

## UNITED KINGDOM – Energy Mix Fact Sheet

### Policy Background

A European energy policy must pursue the objective of a sustainable, competitive and secure supply of energy. If the EU continues on its present course, this key objective will not be attained. In January 2007, the European Commission adopted an energy policy for Europe. This was supported by several documents on different aspects of energy and included an action plan to meet the major energy challenges Europe faces. Each European citizen must be informed of these challenges and the role they should play in meeting them.

A diversified mix of energies will increase security of supply.

### Key Issues

Until recently, the UK was largely self-reliant for energy, producing significant quantities of oil, gas and coal. The gradual depletion of oil and gas reserves and a decrease in domestic coal production has led to a growing dependence on imports. In the electricity sector, gas has replaced coal as the principal fuel. Since 2005, rapidly increasing energy prices, growing concerns on security of supply and awareness of climate change have raised the profile of energy in the UK. The Government has come out strongly in favour of new nuclear build, while some regions are putting particular focus on renewable energies (particularly wind and tidal).

### Key Figures (2004)

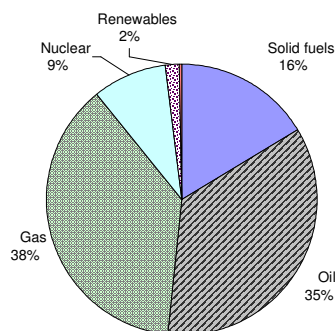
| Mtoe         | Primary Energy Supply | Domestic Production | Net Imports | Final Energy Consumption | Electricity Generation (TWh) |
|--------------|-----------------------|---------------------|-------------|--------------------------|------------------------------|
| Solid fuels  | 38.3                  | 15.6                | 22.6        | 4.7                      | 131.8                        |
| Oil          | 81.6                  | 96.9                | -12.8       | 65.2                     | 4.9                          |
| Gas          | 87.4                  | 86.4                | 1.5         | 51.0                     | 159.2                        |
| Nuclear      | 20.6                  | 20.6                |             |                          | 80.0                         |
| Electricity  |                       |                     | 0.6         | 29.2                     |                              |
| Renewables   | 3.7                   | 3.5                 | 0.2         | 0.7                      | 14.8                         |
| Other        | 0.6                   |                     |             | 1.3                      | 4.6                          |
| <b>Total</b> | <b>232.1</b>          | <b>223.1</b>        | <b>12.1</b> | <b>152.0</b>             | <b>395.3</b>                 |

### Key Indicators (2004)

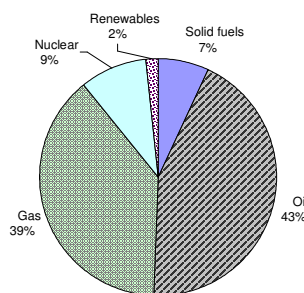
|   | UK    | EU-27 |
|---|-------|-------|
| Energy per capita (kgoe/cap)                      | 3 880 | 3 689 |
| Energy intensity (toe/MEUR '00)                   | 135   | 185   |
| Energy import dependency %                        | 5.2   | 50.1  |
| CO <sub>2</sub> Emissions (Mt)                    | 560   | 4 004 |
| CO <sub>2</sub> intensity (tCO <sub>2</sub> /toe) | 2.4   | 2.2   |
| CO <sub>2</sub> per capita (kg/cap)               | 9 365 | 8 180 |

The source for all data is the European Commission, unless otherwise stated

### 2004 Primary Energy Supply



### 2004 Domestic Production

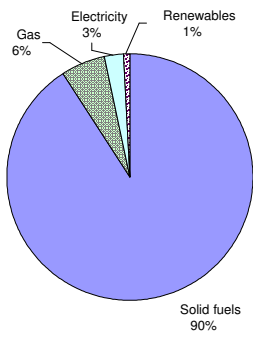
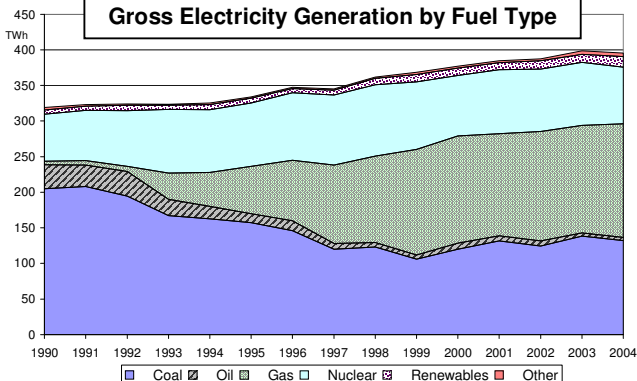
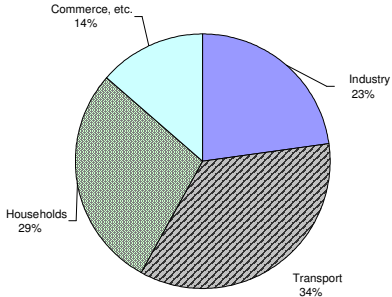


### Primary Energy Supply

Natural gas and oil dominate the UK primary energy supply, with an aggregate 73% of total. The share of natural gas has increased significantly in recent years (total increase of 85% since 1990) and is higher than for the EU-27 average (24%). Renewable sources have increased significantly, although their share is still below the EU-27 average (6%). Solid fuel consumption has decreased in recent years (40% since 1990) and is slightly below the EU-27 average (18%).

### Domestic Production

The UK is the largest producer of oil and gas in the EU. Proved oil reserves were 4 billion barrels and natural gas reserves were 0.53 trillion m<sup>3</sup> at the end of 2005 (Source: BP). The UK was also a significant producer of coal, but production has been decreasing in recent years. Total domestic production showed a 9% reduction in 2004 compared to 2003 and only renewable energies experienced an increase of 9%, with production of all other energy sources declining (oil and nuclear by 11% and gas and solid fuels by 7%).

| <p><b>Imports</b></p> <p>In 2004, the UK became a net energy importer for the first time since 1993 (although still remaining a net exporter of oil and still maintaining one of the lowest import dependencies in the EU-27). A large percentage of the imports are hard coal, the use of which has been increasing in the recent years due to the environmental restrictions in the power stations.</p> <p>Norway is a significant source of imported oil and gas for the UK. Russia is becoming a major supplier, both for oil and coal. Significant shares of low sulphur coal are also imported from South Africa and Australia.</p>   | <p><b>2004 Net Imports by Energy Product</b></p>  <table border="1"> <caption>2004 Net Imports by Energy Product</caption> <thead> <tr> <th>Energy Product</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Solid fuels</td> <td>90%</td> </tr> <tr> <td>Gas</td> <td>6%</td> </tr> <tr> <td>Electricity</td> <td>3%</td> </tr> <tr> <td>Renewables</td> <td>1%</td> </tr> </tbody> </table>             | Energy Product | Percentage | Solid fuels | 90% | Gas        | 6%  | Electricity | 3%  | Renewables     | 1%  |
|---|---|----------------|------------|-------------|-----|------------|-----|-------------|-----|----------------|-----|
| Energy Product  | Percentage  |                |            |             |     |            |     |             |     |                |     |
| Solid fuels   | 90%   |                |            |             |     |            |     |             |     |                |     |
| Gas   | 6%  |                |            |             |     |            |     |             |     |                |     |
| Electricity   | 3%  |                |            |             |     |            |     |             |     |                |     |
| Renewables  | 1%  |                |            |             |     |            |     |             |     |                |     |
| <p><b>Electricity Generation</b></p> <p>Electricity generation has been increasing steadily over the past 10 years. Environmental pressures and increased availability of natural gas has led to an increasing share of natural gas in the electricity fuel mix. Gas accounts for around 40% of total gross generation, with coal following with a 33% share. The share of nuclear has not experienced great fluctuations in the recent past and, in 2004, accounted for 20% of total generation.</p>   | <p><b>Gross Electricity Generation by Fuel Type</b></p>  <table border="1"> <caption>Gross Electricity Generation by Fuel Type (2004)</caption> <thead> <tr> <th>Fuel Type</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Coal</td> <td>33%</td> </tr> <tr> <td>Gas</td> <td>40%</td> </tr> <tr> <td>Nuclear</td> <td>20%</td> </tr> <tr> <td>Other</td> <td>7%</td> </tr> </tbody> </table>            | Fuel Type      | Percentage | Coal        | 33% | Gas        | 40% | Nuclear     | 20% | Other          | 7%  |
| Fuel Type   | Percentage  |                |            |             |     |            |     |             |     |                |     |
| Coal  | 33%   |                |            |             |     |            |     |             |     |                |     |
| Gas   | 40%   |                |            |             |     |            |     |             |     |                |     |
| Nuclear   | 20%   |                |            |             |     |            |     |             |     |                |     |
| Other   | 7%  |                |            |             |     |            |     |             |     |                |     |
| <p><b>Final Energy Consumption</b></p> <p>Final Energy Consumption in the UK has remained fairly constant in recent years. Transport is the single biggest energy-consuming sector, with 34% share in total final energy consumption in 2004 (above EU-27 average of 31%). It also exhibited the largest growth, with an increase of 18% over the period 1990-2004. Household demand has also increased to a lesser extent, whereas industrial demand has been decreasing slightly (although maintaining a share above the EU-27 average). In terms of the type of energy consumed, petroleum products and natural gas dominate, with a significant contribution also coming from electricity.</p>  | <p><b>2004 Final Energy Consumption by Sector</b></p>  <table border="1"> <caption>2004 Final Energy Consumption by Sector</caption> <thead> <tr> <th>Sector</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Transport</td> <td>34%</td> </tr> <tr> <td>Households</td> <td>29%</td> </tr> <tr> <td>Industry</td> <td>23%</td> </tr> <tr> <td>Commerce, etc.</td> <td>14%</td> </tr> </tbody> </table> | Sector         | Percentage | Transport   | 34% | Households | 29% | Industry    | 23% | Commerce, etc. | 14% |
| Sector  | Percentage  |                |            |             |     |            |     |             |     |                |     |
| Transport   | 34%   |                |            |             |     |            |     |             |     |                |     |
| Households  | 29%   |                |            |             |     |            |     |             |     |                |     |
| Industry  | 23%   |                |            |             |     |            |     |             |     |                |     |
| Commerce, etc.  | 14%   |                |            |             |     |            |     |             |     |                |     |
| <p><b>For further information</b></p> <p>If you want to find more data on the UK or other Member State energy markets, go to <a href="http://epp.eurostat.ec.europa.eu/http://ec.europa.eu/dgs/energy_transport/figures/pocketbook/2006_en.htm">http://epp.eurostat.ec.europa.eu/http://ec.europa.eu/dgs/energy_transport/figures/pocketbook/2006_en.htm</a></p> <p>Further fact sheets on the UK and other Member States can be found on: <a href="http://ec.europa.eu/energy/energy_policy/facts_en.htm">http://ec.europa.eu/energy/energy_policy/facts_en.htm</a></p>  |   |                |            |             |     |            |     |             |     |                |     |
| <p><b>What is meant by.....?</b></p> <p><i>Energy Import Dependency</i> shows the extent to which a country relies upon imports in order to meet its energy needs. It is calculated using the following formula: net imports / (primary energy supply + bunkers)</p> <p><i>Energy Intensity</i> gives an indication of the effectiveness with which energy is being used to produce added value. It is defined as the ratio of Primary Energy Supply to Gross Domestic Product</p> <p><i>Final Energy Consumption</i> is the energy finally consumed in the transport, industrial, commercial, agricultural, public and household sectors. It excludes deliveries to the energy transformation sector and to the energy industries themselves</p> <p><i>Primary Energy Supply</i>: The quantity of energy consumed within the borders of a country: primary production + recovered products + imports + stock changes - exports - bunkers (i.e. quantities supplied to sea-going ships)</p> |   |                |            |             |     |            |     |             |     |                |     |
| <p><b>Disclaimer</b></p> <p>Views expressed in this document have not been adopted or in any way approved by the European Commission and should not be relied upon as a statement of the Commission's views.</p> <p>The Commission does not guarantee the accuracy of the data included in this document, nor does it accept responsibility for any use made thereof.</p>   |   |                |            |             |     |            |     |             |     |                |     |