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The cover illustration used for Energy Trends and other 2006-2007 DTI energy statistics publications is from a photograph by David Askew. It was a winning entry in the DTI News Photographic Competition in 2002.

Introduction

Energy Trends and Quarterly Energy Prices are produced by the Department of Trade and Industry on a quarterly basis. Both periodicals are published concurrently in June, September, December and March. The December editions cover the third quarter of the current year.

Energy Trends includes information on energy as a whole and by individual fuels. The text and charts provide an analysis of the data in the tables. The tables are mainly in commodity balance format, as used in the DTI's annual Digest of UK Energy Statistics. The 2006 edition of the Digest was published on 27 July 2006. Printed and bound copies of the 2006 Digest can be obtained from The Stationery Office and an electronic version is available on our web site at www.dti.gov.uk/energy/statistics/publications/dukes/page29812.html. The balance format shows the flow of a commodity from its sources of supply, through to its final use. The articles in Energy Trends provide in-depth information on current issues within the energy sector.

The text and tables included in this publication represent a snapshot of the information available at the time of publication. However, the data collection systems operated by the DTI, which produce this information, are in constant operation. New data are continually received and revisions to historic data made. To ensure that those who use the statistics have access to the most up-to-date information, revised data will be made available as soon as possible, via the electronic versions of these tables. The electronic versions are available free of charge from the DTI web site. In addition to quarterly tables, the main monthly tables that were published in the period up to May 2001 when Energy Trends was produced monthly, continue to be updated and are also available on the DTI web site. Both sets of tables can be obtained from www.dti.gov.uk/energy/statistics/index.html

Energy Trends does not contain information on Foreign Trade, Temperatures and Prices. Foreign Trade and Temperatures tables are, however, available on the DTI web site and information on Prices can be found in the Quarterly Energy Prices publication. Prices information is also available on our web site at the above address.

If you have any comments on Energy Trends or Quarterly Energy Prices publications please send them to:

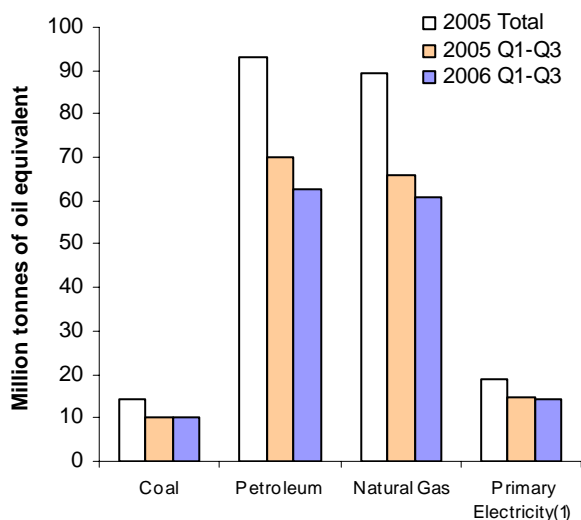
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The main points for the third quarter of 2006:

- Total energy production was 8 per cent lower than in the third quarter of 2005.
- Oil production fell by 10 per cent compared to the third quarter of 2005 as production from older established fields continued to decline. The UK was a net importer of oil and oil products in the third quarter of 2006.
- Gas production was 2½ per cent lower than the third quarter of 2005. Gas imports increased by 14 per cent and gas exports increased by 63 per cent. The UK was a net exporter of gas in the third quarter of 2006, whereas the UK was a net importer in the same period of 2005. Gas demand was 10½ per cent lower than the third quarter of 2005.
- Total primary energy consumption for energy uses was 2 per cent lower than during the third quarter of 2005, this is equivalent to a ½ per cent increase when adjusted to take account of weather differences between the third quarters of 2005 and 2006.
- Coal production in the third quarter of 2006 was 24 per cent lower on the third quarter of 2005. Coal imports were 19 per cent higher and generators' demand for coal was up by 23 per cent.
- Motor spirit deliveries fell by 2½ per cent but Derv deliveries rose by 6 per cent.
- Oil and gas exploration activity both onshore and offshore decreased compared with a year earlier.
- Coal supplied 24½ per cent more electricity than in the third quarter of 2005 while gas supplied 11 per cent less and nuclear supplied 8 per cent less.

Section 1 - Total Energy

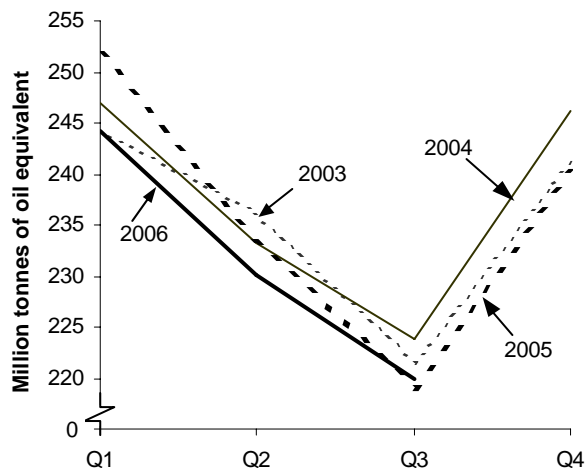
Chart 1.1 Production of indigenous primary fuels



(1) Nuclear and natural flow hydro electricity.

- Total production in the third quarter of 2006 was 42.4 million tonnes of oil equivalent, 7.8 per cent lower than in third quarter of 2005.
- Production of natural gas fell by 2.3 per cent between the third quarter of 2005 and the third quarter of 2006; gas production is declining as North Sea reserves deplete.
- Production of petroleum was 10.2 per cent lower in the third quarter of 2006 than in the third quarter a year earlier.
- Primary electricity output was 7.4 per cent lower, within which nuclear electricity output was 8.1 per cent lower but output from wind and natural flow hydro increased by 21.3 per cent.
- In the third quarter of 2006 production of coal and other solid fuels was 21.2 per cent lower than in the third quarter of 2005.

Chart 1.2 Total inland consumption (primary fuel input basis)⁽¹⁾

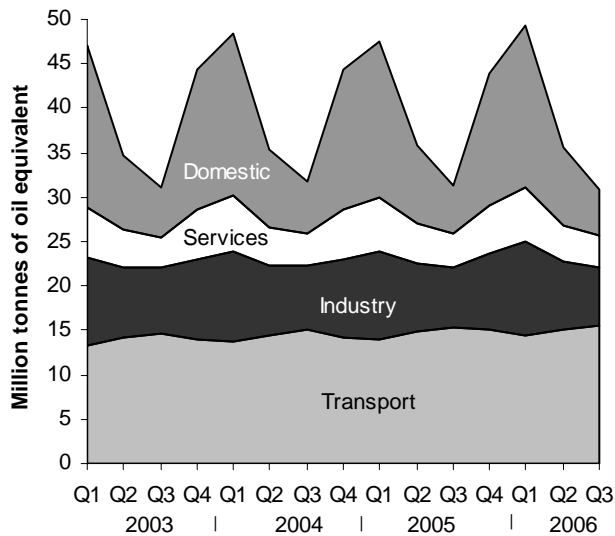


(1) Seasonally adjusted and temperature corrected annual rates.

- Total inland consumption on a primary fuel input basis was 220.0 million tonnes of oil equivalent in third quarter of 2006 (temperature corrected, seasonally adjusted annualised rate). The average temperature during the third quarter of 2006 was 17.3 degrees Celsius, 1.4 degrees Celsius warmer than the third quarter of 2005.
- Total seasonally adjusted and temperature corrected consumption in the third quarter of 2006 was 0.4 per cent higher than the same period a year earlier.
- Between the third quarter of 2005 and the third quarter of 2006 (on a seasonally adjusted and temperature corrected basis) coal and other solid fuel consumption increased by 21.2 per cent because of increased use at power stations.
- Also on a seasonally adjusted and temperature corrected basis, oil consumption fell by 1.8 per cent.
- On the same basis, gas consumption fell by 5.2 per cent.

Total Energy

Chart 1.3 Final energy consumption by user



- Total final energy consumption fell by 3.0 per cent between the third quarter of 2005 and the third quarter in 2006.
- Service sector energy consumption decreased by 4.1 per cent
- Domestic sector energy consumption decreased by 5.6 per cent.
- Transport energy consumption increased by 0.9 per cent.
- Industrial energy consumption fell by 2.0 per cent

Background

Relevant tables

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Production

Indigenous production of energy was 9.5 per cent lower in 2005 than in 2004, continuing a year on year decline for each year since 1999. Coal and other solid fuel production was lower by 16.8 per cent, gas production fell by 8.5 per cent and petroleum production by fell 11.2 per cent.

Indigenous production continued to fall in 2006, with total production in each quarter of 2006 to date being lower than the same quarter in 2005. Petroleum accounted for 44.9 per cent of total indigenous production in the third quarter of 2006 while coal and other solid fuels accounted for 6.3 per cent, and natural gas 38.6 per cent. A year earlier the proportions were petroleum 46.0 per cent, coal and other solid fuels 7.3 per cent and natural gas 36.4 per cent.

Total inland consumption

In 2005 consumption of primary fuels was 0.3 per cent higher than in 2004. The largest contribution to this increase in absolute terms was from petroleum (which increased by 2.3 per cent). On a temperature corrected basis consumption in 2005 was 0.6 per cent lower than in 2004.

Total inland energy consumption, on a primary fuel input basis (not temperature corrected or seasonally adjusted), increased by 3½ per cent in the first quarter of 2006 compared with the same period in 2005; this was followed by a 3 per cent reduction between the two second quarters. In the third quarter of 2006 consumption was 47.4 million tonnes of oil equivalent, which is 1.9 per cent lower than in the corresponding period a year ago.

Consumption by final users

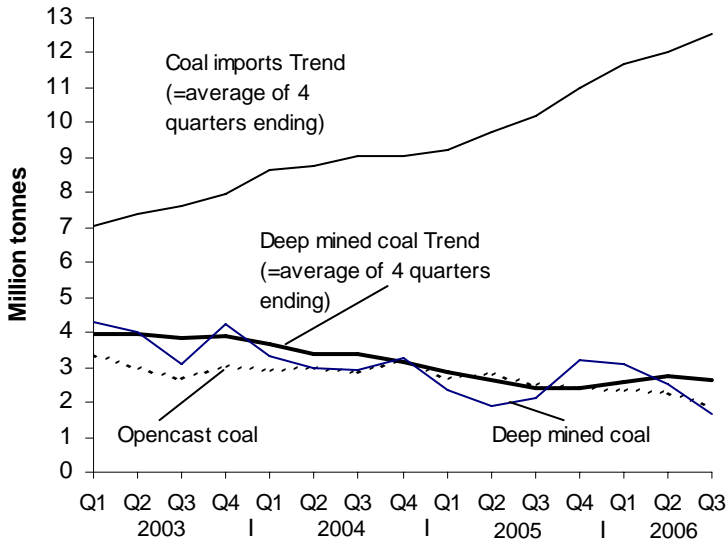
Final energy consumption shows a strong seasonal pattern with more energy being consumed in the winter months and less in the summer, particularly in the domestic and service sectors.

In the third quarter of 2006 the transport sector was responsible for the largest share of final consumption at 46 per cent of all energy consumed by final users. The industrial sector was responsible for a further 20 per cent, the domestic sector for another 15 per cent and the service industries, including agriculture, consumed 11 per cent. The remaining 8 per cent was made up by fuel use for non-energy purposes.

Final energy consumption fell by 3.0 per cent between the third quarter of 2005 and the third quarter of 2006, mainly due to decreases in the service sector (a 4.1 per cent fall), the domestic sector (a 5.6 per cent decrease) and the industrial sector (a 2.0 per cent fall). There was an increase in the transport sector of 0.9 per cent.

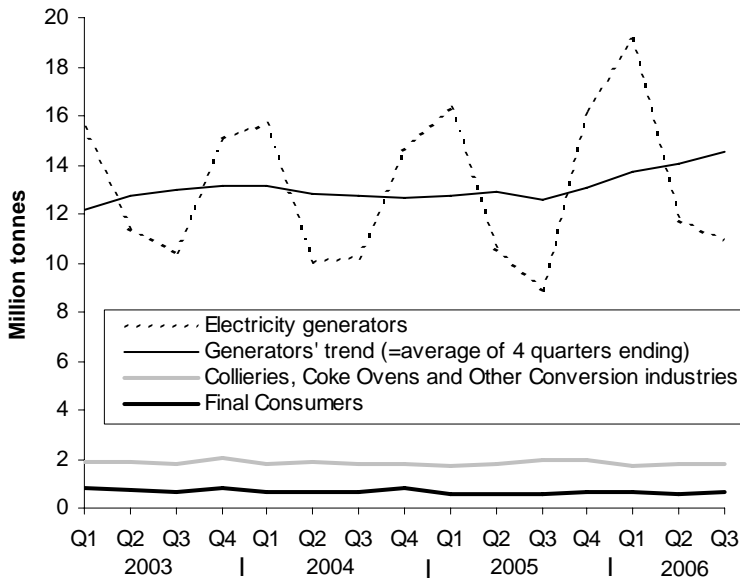
Section 2 - Solid Fuels and Derived Gases

Chart 2.1 Coal production and imports



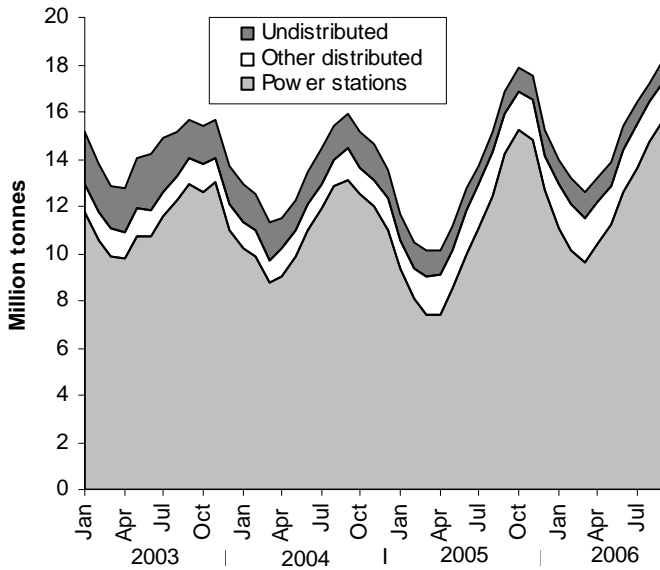
- Provisional figures for the third quarter of 2006 show that coal production (including an estimate for slurry) was 24.1 per cent lower than the third quarter of 2005 at 3.6 million tonnes, with deep mined production down 23.4 per cent and opencast production down 25.6 per cent.
- Imports of coal in the third quarter of 2006 were 18.8 per cent higher than in the third quarter of 2005 at 13.0 million tonnes, a new quarterly record.
- 87 per cent of the coal imported in the third quarter of 2006 (11.3 million tonnes) was steam coal, largely for the power stations market.

Chart 2.2 Coal consumption



- Consumption of coal in the third quarter of 2006, at 13.5 million tonnes was 18.5 per cent up on consumption in the third quarter of 2005; consumption by electricity generators was up by 23.1 per cent over the same period.
- Electricity generators accounted for 81.0 per cent of total coal use in the third quarter of 2006, 3.22 percentage points higher than a year earlier.
- Provisionally, final consumption increased by 4.5 per cent in the third quarter of 2006 compared with a year earlier, within which domestic sector consumption was 3.5 per cent higher.

Chart 2.3 Coal stocks



- Coal stocks showed a rise of 3.0 million tonnes during the third quarter 2006 from the second quarter of 2006. At the end of September 2006 stocks stood at 18.5 million tonnes, 1.3 million tonnes higher than at the end of September 2005.
- Stock levels at power stations rose by 3.1 million tonnes in the third quarter of 2006 to stand at 15.7 million tonnes. This was 1.5 million tonnes higher than at the end of the third quarter of 2005.
- Stocks held by producers (undistributed stocks) fell 3.1 per cent on the second quarter of 2006 but were overall up by 2.3 per cent on the third quarter of 2005. At the end of September 2006 undistributed stocks totalled 1.0 million tonnes.

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Coal production and imports

In 2005 indigenous production of coal fell by 4.5 million tonnes. Deep mined coal fell to a record low of 9.5 million tonnes, while opencast coal production was at its lowest level since 1975, and 13 per cent lower than in 2004. During the first quarter of 2005 Ellington mine closed due to flooding. Geological and operational difficulties reduced production at the remaining deep mines during the first three quarters of 2005, so that in 2005 for the first time ever, opencast production exceeded deep mined production. However in the fourth quarter of 2005 production of deep mined coal started to recover and production levels exceeded those of opencast once again. Deep mined production fell again in the first two quarters of 2006, with the closure of Rossington at the end of March 2006 and the run down in production at Harworth, which ceased mining during September 2006. In the third quarter of 2006, geological and other one-off factors suppressed production still further, so that opencast production exceeded deep mined production again. Imports of coal in 2005 were a record 43.8 million tonnes and the upward trend has continued in 2006.

Coal consumption

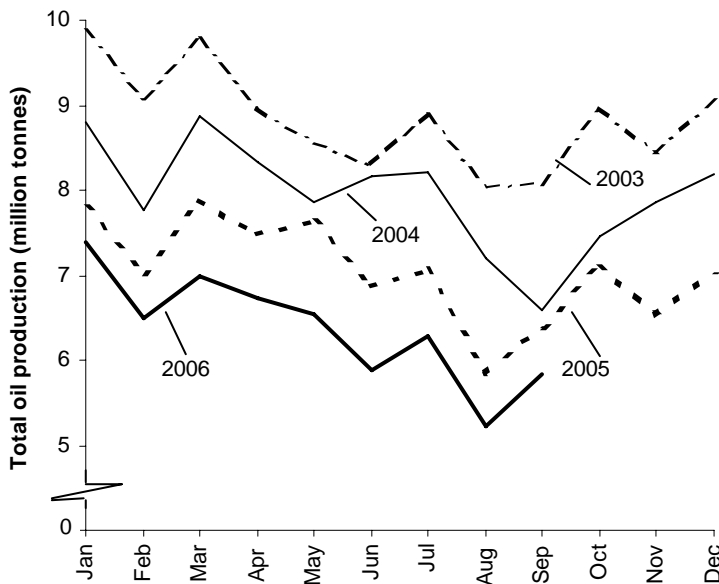
Coal use by electricity generators was 5.3 million tonnes higher in 2003 as a whole than it was in 2002, but in 2004 it fell back by 2.0 million tonnes because prices enabled gas fired generation to be more competitive. In 2005, coal use rose by 3.4 per cent as higher gas prices made coal more competitive for generation. This trend continued into the first three quarters of 2006 with the demand from electricity generators up 23.1 per cent in the third quarter of 2006. The use of coal for coke making and at blast furnaces increased by 3.5 per cent in 2005. Data for the first three quarters of 2006 indicates that this trend has continued with an increase of 12.5 per cent at blast furnaces.

Stocks

End of winter stocks have been edging lower each year since 2001/02, falling to just over 10 million tonnes at the end of the winter 2004/05. However the seasonal rise in stocks over the summer of 2005 was strong, boosted by record levels of coal imports, and the peak level reached in October 2005 was 18.3 million tonnes. Heavy demand for coal to generate electricity over the winter of 2005/06 saw stock levels fall; however stock levels at the end of the third quarter of 2006 were 7.5 per cent higher than a year before.

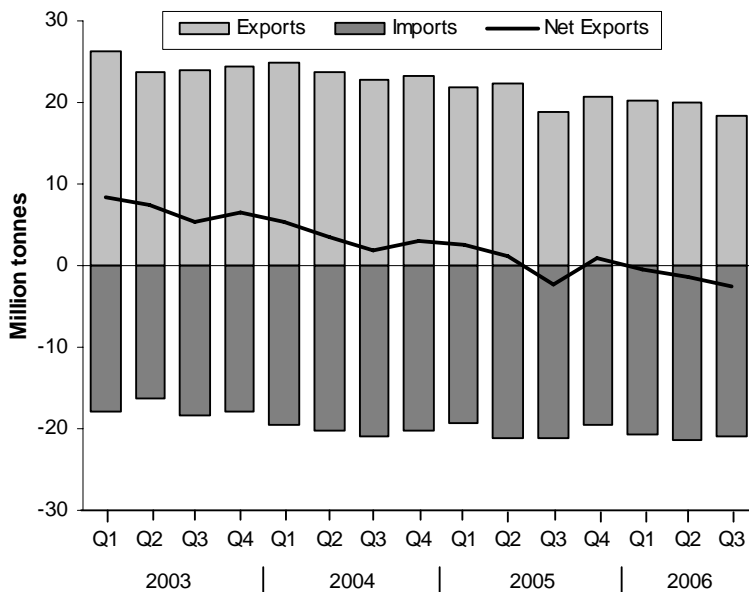
Section 3 - Oil and Oil Products

Chart 3.1 Production of crude oil and NGLs



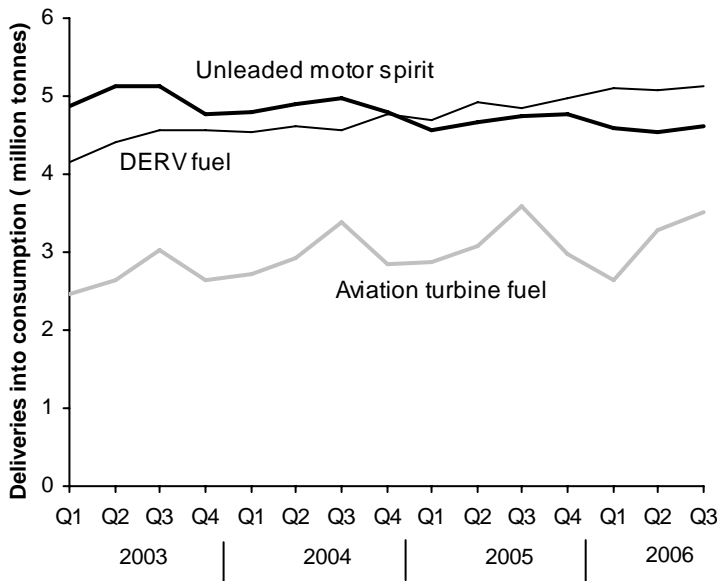
- Total indigenous UK production of crude oil and NGLs in the third quarter of 2006 was 10.2 per cent lower than a year earlier.
- Only two new fields started production after October 2005 and production from these fields was insufficient to make up the general decline in production from older established fields.

Chart 3.2 UK trade in crude oils, NGLs and petroleum products



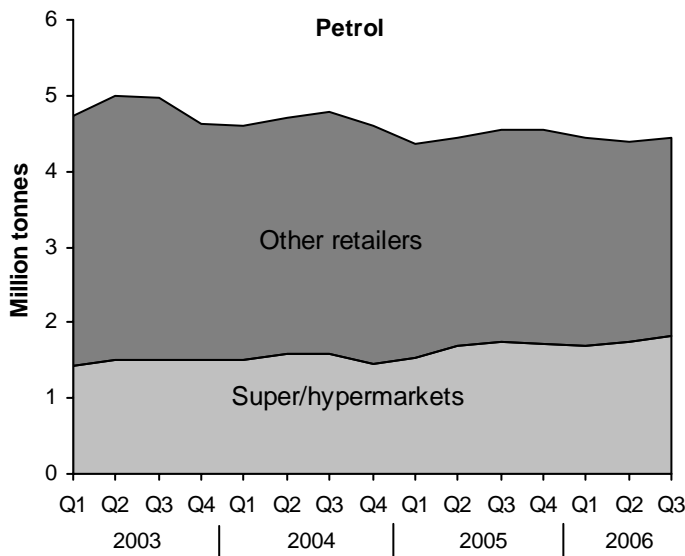
- Net imports of oil and oil products increased by 6.0 per cent in the third quarter of 2006 compared to the same quarter in 2005. Imports exceeded exports by 2.5 million tonnes.
- The UK was a net importer of crude oil, NGLs and feedstocks in the third quarter of 2006 (by 3.8 million tonnes).
- Exports of crude oil, NGLs and feedstocks decreased by 1.9 per cent. Imports decreased by 3.9 per cent.
- The UK remained a net exporter of petroleum products (by 1.3 million tonnes) in the third quarter of 2006.
- Exports of petroleum products fell by 2.4 per cent while imports rose by 6.3 per cent.

Chart 3.3 Demand for key transport fuels

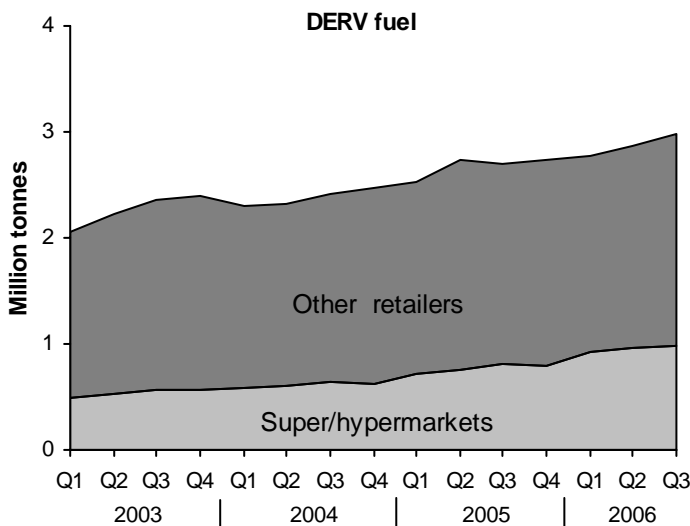


- Total deliveries of key transport fuels were 0.7 per cent higher in the third quarter of 2006 than in the third quarter of 2005.
- Motor spirit deliveries fell by 2.4 per cent.
- DERV fuel deliveries rose by 5.8 per cent.
- DERV fuel's share of road transport fuels in the third quarter 2006 was 52.5 per cent compared to 50.5 per cent in 2005.
- Deliveries of aviation turbine fuel were 1.8 per cent lower than a year ago.

Chart 3.4 Super/hypermarket shares of retail deliveries



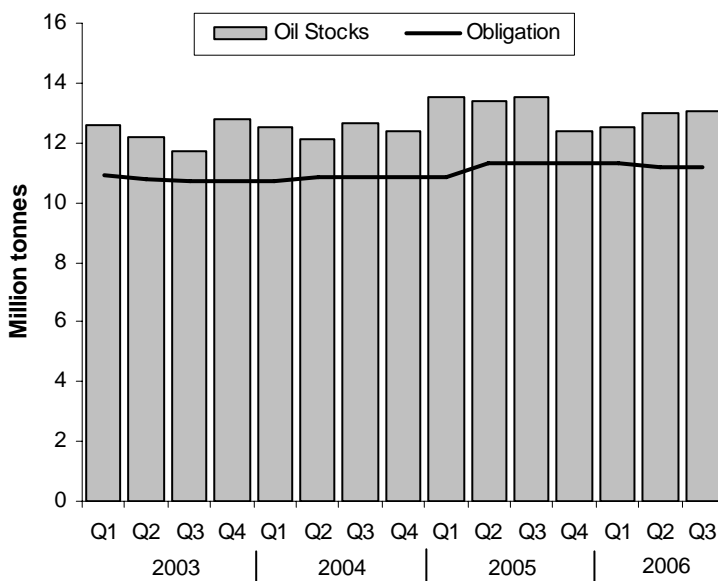
- Sales of motor spirit by super/hypermarket companies accounted for 41.1 per cent of retail sales of petrol in the third quarter of 2006, down from 38.5 per cent in the third quarter of 2005.



- Sales of DERV by super/hypermarket companies accounted for 33.0 per cent of retail sales of DERV compared with 30.3 per cent in the third quarter of 2005.

Oil and Oil Products

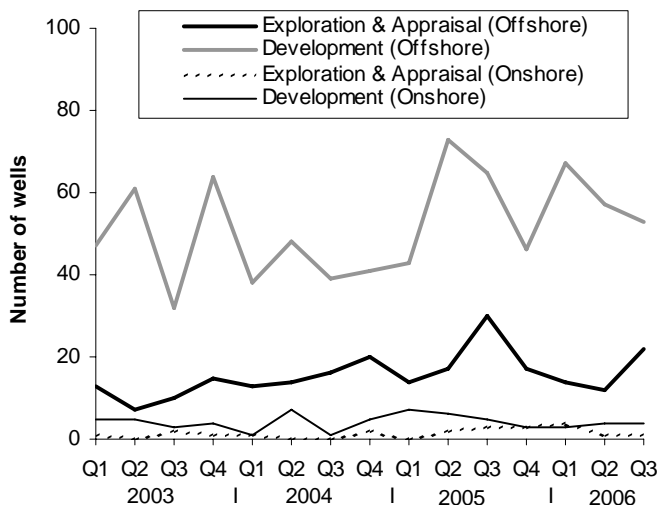
Chart 3.5 Stocks of key oil products⁽¹⁾



(1) This includes motor spirit, DERV fuel, other gas diesel oils, aviation turbine fuel, kerosene and fuel oils.

- Overall, stocks of crude oil and petroleum products were 4.8 per cent lower at the end of the third quarter of 2006 than a year earlier.
- Crude oil and refinery process oil stocks were 14.1 per cent lower while stocks of products were 4.1 per cent higher than a year earlier.
- During the third quarter of 2006 stocks at UKCS pipeline terminals fell by 20.2 per cent (307 thousand tonnes).
- Chart 3.5 combines stocks of products with the product equivalent of stocks of crude oil to give an overall level of UK stocks of key products.
- At the end of the third quarter of 2006, the UK held stocks equal to 79 days of consumption of these key products, compared with an obligation of 67½ days (see Background for more details).

Chart 3.6 Drilling activity on the UKCS



- Drilling figures for the third quarter of 2006 showed a fall in the number of exploration and appraisal wells started offshore to 22 against 30 in the corresponding quarter of 2005.
- The number of development wells drilled offshore fell to 53, compared with 65 in the corresponding quarter of 2005.
- 4 development wells were drilled onshore in the third quarter of 2006, compared with 5 in the corresponding quarter a year earlier.
- Only 1 exploration or appraisal well was started onshore in the third quarter of 2006, compared with 3 exploration or appraisal well started onshore in third quarter of 2005.

Background

Relevant tables

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Crude oil production and trade

Total UK production of crude oil and NGL's decreased in the third quarter of 2006 by 10.2 per cent to 17.3 million tonnes when compared to the same period last year. The UK was a net importer of oil and oil products in the third quarter of 2006. About two thirds of UK production of crude oil and NGL's is exported as the UK generally produces a lighter, more valuable crude oil than other areas of the world such as the Middle East or West Africa. UK refineries are relatively modern and as such can cope with having these lower grade crude oils as an input. Therefore the economics of crude oil markets results in significant volumes of crude oil being imported into the UK.

Refinery production of petroleum products and trade

The net refinery output in the third quarter of 2006 was 22.3 million tonnes, 1.1 million tonnes (4.5 per cent) lower than the third quarter of 2005.

Demand for petroleum products

Overall demand for petroleum products in the third quarter of 2006 was 2.6 per cent lower than in the third quarter of 2005. Deliveries of motor spirit were 2.4 per cent lower at 4.6 million tonnes whilst Derv deliveries were 5.8 per cent higher at 5.1 million tonnes. Deliveries of aviation turbine fuel were 1.8 per cent lower.

Stocks of crude oil and petroleum products

The UK has an obligation under EU law to maintain stocks of key oil products at or above a certain level to ensure adequate supplies would exist for any international oil supply emergency. These obligations are based on the UK's annual consumption of the key products motor spirit, DERV fuel and other gas diesel oils, aviation fuel and other kerosenes and fuel oils. These obligations are usually updated every 1st July as consumption data for the previous year are finalised. Chart 3.5 above combines data on stocks of key oil products with the product equivalent of stocks of crude oil to give an overall level of UK stocks of key oil products to show how the UK is complying with these obligations at an overall level. The UK's current overall obligation, based on 2005 consumption data, is to hold a total of 11 million tonnes of these products, equal to 67½ days of consumption.

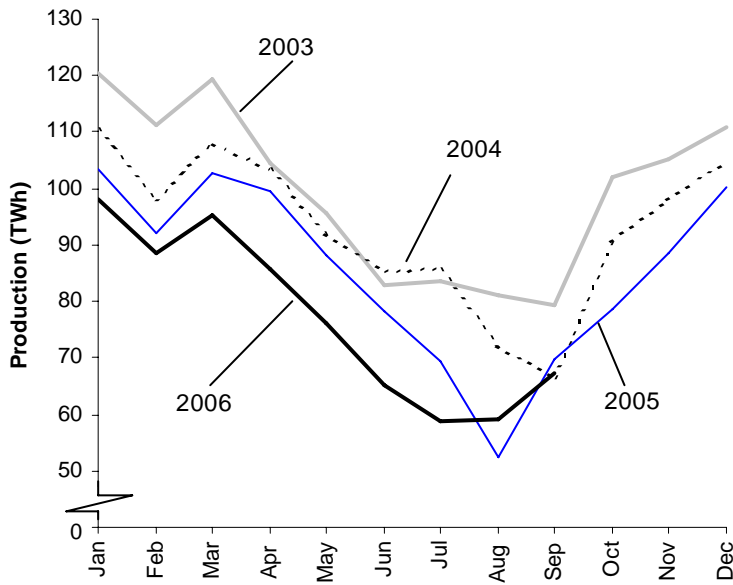
Financial aspects of operations on the United Kingdom Continental Shelf

As announced in the June 2004 issue of Energy Trends, the quarterly collection of the data used to compile Table 3.8, Value of UKCS production and investment by operators and licensees, has now ceased. Data up to Q4 2003 will still be available on the DTI Energy Statistics web site.

As announced in the September 2005 issue of Energy Trends, publication of Table 3.9 Indicative tariffs rates offered in the UKCS for handling of oil and gas, has been discontinued. Indicative tariffs are no longer reported to DTI following the introduction in 2004 of a substantially revised Code of Practice on Access to Upstream Infrastructure. Under the new Code, information on actual tariff agreements should be posted on the infrastructure owner/operator's website or, if they do not have an appropriate website, on the DEAL website (<http://www.ukdeal.co.uk>). Historical data on indicative tariffs (as reported in Table 3.9) will, for now, continue to be available on the DTI Energy Statistics website

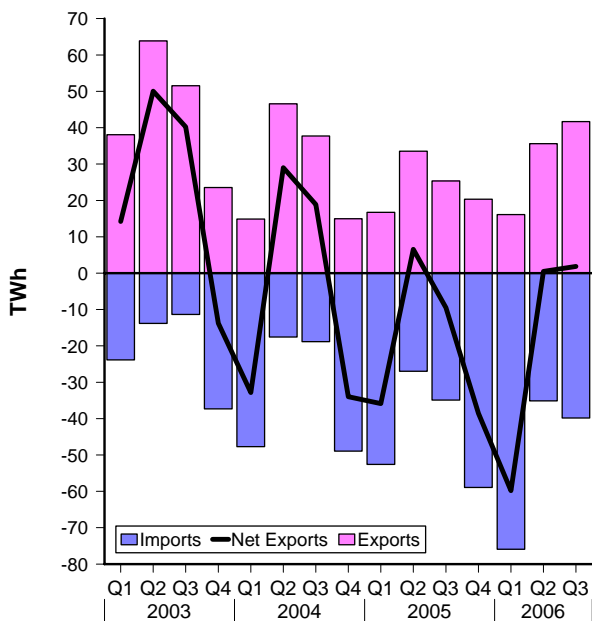
Section 4 – Gas

Chart 4.1 Production of natural gas



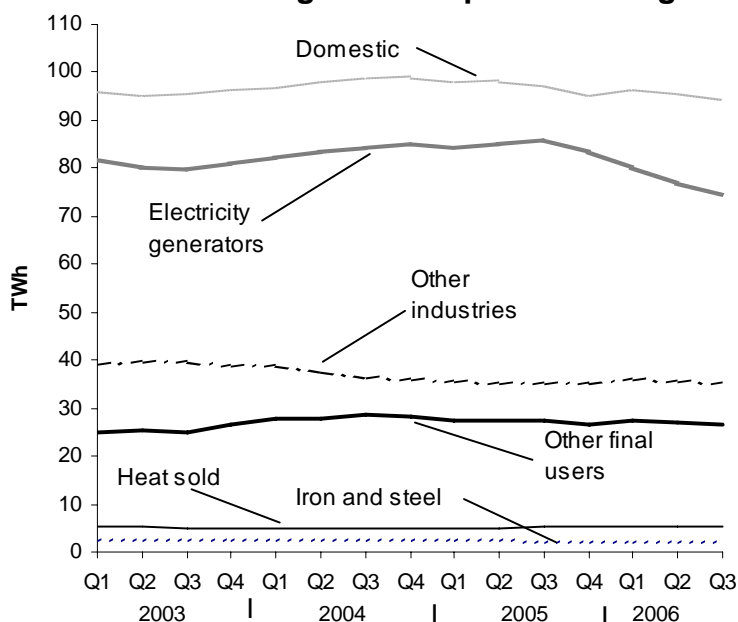
- Total indigenous UK production of natural gas in the third quarter of 2006 was 2.4 per cent lower than in the corresponding quarter a year earlier.
- Overall, gas production is declining as UKCS reserves deplete. This trend is likely to continue.

Chart 4.2 UK trade in natural gas



- In the third quarter of 2006, the UK was a net exporter of gas.
- Net exports of gas were 1.9 TWh compared with net imports of 9.3 TWh in the same quarter of 2005. In the third quarter of 2006, 77 per cent of gas imports came from Norway.

Chart 4.3 Natural gas consumption - average of four quarter ending



- Demand for gas in the third quarter of 2006 was 10.3 per cent lower than the level in the third quarter of 2005.
- Gas use for electricity generation was 11.7 per cent lower than in the third quarter of 2005.
- Provisionally, consumption in the domestic sector fell by 4.0 per cent mainly because of milder temperatures and higher gas prices in 2006.
- In public administration, commerce and agriculture consumption fell by 11.3 per cent compared with a year earlier. In the industrial sector gas sales were provisionally 12.0 per cent lower than in the third quarter of 2005.

Background

Relevant table

4.1: Natural gas supply and consumption..... Page 57

Gas production and trade

In the third quarter of 2006, gas production was 2.4 per cent lower than a year ago. Imports of gas to the UK were 14.2 per cent higher than a year ago and exports were 62.8 per cent higher. During this period, the UK was a net exporter of gas.

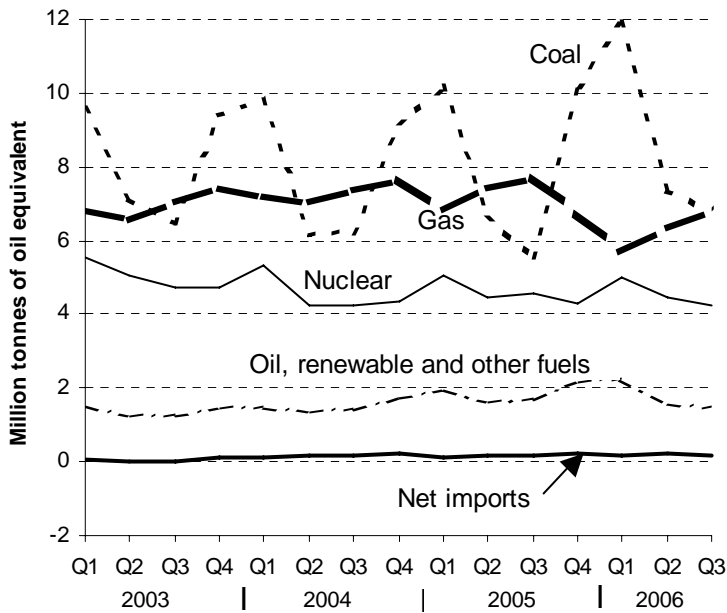
The UK currently exports gas to the Netherlands from the Markham and Windermere fields, to the Irish Republic via the Irish – UK gas interconnector and to Belgium through the Bacton-Zeebrugge interconnector. Imports to the UK are from Belgium, via the interconnector, Norway, via the Staffjord and Vesterled pipelines, and Algeria, Egypt, Qatar and Trinidad (liquefied natural gas). In the third quarter of 2006, Norwegian gas accounted for 77 per cent of UK natural gas imports, compared to 85 per cent a year ago. The lower percentage of imports from Norway was largely due to a doubling of liquefied natural gas imports .

Gas consumption

Until the middle of 2000 the growth in consumption of natural gas was dominated by growth in consumption for electricity generation, mainly in Combined Cycle Gas Turbine stations. However, high gas prices led to the use of gas for generation levelling off after 2000, rising slightly in some years and falling back in others. While much of this switchback pattern is the result of the relative prices of gas and coal, the 2004 growth can also be attributed to the three newest CCGT stations operating at high levels throughout the year, while the downturn in 2005 results from generators preferring coal when prices reached very high levels at the end of the year. Gas prices are still relatively high so generators continued to use less gas and more coal in the second quarter of 2006, compared to a year earlier. Gas use in the domestic sector is particularly dependent on temperatures, not only during the heating season, but also in summer very hot weather deters use for cooking and hot water. Colder weather at the beginning of 2006 boosted domestic gas consumption. Warmer weather in the third quarter of 2006 led to lower consumption compared to a year earlier.

Section 5 - Electricity

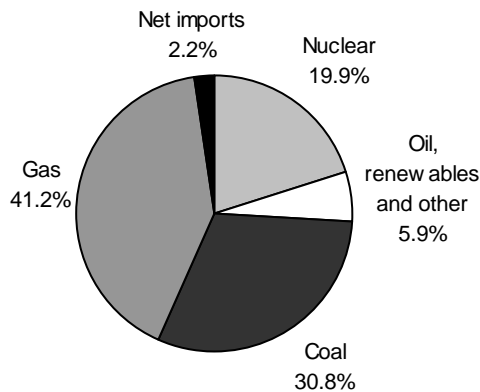
Chart 5.1 Fuel used for electricity generation



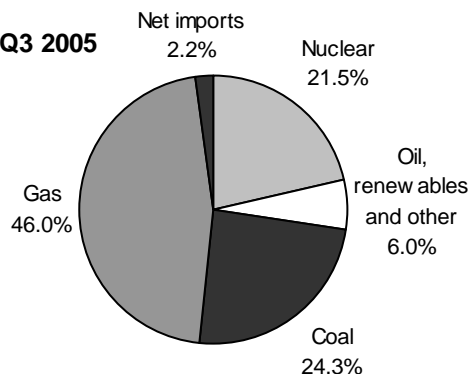
- Fuel used by generators in the third quarter of 2006 was, in total, 1.1 per cent lower than in the third quarter of 2005.
- Coal use during the quarter was 22.9 per cent higher than a year earlier.
- Gas use was 11.6 per cent down on the third quarter of 2005.
- Nuclear sources were down 8.1 per cent compared with the third quarter of 2005. This was due to maintenance and outages in the third quarter of 2006.
- Hydro sources fell back by 6.1 per cent on the level of the third quarter of 2005.

Chart 5.2 Electricity supplied

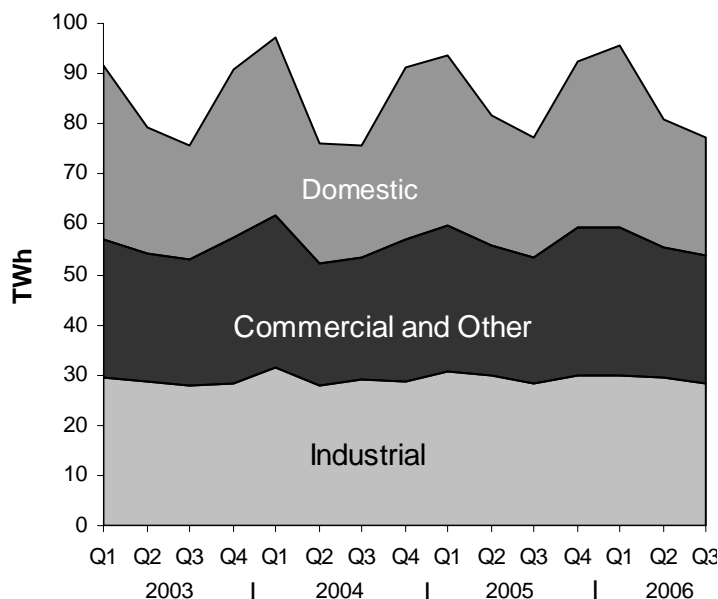
Q3 2006



Q3 2005



- Total electricity supplied by all generators in third quarter of 2006 was 0.5 per cent lower (-½ TWh) than a year earlier
- Indigenous supply was 0.2 per cent higher than in quarter 3 2005. Net imports were 0.5 per cent lower than in the third quarter of 2005
- The supply from coal rose by 26.4 per cent (+5.6 TWh), while from gas fired stations supply fell by 11.0 per cent (-4.4 TWh).
- The supply from nuclear stations fell by 8.1 per cent (-1½ TWh).
- Between the third quarter of 2005 and the third quarter of 2006 coal's share of electricity supplied rose by 6½ percentage points to 31 per cent. Nuclear's share fell by ½ a percentage point to 20 per cent and gas' share fell by 5 percentage points to 41 per cent. The change in oil, other fuels and renewables (including hydro) was negligible.

Chart 5.3 Electricity consumption

- Overall final consumption of electricity was unchanged from the level in the third quarter of 2005 at 77.4 TWh.
- Domestic use fell by 0.5 per cent. Industrial consumption rose by 0.2 per cent from the third quarter of 2005 while consumption by other final users rose by 0.4 per cent.
- In this period temperatures were on average about 1½ degrees higher than in the third quarter of 2005

Background

Relevant tables

- 5.1: Fuel used in electricity generation and electricity supplied..... Page 58
 5.2: Supply and consumption of electricity..... Page 59

Fuel use

In 2001 higher gas prices and strong competition from coal, especially imported coal, brought a temporary halt to the rising trend in gas use at power stations, and gas use maintained a fairly flat profile until the second half of 2003. As coal prices rose so gas use became more attractive and gas use for generation increased again to reach a new record level in 2004, 3½ per cent higher than 2002's previous record. Rising gas prices over the later part of 2005 and the first three quarters of 2006 led to a preference for coal as the main fuel source for electricity generation. Although the amount of gas used in electricity generation has increased for the past three quarters, it remains well below the levels of 2005 and coal remains the dominant fuel source for generation.

Supply

Total electricity supplied in the UK in 2005 was 1½ per cent higher than in 2004, just above the average rate of growth over the last 5 years. Supply from the coal fired power stations of all generating companies rose by 3½ per cent in 2005, with electricity supplied from gas falling 2½ per cent from 2004's record level. Supply from nuclear sources rose by 2 per cent in 2005 although the nuclear sector was again affected by a high level of outages for repairs and maintenance. Imports and exports of electricity from and to continental Europe are volatile with suppliers taking advantage of price differentials that have arisen during periods of extreme weather. In 2003 both very hot and very cold weather increased exports to continental Europe to record levels. Imports rose in 2004 and again in 2005 to levels comparable with 2002, but exports have remained high because of increased exports from Northern Ireland to the Irish Republic. In the first three quarters of 2006 total electricity supplied has shown a slight fall of ½ per cent with supplies from coal up 26½ per cent but supplies from gas down 11 per cent and supplies from nuclear down 8 per cent.

Consumption

After the near absence of growth in 2002, electricity demand by final consumers grew by 1¼ per cent in 2003 but only ¾ per cent in 2004 (although this rises to just above the 1½ per cent per year trend rate of growth when allowance is made for the change to reporting on a calendar year basis in 2004). In 2005, growth in electricity demand was closer to 2 per cent and was divided 29 per cent to the domestic, 29 per cent to industry and 27 per cent to commerce, public administration, transport and agriculture. Fuel industries accounted for a further 7½ per cent with the remaining 7½ accounted for by transmission and distribution losses. The demand for electricity in the first three quarters of 2006 is at the same level as a year previous.

Further developments relating to the DTI sub national energy consumption data

This article describes three recent developments in the production and publication of energy data at regional and local authority level.

Extra functionality for regional and local energy consumption statistics for 2003

Following the 2003 Energy White Paper, DTI have committed to collect and make available data on the pattern of energy use in local areas, to enable local authorities and regional bodies to target activity more effectively. As part of this project, statistics of local and regional electricity consumption, gas consumption, road transport fuels, “other” fuels, total final consumption and high level indicators have been published. The background and methodology behind many of these datasets can be found in the December 2005 edition of Energy Trends. All of these datasets are currently available on DTI’s regional energy website:

<http://www.dti.gov.uk/energy/statistics/regional/index.html>

To aid accessibility for users, a combined regional frontpage Excel based document has been designed to provide users with far greater flexibility when viewing this data. As opposed to downloading separate files, all of the datasets can be viewed in their complete format at the click of a button. The benefits of this document are not only to display all available data in one place, but also to allow users to filter out exactly the data that they require. There is an option to select and compare the data for up to three local authorities or government office regions. The user’s chosen areas are then displayed together on a single sheet making comparison of data between regions simple. Alternatively, users can filter for data from a specific government office region. This can be displayed either as a single line of data for any selected local authority, or as the complete dataset for that region. All of this extra functionality is available for each of the datasets mentioned above. This document can be found along with the individual datasets on DTI’s regional website.

All of the figures provided are for 2003 data. DTI hopes to update this document with 2004 data early in 2007.

Publication of middle layer super output area (MLSOA) estimates of electricity consumption in 2004 for England and Wales

The aim of this work is to provide local authorities with energy consumption data below local authority level. This will enable councils to monitor and target small areas for further interventions as part of their local energy strategies, and enhance the implementation of energy efficiency programmes and reduction of CO₂ emissions. Middle layer super output areas are a statistical geography developed by the Office for National Statistics (ONS) as part of the 2001 census. They are areas containing a minimum population of 5,000 or around 2,000 households. MLSOA have the advantage of having more stable boundaries and are more homogenous in terms of population when compared to NUTS5 or electoral ward areas.

On the regional energy website, ten excel workbooks have been produced, relating to the nine English Government Office Regions and Wales. Each worksheet on the ten individual workbook files contains MLSOA electricity consumption for each local authority within the relevant region. No information has been released for Scotland due to problems with allocating electricity consumption to data zone areas, using the current geographical information currently available to DTI; solutions to overcome this will be explored in the future. The information published includes total consumption, the total number of meters and average consumption for the domestic standard tariff, domestic economy 7 and non-half hourly metered commercial/industrial consumers. Due to data disclosure issues, electricity consumption relating to larger commercial/industrial customers could not be disaggregated below local authority level. To assist data users interpret the estimates, a guidance note has also been released that provides further background information and details on why some consumption in the local authority areas could not be allocated to a specific MLSOA.

Special feature – further developments for regional energy statistics

DTI plans to produce similar estimates for both electricity and gas consumption in 2005 for Great Britain.

Helping users interpret sub national energy statistics

Over the last few years, there have been a number of significant new developments in terms of the different work streams that form part of the DTI's regional energy project. These include the publication of local authority (NUTS4) and regional (NUTS1) estimates of energy consumption for gas, electricity, road transport fuels and remaining fuels. Therefore it is important that users of the information are provided with continual guidance on how the data were collected and compiled, and information on how it should be interpreted. Background information for these estimates has been published in the various editions of 'Energy Trends'. The purpose of this new note is to provide comprehensive guidance to data users by making relevant information available a single document.

The note contains five sections, covering the four main fuel source datasets, and the estimates for total energy consumption produced by combining the four sets of estimates together. Each section covers:

- Information available, which lists the published and forthcoming data sets that DTI have published.
- Data collection and collation.
- Data coverage.
- Methodological changes impacting on data quality.
- Advice for use of baselines for historical data series.
- Links to Energy Trends articles and datasets.

DTI plan to update the note as new sub national energy data are published over time. The note is available on the DTI's regional energy website.

Further information.

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Natural gas: world production, consumption, reserves and trade

This article brings together the latest available data on natural gas production, consumption and reserves of natural gas, and also trade in natural gas.

The UK was the world's fifth largest producer of natural gas in 2005 accounting for 3.3 per cent of world production. The ten largest gas producers in 2005 are shown in Table 1. The USA and Russia together accounted for 40 per cent of the world total.

In consumption terms (Table 2), the UK accounted for 3.6 per cent of the world's total gas consumption in 2005, making it the 3rd largest consumer behind the USA and Russia.

UK reserves of gas at 0.48 trillion cubic metres represent 0.3 per cent of the world's total reserves. This is equivalent to 6 years of production at 2005 rates. The BP Statistical Review of World Energy 2006¹ puts total world gas reserves at 179.83 trillion cubic metres, equivalent to 62 years of production at 2005 rates. Russia has 27 percent of reserves, Iran 15 per cent and Qatar 14 percent, with the remaining 44 per cent spread widely between countries and across continents.

Table 1 : World gas production in 2005

	Gas Production ⁽³⁾ TWh	Share of Total %
Russia	6,663	21.7
USA	5,490	17.9
Canada	1,987	6.5
Algeria	1,083	3.5
UK	1,018	3.3
Norway	995	3.2
Iran	913	3.0
Indonesia	872	2.8
Saudi Arabia	734	2.4
Netherlands	729	2.4
All Other Countries	10,254	33.4
World Total	30,738	100

Table 2 : World gas consumption in 2005

	Gas Consumption ⁽³⁾⁽⁴⁾ TWh	Share of Total %
USA	6,611	21.6
Russia	4,513	14.7
UK	1,096	3.6
Germany	1,036	3.4
Iran	1,005	3.3
Canada	953	3.1
Japan	948	3.1
Italy	912	3.0
Ukraine	861	2.8
Saudi Arabia	734	2.4
All Other Countries	12,013	39.2
World Total	30,680	100

(3) Original data were in Terajoules, and converted to TWh (1 TJ = 0.00027778 TWh)

(4) Consumption includes gas consumed as part of the production process.

Source: IEA Natural Gas Information 2006²

Charts 1 and 2 show world production and consumption of natural gas since 1971. Data for Russia are not separately available before 1984 for production and before 1989 for consumption and so the whole of the Former Soviet Union (FSU) is shown for the earlier periods. For consistency the remainder of the FSU is shown as a combined total on these charts after 1984 and 1989 (ie excluding Russia for production and excluding Russia and the Ukraine for consumption).

¹ The BP Statistical Review of World Energy 2006 is available at www.bp.com/productlanding.do?categoryId=91&contentId=7017990.

This review gives production and consumption data which differ from the data published by the IEA. This is because the BP data pre-date the IEA data and the values countries provide to BP are frequently estimates because actual values are not available at that time.

² "Natural Gas Information 2006" was published by the IEA in August 2006 ISBN 92-64-11009-7 <http://www.iea.org/>

The largest rates of growth of production between 1985 and 2005 were in Iran (12 per cent a year on average) and Malaysia (9½ per cent per year). UK production grew at 4 per cent a year on average over this period and the world's production as a whole at 2½ per cent. The largest rates of consumption growth were in Iran (12½ per cent a year) and China (7 per cent per year). UK natural gas consumption grew at 3 per cent a year on average over these 20 years.

Chart 1: Natural gas production 1971 to 2005

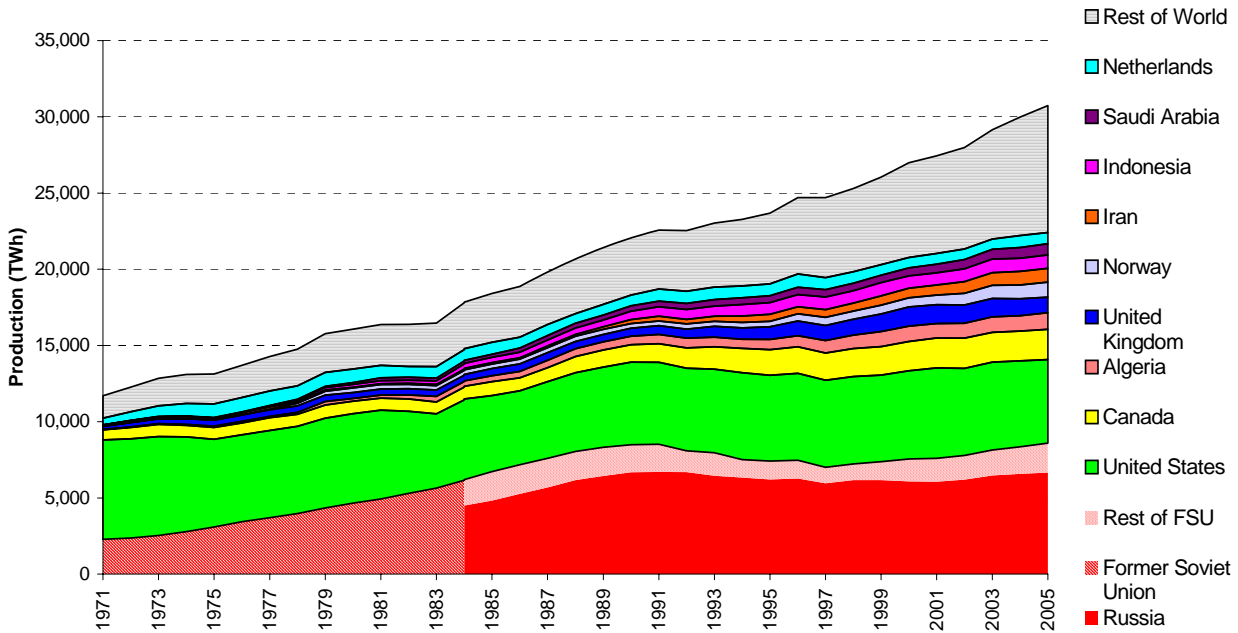
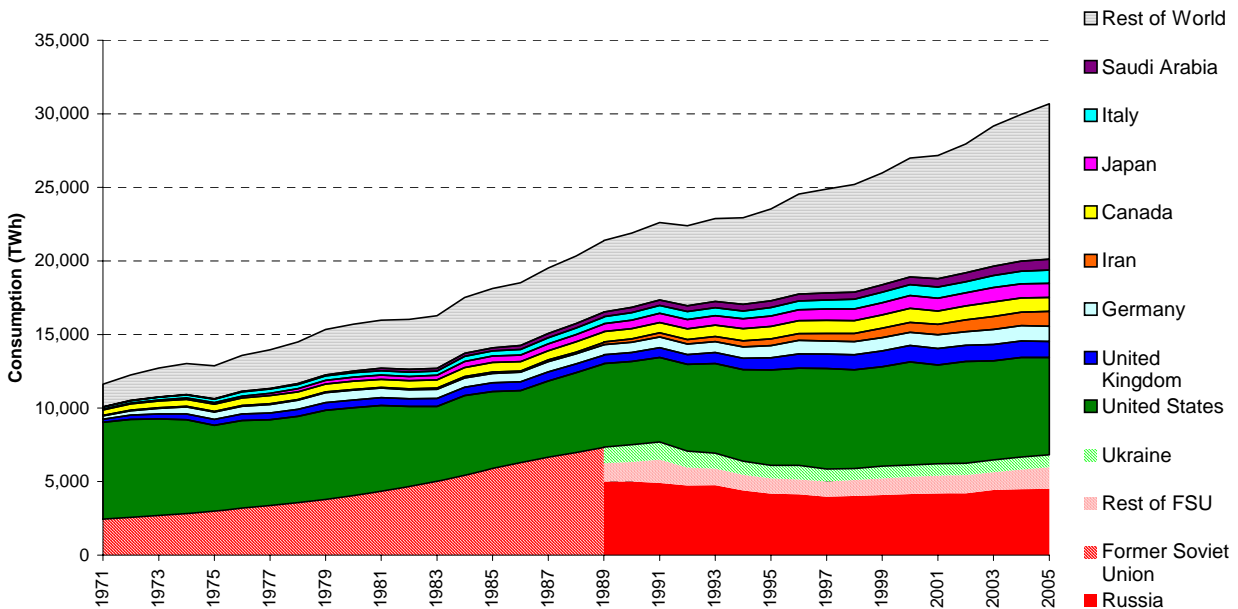


Chart 2: Natural gas consumption 1971 to 2005



	Gas Exports TWh ⁽¹⁾	Share of Total %
Russia	2,164	23.8
Canada	1,129	12.4
Norway	920	10.1
Algeria	801	8.8
Turkmenistan	518	5.7
Netherlands	485	5.3
Indonesia	408	4.5
Malaysia	356	3.9
Qatar	295	3.2
USA	233	2.6
All Other Countries	1,797	19.7
World Total	9,104	100

	Gas Imports TWh ⁽¹⁾	Share of Total %
USA	1,287	14.3
Germany	950	10.5
Japan	876	9.7
Italy	777	8.6
Ukraine	673	7.5
France	538	6.0
Spain	391	4.3
Korea	341	3.8
Turkey	286	3.2
Netherlands	213	2.4
All Other Countries	2,687	29.8
World Total	9,021	100

(1) Original data were in Terajoules, and converted to TWh (1 TJ = 0.00027778 TWh)
 In total, imports are lower than exports because of distribution and conversion losses.
 Source: IEA Natural Gas Information 2006.

Tables 3 and 4 show the ten largest importers and exporters of natural gas in the world in 2005. Russia is the largest exporter with Germany, Ukraine, Italy, Belarus and Turkey its main customers. Exports of gas from Canada to the USA account for Canada being the second largest exporter, but the USA also imports gas from Trinidad and Tobago and Algeria as Liquefied Natural Gas (LNG - see next paragraph). Of the other large gas importers, Germany's main sources are Russia, Norway and the Netherlands and Italy's Russia and Algeria. Japan's imports are all in the form of LNG, which is examined in the next paragraph.

Twenty three per cent of natural gas imports were in the form of LNG. Japan accounted for 42 per cent of these LNG imports in 2005 with Indonesia, Malaysia and Australia providing 65 per cent of Japanese imports. Other major LNG importing countries were South Korea (15½ per cent of the world total), Spain (11½ per cent), the United States (9½ per cent), France (6½ per cent) and Taiwan (5 per cent). The largest LNG exporting countries are Indonesia (16½ per cent of the world total), Malaysia (15 per cent), Qatar (14½ per cent) and Algeria (13 per cent). The destinations of LNG exports from the major LNG exporting countries are shown in Chart 3, and the origins of the LNG imports from the major LNG importing countries in 2005 are shown in Chart 4. Most importers of LNG use several countries to source the gas with the largest dependencies being the USA taking 70 per cent of its LNG from Trinidad and Tobago in 2005 and France taking 61 per cent of its LNG from Algeria.

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Chart 3: Major exporters of LNG in 2005

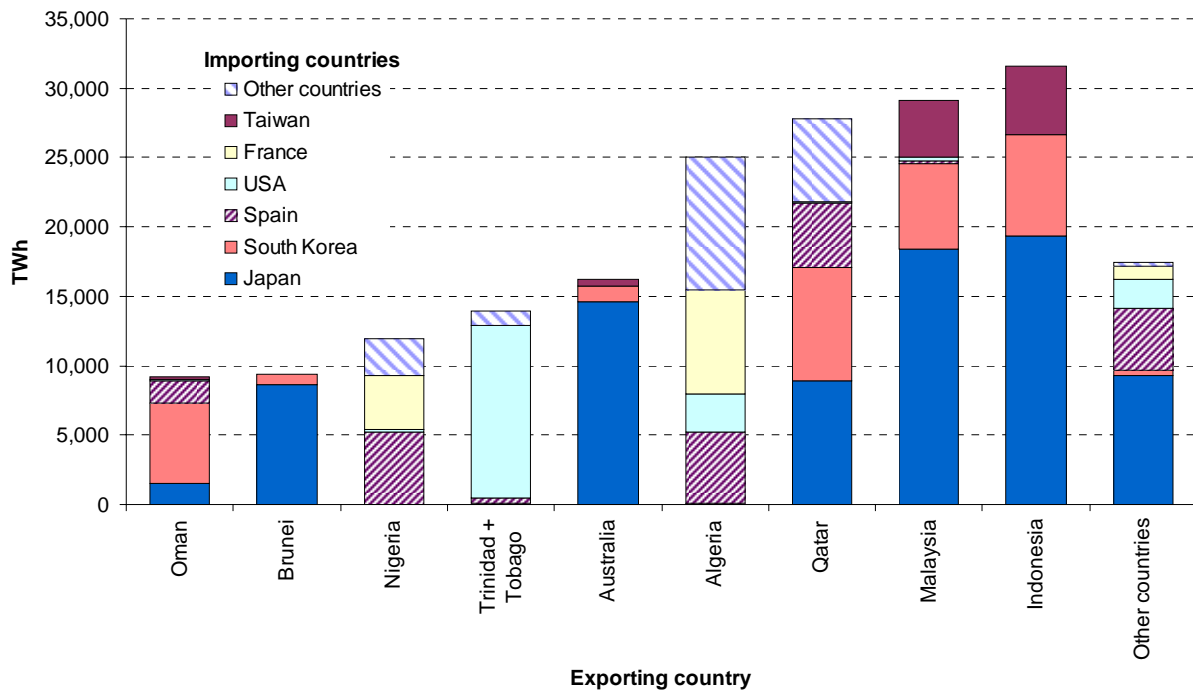
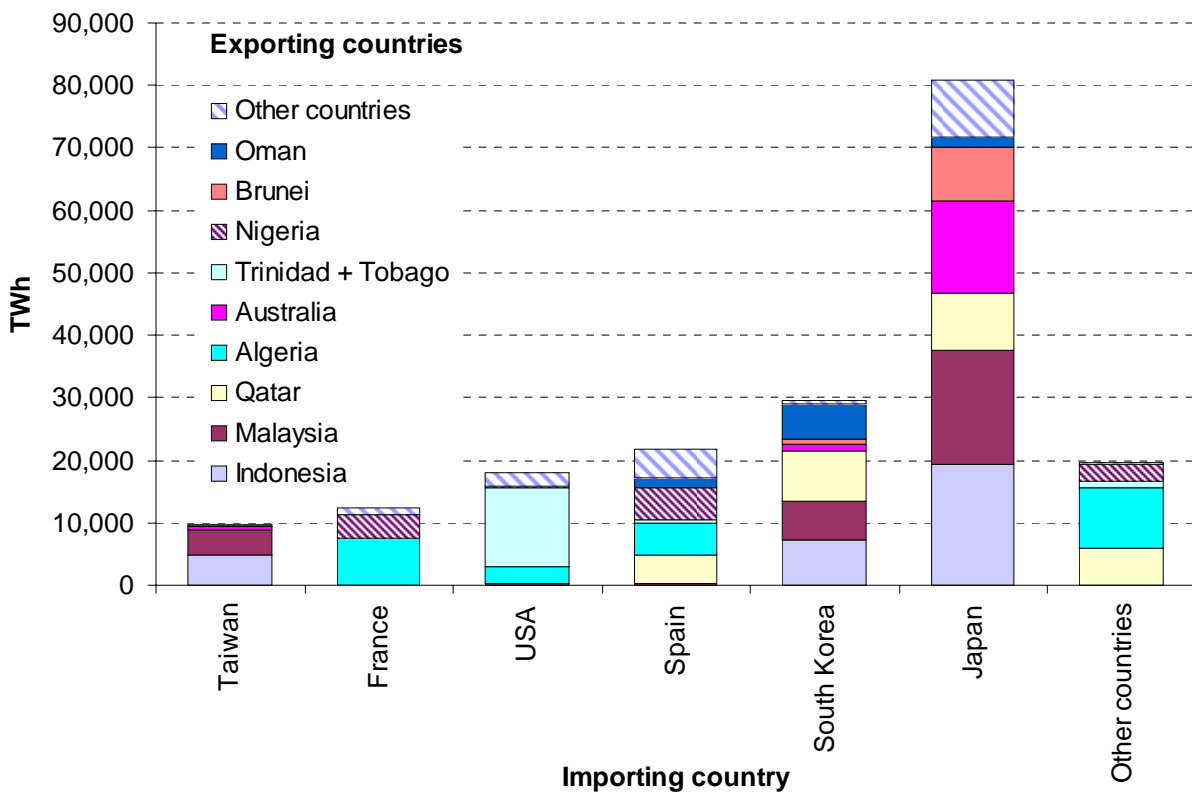


Chart 4: Major importers of LNG in 2005



Update on DTI local and regional estimates of gas consumption in 2005

Since 2001 DTI has released estimates of gas consumption at local authority (NUTS4) and government office regional (NUTS1) levels. This information was based on gas sales data released by the National Grid at postcode sector level. In 2005 there was a major restructuring of the gas distribution network, with National Grid selling off some of the local distribution zones (LDZ's) and consequently National Grid were unable to compile this valuable source of information.

In 2005 DTI entered into discussions with the gas industry to discuss an alternative approach to producing highly disaggregated gas consumption statistics. An agreement was reached whereby the new company, *xoserve*, set up after the reorganisation of the distribution network in May 2005 would generate for each gas meter connected to the main distribution network an estimated annual consumption figure using the Annual Quantity (AQ) measurement. *xoserve* would also provide the address and postcode of the meter in 2004 and 2005. This information has enabled DTI to map gas consumption to local authority areas. The AQ is an estimate of annual consumption between 1 April and 30 March based on consumption recorded between two individual meter readings taken at least two months apart. The estimate also uses meter profile information and is weather corrected for a 17 year trend, contrasting with the 35 year trend applied to the original National Grid postcode sector datasets. Release of the new data to DTI was authorised after permissions were obtained from the four main gas transporters (the owners of the LDZ's) in Great Britain.

In addition to collecting gas consumption estimates from meters connected the main distribution network, DTI has been able obtain similar information from the independent gas transporters. These companies are responsible for transporting gas to mainly new housing estates or connected system exit points (CSEPs).

DTI has now received all 2004 and 2005 gas consumption data from the re-structured gas industry. The data quality of the postcode information for the gas meters is high and by obtaining consumption data at this highly disaggregated level the reliability of future DTI local authority estimates should be an improvement on the published National Grid datasets from 2001 to 2004. During January 2007 DTI will process, aggregate and validate the data files, with plans to release a set of revised 2004 and new 2005 estimates at NUTS1 and NUTS4 levels on the Regional Energy Consumption Statistics Website probably in February 2007. A link to the site is shown below:
<http://www.dti.gov.uk/energy/statistics/regional/index.html> .

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Regional and local electricity consumption statistics for 2005

The third annual DTI exercise to collect and publish electricity consumption data at a regional and local level has now taken place. The first exercise was reported in the December 2004 edition of Energy Trends with an updated article the March 2005 Energy Trends. The results of the second exercise were presented in an article in the December 2005 Energy Trends.

Summary

Estimates of final electricity consumption at both local authority (NUTS4) and government office region (NUTS1) levels assist local and regional bodies to monitor and implement the energy efficiency programmes in their own areas. Once again excellent co-operation from electricity suppliers, distributors and data aggregators, has again led to total and average consumption levels for domestic and industrial/commercial sectors being made available here. As before, the information has been taken from the administrative systems of the electricity companies' data aggregators, but while the quality of the data is a further improvement on that for 2004 and 2003¹, the statistics shown here are again classed as experimental while detailed comparisons are made between the three years of data to ensure that all the shortcomings of the earlier years' data have been understood and allowed for.

Methodology

To produce 2005 annualised data at both local authority (NUTS4) and government office regional (NUTS1) levels data were collected for all electricity metering points and then aggregated for each of the sub national areas. Every metering point has a unique reference number called an MPAN or meter point administration number – which may have one or more meters. Consumption data for all MPANs are held on the systems of the data aggregators (DAs), the agents of the electricity suppliers who collate/aggregate electricity consumption levels for each meter. To find the geographical location of each MPAN, Gemserv extracted from the 'meter point administration system (MPAS) database at the end of 2005 the full address and postcode of each MPAN and provided this extract to DTI on a CD-ROM. Gemserv is the company that provides one central access point for suppliers, distributors and their agents to obtain address and postcode information about each MPAN. Subsequently in 2006 MPAS has been replaced by a new on-line system ECOES². By merging the DAs' consumption data with Gemserv's postal address information, local and regional consumption estimates were compiled.

DA's responsible for non half hourly (NHH) meters (domestic and small commercial customers) were asked to use a standard run on their systems over the 2006 August Bank Holiday weekend to generate annualised consumption rates for the period from 30 January 2005 to 29 January 2006. This ensured that the data generated were consistent, that the task could be easily accommodated within the work schedules of the DA's, and that the costs to the electricity industry of providing the data were minimised. The information that was provided by the data aggregators was as follows:

- Consumption data, based on either an annualised advance (AA) or an estimated annual consumption (EAC). The AA is based on actual meter readings, whilst the EAC is an estimate of consumption based on historical information and the profile class of the customer. The DAs' systems for NHH meters work around a 14-month settlement period, which ensures that around 80 per cent of the data, are based on AAs after 7 months and approximately 92 per cent after 14 months. So by generating the data for DTI in August 2006, around 80 per cent of NHH MPAN data collected for this exercise was based on electricity consumption taken from actual meter readings. There are over 28 million domestic, industrial and commercial NHH MPANs in Great Britain.
- For NHH meters the profile attached to each MPAN was also given and profiles 1 and 2 were allocated to the Domestic sector and profiles 3 to 8 to Industrial and Commercial. All HH meters were allocated to Industrial and Commercial.

¹ However, the late receipt of one set of data has cut short the time available for adding missing postcodes so the Unallocated figures are higher than in 2004 at this stage.

² ECOES is the Electricity Central Online Enquiry Service

Special Feature – Regional and local electricity consumption

- For half hourly (HH) meters (larger commercial customers), DA's ran a simple report on their systems to give the total amount of consumption for the calendar year 2005. There are currently around 105,000 HH meters in Great Britain (up from 104,000 in 2004).
- In addition to data linked to domestic and commercial properties, the data files also provided consumption levels for unmetered sites including street lighting and electricity used by the electrified railway network, based mainly in the south of England.

For 2003 DTI used the Office for National Statistics' (ONS) Postcode Lookup File in order to assign postcodes first to NUTS5 areas and from there to NUTS4 areas. For 2004 and 2005 the Gemserv data was matched against the All Fields Postcode Directory (AFPD) to obtain a NUTS5 code and the NUTS5 code was truncated to 7 characters, giving a NUTS4 code. Out of the 29.5 million records in the Gemserv dataset, it was not possible to allocate a NUTS code to around 600,000 records. This was due to the postcode being incomplete, invalid or missing. A number of invalid postcodes were corrected by automated methods, for example, changing those that started 1P to 1P, those ending II to LL, and standardising on postcode spacing. Where a NUTS code could not be allocated in this way, the street and post town, or just post town, was used to allocate a NUTS code. During the last 12 months, DTI has worked its way through some of the Gemserv data with incomplete, invalid or missing postcode data and added complete postcodes from other sources; the largest consumers of electricity were investigated first. The AFPD was renamed as the NSPD (National Statistics Postcode Directory) in May 2006. Some errors had been found in the 2005 version of the AFPD and in order to produce a more accurate allocation of data to NUTS areas and Middle Layer Super Output Areas (MLSOA – see below) the August 2006 version of the NSPD was used. Because allocation to NUTS area is by postcode, any address containing a PO Box number will be assigned to the NUTS area of the Post Office sorting depot. This is particularly important for interpretation of data at a level below that of NUTS 4 such as the MLSOA analyses described below.

Any nominally domestic MPANs with consumption over 100,000 kWh (ie profile codes 1 and 2) were allocated to the industrial and commercial sector in the same way as they had been for 2004 and 2003. Inspection of the individual data showed that there were very few recognisable private addresses with consumptions over 100,000 kWh, but a significant number between 50,000 and 100,000 kWh per year. Additionally, where the third variable of the address started with UNMET or UMS (ie unmetered supply) or STR (street lighting) or LAND or LLO (Landlord supply) or STAIR (staircase lighting) or TEMP (temporary builders' supply) consumption was moved to the industrial and commercial category. (This refinement was introduced for 2004). The 100,000 kWh cut off is known to have classified some very large domestic users to the industrial and commercial sector but this is more than outweighed by the number of small industrial and commercial consumers that will have been allocated to the domestic sector.

Regional and local estimates of final electricity consumption data

Table 3 shows the amount of electricity consumed by selected local authorities within each government office region. The table is broken down by domestic and commercial/industrial customers and shows the total amount of electricity consumed in GWh and the number of customers. Average consumption levels for domestic and non-domestic MPANs are also provided. The local authorities within each region have been selected to show those areas with the highest and lowest average consumptions. Commercial and industrial customers may have more than one MPAN per site. The number of domestic sector MPANs in Great Britain is larger than the number of households by 4 per cent, although in Scotland there are around 18 per cent more domestic MPANs than households. This is because in Scotland it is estimated that some 260,000 domestic customers are on two-rate or three-rate meters using dynamic teleswitching to control when cheaper rate electricity is made available to consumers and these customers will have two MPANs per address. A similar system (resulting in multiple MPANs per customer) is available to households in England and Wales ("Economy 10" being one example) but this is less widespread (around 800,000 customers in total). Second homes, holiday homes and additions to the housing stock will also lead to the number of MPANs exceeding the number of households. This means that the sales per MPAN figures understate consumption per household for most local authorities.

The full table showing all NUTS4 areas³ within these regions is available on the DTI Energy statistics web site at:

www.dti.gov.uk/energy/statistics/regional/index.html
www.dti.gov.uk/files/file36068.xls

Electricity consumption not covered by the data collection exercise

The consumption estimates provided here cover only Great Britain, and exclude those large consumers of electricity that are connected to the high voltage lines of the transmission system. Northern Ireland has been excluded because the structure of the electricity industry in Northern Ireland differs from the rest of the United Kingdom, where there is a single monopoly supplier to domestic customers, Northern Ireland Electricity plc. This creates problems with disclosure. However, any consumer of more than 500 MWh per year can select its supplier from one of 6 licensed suppliers. In 2007 the electricity market will be further opened so that any Northern Ireland consumer can select their supplier. DTI has been in contact with Northern Ireland about extending this analysis in time for 2007 so that the whole of the United Kingdom is covered.

In addition, DAs do not hold information on their systems for consumption levels for those industrial consumers, such as very large sites or plant, who receive their electricity as CVA (Central Volume Allocation) users via the high voltage transmission system. CVA users have different arrangements with their electricity suppliers to NHH and HH meter customers. CVA consumption is particularly important in Wales and so the consumption figure for Wales in Table 3 is lower than consumption estimate given on page 35.

Also excluded is electricity used by companies that generate their own electricity and consume it without it passing over the public distribution network. This amounted to 27.6 TWh in the UK as a whole in 2005. Much of this “autogeneration” is from CHP schemes and an indication of the regional importance of such schemes can be from an article on pages 31 to 36 of the September 2006 Energy Trends (“Combined Heat and Power in Scotland, Wales, Northern Ireland and the regions of England in 2005”).

Table 1: Comparison with published UK statistics for 2005	<i>GWh</i>
GB Total in Table 3 - Domestic	119,429
Industrial and Commercial	200,895
Total for Great Britain	320,324
<i>Plus</i> Northern Ireland	7,647
<i>Plus</i> Sales direct from high voltage lines (based on Ofgem data)	6,600
Implied UK Sales of electricity	334,571
UK Sales of electricity (DUKES 2006 Table 5.5)	329,073
Statistical difference	+5,498 (+1.7% of UK Sales)
Domestic sector (DUKES 2006 Table 5.2)	116,811
<i>Less</i> Northern Ireland	-3,191
Domestic sector GB	113,620
GB Total in Table 3 - Domestic	119,429
Statistical difference	+5,809 (+4.9% of GB domestic consumption)

³ The NUTS4 areas in Scotland do not match exactly the Scottish Local Authority Areas. There are more NUTS4 areas in Scotland than Local Authorities. In the analysis in the full table Scottish Local Authorities are used in place of NUTS4 giving a total of 408 local areas in Great Britain.

Comparison with published annual figures for 2005

Table 1 compares the total figures shown in Table 3 with corresponding electricity figures published in Chapter 5 of the Digest of United Kingdom Energy Statistics 2006 (DUKES). After allowing for electricity not included in consumption in Table 3 (CVA and Northern Ireland), there is a difference of around 5.5 TWh or just over 1½ per cent. Some of this will be due to the fact that around 20 per cent of the data in the sub-national exercise is based on estimates rather than actual meter readings while another factor is that the NHH records run from end January 2005 to end January 2006 and not for the calendar year 2005.

In addition the sub-national figures for domestic consumption appear to include about 6 TWh that are included as non-domestic consumption in DUKES. Some of this will be due to the overall over-estimate of consumption described in the paragraph above, but some will also be due to the classification of consumption by profile class (see 'Methodology' section, above) with small commercial and industrial consumers classified as domestic consumers.

Preliminary analyses

The lowest average domestic electricity consumption (which is consumption per meter point rather than per home or per household) is 3,552 kWh in Blaenau Gwent while the highest is 7,620 kWh in the Isles of Scilly (although on a per household basis estimated average consumptions in the Orkney and Shetland Islands are higher than this at 9,600 and 11,500 kWh respectively). Commercial and industrial sector electricity consumption is a function of both the number of commercial and industrial sites in an area and the volume of electricity they use. Commercial centres such as Westminster, Leeds, Glasgow, Manchester, Birmingham and Tower Hamlets (Docklands) have a high total overall volume of consumption but they also have a large number of non-domestic consumers so average consumption per commercial and industrial meter point is usually relatively low. Apart from the City of London, Neath Port Talbot has the highest average consumption per commercial or industrial meter point because consumption in that area is shared between fewer but larger consumers of electricity. The lowest level of industrial and commercial consumption of electricity in total volume terms is recorded in the Orkney Islands. However, low average consumptions are found in rural areas such as South Shropshire, Wealden, Penwith and the Isles of Scilly, but also in some inner city areas such as Hackney, Lambeth and Lewisham.

Table 2: Electricity consumption in 2005 in the industrial and commercial sector compared with economic activity

	Electricity consumption (GWh)	kWh consumption per £ thousand of Gross Value Added*
Wales	11,911	285.17
North East	9,336	273.08
East Midlands	15,288	232.45
North West	23,117	226.65
Yorkshire and the Humber	16,836	223.83
Scotland	17,114	208.58
West Midlands	16,950	207.35
South West	15,812	201.04
East	17,192	192.29
South East	24,400	164.14
London	27,550	148.60
Great Britain total (including unallocated)	200,895	204.51

* This uses provisional Gross Value Added in 2004 at current basic prices (workplace based) as published in Economic Trends August 2006.

Chart 1: Industrial electricity consumption per £ thousand of value added, 2005

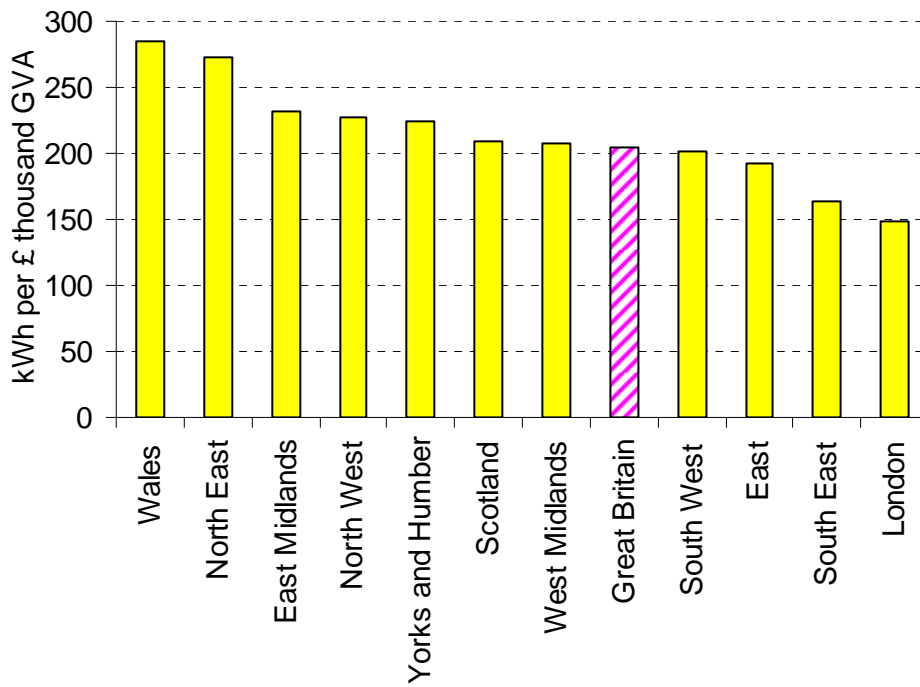
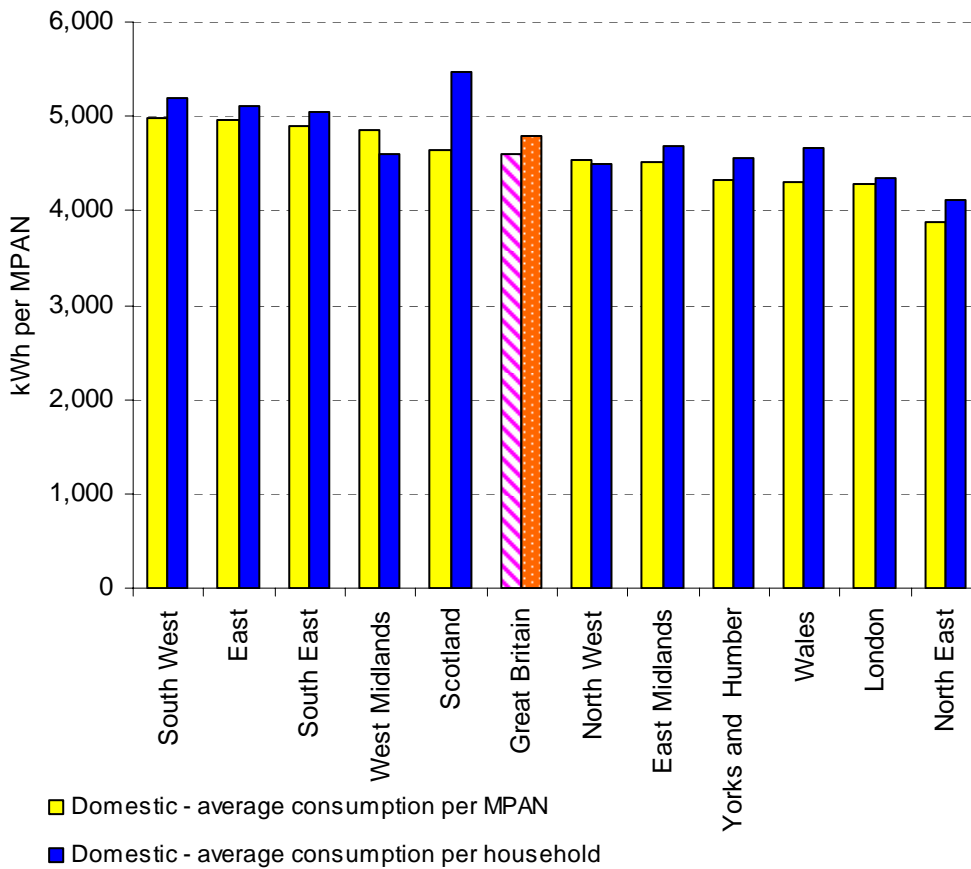


Chart 2: Average domestic electricity consumption per MPAN and per household, 2005



Special Feature – Regional and local electricity consumption

For Great Britain as a whole average domestic consumption per meter point in 2005 was 4,606 kWh⁴, with the North West being the closest to this average in Regional terms. The East and the South West had the highest domestic sector averages and the North East the lowest. (Although on an estimated consumption per household basis Scotland's average at over 5,400 kWh is the highest as Chart 2 shows). For industrial and commercial use the greatest regional volume of consumption is in Greater London and the least in the North East. However, in terms of electricity consumed per £ thousand of Gross Value Added, Wales ranks the highest and the North East the second highest with Greater London the lowest as Table 2 and Chart 1 show.

Comparison of 2003, 2004 and 2005 results

The 2005 data have been compared with the 2004 and 2003 experimental results published in December 2005's and March 2005's Energy Trends. The 2005 data are judged to be of better quality than both the 2004 and the 2003 data as the following improvements have been made:

- Slightly less data have been allocated to NUTS4 areas than in 2004 although 2004 showed a big improvement over 2003. Unallocated consumption accounted for 1.7 per cent of the Great Britain total compared with 1.5 per cent unallocated in 2004 and 6.5 per cent unallocated in 2003 (see footnote 1 on page 23). In terms of numbers of MPANs unallocated the proportion has fallen from 0.7 per cent in 2003 to 0.15 per cent in 2004 but risen slightly to 0.2 per cent in 2005. The number of unallocated MPANs in the industrial and commercial sector in 2003 was disproportionately large in the West Midlands.
- The 2003 data as submitted to DTI contained duplicated entries for a large number of MPANs, although this was mainly confined to the North West region. Although the duplicated data were removed, it is suspected that the resultant dataset did not adhere strictly to the specification used by other datasets in other regions. There were no duplicated entry problems in 2004 and 2005.
- In 2004 more non domestic data were moved to the industrial and commercial sector through identifying large non-private household use such as street lighting, other unmetered usage, and usage attributable to communal areas in multi-occupied dwellings and housing estates. This process was continued in 2005. [Additionally in 2005, DTI now has a better understanding of how duplicated MPANs can arise for new connections because of changes to building plans. This has led to the removal of a substantial number of MPANs for which consumption was zero and full postcodes had not been allocated.]
- In 2005 more of the larger half hourly sites without adequate postcode information have been investigated and a postcode added to enable them to be added to a NUTS4 area.
- In any year the Royal Mail introduces changes to postcodes so that areas of the country that are expanding can be better covered. This can lead to discontinuities in the allocation of MPANs to NUTS areas via the AFPD.
- Since 2003 there has been a general improvement in the statistical differences between these data in aggregate and corresponding data published in the Digest of UK Energy Statistics. The statistical difference has fallen from 3.4 per cent of UK electricity sales in 2003 to 1.7 per cent in 2005. The statistical difference for domestic sector sales has fallen from 14.2 per cent in 2003 to 4.9 per cent in 2005 (see Table 1, above).
- There unallocated figures have shown a reduction in bias over the three years. For domestic consumers the average consumption of the unallocated was 10½ per cent below the average for all domestic consumers but this reduced to 8 per cent below in 2004 and 5 per cent below in 2005. For the unallocated MPANs in the industrial and commercial sector average consumption in 2003 was almost 4 times the average consumption for all industrial and commercial MPANs (ie some very large consumers could not be allocated to a NUTS 4 area). This rose in 2004 but in 2005 fell back to less than 1½ times.

However, each year the Royal Mail introduces changes to postcodes so that areas of the country that are expanding can be better covered. This can lead to discontinuities in the allocation of MPANs to NUTS areas via the AFPD.

⁴ Households are not evenly distributed about this mean because households using electricity as their main source of heating will have much higher consumptions. However, the majority of households do not use electricity as their main source of heating and the median MPAN recorded consumption of around 3,690 kWh per year in 2005.

There was a small increase in average domestic consumption per MPAN from 4,600 kWh in 2003 to 4,628 kWh in 2004 but this fell back to 4,606 kWh in 2005 at the Great Britain level. Average industrial and commercial consumption per MPAN has shown a small fall from 77,909 kWh in 2003 to 77,620 kWh in 2004 but rose to 78,223 kWh in 2005. The total number of MPANs with non-zero electricity consumption recorded is shown to have risen from 28.25 million in 2003 to 28.38 million in 2004 and 28.50 million in 2005. Annually around one million MPANs have no electricity consumption because they relate to new-build properties, new businesses or established businesses that have closed down. The improvements to the data, described above, mean that changes at region and local authority level between the 2003, 2004 and 2005 data are most likely to be due to data improvements. The data should not be used to infer that consumption in any particular area has gone up or down.

Pilot exercise on middle layer super output areas

Data users, particularly local authorities, responding to the original consultation requested that the data should be further disaggregated to enable areas such as electoral wards to be monitored and targeted. DTI therefore set up a pilot exercise with 6 local authorities to establish the feasibility and value of producing data for middle layer super output areas (MLSOAs). These areas are a new statistical geography developed by the Office for National Statistics (ONS) as part of the 2001 Census. They relate to an area of a minimum population of 5,000 people. DTI's report back on this exercise in the spring of 2006 suggested that the information at this level was reliable and a first set of consumption statistics for MLSOAs in England and Wales for 2004 was released by DTI on the regional energy consumption statistics web site www.dti.gov.uk/energy/statistics/regional/index.html.

The article on page 16 of this issue of Energy Trends also provides further information on the new MLSOA electricity estimates.

Consultation

DTI are keen to receive comments. Please send these comments to Steven White at the email address below. Alternatively mail can be addressed to Mr Steven White, Bay 215, 1 Victoria Street, London, SW1H 0ET.

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DTI gratefully acknowledges the assistance of all the companies that provided the data and the particular assistance of Jon Williams (DTI – data processing) and Sacha Chorley (DTI – tabulation).

Table 3: Selected regional and local electricity consumption statistics (experimental)

Government Office Regions and selected NUTS4 Regions	Domestic consumers		Commercial and industrial consumers		All consumers		kWh per MPAN	
	Sales 2005 GWh	Number of MPANs (thousands)	Sales 2005 GWh	Number of MPANs (thousands)	Sales 2005 GWh	Number of MPANs (thousands)	Average domestic consumption	Average industrial and commercial consumption
Blaenau Gwent	110	31.1	188	2.4	299	33.5	3,552	79,155
Wrexham	251	55.4	859	4.8	1,110	60.2	4,536	178,000
Powys	296	57.6	366	11.7	663	69.3	5,146	31,273
Neath Port Talbot	231	62.0	1,346	4.5	1,577	66.5	3,722	301,737
TOTAL WALES	5,656	1,315.1	11,911	134.5	17,566	1,449.5	4,301	88,584
Glasgow City	1,333	331.1	2,110	26.5	3,443	357.7	4,026	79,476
Eilean Siar	96	17.3	60	1.9	156	19.2	5,581	31,244
Orkney Islands	85	12.4	54	2.4	138	14.7	6,825	22,745
Clackmannanshire	104	24.2	228	1.5	332	25.7	4,285	151,274
TOTAL SCOTLAND	12,393	2,674.4	17,114	238.1	29,507	2,912.6	4,634	71,869
South Tyneside	244	68.8	285	4.1	529	72.9	3,545	69,101
Berwick-upon-Tweed	83	15.8	101	2.5	184	18.3	5,257	40,359
Alnwick	78	16.5	86	2.0	164	18.4	4,725	43,865
Redcar and Cleveland	247	62.4	1,016	3.9	1,263	66.4	3,961	259,399
TOTAL NORTH EAST	4,548	1,169.3	9,336	86.4	13,884	1,255.7	3,889	108,031
St. Helens	303	74.8	566	4.8	869	79.7	4,042	116,756
Eden	140	22.5	335	4.2	475	26.6	6,243	80,592
Copeland	139	29.3	122	2.8	261	32.1	4,740	43,417
Ellesmere Port & Neston	148	34.8	571	2.4	720	37.2	4,257	235,073
TOTAL NORTH WEST	13,179	2,908.3	23,117	249.6	36,296	3,157.9	4,532	92,611
Barnsley	383	100.7	621	6.3	1,004	107.0	3,803	99,405
Ryedale	123	23.6	196	3.9	319	27.5	5,239	50,299
Richmondshire	114	22.2	114	3.0	228	25.2	5,131	37,668
North Lincolnshire	305	70.3	1,137	6.1	1,442	76.5	4,340	185,625
TOTAL YORKSHIRE AND THE HUMBER	9,793	2,265.9	16,836	186.3	26,630	2,452.1	4,322	90,385
Chesterfield	180	48.0	384	4.4	564	52.4	3,747	87,128
South Northamptonshire	205	35.2	234	3.2	439	38.3	5,834	73,827
West Lindsey	188	37.7	213	4.0	401	41.7	4,989	53,579
Rutland	84	15.4	379	1.8	462	17.2	5,432	208,248
TOTAL EAST MIDLANDS	8,644	1,910.4	15,288	170.4	23,932	2,080.8	4,525	89,733

Table 3 (continued): Selected regional and local electricity consumption statistics (experimental)

Government Office Regions and selected NUTS4 Regions	Domestic consumers		Commercial and industrial consumers		All consumers		kWh per MPAN	
	Sales 2005 GWh	Number of MPANs (thousands)	Sales 2005 GWh	Number of MPANs (thousands)	Sales 2005 GWh	Number of MPANs (thousands)	Average domestic consumption	Average industrial and commercial consumption
Stoke-on-Trent	396	96.8	769	8.5	1,165	105.3	4,090	90,290
Stratford-on-Avon	295	48.6	340	5.8	635	54.4	6,073	58,203
South Shropshire	112	18.6	82	2.9	195	21.5	6,049	28,127
North Warwickshire	135	25.9	382	2.5	517	28.4	5,123	150,616
TOTAL WEST MIDLANDS	10,318	2,129.5	16,950	197.4	27,267	2,326.9	4,845	85,883
Norwich	220	60.8	545	7.4	765	68.2	3,626	73,245
Mid Suffolk	234	39.2	297	4.3	532	43.5	5,978	68,776
Castle Point	184	37.2	97	2.3	281	39.5	4,953	41,331
Thurrock	310	64.3	825	4.8	1,134	69.0	4,818	172,997
TOTAL EAST OF ENGLAND	12,081	2,438.6	17,192	229.0	29,273	2,667.7	4,954	75,069
Islington	325	90.2	917	19.4	1,242	109.6	3,599	47,364
Barnet	684	136.6	555	12.6	1,238	149.1	5,007	44,175
Hackney	347	92.6	428	17.8	776	110.5	3,750	24,024
City of London	26	5.5	2,590	9.5	2,616	15.0	4,687	271,862
TOTAL GREATER LONDON	13,886	3,246.0	27,550	440.1	41,436	3,686.0	4,278	62,605
Eastbourne	183	45.4	223	5.3	406	50.7	4,028	42,232
South Bucks	157	26.6	243	2.8	400	29.4	5,907	86,996
Wealden	343	62.2	217	7.2	560	69.4	5,512	30,147
Crawley	170	40.3	530	3.6	700	43.9	4,220	145,246
TOTAL SOUTH EAST	17,358	3,549.0	24,400	355.9	41,758	3,904.9	4,891	68,568
Plymouth	467	111.7	756	8.5	1,223	120.2	4,183	88,531
Isles of Scilly	9	1.2	10	0.4	18	1.6	7,620	23,880
Penwith	172	33.1	128	4.5	300	37.6	5,194	28,379
South Gloucestershire	500	101.9	1,024	7.0	1,523	108.9	4,904	145,290
TOTAL SOUTH WEST	11,456	2,296.4	15,812	251.6	27,268	2,548.0	4,989	62,487
Unallocated Consumption	119	27.0	5,388	29.1	5,507	56.1		
GREAT BRITAIN	119,429	25,930.0	200,895	2,568.2	320,324	28,498.2	4,606	78,223

Electricity generation and supply figures for Scotland, Wales, Northern Ireland and England, 2004 and 2005.

Introduction

This article updates that published in December 2005. As before, there are confidentiality constraints that mean that some data for generation by fuel in Northern Ireland cannot be shown separately from those for England. The United Kingdom figures shown in the tables in this article are taken from the Digest of United Kingdom Energy Statistics (DUKES) 2006, Chapter 5 and 7 and so the definitions used are identical to those in the Digest. Tables 1 and 2 are shown in “landscape” format at the end of the main text.

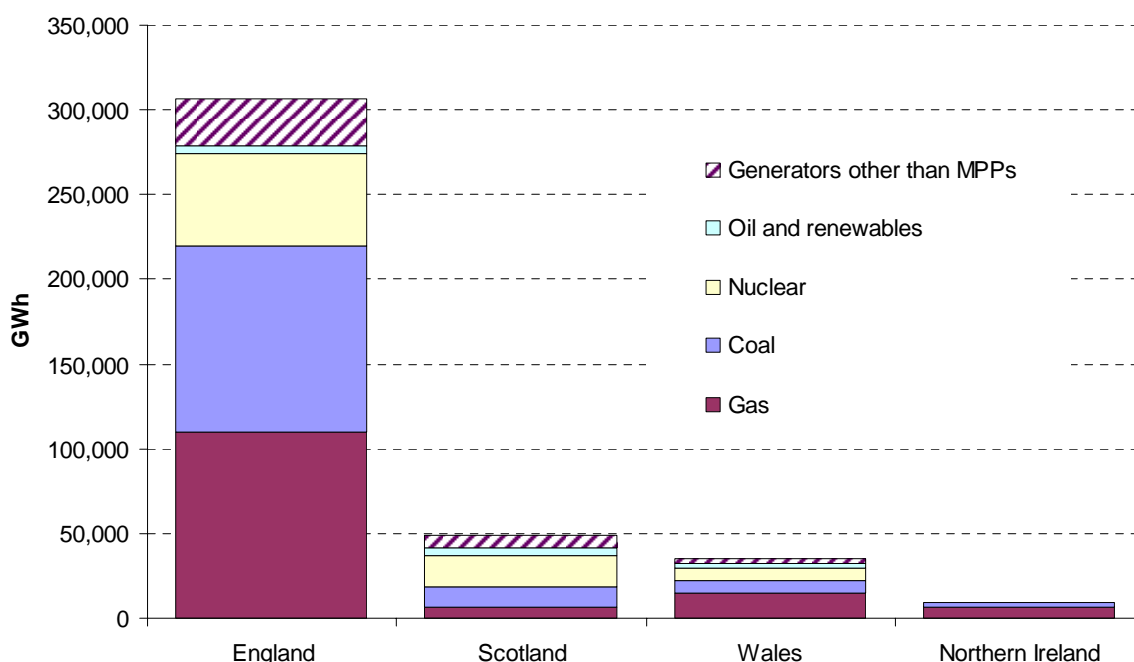
Generation and net exports

In 2004 12.9 per cent of the electricity generated in the UK was generated in Scotland, 9.0 per cent in Wales, and 1.9 per cent in Northern Ireland and 76.2 per cent in England. These percentages fell in 2005 to 12.2 per cent and 8.7 per cent respectively in Scotland and Wales but rose in Northern Ireland to 2.4 per cent and in England to 76.7 per cent (Table 1).

Both Scotland and Wales are net exporters of electricity with England importing electricity from both countries and from continental Europe. Northern Ireland trades electricity with the Republic of Ireland to which it was a net exporter in 2005. It also imports electricity from Scotland via the Moyle interconnector opened in 2002 but these imports were less than the net exports to the Irish Republic in 2005. In 2004 Scotland exported 16.8 per cent of the electricity generated there to consumers elsewhere in the UK, but this fell to 14.7 per cent in 2005. However, the reduction in Scottish exports between these two years was less than the reduction in Scottish generation. Wales exported the equivalent of 18.5 per cent of its generation to consumers in England in 2004, falling back to 12.4 per cent in 2005. The reduction in Welsh exports between these two years was greater than the reduction in generation in Wales.

The bringing together of the grid systems of England and Wales and Scotland under BETTA in 2005 has meant that data for the transmission of electricity along the two interconnecting grid lines is no longer available. As a result for 2005 these amounts are calculated based on generation and consumption data.

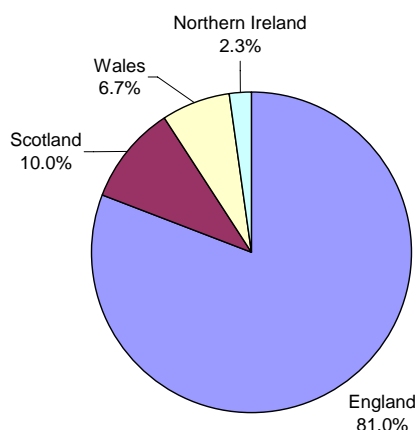
Chart 1: Generation by fuel in 2005 by major power producers and other generators



Generation by fuel

Table 2 sets out the generation of electricity by the fuel categories used in Table 5.6 of the Digest of UK Energy Statistics 2006. The position in 2005 is shown in Chart 1. Coal's share was lower in both Scotland and Wales than the approximately one third share in the UK as a whole in both 2004 and 2005 with increased coal use in 2005 by the English stations. In Northern Ireland gas accounted for over 50 per cent of generation for the first time in 2004 and moved further ahead to over two thirds in 2005 with the opening of new gas-fired capacity. In Scotland 21.6 per cent of generation was from gas in 2004, falling back to 16.9 per cent in 2005. In Wales the 48.9 per cent share of gas in 2004 fell back to 45.8 per cent in 2005 as high prices discouraged the use of gas for generation. In England the use of gas stations also declined. There was a 3½ per cent increase in nuclear output in Scotland in 2005 and a 6 per cent increase in Wales; these increases were sufficient to increase nuclear's share by 3 percentage points in Scotland and 2 percentage points in Wales. In England, although there was a slight increase in nuclear output, nuclear's share fell slightly to 18 per cent in 2005. After the "drier" year of 2003 natural flow hydro returned to its more usual share of generation in both Scotland and Wales in 2004 and 2005 (ie around 9 and 1 per cent respectively). The role of renewables is discussed in a separate section below. Combined heat and power (CHP) forms the bulk of "Other generators" generation, although some major power producers (MPPs) also operate generators that are partially CHP. CHP statistics for 2005 on a sub-national and regional basis were published in September 2006's issue of Energy Trends. The share of generation accounted for by generators other than major power producers varies across the UK. In Scotland in 2005 other generators had a 14 per cent share, while in England the share was 9 per cent, in Wales 7½ per cent and in Northern Ireland 4 per cent.

Chart 2: Electricity consumption in 2005



Consumption and sales

Transmission and distribution losses are not separately available for Scotland, Wales, Northern Ireland and England so estimates have been made using the same proportions of electricity supplied as for the UK as a whole. Consumption figures have then been calculated by deducting net transfers and losses figures from the electricity supplied figures shown in Table 1. These show (Chart 2) that in 2005 10.0 per cent of electricity consumption in the UK was in Scotland, 6.7 per cent in Wales, 2.3 per cent in Northern Ireland and 81.0 per cent in England, all little changed from the percentage shares in 2004.

Since 2001 separate data have been collected for sales of electricity from the public supply system in Scotland, England and Wales, and Northern Ireland and published as monthly Table 5.5 on the DTI Energy Statistics web site (see references at the end of the article). Because of definitional and other differences set out in the Technical Notes to Chapter 5 of the Digest of UK Energy Statistics 2006, there is a statistical difference between the calculated consumption and the sales data in Table 1. As part of its commitment to improving the quality of its statistics, DTI continues to

Special feature – Sub national electricity figures

examine this statistical difference and look further at the component series to see where the differences might be arising and thus where improvements to the data might be made.

Renewables

The share of renewables in electricity generation or sales is measured in two different ways in the UK¹. First there is the “headline” overall measure that shows the percentage of electricity generation accounted for by all renewables. Secondly there is the measure that is based on the Renewables Obligation (RO) (and the analogous Renewables Obligation (Scotland) - ROS) which shows the percentage of electricity sales accounted for by renewables eligible under these obligations. The main differences are the exclusion from the RO of large-scale hydro and non-biodegradable wastes². Table 3 shows the overall measure for 2003, 2004 and 2005.

		UK	Scotland	Wales	Northern Ireland	England
Overall	2003	2.67	7.71	2.59	1.59	1.90
renewables	2004	3.58	11.56	3.10	2.03	2.33
percentage	2005	4.22	13.25	4.04	2.83	2.85

Scotland's, Wales' and Northern Ireland's hydro outputs in 2003 were all affected by the dryer weather that caused a 32.6 per cent reduction in UK hydro generation in 2003 compared with 2002.

Under the headline measure, the high proportion of natural flow hydro in Scotland has taken the 2005 to 11.56 per cent. This share is very much higher than other parts of the UK can produce. On a RO basis, the percentage measure for the UK (2.21 per cent in 2003, 3.09 per cent in 2004 and 4.00 per cent in 2005) is not meaningful at sub-national level because electricity generated in one part of the UK can be sold in a different part of the UK. The amount of electricity from renewable sources transferred from Scotland or Wales to England, or from Scotland to Northern Ireland is not known. What is known from Table 2 is that the amount of ROS eligible electricity generated in Scotland in 2005 was 35 per cent greater than in 2004 and the amount of RO eligible electricity generated in Wales in 2005 was 34 per cent more than in 2004. In England the increase was 29 per cent and in the UK as a whole 32 per cent. Renewables statistics for 2005 on a sub-national and regional basis were published in September 2006's issue of Energy Trends.

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References:

Digest of UK Energy Statistics 2006. Published for DTI by The Stationery Office ISBN 0-11-515517-1 £39.50, but also available on the DTI web site at <http://www.dti.gov.uk/energy/statistics/publications/dukes/page29812.html>
Energy Trends monthly Table 5.5
www.dti.gov.uk/energy/statistics/publications/trends/index.html

“Combined Heat and Power in Scotland, Wales, Northern Ireland and the regions of England in 2005” – Energy Trends September 2006, page 31
<http://www.dti.gov.uk/energy/statistics/publications/trends/index.html>
“Renewable energy in Scotland, Wales, Northern Ireland and the regions of England in 2005” – Energy Trends September 2006, page 22
<http://www.dti.gov.uk/energy/statistics/publications/trends/index.html>

¹ There is also a third method used by the EU – a Renewables Directive basis – see Chapter 7 of the Digest of UK Energy Statistics 2006, paragraph 7.11.

² Specific exclusions from eligibility for the RO are existing hydro plant over 20 MW; all plant using renewable sources built before 1990 (unless re-furbished); and energy from mixed waste combustion unless the waste is first converted to fuel using advanced conversion technology.

Table 1: Generation and supply of electricity in Scotland, Wales, Northern Ireland and England, 2004 and 2005

		2004					2005					<i>GWh</i>
		UK total	Scotland	Wales	Northern Ireland	England	UK total	Scotland	Wales	Northern Ireland	England	
Generated by	Major power producers	358,405	44,552	33,020	7,141	273,692	362,379	41,998	32,273	9,239	278,869	
	Other generators	36,900	6,539	2,474	269	27,618	38,145	6,987	2,619	393	28,146	
Total generated		395,305	51,091	35,494	7,410	301,310	400,525	48,985	34,892	9,632	307,015	
Own use by	Other generators	1,499	266	101	11	1,122	1,566	287	108	16	1,156	
Electricity supplied (net) by	Other generators	35,401	6,273	2,373	259	26,496	36,579	6,700	2,512	377	26,991	
Used in pumping at pumped storage and other own use by	MPPs	19,079	3,800	4,177	284	10,819	19,973	3,403	4,601	325	11,644	
Electricity supplied (net) by MPPs		339,327	40,752	28,844	6,857	262,874	342,406	38,595	27,672	8,915	267,224	
Electricity transferred to England (net of receipts)		-	5,780	6,096	-	-11,876	-	5,519	4,311	-	-9,830	
Electricity transferred to Northern Ireland (net of receipts)		-	2,793	-	-2,793	-	-	1,689	-	-1,689	-	
Electricity transferred to Europe (net of receipts)		-7,490	-	-	1,574	-9,064	-8,320	-	-	2,073	-10,393	
Transfers from other generators to public supply		10,954	1,413	920	148	8,473	10,533	2,044	1,065	271	7,154	
Transmission losses		5,733	577	377	125	4,655	5,810	571	388	134	4,717	
Distribution losses		24,995	1,935	1,367	485	21,208	24,827	1,889	1,404	512	21,023	
Consumption from public supply [A]		327,070	31,085	21,926	7,615	266,444	330,654	30,978	22,636	8,154	268,886	
Consumption by autogenerators		24,420	4,855	1,452	110	18,003	26,015	4,651	1,445	106	19,814	
Total Electricity consumption		351,490	35,940	23,378	7,725	284,447	356,669	35,629	24,081	8,260	288,700	
Electricity sales (public supply) [B]		323,714	30,117	21,740	7,558	264,299	329,073	30,975	23,125	7,647	267,326	
Statistical difference		+3,356	+968	+186	+57	+2,145	+1,581	+3	-489	+507	+1,560	

Figures in this table do not sum exactly to the UK totals shown because of rounding

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December 2006

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		2004					2005				
		UK total	Scotland	Wales	Northern Ireland	England	UK total	Scotland	Wales	Northern Ireland	England
Major power	Coal	127,827	13,002	7,234	2,711	104,880	130,894	12,092	6,772	2,455	109,576
producers:	Oil	1,883	149	-	347	1,387	2,716	556	-	331	1,829
	Gas	140,577	8,851	16,245	4,083	111,398	137,483	6,251	14,984	6,454	109,795
	Nuclear	79,999	18,013	7,388	-	54,598	81,618	18,681	7,842	-	55,095
	Thermal renewables	1,471	-	51	-	1,420	2,746	-	176	-	2,570
	Hydro natural flow	4,000	3,752	239	-	9	3,993	3,777	212	-	4
	Hydro pumped storage	2,648	786	1,863	-	-	2,930	643	2,287	-	-
	Total	358,405	44,552	33,020	7,141	273,692	362,380	41,999	32,273	9,239	278,869
Other	Coal	3,995	53	-	-	3,942	4,024	53	-	-	3,971
Generators:	Oil	2,990	2,125	39	-	826	2,702	2,164	41	-	497
	Gas	16,761	2,182	1,118	-	13,461	15,747	2,043	967	-	12,737
	Thermal renewables	5,824	513	195	3	5,114	6,297	595	238	6	5,457
	Other thermal	4,461	26	506	-	3,929	5,492	16	588	-	4,888
	Hydro natural flow	929	792	65	8	64	968	835	69	14	51
	Non thermal renewables	1,939	848	551	140	400	2,916	1,281	715	253	667
	Total	36,900	6,539	2,474	269	27,618	38,145	6,987	2,619	393	28,146
Total generation by fuel		395,305	51,091	35,494	7,410	301,310	400,525	48,985	34,892	9,632	307,015
<i>within which:</i>											
	Renewables Hydro	4,929	4,544	304	8	73	4,961	4,612	281	14	55
	Wind, wave, solar	1,939	848	551	140	401	2,916	1,281	715	253	667
	Other	7,295	513	246	3	6,533	9,042	595	414	6	8,026
	Total	14,164	5,905	1,101	150	7,008	16,919	6,488	1,410	273	8,748
Renewables eligible under the renewables obligation		9,986	2,907	888	150	6,041	13,171	3,929	1,187	273	7,783
Percentage	Coal	33.4%	25.5%	20.4%	-	36.1%	33.7%	24.8%	19.4%	-	36.6%
shares of	Oil	1.2%	4.5%	0.1%	-	0.8%	1.3%	5.6%	0.1%	-	0.9%
generation:	Gas	39.8%	21.6%	48.9%	-	41.8%	38.3%	16.9%	45.7%	-	40.7%
	Nuclear	20.2%	35.3%	20.8%	-	17.7%	20.4%	38.2%	22.5%	-	17.4%
	Hydro natural flow	1.3%	8.9%	0.9%	-	-	1.2%	9.4%	0.8%	-	-
	Other renewables	2.3%	2.6%	2.2%	-	2.3%	3.0%	3.8%	3.2%	-	2.8%
	Other	1.8%	16%	6.7%	-	1.3%	2.1%	1.3%	8.3%	-	1.6%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Shaded areas indicate where separate figures for Northern Ireland cannot be given and the data have been merged with data for England

Figures in this table do not sum exactly to the UK totals shown because of rounding

Electricity transmission across Europe in 2004

The International Energy Agency (IEA) has recently published its annual “Electricity Information” volume and the Statistical Office of the European Community (Eurostat) has also published the corresponding electricity statistics for its member states on its web site. This article has used these sources to piece together the latest information on imports and exports of electricity between the countries of Europe. The latest available data are for 2004, although for some of the non-OECD countries electricity production and consumption data used in this article are only available for 2003.

Transfers of electricity between the utilities in neighbouring countries have been common for many years. Exchanges based on differences in production costs are economically efficient while fluctuations in load can be balanced by exchanges with neighbouring utilities that have different load profiles. This was the impetus for the cross channel interconnector between England and France that first became operational in 1961. Such exchanges reduce the overall reserve margins needed by diversifying the potential sources of supply. Surplus capacity in a neighbouring country can result not only from simple differences of load timing, but also from differences in climate, economic structure, or the timing of forced or scheduled unit outages. Trade also plays an important role in the electricity sector’s fuel mix.

Not surprisingly the picture is a complex one (Chart 1) with most countries both importing and exporting electricity, although usually the movement is predominantly in a single direction. The export flows that have no corresponding imports (or where the imports are less than 1 GWh) are:

- Russia exporting to Norway
- Russia exporting to Finland
- Belarus exporting to Poland
- Ukraine exporting to Poland
- Ukraine exporting to Hungary
- Bulgaria exporting to Greece
- Austria exporting to Italy
- United Kingdom exporting to the Irish Republic.

The largest export flow was Switzerland to Italy (20,450 GWh), followed by Germany to the Netherlands (17,355 GWh) and France to Italy (17,229 GWh). The country with the most electricity links to other countries is Germany (9) followed by France (6), Austria (6) and Poland (6), Sweden (5) and Italy (5). The largest importer of electricity in total was Italy (47,070 GWh), followed by Germany (46,200 GWh), Switzerland (29,188 GWh) and The Netherlands (21,408 GWh). France was the largest exporter of electricity (68,588 GWh) followed by Germany (52,675 GWh), Switzerland (28,016 GWh) and the Czech Republic (26,912 GWh). That Germany and Switzerland are both large importers and large exporters is indicative of the role their transmission networks play in linking the electricity networks of countries that do not have a common border.

Assumptions made

To construct Chart 1 certain assumptions have had to be made where precise data were not available or where data reported as exports by country A to country B did not agree with data reported as imports by country B from country A. Where the errors between the receiving and transmitting countries is smaller than 5 GWh an average of the conflicting values has been used and the figures are shown in *italics*. Larger discrepancies were more difficult to handle but data which give the largest net import (or net export as applicable) were estimated from the available data so as to give an overall estimate of the largest amount of traffic there might be on the electricity network across Europe. Such estimated figures are shown underlined. For example Denmark records exports to Germany as 5,381 GWh whereas Germany shows imports from Denmark as 5,535 GWh. Denmark shows imports from Germany as 3,380 GWh but Germany shows exports to Denmark as 3,565 GWh. The trade figures on Chart 1 are thus 5,535 GWh from Denmark to Germany and 3,380 GWh from Germany to Denmark.

Special feature – Electricity in Europe

In addition for four countries there are specific considerations and assumptions as the following notes show:

1. The Czech Republic recorded only net flows so the import and export breakdowns are based on flows given by the countries that import from or export to the Czech Republic.
2. France does not report its electricity trade to the IEA on a country basis on the grounds of confidentiality, but Eurostat does give these figures for the countries that import from or export to France and they sum to the IEA total.

Trade as a proportion of generation or consumption

Chart 2 expresses each of the export figures in Chart 1 as the proportion the exports represent of the total electricity generated in the exporting country. The largest proportions on the chart are Luxembourg exporting the equivalent of 58 per cent of its electricity production to Belgium (and a further 18 per cent to Germany), Slovenia exporting 45 per cent of its electricity production to Italy, Switzerland exporting 32 per cent of its electricity production to Italy, and the Slovak Republic exporting 30 per cent of its production to Hungary.

Chart 3 expresses each of the import figures in Chart 1 as the proportion the imports represent of the total electricity consumption in the importing country. The largest proportions on the chart are Luxembourg importing the equivalent of 77 per cent of its electricity consumption from Germany (and a further 25 per cent from Belgium), Hungary importing 25 per cent of its electricity consumption from the Slovak Republic, and the Slovak Republic importing 24 per cent of its consumption from the Czech Republic.

Thus the electricity grids of Luxembourg and the Slovak Republic are also important to the cross border trade of electricity in Europe as well as Germany and Switzerland.

Conclusions

Within the EU, plus Norway and Switzerland, electricity generation and use is very much more self-contained than gas use. Imports from outside these EEA countries in total amount to less than 1 per cent of total consumption by these countries. Exports from these countries taken together are less than ½ per cent of total electricity consumption. However, the transmission of electricity between these countries is very much larger with many countries relying on generation that takes place in neighbouring countries. This is one of the reasons why problems with the transmission in grid in one country can cause power disruptions in other parts of Europe. Countries such as France, Germany, Luxembourg, Switzerland, and the Slovak Republic are very important to the integrity of the European grid. From the UK perspective, the 1 hour time difference with France enables France to assist with the UK's peak load, but we import less than 3 per cent of our electricity consumption and export only ½ per cent of our production.

Sources

IEA Electricity Information 2006

IEA Energy Statistics of Non-OECD Countries 2002-03

Eurostat (http://epp.eurostat.ec.europa.eu/pls/portal/url/page/SHARED/PER_ENVENE)

Mike Janes (Statistician) and Sacha Chorley

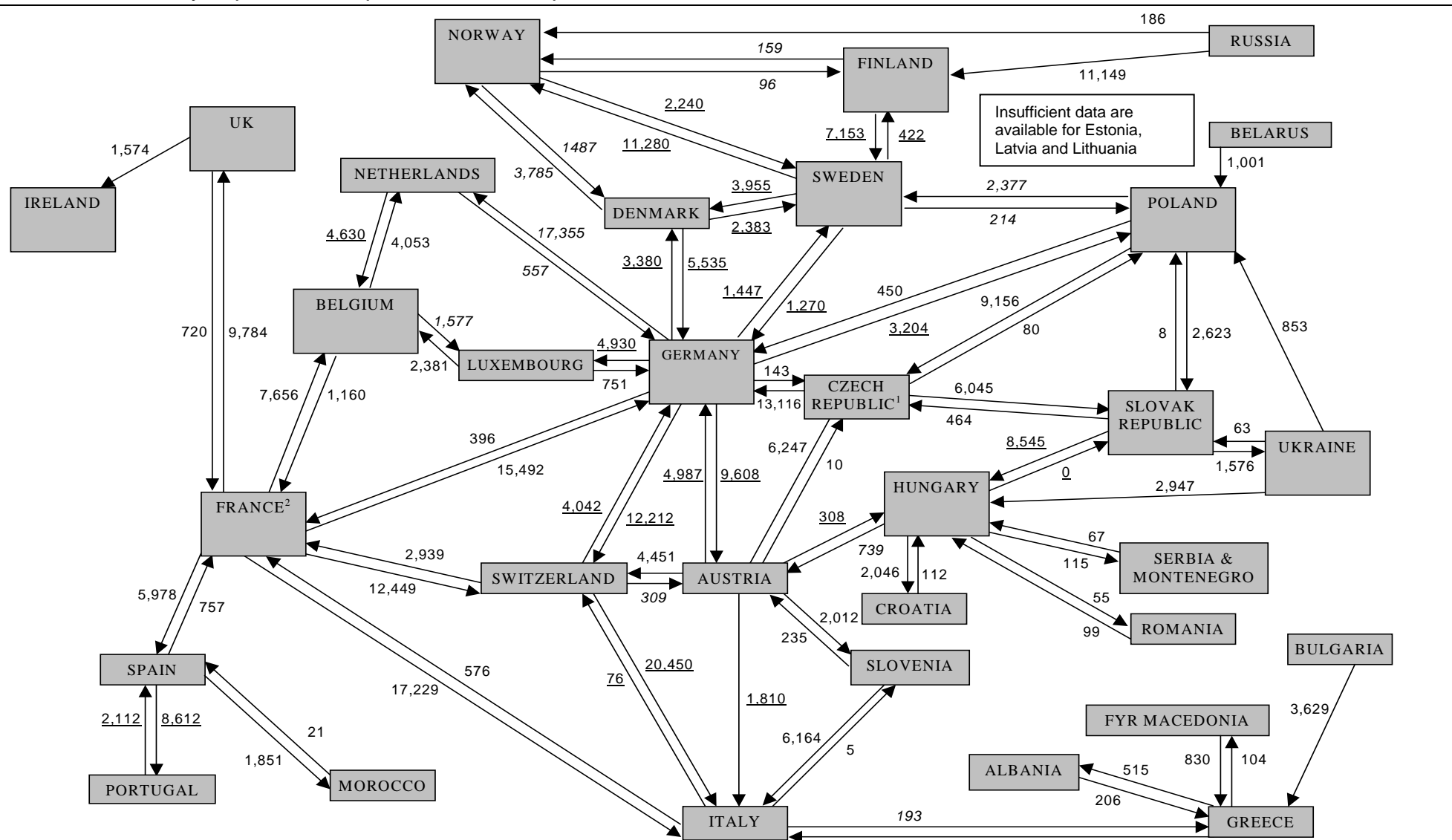
Energy Statistics and Analysis

Energy Strategy and International Unit

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Chart 1: Electricity imports and exports across Europe in 2004



Recent and forthcoming publications of interest to users of energy statistics

Seventh Joint Energy Security of Supply Working Group (JESS) Report, December 2006

The JESS group, chaired jointly by DTI and Ofgem, brings together contributions from DTI, Ofgem, National Grid and the Foreign and Commonwealth Office (FCO) on energy security. The work that JESS undertakes on security of supply is focused on the medium- to long- term, at least seven years ahead, rather than the short-term. The seventh report covers the work of JESS between February and November 2006 and sets out how the group's work has developed since its sixth report (April 2006) and how the work of JESS is likely to expand in the future. JESS reports are available on the DTI website at

www.dti.gov.uk/energy/reliability/security-supply/jess/reports/index.html

or in hard copy from:

DTI Publications Orderline

Web: www.dti.gov.uk/publications

Phone: 0845 0150 0010

Address: ADMAIL, 528, London, SW1W 0YT

Email: publications@dti.gsi.gov.uk

1 TOTAL ENERGY

TABLE 1.1. Indigenous production of primary fuels

Million tonnes of oil equivalent

	Total	Coal ¹	Petroleum ^{2,3}	Natural gas ⁴	Primary electricity	
					Nuclear	Wind and natural flow hydro ⁵
2001	277.4	21.5	127.8	106.9	20.77	0.43
2002	272.9	20.5	127.0	104.7	20.10	0.52
2003	260.2	19.4	116.2	104.2	20.04	0.39
2004	238.0	17.2	104.5	97.5	18.16	0.59
2005	215.4	14.3	92.9	89.2	18.37	0.68
<i>Per cent change</i>	-9.5	-16.8	-11.2	-8.5	+1.1	+14.4
2005						
Quarter 3	46.0	3.4	21.2	16.7	4.59	0.12
Quarter 4	54.3	4.0	22.7	23.2	4.27	0.21
2006						
Quarter 1	56.6	3.9	22.9	24.7	5.02	0.19
Quarter 2	49.0	3.5	21.0	19.9	4.45	0.15
Quarter 3 p	42.4	2.7	19.0	16.3	4.21	0.14
<i>Per cent change⁶</i>	-7.8	-21.2	-10.2	-2.3	-8.1	+21.3

1. Includes solid renewable sources (wood, straw and waste), a small amount of renewable primary heat sources (solar, geothermal etc) and an estimate for slurry.

2. Calendar months.

3. Crude oil, offshore and land, plus condensates and petroleum gases derived at onshore treatment plants.

4. Includes colliery methane, landfill gas and sewage gas. Excludes gas flared or re-injected.

5. Includes generation by solar PV.

6. Percentage change in the third quarter of 2006 compared with a year earlier.

1 TOTAL ENERGY

TABLE 1.2 Inland energy consumption: primary fuel input basis
Million tonnes of oil equivalent

	Unadjusted ⁵							Seasonally adjusted and temperature corrected ^{6,7,9} (annualised rates)						
	Total	Coal ¹	Petroleum ²	Primary electricity			Net imports	Total	Coal	Petroleum	Primary electricity			Net imports
				Natural gas ³	Nuclear	Wind and natural flow hydro ⁴					Natural gas	Nuclear	Wind and natural flow hydro	
2001	237.0	42.5	75.9	96.6	20.8	0.43	0.89	238.1	42.9	76.4	96.7	20.8	0.44	0.89
2002	229.5	39.3	73.5	95.4	20.1	0.52	0.72	235.0	40.1	74.9	98.7	20.0	0.54	0.72
2003	231.9	42.4	73.0	95.8	20.0	0.39	0.19	235.8	43.5	74.0	97.7	20.0	0.40	0.19
2004	233.6	41.2	75.3	97.7	18.2	0.59	0.64	237.5	41.7	76.4	100.0	18.1	0.61	0.64
2005	234.3	42.4	77.0	95.1	18.4	0.68	0.72	236.1	42.7	78.0	95.5	18.4	0.70	0.72
<i>Per cent change</i>	+0.3	+2.9	+2.3	-2.7	+1.1	+14.4	+11.1	-0.6	+2.5	+2.1	-4.5	+1.5	+14.6	+11.1
2005														
Quarter 3	48.3	8.0	19.2	16.2	4.6	0.12	0.17	219.0	38.5	77.0	82.7	19.4	0.73	0.67
Quarter 4	63.8	12.8	19.5	26.8	4.3	0.21	0.25	240.1	45.5	78.5	97.4	16.9	0.68	0.98
2006														
Quarter 1	70.4	14.6	19.6	30.8	5.0	0.19	0.16	244.3r	51.6	76.1	96.4r	19.0	0.59	0.63
Quarter 2	52.6	9.8	18.8r	19.1r	4.4	0.15	0.25	230.1	45.2	78.4r	86.6r	18.2	0.81	0.99
Quarter 3 p	47.4	9.4	18.8	14.7	4.2	0.14	0.17	220.0	46.6	75.6	78.4	17.9	0.89	0.67
<i>Per cent change</i> ⁸	-1.9	+16.9	-2.3	-9.2	-8.1	+21.3	+0.5	+0.4	+21.2	-1.8	-5.2	-8.2	+21.4	+0.5

1. Includes solid renewable sources (wood, straw and waste), a small amount of renewable primary heat sources (solar, geothermal, etc.) and net foreign trade and stock changes in other solid fuels.

2. Excludes non-energy use.

3. Includes gas used during production, colliery methane, landfill gas and sewage gas. Excludes gas flared or re-injected and non-energy use of gas.

4. Includes generation by solar PV. Excludes generation from pumped storage stations.

5. Not seasonally adjusted or temperature corrected.

6. Coal, petroleum and natural gas are temperature corrected.

7. For details of temperature correction see DTI energy statistics website at www.dti.gov.uk/files/file19317.pdf

8. Percentage change in the third quarter of 2006 compared with a year earlier.

9. From April 2005 National Grid have changed their methodology for calculating the temperature correction of gas. More information on the methodology used by National Grid can be found at: <http://www.nationalgrid.com/uk/Gas/OperationalInfo/operationaldocuments/Gas+Demand+and+Supply+Forecasting+Methodology>

1 TOTAL ENERGY

Table 1.3a Supply and use of fuels

Thousand tonnes of oil equivalent

	2004	2005	per cent change	2004 3rd quarter	2004 4th quarter	2005 1st quarter	2005 2nd quarter	2005 3rd quarter	2005 4th quarter	2006 1st quarter	2006 2nd quarter	2006 3rd quarter	per cent change ¹
SUPPLY													
Indigenous production	238,034	215,447	-9.5	52,315	60,607	59,891	55,269	45,865	54,421	56,748r	49,004r	42,314	-7.7
Imports	125,420	134,702	+7.4	31,023	32,436	32,714	33,211	33,835	34,941	38,066r	35,020r	35,409	+4.7
Exports	-113,954	-100,519	-11.8	-28,156	-26,887	-25,609	-27,464	-22,967	-24,479	-23,589r	-25,057r	-23,845	+3.8
Marine bunkers	-2,220	-2,180	-1.8	-622	-568	-495	-566	-600	-519	-450	-583	-486	-19.1
Stock change ²	-1,151	-637		-2,862	+1,194	+4,721	-3,425	-4,771	+2,838	+2,917r	-2,459r	-2,974	
Primary supply	246,130	246,813	+0.3	51,698	66,782	71,223	57,027	51,361	67,202	73,692r	55,925r	50,418	-1.8
Statistical difference ³	+267	-71		-105	-403	+145	+268	-546	+63	+155r	+104r	-36	
Primary demand	245,863	246,884	+0.4	51,804	67,185	71,078	56,759	51,908	67,139	73,537r	55,822r	50,454	-2.8
Transfers ⁴	-140	-114		-147	-100	+135	-22	-33	-194	+619r	648r	376	
TRANSFORMATION	-53,346	-54,371	+1.9	-12,151	-14,509	-14,868	-12,781	-12,345	-14,377	-15,706r	-12,969r	-12,549	+1.6
Electricity generation	-50,187	-51,107	+1.8	-11,550	-13,512	-14,150	-11,779	-11,564	-13,614	-14,552r	-11,757r	-11,622	+0.5
Heat generation	-864	-867	+0.3	-141	-256	-261	-195	-169	-241	-262	-183	-158	-6.4
Petroleum refineries	217	84	-61.1	160	-77	135	-179	-7	134	-182	-349	-83	(+)
Coke manufacture	-18	-38	(+)	-4	-23	4	10	-24	-28	-12	-3r	-25	+5.3
Blast furnaces	-2,502	-2,455	-1.9	-617	-643	-598	-643	-586	-629	-698	-680	-660	+12.6
Patent fuel manufacture	8	11	+40.5	2	1	-	-	-	-	-1	-	-	(+)
Energy industry use	16,496	16,523	+0.2	3,800	4,302	4,344	4,135	3,841	4,204	4,465r	3,828r	3,576	-6.9
Losses	3,546	3,765	+6.2	774	989	1,122	844	799	999	1,208r	828	861	+7.8
FINAL CONSUMPTION	172,335	172,111	-0.1	34,919	47,291	50,878	38,976	34,891	47,366	52,775r	38,844r	33,846	-3.0
Iron & steel	1,918	1,762	-8.1	454	465	450	457	413	443	476	461r	426	+3.2
Other industries	31,061	31,333	+0.9	6,506	7,903	9,427	7,266	6,410	8,229	10,084r	7,154r	6,261	-2.3
Transport	58,166	59,225	+1.8	15,167	14,484	14,008	14,889	15,326	15,002	14,360r	15,037r	15,460	+0.9
Domestic	48,587	46,979	-3.3	5,878	15,755	17,662	8,847	5,539	14,931	18,170r	8,736r	5,228	-5.6
Other Final Users	20,174	20,229	+0.3	3,778	5,702	6,232	4,554	3,865	5,578	6,445r	4,343r	3,705	-4.1
Non energy use	12,429	12,583	+1.2	3,136	2,982	3,099	2,963	3,339	3,183	3,240r	3,114r	2,765	-17.2

1. Percentage change between the most recent quarter and the same quarter a year earlier.

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

3. Primary supply minus primary demand.

4. Annual transfers should ideally be zero. For manufactured fuels differences occur in the rescreening of coke to breeze. For oil and petroleum products differences arise due to small variations in the calorific values used.

1 TOTAL ENERGY

Table 1.3b Supply and use of fuels

Thousand tonnes of oil equivalent

	2005 Quarter 3								2006 Quarter 3 p									
	Coal	Manufactured fuels ⁴	Primary oil	Petroleum Products	Natural gas ⁵	Renewables & waste ⁶	Primary electricity	Electricity	Heat sold	Coal	Manufactured fuels ⁴	Primary oil	Petroleum Products	Natural gas ⁵	Renewables & waste ⁶	Primary electricity	Electricity	Heat sold
SUPPLY																		
Indigenous production	2,977	-	21,164	-	16,331	689	4,705	-	-	2,261	-	19,007	-	15,945	742	4,359	-	-
Imports	7,137	104	16,971	6,192	2,999	198	-	235	-	8,477	171	16,302	6,573	3,424	246	-	216	-
Exports	-92	-20	-12,471	-8,115	-2,202	-	-	-68	-	-66	-24	-12,227	-7,894	-3,584	-	-	-49	-
Marine bunkers	-	-	-	-600	-	-	-	-	-	-	-	-	-486	-	-	-	-	-
Stock change ¹	-2,736	-129	-256	-537	-1,112	-	-	-	-	-1,886	-78	+945	-699	-1,256	-	-	-	-
Primary supply	7,285	-45	25,407	-3,061	16,016	887	4,705	167	-	8,786	68	24,026	-2,507	14,530	988	4,359	168	-
Statistical difference ²	-69	-83	-112	-107	-236	-	-	+60	-	+87	-1	-27	-81	-45	-	-	+31	-
Primary demand	7,354	37	25,519	-2,953	16,252	887	4,705	107	-	8,699	69	24,053	-2,425	14,574	988	4,359	137	-
Transfers ³	-	-27	-705	+700	-1	-	-119	+119	-	-	-26	-588	+991	-	-	-144	+144	-
TRANSFORMATION	-6,934	502	-24,814	24,501	-8,032	-811	-4,586	7,565	263	-8,230	478	-23,465	23,134	-7,135	-911	-4,214	7,531	263
Electricity generation	-5,541	-247	-	-244	-7,701	-811	-4,586	7,565	-	-6,817	-238	-	-169	-6,804	-911	-4,214	7,531	-
Heat generation	-72	-13	-	-16	-331	-	-	-	263	-61	-13	-	-16	-331	-	-	-	263
Petroleum refineries	-	-	-24,814	24,808	-	-	-	-	-	-	-	-23,465	23,382	-	-	-	-	-
Coke manufacture	-1,077	1,053	-	-	-	-	-	-	-	-1,095	1,070	-	-	-	-	-	-	-
Blast furnaces	-195	-345	-	-46	-	-	-	-	-	-204	-393	-	-	-	-	-	-	-
Patent fuel manufacture	-48	53	-	-	-	-	-	-	-	-52	52	-	-	-	-	-	-	-
Energy industry use	-	205	-	1,507	1,563	-	-	556	9	-	217	-	1,314	1,464	-	-	571	9
Losses	-	48	-	-	171	-	-	580	-	-	57	-	-	216	-	-	588	-
FINAL CONSUMPTION	420	258	-	20,740	6,484	77	-	6,656	256	469	247	-	20,386	5,758	77	-	6,653	256
Iron & steel	-	149	-	2	153	-	-	108	-	-	142	-	14	162	-	-	108	-
Other industries	302	62	-	1,503	1,992	28	-	2,309	213	344	54	-	1,579	1,728	29	-	2,314	213
Transport	-	-	-	15,140	-	-	-	186	-	-	-	-	15,282	-	-	-	179	-
Domestic	113	47	-	469	2,825	27	-	2,053	5	117	50	-	484	2,502	27	-	2,043	5
Other final users	5	-	-	496	1,305	21	-	2,000	38	7	-	-	472	1,158	21	-	2,009	38
Non energy use	-	-	-	3,130	209	-	-	-	-	-	-	-	2,556	209	-	-	-	-

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

2. Primary supply minus primary demand.

3. Annual transfers should ideally be zero. For manufactured fuels differences occur in the rescreening of coke to breeze. For oil and petroleum products differences arise due to small variations in the calorific values used.

4. Includes all manufactured solid fuels, benzole, tars, coke oven gas and blast furnace gas.

5. Includes colliery methane.

6. Includes geothermal and solar heat. Latest quarter is estimated from the previous year and adjusted according to average annual rate of change over the last three years.

2 SOLID FUEL AND DERIVED GASES

Table 2.1 Supply and consumption of coal

Thousand tonnes

	2004	2005	per cent change ¹	2004 3rd quarter	2004 4th quarter	2005 1st quarter	2005 2nd quarter	2005 3rd quarter	2005 4th quarter	2006 1st quarter	2006 2nd quarter	2006 3rd quarter p	per cent change ²
SUPPLY													
Indigenous production	25,096	20,498	-18.3	6,001	6,623	5,112	4,854	4,789	5,742	5,567	4,965	3,637	-24.1
Deepmined	12,542	9,563	-23.8	2,947	3,263	2,324	1,908	2,132	3,199	3,073	2,541	1,633	-23.4
Opencast	11,993	10,445	-12.9	2,886	3,232	2,691	2,821	2,521	2,412	2,371	2,296	1,875	-25.6
Other sources	561	490	-13	167	127	97	125	136	132	124	128	129	-5.2
Imports	36,153	43,968	+21.6	9,275	8,611	10,185	10,903	10,962	11,918	12,957r	12,207r	13,022	+18.8
Exports	622	536	-13.8	125	179	130	175	117	113	108r	119r	85	-27.4
Stock change ³	-60	-2,129		-2,487	+2,180	+3,320	-2,677	-4,173	+1,401	+3,192r	-2,757r	-3,035	
Total supply	60,567	61,802	+2.0	12,663	17,235	18,487	12,905	11,462	18,948	21,608r	14,296r	13,538	+18.1
Statistical difference	+120	-48		+107	+45	-121	-75	+51	+97	-129r	+17r	+12	
Total demand	60,447	61,850	+2.3	12,556	17,191	18,608	12,980	11,411	18,851	21,737r	14,279r	13,526	+18.5
TRANSFORMATION													
Electricity generation	50,444	52,084	+3.2	10,152	14,603	16,297	10,626	8,882	16,278	19,128	11,736	10,930	+23.1
Heat generation	478	453	-5	98	131	123	113	102	115	123	113	102	-
Coke manufacture	5,487	5,564	+1.4	1,363	1,341	1,262	1,331	1,481	1,490	1,462	1,478	1,506	+1.7
Blast furnaces	895	1,039	+16.1	222	232	247	281	268	243	263	284	280	+4.8
Patent fuel manufacture	327	266	-18.7	74	74	65	67	68	66	78	73	72	+5.5
Energy industry use	8	6		2	2	2	1	1	1	1	0	0	
FINAL CONSUMPTION	2,808	2,439	-13.2	644	807	611	560	608	659	682r	595r	635	+4.5
Iron & steel	-	-		-	-	-	-	-	-	-	-	-	
Other industries	1,845	1,790	-3.0	458	514	423	414	455	498	478r	423r	473	+4.0
Domestic	941	614	-34.7	179	288	179	139	147	149	186r	157r	152	+3.5
Other final users	22	34	+52	6	4	9	7	6	11	19r	16r	10	+63
Stocks at end of period													
Distributed stocks	12,498	14,719	+17.8	14,546	12,498	9,221	12,094	16,273	14,719	11,688r	14,484r	17,551	+7.9
Of which:													
Major power producers	11,019	12,696	+15.2	13,141	11,019	7,419	9,990	14,211	12,696	9,658	12,616	15,689	+10.4
Coke ovens	1,291	1,604	+24.2	1,306	1,291	1,558	1,801	1,706	1,604	1,857	1,802	1,595	-6.5
Undistributed stocks	1,192	1,101	-7.7	1,325	1,192	1,150	954	947	1,101	1,040	1,000	969	+2.3
Total stocks	13,691	15,819	+15.5	15,871	13,691	10,371	13,048	17,221	15,819	12,728r	15,485	18,520	+7.5

1. Percentage change in 2005 compared with a year earlier.

2. Percentage change in the third quarter of 2006 compared with a year earlier.

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

2 SOLID FUEL AND DERIVED GASES

Table 2.2 Supply and consumption of coke oven coke, coke breeze and other manufactured solid fuels

	<i>Thousand tonnes</i>												
	2004	2005	<i>per cent change¹</i>	2004 3rd quarter	2004 4th quarter	2005 1st quarter	2005 2nd quarter	2005 3rd quarter	2005 4th quarter	2006 1st quarter	2006 2nd quarter	2006 3rd quarter p	<i>per cent change²</i>
SUPPLY													
Indigenous production	4,653	4,622	-0.7	1,145	1,105	1,061	1,136	1,213	1,212	1,222	1,248	1,236	+1.9
Coke oven coke	4,038	4,105	+1.7	1,003	965	949	992	1,078	1,086	1,087	1,098	1,090	+1.1
Coke breeze	298	259	-13	70	69	51	77	67	64	63	78	78	+15
Other MSF	318	258	-19	72	71	61	67	68	62	72	72	68	-
Imports	1,051	927	-12	257	236	239	265	152	271	207r	229r	244	+60
Exports	182	134	-26	41	51	41	34	29	29	43	71r	34	+19
Stock change ³	-129	-147		-55	+111	+79	-49	-187	+10	+58	-7	-115	
Transfers	-	-		-	-	-	-	-	-	-	-	-	
Total supply	5,392	5,268	-2.3	1,306	1,401	1,339	1,317	1,149	1,463	1,445r	1,399	1,330	+15.8
Statistical difference	-72	-3		-18	+16	+35	-19	-121	103	-32r	+1r	-8	
Total demand	5,465	5,271	-3.6	1,324	1,385	1,303	1,337	1,270	1,360	1,476r	1,399r	1,339	+5.4
TRANSFORMATION	4,171	4,067	-2.5	1,028	1,064	987	1,040	982	1,058	1,183	1,116	1,086	+10.6
Coke manufacture	-	-		-	-	-	-	-	-	-	-	-	
Blast furnaces	4,171	4,067	-2.5	1,028	1,064	987	1,040	982	1,058	1,183	1,116	1,086	+10.6
Energy industry use	4	-	(-)	-	-	-	-	-	-	-	-	-	
FINAL CONSUMPTION	1,290	1,203	-6.7	297	321	316	297	288	302	293r	283r	252	-12
Iron & steel	810	821	+1	198	209	199	213	206	203	182	190	171	-17
Other industries	126	92	-27	28	28	27	19	21	25	20	21r	16	-24
Domestic	354	290	-18	70	85	90	65	61	74	91r	72r	65	+6
Stocks at end of period	708	855	+21	819	708	628	677	864	855	855r	796r	803	-7

1. Percentage change in 2005 compared with a year earlier.

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

2. Percentage change in the third quarter of 2006 compared with a year earlier.

2 SOLID FUEL AND DERIVED GASES

Table 2.3 Supply and consumption of coke oven gas, blast furnace gas, benzole and tars

	GWh													
			2004		2004		2005		2005		2006		2006	
	2004	2005	<i>per cent change¹</i>	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter	1st quarter	2nd quarter	3rd quarter p	<i>per cent change²</i>	
SUPPLY														
Indigenous production	26,606	27,289	+2.6	6,619	6,699	6,551	6,849	6,814	7,075	7,198	7,026	7,102	+4.2	
Coke oven gas	9,076	9,290	+2.4	2,284	2,209	2,151	2,252	2,436	2,451	2,412	2,455	2,509	+3.0	
Blast furnace gas	15,770	16,199	+2.7	3,897	4,064	3,972	4,159	3,890	4,179	4,289	4,078	4,125	+6.0	
Benzole & tars	1,722	1,749	+1.6	432	422	411	425	473	440	474	479	462	-2	
Transfers	+39	+50	+30	+7	+4	+17	+13	+15	+5	+23	+15	+7	(-)	
Total supply	26,606	27,289	+2.6	6,619	6,699	6,551	6,849	6,814	7,075	7,198	7,026	7,102	+4.2	
Statistical difference	-38	-38		-5	-3	-14	-6	-11	-7	-19	-11	-3		
Total demand	26,644	27,327	+2.6	6,624	6,701	6,565	6,855	6,825	7,082	7,217	7,037	7,106	+4.1	
TRANSFORMATION	11,315	12,079	+6.8	2,910	2,971	3,020	3,020	3,020	3,020	3,094	3,000	2,917	-3.4	
Electricity generation	10,717	11,481	+7.1	2,761	2,822	2,870	2,870	2,870	2,870	2,945	2,851	2,768	-3.6	
Heat generation	598	598	-	149	149	149	149	149	149	149	149	149	-	
Energy industry use	9,843	9,537	-3.1	2,433	2,384	2,305	2,380	2,383	2,469	2,625	2,486	2,529	+6.1	
Losses	2,340	2,456	+4.9	565	677	625	700	564	567	494	522	666	+18	
FINAL CONSUMPTION	3,147	3,255	+3.4	716	669	616	755	859	1,026	1,004	1,030	994	+16	
Iron & steel	1,160	1,208	+4.1	213	176	133	258	310	508	498	479	468	+51	
Other industries	1,987	2,047	+3.0	503	493	483	497	549	518	506	550	526	-4.1	

1. Percentage change in 2005 compared with a year earlier.

2. Percentage change in the third quarter of 2006 compared with a year earlier.

3 OIL AND OIL PRODUCTS

Table 3.1 Supply and use of crude oil, natural gas liquids and feedstocks¹

Thousand tonnes

	2004	2005	<i>per cent change</i>	2004 3rd quarter	2004 4th quarter	2005 1st quarter	2005 2nd quarter	2005 3rd quarter	2005 4th quarter	2006 1st quarter	2006 2nd quarter	2006 3rd quarter p	<i>per cent change⁸</i>
SUPPLY													
Indigenous production	95,374	84,721	-11.2	22,078	23,516	22,714	21,990	19,308	20,710	20,878r	19,151r	17,341	-10.2
Crude oil	87,516	77,179	-11.8	20,376	21,507	20,546	20,071	17,663	18,899	19,028r	17,390r	15,838	-10.3
NGLs ³	7,858	7,543	-4.0	1,703	2,009	2,168	1,919	1,645	1,811	1,850	1,761	1,503	-8.6
Imports ⁴	62,516	58,885	-5.8	16,440	15,448	13,694	15,796	15,552	13,843	13,758r	15,189	14,940	-3.9
Crude oil & NGLs	55,858	52,211	-6.5	14,446	13,991	12,469	13,896	13,656	12,190	12,282	13,237	13,291	-2.7
Feedstocks	6,659	6,675	+0.2	1,994	1,457	1,225	1,900	1,896	1,653	1,477r	1,952	1,649	-13.0
Exports ⁴	64,504	54,098	-16.1	15,075	15,052	14,547	15,345	11,404	12,801	13,795r	13,116r	11,190	-1.9
Crude Oil & NGLs	63,413	52,106	-17.8	14,794	14,858	14,039	15,039	10,900	12,128	13,260r	12,271r	10,591	-2.8
Feedstocks	1,091	1,992	+82.5	282	194	508	306	504	673	536	845	599	+18.9
Stock change ⁵	-133	-385		+255	+329	-329	-376	-235	+556	-595r	+10r	+868	
Transfers ⁶	-3,543	-3,054		-759	-929	-636	-869	-584	-965	-580r	-629r	-483	
Total supply	89,710	86,070	-4.1	22,938	23,312	20,896	21,196	22,636	21,342	19,667r	20,604r	21,475	-5.1
Statistical difference ⁷	-111	-66		-67	+128	+70	+73	-98	-111	+10r	-21r	-21	
Total demand	89,821	86,135	-4.1	23,006	23,184	20,826	21,122	22,734	21,453	19,657	20,625	21,496	-5.4
TRANSFORMATION													
Petroleum refineries	89,821	86,135	-4.1	23,006	23,184	20,826	21,122	22,734	21,453	19,657	20,625	21,496	-5.4
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. Includes offshore and onshore production.
3. Natural Gas Liquids (NGLs) are condensate and petroleum gases derived at onshore treatment plants.
4. Foreign trade as recorded by the Petroleum Industry which may differ from the figures published by HM Revenue and Customs in the Overseas Trade Statistics. 2005 data are subject to further revision as revised information on imports and exports becomes available.
5. Stock fall (+), stock rise (-). Stocks include stocks held at refineries, at oil terminals and also those held in tanks and partially loaded vessels at offshore facilities.
6. Mostly backflows from petrochemical plants to refineries.
7. Total supply minus total demand.
8. Percentage change between the most recent quarter and the same quarter a year earlier.

3 OIL AND OIL PRODUCTS

Table 3.2 Supply and use of petroleum products

Thousand tonnes

	2004	2005	per cent change	2004 3rd quarter	2004 4th quarter	2005 1st quarter	2005 2nd quarter	2005 3rd quarter	2005 4th quarter	2006 1st quarter	2006 2nd quarter	2006 3rd quarter p	per cent change ¹
SUPPLY													
Indigenous production ^c	93,552	89,389	-4.4	23,941	24,000	21,850	21,794	23,395	22,351	20,581r	21,346r	22,330	-4.5
Imports ^o	18,545	22,510	+21.4	4,512	4,732	5,579	5,477	5,656	5,798	6,841	6,271r	6,015	+6.3
Exports ^o	30,270	29,722	-1.8	7,645	8,240	7,397	6,990	7,456	7,879	6,367r	6,899r	7,275	-2.4
Marine bunkers	2,085	2,055	-1.5	584	533	466	533	566	490	424	549	460	-18.8
Stock change ⁴	-289	+1,046		-260	-531	+647	+187	-498	+710	+327	-199	-645	
Transfers ^o	-203	-333		-157	-83	-164	+8	-145	-32	+17r	+159r	-105	
Total supply	79,250	80,837	+2.0	19,807	19,346	20,049	19,943	20,386	20,459	20,975r	20,130r	19,861	-2.6
Statistical difference ⁶	-34	-140		-211	-447	-35	+120	-97	-128	+135r	+138r	-81	
Total demand	79,284	80,977	+2.1	20,017	19,793	20,084	19,823	20,482	20,587	20,840r	19,993r	19,942	-2.6
TRANSFORMATION	951	980	+3.1	269	232	282	195	289	215	209r	199r	232	-19.7
Electricity generation	593	650	+9.6	181	137	190	104	229	127	134r	131r	156	-31.7
Heat generation	61	61	+1.2	15	15	15	15	15	15	16	16	16	+2.0
Blast furnaces	297	269	-	73	80	76	76	45	73	60	53	60	+34.4
Energy industry use	5,419	5,602	+3.4	1,316	1,436	1,379	1,414	1,412	1,397	1,532r	1,274r	1,233	-12.7
Petroleum Refineries	5,417	5,602	+3.4	1,316	1,436	1,379	1,414	1,412	1,397	1,532r	1,274r	1,233	-12.7
Blast Furnaces	-	-	-	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-	-	-	-
FINAL CONSUMPTION	72,915	74,395	+2.0	18,432	18,124	18,423	18,214	18,782	18,975	19,099r	18,520r	18,477	-1.6
Iron & steel	33	14	-57.3	7	7	6	2	2	5	8	-	13	(+)
Other industries	6,116	6,410	+4.8	1,429	1,428	1,881	1,472	1,368	1,688	2,185r	1,457r	1,423	+4.0
Transport	51,927	52,907	+1.9	13,553	12,932	12,502	13,303	13,698	13,404	12,830r	13,439r	13,832	+1.0
Domestic	2,938	2,782	-5.3	466	932	970	505	423	884	978r	698r	506	+19.8
Other final users	1,316	1,603	+21.7	295	305	418	433	456	295	360r	272r	364	-20.1
Non energy use	10,584	10,678	+0.9	2,683	2,519	2,645	2,499	2,835	2,699	2,738r	2,654r	2,339	-17.5

1. Percentage change between the most recent quarter and the same quarter a year earlier.
2. Includes refinery production and petroleum gases extracted as products during the production of oil and gas.
3. Foreign trade as recorded by the Petroleum Industry which may differ from the figures published by HM Revenue and Customs in the Overseas Trade Statistics.
2003 and 2004 data are subject for further revision as revised information on imports and exports becomes available.
4. Stock fall (+), stock rise (-).
5. Mainly backflows from petrochemical plants to refineries.
6. Total supply minus total demand.

3 OIL AND OIL PRODUCTS

Table 3.3 Supply and use of petroleum products - annual data

Thousand tonnes

	2004								2005							
	Total Petroleum Products	Motor spirit	Gas diesel oil ^{1,9}	Aviation turbine fuel	Fuel oils	Petroleum gases ²	Burning oil	Other products ³	Total Petroleum Products	Motor spirit	Gas diesel oil ^{1,9}	Aviation turbine fuel	Fuel oils	Petroleum gases ²	Burning oil	Other products ³
SUPPLY																
Indigenous production ⁴	93,552	24,589	28,839	5,615	12,988	8,087	3,613	9,821	89,389	22,620	28,691	5,167	11,728	8,218	3,325	9,640
Imports ⁵	18,545	2,175	4,216	7,658	612	524	360	3,000	22,510	2,377	4,921	9,083	1,528	920	407	3,275
Exports ⁵	30,270	7,334	6,623	758	8,936	1,032	413	5,173	29,722	6,586	6,314	1,397	8,452	1,298	282	5,392
Marine bunkers	2,085	-	1,073	-	1,012	-	-	-	2,055	-	889	-	1,166	-	-	-
Stock change ⁶	-289	-40	-268	-112	-46	-34	-58	+269	+1,046	+366	+284	+96	+136	+22	+24	+119
Transfers ⁷	-203	-11	-393	-345	-19	+4	+413	+148	-333	-4	-262	-343	-92	-6	+333	+42
Total supply	79,250	19,380	24,698	12,059	3,586	7,549	3,915	8,064	80,837	18,772	26,431	12,606	3,681	7,855	3,807	7,684
Statistical difference ⁸	-34	-105	-30	197	-158	-10	-35	107	-140	42	-8	109	143	-331	-63	-32
Total demand	79,284	19,484	24,729	11,862	3,744	7,559	3,950	7,956	80,977	18,731	26,438	12,497	3,538	8,186	3,870	7,717
TRANSFORMATION	951	-	75	-	694	181	-	-	980	-	75	-	723	182	-	-
Electricity generation	593	-	67	-	345	181	-	-	650	-	66	-	402	182	-	-
Heat generation	61	-	9	-	52	-	-	-	61	-	9	-	52	-	-	-
Petroleum refineries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blast furnaces	297	-	-	-	297	-	-	-	269	-	-	-	269	-	-	-
Patent fuel manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Energy industry use	5,419	-	192	-	1,681	2,526	-	1,019	5,602	-	206	-	1,573	2,612	-	1,211
FINAL CONSUMPTION	72,915	19,484	24,461	11,862	1,368	4,852	3,950	6,937	74,395	18,731	26,158	12,497	1,242	5,392	3,869	6,506
Iron & steel	33	-	2	-	31	-	-	-	14	-	-	-	14	-	-	-
Other industries	6,116	-	2,852	-	941	858	1,465	-	6,410	-	3,285	-	772	863	1,490	-
Transport	51,927	19,484	20,142	11,862	266	112	12	49	52,907	18,731	21,140	12,497	355	120	12	52
Domestic	2,938	-	160	-	-	330	2,448	-	2,782	-	141	-	-	298	2,344	-
Other final users	1,316	-	1,056	-	130	106	24	-	1,603	-	1,363	-	101	115	24	-
Non energy use	10,584	-	249	-	-	3,447	-	6,888	10,678	-	229	-	-	3,996	-	6,454

1. Includes DERV road fuel and middle distillate feedstock destined for use in the petrochemical industry.

2. Includes ethane, propane, butane and other petroleum gases.

3. Includes naphtha, industrial and white spirits, lubricants, bitumen, petroleum waxes, petroleum coke and other oil products.

4. Includes refinery production and petroleum gases extracted as products during the production of oil and gas.

5. Foreign trade as recorded by the Petroleum Industry which may differ from the figures published by HM Revenue and Customs in the Overseas Trade Statistics.

2005 data are subject to further revision as revised information on imports and exports becomes available.

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

7. Mainly backflows from petrochemical plants to refineries.

8. Total supply minus total demand.

9. See page 11 of September 2006 Energy Trends for a note concerning changes to this table.

3 OIL AND OIL PRODUCTS

Table 3.4 Supply and use of petroleum products - latest quarter

Thousand tonnes

	2005 3rd quarter								2006 3rd quarter p							
	Total Petroleum Products	Motor spirit	Gas diesel Oil ^{1,9}	Aviation turbine fuel	Fuel oils	Petroleum gases ²	Burning oil	Other products ³	Total Petroleum Products	Motor spirit	Gas diesel Oil ^{1,9}	Aviation turbine fuel	Fuel oils	Petroleum gases ²	Burning oil	Other products ³
SUPPLY																
Indigenous Production ⁴	23,395	5,993	7,620	1,591	3,008	2,109	597	2,478	22,330	5,513	7,012	1,979	2,923	2,247	444	2,212
Imports ⁵	5,656	565	1,022	2,570	376	240	76	807	6,015	831	1,758	1,793	337	221	69	1,007
Exports ⁵	7,456	1,628	1,620	405	2,067	391	62	1,284	7,279	1,624	1,386	261	2,294	357	20	1,337
Marine bunkers	566	-	238	-	329	-	-	-	460	-	156	-	304	-	-	-
Stock change ⁶	-498	-118	-132	-104	-70	-	-28	-45	-645	-154	-208	+21	-195	-64	+46	-90
Transfers ⁷	-145	-71	-65	-42	-18	-7	+43	+15	-105	+13	-115	-54	+97	-120	+61	+14
Total supply	20,386	4,742	6,586	3,609	900	1,951	627	1,971	19,857	4,578	6,906	3,477	563	1,926	600	1,806
Statistical difference ⁸	-97	+96	-88	+30	35	-55	+34	-148	-81	-47	+26	-37	-38	+24	+3	-13
Total demand	20,482	4,645	6,674	3,580	865	2,007	593	2,119	19,938	4,625	6,880	3,514	601	1,902	597	1,819
TRANSFORMATION	289	-	10	-	233	46	-	-	232	-	13	-	173	46	-	-
Electricity generation	229	-	8	-	175	46	-	-	156	-	10	-	100	46	-	-
Heat generation	15	-	2	-	13	-	-	-	16	-	3	-	13	-	-	-
Petroleum refineries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coke manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blast furnaces	45	-	-	-	45	-	-	-	60	-	-	-	60	-	-	-
Patent fuel manufacture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Energy industry use	1,412	-	44	-	344	699	-	325	1,233	-	3	-	170	693	-	366
FINAL CONSUMPTION	18,782	4,645	6,620	3,580	288	1,262	593	1,794	18,472	4,625	6,864	3,514	257	1,163	596	1,453
Iron & steel	2	-	-	-	2	-	-	-	13	-	-	-	13	-	-	-
Other industries	1,368	-	785	-	176	176	231	-	1,423	-	907	-	19	269	228	-
Transport	13,698	4,645	5,330	3,580	92	30	3	18	13,832	4,625	5,499	3,514	145	32	3	14
Domestic	423	-	29	-	-	41	353	-	436	-	42	-	-	35	360	-
Other final users	456	-	414	-	19	17	6	-	434	-	326	-	81	22	6	-
Non energy use	2,835	-	61	-	-	998	-	1,776	2,334	-	90	-	-	805	-	1,439

1. Includes DERV road fuel and middle distillate feedstock destined for use in the petrochemical industry.

2. Includes ethane, propane, butane and other petroleum gases.

3. Includes naphtha, industrial and white spirits, lubricants, bitumen, petroleum waxes, petroleum coke and other oil products.

4. Includes refinery production and petroleum gases extracted as products during the production of oil and gas.

5. Foreign trade as recorded by the Petroleum Industry which may differ from the figures published by HM Revenue and Customs in the Overseas Trade Statistics. 2005 data are subject to further revision as revised information on imports and exports becomes available.

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

7. Mainly backflows from petrochemical plants to refineries.

8. Total supply minus total demand.

9. See page 11 of September 2006 Energy Trends for a note concerning changes to this table.

3 OIL AND OIL PRODUCTS

Table 3.5 Demand for key petroleum products¹

Thousand tonnes

	2004	2005	per cent change	2004 3rd quarter	2004 4th quarter	2005 1st quarter	2005 2nd quarter	2005 3rd quarter	2005 4th quarter	2006 1st quarter	2006 2nd quarter	2006 3rd quarter p	per cent change ²
MOTOR SPIRIT													
Total sales	19,484	18,731	-3.9	4,971	4,807	4,553	4,656	4,740	4,781	4,596r	4,550r	4,625	-2.4
By seller:													
Retail sales: ³													
hypermarkets ⁴	18,679	17,903	-4.2	4,772	4,595	4,350	4,443	4,551	4,559	4,432r	4,381r	4,428	-2.7
refiners/other traders	6,137	6,710	+9.3	1,580	1,464	1,542	1,683	1,754	1,730	1,699	1,736	1,822	+3.8
Commercial sales ⁵	12,542	11,193	-10.8	3,192	3,131	2,807	2,760	2,796	2,829	2,733r	2,645r	2,606	-6.8
805	828	+2.9	199	212	203	214	190	222	165r	169r	197	+3.9	
By grade:													
4-Star/Leaded/LRP ⁶	88	26	(-)	36	9	6	6	7	7	5	6	4	-32.6
Super Premium Unleaded	836	940	+12.5	198	211	219	232	257	231	199	210	196	-23.7
Premium Unleaded/ULSP ⁷	18,561	17,765	-4.3	4,737	4,587	4,328	4,418	4,477	4,543	4,392r	4,334r	4,425	-1.2
GAS DIESEL OIL													
Total sales	24,537	26,233	+6.9	6,140	6,236	6,295	6,603	6,630	6,704	6,757r	6,349r	6,877	+3.7
DERV fuel	18,514	19,436	+5.0	4,571	4,779	4,694	4,919	4,842	4,980	5,097	5,071r	5,121	+5.8
Retail sales: ³													
hypermarkets ⁴	9,517	10,679	+12.2	2,421	2,475	2,524	2,735	2,689	2,732	2,781r	2,873r	2,979	+10.8
refiners/other traders	2,474	3,091	+24.9	649	628	726	755	815	795	927	956r	984	+20.8
Commercial sales ⁵	7,043	7,588	+7.7	1,772	1,847	1,798	1,979	1,874	1,936	1,855r	1,917r	1,995	+6.4
8,997	8,757	-2.7	2,150	2,304	2,170	2,184	2,153	2,249	2,316r	2,198	2,142	2,142	-0.5
Other gas diesel oil ⁸	6,023	6,797	+12.9	1,569	1,458	1,602	1,684	1,788	1,724	1,661r	1,278r	1,756	-1.8
AVIATION FUELS													
Total sales	11,911	12,549	+5.4	3,410	2,844	2,879	3,085	3,598	2,988	2,647r	3,295r	3,529	-1.9
Aviation spirit	49	52	+5.5	19	9	9	16	18	9	7	9	14	-21.9
Aviation turbine fuel	11,862	12,497	+5.4	3,391	2,835	2,870	3,069	3,580	2,979	2,640r	3,286r	3,514	-1.8
FUEL OIL													
Total Sales	2,064	1,965	-4.8	517	534	561	480	421	503	692r	480r	430	+2.2
Light	215	124	-42.2	53	54	38	30	24	32	47r	19r	57	(+)
Medium	961	881	-8.4	243	251	250	215	190	225	283r	205r	117	-38.6
Heavy	888	960	+8.1	221	229	273	235	207	246	361r	255r	257	+24.2

1. Monthly data for inland deliveries of oil products are available - See DTI web-site. www.dti.gov.uk/energy/statistics/source/oil/page18470.html.
2. Percentage change between the most recent quarter and the same quarter a year earlier.
3. Retail sales are those deliveries made to garages etc. mainly for resale to final consumers.
4. Data for sales by hypermarket companies are collected by a separate reporting system, but are consistent with the main data collected from companies.
5. Commercial sales are those deliveries made direct to a consumer for use in their own business, e.g. to bus and coach depots.
6. Sales of leaded petrol ceased from 31st December 1999, with Lead Replacement Petrol being introduced as a replacement fuel.
7. ULSP is Ultra Low Sulphur Petrol introduced during the second half of 2000 and first half of 2001 as a replacement for ordinary Premium grade unleaded petrol.
8. This includes gas diesel oil used for other purposes such as heating and middle distillate feedstock destined for use in the petrochemical industry.

3 OIL AND OIL PRODUCTS

Table 3.6 Stocks of petroleum¹ at end of period

	<i>Thousand tonnes</i>											
	Crude oil and refinery process oil				Petroleum products					Total stocks		
	Refineries ²	Terminals ³	Offshore ⁴	Total ⁵	Light distillates ⁶	Kerosene & gas/diesel ⁷	Fuel oils ⁸	Other products ⁹	Total products	Net bilaterals ¹⁰	Stocks in UK ¹¹	Total stocks
2002	4,508	2,126	760	7,504	1,282	3,173	1,196	2,061	7,712	1,118	14,098	15,216
2003	4,670	1,509	741	7,140	1,490	3,640	1,237	2,166	8,533	1,610	14,063	15,673
2004	4,440	1,261	736	6,648	1,504	3,790	987	1,693	7,974	1,545	13,078	14,623
2005	4,875	1,129	798	7,067	1,051	3,911	1,057	1,548	7,567	1,587	13,047	14,634
<i>Per cent change</i>	<i>+9.8</i>	<i>-10.5</i>	<i>+8.4</i>	<i>+6.3</i>	<i>-30.1</i>	<i>+3.2</i>	<i>+7.1</i>	<i>-8.5</i>	<i>-5.1</i>	<i>+2.8</i>	<i>-0.2</i>	<i>+0.1</i>
3rd quarter	4,660	1,049	955	6,844	1,268	3,624	1,090	2,029	8,012	1,462	13,394	14,856
4th quarter	4,440	1,261	736	6,648	1,504	3,790	987	1,693	7,974	1,545	13,078	14,623
2005 1st quarter	4,546	1,169	982	7,017	1,204	4,060	1,351	1,647	8,261	1,937	13,341	15,279
2nd quarter	4,843	1,459	772	7,458	993	4,055	1,363	1,604	8,015	1,943	13,530	15,473
3rd quarter	4,671	1,875	773	7,619	909	4,295	1,236	1,654	8,094	1,440	14,274	15,713
4th quarter	4,875	1,129	798	7,067	1,051	3,911	1,057	1,548	7,567	1,587	13,047	14,634
2006 1st quarter	5,234	1,564	620r	7,699r	884	3,789	1,069	1,390	7,132	1,493	13,337	14,831r
2nd quarter	5,065	1,518	760	7,552	920	4,082	1,215	1,320	7,538	1,629	13,461	15,089
3rd quarter p	4,635	1,211	696	6,542	1,101	4,446	1,403	1,473	8,423	1,661	13,304	14,965
<i>Per cent change¹²</i>	<i>-0.8</i>	<i>-35.4</i>	<i>-10.0</i>	<i>-14.1</i>	<i>+21.1</i>	<i>+3.5</i>	<i>+13.5</i>	<i>-10.9</i>	<i>+4.1</i>	<i>+15.4</i>	<i>-6.8</i>	<i>-4.8</i>

1. Stocks held at refineries, terminals and power stations. Stocks in the wholesale distribution system and certain stocks at offshore fields (UK Continental Shelf [UKCS]), and others held under approved bilateral agreements are also included.

2. Stocks of crude oil, NGLs and process oil at UK refineries.

3. Stocks of crude oil and NGLs at UKCS pipeline terminals

4. Stocks of crude oil in tanks and partially loaded tankers at offshore field (UKCS).

5. Includes process oils held under approved bilateral agreements.

6. Motor spirit and aviation spirit.

7. Aviation turbine fuel, burning oil, gas oil, DERV fuel, middle distillate feestock (mdf) and marine diesel oil.

8. Including Orimulsion.

9. Ethane, propane, butane, other petroleum gases, naphtha (ldf), industrial white spirit, bitumen, petroleum wax, lubricating oil, petroleum coke and miscellaneous products.

10. The difference between the stocks held abroad for UK use under approved bilateral agreements and the equivalent stocks held in the UK for foreign use.

11. Stocks held in the national territory or elsewhere on the UKCS.

12. Percentage change between the most recent quarter and the same quarter a year earlier.

3 OIL AND OIL PRODUCTS

Table 3.7 Drilling activity¹ on the UKCS

		<i>Number of wells started</i>					
		Offshore			Onshore		
		Exploration &		Development ²	Exploration &		
		Exploration	Appraisal		Appraisal	Development ²	
2003		26	19	45	204	4	17
2004		29	34	63	166	3	14
2005		41	37	78	227	8	21
<i>Per cent change</i>		<i>+41.4</i>	<i>+8.8</i>	<i>+23.8</i>	<i>+36.7</i>	<i>(+)</i>	<i>+50.0</i>
2004	3rd quarter	8	8	16	39	-	1
	4th quarter	8	12	20	41	2	5
2005	1st quarter	6	8	14	43	-	7
	2nd quarter	8	9	17	73	2	6
	3rd quarter	19	11	30	65	3	5
	4th quarter	8	9	17	46	3	3
2006	1st quarter	8	6	14	67	4	3
	2nd quarter	7	5	12	57	1	4
	3rd quarter p	8	14	22	53	1	4
<i>Per cent change³</i>		<i>-57.9</i>	<i>+27.3</i>	<i>-26.7</i>	<i>-18.5</i>	<i>(-)</i>	<i>-20.0</i>

1. Including sidetracked wells

2. Development wells are production or injection wells drilled after development approval has been granted.

3. Percentage change in the third quarter of 2006 compared with a year earlier

4 GAS

Table 4.1. Natural gas supply and consumption

	<i>GWh</i>												
	2004	2005	<i>per cent change¹</i>	2004 3rd quarter	2004 4th quarter	2005 1st quarter	2005 2nd quarter	2005 3rd quarter	2005 4th quarter	2006 1st quarter	2006 2nd quarter	2006 3rd quarter p	<i>per cent change²</i>
SUPPLY													
Indigenous production	1,115,744	1,017,813	-8.8	224,481	293,690	298,271	265,126	189,724	264,694	282,195r	226,818r	185,239	-2.4
Imports	133,035	173,328	+30.3	18,822	48,950	52,597	26,952	34,873	58,906	75,929r	35,122r	39,823	+14.2
Exports	114,111	96,181	-15.7	37,714	14,960	16,726	33,517	25,604	20,334	16,106r	35,595r	41,678	+62.8
Stock change ³	-6,235	+1,321		-14,348	-419	+24,768	-16,688	-12,932	+6,173	+13,746	-6,156	-14,606	
Transfers	-39	-51		-7	-4	-17	-13	-15	-5	-23	-15	-7	
Total supply	1,128,395	1,096,231	-2.9	191,234	327,257	358,893	241,859	186,046	309,434	355,741r	220,175r	168,772	-9.3
Statistical difference	+805	+634		+664	-2,946	+848	+1,656	-2,742	+871	+567r	-338r	-519	
Total demand	1,127,589	1,095,597	-2.8	190,570	330,203	358,044	240,202	188,788	308,562	355,174r	220,513r	169,291	-10.3
TRANSFORMATION													
Electricity generation	340,516	333,245	-2.1	85,684	89,157	79,412	86,111	89,410	78,312	66,507r	73,953	78,978	-11.7
Heat generation	19,886	20,671	+3.9	3,659	5,682	6,408	4,513	3,854	5,896	6,408	4,513	3,854	-
Energy industry use	86,906	84,051	-3.3	18,923	22,653	23,086	21,422	18,139	21,404	22,199r	19,508r	16,993	-6.3
Losses	8,174	10,694	+30.8	1,480	2,492	2,637	2,738r	1,987	3,332	3,626r	2,636r	2,514	+26.5
FINAL CONSUMPTION													
Iron & steel	9,716	8,412	-13.4	2,248	2,336	2,392	2,307	1,785	1,928	2,406r	2,288r	1,879	+5.3
Other industries	143,893	140,271	-2.5	23,175	39,024	48,909	30,364	23,154	37,843	53,099r	28,960r	20,077	-13.3
Domestic	396,411	381,879	-3.7	37,341	132,540	155,265	68,004	32,854	125,756	158,755r	64,950r	29,103	-11.4
Other final users	112,065	106,653	-4.8	15,555	33,814	37,505	22,312	15,174	31,662	39,970r	21,274r	13,463	-11.3
Non energy use	10,021	9,721	-3.0	2,505	2,505	2,430	2,430	2,430	2,430	2,205	2,430	2,430	-

1. Percentage change in 2005 compared with a year earlier.

2. Percentage change in the third quarter of 2006 compared with a year earlier.

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

5 ELECTRICITY

Table 5.1. Fuel used in electricity generation and electricity supplied

	2004	2005	per cent change ¹	2004 3rd quarter	2004 4th quarter	2005 1st quarter ³	2005 2nd quarter	2005 3rd quarter	2005 4th quarter	2006 1st quarter	2006 2nd quarter	2006 3rd quarter p	per cent change ²
FUEL USED IN GENERATION													
Major power producers													
	Million tonnes of oil equivalent												
Coal	30.37	31.65	+4.2	6.02	8.90	9.95	6.42	5.35	9.93	11.69	7.06	6.57	+22.8
Oil	0.58	0.83	+43.3	0.12	0.16	0.25	0.09	0.11	0.38	0.62	0.16r	0.13	+21.9
Gas	26.18	25.42	-2.9	6.59	6.89	5.96	6.59	6.85	6.02	5.00	5.69	6.18	-9.9
Nuclear	18.16	18.37	+1.1	4.24	4.36	5.06	4.46	4.59	4.27	5.06	4.49	4.21	-8.1
Hydro (natural flow)	0.34	0.34	-0.4	0.07	0.12	0.12	0.07	0.05	0.11	0.08	0.07	0.04	-2.6
Other renewables	0.54	0.82	+51.5	0.14	0.19	0.22	0.17	0.19	0.23	0.25	0.11	0.11	-41.2
Net imports	0.64	0.72	+11.1	0.18	0.21	0.12	0.18	0.17	0.25	0.16	0.25	0.17	+0.5
Total major power producers	76.83	78.15	+1.7	17.35	20.83	21.69	17.98	17.30	21.18	22.86	17.82r	17.42	+0.7
Other generators													
Coal	0.93	0.96	+4.1	0.20	0.24	0.25	0.24	0.21	0.26	0.28	0.28	0.27	+26.4
Oil	0.54	0.50	-7.2	0.11	0.13	0.16	0.11	0.11	0.13	0.15	0.10	0.10	-14.2
Gas	3.15	3.28	+4.3	0.79	0.79	0.88	0.83	0.85	0.73	0.72	0.68	0.63	-26.1
Hydro (natural flow)	0.08	0.08	+4.1	0.02	0.02	0.03	0.02	0.01	0.02	0.02	0.02	0.01	-16.9
Other renewables	2.39	2.78	+16.1	0.60	0.66	0.66	0.66	0.69	0.77	0.72	0.71	0.75	+9.0
Other fuels	1.57	2.07	+31.9	0.37	0.49	0.50	0.50	0.54	0.53	0.42	0.42	0.34	-37.5
Total other generators	8.66	9.68	+11.8	2.08	2.32	2.47	2.36	2.42	2.44	2.31	2.21	2.10	-13.4
All generating companies													
Coal	31.30	32.62	+4.2	6.22	9.14	10.20	6.66	5.56	10.19	11.97	7.34	6.84	+22.9
Oil	1.12	1.33	+18.9	0.23	0.29	0.41	0.20	0.22	0.50	0.77	0.26r	0.23	+3.5
Gas	29.33	28.70	-2.1	7.38	7.68	6.84	7.42	7.70	6.75	5.72	6.37	6.80	-11.6
Nuclear	18.16	18.37	+1.1	4.24	4.36	5.06	4.46	4.59	4.27	5.06	4.49	4.21	-8.1
Hydro (natural flow)	0.42	0.43	+0.5	0.08	0.14	0.15	0.09	0.06	0.13	0.10	0.08	0.06	-6.1
Other renewables	2.93	3.60	+22.6	0.74	0.85	0.88	0.83	0.89	1.00	0.97	0.82	0.87	-2.0
Other fuels	1.57	2.07	+31.9	0.37	0.49	0.50	0.50	0.54	0.53	0.42	0.42	0.34	-37.5
Net imports	0.64	0.72	+11.1	0.18	0.21	0.12	0.18	0.17	0.25	0.16	0.25	0.17	+0.5
Total all generating companies	85.49	87.83	+2.7	19.43	23.15	24.16	20.34	19.72	23.62	25.16	20.03r	19.51	-1.1
ELECTRICITY SUPPLIED													
All generating companies													
	TWh												
Coal	125.72	129.95	+3.4	24.80	36.79	41.06	26.56	21.37	40.96	48.65	28.98	26.77	+25.3
Oil	4.31	4.72	+9.7	0.90	1.18	1.37	0.75	0.76	1.85	2.38	0.81	0.90	+18.6
Gas	154.00	149.78	-2.7	38.60	39.82	35.93	38.97	40.16	34.72	29.88	33.98	35.74	-11.0
Nuclear	73.68	75.17	+2.0	17.20	17.67	20.69	18.24	18.76	17.48	20.52	18.21	17.24	-8.1
Hydro (natural flow and net supply by pumped storage stations)	3.97	4.01	+0.8	0.75	1.41	1.45	0.79	0.50	1.27	0.77	0.71	0.34	-33.0
Other renewables	9.31	10.63	+14.2	2.24	2.61	2.65	2.37	2.58	3.03	3.17	2.90	2.85	+10.6
Other fuels	3.74	4.72	+26.3	0.82	1.17	1.20	1.15	1.20	1.17	1.11	0.99	1.01	-16.0
Net imports	7.49	8.32	+11.1	2.05	2.46	1.40	2.13	1.94	2.85	1.84	2.86	1.95	+0.5
Total all generating companies	382.22	387.31	+1.3	87.35	103.12	105.74	90.96	87.28	103.33	108.32	89.44	86.81	-0.5

1. Percentage change in 2006 compared with a year earlier.

2. Percentage change in third quarter of 2006 compared with a year earlier.

3. See note on page 14 of September 2005 Energy Trends regarding calendar differences.

5 ELECTRICITY

Table 5.2 Supply and consumption of electricity

GWh

	2004	2005	Per cent change ¹	2004 3rd quarter	2004 4th quarter	2005 1st quarter	2005 2nd quarter	2005 3rd quarter	2005 4th quarter	2006 1st quarter	2006 2nd quarter	2006 3rd quarter p	Per cent change ²
SUPPLY													
Indigenous production	395,306	400,525	+1.3	89,943	106,098	110,306	93,685	90,065	106,469	113,229r	91,591r	90,256	+0.2
Major power producers ³	355,757	359,449	+1.0	80,786	95,769	99,553	83,991	80,082	95,822	102,342r	81,482r	80,244	+0.2
Auto producers	36,900	38,146	+3.4	8,543	9,638	9,986	9,131	9,291	9,737	9,814	9,306	9,022	-2.9
Other sources	2,649	2,930	+10.6	614	692	766	563	691	910	1,073	803	990	+43.2
Imports	9,784	11,160	+14.1	2,501	3,027	2,299	2,716	2,734	3,410	2,621	3,308	2,518	-7.9
Exports	2,294	2,839	+23.8	446	565	900	590	793	556	785	443	567	-28.6
Transfers	-	-		-	-	-	-	-	-	-	-	-	
Total supply	402,796	408,846	+1.5	91,998	108,561	111,705	95,811	92,006	109,324	115,066r	94,455r	92,207	+0.2
Statistical difference	+3,356	+1,582		+1,059	+1,402	-252	+476	+701	+657	+372r	-617r	+359	
Total demand	399,440	407,263	+2.0	90,939	107,159	111,957	95,335	91,305	108,666	114,694r	95,072r	91,849	+0.6
TRANSFORMATION	-	-		-	-	-	-	-	-	-	-	-	
Energy industry use	29,694	31,384	+5.7	6,917	7,706	8,515	7,284	7,149	8,436	9,224	7,599	7,633	+6.8
Losses	30,728	30,638	-0.3	6,955	8,333	9,789	6,382	6,743	7,724	9,930	6,475r	6,839	+1.4
FINAL CONSUMPTION	339,018	345,241	+1.8	77,067	91,119	93,653	81,668	77,414	92,506	95,540r	80,998r	77,376	-
Iron & steel	5,412	5,019	-7.3	1,353	1,365	1,262	1,247	1,260	1,250	1,270	1,272	1,261	+0.1
Other industries	110,493	113,810	+3.0	27,306	27,068	29,564	28,590	26,855	28,802	28,486r	28,212r	26,914	+0.2
Transport	8,445	8,609	+1.9	2,059	2,145	2,136	2,136	2,161	2,175	2,148	2,203	2,079	-3.8
Domestic	115,526	116,811	+1.1	22,423	34,111	33,799	25,870	23,871	33,272	36,047r	25,573	23,760	-0.5
Other final users	99,141	100,991	+1.9	23,925	26,430	26,891	23,825	23,267	27,008	27,588r	23,738r	23,362	+0.4
Non energy use	-	-		-	-	-	-	-	-	-	-	-	

1. Percentage change in 2005 compared with a year earlier.

2. Percentage change in the third quarter of 2006 compared with a year earlier.

3. Companies that produce electricity from nuclear sources plus all companies whose prime purpose is the generation of electricity are included under the heading "Major Power Producers". At the end of December 2005 they were:

AES Electric Ltd., Baglan Generation Ltd., Barking Power Ltd., BNFL Magnox, British Energy plc., Centrica plc., Coolkeeragh ESB Ltd., Corby Power Ltd., Coryton Energy Company Ltd., Derwent Cogeneration Ltd., Drax Power Ltd., EDF Energy plc., E.On UK plc., Fellside Heat and Power Ltd., Fibrogen Ltd., Fibropower Ltd., Fibrothetford Ltd., First Hydro Company, Immingham CHP, International Power plc., Premier Power Ltd., Rocksavage Power Company Ltd., RWE Npower plc., Scottish Power plc., Scottish and Southern Energy plc., Seabank Power Ltd., SELCHP Ltd., Spalding Energy Company Ltd., Teesside Power Ltd., Usknoth Power Company Ltd., Western Power Generation Ltd.

List of special feature articles published in Energy Trends between December 2004 and September 2006

Energy

June	2005	Energy statistics – revisions policy
December	2005	Regional and local use of non gas, non electricity and non road transport Fuels for 2003
December	2005	Regional and local total energy consumption statistics for 2003
June	2006	Accessing energy statistics via the DTI website

Coal

September	2006	UK Coal imports 2000 to 2005
September	2006	Revisions to historic coal data in the Digest of UK Energy Statistics 2006

Petroleum (Oil and oil products)

March	2005	UKCS Capital Expenditure Survey 2004
June	2005	Regional and local use of road transport fuels for 2003
December	2005	Regional and local use of road transport fuels for 2002 and 2003 update
March	2006	UKCS capital expenditure survey 2005
June	2006	Regional and local use of road transport fuels 2004

Gas

March	2005	Local gas consumption statistics update
December	2005	Regional and local gas consumption statistics for 2004
March	2006	Local gas consumption statistics update

Electricity

December	2004	Experimental regional and local electricity consumption statistics for 2003
December	2004	Electricity generation and supply figures for Scotland, Wales, Northern Ireland and England, 2002 and 2003
March	2005	Regional and local electricity consumption data for 2003 – an update
September	2005	Regional and local electricity consumption data for 2003 – a further update
December	2005	Regional and local electricity consumption statistics for 2004
December	2005	Electricity generation and supply figures for Scotland, Wales, Northern Ireland and England, 2003 and 2004
June	2006	High level energy indicators and quality indicators for regional and local electricity and gas estimates

Renewables

June	2005	Renewable energy in 2004
September	2005	Renewable energy in Scotland, Wales, Northern Ireland and the regions of England in 2004
March	2006	UK onshore wind capacity factors 1998-2004
June	2006	Renewable energy in 2005
June	2006	Survey control report on RESTATS
September	2006	Renewable energy in UK regions 2005

Combined Heat and Power

June	2005	Comparison of United Kingdom and European reporting of Combined Heat and Power (CHP) statistics
September	2005	CHP in Scotland, Wales, Northern Ireland and the regions of England in 2004
September	2006	CHP in UK regions 2005

CO₂

March	2005	CO ₂ Emissions and energy consumption in the UK
March	2006	CO ₂ Emissions and energy consumption in the UK