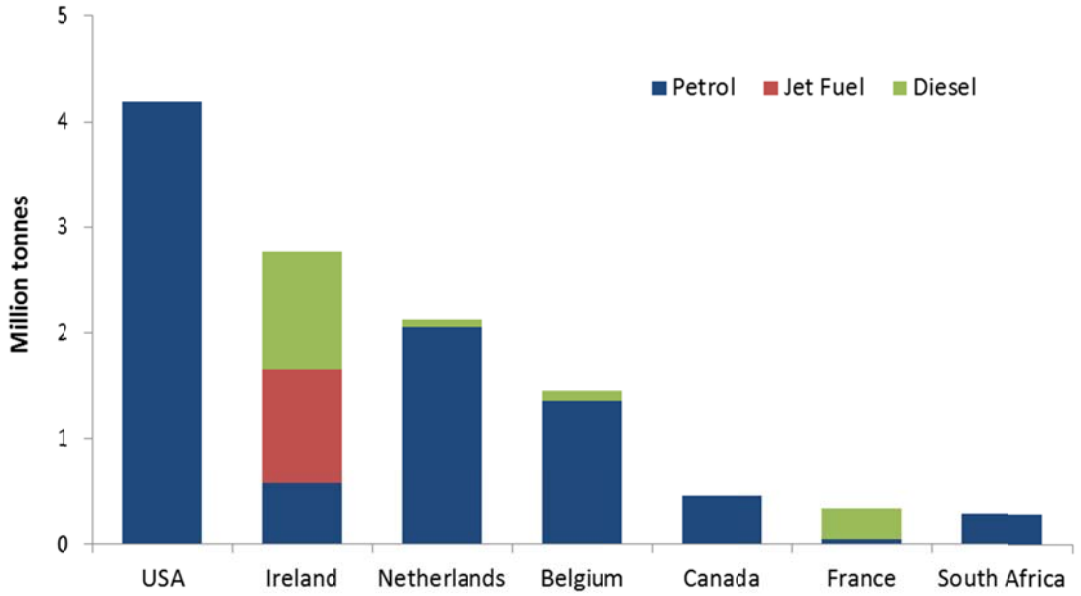


Chart 3.7: Destination of transport fuel exports 2015



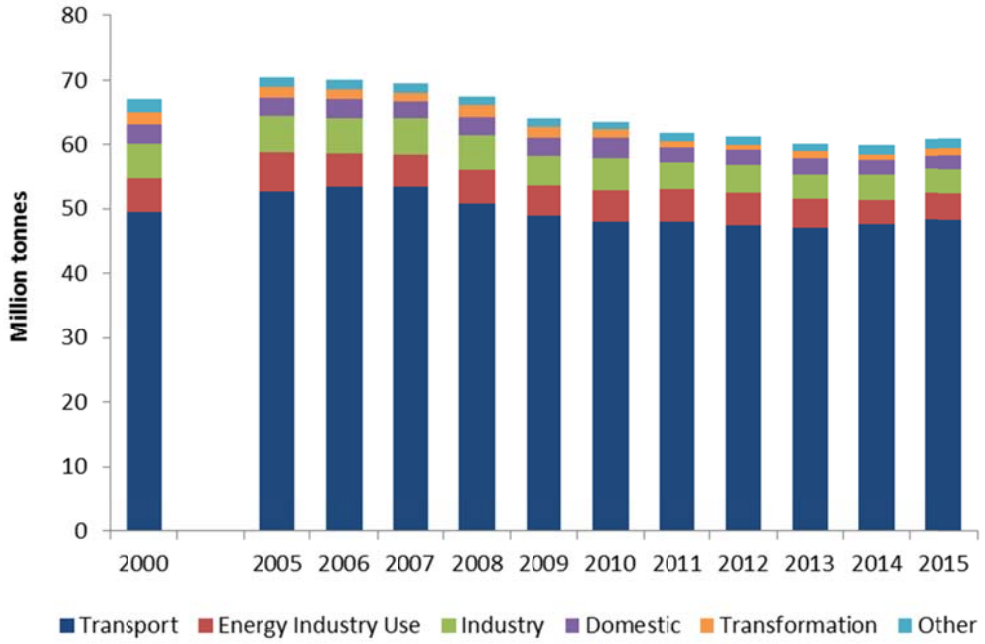
3.24 Similarly, Chart 3.7 shows the exports by country for the three principal transport fuels in 2015. The chart covers over 90 per cent of these exports. A considerable portion of the UK's total exports (nearly a third) is petrol exported to the United States. Ireland imports a substantial volume of its products from the UK as it has no indigenous production of aviation fuel.

Consumption of petroleum products

3.25 **The low oil prices that boosted refinery production in 2015 are likely to have contributed to the first increase in consumption of petroleum products since 2005,** mainly as a result of a substantial increase in road transport fuels as well as aviation fuel. Additionally, we have seen large imports of petroleum gases into the UK to some petrochemical operations.

3.26 Tables 3.2 to 3.4 show the consumption of oil products during the period 2013 to 2015, by consumers and products. The chart below shows that **the principal use for petroleum products is consistently for transport, consuming over 70 per cent of total demand in 2015.**

Chart 3.8: Petroleum products used for energy (share by main sector)

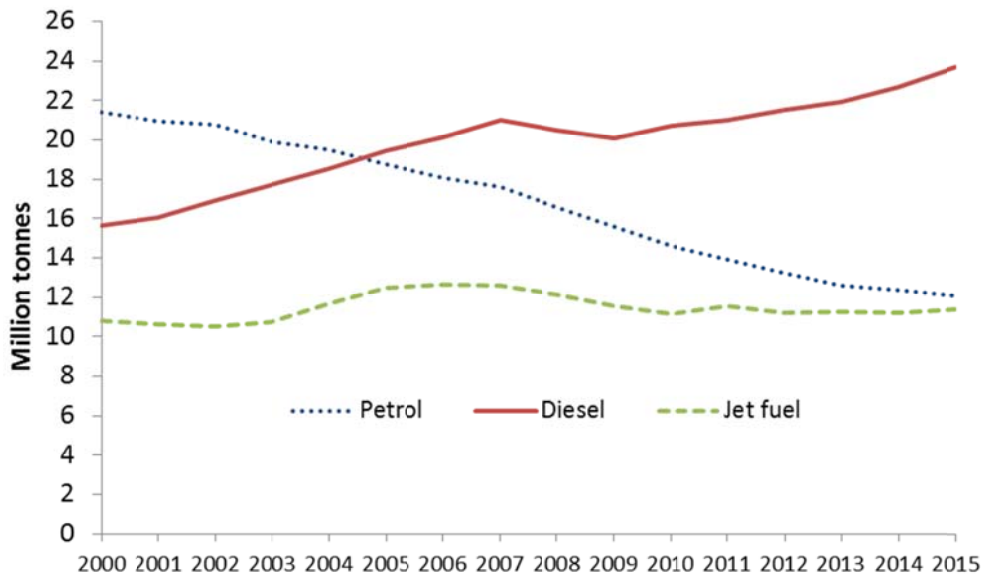


Consumption of transport fuels (Table 3.6)

3.27 The three main transport fuels – petrol, jet fuel and diesel – account for nearly 70 per cent of the UK's total demand for petroleum products. Around 11 per cent of oil is used by industry, including refinery use of oil, and a further 10 per cent is used for non-energy use (typically petrochemical feedstock). Relatively small amounts of oil are used in domestic heating and for transformation, meaning power generation from fuel oil or gas oil.

3.28 **Jet fuel deliveries increased more than 23 per cent between 1998 and 2015, but remain 10 per cent down on the 2006 peak.** Demand in recent years has been consistent, being between 11 and 11.5 million tonnes each year. Despite robust passenger numbers post the economic downturn, increased efficiencies in the airline industry have meant that less fuel has been needed.

Chart 3.9: Petrol, Diesel and Jet fuel deliveries 2000 to 2015



3.29 **Whilst the proportion of petroleum delivered to transport has remained relatively constant over time, the mix of fuels has changed greatly as many motorists have switched from petrol to diesel.** Chart 3.9 shows that contraction in petrol consumption reduced by just 2.0 per cent in 2015 compared to the average 3.5 per cent reduction year-on-year since 2000. Meanwhile deliveries of diesel increased by 4.3 per cent in 2015 compared to the average 2.6 per cent increase year-on-year (with a downturn in deliveries during the recession) over the same period. The increased demand for diesel, combined with the reduced contraction in demand for petrol, has driven the overall increase in demand for oil products seen in 2015. Demand has likely been affected by low road fuel prices seen in 2015; the average annual retail price of motor spirit was over 12 per cent lower compared to 2014, and road diesel was nearly 14 per cent lower (BEIS Monthly and annual prices of road fuels and petroleum products, Table 4.1.2).

3.30 The increase in diesel sales reflects in part the changing pattern of fuel consumption within the UK. The table below, derived from information provided by Ricardo-EE, shows that the share of diesel being consumed by cars and taxis more than doubled between 1995 and 2014, the most recent year for which data is available. The methodology used to calculate the split between vehicle types was updated this year, including using a new estimate of real world fuel consumption by passenger cars. This led to re-distribution between vehicle types; in particular, less diesel has been allocated to HGVs and more to passenger cars and LGVs than before. Please see the National Inventory Report on GHG emissions for further details:
https://uk-air.defra.gov.uk/assets/documents/reports/cat07/1605241007_ukghgi-90-14_Issue2.pdf

Table 3B: Estimated consumption of road transport fuels by vehicle class

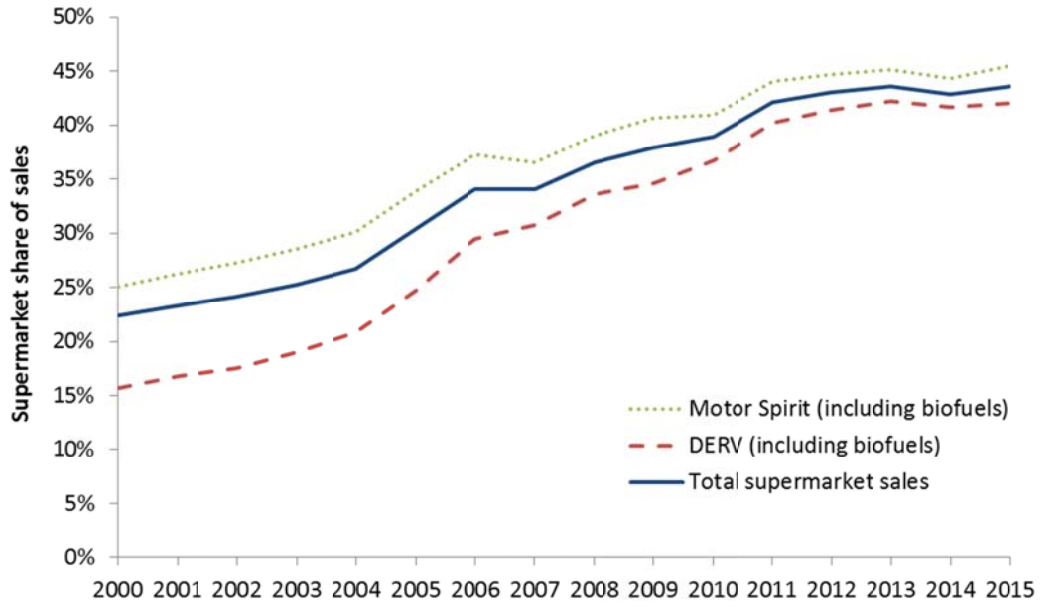
	1995	2000	2005	2010	2014
Petrol:					
Cars and taxis	92%	95%	96%	97%	97%
Light goods vehicles	7%	5%	3%	2%	2%
Motor cycles etc.	1%	1%	1%	1%	1%
Diesel:					
Cars and taxis	21%	27%	34%	41%	45%
Light goods vehicles	19%	23%	24%	23%	23%
Heavy goods vehicles	47%	40%	35%	29%	26%
Buses and coaches	13%	10%	8%	7%	5%

Source: Ricardo-EE. Percentages exclude off-road use of diesel.

3.31 Table 3.6 provides details of the consumption of motor spirit, gas oil/diesel and fuel oils for the period 2011 to 2015. The table includes information on retail, supermarket and commercial sales of motor spirit and DERV that are of interest but cannot be accommodated within the commodity balances. The supermarket sales refer to Asda, Morrisons, Sainsbury's and Tesco only.

3.32 **In 2015, the proportion of road fuels sold by supermarkets accounted for 46 per cent of petrol sales and 42 per cent of road diesel sales compared to 24 per cent and 15 per cent respectively in 1999.**

Chart 3.10: Percentage of road fuels sold by supermarkets 2000 to 2015



Biofuels in transport

3.33 The quantity of biofuels blended into motor spirit and DERV are shown in Table 3.6 of this chapter. Total consumption of biofuels and road fuels are shown in Table 3C, this is based on the volume of fuel for which excise duty has been paid to HM Revenue and Customs (HMRC). As a percentage of road fuels biofuels have increased significantly from 2007 until 2010, but have been relatively flat since. At 3.2 per cent of total road fuels, they are down on last year which is likely to be driven by cost signals. Further details on biofuel consumption can be found in Chapter 6, paragraphs 6.37 to 6.42. Biofuels are also included in the overall energy balances in Chapter 1.

Table 3C: Consumption of Biodiesel and Bioethanol in the UK 2005 to 2015

Unit: Million litres

Year	Biodiesel	All diesel including biodiesel	Biodiesel as % diesel share	Bioethanol	All petrol including bioethanol	Bioethanol as % petrol share	Biofuels as % of road fuels
2005	33	23,233	0.1%	85	25,693	0.3%	0.2%
2006	169	24,286	0.7%	95	24,724	0.4%	0.5%
2007	347	25,501	1.4%	153	24,019	0.6%	1.0%
2008	886	25,686	3.4%	206	22,709	0.9%	2.3%
2009	1,044	25,089	4.2%	320	22,029	1.5%	2.9%
2010	1,049	25,773	4.1%	631	20,650	3.1%	3.6%
2011	925	25,926	3.6%	652	19,548	3.3%	3.5%
2012	634	26,348	2.4%	775	18,792	4.1%	3.1%
2013	766	26,969	2.8%	820	18,020	4.6%	3.5%
2014	954	27,985	3.4%	814	17,672	4.6%	3.9%
2015	669	28,884	2.3%	795	17,319	4.6%	3.2%

Source: HM Revenue and Customs

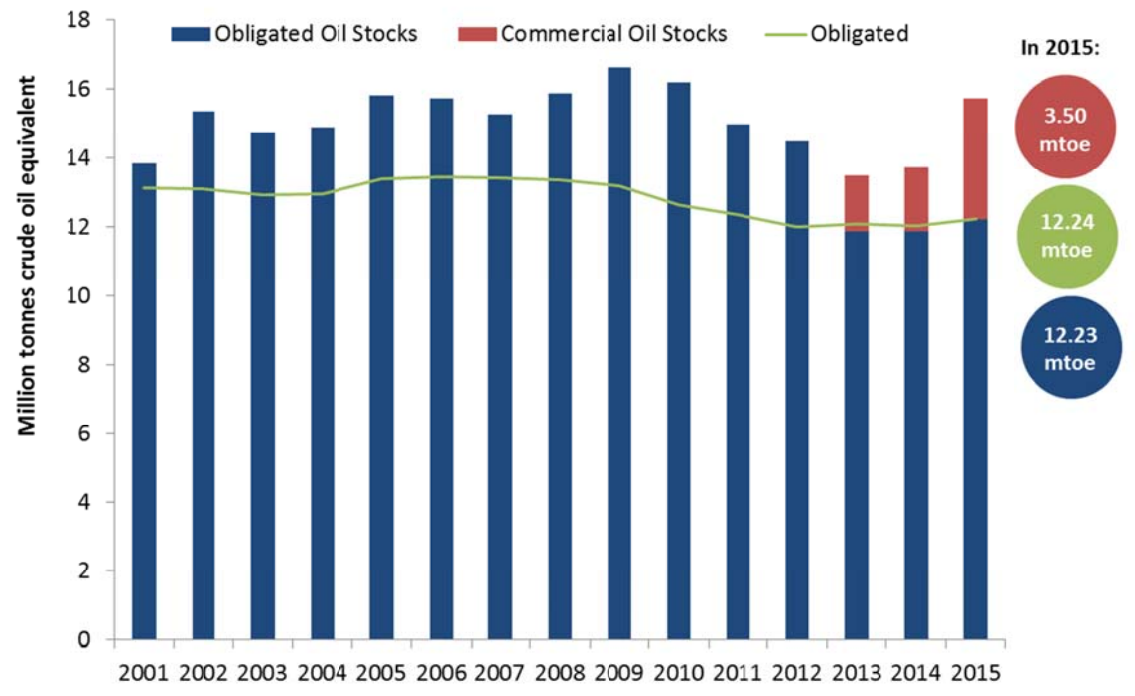
Stocks of oil (Table 3.7)

3.34 Table 3.7 shows the stocks of oil held either in the UK or on behalf of the UK. Stocks of crude oil and the various downstream petroleum products (petrol, diesel and other similar products) held under an obligation were 2.9 per cent higher at the end of 2015 versus 2014. At the end of 2015, UK companies held stocks equal to around 78 days of normal consumption.

3.35 In addition to stocks held for commercial purposes by oil companies operating in the UK, the UK obliges significant suppliers into the oil market to hold stocks of oil to help reduce the adverse impact on the UK and global economy of any disruptions to supply. The UK is required to hold these stocks under an EU directive (based on days of consumption held) and IEA qualifying arrangements (based on days of net imports held).

3.36 Chart 3.11 shows the total stocks over time, split into those stocks that are reserved to meet the condition of the EU directive (obligated oil stocks) and those stocks that are held under normal commercial arrangements (commercial oil stocks). The chart also shows the obligation on the UK to hold stocks under the EU directive (currently equivalent to 61 days of consumption). In accordance with the EU requirement, these are shown in terms of Tonnes of Oil Equivalent. Figures include crude, motor gasoline, aviation turbine fuel and diesel/gas oil stocks held both under obligation in the UK and under bilateral ticketing arrangements. For further information on the EU oil stocking requirements, see: http://eur-lex.europa.eu/legal-content/EN/ALL/?qid=1414672111051&uri=CELEX:32009L0119.

Chart 3.11: UK Oil stocks 2001 to 2015, under EU qualifying rules



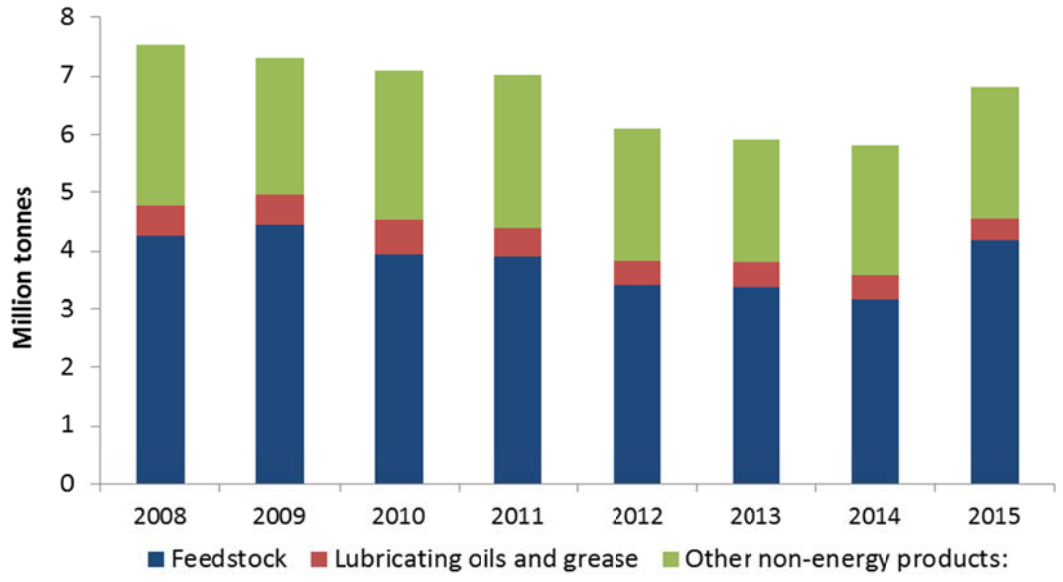
3.37 From 2013, following the introduction of a new EU directive on oil stocking, which was implemented at the end of 2012, commercial stocks can no longer be counted towards the EU's obligation. As a result, the UK's stocks are, on average, at around 60 days and marginally short of the EU's 61 day requirement. The UK is substantially above its requirement to the IEA (to hold 90 days of net imports), holding nearly 200 days of net imports at the end of 2015.

3.38 Further information on the method by which the UK obligates companies is described in www.gov.uk/government/uploads/system/uploads/attachment_data/file/401952/Guidance_for_Stakeholders_version_FEBRUARY_2015.pdf

Inland deliveries for non-energy uses (Table 3.8)

3.39 Table 3.8 summarises additional data on the non–energy uses made of the total deliveries of oil products included as the bottom line in the commodity balances in Tables 3.2 to 3.4. It provides extra information on the uses of lubricating oils and greases by use, and details of products used as petro-chemical feedstocks. Chart 3.12 below shows the principal use of non-energy products since 2008.

Chart 3.12: Use of non-energy products 2008 to 2015



3.40 The principal products for non-energy use are gases used as feedstocks in petrochemical plants. Natural gas liquids used as feedstocks accounted for over 60 per cent of the fuel put to non-energy use in 2015. Bitumen for road surfacing (21 per cent of non-energy use) and naphtha (16 per cent) are the other most significant fuels.

3.41 Deliveries for non-energy use increased substantially in 2015 as petrochemical processing increased towards the latter half of the year.

Technical notes and definitions

3.42 These notes and definitions are in addition to the technical notes and definitions covering all fuels and energy as a whole in Chapter 1.

Sources of data

3.43 The majority of the data included in the text and tables of this chapter are derived from BEIS's Downstream Oil Reporting System (DORS), which replaced the UK Petroleum Industry Association (UKPIA) reporting system in 2005. Data relating to the inland operations of the UK oil industry (i.e. information on the supply, refining and distribution of oil in the UK) are collected from companies. The data format and coverage have been designed to meet most of the needs of both Government and the industry itself. Each member of UKPIA and a number of other contributing companies provides returns on its refining activities and deliveries of various products to the internal UK market. This information is supplemented whenever necessary to allow for complete coverage within the statistics, with separate exercises carried out on special topics (for example, supermarket shares) or with the use of additional data (such as trade data from HM Revenue and Customs (HMRC) to cover import activity by non-reporting companies). In addition to these data sources, BEIS make use of the Emissions data from the EU's Emissions Trading Scheme provided on major energy users. In particular ensuring the consistency of data published on fuel used within the refineries (refinery gases and petroleum coke) and the sectoral usage of Gas oil and Fuel oil.

3.44 In 2014 BEIS introduced a new reporting form to major oil importers. The new form indicated the need for more detailed surveys of large importers within the UK and from January 2015 all major importers were obliged to complete the more detailed DORS form used by refiners. The DORS survey now offers substantially greater insight (particularly with respect to trade and blending activities).

Statistical differences

3.45 In Tables 3.1 to 3.5, there are headings titled "statistical differences". These are differences between the separately observed figures for production and delivery of crude oil and products during the path of their movement from the point of production to the point of consumption.

3.46 The statistical differences headings listed in the primary oil commodity balances (Table 3.1) are differences between the separately observed and reported figures for production from onshore or offshore fields and supply to the UK market that cannot be accounted for by any specific factors. Primarily they result from inaccuracies in the meters at various points along offshore pipelines. These meters vary slightly in their accuracy within accepted tolerances, giving rise to both losses and gains when the volumes of oil flowing are measured. Errors may also occur when non-standard conditions are used to meter the oil flow.

3.47 The statistical difference for primary oils in the table includes own use in onshore terminals and gas separation plants, losses, platform and other field stock changes. Another factor is the time lag that can exist between production and loading onto tankers being reported at an offshore field and the arrival of these tankers at onshore refineries and oil terminals. This gap is usually minimal and works such that any effect of this at the start of a month is balanced by a similar counterpart effect at the end of a month. However, there can be instances where the length of this interval is considerable and, if it happens at the end of a year, there can be significant effects on the statistical differences seen for the years involved.

3.48 Another technical factor that can contribute to the statistical differences relates to the recording of quantities at the producing field (which is the input for the production data) and at oil terminals and refineries, since they are in effect measuring different types of oil. Terminals and refineries are able to measure a standardised, stabilised crude oil, that is, with its water content and content of Natural Gas Liquids (NGLs) at a standard level and with the amounts being measured at standard conditions. However, at the producing field they are dealing with a "live" crude oil that can have a varying level of water and NGLs within it. While offshore companies report live crude at field, the disposals from oil terminals and offshore loading fields are reported as stabilised crude oil. This effectively assumes that terminal disposals are stabilised crude production figures. These changes were introduced in the 2002 edition of this Digest.

3.49 Part of the overall statistical difference may also be due to problems with the correct reporting of individual NGLs at the production site and at terminals and refineries. It is known that there is some

mixing of condensate and other NGLs in with what might otherwise be stabilised crude oil before it enters the pipeline. This mixing occurs as it removes the need for separate pipeline systems for transporting the NGLs and it also allows the viscosity of the oil passing down the pipeline to be varied as necessary. While the quantity figures recorded by terminals are in terms of stabilised crude oil, with the NGL component removed, there may be situations where what is being reported does not comply with this requirement.

3.50 With the downstream sector, the statistical differences can similarly be used to assess the validity and consistency of the data. From the tables, these differences are generally a very small proportion of the totals involved.

3.51 Refinery data are collated from details of individual shipments received and made by each refinery and terminal operating company. Each year there are thousands of such shipments, which may be reported separately by two or three different companies involved in the movement. While intensive work is carried out to check these returns, it is possible that some double counting of receipts may occur.

3.52 Temperature, pressure and natural leakage also contribute to the statistical differences. In addition, small discrepancies can occur between the estimated calorific values used at the field and the more accurate values measured at the onshore terminal where data are shown on an energy basis. The statistical differences can also be affected by rounding, clerical errors or unrecorded losses, such as leakage. Other contributory factors are inaccuracies in the reporting of the amounts being disposed of to the various activities listed, including differences between the quantities reported as going to refineries and the actual amounts passing through refineries.

3.53 Similarly, the data under the statistical difference headings in Tables 3.2 to 3.4 are the differences between the deliveries of petroleum products to the inland UK market reported by the supplying companies and estimates for such deliveries. These estimates are calculated by taking the output of products reported by refineries and then adjusting it by the relevant factors (such as imports and exports of the products, changes in the levels of stocks etc.).

3.54 It may be thought that such differences should not exist as the data underlying both the observed deliveries into the UK market and the individual components of the estimates (i.e. production, imports, exports, stocks) come from the same source (the oil companies). While it is true that each oil company provides data on its own activities in each area, there are separate areas of operation within the companies that report their own part of the overall data. Table 3D below illustrates this.

Table 3D Sources of data within oil companies

Area covered	Source
Refinery production	Refinery
Imports and exports	Refinery, logistics departments, oil traders
Stocks	Refinery, crude and product terminals, major storage and distribution sites
Final deliveries	Sales, marketing and accounts departments

3.55 Each individual reporting source will have direct knowledge of its own data. For example, refineries will know what they produce and how much leaves the refinery gate as part of routine monitoring of the refinery operations. Similarly other data such as sales to final consumers or imports and exports will be closely monitored. Companies will ensure that each component set of data reported is as accurate as possible but their reporting systems may not be integrated, meaning that internal consistency checks across all reported data cannot be made. Each part of a company may also work to different timings as well, which may further add to the degree of differences seen.

3.56 The main area where there is known to be a problem is with the “Transfers” heading in the commodity balances. The data reported under this heading have two components. Firstly, there is an allowance for reclassification of products within the refining process. For example, butane can be added to motor spirit to improve the octane rating, aviation turbine fuel could be reclassified as domestic kerosene if its quality deteriorates, and much of the fuel oil imported into the UK is further refined into other petroleum products. Issues can arise with product flows between different reporting companies, for example when company A delivers fuel oil to company B who report a receipt of a feedstock. Secondly, and in addition to these inter-product transfers, the data also include an allowance to cover the receipt of

backflows of products from petrochemical plants that are often very closely integrated with refineries. A deduction for these backflows thus needs to be included under the "Transfers" heading so that calculated estimates reflect net output and are thus more comparable with the basis of the observed deliveries data.

3.57 There is scope for error in the recording of these two components of transfers. With inter-product transfers, the data are recorded within the refinery during the refining and blending processes where the usual units used to record the changes are volumes rather than masses. Different factors apply for each product when converting from a volume to mass basis, as shown by the conversion factors given in Annex A of this Digest. Thus, a balanced transfer in volume terms may not be equivalent when converted to a mass basis. This is thought to be the main source of error within the individual product balances.

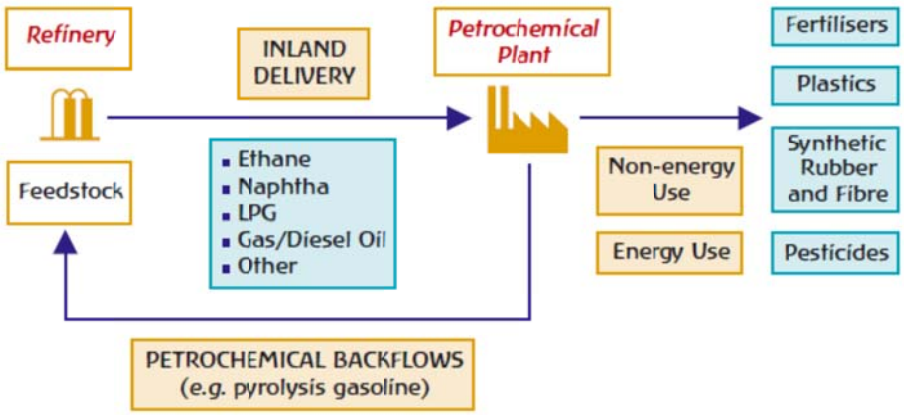
Revisions to published data

3.58 Following consultation with industry, BEIS have made a number of revisions to the statistics published here. The revisions affect data for 2013 and 2014.

3.59 Data now available since introducing the full DORS survey to importers as well as refiners suggests that historically volumes being delivered to international marine bunkers were under-estimated. Revisions have been made to 2013 and 2014 based on data for 2015.

3.60 BEIS and Industry have also worked to better understand product flows between refiners and petrochemical plants. Whilst most petroleum products are used for energy purposes, substantial volumes are delivered to the petrochemical industry as a feedstock for the manufacturing of plastics, synthetic fibres and other products. These products are used, but they are not combusted. The refining and petrochemical industries are often closely related as shown in Figure 3.1 below. Refineries deliver product to a petrochemical plant for the production of a range of products but they also return some petroleum products back to refineries for further processing.

Figure 3.1: Deliveries to the Petrochemical Sector (Source: IEA)



3.61 Previously backflows data as received at the refinery were not included in the balances. BEIS have previously not separately identified deliveries of backflows from petrochemical plants but for this edition we have included them under both the upstream side of the balance (in Table 3.1 they are included as part of the ‘feedstocks’ column) and the downstream part of the balance (in Table 3.2 to 3.4 the volumes are shown on the ‘other’ row in the transformation section) to ensure that the downstream supply remains in balance for accounting purposes. We continue to consider how best to reflect these within the balances and welcome comments.

3.62 Last year BEIS carried out a more detailed analysis of the final destination of NGLs (propane, butane and condensate) which were previously recorded as ‘unknown’ on the upstream data collection system PPRS. Research identified that some disposals that were previously assumed to be exported were being consumed in the UK by petrochemical plants for non-energy use leading to an increase in these figures. To further improve our understanding of the uses of fuels for petrochemical processing BEIS will be conducting further research in the coming year to better understand this sector.

Indigenous production

3.63 The term indigenous is used throughout this chapter and includes oil from the UK Continental Shelf, both offshore and onshore. Production of feedstocks at petrochemical plants that are delivered to refineries as backflows have not been included in production figures in the text or charts in this chapter.

Deliveries

3.64 These are deliveries into consumption, as opposed to being estimates of actual consumption or use. They are split between inland deliveries and deliveries to marine bunkers. Inland deliveries will not necessarily be consumed in the UK (e.g. aviation fuels).

Imports and exports

3.65 The information given under the headings "imports" and "exports" in this chapter are the figures recorded by importers and exporters of oil. They can differ in some cases from the import and export figures provided by HMRC that are given in Annex G on BEIS's energy statistics website. Such differences arise from timing differences between actual and declared movements but also result from the Customs figures including re-exports. These are products that may have originally entered the UK as imports from another country and been stored in the UK prior to being exported back out of the UK, as opposed to having been actually produced in the UK.

Marine bunkers

3.66 This covers deliveries to be used by ocean going and coastal vessels under international bunker contracts. Other deliveries to fishing, coastal and inland vessels are excluded. As part of BEIS's audit programme, UK refinery contacts reviewed the provision of fuel to marine bunkers in 2009. Whilst a number of companies have reviewed their methodology there are still issues with determining the final destination of fuel when these are supplied to third parties that are not part of BEIS's monitoring programme. This issue impacts on both the volumes delivered directly to marine vessels, and whether those vessels are engaged in domestic or international navigation.

3.67 Whilst BEIS will continue to work closely with reporting companies to improve the estimation of marine fuel use. We have aligned energy demand for shipping in line with the estimates of marine fuel use in the UK's National Atmospheric Emissions Inventory (NAEI). The NAEI figures use BEIS's estimate of marine fuels and derive the split between international and domestic use based on an activity based study of the UK's marine fuel use.

Crude and process oils

3.68 These are all feedstocks, other than distillation benzene, for refining at refinery plants. Gasoline feedstock is any process oil whether clean or dirty which is used as a refinery feedstock for the manufacture of gasoline or naphtha. Other refinery feedstock is any process oil used for the manufacture of any other petroleum products.

Refineries

3.69 Refineries distil crude and process oils to obtain petroleum products. This excludes petrochemical plants, plants only engaged in re-distilling products to obtain better grades, crude oil stabilisation plants and gas separation plants.

Products used as fuel (energy use)

3.70 The following paragraphs define the product headings used in the text and tables of this chapter. The products are used for energy, either directly as a fuel or as an input into electricity generation.

Refinery fuel - Petroleum products used as fuel at refineries.

Ethane - A naturally gaseous straight-chain hydrocarbon (C2H6) in natural gas and refinery gas streams. Primarily used, or intended to be used, as a chemical feedstock.

Propane - Hydrocarbon containing three carbon atoms (C3H8), gaseous at normal temperature but generally stored and transported under pressure as a liquid. Used mainly for industrial purposes, but also as transport, Liquid Petroleum Gas (LPG), and some domestic heating and cooking.

Butane - Hydrocarbon containing four carbon atoms (C4H10), otherwise as for propane. Additionally used as a constituent of motor spirit to increase vapour pressure and as a chemical feedstock.

Naphtha (Light distillate feedstock) - Petroleum distillate boiling predominantly below 200°C.

Aviation spirit - All light hydrocarbon oils intended for use in aviation piston-engine power units, including bench testing of aircraft engines.

Motor spirit - Blended light petroleum components used as fuel for spark-ignition internal-combustion engines other than aircraft engines:

(i) Premium unleaded grade - all finished motor spirit, with an octane number (research method) not less than 95.

(ii) Lead Replacement petrol / Super premium unleaded grade - finished motor spirit, with an octane number (research method) not less than 97.

Aviation turbine fuel (ATF) - All other turbine fuel intended for use in aviation gas-turbine power units and including bench testing of aircraft engines.

Burning oil (kerosene or "paraffin") - Refined petroleum fuel, intermediate in volatility between motor spirit and gas oil, used primarily for heating. White spirit and kerosene used for lubricant blends are excluded.

Gas/diesel oil - Petroleum fuel having a distillation range immediately between kerosene and light-lubricating oil:

(i) **DERV (Diesel Engined Road Vehicle) fuel** - automotive diesel fuel for use in high speed, compression ignition engines in vehicles subject to Vehicle Excise Duty.

(ii) **Gas oil** - used as a burner fuel in heating installations, for industrial gas turbines and as for DERV (but in vehicles not subject to Vehicle Excise Duty e.g. agricultural vehicles, fishing vessels, construction equipment used off road and usually coloured with a red marker dye). Gas oil used for oil and gas extraction is included from 2005 onwards.

(iii) **Marine diesel oil** - heavier type of gas oil suitable for heavy industrial and marine compression-ignition engines.

Fuel oil - Heavy petroleum residue blends used in atomising burners and for heavy-duty marine engines (marine bunkers, etc.) with heavier grades requiring pre-heating before combustion. Excludes fuel oil for grease making or lubricating oil and fuel oil sold as such for road making.

Products not used as fuel (non-energy use)

3.71 The following paragraphs define the product headings used in the text and tables of this chapter, which are used for non-energy purposes.

Feedstock for petroleum chemical plants - All petroleum products intended for use in the manufacture of petroleum chemicals. This includes middle distillate feedstock of which there are several grades depending on viscosity. The boiling point ranges between 200°C and 400°C. (A deduction has been made from these figures equal to the quantity of feedstock used in making the conventional petroleum products that are produced during the processing of the feedstock. The output and deliveries of these conventional petroleum products are included elsewhere as appropriate.)

White spirit and specific boiling point (SBP) spirits - These are refined distillate intermediates with a distillation in the naphtha / kerosene range. **White spirit** has a boiling range of about 150°C to 200°C and is used as a paint or commercial solvent. **SBP spirit** is also known as **Industrial**

spirit and has a wider boiling range that varies up to 200°C dependent upon its eventual use. It has a variety of uses that vary from use in seed extraction, rubber solvents and perfume.

Lubricating oils (and grease) - Refined heavy distillates obtained from the vacuum distillation of petroleum residues. Includes liquid and solid hydrocarbons sold by the lubricating oil trade, either alone or blended with fixed oils, metallic soaps and other organic and/or inorganic bodies. A certain percentage of inland deliveries are re-used as a fuel, but all inland deliveries of lubricating oils have been classified as non-energy use only. Some deliveries are used for energy purposes, but it is difficult to estimate energy use figures with any degree of accuracy, hence no such estimates appear in the commodity balance tables. DUKES Table 3.8 (prior to 2010, table 3D, within the main text) provides limited information on the use of lubricants and grease. The information which was published under the heading of "Motors" has been amended to now include "Gear Oils and Transmission" to give a full picture of the lubricants used by vehicles.

Bitumen - The residue left after the production of lubricating oil distillates and vacuum gas oil for upgrading plant feedstock. Used mainly for road making and building construction purposes. Includes other petroleum products such as creosote and tar mixed with bitumen for these purposes and fuel oil sold specifically for road making.

Petroleum wax - Includes paraffin wax, which is a white crystalline hydrocarbon material of low oil content normally obtained during the refining of lubricating oil distillate, paraffin scale, slack wax, microcrystalline wax and wax emulsions. Used for candle manufacture, polishes, food containers, wrappings etc.

Petroleum cokes - Carbonaceous material derived from hydrocarbon oils, uses for which include metallurgical electrode manufacture. Quantities of imports of this product are used as a fuel as it has a higher energy content than coal, though a lower energy content than fuel oils.

Miscellaneous products - Includes aromatic extracts, defoament solvents and other minor miscellaneous products.

Main classes of consumer

3.72 The following are definitions of the main groupings of users of petroleum products used in the text and tables of this chapter.

Electricity generators - Petroleum products delivered for use by major power producers and other companies for electricity generation including those deliveries to the other industries listed below which are used for autogeneration of electricity (Tables 3.2 to 3.4). This includes petroleum products used to generate electricity at oil refineries and is recorded in the Transformation section, as opposed to other uses of refinery fuels that are recorded in the Energy Industry Use section. From the 2009 chapter of the Digest, data in Chapter 3 (Table 3.2 to 3.4) has been aligned with Chapter 5 (Table 5.4). The data on oil used for electricity generation collected from major power producers and autogenerators is judged to be at least as accurate as the data from refiners on deliveries, and has the advantage of consistency.

Agriculture - Deliveries of fuel oil and gas oil/diesel for use in agricultural power units, dryers and heaters. Burning oil for farm use.

Iron and steel - Deliveries of petroleum products to steel works and iron foundries. This is now based on information from the Iron and Steel Statistics Bureau.

Other industries - The industries covered correspond to the industrial groups shown in Table 1G of Chapter 1, excluding Iron and Steel.

National navigation - Fuel oil and gas/diesel oil delivered, other than under international bunker contracts, for fishing vessels, UK oil and gas exploration and production, coastal and inland shipping and for use in ports and harbours.

Railways - Deliveries of fuel oil, gas/diesel oil and burning oil to railways now based on estimates produced by Ricardo Energy and Environment as part of their work to compile the UK National

Atmospheric Emissions Inventory (NAEI).

Air transport - Total inland deliveries of aviation turbine fuel and aviation spirit. The figures cover deliveries of aviation fuels in the UK to international and other airlines, British and foreign Governments (including armed services) and for private flying. In order to compile the NAEI, Ricardo Energy and Environment need to estimate how aviation fuel usage splits between domestic and international consumption. Information from Ricardo Energy and Environment suggests that virtually all aviation spirit is used domestically while just 5 per cent of aviation turbine fuel use is for domestic consumption. A further 5 per cent is estimated to be consumed by the military.

Road transport - Deliveries of motor spirit and DERV fuel for use in road vehicles of all kinds.

Domestic - Fuel oil and gas oil delivered for central heating of private houses and other dwellings and deliveries of kerosene (burning oil) and liquefied petroleum gases for domestic purposes (see Tables 3.2 to 3.4).

Public services - Deliveries to national and local Government premises (including educational, medical and welfare establishments and British and foreign armed forces) of fuel oil and gas oil for central heating and of kerosene (burning oil).

Miscellaneous - Deliveries of fuel oil and gas oil for central heating in premises other than those classified as domestic or public.

Monthly and quarterly data

3.73 Monthly or quarterly aggregate data for certain series presented in this chapter are available. This information can be obtained free of charge by following the links given in the Energy Statistics section of the BEIS website on GOV.UK at: www.gov.uk/government/organisations/department-for-business-energy-and-industrial-strategy.

Contacts:

Warren Evans
Energy Statistics Team
warren.evans@decc.gsi.gov.uk
0300 068 5059

Natalie Cartwright
Downstream Oil Statistics (petroleum products)
natalie.cartwright@decc.gsi.gov.uk
0300 068 5260

Matthew Curds
Upstream Oil Statistics (primary oils)
matthew.curds@decc.gsi.gov.uk
0300 068 8414

3.1 Commodity balances 2013 - 2015[1]

Primary oil

Thousand tonnes

	Crude oil	Ethane	Propane	Butane	Condensate	Total NGL	Feedstock (2)	Total primary oil
2013								
Supply								
Production	38,456	341	683	542	624	2,190	454r	41,101r
Imports	50,311	515	582	396	666	2,158	6,497r	58,967r
Exports	-30,376	-14	-563	-384	-333	-1,293	-1,436	-33,105
Stock change (3)	+615	..	..	..	..	+19	+90	+724
Transfers (4)	-	-843	-680	-327	-371	-2,221	+463	-1,758
Total supply	**59,007**	..	..	..	..	**853**	**6,068r**	**65,928r**
Statistical difference (5)(6)	-20	..	..	..	..	-16	-8	-44
Total demand (5)	**59,026**	..	..	..	..	**870**	**6,076r**	**65,972r**
Transformation (Petroleum refineries)	59,026	..	..	..	..	870	6,076r	65,972r
Energy industry use	-	-	-	-	-	-	-	-
2014								
Supply								
Production	37,474	384	790r	605	675	2,454r	400r	40,328r
Imports	46,570	584	582	418	736	2,320	4,747r	53,638r
Exports	-28,204	-14	-704r	-505	-382r	-1,605r	-1,060	-30,869r
Stock change (3)	-497	..	..	..	..	-26	-69	-592
Transfers (4)	-	-944	-641r	-317	-352r	-2,255r	+817	-1,439r
Total supply	**55,342**	..	..	..	..	**888**	**4,835**	**61,066r**
Statistical difference (5)(6)	-	..	..	..	..	+1	+2	+4
Total demand (5)	**55,342**	..	..	..	..	**887**	**4,833**	**61,063r**
Transformation (Petroleum refineries)	55,342	..	..	..	..	887	4,833	61,063r
Energy industry use	-	-	-	-	-	-	-	-
2015								
Supply								
Production	42,826	345	744	642	730	2,462	410	45,698
Imports	42,674	678	665	697	444	2,484	5,322	50,480
Exports	-29,964	-11	-540	-577	-638	-1,766	-1,930	-33,660
Stock change (3)	-160	..	..	..	..	+28	+123	-9
Transfers (4)	-	-995	-743	-350	-265	-2,353	+1,218	-1,135
Total supply	**55,376**	..	..	..	..	**855**	**5,144**	**61,375**
Statistical difference (5)(6)	-	..	..	..	..	+8	-8	+0
Total demand (5)	**55,376**	..	..	..	..	**847**	**5,152**	**61,375**
Transformation (Petroleum refineries)	55,376	..	..	..	..	847	5,152	61,375
Energy industry use	-	-	-	-	-	-	-	-

(1) As there is no use made of primary oils and feedstocks by industries other than the oil and gas extraction and petroleum refining industries, other industry headings have not been included in this table. As such, this table is a summary of the activity of what is known as the Upstream oil industry.

(2) Production of feedstock indicates volume received from petrochemical plant as a backflow. See paragraphs 3.60 and 3.61 for more detail.

(3) Stock fall (+), stock rise (-).

(4) Transfers direct from the source to the petrochemical sector.

(5) Total supply minus total demand.

(6) Figures for total demand for the individual NGLs (and thus for the statistical differences as well) are not available.

3.2 Commodity balances 2015

Petroleum products

Thousand tonnes

	Ethane	Propane	Butane	Other gases	Naphtha	Aviation spirit	Motor spirit	White Spirit & SBP	Aviation turbine fuel
Supply									
Production	-	1,357	850	2,304	2,368	-	17,024	151	4,973
Other sources	995	743	350	-	265	-	-	-	-
Imports	-	660	138	-	963	13	3,805	98	8,186
Exports	-	-293	-520	-	-436	-	-10,340	-76	-1,201
Marine bunkers	-	-	-	-	-	-	-	-	-
Stock change *(2)*	-	4	10	-0	-8	-0	-137	-7	-201
Transfers	-	-	-	-	-1,986	-0	1,777	-6	-413
Total supply	**995**	**2,472**	**829**	**2,304**	**1,165**	**13**	**12,129**	**160**	**11,344**
Statistical difference *(3)*	**-**	**-7**	**-17**	**-52**	**50**	**1**	**47**	**-0**	**-28**
Total demand	**995**	**2,478**	**845**	**2,356**	**1,115**	**11**	**12,082**	**160**	**11,372**
Transformation	**-**	**12**	**282**	**379**	**-**	**-**	**-**	**-**	**-**
Electricity generation	-	-	-	253	-	-	-	-	-
Major power producers	-	-	-	-	-	-	-	-	-
Autogenerators	-	-	-	253	-	-	-	-	-
Heat generation	-	9	-	-	-	-	-	-	-
Petroleum refineries	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-
Blast furnaces	-	-	-	-	-	-	-	-	-
Patent fuel manufacture	-	-	-	-	-	-	-	-	-
Other (4)	-	3	282	126	-	-	-	-	-
Energy industry use	**-**	**-**	**-**	**1,942**	**-**	**-**	**-**	**-**	**-**
Electricity generation	-	-	-	-	-	-	-	-	-
Oil & gas extraction	-	-	-	-	-	-	-	-	-
Petroleum refineries	-	-	-	1,942	-	-	-	-	-
Coal extraction	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-
Blast furnaces	-	-	-	-	-	-	-	-	-
Patent fuel manufacture	-	-	-	-	-	-	-	-	-
Pumped storage	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Losses	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Final consumption	**995**	**2,467**	**563**	**35**	**1,115**	**11**	**12,082**	**160**	**11,372**
Industry	**-**	**275**	**72**	**-**	**43**	**-**	**-**	**-**	**-**
Unclassified	-	273	72	-	43	-	-	-	-
Iron & steel	-	2	-	-	-	-	-	-	-
Non-ferrous metals	-	-	-	-	-	-	-	-	-
Mineral products	-	-	-	-	-	-	-	-	-
Chemicals	-	-	-	-	-	-	-	-	-
Mechanical engineering, etc	-	-	-	-	-	-	-	-	-
Electrical engineering, etc	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	-	-	-	-	-
Food, beverages, etc	-	-	-	-	-	-	-	-	-
Textiles, leather, etc	-	-	-	-	-	-	-	-	-
Paper, printing etc	-	-	-	-	-	-	-	-	-
Other industries	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-
Transport	**-**	**82**	**-**	**-**	**-**	**11**	**12,082**	**-**	**11,372**
Air	-	-	-	-	-	11	-	-	11,372
Rail	-	-	-	-	-	-	-	-	-
Road	-	82	-	-	-	-	12,082	-	-
National navigation	-	-	-	-	-	-	-	-	-
Pipelines	-	-	-	-	-	-	-	-	-
Other	**-**	**514**	**4**	**-**	**-**	**-**	**-**	**-**	**-**
Domestic	-	204	1	-	-	-	-	-	-
Public administration	-	16	-	-	-	-	-	-	-
Commercial	-	204	3	-	-	-	-	-	-
Agriculture	-	90	0	-	-	-	-	-	-
Miscellaneous	-	-	-	-	-	-	-	-	-
Non energy use *(5)*	**995**	**1,596**	**487**	**35**	**1,072**	**-**	**-**	**160**	**-**

(1) Includes marine diesel oil.
(2) Stock fall (+), stock rise (-).
(3) Total supply minus total demand.
(4) Backflows delivered from petrochemical plants to refineries for re-processing. See paragraphs 3.60 and 3.61 for further details
(5) For further details on non-energy usage see paragraphs 3.39 to 3.41 and 3.71

3.2 Commodity balances 2015 (continued)

Petroleum products

Thousand tonnes

Burning oil	DERV	Gas Oil (1)	Fuel oils	Lubri -cants	Bitu -men	Petroleum coke	Misc. products	Total Products	
									Supply
2,031	13,483	7,204	5,094	350	990	1,737	1,099	61,014	Production
-	-	-	-	-	-	-	-	2,353	Other sources
860	12,605	1,838	1,033	400	509	339	280	31,727	Imports
-151	-1,792	-2,806	-3,379	-365	-61	-455	-958	-22,835	Exports
-	-	-1,591	-835	-	-	-	-	-2,426	Marine bunkers
-46	-94	-105	-83	-19	7	-58	-7	-747	Stock change *(2)*
397	-422	285	-1,013	-0	14	-	150	-1,218	Transfers
3,091	**23,779**	**4,824**	**816**	**365**	**1,458**	**1,562**	**563**	**67,869**	**Total supply**
-20	**123**	**-1**	**3**	**3**	**-6**	**-8**	**-9**	**79**	**Statistical difference *(3)***
3,111	**23,656**	**4,825**	**814**	**363**	**1,464**	**1,571**	**572**	**67,790**	**Total demand**
-	**-**	**102**	**206**	**-**	**-**	**122**	**12**	**1,116**	**Transformation**
-	-	97	161	-	-	39	-	551	Electricity generation
-	-	38	132	-	-	39	-	208	Major power producers
-	-	60	30	-	-	-	-	343	Autogenerators
-	-	5	45	-	-	-	-	59	Heat generation
-	-	-	-	-	-	-	-	-	Petroleum refineries
-	-	-	-	-	-	-	-	-	Coke manufacture
-	-	-	-	-	-	-	-	-	Blast furnaces
-	-	-	-	-	-	84	-	84	Patent fuel manufacture
-	-	-	-	-	-	-	12	423	Other (4)
-	**-**	**633**	**342**	**-**	**-**	**1,127**	**56**	**4,099**	**Energy industry use**
-	-	-	-	-	-	-	-	-	Electricity generation
-	-	633	66	-	-	-	-	699	Oil & gas extraction
-	-	-	276	-	-	1,127	56	3,400	Petroleum refineries
-	-	-	-	-	-	-	-	-	Coal extraction
-	-	-	-	-	-	-	-	-	Coke manufacture
-	-	-	-	-	-	-	-	-	Blast furnaces
-	-	-	-	-	-	-	-	-	Patent fuel manufacture
-	-	-	-	-	-	-	-	-	Pumped storage
-	-	-	-	-	-	-	-	-	Other
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**Losses**
3,111	**23,656**	**4,089**	**266**	**363**	**1,464**	**322**	**504**	**62,576**	**Final consumption**
1,236	**-**	**1,647**	**160**	**-**	**-**	**184**	**-**	**3,617**	**Industry**
1,212	-	973	37	-	-	184	-	2,793	Unclassified
-	-	0	4	-	-	-	-	6	Iron & steel
-	-	-	0	-	-	-	-	0	Non-ferrous metals
-	-	158	7	-	-	-	-	165	Mineral products
-	-	88	25	-	-	-	-	112	Chemicals
-	-	-	-	-	-	-	-	-	Mechanical engineering, etc
-	-	1	-	-	-	-	-	1	Electrical engineering, etc
24	-	152	6	-	-	-	-	182	Vehicles
-	-	28	73	-	-	-	-	101	Food, beverages, etc
-	-	39	-	-	-	-	-	39	Textiles, leather, etc
-	-	26	-	-	-	-	-	26	Paper, printing etc
-	-	30	-	-	-	-	-	30	Other industries
-	-	154	8	-	-	-	-	162	Construction
-	**23,656**	**1,224**	**-**	**-**	**-**	**-**	**-**	**48,427**	**Transport**
-	-	-	-	-	-	-	-	11,383	Air
-	-	611	-	-	-	-	-	611	Rail
-	23,656	-	-	-	-	-	-	35,820	Road
-	-	614	-	-	-	-	-	614	National navigation
-	-	-	-	-	-	-	-	-	Pipelines
1,875	**-**	**1,202**	**107**	**-**	**-**	**-**	**-**	**3,701**	**Other**
1,875	-	132	-	-	-	-	-	2,212	Domestic
-	-	262	26	-	-	-	-	304	Public administration
-	-	340	61	-	-	-	-	608	Commercial
-	-	233	5	-	-	-	-	328	Agriculture
-	-	235	14	-	-	-	-	249	Miscellaneous
-	**-**	**15**	**-**	**363**	**1,464**	**138**	**504**	**6,830**	**Non energy use (5)**

3.3 Commodity balances 2014

Petroleum products

Thousand tonnes

	Ethane	Propane	Butane	Other gases	Naphtha	Aviation spirit	Motor spirit	White Spirit & SBP	Aviation turbine fuel
Supply									
Production	-	1,382	745r	2,266r	2,290	-	15,709	165	4,635
Other sources	944	641r	317	-	352r	-	-	-	-
Imports	-	295	170r	-	733	17	3,482	46	8,157
Exports	-	-392	-506	-	-585	-	-8,683	-80	-1,072
Marine bunkers	-	-	-	-	-	-	-	-	-
Stock change *(2)*	-	-27	-3	-0	-14	2	113	-5	123
Transfers	-	-2	0	24	-1,952	-0	1,610	-0	-642
Total supply	**944**	**1,898r**	**722r**	**2,291r**	**824r**	**18**	**12,232**	**125**	**11,201**
Statistical difference *(3)*	**-**	**-24**	**-23**	**23**	**28**	**0**	**-94**	**-1**	**-19**
Total demand	**944**	**1,922r**	**746r**	**2,267r**	**796r**	**18**	**12,326**	**126**	**11,220**
Transformation	**-**	**20r**	**277r**	**349r**	**-**	**-**	**-**	**-**	**-**
Electricity generation	-	-	-	237	-	-	-	-	-
Major power producers	-	-	-	-	-	-	-	-	-
Autogenerators	-	-	-	237	-	-	-	-	-
Heat generation	-	11	-	-	-	-	-	-	-
Petroleum refineries	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-
Blast furnaces	-	-	-	-	-	-	-	-	-
Patent fuel manufacture	-	-	-	-	-	-	-	-	-
Other (4)	-	9r	277r	112r	-	-	-	-	-
Energy industry use	**-**	**-**	**-**	**1,918**	**-**	**-**	**-**	**-**	**-**
Electricity generation	-	-	-	-	-	-	-	-	-
Oil & gas extraction	-	-	-	-	-	-	-	-	-
Petroleum refineries	-	-	-	1,918	-	-	-	-	-
Coal extraction	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-
Blast furnaces	-	-	-	-	-	-	-	-	-
Patent fuel manufacture	-	-	-	-	-	-	-	-	-
Pumped storage	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Losses	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Final consumption	**944**	**1,903r**	**469r**	**0**	**796r**	**18**	**12,326**	**126**	**11,220**
Industry	**-**	**239r**	**110r**	**-**	**32r**	**-**	**-**	**-**	**-**
Unclassified	-	237r	110r	-	32r	-	-	-	-
Iron & steel	-	3	-	-	-	-	-	-	-
Non-ferrous metals	-	-	-	-	-	-	-	-	-
Mineral products	-	-	-	-	-	-	-	-	-
Chemicals	-	-	-	-	-	-	-	-	-
Mechanical engineering, etc	-	-	-	-	-	-	-	-	-
Electrical engineering, etc	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	-	-	-	-	-
Food, beverages, etc	-	-	-	-	-	-	-	-	-
Textiles, leather, etc	-	-	-	-	-	-	-	-	-
Paper, printing etc	-	-	-	-	-	-	-	-	-
Other industries	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-
Transport	**-**	**88**	**-**	**-**	**-**	**18**	**12,326**	**-**	**11,220**
Air	-	-	-	-	-	18	-	-	11,220
Rail	-	-	-	-	-	-	-	-	-
Road	-	88	-	-	-	-	12,326	-	-
National navigation	-	-	-	-	-	-	-	-	-
Pipelines	-	-	-	-	-	-	-	-	-
Other	**-**	**464r**	**19**	**-**	**-**	**-**	**-**	**-**	**-**
Domestic	-	212	19	-	-	-	-	-	-
Public administration	-	3r	-	-	-	-	-	-	-
Commercial	-	163r	-	-	-	-	-	-	-
Agriculture	-	85	0	-	-	-	-	-	-
Miscellaneous	-	-	-	-	-	-	-	-	-
Non energy use *(5)*	**944**	**1,111**	**340**	**0**	**763**	**-**	**-**	**126**	**-**

(1) Includes marine diesel oil.
(2) Stock fall (+), stock rise (-).
(3) Total supply minus total demand.
(4) Backflows delivered from petrochemical plants to refineries for re-processing. See paragraphs 3.60 and 3.61 for further details
(5) For further details on non-energy usage see paragraphs 3.38 to 3.39 and 3.69

3.3 Commodity balances 2014 (continued)

Petroleum products

Thousand tonnes

Burning oil	DERV	Gas Oil (1)	Fuel oils	Lubri -cants	Bitu -men	Petroleum coke	Misc. products	Total Products	
									Supply
2,093	13,726	8,049	5,409	373	1,006	1,745	798r	60,392r	Production
-	-	-	-	-	-	-	-	2,255r	Other sources
619	11,452r	1,406r	1,024r	386	465	537	306	29,093r	Imports
-164	-1,942	-3,463	-4,148	-337	-62	-567	-746	-22,748	Exports
-	-	-1,676r	-1,148r	-	-	-	-	-2,824r	Marine bunkers
-15	-61	24	107	29	18	16	-13	292	Stock change *(2)*
621	-509	489	-616	-20	-18	-	199	-817	Transfers
3,154	**22,666r**	**4,829r**	**627r**	**430**	**1,409**	**1,730**	**543r**	**65,643r**	**Total supply**
-26	**-10**	**-0**	**40**	**-6**	**-1**	**-**	**2**	**-109**	**Statistical difference *(3)***
3,179	**22,675**	**4,829r**	**588r**	**436**	**1,410**	**1,730**	**541r**	**65,752r**	**Total demand**
-	**-**	**118r**	**186r**	**-**	**-**	**91**	**15r**	**1,055r**	**Transformation**
-	-	112r	141r	-	-	-	-	490r	Electricity generation
-	-	46	122	-	-	-	-	168	Major power producers
-	-	66r	19r	-	-	-	-	322r	Autogenerators
-	-	5	45r	-	-	-	-	61r	Heat generation
-	-	-	-	-	-	-	-	-	Petroleum refineries
-	-	-	-	-	-	-	-	-	Coke manufacture
-	-	-	-	-	-	-	-	-	Blast furnaces
-	-	-	-	-	-	91	-	91	Patent fuel manufacture
-	-	-	-	-	-	-	15r	413r	Other (4)
-	**-**	**647**	**156r**	**-**	**-**	**1,140r**	**-**	**3,861r**	**Energy industry use**
-	-	-	-	-	-	-	-	-	Electricity generation
-	-	647	16r	-	-	-	-	663r	Oil & gas extraction
-	-	-	140r	-	-	1,140r	-	3,198r	Petroleum refineries
-	-	-	-	-	-	-	-	-	Coal extraction
-	-	-	-	-	-	-	-	-	Coke manufacture
-	-	-	-	-	-	-	-	-	Blast furnaces
-	-	-	-	-	-	-	-	-	Patent fuel manufacture
-	-	-	-	-	-	-	-	-	Pumped storage
-	-	-	-	-	-	-	-	-	Other
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**Losses**
3,179	**22,675**	**4,065r**	**246r**	**436**	**1,410**	**499r**	**526**	**60,837r**	**Final consumption**
1,270	**-**	**1,624r**	**145r**	**-**	**-**	**350r**	**-**	**3,771r**	**Industry**
1,246	-	981r	26r	-	-	350r	-	2,982r	Unclassified
-	-	0	3r	-	-	-	-	6r	Iron & steel
-	-	-	0	-	-	-	-	0	Non-ferrous metals
-	-	165r	5r	-	-	-	-	169r	Mineral products
-	-	76r	20r	-	-	-	-	96r	Chemicals
-	-	-	-	-	-	-	-	-	Mechanical engineering, etc
-	-	1	-	-	-	-	-	1	Electrical engineering, etc
24	-	131r	5	-	-	-	-	160r	Vehicles
-	-	30r	82r	-	-	-	-	112r	Food, beverages, etc
-	-	40r	-	-	-	-	-	40r	Textiles, leather, etc
-	-	26r	-	-	-	-	-	26r	Paper, printing etc
-	-	26r	-	-	-	-	-	26r	Other industries
-	-	149r	5r	-	-	-	-	154r	Construction
-	**22,675**	**1,250r**	**-r**	**-**	**-**	**-**	**-**	**47,578r**	**Transport**
-	-	-	-	-	-	-	-	11,238	Air
-	-	624r	-	-	-	-	-	624r	Rail
-	22,675	-	-	-	-	-	-	35,089	Road
-	-	627	-r	-	-	-	-	627r	National navigation
-	-	-	-	-	-	-		-	Pipelines
1,909	**-**	**1,175r**	**101r**	**-**	**-**	**-**	**-**	**3,668r**	**Other**
1,909	-	138r	-	-	-	-	-	2,278r	Domestic
-	-	280r	26	-	-	-	-	309r	Public administration
-	-	336r	57r	-	-	-	-	556r	Commercial
-	-	189r	5	-	-	-	-	279r	Agriculture
-	-	232r	13	-	-	-	-	246r	Miscellaneous
-	**-**	**15**	**1**	**436**	**1,410**	**149**	**526**	**5,820r**	**Non energy use (5)**

3.4 Commodity balances 2013

Petroleum products

Thousand tonnes

	Ethane	Propane	Butane	Other gases	Naphtha	Aviation spirit	Motor spirit	White Spirit & SBP	Aviation turbine fuel
Supply									
Production	-	1,474	852	2,464r	2,013	-	17,691	106	4,527
Other sources	843	680	327	-	371	-	-	-	-
Imports	-	326	105	-	1,000	15	4,442	219	8,219
Exports	-	-597	-568	-	-738	-	-10,809	-49	-970
Marine bunkers	-	-	-	-	-	-	-	-	-
Stock change *(2)*	-	14	-3	0	93	1	-356	-10	-20
Transfers	-	-	-	23	-1,727	-0	1,606	12	-519
Total supply	**843**	**1,897**	**712**	**2,487r**	**1,011**	**16**	**12,575**	**278**	**11,238**
Statistical difference *(3)*	**3**	**-5**	**3**	**-31**	**-1**	**0**	**1**	**-1**	**-4**
Total demand	**840**	**1,902r**	**709**	**2,517**	**1,012**	**16**	**12,574**	**279**	**11,242**
Transformation	**-**	**12r**	**310r**	**361r**	**-**	**-**	**-**	**-**	**-**
Electricity generation	-	-	-	222	-	-	-	-	-
Major power producers	-	-	-	-	-	-	-	-	-
Autogenerators	-	-	-	222	-	-	-	-	-
Heat generation	-	7	-	-	-	-	-	-	-
Petroleum refineries	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-
Blast furnaces	-	-	-	-	-	-	-	-	-
Patent fuel manufacture	-	-	-	-	-	-	-	-	-
Other (4)	-	5r	310r	139r	-	-	-	-	-
Energy industry use	**-**	**-**	**-**	**2,112**	**-**	**-**	**-**	**-**	**-**
Electricity generation	-	-	-	-	-	-	-	-	-
Oil & gas extraction	-	-	-	-	-	-	-	-	-
Petroleum refineries	-	-	-	2,112	-	-	-	-	-
Coal extraction	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-
Blast furnaces	-	-	-	-	-	-	-	-	-
Patent fuel manufacture	-	-	-	-	-	-	-	-	-
Pumped storage	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Losses	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Final consumption	**840**	**1,891r**	**399r**	**44r**	**1,012**	**16**	**12,574**	**279**	**11,242**
Industry	**-**	**204**	**-**	**-**	**103**	**-**	**-**	**-**	**-**
Unclassified	-	203	-	-	103	-	-	-	-
Iron & steel	-	1	-	-	-	-	-	-	-
Non-ferrous metals	-	-	-	-	-	-	-	-	-
Mineral products	-	-	-	-	-	-	-	-	-
Chemicals	-	-	-	-	-	-	-	-	-
Mechanical engineering, etc	-	-	-	-	-	-	-	-	-
Electrical engineering, etc	-	-	-	-	-	-	-	-	-
Vehicles	-	-	-	-	-	-	-	-	-
Food, beverages, etc	-	-	-	-	-	-	-	-	-
Textiles, leather, etc	-	-	-	-	-	-	-	-	-
Paper, printing etc	-	-	-	-	-	-	-	-	-
Other industries	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-
Transport	**-**	**94**	**-**	**-**	**-**	**16**	**12,574**	**-**	**11,242**
Air	-	-	-	-	-	16	-	-	11,242
Rail	-	-	-	-	-	-	-	-	-
Road	-	94	-	-	-	-	12,574	-	-
National navigation	-	-	-	-	-	-	-	-	-
Pipelines	-	-	-	-	-	-	-	-	-
Other	**-**	**374**	**28**	**-**	**-**	**-**	**-**	**-**	**-**
Domestic	-	272	28	-	-	-	-	-	-
Public administration	-	-	-	-	-	-	-	-	-
Commercial	-	-	-	-	-	-	-	-	-
Agriculture	-	102	0	-	-	-	-	-	-
Miscellaneous	-	-	-	-	-	-	-	-	-
Non energy use *(5)*	**840**	**1,218r**	**372r**	**44r**	**909**	**-**	**-**	**279**	**-r**

(1) Includes marine diesel oil.
(2) Stock fall (+), stock rise (-).
(3) Total supply minus total demand.
(4) Backflows delivered from petrochemical plants to refineries for re-processing. See paragraphs 3.60 and 3.61 for further details
(5) For further details on non-energy usage see paragraphs 3.38 to 3.39 and 3.69

3.4 Commodity balances 2013 (continued)

Petroleum products

Thousand tonnes

Burning oil	DERV	Gas Oil (1)	Fuel oils	Lubri -cants	Bitu -men	Petroleum coke	Misc. products	Total Products	
									Supply
2,705	14,831	8,193	6,574	387	777	1,773	1,029r	65,397r	Production
-	-	-	-	-	-	-	-	2,221	Other sources
678	10,115	856r	620	411	648	577	187	28,418r	Imports
-381	-2,843	-3,310	-4,677	-395	-75	-578	-919	-26,910	Exports
-	-	-1,338r	-1,382r	-	-	-	-	-2,720r	Marine bunkers
52	46	91	93	47	-1	78	-19	106	Stock change *(2)*
447	-253	250	-401	-22	13	-	107	-463	Transfers
3,501	**21,896**	**4,743r**	**826r**	**428**	**1,361**	**1,850**	**385r**	**66,049r**	**Total supply**
-6	**-30**	**11**	**3**	**-9**	**2**	**-0**	**-45**	**-107**	**Statistical difference *(3)***
3,507	**21,926**	**4,732r**	**823r**	**437**	**1,358**	**1,851**	**431r**	**66,156r**	**Total demand**
-	**-**	**93**	**225**	**-**	**-**	**162**	**15**	**1,177r**	**Transformation**
-	-	88	179	-	-	51	-	541r	Electricity generation
-	-	30	156	-	-	51	-	237	Major power producers
-	-	58	24	-	-	-	-	304r	Autogenerators
-	-	5	45	-	-	-	-	57r	Heat generation
-	-	-	-	-	-	-	-	-	Petroleum refineries
-	-	-	-	-	-	-	-	-	Coke manufacture
-	-	-	-	-	-	-	-	-	Blast furnaces
-	-	-	-	-	-	111	-	111	Patent fuel manufacture
-	-	-	-	-	-	-	15r	469r	Other (4)
-	**-**	**619**	**344**	**-**	**-**	**1,245**	**58**	**4,378**	**Energy industry use**
-	-	-	-	-	-	-	-	-	Electricity generation
-	-	619	-	-	-	-	-	619	Oil & gas extraction
-	-	-	344	-	-	1,245	58	3,759	Petroleum refineries
-	-	-	-	-	-	-	-	-	Coal extraction
-	-	-	-	-	-	-	-	-	Coke manufacture
-	-	-	-	-	-	-	-	-	Blast furnaces
-	-	-	-	-	-	-	-	-	Patent fuel manufacture
-	-	-	-	-	-	-	-	-	Pumped storage
-	-	-	-	-	-	-	-	-	Other
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**Losses**
3,507	**21,926**	**4,019r**	**255r**	**437**	**1,358**	**444**	**358**	**60,600r**	**Final consumption**
1,383	**-**	**1,573r**	**164r**	**-**	**-**	**343**	**-**	**3,770r**	**Industry**
1,359	-	938r	29r	-	-	343	-	2,975r	Unclassified
-	-	0	3	-	-	-	-	4	Iron & steel
-	-	-	0	-	-	-	-	0	Non-ferrous metals
-	-	150r	5	-	-	-	-	155r	Mineral products
-	-	77r	21	-	-	-	-	98r	Chemicals
-	-	-	-	-	-	-	-	-	Mechanical engineering, etc
-	-	1	-	-	-	-	-	1	Electrical engineering, etc
24	-	137r	5	-	-	-	-	166r	Vehicles
-	-	27r	96	-	-	-	-	123r	Food, beverages, etc
-	-	41r	-	-	-	-	-	41r	Textiles, leather, etc
-	-	28r	-	-	-	-	-	28r	Paper, printing etc
-	-	30r	-	-	-	-	-	30r	Other industries
-	-	144r	5	-	-	-	-	149r	Construction
-	**21,926**	**1,293r**	**-r**	**-**	**-**	**-**	**-**	**47,144r**	**Transport**
-	-	-	-	-	-	-	-	11,257	Air
-	-	615r	-	-	-	-	-	615r	Rail
-	21,926	-	-	-	-	-	-	34,593	Road
-	-	678	-r	-	-	-	-	678r	National navigation
-	-	-	-	-	-	-		-	Pipelines
2,125	**-**	**1,139r**	**90**	**-**	**-**	**-**	**-**	3,756r	**Other**
2,125	-	133r	-	-	-	-	-	2,558r	Domestic
-	-	258r	19	-	-	-	-	277r	Public administration
-	-	322r	47	-	-	-	-	369r	Commercial
-	-	203r	14	-	-	-	-	319r	Agriculture
-	-	222r	10	-	-	-	-	233r	Miscellaneous
-	**-**	**14r**	**-**	**437**	**1,358**	**101**	**358**	**5,930r**	**Non energy use (5)**

3.5 Supply and disposal of petroleum[1]

Thousand tonnes

	2011	2012	2013	2014	2015
Primary oils (Crude oil, NGLs and feedstocks)					
Indigenous production *(2)*	51,972	44,561	41,101r	40,328r	45,698
Imports	58,092	60,476	58,967r	53,638r	50,480
Exports *(3)*	-33,625	-30,946	-33,105	-30,869r	-33,660
Transfers - Transfers to products *(4)*	-2,255	-1,982	-2,221	-2,255r	-2,353
Product rebrands (5)	+19	+120	+463	+817	+1,218
Stock change *(6)*	+611	-486	+724	-592	-9
Use during production *(7)*	-	-	-	-	-
Calculated refinery throughput *(8)*	74,815	71,741	65,928r	61,066r	61,375
Overall statistical difference *(9)*	-265	-98	-44	4r	0
Actual refinery throughput	**75,080**	**71,839**	**65,972r**	**61,063r**	**61,375**
Petroleum products					
Losses in refining process *(10)*	373	209	575r	671r	360
Refinery gross production *(11)*	74,707	71,630	65,397r	60,392r	61,014
Transfers - Transfers to products *(4)*	2,255	1,982	2,221	2,255r	2,353
Product rebrands *(5)*	-19	-120	-463	-817	-1,218
Imports	22,656	26,207	28,418r	29,093r	31,727
Exports *(12)*	-27,800	-29,904	-26,910	-22,748	-22,835
Marine bunkers	-3,130	-2,663	-2,720r	-2,824r	-2,426
Stock changes *(6)* - Refineries	46	102	79	266	-774
Power generators	142	26	26	26	26
Calculated total supply	68,857	67,260	66,049r	65,643r	67,869
Statistical difference *(9)*	28	-87	-107r	-109r	79
Total demand *(4)*	**68,829**	**67,347**	**66,156r**	**65,752r**	**67,790**
Of which:					
Energy use	61,774	61,236	60,226r	59,932r	60,960
Of which, for electricity generation *(13)*	722	694	541r	490r	551
total refinery fuels *(13)*	4,585	4,299	3,759	3,198r	3,400
Non-energy use	7,055	6,111	5,930r	5,820r	6,830

(1) Aggregate monthly data on oil production, trade, refinery throughput and inland deliveries are available - see paragraph 3.73 and Annex C.
(2) Crude oil plus condensates and petroleum gases derived at onshore treatment plants.
(3) Includes NGLs, process oils and re-exports.
(4) Disposals of NGLs by direct sale (excluding exports) or for blending.
(5) Product rebrands (inter-product blends or transfers) represent petroleum products received at refineries/ plants and used as feedstock for refinery or cracking unit operations.
(6) Impact of stock changes on supplies. A stock fall is shown as (+) as it increases supplies, and vice-versa for a stock rise (-).
(7) Own use in onshore terminals and gas separation plants. These figures ceased to be available from January 2001 with the advent of the new PPRS system.
(8) Equivalent to the total supplies reported against the upstream transformation sector in Table 3.1.
(9) Supply greater than (+) or less than (-) recorded throughput or disposals.
(10) Calculated as the difference between actual refinery throughput and gross refinery production.
(11) Includes refinery fuels.
(12) Excludes NGLs.
(13) Figures cover petroleum used to generate electricity by all major power producers and by all other generators, including petroleum used to generate electricity at refineries.

3.6 Additional information on inland deliveries of selected products[1]

Thousand Tonnes

	2011	2012	2013	2014	2015
Motor spirit					
of which, Hydrocarbon *(2)*	13,895	13,231	12,574	12,326	12,082
of which, Bio-ethanol *(3)*	517	615	650	645	631
Total Motor Spirit including Bio-ethanol	**14,412**	**13,845**	**13,224**	**12,971**	**12,713**
of which, sold through Supermarkets (4)	6,345	6,196	5,974	5,755	5,794
of which, sold through Refiners, and other traders *(5)*	8,067	7,649	7,250	7,216	6,919
of which, sold via commercial sales *(6)*	-	-	-	-	-
Diesel Road Fuel	-	-	-	-	-
Hydrocarbon *(7)*	20,991	21,538	21,926	22,675	23,656
Bio-diesel (8)	825	563	682	850	595
Total Diesel Road Fuel including Bio-diesel	**21,816**	**22,101**	**22,607**	**23,525**	**24,251**
of which, sold through Supermarkets (4)	5,722	5,959	6,217	6,394	6,644
of which, sold through Refiners, and other traders *(5)*	8,502	8,446	8,519	8,946	9,168
of which, sold via commercial sales *(6)*	7,591	7,696	7,871	8,185	8,439
Other gas diesel oil (9)	**4,759**	**4,990**	**5,174**	**5,241**	**4,824**
Aviation Fuels	-	-	-	-	-
Total Sales - Aviation fuels	**11,594**	**11,238**	**11,257**	**11,238**	**11,383**
Aviation spirit	21	17	16	18	11
Aviation turbine fuel	11,574	11,221	11,242	11,220	11,372
Fuel Oil	-	-	-	-	-
Total Sales - Fuel Oils	**939**	**707**	**556r**	**579r**	**506**
Light	449	367	219	225r	197
Medium	106	118	139	128r	112
Heavy	384	221	209	209r	183

(1) Monthly data for inland deliveries of oil products are available -
See BEIS website: www.gov.uk/government/organisations/department-of-energy-climate-change/series/oil-statistics.
(2) Demand excluding bioethanol. Based on HMRC duty data.
(3) Bioethanol based on HMRC duty data, excluding other renewables.
(4) Sales by supermarkets are collected by a monthly reporting system. Includes Asda, Morrisons, Sainsburys and Tesco only.
(5) Total sales excluding supermarket and commercial sales.
(6) Commercial sales are currently estimated based on road movements and a number of assumptions.
Further details are available at:
www.gov.uk/government/uploads/system/uploads/attachment_data/file/295224/Supermarket_share_of_retail_sales.pdf.
(7) Demand excluding biodiesel. Based on HMRC duty data.
(8) Biodiesel based on HMRC duty data, excluding other renewables.
(9) This includes gas diesel oil used for other purposes such as heating and middle distillate feedstock destined for use in the petrochemical industry.

3.7 Stocks of crude oil and petroleum products at end of year[1]

Thousand tonnes

	2011	2012	2013	2014	2015
Crude and process oils					
Refineries *(2)*	3,889	3,829	3,592	3,876	3,106
Terminals *(3)*	694	1,194	1,102	1,147	1,629
Offshore *(4)*	540	473	513	460	499
Net bilateral stocks *(5)*	151	195	1,469	1,728	2,289
Total crude and process oils *(6)*	**5,274**	**5,690**	**6,677**	**7,211**	**7,524**
Petroleum products					
Ethane	-	-	-	-	-
Propane	23	28	19	46	37
Butane	38	25	29	35	27
Other petroleum gases	-	-	-	-	-
Naphtha	199	165	112	140	94
Aviation spirit	3	5	4	5	5
Motor spirit	846	727	1,287	1,141	1,246
White spirit & SBP	7	9	18	24	31
Aviation turbine fuel	1,216	1,229	1,162	999	1,232
Burning oil	238	198	287	231	281
Gas/Diesel oil (7)	3,776	4,222	2,482	2,399	2,842
of which, DERV	545	1,240	1,662	1,592	1,622
Fuel oils	645	514	1,340	1,060	898
Lubricating oils	132	143	186	67	121
Bitumen	95	106	127	101	88
Petroleum wax	6	4	10	3	8
Petroleum coke	252	274	236	318	343
Miscellaneous products	92	88	228	302	203
Total all products	**7,569**	**7,735**	**7,528**	**6,871**	**7,458**
Of which : net bilateral stocks *(5)*	2,100	2,441	2,432	2,064	2,022

(1) Aggregate monthly data on the level of stocks of crude oil and oil products are available - see paragraph 3.73 and Annex C.
(2) Stocks of crude oil, NGLs and process oils at UK refineries.
(3) Stocks of crude oil and NGLs at UKCS (UK continental shelf) pipeline terminals.
(4) Stocks of crude oil in tanks and partially loaded tankers at offshore fields.
(5) The difference between stocks held abroad for UK use under approved bilateral agreements and the equivalent stocks held in the UK for foreign use.
(6) Includes process oils held abroad for UK use approved by bilateral agreements.
(7) Includes marine diesel oil.

3.8 Additional information on inland deliveries for non-energy uses[(1)(2)]

Thousand tonnes

	2011	2012	2013	2014	2015
Feedstock for petroleum chemical plants:					
Propane	1,261	1,038	1,218r	1,177r	1,596
Butane	679	567	372r	365r	487
Other gases	1,003	899	884r	944r	1,031
Total gases	2,944	2,504	2,474r	2,487r	3,113
Naphtha (LDF)	969	910	909	782r	1,072
Middle Distillate Feedstock (MDF)	34	16	16r	17	15
Other products	-	-	-	-	-
Total feedstock	3,946	3,430	3,400r	3,285r	4,201
Lubricating oils and grease:					
Aviation	4	4	5r	6r	7
Industrial	248	197	221r	219r	145
Marine	19	17	17r	17r	17
Other motors, Gear oils & Transmissions	216	191	191r	191r	191
Agricultural	4	3	3	3	3
Fuel oil sold as lubricant	-	-	-	-	-
Total lubricating oils and grease	491	412	437	436	363
Other non-energy products:					
Industrial spirit/white spirit	143	219	279	126	160
Bitumen	1,621	1,355	1,358	1,410	1,464
Petroleum coke	262	154	101	149	138
Miscellaneous products	592	542	358	526	504
Total other non-energy products	2,618	2,268	2,096	2,210r	2,267
Total non-energy use	**7,055**	**6,111**	**5,930r**	**5,820r**	**6,830**

(1) Aggregate monthly data on the total non energy use of oil products are available - see paragraph 3.73 and Annex C
(2) For further details on non-energy usage see paragraphs 3.37 to 3.39 and 3.69.