British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

United Kingdom Minerals Yearbook 2007

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United Kingdom Minerals Yearbook 2007

Statistical data to 2006

By L E Hetherington, N E Idoine, T J Brown, P A J Lusty, K Hitchen and T Bide

Keyworth, Nottingham: British Geological Survey 2008

BRITISH GEOLOGICAL SURVEY

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The compilers would also like to thank their colleagues in the British Geological Survey, in particular A J Hill, P Lappage, J E Thomas and J I Rayner.

Bibliographical reference

British Geological Survey. 2008. *United Kingdom Minerals Yearbook 2007.* (Keyworth, Nottingham: British Geological Survey.)

Cover photograph

Resources at the Curraghinalt vein gold deposit in County Tyrone are currently being evaluated by drilling at depth and along strike to the east of the known reserve. The photo shows the diamond drill rig on this eastern extension. BGS © NERC. Photographer: Paul McDonnell

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Preface

Policy makers, regulators, industry and the wider public all require access to reliable information on the minerals industry in Britain. Such data are provided in our annual publication, *United Kingdom Minerals Yearbook*, which brings together data on minerals production, consumption and trade, and includes an authoritative commentary on current developments in the minerals industry. It is of value to all those interested in Britain's minerals industry and its contribution to the national economy, and forms part of the long-term mining and quarrying record of the UK. In 2007, minerals issues in the UK continued to be dominated by concerns regarding security of supply (particularly for energy minerals) and by the rising cost of minerals and metals.

The recent unprecedented demand for raw materials from China and other emerging economies has contributed to the high global prices of many metals, oil, gas and coal. This has had some positive effects on UK mining but, given the UK's heavy reliance on imports of many mineral commodities, manufacturing industries are under significant pressure with regard to costs and security of access to raw materials.

In light of concerns about increased raw materials costs and security of supply, the European Commision's Directorate General for Enterprise and Industry recently commenced a public consultation on future non-energy raw materials policy. Its aim is to examine the various factors that affect the EU's long-term, sustainable supply of raw materials and develop a coherent political approach to the challenges. The main challenges that are being explored in the consultation are how to:

- increase the supply of raw materials from European sources sustainably
- ensure a sustainable and transparent supply from third countries
- encourage capacity building in developing countries
- encourage more efficient use of resources, and
- establish an adequate EU knowledge base on raw materials to monitor and forecast strategic policy and market developments.

The results of the survey will be published on their website and in the second half of 2008 the Commission will prepare a communication setting out a European strategy on non-energy raw materials.

The high price of coal has enabled some previously uneconomic sites to become commercially viable and two underground mines in South Wales have reopened. The European steelmaker, Corus, hopes to develop a new mine to supply metallurgical coal to its steelworks in Port Talbot, South Wales. If this goes ahead it will be the first new deep coal mine in Britain for 30 years. In England, there has been substantial investment by Powerfuel Ltd in the Hatfield colliery, which reopened in 2007, and UK Coal plc has committed to new investment in both the Thoresby and Kellingley collieries in order to extend the lives of these mines and increase the planned production rates.

In Northern Ireland the release in 2007 of new high-resolution airborne geophysical and geochemical datasets from the Tellus project has contributed to a marked upturn in exploration activity for metals. Currently, more than 60 per cent of the land area is either under licence, or licence application, with several companies searching for precious and base metal deposits in a variety of geological settings. Elsewhere in the UK there has been significant revival of commercial interest in known deposits, including Hemerdon (tungsten), South Crofty (tin), Parys Mountain (base metals) and Cononish (gold).

I would like to thank colleagues in the Government Statistical Service who have collaborated so readily in providing the basic data included in this volume. In addition I would like to thank the many organisations, trade associations, companies and individuals who have generously supplied additional information.

John N Ludden, PhD
Executive Director

British Geological Survey
Keyworth
Nottingham

June 2008

Contents

Maps and diagrams

Explanatory notes

Coverage: Except where otherwise stated all the statistics shown relate to the United Kingdom of Great Britain and Northern Ireland.

The Channel Islands and the Isle of Man are also included in the 'United Kingdom' overseas trade statistics, but are excluded from the production statistics. The UK part of the Continental Shelf is included in both the overseas trade and the production statistics.

All figures for the latest year shown are provisional and subject to revision.

Rounding of figures: In tables where figures have been rounded to the nearest final digit, there may be a slight discrepancy between the sums of the constituent items and the total as shown.

Units: The statistics in this volume are expressed in metric units. The following factors are given for converting from or into non-metric units:

Troy ounce	*Kilogram*
1	= 0.0311035
32.1507	= 1

Pound	*Kilogram*
1	= 0.453592
2.20462	= 1

Hundredweight	*Kilogram*
1	= 50.8023
0.019684	= 1

Long ton	*Tonne*
1	= 1.01605
0.984206	= 1

Square yard	*Square metre*
1	= 0.836127
1.19599	= 1

Cubic yard	*Cubic metre*
1	= 0.764555
1.30795	= 1

UK gallon	*Litre*
1	= 4.54596
0.2199755	= 1

Symbols: The following symbols are used throughout:

…	Figures not available
0	Quantity less than half the unit shown
—	Nil
nes	Not elsewhere specified
BGS	British Geological Survey

Apparent consumption: BGS estimates of apparent consumption of metals are based on the formula: production (primary and secondary) plus imports minus exports. All the main traded forms of the metal are taken into account, for example, ores, concentrates, intermediate products, unwrought metal and alloys, oxides, etc. Figures are given in terms of metal content. No information is available for stock changes. Such estimates of apparent consumption are made for metals for which there are no reported consumption statistics: in this edition data are given for chromium, cobalt, manganese, molybdenum, titanium and zirconium.

Trade: Trade figures from INTRASTAT, the new system for measuring intra-EC trade became available from 1993. This was introduced following the abolition of customs controls as a result of the Single Market and trade figures are now compiled from data provided directly from companies instead of Customs documents. Extra-EC trade continues to be collected from Customs declarations as before. The transition from one system to another has produced some anomalous figures in terms of the size of the trade in and unit value of certain commodities. These factors should be taken into consideration when evaluating trends. Figures given in this edition are the combined intra and extra-EC trade data.

Values of commodities are cif for imports and fob for exports.

The terms 'scrap', 'unwrought' and 'wrought' metal include alloys unless these are separately shown.

Exclusion of warranty

Sources of information

In compiling this volume the British Geological Survey has largely relied upon data originally collected by other bodies. A list of the departments and organisations concerned is given below, together with the titles of principal publications that have been used. In many cases the BGS has also been provided with supplementary or unpublished information. Interested readers are strongly advised to consult the original sources themselves wherever possible and in this connection may wish to refer not only to the publications as listed here, but also earlier issues in the same series, some of which were published under different titles.

Information about the production of minerals in the United Kingdom is given from 1853 to 1881 in a series of Geological Survey Memoirs entitled *Mineral Statistics*, by Robert Hunt, Keeper of Mining Records; earlier information for certain metalliferous minerals is also available. Since 1873 all collieries and metalliferous mines have been required by statute to complete annual returns of production, and since 1895 the same has applied to quarries. These returns were made to the Home Office, which, in 1882, was made responsible for the publication of *Mineral Statistics*. In 1920 responsibility for collection of returns was transferred to the Mines Department (Board of Trade) and statistics were subsequently published in the Annual Reports of the Secretary of Mines. The Mines Department was incorporated into the Ministry of Fuel and Power in 1942 and statistics from 1938 to 1972 were published in their Statistical Digests (subsequently the Digests of Energy Statistics of the Department of Trade and Industry). In 1973 responsibility for the collection of returns relating to most minerals other than fuels was transferred to the Business Statistics Office (formerly part of the Department of Trade and Industry, now the Office for National Statistics). The Department of Trade and Industry, and previously the Department of Energy, collects statistics relating to hydrocarbons (natural gas and crude petroleum). Statistics on coal production are now collected by The Coal Authority. Returns of sand and gravel were collected by the Department of the Environment up to 1974. Details of mineral production in Northern Ireland since 1922 have been obtained by the Northern Ireland Government.

1853–1881 *Mineral Statistics*, by Robert Hunt, Keeper of Mining Records; Memoirs of the Geological Survey
1882–1896 *Mineral Statistics*; Home Office
1897–1919 *Mines and Quarries*: General Report with Statistics; Home Office
1920 *Mines and Quarries*: General Report with Statistics; Mines Department, Board of Trade
1921–1938 *Annual Report of the Secretary of Mines*; Mines Department, Board of Trade (Great Britain only from 1922)
1938–1972 *Statistical Digest*; Ministry of Fuel and Power (Great Britain only)
1973–2006 *Digest of United Kingdom Energy Statistics*; Department of Trade and Industry, formerly published by Department of Energy
1973–1993 *Minerals (PA1007)*; Central Statistical Office
1994–2006 *Mineral Extraction in Great Britain* (PA 1007); Office for National Statistics
1922–1949 *Annual Report of the Mining and Quarrying industries in Northern Ireland*; Ministry of Commerce (Northern Ireland)
1950–1981 *Mineral Production in Northern Ireland*; Department of Commerce (Northern Ireland)
1982–1995 *Mineral Production in Northern Ireland*; Department of Economic Development (Northern Ireland)
1996–1998 *Annual Minerals Statement*; Department of Economic Development (Northern Ireland)
1999–2006 *Annual Mineral Statement*; Department of Enterprise, Trade and Investment (Northern Ireland)

Department of Trade and Industry
Digest of United Kingdom Energy Statistics (annual)
Monthly Statistics of Building Materials and Components
DTI website for energy and construction information

Office for National Statistics
Monthly Digest of Statistics
Mineral Extraction in Great Britain (annual)
United Kingdom National Accounts

HM Customs and Excise
Overseas Trade Statistics (monthly, quarterly and annual)
Guide to the Classification for Overseas Trade Statistics

Crown Estate Commissioners, The Crown Mineral Agent

Department of Enterprise, Trade & Investment (Northern Ireland)
Annual Mineral Statement

Department of Trade and Industry (Isle of Man)

Advisory and Finance Committee (Guernsey)

Valuation Office Agency
Property Market Report

UK Iron and Steel Statistics Bureau
Annual Statistics

World Bureau of Metal Statistics
World Metal Statistics (monthly)

International Fertilizer Industry Association

The Kaolin and Ball Clay Association

Quarry Products Association (QPA)

The Coal Authority

United Nations Conference on Trade and Development

Minerals in the national economy

The economic importance of individual industries, including the extractive industries, to the national economy is measured by their contribution of **gross value added** (GVA). This is a key economic indicator and refers to an increase in ability to produce goods and services. Value added is defined as the difference between the value of the output (e.g. sales revenue) and the cost of bought-in inputs used to produce it (fuel and other raw materials, but not labour). The GVA of the minerals extractive industries as a whole is included in national accounts under the heading 'Mining and quarrying', which includes the extraction of oil and gas. The GVA for 'Mining and quarrying' was £28 093 million in 2006, or 2.4 per cent of national GVA. The extraction of oil and gas accounted for £26 146 million of the total GVA for the extractive industries, the mining of coal £333 million, and other mining and quarrying £1615 million.

The estimated total value of minerals produced in 2006 in the UK, expressed as sales on an ex-works basis as opposed to gross valued added, was £35 060 million, an increase of 14.6 per cent on 2005. For the second consecutive year, this is almost entirely due to the high price of oil and gas.

UK: Value of mineral production, 2004–2006 **£ million**

	2004	2005	2006
Oil and natural gas liquids	14 461	18 340	19 845
Natural gas	7 115	8 902	11 741
Coal	800	722	705
Aggregates	1 794	1 632	1 815
Other construction minerals	311	343	330
Industrial minerals	722	655	625
Metalliferous minerals	<0.2	<0.2	<0.2
Total	**25 203**	**30 594**	**35 060**

Production of crude oil, including natural gas liquids, was 76.75 million tonnes, showing almost no change between 2006 and 2007. The increase in value of production was due to the increasing price of a barrel of oil, which continues to climb. Cumulative production of oil to the end of 2005 was 3167 million tonnes and estimated total remaining reserves in present discoveries are in the range 479 to 1254 million tonnes. In 2005 the UK became a net importer of crude petroleum and, in 2006, also a net importer of partly refined and refined petroleum products. Natural gas production declined from 80.00 million tonnes (oil equivalent) in 2006 to 72.39 million tonnes in 2007. The UK became a net importer of gas in 2004, after many years of self-sufficiency, and will become increasingly dependent on imports in the future as indigenous production continues to decline. Cumulative net natural gas production to end of 2006 was 2086 billion cubic metres and estimated remaining reserves in present discoveries are in the range 412 billion cubic metres to 967 billion cubic metres.

Coal production declined by 8.1 per cent from 18.53 million tonnes in 2006 to 17.03 million tonnes in 2007. This decrease was due to a fall in production from underground mines while opencast production increased from 8.64 million tonnes in 2006 to 8.87 million tonnes in 2007. Major power producers are importing an increasing proportion of coal for electricity generation. This has increased from 20 per cent in 1999 to 74 per cent in 2006.

Globally, the price of coal is high and this has had a positive effect on the industry. In South Wales, two mines have reopened, and Corus hopes to develop a new mine to supply metallurgical coal to its steelworks in Port Talbot. There has been substantial investment in the Hatfield colliery, which reopened in 2007, and UK Coal plc has committed to new investment in the Thoresby and Kellingley collieries to increase production and to extend the lives of these mines.

UK: Primary fuel consumption for total energy and use in electricity generation

Million tonnes of oil equivalent

	Total energy		Electricity generation	
	2005	2006	2005	2006
Coal	39.8	43.4	32.6	35.9
Petroleum	77.3	77.1	1.4	1.4
Natural gas	94.0	89.2	28.2	26.6
Nuclear	18.2	18.4	18.4	18.4
Hydroelectricity, wind,	4.1	4.6	4.0	4.0
other renewables, waste	4.7	4.9	4.0	4.2
Net electricity imports	0.7	0.6	0.7	0.6
Other fuels	-	-	1.8	1.5
Total	**234.9**	**232.1**	**87.1**	**87.5**

Total UK production of primary aggregates increased slightly from a total of 216.53 million tonnes in 2005 to 217.44 million tonnes in 2006. Sales of crushed rock aggregate and sand and gravel are estimated to have increased by five per cent and one per cent, respectively, in 2007. Several reports relating to the importance of aggregates in the UK or English economy have been published recently and these are described in the section on aggregates.

The Omagh deposit in Northern Ireland is a mesothermal quartz-sulphide vein deposit with a proven and probable reserve of 367 310 tonnes grading 7.52 grams per tonne gold over a width of 4.43 metres within the designated open pit area. The processing facility is now fully operational, producing sulphide concentrates that are exported to Canada for recovery of gold, silver and lead.

The release of new high-resolution airborne geophysical and geochemical datasets from the Tellus project in Northern Ireland has contributed to an increase in exploration activity for metals. Elsewhere in the UK, as a result of the high price of many metals, there has been a revival of commercial interest in known deposits, including Hemerdon (tungsten), South Crofty (tin), Parys Mountain (base metals) and Cononish (gold).

In 2006 there was a negative balance of trade in minerals and mineral-based products. The largest contributions to the deficit of £15 103 million were monetary gold (-£6919.4 million), petroleum, petroleum products and related materials (-£2301.2 million); coal, coke and briquettes (-£2170.6 million) and non-ferrous metals (-£1529.3 million). Mineral-based goods, including manufactured products, comprised 19.1 per cent of all imports and 22.9 per cent of all exports in 2006.

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The BGS and the Department for Communities and Local Government (DCLG) continue to work on collating UK and European mineral statistics, analysis of minerals intelligence, provision of information and advice, and raising public awareness of minerals-related issues. Much of the output of this work programme, and other projects, is made available on the *MineralsUK Centre for Sustainable Minerals Development* website, www.mineralsUK.com (mineralsUK).

The final edition of the *Guide to Mineral Safeguarding in England* is now available to be downloaded. This guide is designed to complement *Minerals Policy Statement 1: Planning and minerals*, published in November 2006, which introduced an obligation on all mineral planning authorities to define mineral safeguarding areas. It provides guidance on how current mineral safeguarding policy can be complied with and puts forward a relatively simple step-by-step methodology for delineating mineral safeguarding areas. It is intended for use principally by those involved in the preparation of mineral development plan documents and in deciding planning applications.

There are now 23 reports in the *Mineral Planning Factsheets* series, available on the *mineralsUK* website. These factsheets, funded by the DCLG-BGS Joint Minerals Information Programme, each provide an overview of a specific mineral, and although they are primarily intended to inform the land-use planning process, they contain a wealth of useful general information and statistics. The most recent additions are Metals and Underground storage, while a further four factsheets were updated in 2007.

With funding chiefly from the Aggregates Levy Sustainability Fund, BGS and other contractors commenced work on a suite of projects related to the sustainable supply of aggregates in England. The research carried out by BGS is examining the need for indigenous production of non-energy minerals in England, the options for future aggregate minerals supply and the preferred mechanism for ensuring adequate and secure supplies of aggregates will be available to the construction industry over the long term.

The *Directory of Mines and Quarries 2008* has been published. This is a compilation of information relating to over 2200 active mines, quarries and other mineral workings in the UK, Isle of Man and the Channel Islands. The book is derived from the BRITPITS database assembled from the records of BGS, the mineral planning authorities, industry sources and the Coal Authority.

The British Marine Aggregate Producers Association commissioned BGS to produce a report on the strategic role and importance of marine aggregates to the overall supply of aggregates in the UK. It focuses on the socio-economic issues associated with the production and use of marine aggregates, and their contribution to national and regional supply. The report can be downloaded from the BMAPA website, www.bmapa.org.

A guide to minerals information in the central belt of Scotland and a series of four mineral resource maps were produced for the Scottish Government. A web-based GIS was also developed to display this information against a selection of other land-use information. This can be accessed through *Digital maps* on the mineralsUK website. The information base can be used to support planning and decision making on mineral issues in accordance with key objectives of Scottish *Planning Policy 4: Planning for Minerals*.

A new set of web pages entitled *Minerals & you* was added to mineralsUK. These pages were developed to inform non-specialists about mineral commodities. They give information on the geological occurrence, extraction and processing of a range of metallic and non-metallic minerals. They explain why we need minerals, how much we use in our lifetimes and the importance of planning and recycling. The web pages are well-illustrated and include many links to information on a range of related topics.

In June 2007, BGS held the *Quarry or not?* environmental decision-making event for schools. This event, supported by DCLG and industry, presented a fictitious scenario on a proposed quarry development to sixth-form students. The students took the roles of the various stakeholders and participated in a planning inquiry on this matter with professionals working on minerals issues. The event was a success and another is being planned for 2008.

BGS's on-going Baseline Survey of the Environment (G BASE) project continues the regional geochemical mapping of mainland Britain in the south of England. The completion of the Tellus Project in Northern Ireland also means that the province now has complete coverage with high resolution geochemical maps for stream sediments, stream waters and soils. G-BASE involves the systematic collection of stream sediments, waters and soils at an average sampling density of one sample every one to two square kilometres. Soils and sediments are analysed by XRF for up to 50 elements. Waters are analysed by ICP-MS/AES and other methods for 43 elements and selected ions. Data are stored in the BGS Geochemistry Database which currently has nearly half-a-million samples registered, 60 per cent of these originate from G-BASE, 35 per cent from the old Mineral Reconnaissance Programme and five per cent from other sources. There are now some eight million analyte determinations stored in the database. The G BASE results have been presented in the form of regional atlases of which 14 have been published to date; the analytical data are available for use under licence. Geochemical sampling sites can be found in the geochemistry layer of the BGS GeoIndex (http://www.bgs.ac.uk/geoindex). With the upsurge in worldwide mineral exploration activity there has been an increase in enquiries relating to the availability of G-BASE samples including the comprehensive coverage of 85 per cent of the UK with panned concentrate samples.

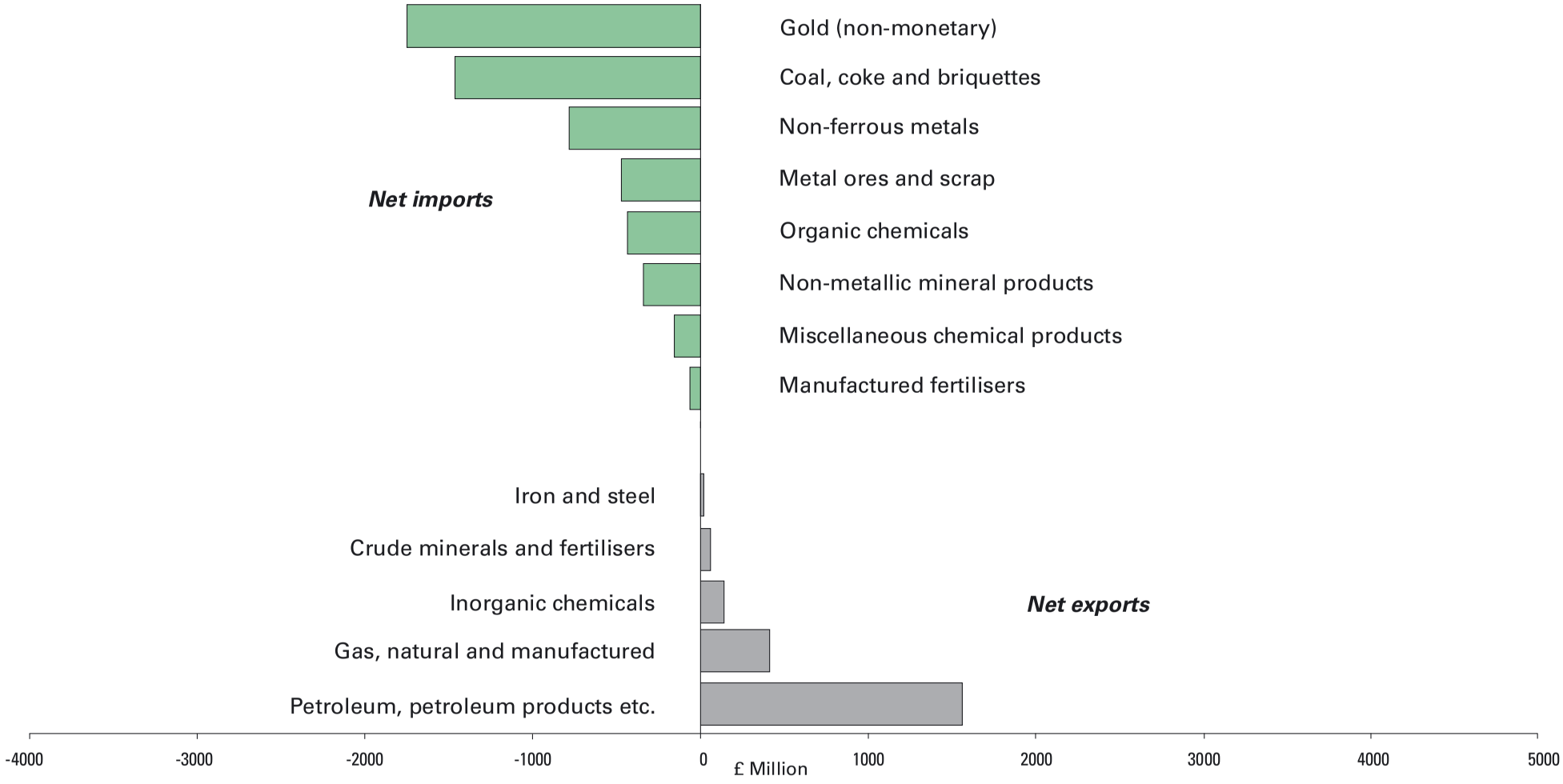
Trade in minerals and mineral-based products compared with total trade 2000–2006

£ million

SITC section		2000	2001	2002	2003	2004	2005	2006
	Imports (c i f)							
0, 1	Food, beverages, tobacco	16 936.7	18 138.7	19 046.8	20 727.8	21 763.3	23 291.4	24 685.3
2, 4	Basic materials	6 899.6	7 037.4	6 513.9	6 733.6	6 968.6	7 366.7	7 673.5
	of which: Minerals	2 378.7	2 595.1	1 995.7	1 980.8	2 233.4	2 619.9	3 420.9
3	Fuels and related materials	9 700.4	10 202.4	9 590.4	11 162.8	16 209.1	23 535.0	29 531.8
	of which: Mineral-based	9 327.8	10 023.2	9 390 3	10 991.9	15 862.9	23 092.9	27 098.4
	Manufactured goods:							
5, 6	Semi-manufactures	51 733.3	54 950.5	54 973.4	57 949.8	62 171.0	64 754.7	71 723.1
	of which: Mineral-based	22 366.8	22 683.5	21 367.1	22 473.7	25 272.4	27 017.6	31 348.9
7, 8	Finished manufactures	135 711.7	136 538.3	136 303.1	138 263.3	144 032.6	151 715.1	166 367.3
9	Other (a)	3 936.6	3 912.1	5 352.3	6 113.7	3 884.1	1 847.1	24 977.9
	of which: Mineral-based	2 248.4	2 791.1	4 060.6	4 750.5	2 334.1	221.3	230.5
	Total	**224 918.3**	**230 779.4**	**231 779.9**	**240 951.0**	**255 028.6**	**272 510.0**	**324 958.9**
	All traded goods							
	of which: Mineral-based	36 321.7	38 093.0	36 813.6	40 196.9	45 702.8	52 951.7	62 098.7
	As % of all traded goods	16.2	16.5	15.9	16.7	17.9	19.4	19.1
	Exports (f o b)							
0, 1	Food, beverages, tobacco	9 916.5	9 695.0	10 035.8	10 879.8	10 615.2	10 690.2	11 080.1
2, 4	Basic materials	2 586.9	2 582.5	2 862.9	3 318.3	3 759.6	3 982.7	4 906.1
	of which: Minerals	1 207.2	1 267.2	1 374.6	1 673.2	2 064.2	2 186.1	2 893.7
3	Fuels and related materials	15 996.6	15 554.8	15 143.2	15 588.9	16 795.5	20 131.0	23 976.1
	of which: Mineral-based	15 991.5	15 552.1	15 042.4	15 421.9	16 644.7	20 030.0	23 872.3
	Manufactured goods:							
5, 6	Semi-manufactures	47 781.0	50 514.3	50 413.0	54 506.2	56 528.5	60 079.2	65 327.6
	of which: Mineral-based	20 700.9	21 247.6	20 011.6	21 103.8	22 932.3	25 962.2	28 775.7
7, 8	Finished manufactures	109 906.4	110 573.0	107 840.1	103 372.5	102 050.3	115 724.9	137 485.6
9	Other (a)	2 901.6	2 251.0	1 449.2	1 144.7	1 605.3	1 910.6	1 599.6
	of which: Mineral-based	1 301.5	1 301.9	479.2	399.0	826.1	878.6	378.1
	Total	**189 089.0**	**191 170.6**	**187 744.2**	**188 810.3**	**191 354.4**	**212 518.6**	**244 375.2**
	All traded goods							
	of which: Mineral-based	39 201.2	39 368.9	36 907.8	38 597.9	42 467.4	49 056.9	55 919.7
	As % of all traded goods	20.7	20.6	19.7	20.4	22.2	23.1	22.9

(a) Including non-monetary gold.

United Kingdom balance of trade in minerals and mineral-based products (2002–2006 average)



Balance of trade in minerals and mineral-based products 2002–2006

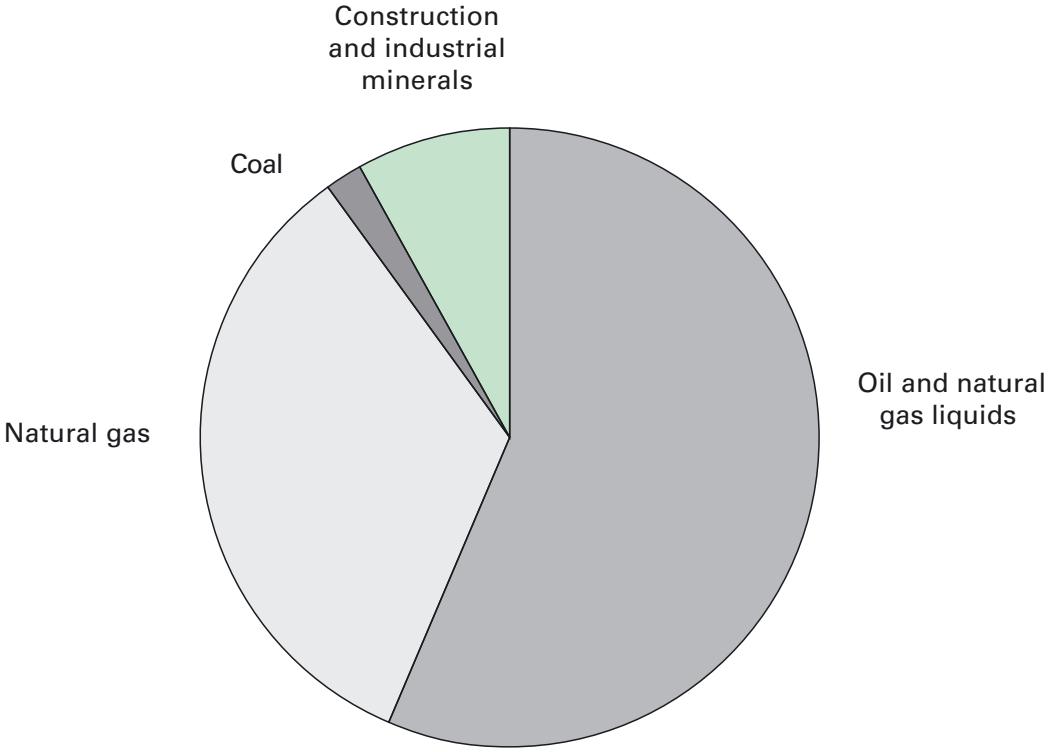
£ million (a)

SITC (R3) divisions		2002	2003	2004	2005	2006
27	Crude minerals and fertilisers:					
	imports	366.1	372.6	385.5	396.9	491.4
	exports	442.9	478.9	467.7	461.2	470.5
		+76.8	+106.3	+82.2	+64.4	–20.9
28	Metal ores and scrap:					
	imports	1 629.6	1 608.2	1 847.9	2 223.0	2 929.5
	exports	931.7	1 194.3	1 596.5	1 724.8	2 423.1
		–697.9	–413.9	–251.4	–498.2	–506.4
32	Coal, coke and briquettes:					
	imports	898.7	1 023.1	1 512.4	1 992.9	2 225.9
	exports	65.2	57.9	64.1	72.2	55.3
		–833.5	–965.2	–1 448.2	–1 920.7	–2 170.6
33	Petroleum, petroleum products and related materials:					
	imports	8 134.4	9 743.7	13 514.4	19 126.4	24 125.0
	exports	13 471.1	13 654.3	15 108.9	18 419.1	21 823.7
		+5 336.7	+3 910.5	+1 594.4	–707.3	–2 301.2
34	Gas, natural and manufactured:					
	imports	357.1	225.1	836.1	1 973.7	2 747.6
	exports	1 506.1	1 709.8	1 471.7	1 538.7	1 993.2
		+1 149.0	+1 484.7	+635.6	–434.9	–754.3
51	Organic chemicals:					
	imports	5 828.2	6 252.0	6 940.3	7 350.6	7 883.8
	exports	5 551.6	5 906.8	5 963.1	6 629.5	8 018.4
		–276.6	–345.2	–977.2	–721.2	+134.6
52	Inorganic chemicals:					
	imports	1 079.2	1 110.2	1 379.2	1 503.4	2 132.5
	exports	1 352.3	1 421.3	1 502.9	1 522.0	2 117.3
		+273.1	+311.1	+123.7	+18.6	–15.3
56	Manufactured fertilisers:					
	imports	129.5	169.4	164.7	142.5	144.9
	exports	81.0	88.8	81.0	80.6	87.3
		–48.5	–80.5	–83.7	–61.9	–57.7
53–59 (part)	Miscellaneous chemical products:					
	imports	2 753.5	2 945.1	3 179.9	3 386.2	3 588.5
	exports	2 647.6	2 560.7	2 726.9	3 761.3	3 359.3
		–105.9	–384.3	–453.0	+375.0	–229.2
66	Non-metallic mineral products:					
	imports	5 687.2	5 890.8	6 335.7	6 954.8	7 165.0
	exports	5 668.5	6 032.9	5 891.3	6 499.3	6 231.7
		–18.7	+142.1	–444.3	–455.5	–933.3
67	Iron and steel:					
	imports	2 411.3	2 538.2	3 405.9	3 456.0	3 873.9
	exports	2 027.0	2 423.5	3 339.8	4 081.6	3 918.8
		–384.3	–114.7	–66.1	+625.7	+44.9
68	Non-ferrous metals:					
	imports	3 368.1	3 467.0	3 752.7	4 086.5	6 369.5
	exports	2 572.8	2 582.2	3 234.7	3 881.3	4 840.2
		–795.3	–884.8	–518.0	–205.1	–1529.3
69	Manufactures of metal:					
	imports (b)	110.1	101.1	114.1	137.6	190.9
	exports (b)	110.8	87.5	102.5	161.2	202.8
		+0.7	–13.6	–11.5	+23.6	+11.9
96	Coin other than gold:					
	imports	3.8	2.0	1.9	2.5	3.3
	exports	16.2	19.5	26.5	36.2	29.3
		+12.4	+17.5	+24.6	+33.7	+26.0
97	Gold (non-monetary):					
	imports	4 056.8	4 748.5	2 332.2	218.8	227.2
	exports	463.0	379.4	799.6	842.4	348.8
		–3 593.8	–4 369.0	–1 532.5	+623.6	+116.9
	Total					
	imports	**36 813.6**	**40 196.9**	**45 702.8**	**52 951.7**	**64 098.7**
	exports	**36 907.8**	**38 597.9**	**42 377.4**	**49 711.3**	**55 919.7**
		+94.2	**–1 599.0**	**–3 325.4**	**–3 240.4**	**–8 179.0**
	Gold (monetary):					
	imports	996.0	2 408.5	2 619.0	2 686.4	8 148.7
	exports	528.2	126.6	389.3	3 497.0	1 229.3
		–467.8	–2 281.9	–2 229.6	+810.6	–6 919.4
	Grand total					
	imports	**37 809.6**	**42 605.4**	**48 321.7**	**55 638.1**	**72 247.4**
	exports	**37 436.0**	**38 724.5**	**42 766.7**	**53 208.3**	**57 149.0**
		–373.6	**–3 880.8**	**–5 555.0**	**–2 429.8**	**–15 098.4**

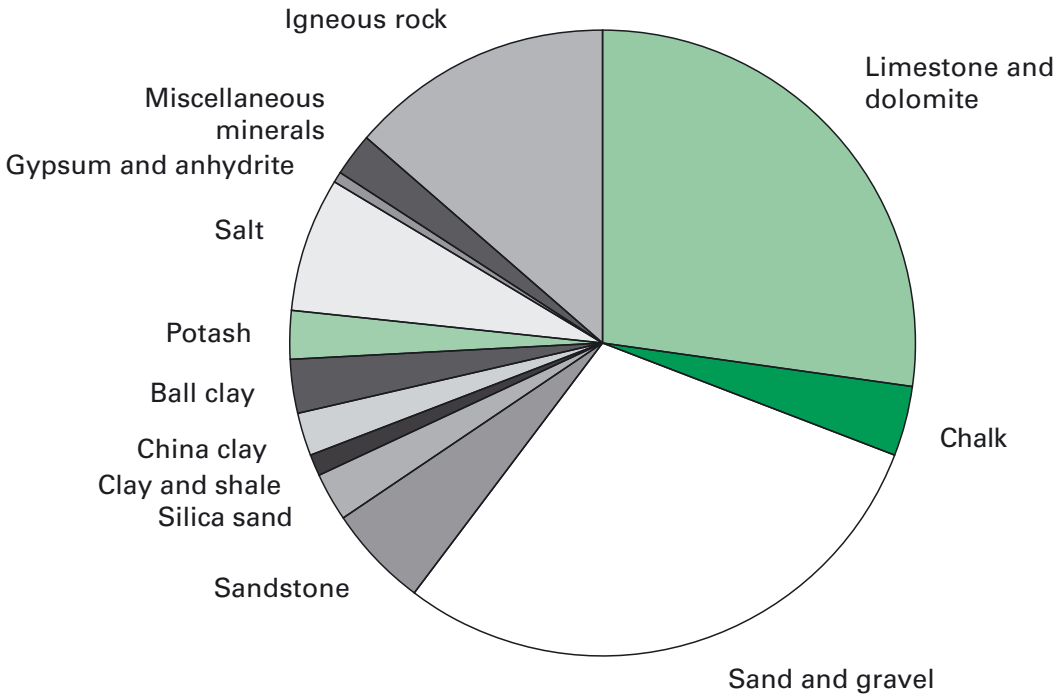
(a) Imports are valued c i f and exports are valued f o b.

(b) Consists of semi-manufactures and articles of beryllium, cobalt, cadmium, magnesium, molybdenum, tantalum, titanium, tungsten, zirconium and other base metals not elsewhere included.

Value of United Kingdom minerals production 2006
(total value £35 060 million)



Value of United Kingdom construction and industrial minerals production 2006
(total value £2769 million)



Approximate value (a) of minerals produced in the United Kingdom 1999–2006

£ million

Mineral	1999	2000	2001	2002	2003	2004	2005	2006
Coal	1 076	916	1 028	889	794	800	722	705
Natural gas	5 031	6 606	8 140	8 199	7 554	7 115	8 902	11 741
Natural gas liquids	727	1 117	963	894	1 105	1 037	1 684	1 910
Crude petroleum	10 257	16 275	13 646	13 629	13 365	13 424	16 656	17 935
Iron ore	0	0	0	0	0	0	0	0
Tin	—	—	—	—	—	—	—	—
Other non-ferrous metals	0	0	0	0	0	0	0	0
Sand and gravel	597	619	677	707	719	722	746	818
Limestone and dolomite	670	662	702	670	685	756	687	756
Igneous rock	312	320	328	336	366	396	335	374
Sandstone	95	98	119	108	133	157	146	143
Chalk	56	46	69	72	88	112	112	101
Common clay and shale	22	19	19	19	24	25	27	27
China clay	242	234	187	192	168	195	107	64
Ball clay	45	50	47	44	43	46	51	81
Fuller's earth	7	7	5	5	4	3	1	—
Salt	146	153	152	148	192	217	222	195
Silica sand	54	51	54	53	56	67	58	72
Potash	74	76	67	68	83	68	72	64
Fluorspar	5	4	5	5	6	5	5	7
Gypsum and anhydrite	13	13	15	17	17	19	17	19
Miscellaneous minerals	35	36	41	40	39	39	44	49
Total	**19 464**	**27 302**	**26 264**	**26 095**	**25 441**	**25 203**	**30 594**	**35 060**
At 2003 constant prices								
Coal	1 184	995	1 092	916	794	780	688	656
Oil and gas	17 618	26 056	24 175	23 425	22 024	21 029	25 969	29 382
Metals	0	0	0	0	0	0	0	0
Construction and industrial minerals	2 611	2 593	2 643	2 561	2 623	2 755	2 507	2 577
Total	**21 413**	**29 644**	**27 911**	**26 902**	**25 441**	**24 564**	**29 165**	**32 615**

(a) Calculated on an ex-works sales basis.

Source: British Geological Survey.

United Kingdom approximate value of minerals produced onshore and offshore 1999–2006

£ million

	1999	2000	2001	2002	2003	2004	2005	2006
Onshore	3 624	3 609	3 756	3 538	3 519	3 787	3 574	3 673
Offshore	15 780	23 629	22 433	22 482	21 839	21 416	27 019	31 387
Total	**19 464**	**27 302**	**26 264**	**26 095**	**25 441**	**25 203**	**30 594**	**35 060**

Source: British Geological Survey.

United Kingdom mining and quarrying: Gross value added (a) 1999–2006

£ million

	1999	2000	2001	2002	2003	2004	2005	2006
Production								
Mining and quarrying								
Mining and quarrying of energy producing materials								
Mining of coal	642	611	548	534	468	385	369	333
Extraction of mineral oil and natural gas	14 694	22 283	20 940	20 006	19 542	19 845	23 084	26 146
Other mining and quarrying	1 716	1 795	1 760	1 474	1 524	1 646	1 656	1 615
Total mining and quarrying	17 052	24 689	23 252	22 011	21 534	21 876	25 110	28 093
All industries	800 611	840 979	882 753	930 297	985 558	1 044 165	1 096 629	1 154 959
of which: minerals related (%)	2	3	3	2	2	2	2	2

(a) At current basic prices.

Source: Office for National Statistics.

United Kingdom employment in the minerals industry, 2006

Number

	Great Britain (a)			Northern Ireland
Mineral	Mines (d)	Quarries	Total	
Ball clay	—	…	…	—
Calcspar	—	—	—	—
Chalk	—	390	390	(b)…
Chert and flint	—	…	…	—
China clay	—	…	…	—
Clay and shale	—	677	677	(b)…
Coal	3 749	1 863	5 546	—
Dolomite	—	486	486	—
Fireclay	…	…	13	(b)…
Fuller's earth	—	—	—	—
Gypsum and anhydrite	…	…	…	—
Igneous rock	—	1 920	1 920	214
Limestone	—	2 933	2 933	225
Oil and gas	—	—	(c)	—
Peat	—	181	181	—
Potash	…	…	…	—
Salt	…	…	…	(b)…
Sand and gravel	—	3 517	3 517	247
Sandstone	—	1 434	1 434	312
Silica sand	…	…	325	—
Silica stone	…	…	…	—
Slate	…	…	…	—
Soapstone and talc	…	…	…	—
Others	…	…	2 351	448
Total	**…**	**…**	**…**	**1 446**

(a) Where more than one mineral is extracted at a mine or quarry all employment is attributed to the chief mineral.
(b) Included with 'Others'.
(c) The United Kingdom Offshore Operators Association (UKOOA) estimates the workforce employed on the UK Continental Shelf at 290 000, of which 30 000 are directly employed by exploration and production companies.
(d) Including surface and underground workers at mines.

Sources: Office for National Statistics, Department of Enterprise Trade and Investment (Northern Ireland), The Coal Authority Department of Trade and Industry

United Kingdom production of minerals 2001–2007

Thousand tonnes

Mineral	2001	2002	2003	2004	2005	2006	2007 (Estimated)
Coal:							
Deep-mined	17 347	16 391	15 633	12 542	9 563	9 444	**7 674**
Opencast	14 166	13 148	12 126	11 993	10 445	8 635	**8 866**
Other (a)	417	450	520	561	490	449	**490**
Natural gas and oil:							
Methane (oil equivalent)							
Colliery	63	60	79	70	65	66	**…**
Onshore	193	433	422	270	151	91	**72 385**
Offshore	105 614	103 154	102 425	96 071	88 003	79 856	
Crude oil							
Onshore	2 921	2 673	2 198	1 941	1 648	1 379	**70 276**
Offshore	105 465	104 757	95 637	85 575	75 530	68 287	
Condensates and other (c)							
Onshore	139	115	89	66	49	41	**6 475**
Offshore	8 153	8 399	8 149	7 792	7 493	6 872	
Iron ore	0.5	0.4	(h) 0.5	(h) 0.5	0.4	0.4	**0.3**
Non-ferrous ores (metal content):							
Tin	—	—	—	—	—	—	—
Lead	(h) 0.8	(h) 0.7	(h) 0.7	(h) 0.5	(h) 0.4	(h) 0.4	**0.1**
Zinc	—	—	—	—	—	—	**—**
Gold (kg)	…	…	…	…	…	…	
Chalk (e)	8 205	8 587	8 066	7 997	7 105	7 376	**7 400**
Clay and shale (e)	10 426	10 306	10 680	11 164	10 898	10 432	**10 000**
Igneous rock (j) (k)	51 501	51 225	51 356	53 037	53 104	53 954	**57 000**
Limestone (excluding dolomite)	88 238	80 688	78 935	81 641	77 596	78 697	**95 000**
Dolomite (excluding limestone)	14 314	12 946	12 167	12 226	11 514	12 101	
Sand and gravel:							
Land	80 793	75 401	72 984	78 145	75 171	71 418	**93 000**
Marine (i)	20 604	19 023	18 227	19 188	19 495	20 689	
Sandstone	19 967	18 362	18 259	18 844	18 685	18 038	**19 000**
Slate (g)	551	742	832	901	928	865	**870**
Ball clay (sales)	999	921	885	965	1 011	1 015	**1 022**
Barytes	(h) 66	(h) 59	(h) 57	61	64	48	**53**
Calcspar	12	(h) 10	—	—	—	—	**—**
Chert and flint	2	2	…	2	2	2	**2**
China clay (sales) (d)	2 204	2 163	2 097	1 945	1 911	1 762	**1 671**
China stone	3	2	3	2	2	1	**1**
Fireclay (e)	459	491	528	402	395	228	**200**
Fluorspar (h)	50	53	56	50	56	50	**45**
Fuller's earth (sales) (d) (f)	52	44	34	28	6	—	—
Gypsum (natural)	(h) 1 700	(h) 1 700	(h) 1 700	1 686	(h) 1 700	(h) 1 700	**1 700**
Lignite	…	…	…	…	…	…	…
Peat (000 m^3)	1 814	973	2 008	1 262	1 505	1 593	**1 600**
Potash (b)	882	900	1 040	912	732	712	**716**
Rock salt (h)	1 900	1 500	1 700	2 000	2 000	2 000	**2 000**
Salt from brine (h)	1 100	1 000	1 000	1 000	1 000	1 000	**1 000**
Salt in brine (h) (l)	3 000	3 200	3 200	2 800	2 800	2 800	**2 800**
Silica sand	3 848	3 833	4 073	5 011	4 146	5 174	**5 200**
Talc	5	6	6	4	6	4	**3**

(a) Slurry etc. recovered from dumps, ponds, rivers etc.
(b) Marketable product (KCl).
(c) Including ethane, propane and butane, in addition to condensates.
(d) Dry weight.
(e) Excluding a small production in Northern Ireland.
(f) BGS estimates based on data from producing companies.
(g) Slate figures include waste used for constructional fill and powder and granules used in industry.
(h) BGS estimate.
(i) Including marine-dredged landings at foreign ports (exports); see p.93.
(j) Excluding a small production of granite in Northern Ireland.
(k) In addition, the following amounts of igneous rock were produced in Guernsey (thousand tonnes): 2001: 134; 2002: 138; 2003: 142, 2004: 149; 2005: 129; 2006: 136 and Jersey: 2001: 365; 2002: 370; 2003: 290; 2004: 310; 2005: 305; 2006: 286
(l) Used for purposes other than salt making.

Sources: Office for National Statistics, Department of Trade and Industry, Dept. of Enterprise, Trade & Investment (Northern Ireland), Crown Estate Commissioners (marine sand and gravel produced for export),and company data.

England production of minerals 2000–2006

Thousand tonnes

Mineral	2000	2001	2002	2003	2004	2005	2006
Coal:							
Deep-mined	(e) 15 800	(e) 15 900	(e) 15 600	15 044	12 081	9 011	7 452
Opencast	(e) 4 800	(e) 4 800	(e) 5 000	4 068	3 037	1 456	1 619
Other (a)	…	…	…	…	…	…	…
Natural gas and oil:							
Methane (oil equivalent)							
Colliery	…	…	…	…	…	…	…
Onshore	…	…	…	…	…	…	…
Offshore	…	…	…	…	…	…	…
Crude oil							
Onshore	…	…	…	…	…	…	…
Offshore	…	…	…	…	…	…	…
Condensates and other (c)	…	…	…	…	…	…	…
Iron ore	1	1	1	1	(e) 0.5	(e) 0.5	—
Non-ferrous ores (metal content):							
Tin	—	—	—	—	—	—	—
Lead	(e) 1.0	(e) 0.8	(e) 0.7	(e) 0.7	(e) 0.5	(e) 0.4	(e) 0.4
Zinc	—	—	—	—	—	—	—
Chalk	9 213	8 205	8 587	8 066	7 997	7 105	7 376
Clay and shale (b)	9 577	9 221	9 226	10 021	10 357	10 074	9 437
Igneous rock	20 435	22 647	21 889	21 878	20 174	20 576	22 076
Limestone (j)	74 954	79 902	73 528	69 507	72 173	67 325	67 356
Dolomite (k)	11 120	…	…	10 327	…	…	10 238
Sand and gravel:							
Land	63 196	62 177	59 633	58 484	62 735	58 926	56 148
Marine (g)	20 391	19 388	17 878	16 997	17 939	18 383	19 602
Sandstone	7 401	7 201	7 006	7 005	7 076	6 910	7 041
Slate (i)	…	…	…	…	…	…	…
Anhydrite	…	…	…	…	…	…	…
Ball clay (sales)	1 069	999	921	885	965	1 011	1 015
Barytes	…	…	…	…	…	…	…
Calcspar	…	12	(e) 10	—	—	—	…
Chert and flint	…	2	2	…	2	2	…
China clay (sales) (l)	2 376	2 204	2 163	2 097	1 945	1 911	1 762
China stone	4	3	2	2	2	2	
Fireclay	547	419	449	483	338	346	213
Fluorspar (e)	36	50	53	56	50	44	133
Fuller's earth (sales) (h) (l)	66	52	44	34	28	6	—
Gypsum (natural)	(e) 1 500	(e) 1 700	(e) 1 700	(e) 1 700	1 686	(e) 1 700	(e) 1 701
Lignite	…	…	…	…	…	…	…
Peat (000 m^3)	1 259	1 460	857	1 228	903	928	857
Potash (d)	966	882	900	1 040	912	732	712
Potter's clay	…	…	…	…	…	…	…
Rock salt	…	…	…	…	…	…	…
Salt from brine (e)	1 100	1 100	1 000	1 000	1 000	1 000	1 000
Salt in brine (e) (f)	3 000	3 000	3 200	3 200	2 800	2 800	2 800
Silica sand	3 599	3 343	3 349	3 588	4 525	3 572	4 540
Silica stone and ganister	…	…	…	…	1	…	…

(a) Slurry etc. recovered from dumps, ponds, rivers etc.
(b) Including potter's clay.
(c) Including ethane, propane and butane, in addition to condensates.
(d) Marketable product (KCl).
(e) BGS estimate.
(f) Used for purposes other than salt making.
(g) Including marine-dredged landings at foreign ports (exports); see p.87.
(h) BGS estimates based on data from producing companies.
(i) Slate figures include waste used for constructional fill and powder and granules used in industry.
(j) Including dolomite for constructional uses.
(k) Dolomite and magnesian limestone used for constructional and agricultural purposes as well as for refractory, chemical and other purposes specifically dependent on the high magnesium content.
(l) Dry weight.

Sources: Office for National Statistics, Department of Trade and Industry, Crown Estate Commissioners (marine sand and gravel produced for export) and company data.

Wales production of minerals 2000–2006

Thousand tonnes

Mineral	2000	2001	2002	2003	2004	2005	2006
Coal:							
Deep-mined	(e) 700	(e) 700	(e) 800	589	461	552	253
Opencast	(e) 1 500	(e) 1 200	(e) 1 000	1 189	1 405	1 235	1 060
Other (a)	…	…	…	…	…	…	…
Natural gas and oil:							
Methane (oil equivalent)							
Colliery	…	…	…	…	…	…	…
Onshore	—	—	—	—	—	—	—
Offshore	…	…	…	…	…	…	…
Crude oil							
Onshore	—	—	—	—	—	—	—
Offshore	…	…	…	…	…	…	…
Condensates and other (b)	…	…	…	…	…	…	…
Non-ferrous ores (metal content):							
Gold	—	—	—	—	—	—	—
Clay and shale	351	365	382	348	445	354	604
Igneous rock	2 743	2 372	2 111	2 507	2 295	2 364	2 596
Limestone (d)	15 543	14 238	12 850	13 208	12 926	12 759	13 707
Dolomite (f)	…	…	…	…	…	…	…
Sand and gravel:							
Land	1 658	1 670	1 613	1 503	1 871	1 634	1 528
Marine	1 280	1 216	1 145	1 230	1 249	1 112	1 087
Sandstone	2 941	3 094	3 136	3 179	3 241	3 233	3 415
Slate (c)	…	…	…	…	…	…	…
Fireclay	—	—	—	—	30	—	—
Silica sand	…	…	…	…	…	51	92

(a) Slurry etc. recovered from dumps, ponds, rivers etc.
(b) Including ethane, propane and butane, in addition to condensates.
(c) Slate figures include waste used for constructional fill and powder and granules used in industry.
(d) Including dolomite for constructional uses.
(e) BGS estimate.
(f) Dolomite and magnesian limestone used for constructional and agricultural purposes as well as for refractory, chemical and other purposes specifically dependent on the high magnesium content.

Sources: Office for National Statistics, Department of Trade and Industry and company data.

Scotland production of minerals 2000–2006

Thousand tonnes

Mineral	2000	2001	2002	2003	2004	2005	2006
Coal:							
Deep-mined	(e) 700	(e) 700	—	—	—	—	—
Opencast	(e) 7 100	(e) 8 200	(e) 7 100	6 869	7 547	7 753	6 188
Other (a)	…	…	…	…	…	…	…
Natural gas and oil:							
Methane (oil equivalent)							
Colliery	…	…	…	…	…	…	…
Onshore	…	…	—	—	—	—	—
Offshore	…	…	…	…	…	…	…
Crude oil							
Onshore	—	—	—	—	—	—	—
Offshore	…	…	…	…	…	…	…
Condensates and other (b)	…	…	…	…	…	…	…
Clay and shale	910	839	698	311	362	469	390
Igneous rock	21 455	20 034	20 543	20 920	23 724	23 052	23 194
Limestone (d)	1 722	1 733	1 635	1 730	1 746	1 746	1 534
Dolomite (f)	…	…	…	…	…	…	…
Sand and gravel (land-won)	10 022	10 753	8 643	8 103	8 455	8 808	8 592
Sandstone	1 715	1 603	1 645	1 481	1 613	1 466	1 372
Slate (c)	…	…	…	…	…	…	…
Barytes	…	…	…	…	…	…	…
Fireclay	48	40	42	45	35	49	15
Honestone	…	—	…	…	—	…	…
Peat (000 m^3)	367	355	117	779	359	577	736
Silica sand	…	…	…	…	…	522	542
Talc	5	5	6	6	4	6	4

(a) Slurry etc. recovered from dumps, ponds, rivers etc.
(b) Including ethane, propane and butane, in addition to condensates.
(c) Slate figures include waste used for constructional fill and powder and granules used in industry.
(d) Including dolomite for constructional uses.
(e) BGS estimate.
(f) Dolomite and magnesian limestone used for constructional and agricultural purposes as well as for refractory, chemical and other purposes specifically dependent on the high magnesium content.

Sources: Office for National Statistics, Department of Trade and Industry and company data.

Northern Ireland mineral production by county 2006

Thousand tonnes

County	Limestone	Sand & gravel	Basalt & igneous rock (a)	Sandstone	Others (b)	Total
Down	—	226	—	5 162	12	5 400
Antrim	296	1 056	4 249	—	523	6 123
Armagh	433	299	310	1 049	1 039	3 130
Fermanagh	4 491	79	—	—	3	4 573
Londonderry	101	1 330	1 155	—	4	2 591
Tyrone	1 064	2 160	372	—	116	3 712
Total	**6 385**	**5 150**	**6 087**	**6 211**	**1 698**	**25 530**

(a) Excluding granite.
(b) Including rock salt, chalk, fireclay, granite, clay and shale, and bauxite.

Source: Department of Enterprise, Trade and Investment.

Minerals produced in Northern Ireland, the Isle of Man, Guernsey and Jersey 2002–2006

Thousand tonnes

	2002	2003	2004	2005	2006
Northern Ireland					
Limestone	4 514	4 887	5 634	5 588	6 385
Sand and gravel	5 512	4 894	5 084	5 803	5 150
Basalt and igneous rock (a)	6 681	6 051	6 844	7 112	6 087
Sandstone	6 574	6 594	6 915	7 076	6 211
Granite					
Clay and shale					
Others (b)	242	1 055	1 266	2 090	1 698
Total	**23 523**	**23 481**	**25 743**	**27 669**	**25 530**
Isle of Man (c)					
Limestone	127	97	93	89	110
Sand and gravel	326	302	275	197	358
Igneous rock	197	123	120	81	66
Slate	46	58	73	55	69
Total	**696**	**581**	**562**	**422**	**602**
Guernsey					
Igneous rock	138	142	149	129	136
Jersey					
Igneous rock (d)	370	290	310	305	286
Sand and gravel	83	73	71	70	75

(a) Excluding granite.
(b) Including rock salt, chalk, fireclay, granite, clay and shale, and bauxite.
(c) Year ended 12 November.
(d) Excluding granite and clay and shale.

(d) BGS estimates.

Sources: Dept. of Enterprise, Trade & Investment (Northern Ireland), Department of Trade and Industry (Isle of Man), Advisory and Finance Committee (Guernsey).

United Kingdom mineral production by underground mining 2005–2007 (a)

Thousand tonnes

	2004	2005	2006	2007
Coal	12 542	9 563	9 444	7 674
Brine Salt (b)	3 800	3 800	3 800	3 800
Rock Salt (b)	2 000	2 000	2 000	2 000
Potash	912	732	712	716
Gypsum	1 500	1 500	1 500	1 500
Other minerals (b) (c)	270	220	162	168
	21 024	**17 815**	**17 618**	**15 858**

(a) Figures exclude hydrocarbons
(b) BGS estimate
(c) 'Other minerals' include: silica sand, limestone, barytes, fluorspar, slate and hematite.

Area of land permitted for mineral working in England in 1994 and 2000

Hectares

Mineral type	Surface working		Underground mining		Areas of pithead	
	Area in 1994	Area in 2000	Area in 1994	Area in 2000	Area in 1994	Area in 2000
Ball clay (a)	—	1 066	—	—	—	—
Chalk	2 926	2 339	—	—	—	—
China clay	2 201	4 262	—	—	—	—
Clay/shale	9 107	8 430	1 339	466	7	3
Coal (opencast)	7 568	3 390	—	—	—	—
Coal (under GPDO)	—	—	184 643	163 675	1 445	775
Coal (specific planning permission)	—	—	49 545	50 400	360	362
Gypsum/anhydrite	718	368	38 215	14 894	117	125
Igneous rock	1 973	2 676	—	—	—	—
Ironstone	13 029	16 087	1 911	8 465	74	103
Limestone/dolomite	11 401	11 418	748	798	5	5
Oil/gas/coalbed methane (b)	185	166	—	—	—	—
Peat	5 661	5 263	—	—	—	—
Salt (incl. brine pump)	—	—	2 300	2 769	20	11
Sand & gravel (construction)	29 828	27 007	—	—	—	—
Sand (industrial/silica)	1 945	1 847	—	—	—	—
Sandstone	3 305	4 183	—	—	—	—
Slate	511	470	—	(c) 1	—	(c) 0
Vein minerals	2 614	23 827	376 360	29 781	30	47
Other minerals	1 053	845	5 565	13 938	34	32
Totals (d)	**94 025**	**113 644**	**660 626**	**285 187**	**2 092**	**1 463**
Estimated Totals (e)	**118 296**	**113 644**	**660 626**	**285 187**	**2 092**	**1 463**

(a) Ball clay included as a separate mineral for the first time in 2000, previously under 'clay/shale'.
(b) Coalbed methane added in to this category for the first time in 2000. In 1994, oil/gas were split into 'exploration/appraisal' and 'production' categories, but were combined in 2000.
(c) Slate was only a separate mineral category in 2000.
(d) Based on published 1994 data.
(e) Estimate, taking into account older permissions for which accurate information was not available in 1994.

Source: *Survey of Land for Mineral Workings in England 2000,* Department for Transport, Local Government and the Regions.

Mineral bearing land royalty values (a)

Pence per tonne

Commodity/region	2004 (b)		2006 (c)		2007 (d)	
	Typical maximum	Typical minimum	Typical maximum	Typical minimum	Typical maximum	Typical minimum
Sand and gravel						
South East	300	130	260	110	260	110
Eastern	220	120	220	120	220	120
South West	185	70	200	75	200	75
East Midlands	160	80	180	80	180	80
West Midlands	170	110	170	110	170	110
Yorks. & the Humber	120	70	120	70	120	70
North East	100	50	100	50	100	50
North West	125	50	125	50	125	50
Merseyside						
Gtr. Manchester & Cheshire						
Wales	90	50	95	50	95	50
Scotland	90	40	60	40	60	40
Hard rock						
South East	90	50	90	50	90	50
Eastern	95	60	65	60	65	60
South West	65	25	65	25	65	25
East Midlands	65	28	65	28	65	28
West Midlands	40	25	36	25	36	25
Yorks. & the Humber	45	23	45	23	45	23
North East	45	25	35	26	55	26
North West	50	30	50	35	50	35
Wales	75	18	80	19	80	19
Scotland	50	30	40	30	50	30

(a) The typical value ranges are designed to provide information about general levels of value passing in the market in each region. They do not represent the extremes either high or low. The ranges are of necessity very broad as they encompass a wide range of categories contained under each class. They should not be relied upon as indications of specific value.
(b) At July 2004
(c) At July 2006
(d) At July 2007

Source: *Property Market Report* , Valuation Office Agency.

Number of mineral workings in the United Kingdom, by commodity (a) (b)

Number

Commodity	Region															
	North East England	Yorkshire & the Humber	North West England	East Midlands	West Midlands	East of England	Greater London	South East England	South West England	England Total	Wales	Scotland	Isle of Man	Northern Ireland	Channel Islands	**Total**
Anhydrite	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	1
Ball clay	—	—	—	—	—	—	—	—	18	18	—	—	—	—	—	18
Barytes	—	—	—	2	—	—	—	—	—	2	—	1	—	—	—	3
Calcite	—	—	—	2	—	—	—	—	—	2	—	—	—	—	—	2
Chalk	—	14	—	4	—	15	—	17	4	54	—	—	—	3	—	57
Chert	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1
China clay	—	—	—	—	—	—	—	—	15	15	—	—	—	—	—	15
China clay waste	—	—	—	—	—	—	—	—	13	13	—	—	—	—	—	13
Clay & shale	5	33	10	12	23	12	—	33	20	148	10	9	—	5	—	172
Coal, underground	—	4	2	3	1	—	—	—	2	12	6	—	—	—	—	18
Coal, opencast	4	3	1	1	1	—	—	—	—	10	7	23	—	—	—	40
Coalbed methane	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1
Fireclay	—	7	—	—	1	—	—	—	—	8	—	5	—	—	—	13
Flint	—	—	—	—	—	3	—	3	2	8	—	—	—	—	—	8
Fluorspar	1	1	—	11	—	—	—	—	—	13	—	—	—	—	—	13
Gold	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Gypsum	—	1	1	3	1	—	—	1	—	7	—	—	—	—	—	7
Igneous & metamorphic rock	8	—	2	6	4	—	—	—	17	37	14	109	2	34	3	199
Iron ore - hematite	—	—	1	—	—	—	—	—	—	1	—	—	—	—	—	1
Iron ore - ironstone	—	2	—	—	1	—	—	4	—	7	—	—	—	—	—	7
Lead	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	1
Limestone/ dolomite	18	35	24	58	7	3	—	13	90	248	39	14	1	17	—	319
Marble	—	—	—	—	—	—	—	—	—	0	—	1	—	—	—	1
Mine drainage gas	—	2	—	2	—	—	—	—	—	4	—	—	—	—	—	4
Natural gas	—	11	—	3	—	—	—	2	1	17	—	—	—	—	—	17
Oil	—	—	—	22	—	—	—	21	3	46	—	—	—	—	—	46
Peat	1	3	9	—	—	3	—	—	41	57	2	24	—	—	—	83
Potash	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	1
Salt	—	1	5	—	—	—	—	—	—	6	—	—	—	1	—	7
Sand	3	5	4	5	1	16	1	27	12	74	1	15	—	—	1	91
Sand & gravel	36	33	28	39	48	100	12	81	39	416	16	114	3	59	1	609
Sandstone	22	58	40	20	22	5	—	8	26	201	32	40	—	31	—	304
Serpentine	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	1
Silica sand	1	2	4	2	4	17	—	7	1	38	1	7	—	—	—	46
Slate	—	—	10	—	—	—	—	—	9	19	12	—	4	—	—	35
Slate waste	—	—	—	—	—	—	—	—	—	—	13	—	—	—	—	13
Soapstone	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	1
Talc	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1
Tin	—	—	—	—	—	—	—	—	2	2	—	—	—	—	—	2
Total	99	216	141	196	115	174	13	217	317	1 488	154	364	10	151	5	**2 172**

(a) As at February 2008.

(b) Double counting may occur because some workings produce more than one mineral.

Source: British Geological Survey

Abrasives, natural

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Carats					£ thousand				
Abrasives										
Imports										
Natural abrasives–										
Industrial diamonds	7 804 225	21 518 053	30 993 557	25 367 064	11 884 651	11 694	33 872	29 956	12 673	70 193
	Tonnes									
Dust and powder of precious and semi-precious stones	14	18	26	27	49	11 057	9 730	10 904	9 247	11 260
Pumice	…	21 406	35 533	71 598	97 832	2 703	2 978	1 898	1 213	1 659
Other	5 243	6 193	6 175	6 877	8 106	927	1 136	995	1 193	1 697
	Carats									
Exports										
Natural abrasives–										
Industrial diamonds	7 837 074	12 177 638	22 821 716	21 647 850	13 652 233	17 199	40 468	33 851	20 924	18 891
	Tonnes									
Dust and powder of precious and semi-precious stones	…	14	30	25	16	12 102	11 783	11 211	12 180	11 288
Pumice	319	859	242	138	70	654	702	450	275	227
Other	1 394	1 045	965	796	852	952	795	608	489	511

Aggregates

Sales of primary aggregates (sand and gravel, and crushed rock) in Great Britain were reported as 207.1 million tonnes in 2006, according to the official Annual Minerals Raised Inquiry (AMRI) carried out by the Office for National Statistics. This is an increase of just over one per cent compared to the 2005 AMRI survey (204.3 million tonnes). Of the total sales in 2006, 61 per cent comprised crushed rock aggregates, 32 per cent was land-won sand and gravel and seven per cent marine-dredged sand and gravel. The Quarry Products Association (QPA) estimate that sales of crushed rock aggregates increased by five per cent in 2007, while sand and gravel sales increased by one per cent compared to 2006.

From 1 April 2008 the Aggregates Levy was increased from £1.60 per tonne to £1.95 per tonne of primary aggregates produced. In the budget of March 2008 the Chancellor announced a further increase in the Levy to £2.00 per tonne with effect from 1 April 2009.

Recycled and secondary aggregates continue to supply just over 25 per cent of the UK's requirement for aggregates. A new report was launched by the Waste and Resources Action Programme in 2007 containing technical information on the performance of recycled aggregates in concrete. The results of their research show that blending 20 per cent of recycled aggregates with natural aggregates can be achieved without negative impact on the performance of the concrete.

The German cement company, Heidelberg Cement AG, completed their takeover of Hanson plc during 2007 including Hanson Aggregates in the UK. As a result, four of the top five aggregates companies in the UK are now owned by international cement groups. The mining giant, Anglo American, who own the largest UK aggregates company, did announce plans during 2007 to sell Tarmac, but these were later deferred as a result of the recent problems in the financial markets.

Sales of readymix concrete are estimated by the QPA to have increased by two per cent in 2007, confirming the continued growth of construction activity, estimated as 2.6 per cent in 2007. Although growth in construction is expected to slow during 2008, the Construction Products Association still expect a modest increase of around one per cent per year. Aggregates Industries received a boost to their expected sales of readymix concrete when they learned that they had secured the contract to build and operate the on-site concrete plant for the 2012 Olympic Park. At the height of construction this plant is expected to be required to produce as much as 1000 cubic metres of concrete per day.

Asphalt sales for 2007 are estimated by the QPA to have been a little less than 26 million tonnes, which is a similar figure to 2006 and the lowest annual level since 1986, reflecting a lower level of investment in the country's road network.

The British Geological Survey produced a report on *The strategic importance of the marine aggregates industry to the UK* on behalf of the British Marine Aggregate Producers Association (BMAPA), which was published 2007. The report focuses on the socio-economic issues associated with the production and use of marine aggregates, and their contribution to national and regional supply. The report can be downloaded from the BMAPA website.

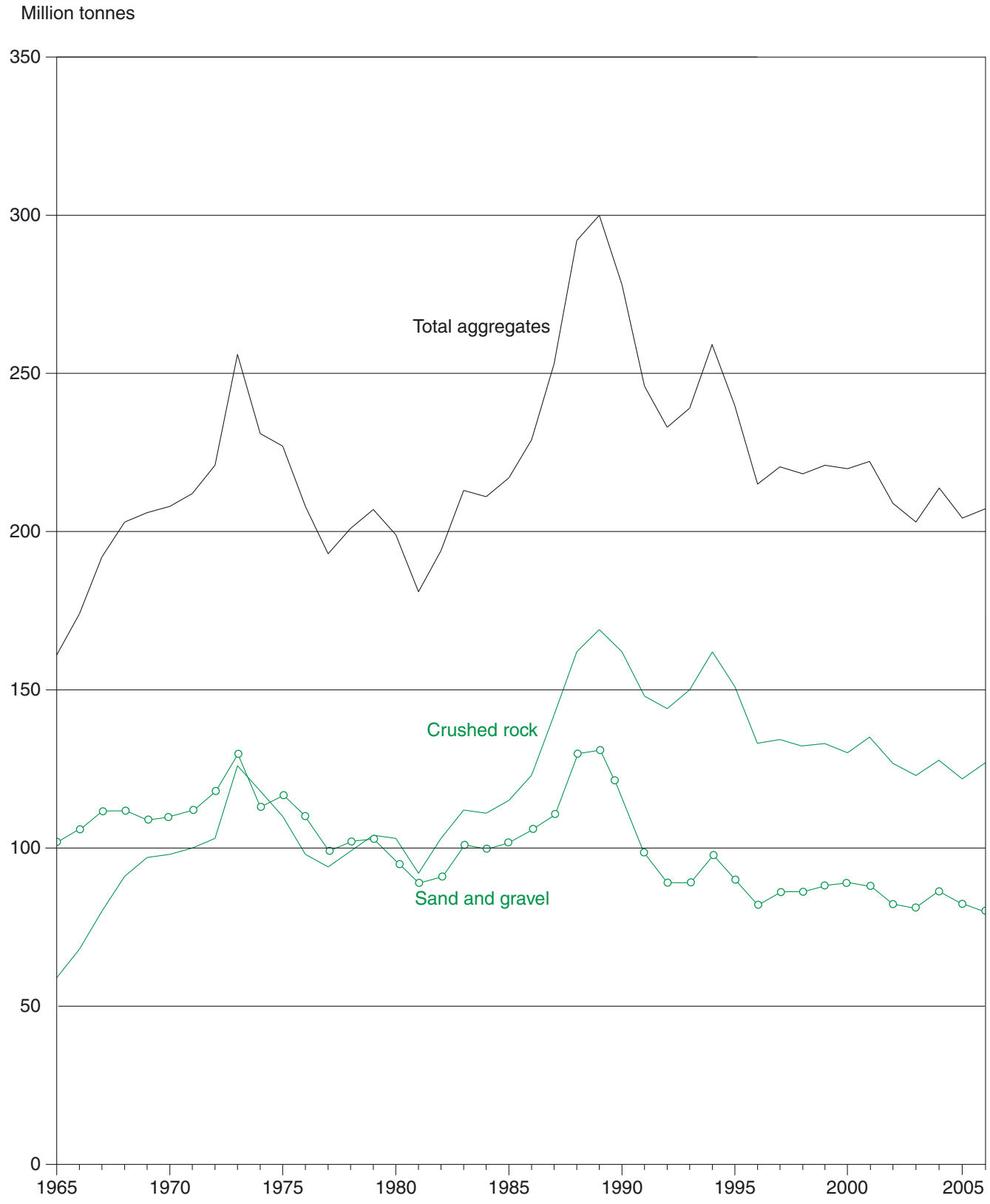
A series of new research reports into various aspects of the aggregates supply were released during the first part of 2008. *Managing aggregates supply in England: A review of the current system and future options* (BGS, 2008) looks at the different elements that comprise the managed aggregates supply system in England, assesses how effective the system has been and compares four possible alternatives. It concludes that the long-term continuity of aggregates supply is best achieved through the current system and offers a number of recommendations for improvements.

The need for indigenous aggregates supply in England (BGS, 2008) identifies, for a non-technical audience, exactly why society needs aggregates, what they are used for and how much they contribute to the English economy every year. The report goes on to look at the practical

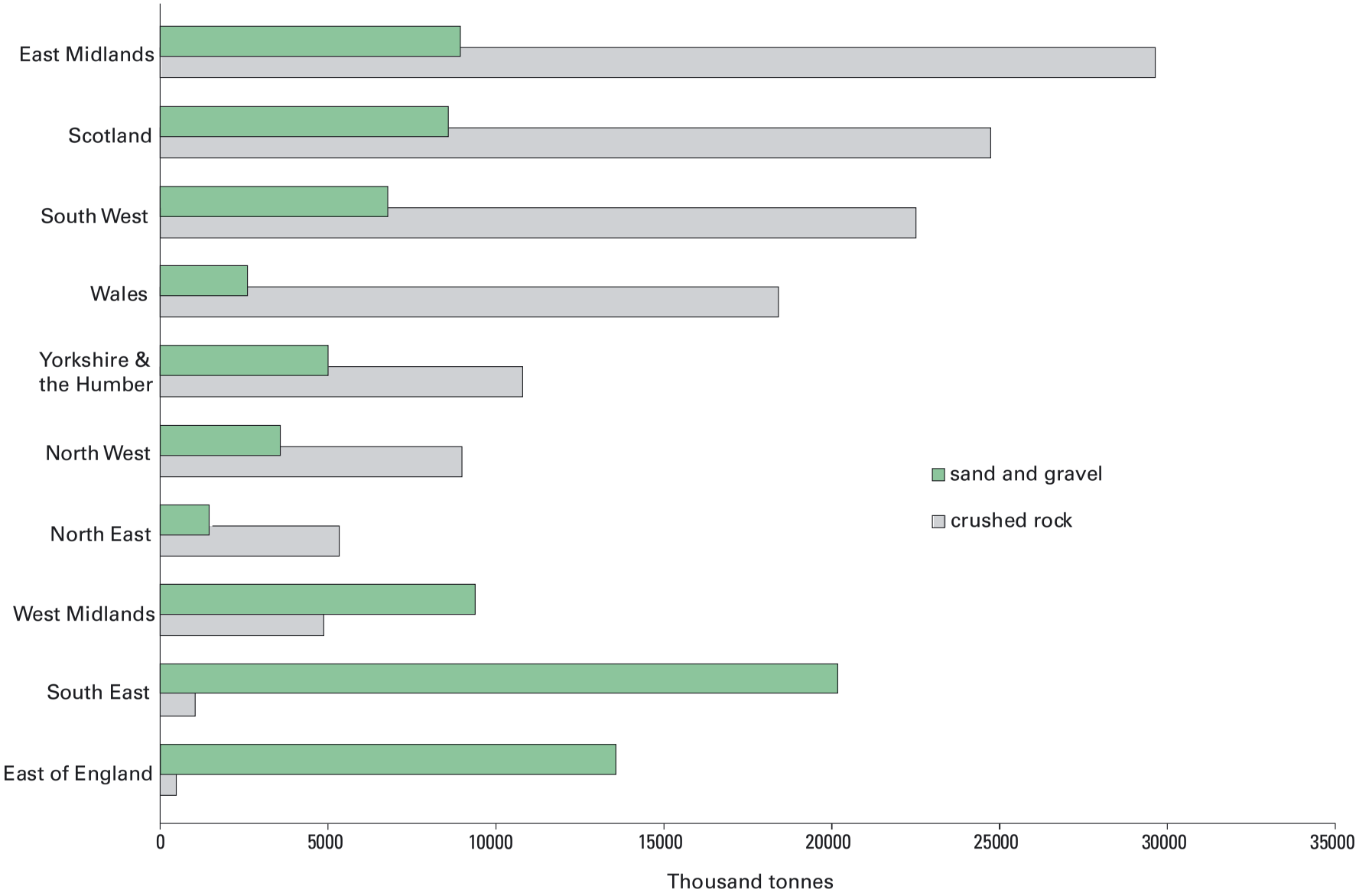
steps involved in increasing imports of aggregates and concludes that it is not physically possible for significant increases to occur as a result of current port capacity constraints. The report *Aggregate resource alternatives: Options for future aggregate minerals supply in England* and the accompanying set of eight maps (BGS, 2008) aims to set out the current situation with regards to the extraction of aggregates within selected environmental designations and looks at possible options for sourcing aggregates outside these areas in future.

Exploring the reasons for the decline in aggregate reserves in England (Capita Symonds, 2008) aims to examine both quantitatively and qualitatively the reason behind recent declines seen in aggregate reserves, and *Verney – beyond the way ahead* (National Stone Centre, 2008) looks back to the findings of the Verney Committee of 1976 and assesses whether its findings are still relevant today.

Great Britain production of natural aggregates 1965–2006



Great Britain production of crushed rock aggregate and sand and gravel by region 2006



England and Wales summary of consumption of primary aggregates, by region 2005 (a) (b)

Thousand tonnes

Region	Land-won sand and gravel	Marine sand and gravel	Total sand and gravel	Crushed rock	Total primary aggregate
South West	5 236	567	5 803	17 197	22 999
South East	7 551	5 691	13 241	7 935	21 176
London	2 185	4 278	6 463	3 892	10 355
East of England	12 987	167	13 154	5 577	18 732
East Midlands	9 275	—	9 275	13 002	22 277
West Midlands	8 138	12	8 149	9 677	17 827
North West	2 720	820	3 540	16 631	20 171
Yorkshire and the Humber	5 917	322	6 238	11 511	17 749
North East	1 949	758	2 707	5 868	8 575
England	**55 958**	**12 613**	**68 571**	**91 289**	**159 860**
South Wales	390	1 238	1 628	8 537	10 165
North Wales	748	63	811	2 520	3 331
Wales	**1 138**	**1 301**	**2 439**	**11 057**	**13 496**
England and Wales	**57 096**	**13 914**	**71 010**	**102 346**	**173 356**

(a) For aggregate use only.
(b) The figure for total consumption slightly under estimates true consumption because for some regions unallocated sales have an unknown destination. Total unallocated sales were (thousand tonnes): sand and gravel: 1 757; crushed rock: 1 361.

Source: *Collation of the Results of the 2005 Aggregate Minerals Survey for England and Wales* . British Geological Survey.

Permitted reserves of primary aggregate minerals in England and Wales for active and inactive sites at 31st December 2005 (a)

Thousand tonnes

Region	Sand and gravel					Crushed rock					Grand total (excluding dormant)
	Active	Inactive: worked in past	Inactive: yet to be worked	Total	Dormant (b)	Active	Inactive: worked in past	Inactive: yet to be worked	Total	Dormant (b)	
South West	42 633	5 120	3 484	51 237	1 365	817 517	101 676	901	920 094	285 742	971 331
South East	59 601	11 103	10 225	80 929	980	52 873	1 035	—	53 908	5	134 836
London	2 866	—	—	2 866	—	—	—	—	—	—	2 866
East of England	143 894	16 566	5 790	166 250	1 708	8 255	3	—	8 258	1 780	174 508
East Midlands	60 290	6 871	9 799	76 959	2 600	996 799	372 842	5 200	1 374 841	49 764	1 451 801
West Midlands	112 032	10 857	4 000	126 889	5 700	227 660	76 298	2 174	306 132	250	433 022
North West	30 008	7 325	4 020	41 353	—	294 288	7 549	—	301 837	23 715	343 190
Yorkshire and the Humber	36 571	5 646	—	42 218	—	307 841	39 425	—	347 266	2 430	389 484
North East	10 240	1 938	2 448	14 628	—	176 369	67 187	—	243 556	—	258 184
England	**498 136**	**65 426**	**39 766**	**603 328**	**12 923**	**2 881 603**	**666 014**	**8 275**	**3 555 893**	**364 336**	**4 159 221**
South Wales	3 028	—	120	3 148	—	276 084	223 180	—	499 264	42 287	502 412
North Wales (c)	12 804	2 352	25	15 181	655	190 730	14 526	—	205 256	23 680	220 437
Wales	**15 832**	**2 352**	**145**	**18 329**	**655**	**466 814**	**237 706**	**—**	**704 520**	**65 967**	**722 849**
England & Wales	**513 968**	**67 778**	**39 911**	**621 657**	**13 578**	**3 348 416**	**903 721**	**8 275**	**4 260 412**	**430 303**	**4 882 070**

(a) For aggregate use only.
(b) Reserves in 'dormant' sites are not included in 'inactive sites worked in the past' nor in the totals.
(c) In addition, permitted reserves of slate in North Wales were 42.5 million tonnes.

Source: *Collation of the Results of the 2005 Aggregate Minerals Survey for England and Wales* . British Geological Survey.

England and Wales summary sales of primary aggregates, by region 2005

Thousand tonnes

Region	Land-won sand and gravel		Marine sand and gravel		Total sand and gravel		Crushed rock		Total primary aggregate	
	AMRI 2005	AM 2005	AMRI 2005	AM 2005	AMRI 2005	AM 2005	AMRI 2005	AM 2005	AMRI 2005	AM 2005
North East	1 146	1 360	429	1 140	1 575	2 500	5 333	5 657	6 908	8 157
North West	3 411	2 932	263	838	3 674	3 770	7 993	8 644	11 667	12 413
Yorkshire and the Humber	5 094	4 398	154	298	5 248	4 695	10 875	11 964	16 123	16 659
West Midlands	9 250	9 105	—	—	9 250	9 105	4 416	4 516	13 666	13 621
East Midlands	9 235	10 014	—	—	9 235	10 014	27 468	28 793	36 703	38 807
East of England	13 227	13 720	2 334	154	15 561	13 875	238	486	15 799	14 361
South East	11 253	9 573	8 109	5 952	15 347	15 526	1 090	1 238	16 437	16 763
London	(a)	1 038	(a)	4 035	4 015	5 073			4 015	5 073
South West	6 310	4 603	624	661	6 934	5 264	23 180	22 238	30 114	27 501
England	**58 926**	**56 743**	**11 912**	**13 078**	**70 838**	**69 821**	**80 593**	**83 535**	**151 431**	**153 356**
South Wales	(b)	304	(b)	1 238	(b)	1 542	6 208	10 873	(b)	12 416
North Wales	(b)	1 192	(b)	45	(b)	1 237	10 327	5 663	(b)	6 899
Wales	**1 634**	**1 496**	**1 112**	**1 283**	**2 746**	**2 779**	**16 535**	**16 536**	**19 281**	**19 315**
England and Wales	**60 560**	**58 239**	**13 024**	**14 361**	**73 584**	**72 599**	**97 128**	**100 071**	**170 712**	**172 671**

(a) Included in South East to protect confidentiality.
(b) It is not possible to split the AMRI data between North and South Wales for confidentiality reasons.

Sources: *Annual Minerals Raised Inquiry* , Office for National Statistics, *Aggregate Minerals Survey* , British Geological Survey

England and Wales (c) summary of estimated arisings and use of recycled and secondary materials, 2005

Thousand tonnes

	Used as aggregate		Used as non-aggregate		Total arisings (a)	
	England	Wales	England	Wales	England	Wales
Recycled material						
Construction & demolition waste (b)	42 070	4 460	9 610	4 830	89 630	9 890
Spent railway track ballast	1 200	…	—	…	1 400	…
Asphalt planings (d)	4 090	…	170	…	5 600	…
Secondary material						
Blast furnace slag	500	…	1 500	…	2 000	…
Basic oxygen furnace steel slag	250	…	—	…	500	…
Electric arc furnace steel slag	260	…	…	…	260	…
China clay waste	2 600	…	—	…	19 600	…
Colliery spoil	1 000	…	—	…	4 850	…
Power station pulverised fuel ash	900	…	1 800	…	5 000	…
Power station furnace bottom ash	900	…	negligible	…	1 000	…
Slate waste	150	…	80	…	500	…
Waste glass	150	…	900	…	2 000	…
Municipal solid waste incinerator bottom ash	400	…	—	…	725	…
Fired ceramic waste	40	…	—	…	50	…
Spent foundry sand	30	…	—	…	400	…
Total	**54 540**	**4 460**	**14 060**	**4 830**	**133 515**	**9 890**

(a) A significant proportion of total arisings are not utilised.
(b) The arisings of construction and demolition waste include excavation waste as well as the hard material most suitable for recycling into aggregates.
(c) Construction and demolition waste for Scotland in 2003: total arisings 10.8 million tonnes, recycled as aggregate 4.3 million tonnes
(d) Estimate for the UK is 8000 tonnes, England represents 70% of the total. Data on uses of recovered asphalt planings are not comprehensive. The report indicates that from the responses received 73% was used in asphalt or as general fill and 3% for other uses.

Sources: *Survey of arisings and use of alternatives to primary aggregates in England, 2005* report by Capita Symonds Ltd for the Department of Communities and Local Government
Survey of the arisings and use of aggregates from construction and demolition waste, excavation waste, quarry waste and dredging waste in Wales in 2005 report by Fabour Maunsell for Welsh Assembly Government

Great Britain estimated consumption of natural aggregates 1958–2006

Million tonnes

Year	Crushed rock aggregate (c)				Sand and gravel (b)			Total crushed rock and sand and gravel
	Limestone (a)	Igneous rock	Sandstone	Total	Sand	Gravel	Total	
1958	14	13	4	31	…	…	63	94
1959	17	14	3	34	33	35	68	102
1960	18	15	4	37	38	38	76	113
1961	20	16	4	40	42	43	85	125
1962	21	16	4	41	42	43	85	126
1963	23	17	4	44	44	45	89	133
1964	29	20	5	54	52	54	106	160
1965	34	20	5	59	50	52	102	161
1966	40	22	6	68	50	56	106	174
1967	48	25	7	80	52	60	112	192
1968	53	27	11	91	54	58	112	203
1969	55	28	14	97	52	57	109	206
1970	59	28	11	98	53	57	110	208
1971	62	29	9	100	53	59	112	212
1972	61	32	10	103	55	63	118	221
1973	74	38	14	126	62	68	130	256
1974	72	34	12	118	53	60	113	231
1975	67	32	10	110	54	63	117	227
1976	60	28	10	98	51	59	110	208
1977	59	26	9	94	46	53	99	193
1978	61	28	10	99	48	55	102	201
1979	65	29	10	104	49	54	103	207
1980	65	28	10	103	45	52	96	199
1981	57	25	10	92	41	48	89	182
1982	62	30	11	103	42	49	91	194
1983	70	31	11	112	46	55	101	213
1984	69	30	12	111	46	54	100	211
1985	72	32	11	115	47	55	102	217
1986	78	34	11	123	51	55	106	229
1987	89	39	14	142	53	58	111	253
1988	102	44	16	162	63	67	130	292
1989	106	46	16	169	64	67	131	300
1990	98	49	14	162	58	58	116	278
1991	90	46	13	148	49	49	98	246
1992	85	48	11	144	45	44	89	233
1993	89	49	12	150	45	44	89	239
1994	99	50	13	162	50	48	98	259
1995	87	49	15	151	47	43	90	240
1996	77	43	12	133	43	39	82	215
1997	80	42	12	134	45	42	86	220
1998	79	40	13	132	44	42	86	218
1999	76	45	11	133	45	43	88	221
2000	75	44	12	131	45	44	89	220
2001	(d) 78	45	(d) 11	134	45	43	88	222
2002	71	44	11	127	44	39	83	210
2003	67	45	11	123	45	35	80	203
2004	70	46	11	127	45	41	86	213
2005	66	46	11	123	43	39	82	205
2006	70	(d) 46	11	127	42	38	80	207

(a) Including dolomite.

(b) Total production, excluding marine-dredged material for export; see table on p.93.

(c) The following amounts of crushed rock aggregate, believed to be mainly igneous rock, were exported (million tonnes): 2002: 4; 2003: 3; 2004: 4; 2005: 5: 2006: 5. Crushed rock aggregate is also imported in comparable amounts. These figures have not been taken into account when calculating consumption.

(d) BGS estimate.

Source: Office for National Statistics.

Great Britain consumption of natural aggregates related to construction work (intensity of use of aggregates) 1958–2006

Year	Value of new construction work (a)	Estimated consumption of aggregate			Total value of all construction work (a)	Estimated consumption of aggregate		
		Crushed rock	Sand and gravel (b)	Total		Crushed rock	Sand and gravel (b)	Total
	£ million	Tonnes per £1000			£ million	Tonnes per £1000		
1958	20 786	1.5	3.0	4.5	33 681	0.9	1.9	2.8
1959	22 267	1.5	3.1	4.6	36 738	0.9	1.9	2.8
1960	24 492	1.5	3.1	4.6	39 777	0.9	1.9	2.8
1961	26 851	1.5	3.2	4.7	42 604	0.9	2.0	2.9
1962	27 689	1.5	3.1	4.6	43 798	0.9	1.9	2.9
1963	28 132	1.6	3.2	4.7	44 776	1.0	2.0	3.0
1964	33 036	1.6	3.2	4.8	50 048	1.1	2.1	3.2
1965	35 129	1.7	2.9	4.6	52 580	1.1	1.9	3.1
1966	35 524	1.9	3.0	4.9	53 369	1.3	2.0	3.3
1967	38 554	2.1	2.9	5.0	56 958	1.4	2.0	3.4
1968	39 770	2.3	2.8	5.1	58 254	1.6	1.9	3.5
1969	39 230	2.5	2.8	5.3	57 266	1.7	1.9	3.6
1970	37 905	2.6	2.9	5.5	55 799	1.8	2.0	3.7
1971	38 881	2.6	2.9	5.5	56 915	1.8	2.0	3.7
1972	38 748	2.7	3.0	5.7	58 523	1.8	2.0	3.8
1973	38 658	3.3	3.4	6.6	59 363	2.1	2.2	4.3
1974	32 578	3.6	3.5	7.1	52 749	2.2	2.1	4.4
1975	31 056	3.5	3.8	7.3	49 485	2.2	2.4	4.6
1976	31 526	3.1	3.5	6.6	48 881	2.0	2.2	4.3
1977	30 556	3.1	3.2	6.3	48 502	1.9	2.0	4.0
1978	31 816	3.1	3.2	6.3	52 534	1.9	1.9	3.8
1979	29 572	3.5	3.5	7.0	53 365	1.9	1.9	3.9
1980	25 724	4.0	3.7	7.7	50 728	2.0	1.9	3.9
1981	23 053	4.0	3.9	7.8	45 829	2.0	2.0	3.9
1982	24 483	4.2	3.7	7.9	47 487	2.2	1.9	4.1
1983	26 257	4.3	3.8	8.1	51 576	2.2	2.0	4.1
1984	26 939	4.1	3.7	7.8	53 627	2.1	1.9	3.9
1985	26 706	4.3	3.8	8.1	54 219	2.1	1.9	4.0
1986	27 986	4.4	3.8	8.1	56 178	2.2	1.9	4.1
1987	31 786	4.5	3.5	8.0	62 580	2.3	1.8	4.1
1988	35 415	4.5	3.7	8.2	68 616	2.3	1.9	4.2
1989	36 565	4.6	3.6	8.2	71 857	2.3	1.8	4.2
1990	36 877	4.4	3.2	7.5	72 085	2.2	1.6	3.9
1991	35 392	4.2	2.8	6.9	66 841	2.2	1.5	3.7
1992	34 658	4.2	2.6	6.7	64 033	2.2	1.4	3.6
1993	34 165	4.4	2.6	7.0	62 823	2.4	1.4	3.8
1994	32 711	4.9	3.0	7.9	62 589	2.6	1.6	4.1
1995	32 843	4.6	2.7	7.3	63 381	2.4	1.4	3.8
1996	34 331	3.9	2.4	6.3	65 776	2.0	1.2	3.3
1997	35 412	3.8	2.4	6.2	67 369	2.0	1.3	3.3
1998	36 487	3.6	2.4	6.0	68 411	1.9	1.3	3.2
1999	37 843	3.5	2.3	5.8	69 294	1.9	1.3	3.2
2000	37 660	3.5	2.4	5.8	69 676	1.9	1.3	3.2
2001	37 557	3.6	2.3	5.9	71 087	1.9	1.2	3.1
2002	38 944	3.3	2.1	5.4	74 090	1.7	1.1	2.8
2003	40 372	3.0	2.0	5.0	77 852	1.6	1.0	2.6
2004	42 804	3.0	2.0	5.0	80 245	1.6	1.1	2.7
2005	42 012	2.9	2.0	4.9	79 350	1.5	1.0	2.6
2006	44 309	2.9	1.8	4.7	80 569	1.6	1.0	2.6

(a) Valued at constant 2000 prices.
Source: Department for Business, Enterprise & Regulatory Reform (previously Department of Trade and Industry)

(b) Land-won and marine-dredged material.

Source: British Geological Survey.

United Kingdom summary 2002–2006

Commodity		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
		Tonnes					£ thousand				
Aggregates											
Production											
Sand & gravel (a)		94 424 000	91 211 000	97 333 000	94 666 000	90 541 000					
Crushed rock (b)		126 568 000	122 885 000	127 674 000	121 860 000	126 895 000					
	Total	220 992 000	214 096 000	225 007 000	216 526 000	217 436 000					
Imports											
Natural aggregates–											
Crushed rock (c)		572 971	632 792	619 076	1 516 919	2 270 355	9 083	10 064	10 661	19 037	27 202
Sand and gravel (d)		413 992	861 439	924 304	643 594	634 844	9 453	11 406	14 481	14 117	17 583
	Total	986 963	1 494 230	1 543 380	2 160 513	2 905 198	18 536	21 470	25 142	33 154	44 785
Exports											
Natural aggregates–											
Crushed rock (c)		3 593 951	3 188 232	4 528 231	4 850 971	5 322 099	13 989	13 275	22 865	25 141	25 773
Sand and gravel (d)		8 881 454	8 419 845	8 174 262	8 453 949	9 308 961	32 104	36 708	36 414	40 493	45 498
	Total	12 475 405	11 608 077	12 702 493	13 304 920	14 631 060	46 093	49 983	59 279	65 634	71 271

(a) Including production from marine dredging.
(b) Great Britain only.
(c) For a number of years, a significant amount of armourstone imports are believed be wrongly classified as 'granite, crude'. In 2006, this figure was 491 438 tonnes, and this has reduced from 1 331 520 tonnes in 2005, suggesting this issue is being addressed.
(d) Principally marine-dredged sand and gravel. Source: HM Revenue and Custom However, the Crown Estate Commissioners give the following figures for marine-dredged sand and gravel landed at foreign parts (tonnes): 2002: 6 190 ! 2003: 6 095 640; 2004: 6 191 867; 2005: 6 471 453; 2006: 6 714 659.

Aluminium

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Aluminium										
Production										
Unwrought–										
Primary	344 318	342 748	359 631	368 477	360 325					
Secondary	205 400	205 400	205 400	205 301	197 900					
Consumption										
Unwrought–										
Primary	427 607	302 181	438 937	353 249	362 267					
Secondary	198 388	199 749	190 123	186 522	169 983					
Ferro-aluminium (a)	2 500	2 860	2 910	2 890	3 030					
Imports										
Scrap	117 954	103 554	78 309	116 285	137 626	61 730	58 885	53 549	91 004	120 370
Ash and residues	647	847	756	744	1 766	166	183	152	456	910
Unwrought	212 046	163 573	116 344	114 189	169 259	205 256	149 320	113 855	129 794	238 404
Unwrought alloys	159 310	129 451	118 398	87 063	122 748	168 948	138 144	127 138	104 159	147 969
Exports										
Scrap	243 894	295 642	319 217	474 587	385 211	167 176	190 267	226 044	299 115	351 964
Ash and residues	1 402	599	739	553	90	849	310	255	266	35
Unwrought	9 403	1 559	29 949	48 684	17 530	9 264	3 060	31 149	73 852	27 142
Unwrought alloys	241 799	270 701	306 372	329 691	331 598	235 174	266 846	296 207	381 248	514 295

(a) Consumption in the iron and steel industry; ferro-alloy weight.

Aluminium compounds

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Aluminium compounds										
Production										
Oxide (alumina)	73 800	—	—	—	—					
Imports										
Oxide (alumina)	(b) 798 479	(d) 828 300	417 882	755 443	823 115	(b) 105 813	(d) 180 200	64 626	129 663	169 916
Hydroxide	(d) 79 700	(d) 143 000	59 844	130 321	101 126	(d) 16 600	(d) 34 300	11 224	26 646	22 582
Fused oxide (a)	19 928	24 558	33 956	36 277	36 099	13 026	9 167	11 541	13 164	13 527
Fluorides	5 962	5 864	2 286	5 849	7 983	2 763	2 534	2 348	2 859	2 938
Exports										
Oxide (alumina)	(b) 22 740	(c) 3 400	2 281	4 336	9 979	(b) 10 164	(c) 7 800	1 432	2 145	5 094
Hydroxide	(c) 31 600	(c) 26 300	(c) 35 500	(c) 20 600	486	(c) 15 000	(c) 7 800	(c) 9 000	(c) 5 700	686
Fused oxide (a)	5 607	5 201	5 671	5 408	6 252	8 467	4 630	3 867	4 137	5 335
Fluorides	16	69	25	427	0	142	602	115	41	2

(a) Artificial corundum.
(b) Including some bauxite.
(c) BGS estimates, based on known imports into certain countries.
(d) BGS estimates, based on known exports from certain countries.

Antimony

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Antimony										
Consumption (Sb content)										
Metal	480	480	480	…	…					
Scrap (a)	1 165	993	1 483	…	…					
Imports										
Metal	183	290	410	60	81	301	654	796	180	380
Oxides	3 164	2 712	2 976	2 048	2 291	4 217	4 873	5 057	3 959	5 316
Exports										
Ash and residues	...	...	...	...	...	...	...	...	...	...
Metal	...	65	88	54	27	444	153	248	267	200
Oxides	1 879	1 413	663	621	397	2 611	2 446	1 186	1 190	928

(a) Including some antimony in ore.

Arsenic

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Arsenic										
Imports										
Elemental	86	155	165	3	49	279	232	248	90	415
Exports										
Elemental	5	0	0	1	1	37	41	8	32	34

Asbestos

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Asbestos										
Imports										
Fibre	2	3	0	…	0	33	40	3	…	1
Waste	116	—	2 149	…	…	311	—	102	…	…
Fabricated asbestos	187	433	356	281	86	1 165	1 154	910	732	786
Friction material with a basis of asbestos etc.	10 884	7 853	7 596	7 806	13 199	40 009	34 109	31 052	33 207	41 779
Articles of asbestos cement etc.	57 890	63 082	66 314	71 389	69 731	18 142	18 449	20 864	22 491	24 150
Exports										
Fibre	1	—	—	(a) 1	0	16	—	—	(a) 7	1
Waste	—	—	0	…	…	—	—	2	…	….
Fabricated asbestos	690	1 321	918	1 868	915	5 205	4 543	3 571	10 107	2 376
Friction material with a basis of asbestos etc.	4 055	3 644	3 513	2 706	2 877	22 369	22 263	23 253	29 082	31 927
Articles of asbestos cement etc.	26 792	22 972	16 848	16 917	16 902	8 710	8 918	6 639	7 222	6 803

(a) Unmanufactured asbestos, including fibre and waste.

Asphalt, natural

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Asphalt, natural										
Imports	232 887	194 759	94 670	47 510	138 249	24 911	19 322	7 958	6 027	18 069
Exports	116 317	79 604	160 783	166 866	160 972	12 042	7 690	15 689	17 221	20 040

Ball clay

Ball clays are fine-grained, highly plastic sedimentary clays, which fire to a light or near white colour. They are used mainly in the manufacture of ceramic whiteware such as sanitaryware, floor and wall tiles, and tableware, and also in the production of refractories. They are valued for their key properties of plasticity, which makes them easy to mould, their unfired strength, and the fact that when fired they have a light colour. Ball clays exhibit highly variable compositions and consist of a mixture of three predominant minerals: kaolinite, mica and quartz. The clay mineral kaolinite is the key component.

Ball clay sales were a record 1 068 654 tonnes in 2000, but have been on a gradual decline since. Sales were 1 022 472 tonnes in 2007, a slight increase on 1 015 101 tonnes in 2006. The UK is a leading world producer and exporter of high-quality ball clay. In 2007, 864 133 tonnes (84 per cent) of sales were destined for export, including 651 251 tonnes to the EU.

Ball clay has a restricted occurrence in the UK and resources are confined to three small areas all in the South-West Region of England: the Bovey and Petrockstowe basins in Devon and the Wareham Basin in Dorset. The Bovey Basin is the most important, both in terms of total sales (68 per cent in 2004) and, more importantly, the diversity and quality of the clays that are produced. The Wareham and Petrockstowe basins accounted for 19 per cent and 13 per cent of total sales respectively in 2004.

The two UK producers of ball clay are WBB Minerals, the world's leading producer of high-quality ball clays, and Imerys Minerals Ltd. WBB is a wholly owned subsidiary of SCR Sibelco SA, a privately owned Belgian mineral company that operates solely in Devon. Imerys Minerals is a subsidiary of the Imerys Group of France and has had workings in all three basins. However, the company ceased production in the Petrockstowe Basin at the end of 2004, because of the high costs of extraction.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Ball clay										
Production (sales) (a)	921 027	884 809	964 797	1 011 425	1 015 101					
Imports	2 577	2 593	18 241	12 938	19 304	730	669	1 142	1 112	1 781
Exports (a)	762 895	734 524	805 359	845 597	853 177					

(a) Source: The Kaolin and Ball Clay Association.

Barytes

Barytes (barium sulphate, $BaSO_4$), also referred to as barite or baryte, is the most abundant and economically important barium mineral produced worldwide. When pure, barytes contains 58.8 per cent barium and 41.2 per cent sulphate and with a specific gravity (SG) of 4.5 it is often referred to as 'heavy spar.' Inclusions of other minerals may reduce (or in the case of metallics increase) the SG, but a high density, chemical inertness, relative softness and relatively widespread occurrence are the properties that are valued for barytes' most important application as a weighting agent in drilling fluids for hydrocarbon exploration. Colour and chemical purity are important properties when considering the suitability of barytes for non-drilling applications.

United Kingdom sales of barytes were 52 546 tonnes in 2007. Output is dominated by M-I Drilling Fluids UK from its Foss Mine, near Aberfeldy in Scotland, which accounted for more than 80 per cent of total production in 2007, with 42 317 tonnes. The output is mainly used in drilling fluids, although some is sold for use as a heavy aggregate in dense concrete to provide radiation shielding. Remaining production is confined to the Southern Pennine Orefield where barytes is derived as a by-product of processing fluorspar ore at Glebe Mines' Cavendish Mill, near Stoney Middleton in the Peak District. Quantities are essentially dependent on fluorspar output and on the barytes content of the fluorspar ore, which depends on the deposit being worked. Production was 10 229 tonnes in 2007. The barytes flotation concentrate is sold locally to Viaton Industries for valued-added processing by fine grinding for filler applications in paints and plastics. Some is also used in oil-well drilling fluids.

Britain is a net importer of barytes and imports for 2006 were 78 225 tonnes valued at £4.0 million. Imported barytes is mainly used as a weighting agent in drilling fluids for offshore oil and gas exploration. Official figures for barytes exports were 4250 tonnes in 2006.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2 003	2004	2005	2006
	Tonnes					£ thousand				
Barium										
Production										
Barium minerals–Barytes (b)	59 000	57 000	61 000	62 000	44 000					
Imports										
Barium minerals (a)	74 935	56 867	63 934	54 753	78 225	3 208	2 406	2 741	2 720	4 009
Exports										
Barium minerals (a) (c)	37 778	69 094	25 697	16 334	4 250	3 166	3 837	2 952	2 655	1 577

(a) Mainly barytes with some witherite.
(b) BGS estimate.
(c) Figure believed to be too high.

Bauxite

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Bauxite										
Imports (a)	...	...	56 825	103 522	86 882	...	...	10 038	9 743	6 500
Exports (a)	(b) 6 900	(b) 4 200	889	4 237	28 636	...	...	319	1 478	1 887

(a) Excluding refractory grade bauxite.
(b) BGS estimates, based on known imports into certain countries.

Bentonite

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Bentonite										
Imports	216 022	198 434	187 750	151 179	173 483	12 189	10 102	12 335	10 462	13 970
Exports	81 707	75 099	71 153	49 514	42 548	17 538	19 179	20 221	14 145	12 549

Beryllium

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Beryllium										
Imports										
Metal	54	22	47	208	306	1 618	1 004	468	710	1 752
Oxides and hydroxides	4	7	4	7	7	297	509	361	452	502
Exports										
Metal	39	58	5	11	8	259	528	319	586	673

Bismuth

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Bismuth										
Imports										
Metal	1 513	2 237	2 205	2 858	2 347	5 891	7 695	8 201	11 596	12 234
Exports										
Metal	1 793	2 239	2 633	2 426	2 703	8 028	8 646	11 956	10 384	16 043

Boron

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Boron										
Imports										
Boron minerals (a)	9 936	4 954	4 243	5 732	3 470	1 726	1 606	1 086	1 342	1 162
Exports										
Boron minerals (a)	164	395	41	33	186	158	404	48	9	127

(a) Including crude natural borates and concentrates, and crude natural boric acid.

Bricks

Total deliveries of clay bricks decreased from 2254 million bricks in 2006 to 2248 million bricks in 2007. Actual production decreased from 2359 million bricks in 2006 to 2313 million bricks in 2007. Clay brick stocks were 948 million in 2007, up slightly on 887 million in 2006. The decline in demand for brick clay from over 16 million tonnes in 1974 to some 6.7 million tonnes in 2006 is broadly in line with the decline in the production of clay bricks. There are around 100 brickworks in the country following recent mothballing of operations by Hanson Brick UK at Calder, Wainsgroves and Heather and the closure of Ibstock Brick Ltd's Pinhoe site. During 2007 Hanson announced the closure of its Stewartby brickworks, near Bedford as a result of not complying with UK limits on sulphur dioxide emissions.

Three companies dominate brick manufacture in the UK, collectively sharing around 90 per cent of the market. The two largest producers with a combined market share of over 60 per cent are Hanson Brick UK, a subsidiary of Hanson PLC, and Ibstock Brick Ltd (owned by the CRH Group based in the Irish Republic). Wienerberger Ltd (owned by the Austrian-based Wienerberger AG, the world's largest brick producer) is the third largest operator. In 2007 Michelmersh Brick announced that it had acquired a 25.1 per cent share of Baggeridge Brick plc the fourth largest supplier of bricks in the UK. Subsequently Wienerberger acquired Baggeridge Brick plc resulting in Wienerberger now having 18 manufacturing facilities throughout the UK and a 20–30 per cent share of the brick market.

Great Britain production of bricks, blocks and tiles 1997–2006

Material	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	Millions									
Bricks:										
Clay (a)	2 828	2 830	2 759	2 694	2 595	2 600	2 606	2 707	2 601	2 359
Concrete	169	171	180	170	159	150	167	161	147	150
Total	2 997	3 000	2 939	2 864	2 754	2 750	2 772	2 868	2 748	2 510
Brick Production Region										
North East	160	154	133	130	136	138	137	147	137	110
Yorkshire and the Humber	218	194	211	195	186	187	186	195	194	169
East Midlands	473	518	522	508	495	480	487	514	510	454
East of England	325	248	331	334	321	349	362	343	329	301
South East	535	565	409	394	385	371	346	346	326	313
South West	152	146	145	148	132	129	132	143	125	117
West Midlands	558	598	573	572	558	570	586	624	613	578
North West	295	303	320	292	299	290	296	312	301	269
England	**2 718**	**2 727**	**2 643**	**2 573**	**2 513**	**2 513**	**2 531**	**2 624**	**2 535**	**2 311**
Wales	**104**	**102**	**123**	**109**	**106**	**106**	**119**	**117**	**107**	**107**
Scotland	**176**	**172**	**174**	**181**	**136**	**131**	**122**	**127**	**107**	**91**
Great Britain	**2 997**	**3 000**	**2 939**	**2 864**	**2 754**	**2 750**	**2 772**	**2 868**	**2 748**	**2 510**
	Million square metres									
Concrete building blocks:										
Dense aggregate	37	39	38	38	37	36	37	38	36	35
Lightweight aggregate	18	19	21	23	23	24	25	25	26	25
Aerated concrete	28	26	29	30	29	32	34	33	28	27
Total	83	85	88	90	88	92	96	96	90	88
Roofing tiles:										
Concrete	25	25	26	27	25	25	21	21	26	24

(a) Including sandlime bricks.

Source: Department for Business, Enterprise and Regulatory Reform (Previously Department of Trade and Industry).

Bromine

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Bromine										
Production	24 500	(a) 25 000	—	—	—					
Imports	2 880	1 899	7 146	7 995	7 592	1 153	578	2 115	3 280	4 584
Exports	8 672	5 307	1 126	235	1 138	6 149	2 691	1 169	639	1 935

(a) BGS estimate.

Building and dimension stone

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Building and dimension stone										
Production (a)										
Sandstone	(b) 300 000	327 000	439 000	(b) 470 000	434 000					
Igneous rock	217 000	212 000	189 000	150 000	(b) 150 000					
Limestone	191 000	(b) 200 000	226 000	589 000	379 000					
Dolomite	9 000	7 000	8 000	(b) 8 000	(b) 8 000					
Total	(b) 717 000	(b) 746 000	862 000	(b) 1 217 000	(b) 971 000					
Imports										
Unworked–										
Marble and other calcareous stone	12 708	18 565	29 893	63 046	32 609	8 855	11 930	14 655	18 901	17 463
Granite (c)	1 656 235	1 145 887	1 643 221	1 331 520	491 438	29 447	30 386	39 988	43 026	33 622
Sandstone	50 214	72 589	129 148	193 793	255 732	7 050	10 803	16 168	25 501	31 694
Other stone	259 070	300 324	29 224	28 138	116 986	3 448	4 968	5 463	4 580	12 024
Worked–										
Marble and other calcareous stone	48 237	60 473	69 920	77 698	100 555	32 555	40 413	46 701	52 806	65 977
Granite	57 885	76 177	81 551	88 916	114 802	37 543	45 125	50 079	57 884	66 403
Other stone	27 063	31 600	42 132	42 395	41 470	13 552	14 987	16 989	17 780	17 632
Paving stones and flagstones	75 640	88 509	188 204	168 548	220 005	10 754	12 652	22 402	22 825	30 337
Exports										
Unworked–										
Marble and other calcareous stone	4 853	6 203	2 362	2 126	1 549	585	447	203	287	184
Granite	931	1 369	1 806	1 974	2 394	252	251	238	292	983
Sandstone	5 789	6 424	4 920	5 683	5 426	1 184	1 281	1 169	949	764
Other stone	1 168	932	490	784	638	408	176	362	220	167
Worked–										
Marble and other calcareous stone	946	1 072	1 658	2 905	4 068	1 893	3 320	3 726	4 951	6 441
Granite	732	290	489	607	517	755	399	546	623	1 233
Other stone	3 820	4 602	3 685	5 688	5 958	2 269	2 850	2 652	5 070	4 475
Paving stones and flagstones	5 057	4 980	4 690	6 709	6 669	1 217	1 105	1 103	2 035	1 847

(a) Great Britain only.
(b) BGS estimate.
(c) Figures believed to be too high. May include aggregate.

Cadmium

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Cadmium										
Production										
Cadmium (a)	292	22	—	—	—					
Consumption										
Cadmium	589	591	592	598	598					
Imports										
Metal	225	416	479	206	129	439	778	647	538	642
Pigments	31	60	62	53	220	154	298	249	145	299
Exports										
Metal	115	187	27	79	7	742	705	131	167	46
Pigments	640	704	775	707	672	4 504	4 850	5 186	6 162	6 571

(a) Refined.

Calcspar

United Kingdom summary 2002–2006

Tonnes

Commodity	2002	2003	2004	2005	2006
Calcspar (Calcite)					
Production	(a) 10 000	—	—	—	…

(a) BGS estimate.

Cement

Finished cement production in Great Britain was 11 469 million tonnes in 2006 compared with 11 216 million tonnes in 2005. Production in 2007 is estimated at 12 000 million tonnes. Increasing competition in overseas markets has led to a decline in cement exports in recent years. The situation improved in 2005 with UK exports of Portland cement clinker rising to 134 992 tonnes compared with 82 936 tonnes in 2004. The UK has become a net importer of cement due to insufficient domestic production capacity, importing more than 406 000 tonnes of Portland cement clinker in 2005. Planning applications submitted by Lafarge Cement (UK) Ltd have been granted to expand rail infrastructure associated with its Hope Cement works. This development will increase the amount of cement transported by rail, primarily to the south-east of England. In the future Lafarge Cement UK aims to distribute 1 200 000 tonnes of cement by rail. In 2007 Lafarge Cement started the design and feasibility studies for its proposed new ‘Medway Works’ at Snodland, in Kent. Planning permission for the ‘Medway Works’ was granted in 2001 and the company has since been preparing the site for construction and adding new infrastructure. Lafarge’s Northfleet cement Works will close during 2008, but Lafarge have constructed a new import facility on the East Coast to ensure continued supply to the market in the south-east.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Cement										
Production										
Cement, clinker (a)	10 327 000	10 146 000	10 402 000	10 074 000	10 069 000					
Cement, finished (a)	11 089 000	11 215 000	11 405 000	11 216 000	11 469 000					
	Cubic metres									
Ready-mixed concrete	22 597 000	22 289 000	22 856 000	22 432 000	23 029 000					
	Tonnes									
Consumption (home deliveries)										
Finished cement (a) (b)	10 762 000	11 072 000	11 074 000	11 004 000	11 221 000					
Imports										
Portland cement clinker	289 685	506 128	377 341	406 044	516 583	10 511	20 380	21 529	25 125	38 834
Aluminous cement	12 267	10 747	15 478	13 561	13 967	3 403	3 220	3 598	3 645	3 960
Portland cement	2 142 589	1 714 946	2 137 035	1 645 088	1 397 025	75 099	70 633	85 884	77 236	69 931
Other cement	49 060	50 384	48 811	24 144	12 824	1 996	2 037	2 636	2 804	3 244
Exports										
Portland cement clinker	159 252	60 920	82 936	134 992	91 357	6 685	1 965	1 417	1 657	2 510
Aluminous cement	50 501	54 595	66 966	55 934	69 458	14 498	16 768	20 073	17 933	24 515
Portland cement	305 801	216 480	214 420	320 680	521 784	14 062	15 076	16 909	24 987	31 713
Other cement	15 662	6 598	9 551	12 620	17 400	2 575	1 983	1 952	2 328	3 184

(a) Great Britain only.

(b) Excluding imports.

Chalk (see Limestone)

China clay

China clay, or kaolin, is commercial clay composed principally of the hydrated aluminosilicate clay mineral kaolinite. The commercial value of china clay is based on the mineral's natural whiteness and its fine, but controllable, particle size. Particle size affects fluidity, strength, plasticity, colour, abrasiveness and ease of dispersion. Other important properties include its flat particle shape, which increases opacity or hiding power, its soft and non-abrasive texture, due to the absence of coarser impurities, and its chemical inertness. These key properties distinguish china clay from the other kaolinitic clays produced in Britain, such as ball clay and fireclay. The kaolinite content of processed kaolin varies, but is generally in the range 75 to 94 per cent. China clay is mainly used in paper making as a coating pigment and filler, although the ceramics industry, and its use as a filler in paint, rubber and plastics, are also important markets.

China clay resources in Britain are confined to the granites of south-west England. The deposits are world famous for their size and quality and have provided over 165 million tonnes of china clay since production records began in the late 19th century. All the main granite intrusions have been worked to a limited extent in the past. Today production is confined to the St Austell Granite, the south-western margin of the Dartmoor Granite, and on the adjacent but separate Crownhill Down Granite. Production from the Bodmin Moor Granite ceased in 2001 with the closure of the Stannon Pit. The St Austell Granite is by far the most important source, accounting for about 85 per cent of total sales. The industry is of considerable national and regional importance.

China clay sales have been on a declining trend since peak output of 3.28 million dry tonnes in 1988. Sales were 1 671 426 dry tonnes in 2007 compared with 1 762 328 tonnes in 2006. The UK is a major exporter of china clay and in 2007 1 490 416 tonnes (89 per cent) of sales were destined for export, including 966 800 tonnes to the EU.

The extraction and processing of china clay involves the production of very large quantities of waste. China clay waste is exempt from the Aggregates Levy and sales for aggregate use have increased from 2.1 million tonnes in 2001 to 2.6 million tonnes in 2005. Sales are mainly in the south-west, although small quantities are also shipped to London and the south-east. However, shipments of china clay aggregate from the port of Par declined from 160 000 tonnes in 2003 to 62 000 tonnes in 2004. This is due to the rising cost of sea freight, the cost of fuel and the lack of available vessels.

Imerys Minerals Ltd is the largest china clay producer accounting for about 85 per cent of total output with operations based on the St Austell Granite in Cornwall, and the south-western margin of the Dartmoor Granite in Devon. The company is a subsidiary of the Imerys Group of France, which is the world's leading kaolin producer. In July 2006 Imerys announced plans to reorganise its UK kaolin business with the transfer of some production to Brazil. The main reason cited by Imerys for stopping the energy-intensive process of producing clay for paper coating in the UK is recent increase in energy costs. Future UK production will largely focus on filler clays used in lower grade applications, which have a much lower value than paper-coating clays. Imerys will continue to produce ceramic clays and clays for speciality markets such as paint, rubber and plastics. The operations at Lee Moor and Marsh Mills will be closed and production transferred to existing operations in Cornwall. Goonvean Ltd, a privately-owned company, operates five quarries in the St Austell Granite, and WBB Minerals operates two sites on the Dartmoor Granite and Crownhill Down Granite.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
China clay										
Production (sales) (a) (b)	2 162 815	2 097 137	1 944 955	1 910 874	1 762 328					
Imports	56 416	70 125	108 260	72 812	79 958	5 433	7 804	9 439	8 741	10 007
Exports (a) (b)	1 899 220	1 862 437	1 728 161	1 698 747	1 566 025					

(a) Dry weight.

(b) Source: The Kaolin and Ball Clay Association.

China stone

United Kingdom summary 2002–2006

Tonnes

Commodity	2002	2003	2004	2005	2006
China stone–see Feldspar					
Production	1 896	2 865	2 274	1 835	1 441

Chromium

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Chromium										
Apparent consumption (a)	90 000	67 800	103 100	56 200	45 600					
Consumption in iron and steel industry (b)	46 040	52 880	53 860	52 070	54 670					
Imports										
Ores and concentrates	139 748	107 161	130 841	122 042	74 907	5 109	3 742	4 652	6 031	4 344
Under 4% carbon	10 196	8 329	12 892	9 712	7 049	6 063	5 413	10 477	9 092	6 607
4%–6% carbon	—	72	102	31	399	—	34	48	14	351
Over 6% carbon	102 702	60 004	99 240	53 735	45 046	21 079	17 797	31 029	21 902	18 869
Ferro-silico-chrome	2 309	63	—	728	350	555	35	—	217	128
Oxides and hydroxides	(c) 4 400	(c) 2 600	(c) 9 600	(c) 9 500	2 901	(c) 4 300	(c) 2 600	(c) 7 500	(c) 10 400	3 468
Metal	1 171	1 612	2 321	1 723	4 022	4 494	6 436	8 862	6 963	12 883
Exports										
Ores and concentrates	26	212	622	228	47	30	71	403	101	15
Under 4% carbon	181	267	906	507	436	427	660	703	892	582
4%–6% carbon	55	540	111	…	938	37	242	127	…	243
Over 6% carbon	567	879	1 342	5 605	2 684	710	602	1 249	3 307	2 234
Ferro-silico-chrome	10	25	25	8	8	8	89	46	6	12
Oxides and hydroxides (d)	18 500	20 000	22 000	21 400	33	35 600	37 900	44 500	50 700	35
Metal	3 837	4 173	4 766	4 547	5 123	15 034	14 987	15 469	17 291	20 563

(a) BGS estimates; see p.v.

(b) Chromium content of ferro-alloys.

(c) BGS estimates, based on known exports from certain countries.

(d) BGS estimates, based on known imports into certain countries.

Clays (also see Bricks)

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Clays (not elsewhere specified)										
Production										
Clay and shale (a)	10 306 000	10 680 000	11 164 000	10 898 000	10 432 000					
Imports										
Unspecified clays	...	101 742	79 261	99 221	75 154	12 793	21 167	13 940	13 430	13 511

(a) Great Britain only. There is a small, undisclosed production in Northern Ireland.

Great Britain production of clay and shale by end-use and area of origin 2006

Thousand tonnes

Area of origin	Bricks, pipes and tiles	Cement	Construc-tional use	Other uses	Total
Durham	218	—	—	—	218
Northumberland	22	—	—	—	22
Tyne and Wear	33	—	—	—	33
North East	**273**	**—**	**—**	**—**	**273**
Humberside	…	…	—	7	…
North Yorkshire	…	—	…	—	…
South Yorkshire	…	—	…	—	176
West Yorkshire	466	—	—	—	466
Yorkshire and the Humber	**707**	**…**	**…**	**7**	**1 013**
Derbyshire	…	…	—	—	…
Leicestershire	680	241	—	—	920
Nottinghamshire	…	—	…	—	…
East Midlands	**1 340**	**…**	**…**	**_**	**2 087**
Cambridgeshire	…	…	9	—	…
Suffolk	2	—	—	—	2
Essex	…	227	…	—	229
Bedfordshire	…	—	200	—	…
East of England	**…**	**…**	**…**	**—**	**1 782**
Buckinghamshire	…	—	—	—	…
Surrey	210	—	—	—	210
Kent	103	—	1	…	…
East Sussex	126	—	—	—	126
West Sussex	474	—	—	—	474
Hampshire	…	—	—	—	…
South East	**…**	**—**	**1**	**…**	**1 018**
Avon	…	—	—	—	…
Cornwall	—	—	…	…	…
Devon	…	—	—	—	…
Dorset	13	—	—	—	13
Gloucestershire	…	—	10	1	…
Wiltshire	—	57	7	18	81
South West	**295**	**57**	**…**	**…**	**391**
Hereford and Worcester	101	—	—	…	…
Shropshire	…	…	…	…	…
Staffordshire	558	292	—	155	1 006
Warwickshire	…	…	—	—	…
West Midlands	278	—	—	—	278
West Midlands	**1 467**	**…**	**…**	**…**	**2 279**
Cumbria	31	—	51	—	82
Cheshire	…	—	…	—	…
Greater Manchester	…	—	…	—	…
Lancashire	…	—	…	—	362
Merseyside	…	—	—	—	…
North West	**377**	**—**	**217**	**—**	**594**
England	**6 515**	**2 002**	**644**	**276**	**9 437**

continued

Great Britain production of clay and shale by end-use and area of origin 2006 *continued*

Thousand tonnes

Area of origin	Bricks, pipes and tiles	Cement	Construc-tional use	Other uses	Total
Clwyd	—	—	116	—	116
Gwynedd	…	—	1	—	…
Dyfed	—	—	…	5	…
Powys	64	—	…	10	…
Wales	**…**	**—**	**…**	**16**	**604**
South of Scotland	—	—	21	2	23
West Central Scotland	…	—	…	…	68
East Central Scotland	—	…	…	—	238
Tayside and Fife	—	—	…	—	…
Highlands	30	—	—	…	…
Orkney	—	—	…	—	…
Scotland	**…**	**…**	**219**	**…**	**390**
Great Britain	**6 772**	**…**	**…**	**…**	**10 432**

Source: Office for National Statistics.

Great Britain production of clay and shale by end-use 1994–2006

Thousand tonnes

Year	Bricks, pipes and tiles	Cement	Lightweight aggregate	Construc-tional use	Other uses	Total
1994	8 318	2 581	98	1 219	248	12 464
1995	9 316	2 616	—	1 914	85	13 930
1996	8 162	2 169	—	1 196	(a) 277	11 804
1997	7 560	2 339	—	1 104	(a) 319	11 322
1998	8 214	2 384	—	1 089	(a) 543	12 230
1999	8 270	2 148	—	540	…	11 355
2000	7 880	1 939	1	…	…	10 838
2001	7 574	1 884	33	625	(a) 310	10 426
2002	6 985	2 194	…	956	…	10 306
2003	7 090	2 215	…	1 181	…	10 680
2004	7 629	(a) 1 970	…	(a) 1 104	234	11 164
2005	7 741	1 937	…	798	422	10 898
2006	6 772	…	…	…	…	10 432

(a) BGS estimate.

Source: Office for National Statistics.

Coal (also see Primary fuels)

Coal production continues to fall. In 2007, production was 17.0 million tonnes, a decrease of 8.1 per cent on the previous year. This reduction was due to lower production from deep mines (18.7 per cent lower than in 2006) while opencast coal production increased by 2.7 per cent. Of the total production, underground mines contributed 7.7 million tonnes (45.1 per cent) and opencast mines 8.9 million tonnes (52.1 per cent) with minor quantities recovered from other sources. In 2005 and 2007, opencast production exceeded that of deep mines, but in 2006 this situation was reversed. The value of coal production is estimated to have fallen to £648 million in 2006, compared to £722 million in 2005. The number of people employed in UK collieries at the end of March 2008 was 3558, and in opencast sites, 1844, the total representing a 2.6 per cent increase in manpower over the year.

Coal consumption fell by 6.9 per cent from the 2006 peak of 67.3 million tonnes to 62.7 million tonnes. In 2007, generation of electricity used 52.4 million tonnes, or 83.6 per cent of total consumption. Electricity supplied by coal fell by 8.5 per cent from the peak in 2006. The quantities of fuels used in electricity generation in 2006 were affected by the high price of gas for the first 10 months of the year which, combined with the low carbon price in the EU Emissions Trading Scheme, led to generating companies increasing their use of coal-fired power stations in preference to gas-fired plant. The average gas price in 2007 was only slightly lower yet its use in electricity generation increased by 17 per cent. Coal accounted for 33.9 per cent of total electricity generation in 2007, whereas gas accounted for 42.5 per cent. Consumption in coke ovens and blast furnaces accounted for 11.4 per cent and industrial, domestic and other uses for 3.8 per cent. Total stocks of coal at the end of 2007 were 14.3 million tonnes, a decrease of 2.9 million tonnes compared to the previous year.

An increasing proportion of coal for generation is being sourced from imports by major power producers. The proportion has increased from 20 per cent in 1999 to 74 per cent in 2006 (BERR, *Digest of United Kingdom Energy Statistics 2007*).

In 2006, 99.7 per cent of imports were bituminous coal, with steam coal comprising 86.3 per cent of the total and coking coal 13.4 per cent.

Anthracite accounted for the remaining 0.3 per cent of imports. The sources of supply are summarised in the table below. The chief sources of steam coal were Russia (49 per cent) and South Africa (30 per cent) and the chief source of coking coal was Australia (56 per cent). Coal imports decreased by 14.2 per cent from 50.5 million tonnes in 2006 to 43.3 million tonnes in 2007. This is similar to the 2005 imports, the 2006 level being unusually high due to increased demand. In 2007 net imports comprised 68.0 per cent of total consumption.

Coal Authority licences for opencast sites in production at 31 January 2008 totalled 31, of which 17 were in Scotland, eight in England and six in Wales. A further two sites were under development. There were 12 opencast operators in total. Scottish Coal, the largest opencast coal mining company in the UK and second coal producer, held the largest number of licences with nine producing sites, all in Scotland. UK Coal plc held six licences for producing sites in England and ATH Resources plc had three producing sites in Scotland.

In December 2007, there were 12 licences for underground coal mines in production. Of these, four were held by UK Coal plc operating in the Midlands and Yorkshire. Each of the other eight licensees held one licence.

The high global price of coal and continuing demand has led to some previously uneconomic sites becoming commercially viable. The Unity mine, a drift mine in the Vale of Neath, South Wales and closed since 1998, reopened in 2007 and is in production. The owners, Unity Power plc, have stated that 120 jobs should be created and that they are aiming for production of one million tonnes per year for 20 to 25 years. The nearby Aberpergwm mine, owned by Energybuild Holdings Ltd, has also reopened, and Corus hopes to develop a mine at Margam to supply metallurgical coal to the company's nearby steelworks in Port Talbot, South Wales.

In January 2008 the Tower colliery closed. This was the last deep coal mine in Wales. Thirteen years ago, this pit was bought by 239 employees following its closure by British Coal in 1994. The pit reopened in January 1995 but the reserves are now exhausted.

Hatfield Colliery, near Doncaster in Yorkshire, reopened in 2007 following a £100 million investment by Powerfuel Ltd. This company aims to produce 2.2 million tonnes of coal per year and will create more than 300 jobs. Powerfuel is also seeking planning permission to develop an adjacent site. The coal will be sold to the nearby Drax power station and Powerfuel also plan to develop their own power station, costing around £1.2 billion, which could be operational by 2012.

UK Coal plc, the larger UK coal producer, made an operating profit in 2007. The company benefitted from the high world coal price, so enabling investment in accessing more reserves in both deep and opencast mines. Deep mine production for UK Coal plc, at 6.6 million tonnes, was 26 per cent lower than in 2006. In January 2007, UK Coal sold its Maltby mine to Hargreaves Group for £21.5 million. Performance was reduced in the first half of 2007 as there was a period of no production from Daw Mill, UK Coal's largest mine. The company has committed roughly £55 million of new investment to both the Thoresby and Kellingley collieries over the next three years in order to extend the lives of these mines by 10 years and increase the planned production rates. The estimated reserve of deep mine coal is 40 million tonnes, with a further 70 million tonnes in the resources categories.

Three proposals for new UK coal-fired power stations were announced. RWE Npower submitted proposals to replace the power station at Tilbury, Essex, and to build a new plant on the site of the former Blyth power station, Northumberland, at costs of £1 billion and £2 billion respectively. E.ON Npower has also submitted plans to replace its plant in Kingsnorth, Kent by 2012. This would be Britain's first new coal-fired power station in over 20 years. These proposals all state that the power stations will have the capacity to burn organic 'biomass' fuels, which are carbon neutral, and will also be able to utilise carbon capture and storage technology. However, this technology is not yet viable. The Department of Trade and Industry has provisionally said the developments could go ahead if they meet planning and environmental regulations, but there is opposition at both local and national level.

Permitted reserves of opencast coal in operational sites and those with planning permission but not yet worked at the end of 2006 are shown in the table below. This table has been amended to include information from Mineral Planning Authorities and Scottish Planning Authorities. The table, with figures for 2007, will be updated and made available on www.mineralsUK.com.

UK supply of coal 2006

Thousand tonnes

	Bituminous		Anthracite	Total
	Steam coal	Coking coal		
Production				
Mine production	…	266	…	18 079
Other sources	…	—	…	449
Stock change	…	7	…	-1 274
Total production	…	273	…	**17 254**
Imports				
European Union	1 584	—	13	1 597
Australia	172	3 846	—	4 018
Canada	—	1 282	—	1 282
Colombia	3 798	—	—	3 798
Indonesia	1 895	—	—	1 895
China PR	34	—	21	55
South Africa	12 901	—	52	12 953
Russia	22 404	298	37	22 739
USA	692	1 301	—	1 993
Other countries	57	47	22	126
Total imports	**43 537**	**6 774**	**145**	**50 456**
Total exports	**-349**	**-1**	**-94**	**-443**
Total supply	**…**	**7 046**	**…**	**67 267**

Source: Department for Business, Enterprise and Regulatory Reform

Total permitted opencast reserves (working sites and sites not yet worked) at 31 December

Tonnes

Mineral Planning Authority		2005	2006	2007
Derbyshire		(a) 0	0	994340
Leicestershire		61 823	725 000	725 000
East Midlands		**61 823**	**725 000**	**1 719 340**
Durham		—	174 565	—
Northumberland		1 502 746	1 876 022	5149871
Newcastle		185 984	66 742	—
North East		**1 688 730**	**2 117 329**	**5 149 871**
Bolton		964 000	964 000	816096
St Helens		10 950	—	—
North West		**974 950**	**964 000**	**816 096**
Barnsley		—	—	—
Calderdale		—	8 700	7965
Kirklees		—	55 000	42531
Leeds		—	—	—
Rotherham		19 411	19 411	—
Wakefield		—	—	187327
Yorkshire and the Humber		**19 411**	**83 111**	**237 823**
Shropshire		344 976	320 760	320297
West Midlands		**344 976**	**320 760**	**320 297**
	England	**3 089 890**	**4 210 200**	**8 243 427**
Carmarthenshire		157 080	24 386	—
Neath Port Talbot		3 444 797	3 617 406	3393590
Merthyr Tydfil		10 800 000	10 800 000	10791317
Powys		2 435 552	2 032 787	2646020
Wrexham		—	—	—
	Wales	**16 837 429**	**16 474 579**	**16 830 927**
Clackmannanshire		—	—	—
Dumfries and Galloway		1 878 045	3 287 949	2428956
East Ayrshire		14 354 513	11 577 017	9251681
Falkirk		441 925	214 000	190767
Fife		1 501 212	828 786	3235659
Midlothian		181 353	37 155	400270
North Lanarkshire		580 000	no data	—
South Lanarkshire		9 510 893	13 351 218	13769166
West Lothian		754 082	241 486	—
Scottish Borders		—	—	450000
	Scotland	**29 202 023**	**29 537 611**	**29 726 499**
	Great Britain	**49 129 342**	**50 222 390**	**54 800 853**

(a) Reserve for Derbyshire included in total for Leicestershire as one site covers both MPAs

Source: The Coal Authority and planning authorities in England , Scotland and Wales

Great Britain production of deep-mined and opencast coal 1978–2006

Thousand tonnes

Year	Deep-mined			Opencast			Deep-mined and opencast		
	Anthracite	Bituminous	Total	Anthracite	Bituminous	Total	Anthracite	Bituminous	Total
1978	1 453	106 075	107 528	1 499	12 668	14 167	2 952	118 743	121 695
1979	1 693	106 082	107 775	1 337	11 525	12 862	3 030	117 607	120 637
1980	1 607	110 823	112 430	1 295	14 484	15 779	2 902	125 307	128 209
1981	1 566	108 907	110 473	1 343	13 485	14 828	2 909	122 392	125 301
1982	1 406	104 755	106 161	1 478	13 788	15 266	2 884	118 543	121 427
1983	1 249	100 493	101 742	767	13 939	14 706	2 016	114 432	116 448
1984	256	34 987	35 243	961	13 345	14 306	1 217	48 332	49 549
1985	838	74 451	75 289	1 304	14 265	15 569	2 142	88 716	90 858
1986	984	89 382	90 366	1 001	13 274	14 275	1 985	102 656	104 641
1987	917	85 040	85 957	1 174	14 612	15 786	2 091	99 652	101 743
1988	770	82 992	83 762	1 028	16 871	17 899	1 798	99 863	101 661
1989	453	79 175	79 628	1 607	17 050	18 657	2 060	96 225	98 285
1990	573	72 326	72 899	1 372	16 762	18 134	1 945	89 088	91 033
1991	189	73 168	73 357	1 675	16 961	18 636	1 864	90 129	91 993
1992	177	65 623	65 800	1 863	16 324	18 187	2 040	81 947	83 987
1993	115	50 342	50 457	1 289	15 717	17 006	1 404	66 059	67 463
1994	…	…	31 854	…	…	16 804	…	…	48 658
1995	…	…	35 150	…	…	16 369	…	…	51 519
1996	…	…	32 223	…	…	16 315	…	…	48 538
1997	…	…	30 281	…	…	16 700	(a) 2 500	(a) 44 500	46 981
1998	…	…	25 731	…	…	14 315	(a) 2 000	(a) 38 000	40 046
1999	…	…	20 888	…	…	15 275	(a) 2 000	(a) 34 200	36 163
2000	…	…	17 187	…	…	13 412	(a) 2 000	(a) 28 600	30 599
2001	…	…	17 347	…	…	14 166	(a) 2 000	(a) 29 500	31 513
2002	…	…	16 391	…	…	13 148	(a) 2 000	(a) 27 500	29 539
2003	…	…	15 633	…	…	12 126	…	…	27 759
2004	…	…	12 542	…	…	11 993	…	…	24 536
2005	…	…	9 563	…	…	10 445	…	…	20 008
2006	…	…	9 444	…	…	8 635	…	…	18 079

(a) BGS estimate. Source: Department of Trade and Industry.

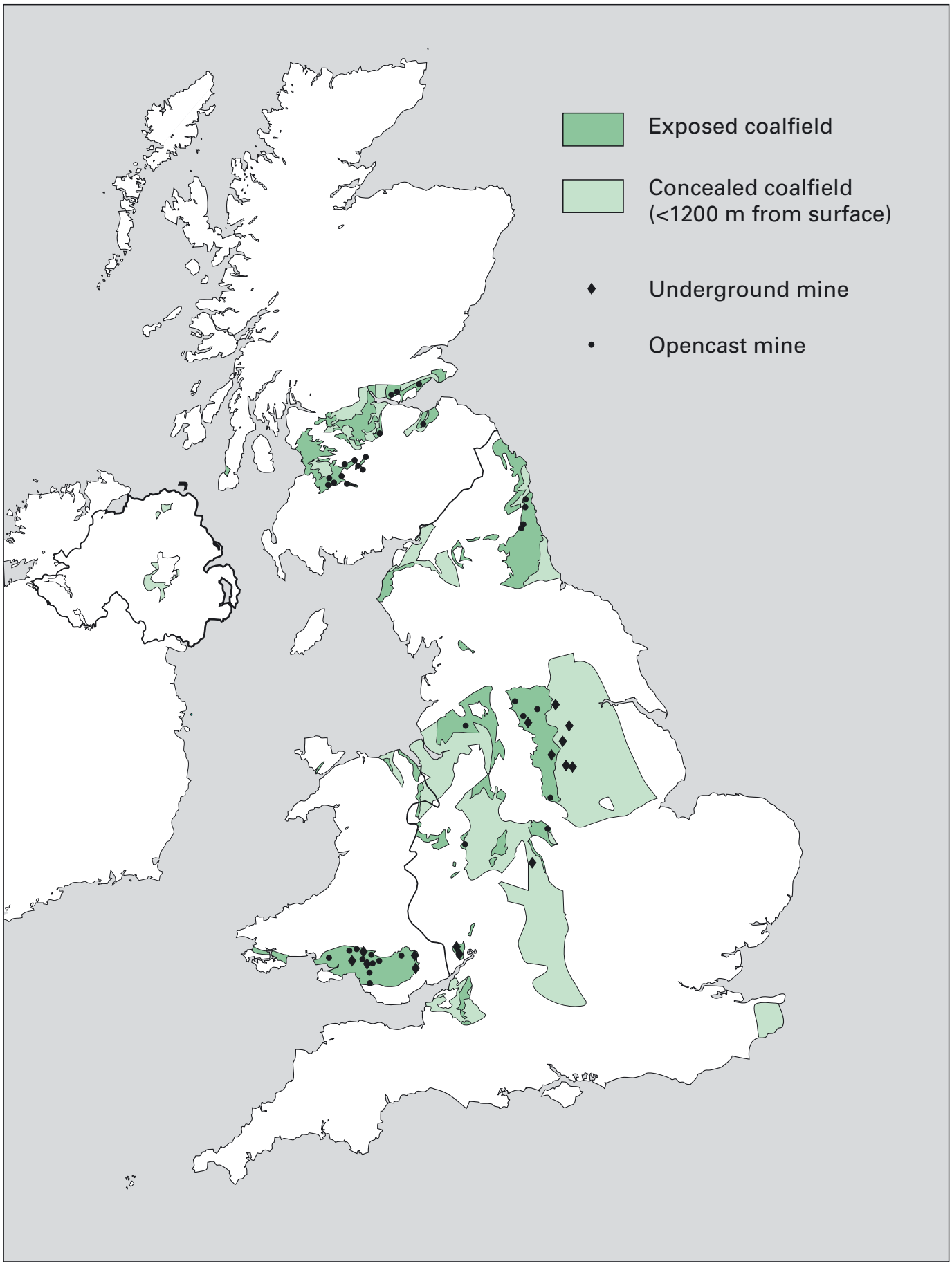
United Kingdom regional deep-mined coal production 2003–2008 (a)

Thousand tonnes

County/Unitary authority	2003/04	2004/05	2005/06	2006/07	2007/08
Doncaster	1 030	378	622	58	118
Kirklees	32	24	18	19	14
Rotherham	962	1 635	1 003	811	917
Warwickshire	2 252	2 977	2 346	2 247	2 560
Derbyshire	25	21	24	26	24
Nottinghamshire	4 083	2 617	3 579	2 642	2 125
Northumberland	598	376	125	—	—
North Yorkshire	5 111	3 054	2 042	1 908	1 569
Gloucestershire	599	94	—	0	0
England	**14 094**	**11 082**	**9 759**	**7 711**	**7 327**
Rhondda, Cynon Taff	525	398	544	423	145
Carmarthenshire	20	—	—	—	—
Neath Port Talbot	18	26	11	11	19
Torfaen	9	8	3	5	5
Wales	**571**	**431**	**558**	**440**	**168**
Scotland	**—**	**—**	**—**	**—**	**—**
United Kingdom	**14 664**	**11 513**	**10 317**	**8 150**	**7 495**

(a) Financial years to March. Source: The Coal Authority.

United Kingdom onshore coalfields and mines as at March 2008



United Kingdom regional opencast coal production 2003–2008 (a)

Thousand tonnes

County/Unitary authority	2003/04	2004/05	2005/06	2006/07	2007/08
Barnsley	352	201	11	—	—
Bolton	—	—	—	—	186
Calderdale	—	—	—	1	—
Kirklees	—	—	—	—	12
Rotherham	463	407	280	18	—
Wakefield	289	—	—	—	82
Leicestershire	572	328	69	8	110
Derbyshire	567	255	9	—	17
Durham	231	258	42	134	91
Gateshead	22	—	—	—	—
Newcastle upon Tyne	—	—	92	89	7
Northumberland	852	906	653	768	1 306
Leeds	249	311	11	—	—
Shropshire	—	6	25	0	—
St Helens	76	48	11	—	—
England	**3 674**	**2 720**	**1 204**	**1 018**	**1 811**
Merthyr Tydfil	—	—	—	—	38
Carmarthenshire	7	29	7	32	18
Wrexham	—	—	7	—	—
Neath Port Talbot	377	977	870	807	665
Powys	424	354	327	412	361
Bridgend	355	—	—	—	—
Wrexham	14	66	—	—	—
Wales	**1 177**	**1 426**	**1 210**	**1 252**	**1 082**
Clackmannanshire	177	65	—	—	—
Dumfries & Galloway	—	—	—	233	751
Falkirk	—	39	209	5	—
Midlothian	12	128	222	246	85
West Lothian	—	262	520	495	260
East Ayrshire	3 908	3 719	4 034	3 257	3 380
Fife	1 035	1 630	1 477	1 046	735
North Lanarkshire	188	203	130	—	—
South Lanarkshire	1 456	1 585	1 147	860	710
Scotland	**6 776**	**7 632**	**7 739**	**6 143**	**5 921**
United Kingdom	**11 627**	**11 778**	**10 153**	**8 413**	**8 815**

(a) Financial years to March. Source: The Coal Authority.

United Kingdom summary 2002–2006

Commodity		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
		Tonnes					£ thousand				
Coal											
Production		29 989 000	28 279 000	25 096 000	20 498 000	18 528 000					
Consumption		58 689 000	63 039 000	60 451 000	61 853 000	67 387 000					
Imports											
Anthracite		1 550 849	334 883	197 787	187 388	125 011	52 678	15 897	12 129	13 262	9 444
Bituminous		27 110 435	31 538 546	35 958 449	43 890 778	49 544 012	797 166	907 426	1 319 047	1 864 790	2 095 699
	Total	28 661 284	31 873 429	36 156 236	44 078 166	49 669 023	849 844	923 323	1 331 176	1 878 052	2 105 143
Briquettes of coal		17 025	7 440	7 697	6 125	9 604	1 811	899	838	789	1 211
Lignite (including agglomerated)		1 336	2 685	5 255	1 930	1 215	203	340	684	543	395
Exports											
Anthracite		187 372	180 382	172 486	169 252	137 353	11 267	12 774	11 419	12 704	10 739
Bituminous		341 627	352 620	439 930	380 426	354 281	19 098	19 394	25 772	26 996	24 795
	Total	528 999	533 002	612 415	549 678	491 634	30 365	32 168	37 191	39 701	35 534
Briquettes of coal		63 126	59 189	40 256	19 885	18 982	5 272	5 375	4 040	2 155	2 073
Lignite (including agglomerated)		3 670	3 567	3 172	3 149	3 804	688	344	250	311	481

Cobalt

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Cobalt										
Consumption in iron and steel industry (a)	20	20	20	20	20					
Apparent consumption (a) (b)	2 300	1 000	1 100	1 100	2 000					
Imports										
Scrap	362	414	508	593	744	1 889	1 627	3 811	4 988	4 527
Ash and residues	...	—	—	...	…	...	—	—	...	…
Unwrought	3 201	2 252	2 467	2 557	2 855	28 560	24 768	48 073	43 929	39 515
Wrought	473	690	887	738	828	6 812	6 935	14 201	12 012	16 942
Oxides	487	582	525	107	195	3 092	4 613	7 456	1 392	2 291
Exports										
Scrap	212	537	794	391	467	1 257	2 352	6 149	3 117	3 203
Unwrought	522	507	628	648	630	8 956	8 031	14 217	13 173	12 932
Wrought	386	502	460	432	597	11 714	11 485	14 884	14 113	19 281
Oxides	1 233	1 380	1 233	994	750	11 072	13 538	20 078	10 706	9 167

(a) Metal content.

(b) BGS estimates; see p.v.

Coke and breeze

United Kingdom summary 2002–2006

Commodity		2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
		Tonnes					£ thousand				
Coke and breeze											
Production											
Coke oven	–coke	4 335 000	4 286 000	4 038 000	4 105 000	4 384 000					
	–breeze	224 000	315 000	298 000	259 000	298 000					
Consumption											
Coke oven coke		3 658 000	4 005 000	3 718 000	3 639 000	3 868 000					
Breeze		1 075 000	1 332 000	1 428 000	1 364 000	1 435 000					
Imports											
Coke from coal		200 809	764 525	785 585	554 707	804 872	14 092	61 358	134 706	71 763	80 803
Exports											
Coke from coal		312 724	223 408	189 640	191 854	93 505	19 175	14 666	18 073	24 350	10 740
Coke from lignite		4 660	5 312	1	…	…	522	469	175	…	…

Copper

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Copper										
Consumption										
Unwrought–										
Refined	260 663	242 193	243 417	165 406	172 092					
Copper in scrap for direct use (a)	120 000	120 000	120 000	120 000	120 000					
Imports										
Ores and concentrates	789	459	249	251	2 571	900	685	567	736	1 537
Matte and cement	19	7	9	5	15	69	33	66	76	63
Scrap	19 240	17 378	15 731	42 264	19 744	16 505	17 025	15 621	25 644	43 789
Ash and residues	87	262	867	1 108	610	286	171	370	579	758
Unwrought–										
Unrefined	89	14	122	1 977	264	206	36	77	4 307	600
Refined	316 578	245 152	214 067	181 767	183 727	330 378	269 351	342 492	364 395	668 026
Alloys	4 363	4 427	6 478	5 371	5 813	5 813	5 555	8 800	9 428	18 155
Master alloys	1 117	1 733	1 592	820	930	1 663	2 211	2 719	1 934	3 113
Exports										
Matte and cement	10 724	2 723	79	41	515	3 909	970	445	523	1 864
Scrap	163 579	210 169	244 749	238 557	311 058	120 540	145 046	203 166	247 351	587 992
Ash and residues	1 075	1 722	2 017	675	1 168	187	3 378	1 136	74	522
Unwrought–										
Unrefined	259	687	759	271	153	1 955	3 259	3 344	2 772	1 922
Refined	32 017	2 237	6 603	15 982	5 969	30 496	2 407	9 643	33 657	18 721
Alloys	22 718	20 803	18 543	12 681	13 661	24 456	22 617	25 426	23 456	41 189
Master alloys	3 948	3 318	3 492	2 332	3 590	5 970	4 588	6 653	6 160	14 471

(a) Additional to that used in secondary metal.

Crushed rock (also see Aggregates)

Great Britain production of crushed rock by region 1978–2006

Thousand tonnes

Year	North East (a)	North West (b)	Yorks. & the Humber	West Midlands	East Midlands	East of England (c)	South East (d)	South West	**England**	**Wales**	**Scotland**	**Great Britain**
1978	10 926	5 235	9 913	7 601	15 375	693	1 296	19 965	71 006	14 164	13 567	98 737
1979	10 731	5 779	9 502	7 974	16 817	741	1 158	21 205	73 910	15 912	13 687	103 509
1980	9 948	4 951	10 714	7 364	15 996	658	1 114	21 934	72 679	15 998	13 586	102 533
1981	8 677	4 504	9 442	6 713	15 854	534	961	18 763	65 450	14 249	11 681	91 381
1982	9 362	4 779	10 108	8 181	17 237	537	1 112	21 175	72 492	16 754	13 602	102 848
1983	8 978	5 311	11 481	9 192	19 206	…	…	23 178	79 541	18 835	13 706	112 082
1984	9 668	5 116	9 557	8 861	19 142	…	…	25 107	79 650	16 965	14 063	110 678
1985	9 823	5 330	9 444	8 589	21 429	674	1 404	26 510	83 203	17 423	14 370	114 995
1986	9 861	5 469	11 201	8 780	23 038	500	1 597	29 194	89 640	17 881	14 844	122 365
1987	10 375	5 328	15 407	10 015	26 355	772	1 601	34 443	104 296	20 950	16 990	142 237
1988	11 453	6 849	14 885	12 519	32 026	853	2 589	39 108	120 283	23 102	17 629	161 014
1989	13 497	7 078	16 895	12 519	32 646	611	3 254	37 589	124 088	23 581	21 125	168 794
1990	14 602	7 533	15 449	11 047	34 143	709	1 320	33 073	117 875	22 646	21 094	161 615
1991	13 378	6 320	14 269	10 009	29 862	676	1 625	28 037	104 177	22 123	21 707	148 007
1992	12 669	5 899	12 812	8 783	29 879	…	…	28 564	100 553	21 482	21 932	143 967
1993	12 724	6 748	12 734	8 225	31 522	625	1 168	29 848	103 595	23 237	22 743	149 576
1994	13 365	7 892	15 576	8 839	33 713	1 705	1 433	32 141	114 665	24 346	22 746	161 757
1995	10 930	8 077	15 664	…	31 881	629	…	27 419	103 475	23 139	24 224	150 838
1996	10 385	6 448	12 350	6 514	29 001	595	1 210	22 940	89 444	21 273	22 177	132 894
1997	10 619	7 086	12 484	6 416	29 925	536	1 352	23 117	91 535	20 585	21 667	133 787
1998	10 246	6 348	13 745	6 028	26 933	607	1 358	23 411	88 675	19 903	23 138	131 716
1999	9 298	5 829	11 689	5 996	30 724	575	1 343	23 183	88 637	20 429	23 531	132 598
2000	5 441	10 381	11 748	5 533	28 679	475	1 624	24 146	88 027	19 044	23 236	130 307
2001	6 338	9 601	11 718	5 688	30 780	452	1 984	28 067	94 630	17 765	21 364	133 759
2002	5 390	9 426	11 620	5 835	29 604	372	1 068	24 332	87 647	16 724	22 198	126 568
2003	6 081	8 887	10 652	5 538	28 443	(e) 350	(e) 1 008	22 998	83 957	16 837	22 092	122 885
2004	6 455	9 182	11 457	4 861	28 445	423	1 351	23 479	85 653	16 528	25 494	127 674
2005	5 333	7 993	10 875	4 416	27 468	238	1 090	23 180	80 593	16 535	24 732	121 860
2006	5 352	8 996	10 811	4 824	29 658	496	1 059	22 526	83 722	18 429	24 744	126 895

(a) From 2000, excludes Cumbria.
(b) From 2000, includes Cumbria.
(c) From 2000, includes Essex, Hertfordshire and Bedfordshire.
(d) From 2000, excludes Essex, Hertfordshire and Bedfordshire.
(e) BGS estimate.

Source: Office for National Statistics.

Great Britain production of crushed rock by end-use and area of origin 2006

Thousand tonnes

Area of origin	Roadstone									Total
	Sold coated	For coating at remote plants	Uncoated	Surface dressing chippings	Railway ballast	Concrete aggregate	Other screened & graded	Other constructional uses	Armour-stone & gabion	
North East	725	…	…	…	…	543	818	1 279	…	5 352
North West	484	…	1 439	…	…	1 694	1 577	2 891	…	8 996
Yorkshire and the Humber	442	1 182	2 736	144	—	2 498	1 659	2 106	44	10 811
West Midlands	1 091	456	1 612	51	…	…	210	1 075	…	4 824
East Midlands	1 965	2 947	6 853	290	1 526	4 768	3 523	7 694	93	29 658
East of England	—	—	—	—	—	—	—	496	—	496
South East	—	—	…	…	—	…	76	554	13	1 059
South West	2 926	1 439	4 340	190	…	5 026	3 405	5 038	…	22 526
England	**7 634**	**6 870**	**18 551**	**1 104**	**1 933**	**14 818**	**11 268**	**21 133**	**411**	**83 722**
Wales	**1 993**	**1 860**	**1 972**	**…**	**…**	**2 514**	**2 954**	**5 813**	**85**	**18 429**
Scotland	**1 869**	**1 139**	**6 711**	**…**	**…**	**2 531**	**6 918**	**3 776**	**200**	**24 744**
Great Britain	**11 497**	**9 870**	**27 234**	**2 331**	**3 543**	**19 863**	**21 140**	**30 721**	**696**	**126 895**

Source: Office for National Statistics.

Great Britain production of crushed rock for aggregate 2006

Thousand tonnes

Mineral	Roadstone									Total
	Sold coated	For coating at remote plants	Uncoated	Surface dressing chippings	Railway ballast	Concrete aggregate	Other screened & graded	Other constructional uses	Armour-stone & gabion	
Limestone (inc. dolomite)	6 062	2 875	15 253	984	…	13 819	8 619	19 730	321	…
Igneous rock	4 581	4 990	10 646	832	3 102	5 548	10 484	7 195	317	47 695
Sandstone	853	2 005	1 335	515	…	496	2 036	3 796	58	…
Total	**11 497**	**9 870**	**27 234**	**2 331**	**3 543**	**19 863**	**21 140**	**30 721**	**696**	**126 895**

Source: Office for National Statistics.

Great Britain production of crushed rock by end-use 1994–2006

Thousand tonnes

Year	Roadstone									Total
	Coated	Uncoated	Surface dressing chippings	Railway ballast	Fill	Concrete aggregate	Other screened & graded	Other constructional uses	Armour-stone & gabion	
1994	28 512	51 121	…	(a) 2 300	63 479	16 345	…	…	…	161 757
1995	28 972	49 307	…	(a) 2 916	53 224	16 419	…	…	…	150 838
1996	26 270	40 893	…	(a) 2 061	48 921	14 748	…	…	…	132 894
1997	23 906	40 186	…	(a) 2 304	49 092	18 300	…	…	…	133 787
1998	23 131	36 816	…	(a) 2 481	49 142	20 146	…	…	…	131 716
1999	22 260	38 114	…	(a) 2 196	49 948	20 080	…	…	…	132 598
2000	21 785	36 509	…	(a) 2 189	51 228	18 595	…	…	…	130 307
2001	23 340	34 638	…	(a) 2 682	44 543	28 553	…	…	…	133 759
2002	23 281	27 323	…	3 514	46 109	26 342	…	…	…	126 568
2003	23 139	28 950	…	(a) 2 895	39 313	28 522	…	…	…	122 885
2004	18 721	25 260	3 787	3 832	…	21 231	21 016	33 492	333	127 674
2005	20 136	25 902	2 693	3 403	…	16 876	20 949	31 360	540	121 860
2006	21 367	27 234	2 331	3 543	…	19 863	21 140	30 721	696	126 895

(a) BGS estimate.

Source: Office for National Statistics.

Great Britain production of crushed rock, gravel and sand for use in concrete, 1994–2006

Thousand tonnes

Year	Sandstone	Igneous rock	Limestone and dolomite	Gravel (a)	Concreting sand (a)	Total
1994	434	2 744	13 166	29 600	30 977	76 921
1995	652	3 022	12 745	27 867	29 390	73 676
1996	498	2 914	11 337	26 020	28 659	69 428
1997	324	3 490	14 486	28 235	30 130	76 665
1998	686	3 749	15 711	30 369	30 244	80 759
1999	773	3 998	15 309	30 349	31 730	82 159
2000	738	3 811	14 046	30 753	31 167	80 515
2001	1 425	6 351	20 780	29 969	31 656	90 181
2002	1 483	4 747	20 112	27 699	31 224	85 265
2003	1 778	6 613	20 197	26 566	31 521	86 675
2004	1 214	5 086	14 931	27 533	32 529	81 293
2005	551	3 755	12 571	26 014	29 848	72 739
2006	496	5 548	13 819	25 354	29 815	75 032

(a) Including marine-dredged material landed at British ports.

Source: Office for National Statistics.

Great Britain production of crushed rock for use as roadstone, 1994–2006

Thousand tonnes

Year	Sandstone		Igneous rock		Limestone and dolomite		Total	
	Coated	Uncoated	Coated	Uncoated	Coated	Uncoated	Coated	Uncoated
1994	2 460	2 824	13 136	14 257	12 916	34 041	28 512	51 122
1995	3 227	2 743	12 297	13 932	13 448	32 631	28 972	49 307
1996	2 944	2 910	11 789	12 431	11 537	25 552	26 270	40 893
1997	2 835	2 741	10 947	12 392	10 124	25 054	23 906	40 186
1998	3 506	2 689	9 273	10 100	10 352	24 027	23 131	36 816
1999	3 140	2 326	9 945	13 307	9 175	22 481	22 260	38 114
2000	3 315	2 201	9 890	13 394	8 580	20 915	21 785	36 509
2001	3 216	1 731	9 523	10 547	10 602	22 360	23 340	34 638
2002	3 402	1 689	11 023	10 326	8 858	15 308	23 281	27 323
2003	3 586	1 741	11 019	10 764	8 533	16 455	23 138	28 950
2004	3 689	(a) 1 698	10 392	(a) 11 318	4 640	(b) 14 558	18 721	(a) 29 047
2005	3 526	(b) 1 452	7 832	(a) 11 168	8 777	(b) 14 195	20 136	(a) 28 595
2006	2 858	(a) 1 850	9 571	(a) 11 478	8 937	(a) 16 237	21 367	(a) 29 565

(a) Including surface dressing chippings
(b) Excluding surface dressing chippings

Source: Office for National Statistics.

Great Britain production of crushed rock for railway ballast, 1994–2006

Thousand tonnes

Year	Sandstone	Igneous rock	Limestone and dolomite	Total
1994	(a) 463	1 826	(a) 11	(a) 2 300
1995	(a) 441	2 393	(a) 82	(a) 2 916
1996	(a) 339	1 643	(a) 79	(a) 2 061
1997	(a) 343	1 870	(a) 89	(a) 2 304
1998	(a) 351	2 008	(a) 122	(a) 2 481
1999	(a) 138	1 959	(a) 99	(a) 2 196
2000	(a) 100	1 965	(a) 100	(a) 2 189
2001	(a) 150	2 341	(a) 150	(a) 2 682
2002	190	3 324	—	3 514
2003	…	2 669	…	(a) 2 895
2004	…	3 074	…	3 832
2005	…	3 072	…	3 403
2006	…	3 102	…	3 543

(a) BGS estimate.

Source: Office for National Statistics.

England production of crushed rock by end-use 1994–2006

Thousand tonnes

Year	Roadstone									Total
	Coated	Uncoated	Surface dressing chippings	Railway ballast	Fill and ballast	Concrete aggregate	Other screened & graded	Other constructional uses	Armourstone & Gabion	
1994	20 563	36 478	…	…	46 133	11 489	…	…	…	114 665
1995	20 584	35 599	…	…	35 858	11 433	…	…	…	103 475
1996	18 381	28 932	…	…	31 992	10 139	…	…	…	89 444
1997	17 405	28 125	…	…	33 252	12 754	…	…	…	91 535
1998	16 076	25 516	…	…	33 080	14 003	…	…	…	88 675
1999	15 663	24 338	…	…	34 754	13 882	…	…	…	88 637
2000	15 618	23 568	…	…	35 500	13 340	…	…	…	88 027
2001	17 202	24 333	…	…	31 518	21 578	…	…	…	94 630
2002	17 002	18 179	…	…	33 611	18 855	…	…	…	87 647
2003	16 511	18 625	…	…	28 545	20 275	…	…	…	83 957
2004	11 995	17 564	2 156	2 243	…	15 300	12 388	23 867	179	85 692
2005	13 194	17 208	1 426	1 871	…	12 494	11 676	22 474	248	80 593
2006	14 504	18 551	1 104	1 933	…	14 818	11 268	21 133	411	83 722

Source: Office for National Statistics.

Wales production of crushed rock by end-use 1994–2006

Thousand tonnes

Year	Roadstone									Total
	Coated	Uncoated	Surface dressing chippings	Railway ballast	Fill and ballast	Concrete aggregate	Other screened & graded	Other constructional uses	Armourstone & Gabion	
1994	3 905	7 045	…	…	10 004	3 392	…	…	…	24 346
1995	3 747	6 714	…	…	9 344	3 335	…	…	…	23 139
1996	3 687	5 504	…	…	8 921	3 161	…	…	…	21 273
1997	3 235	4 827	…	…	8 946	3 575	…	…	…	20 585
1998	3 318	4 222	…	…	8 445	3 919	…	…	…	19 903
1999	3 342	4 868	…	…	8 268	3 951	…	…	…	20 429
2000	2 748	3 269	…	…	9 532	3 495	…	…	…	19 044
2001	3 269	2 436	…	…	7 212	4 848	…	…	…	17 765
2002	3 340	1 938	…	…	6 508	4 937	…	…	…	16 724
2003	3 039	2 514	…	…	5 640	5 644	…	…	…	16 837
2004	2 856	1 871	…	…	…	3 733	2 469	4 351	…	16 528
2005	3 737	2 007	…	…	…	2 117	2 927	4 478	83	16 535
2006	3 853	1 972	…	…	…	2 514	2 954	5 813	85	18 429

Source: Office for National Statistics.

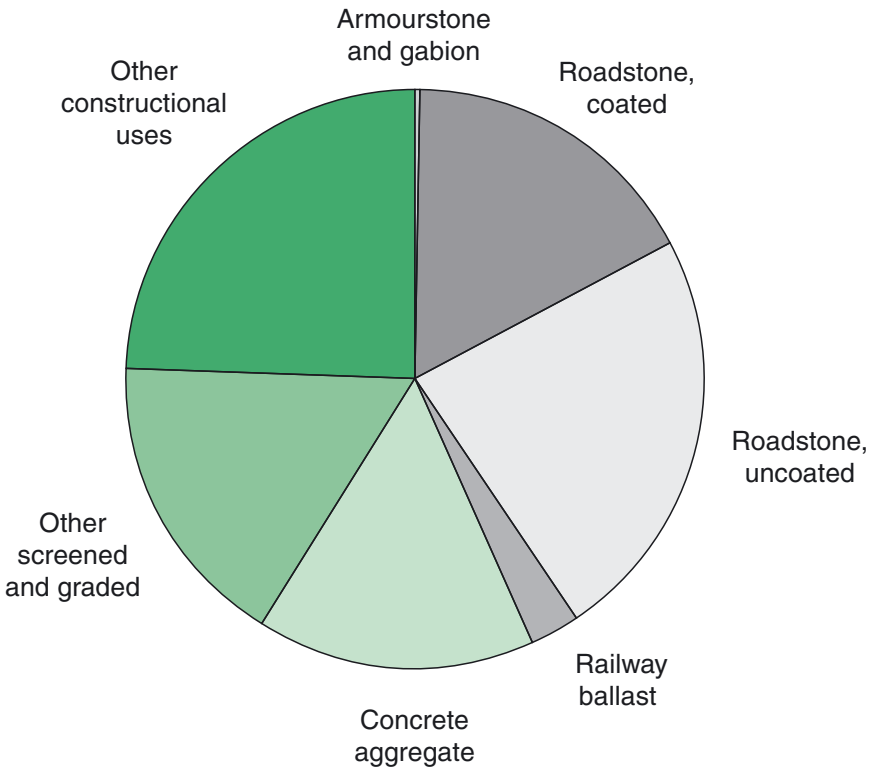
Scotland production of crushed rock by end-use 1994–2006

Thousand tonnes

Year	Roadstone									Total
	Coated	Uncoated	Surface dressing chippings	Railway ballast	Fill and ballast	Concrete aggregate	Other screened & graded	Other constructional uses	Armourstone & Gabion	
1994	4 043	7 598	…	…	9 641	1 464	…	…	…	22 746
1995	4 640	6 994	…	…	10 937	1 652	…	…	…	24 224
1996	4 203	6 457	…	…	10 069	1 449	…	…	…	22 177
1997	3 266	7 233	…	…	9 198	1 971	…	…	…	21 667
1998	3 738	7 077	…	…	10 098	2 224	…	…	…	23 138
1999	3 255	8 907	…	…	9 122	2 247	…	…	…	23 531
2000	3 420	9 672	…	…	8 385	1 760	…	…	…	23 236
2001	2 870	7 869	…	…	8 495	2 130	…	…	…	21 364
2002	2 939	7 206	…	…	9 503	2 550	…	…	…	22 198
2003	3 589	7 812	…	…	8 023	2 669	…	…	…	22 092
2004	3 910	5 825	…	…	…	2 198	6 159	5 274	…	25 494
2005	3 204	6 687	…	…	…	2 266	6 346	4 408	208	24 732
2006	3 008	6 711	…	…	…	2 531	6 918	3 776	200	24 744

Source: Office for National Statistics.

Great Britain production of crushed rock by end-use 2006 (total production £126.9 million tonnes)



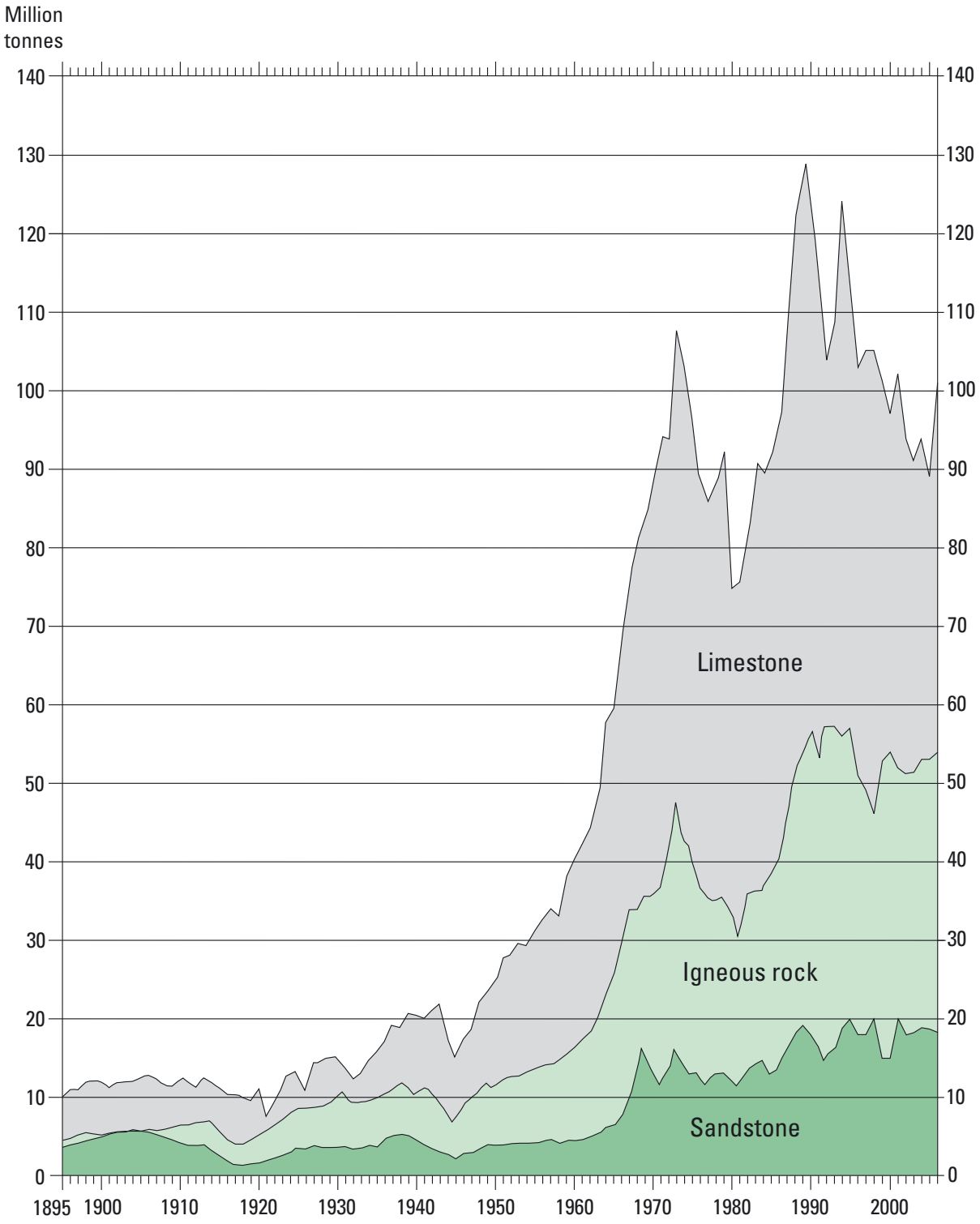
United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Crushed rock										
Production										
Crushed rock (a)	126 568 000	122 885 000	127 674 000	121 860 000	126 895 000					
Imports										
Crushed rock (b)	572 971	632 792	619 076	1 516 919	2 270 355	9 083	10 064	10 661	19 037	27 202
Exports										
Crushed rock	3 593 951	3 188 232	4 528 231	4 850 971	5 322 099	13 989	13 275	22 865	25 141	25 773

(a) Great Britain only.

(b) For a number of years, a significant amount of armourstone imports are believed be wrongly classified as 'granite, crude'. In 2006, this figure was 491 438 tonnes, and this has reduced from 1 331 520 tonnes in 2005, suggesting this issue is being addressed.

United Kingdom production of sandstone, igneous rock and limestone (including dolomite) 1895–2006



Cryolite

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Cryolite										
Imports										
Natural cryolite	…	…	…	…	…	…	…	…	…	…
Exports										
Natural cryolite	…	…	…	…	…	…	…	…	…	…

Diamond

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Carats					£ thousand				
Diamond										
Imports										
Unsorted	1 794 607	5 210 022	10 557 065	33 441 810	14 408 621	80 423	181 085	256 208	542 182	556 447
Gem–										
Rough	70 336 037	77 712 486	68 227 020	78 735 595	78 790 692	3 094 473	3 210 787	3 479 633	3 731 322	3 575 369
Cut	5 123 898	4 520 872	9 317 145	12 039 040	7 370 573	794 171	631 502	577 773	632 372	798 474
Industrial	7 804 225	21 518 053	30 993 557	25 367 064	11 884 651	11 694	33 872	29 956	12 673	70 193
Dust	68 359 660	92 290 565	126 127 015	125 510 400	199 882 920	10 902	9 564	10 684	8 677	10 325
Exports										
Unsorted	...	9 744 443	6 394 541	16 818 545	3 544 216	274 317	542 541	492 362	1 087 752	301 075
Gem–										
Rough	86 681 020	104 300 972	78 613 304	76 400 064	88 991 279	3 743 858	3 757 671	3 638 553	3 477 092	3 944 529
Cut	394 881	828 103	1 592 717	5 330 874	2 341 635	476 463	480 709	493 848	510 487	447 503
Industrial	7 837 074	12 177 638	22 821 716	21 647 850	13 652 233	17 199	40 468	33 851	20 924	18 891
Dust	...	75 401 775	149 415 960	124 529 495	22 357 670	12 027	11 742	11 106	11 791	11 200

Diatomite

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Diatomite										
Production	…	…	…	…	…					
Imports										
Diatomite (a)	34 490	37 217	34 988	29 208	28 290	5 917	5 792	5 242	4 658	4 710
Exports										
Diatomite (a)	816	1 003	2 123	708	687	515	560	745	598	1 085

(a) Officially recorded under the heading 'Siliceous fossil meals and similar siliceous earths'. Excludes flux calcined diatomite.

Dolomite (see Limestone)

Feldspar

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Feldspar										
Production										
China stone	1 896	2 865	2 274	1 835	1 441					
Imports										
Feldspar	33 196	25 764	31 601	23 139	17 098	905	1 708	2 075	1 428	1 096
Nepheline-syenite	53 692	52 453	49 731	47 672	81 960	4 627	4 465	4 204	4 052	4 201
Exports										
Feldspar	209	801	261	48	38	36	204	117	18	121
Nepheline-syenite	82	52	45	38	557	31	28	21	14	271

Fireclay

Fireclays are sedimentary mudstones that occur as the seatearths that underlie almost all coal seams. Seatearths represent the fossil soils on which coal-forming vegetation once grew. Fireclays are, therefore, mainly confined to coal-bearing strata and are commonly named after the overlying coal seam. The term fireclay was derived from the ability to resist heat and their original use in the manufacture of refractories for lining furnaces. Today the term fireclay is used to describe seatearths that are of economic interest, irrespective of their refractory properties. They are mainly used in the manufacture of structural clay products, principally high-quality facing bricks.

There has been a significant decline in fireclay production since the 1950s, due mainly to the fall in demand for fireclay as a refractory raw material. Fireclay output has historically been dominated by England, which accounted for 93 per cent of sales of 228 000 tonnes in 2006. The balance (15 000 tonnes) was from central Scotland. In the 1970s to early 1980s large quantities of fireclay were selectively extracted with the coal but stockpiled separately according to clay quality (mainly by seam). The principal source of these fireclays was the Donington Island site, near Swadlincote, which is where the current stockpiles are located.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Fireclay										
Production										
Fireclay (a)	491 000	528 000	402 000	395 000	228 000					
Imports										
Fireclay	111	67	199	497	1 279	197	405	108	156	377
Fireclay bricks etc	3 262	6 212	5 563	8 261	7 651	1 163	2 352	2 639	3 958	2 800
Refractory hollow-ware	996	880	1 347	1 676	1 969	2 234	2 016	2 023	2 956	2 688
Exports										
Fireclay	439	83	96	91	179	175	29	49	90	117
Fireclay bricks etc	2 312	2 170	1 985	3 135	2 676	2 157	2 765	2 937	4 336	4 800
Refractory hollow-ware	3 055	4 335	4 432	3 009	2 989	9 754	12 801	13 164	14 715	15 361

(a) Great Britain only. There is a small, undisclosed production in Northern Ireland.

Great Britain production of fireclay by end-use and area of origin 2006

Thousand tonnes

Area of origin	Refractory purposes	Bricks, pipes and tiles	Other uses	Total
Northumberland	…	…	…	53
Tyne and Wear	…	…	…	6
North East	…	…	…	**59**
West Yorkshire	…	…	…	3
South Yorkshire	…	…	…	…
Yorkshire and the Humber	…	…	…	**…**
Lancashire	…	…	…	…
North West	…	…	…	**…**
Leicestershire	…	…	…	46
East Midlands	…	…	…	**46**
Shropshire	…	…	…	97
West Midlands	…	…	…	**97**
England	…	…	…	**213**
Wales	**—**	**—**	**—**	**—**
West Central Scotland	…	…	…	15
Scotland	…	…	…	**15**
Great Britain	…	…	…	**228**

Source: Office for National Statistics.

Great Britain production of fireclay by end-use 1994–2006

Thousand tonnes

Year	Refractory purposes	Bricks, pipes and tiles	Other uses	Total
1994	…	550	…	679
1995	201	441	67	708
1996	129	395	13	536
1997	170	168	—	338
1998	…	331	…	577
1999	…	243	…	545
2000	…	287	…	595
2001	…	170	…	459
2002	…	…	…	491
2003	267	219	43	528
2004	…	…	…	402
2005	…	…	…	395
2006	…	…	…	228

Source: Office for National Statistics.

Fluorspar

Fluorspar is the commercial term for the mineral fluorite (calcium fluoride, CaF_2), which is the most important, and only, UK source of the element fluorine (F). All UK output is of acid-grade fluorspar (>97 per cent, CaF_2), and most is used in the production of hydrofluoric acid (HF), the starting point for the manufacture of a wide range of fluorine-bearing chemicals. Sales of acid-grade fluorspar were 44 936 tonnes in 2007, a decline from around 50 000 tonnes in 2006. Almost all the ore was derived from the Southern Pennine Orefield in the Peak District National Park.

Trade data for fluorspar makes a distinction between fluorspar containing more than and less than 97 per cent CaF_2. The former corresponds to acid-grade fluorspar, while the latter is a subacid grade used in steel making and ceramics manufacture.

According to official figures total fluorspar imports have decreased considerably during recent years from 25 092 tonnes in 2004 to 4051 tonnes in 2005 and 6619 tonnes in 2006. This decline can be attributed to the closure of Rhodia's hydrofluoric acid plant at Avonmouth.

Glebe Mines Ltd is the only producer of marketable fluorspar in the UK. In 2007, in a strategic move INEOS Fluor acquired Glebe Mines Ltd, securing supply to the UK's only viable source of acid-grade fluorspar. Glebe Mines operates the Cavendish Mill, near Stoney Middleton for the supply of acid-grade fluorspar, together with its by-products barytes, lead concentrate and limestone aggregate. The Cavendish Mill is the second-most important source of barytes in the UK and the only source of galena (lead sulphide). Production of lead concentrate (65 per cent lead) was 227 tonnes in 2007 a significant decrease from around 600 tonnes during the previous two years. Fluorspar ore, with associated barytes and galena, is obtained mainly from the company's own open pit operations on Longstone Edge and elsewhere. The Watersaw Mine, also on Longstone Edge, continued to supply small amounts of ore during 2007. Reprocessing of historic tailings and supplies from local tributers also make a significant contribution to the company's ore requirement, which is about 420 000 tonnes per year. As individual deposits are relatively small, a continuous exploration programme is required to identify new deposits and process them through the planning system. Permitted reserves of fluorspar in England have reached critically low levels with around 630 000 tonnes within the main producer's control (December 2007), equivalent to some 1.5 years supply for the operation at Cavendish Mill at the current rate of ore usage. Glebe Mines have submitted a planning application to obtain permission to extend the existing Tearsall open pit, providing an additional mineral resource of 660 000 tonnes.

The sole UK consumer of acid-grade fluorspar is the HF and fluorochemicals producer INEOS Fluor. INEOS Fluor (acquired from ICI in 2001) is a worldwide manufacturer of fluorochemicals with its headquarters and main manufacturing facility in Runcorn in Cheshire. The international chemical company, Rhodia formerly produced anhydrous HF at its plant at Avonmouth but ceased production in October 2004. Following closure of the HF plant it had to source HF from other suppliers. Subsequently in 2007 Rhodia announced the closure of their Avonmouth fluorochemical manufacturing site due to increasingly difficult market conditions.

Hydrofluoric acid is an important product in its own right and is used in the manufacture of high-octane petrol for example. However, it is also the key intermediate for the manufacture of all speciality fluorine-bearing chemicals, notably fluorocarbons. Demand for fluorspar in the UK is therefore principally driven by demand for HF and associated fluorochemicals production. Fluorine chemicals have many uses, including in refrigeration and air-conditioning systems, as foam blowing agents, non-stick coatings, aerosols (including medical propellants), anaesthetics, in pharmaceutical products and for specialised cleaning applications.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Fluorine										
Production										
Fluorspar	53 000	56 000	50 080	56 417	49 676					
Imports										
Fluorspar	26 690	21 360	25 092	4 051	6 619	2 483	2 032	2 458	94	976
Natural cryolite	...	...	…	…		...	...	….	…	
Exports										
Fluorspar	636	519	4 592	4 315	2 451	127	176	954	1 070	476
Natural cryolite	...	...	…	…	…	...	...	…	…	…

Fuller's earth

Fuller's earth is a sedimentary clay that contains a high proportion of clay minerals of the smectite group, the most important of which is montmorillonite. Smectite clay minerals exhibit a unique combination of properties, including a high cation-exchange capacity. This means that calcium-smectite, the principal constituent of British fuller's earths, can be readily converted to sodium-smectite by a simple process involving the addition of small amounts of sodium carbonate. It is commercial practice in Britain to refer to this sodium-exchanged clay as bentonite, which exhibits markedly different properties from calcium-smectite.

United Kingdom sales of fuller's earth, most of which are in the sodium-exchanged form (bentonite), were 28 000 dry tonnes in 2004 and 6200 dry tonnes in 2005 when production finally ceased, bringing to an end this long established minerals industry. UK imports of bentonite in 2006 were 173 483 tonnes valued at £14 million.

Fuller's earth was formerly produced by two companies in the UK: Rockwood Absorbents (Baulking) Ltd and Steetley Bentonite and Absorbents Ltd. Rockwood Absorbents (Baulking) Ltd produced fuller's earth at Baulking in Oxfordshire. The clay was processed on site, mainly for conversion into bentonite for use as a filler and fibre retention aid in paper making and as a bonding agent for foundry sand. The original Baulking quarry was exhausted in summer 2002 and is now restored. Until the closure of the Baulking plant in October 2005, sales were based on stockpiles of crude fuller's earth, both from Baulking and the company's former operation at Clophill in Bedfordshire. Remaining permitted reserves of fuller's earth in the Baulking area are confined to a small satellite deposit at Moor Mill Farm, about 2 kilometres from the plant at Baulking. The deposit contains reserves of some 300 000 dry tonnes and was granted planning permission in 1998. It was to have been opened up in 2004, however, a significant deterioration in the market for fuller's earth has rendered such a small deposit uneconomic and no working will now take place.

Steetley Bentonite and Absorbents Ltd, a wholly-owned subsidiary of Tolsa SA of Spain, formerly produced fuller's earth near Woburn in Bedfordshire. A planning application to extract fuller's earth from a southern extension to the deposit (Wavendon Heath South) was turned down in early 2001. The application was the subject of a public inquiry in September 2001, but the appeal was dismissed by the former

ODPM in July 2002. A challenge to this decision was made in the High Court in February 2003, but was also dismissed. Consequently fuller's earth extraction ceased at Woburn in December 2004 with the exhaustion of the remaining reserves. This marked the end of a long history of fuller's earth working in the area where it is thought to have been extracted as early as Roman times. Large-scale extraction in the Woburn area by F W Berk Ltd (acquired by the Steetley Co Ltd in 1970) started in 1951 and continued, with a small break between 1954 and 1957, until 2004. The current workings in Aspley Wood started in 1961 and have continued with a series of extensions to the original permission. The Wavendon Heath South site, covering some 54 hectares and containing some 320 000 tonnes of dry product, sufficient for about ten years' output, would have been the last site in the area. In recent years fuller's earth from Woburn has been used almost entirely as a filler and fibre retention aid in paper making.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Fuller's earth										
Crude production	33 000	19 000	115 000	—	—					
Sales (a)	(b) 44 200	(b) 34 000	(b) 28 000	(b) 6 200	—					
Imports	9 115	7 085	2 574	3 122	14 700	849	697	316	504	1 408
Exports	74	254	124	778	1 102	61	53	59	417	279

(a) BGS estimates based on data from producing companies. Dry weight. (b) Including sales from stockpiles.

Gas, natural (see Petroleum)

Germanium

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Germanium										
Imports										
Metal	10	4	2	5	2	478	595	1 993	2 094	1 205
Exports										
Metal	0	3	1	1	1	82	18	86	75	157

Gold

Mines Royal (gold and silver) exploration and development in Britain requires a licence from the Crown Estate Mineral Agent. The numbers of licences increased in 2007 from 12 to 22, with three new licences granted in Scotland and a further seven in Northern Ireland. Leases dropped from six to four with Caledonia Mining Corporation of Scotland (after the purchase of the Cononish deposit by Scotgold) and Stoic Mining of Wales both relinquishing their leases. The gold price continued to rise during the year reaching over $800 per ounce in December 2007. This contributed to a revival of interest in gold in Great Britain in 2007 with new investigations into the Cononish area. In Northern Ireland investigations have continued in the Omagh and Armagh areas and licences have been awarded for areas in County Down. Mines Royal licence and lease activity is distributed throughout the United Kingdom as follows:

	Licences		**Leases**	
	Granted	Pending	Granted	Pending
England	—	—	—	—
Northern Ireland	15	13	1	—
Scotland	7	—	—	—
Wales	—	1	3	—
Total	**22**	**14**	**4**	—

Source: Crown Mineral Agent

The 22 licences are held by the following companies:

Northern Ireland	Conroy Diamonds and Gold plc Omagh Minerals Ltd (wholly owned subsidiary of Galantas Gold Corporation) Dalradian Gold Ltd (wholly owned subsidiary of Tournigan Gold Corporation) Metallum Exploration Limited (wholly owned subsidiary of Metallum Resources plc)
Scotland	Aurum Mineral Resources Ltd (subsidiary of Alba Mineral Resources plc)

The four Mines Royal leases and current status are as follows:

Company	**Country**	**Activity**
Anglesey Mining plc	Wales	Potential underground mine at Parys Mountain
Anglo Canadian Exploration	Wales	Dormant, part of Anglesey Mining plc
National Trust	Wales	Visitor and educational centre at Dolaucothi
Omagh Minerals Ltd	Northern Ireland	Open pit mining at Cavanacaw

Source: Crown Mineral Agent

The release of data from the Tellus project, which comprised a detailed airborne geophysical survey and a geochemical soil, stream-sediment and stream-water sample survey for Northern Ireland, prompted a marked increase in gold exploration in the province.

Tournigan Gold Corporation has continued exploration at the Curraghinalt deposit, a mesothermal quartz-sulphide vein deposit, 15 kilometres north-east of Omagh in Co. Tyrone. A new resource estimate completed in December 2007 showed the deposit to have an indicated resource of 250 000 ounces of gold, contained in 570 000 tonnes of material, with an average grade of 13.95 grams per tonne of gold. An inferred resource was also announced: 350 000 ounces of gold contained in 640 000 tonnes of material with an average grade of 17.15 grams per tonne of gold, based on a cut-off of 6 grams per tonne of gold and a minimum vein width of 1 metre. The deposit could potentially also have economically recoverable copper in associated copper sulphides.

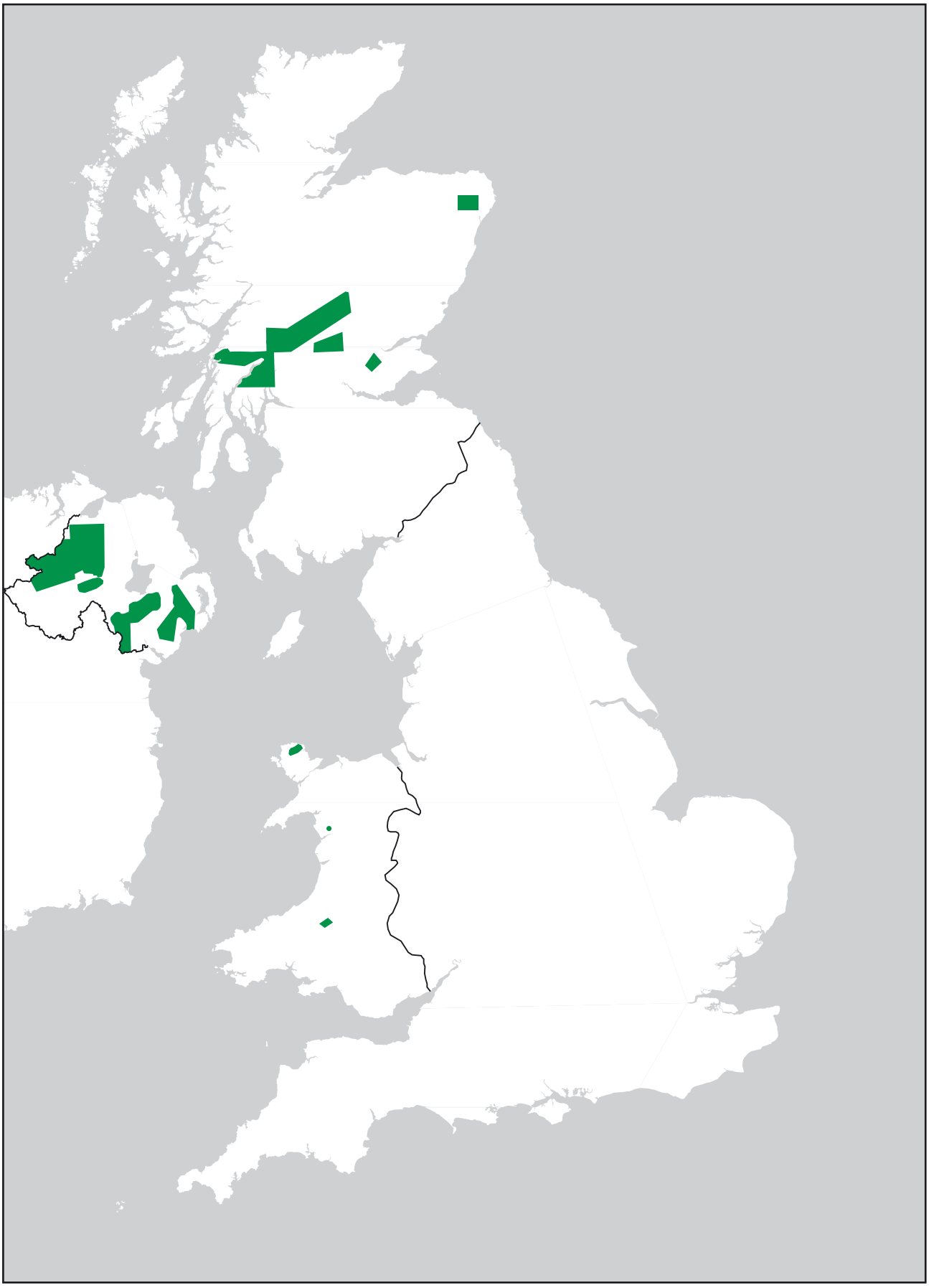
The Omagh (formerly Cavanacaw) deposit, 10 kilometres south-west of Omagh, is owned by Omagh Minerals, a wholly owned subsidiary of Galantas Gold Corporation. The mesothermal quartz-sulphide vein deposit has a proven and probable reserve of 367 310 tonnes grading 7.52 grams per tonne gold over a width of 4.43 metres within the designated open pit area (using a cut-off grade of 1.0 gram per tonne gold and a cut off width of 0.5 metres). The processing facility has been commissioned and is now fully operational. Gold, silver and lead, are recovered from sulphide concentrates which are processed in Canada.

Conroy Diamonds and Gold has increased their indicated resource estimate for the Clontibret gold deposit, located in the ‘Armagh–Monaghan Gold Belt’ in the Longford–Down Massif which extends from Northern Ireland into the Republic of Ireland.

Metallum Resources plc has been awarded some licences and others are pending based on the results of the Tellus project. The company is planning to explore for gold mineralisation in the Dalradian in the north-west of the province, in the Tyrone Volcanic complex located between Cookstown and Omagh and in the South Armagh–South Down area.

In Scotland, Scotgold Resources Ltd purchased the gold and silver assets of the Cononish deposit, near Tyndrum, in December 2007. It is currently preparing to begin a drilling programme to identify the extent of the mineralisation and to determine a JORC-compliant resource. Scotgold has yet to obtain a lease from Mines Royal.

Mines Royal Licences and Leases in 2006



Alba Mineral Resources plc has been awarded four licences covering Aberfeldy and the Ochill Hills. Exploration for gold and silver began in the second half of 2007.

As Crown Estate licences for gold and silver are surrendered, the reports on the work carried out are deposited by the Crown Mineral Agent with the British Geological Survey for archive within the National Geoscience Records Centre. Thirty-four reports are now held, some of which are available for public access. Others will become available as the term of confidentiality expires.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Gold										
Imports										
Waste and scrap	123	231	275	66	8	78 676	134 567	167 932	33 304	8 185
Unwrought (a)	1 257	1 402	1 028	339	1 152	4 882 625	6 972 447	4 701 983	2 825 803	8 263 982
Semi-manufactured	24	12	25	12	547	86 369	40 611	76 005	38 060	90 711
Exports										
Waste and scrap	549	1 075	472	541	314	4 503	3 451	4 004	52 473	36 296
Unwrought (a)	131	65	343	585	149	781 054	402 840	1 083 671	4 217 538	1 407 212
Semi-manufactured	68	18	64	53	24	191 856	76 034	88 082	70 236	52 874

(a) Mainly refined gold bullion in the form accepted in inter-bank transactions.

Granite (see Igneous rock)

Graphite

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Graphite										
Imports										
Natural graphite	22 435	19 270	19 075	17 766	16 978	8 772	8 670	8 814	9 453	9 243
Artificial graphite	14 162	13 176	12 508	13 761	15 334	15 739	13 356	14 275	15 165	15 435
Graphite crucibles etc	1 055	1 146	1 175	811	1 100	2 343	2 888	3 477	2 788	3 506
Exports										
Natural graphite	2 816	4 158	4 348	2 685	2 979	3 064	3 416	4 104	3 204	3 183
Artificial graphite	4 365	4 058	5 771	11 450	9 300	5 712	7 491	11 010	10 431	10 537
Graphite crucibles etc	11 606	11 240	9 007	9 111	11 699	21 982	20 583	18 452	17 647	21 255

Gypsum

Gypsum ($CaSO_4.2H_2O$) and anhydrite ($CaSO_4$) are, respectively, the hydrated and anhydrous forms of calcium sulphate. Gypsum is economically the more important. In nature they occur as beds or nodular masses up to a few metres thick. Gypsum is formed by the hydration of anhydrite at or near surface, but passes into anhydrite at depth.

Calcium sulphate is also derived as a synthetic by-product of certain industrial processes. The most important is flue gas desulphurisation (FGD), a process that removes sulphur dioxide from the flue gases at coal-fired power stations. The product, known as desulphogypsum, is now an important supplement to the supply of natural gypsum, both in the UK and elsewhere.

United Kingdom consumption of gypsum is derived from three sources: the production of natural gypsum, mainly by underground mining, but with some surface extraction in Nottinghamshire; recovery of synthetic gypsum; and imports of both natural and synthetic gypsum. Natural gypsum, of which British Gypsum Ltd is the sole producer, is extracted in Leicestershire, Nottinghamshire, Staffordshire, Cumbria and East Sussex. Extraction is mainly by underground mining. BPB, which owns British Gypsum and is the world's largest producer of gypsum building products, accepted a takeover offer from the French company Saint-Gobain in November 2005.

Total gypsum output has not been disclosed in official statistics for some years but is thought to be about 1.7 million tonnes per year. Official figures for imports of gypsum are difficult to interpret. It seems likely that between 2002 and 2004 some imports of crude gypsum were being wrongly

classified as plaster. The 2005 figures appear more realistic, with reported imports of crude gypsum of 627 595 tonnes valued at £9.7 million, with imports of calcined gypsum, i.e. plasters at 133 522 tonnes valued at around £11 million. Reported imports of crude gypsum in 2006 were 369 714 tonnes valued at £8.4 million, with imports of calcined gypsum at 92 069 tonnes valued at around £11 million.

Desulphogypsum, produced by the neutralisation of sulphur dioxide contained in flue gases at coal-fired power stations, is currently produced at five sites in Britain. Their output of desulphogypsum is shown in the table.

Thousand tonnes

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Drax	549	323	483	565	506	485	699	653	565	610	645
Ratcliffe-on-Soar	296	278	220	260	291	358	384	350	235	204	253
West Burton	—	—	—	—	—	—	—	274	335	289	...
Eggborough	—	—	—	—	—	—	—	—	31	46	36
Cottam	—	—	—	—	—	—	—	—	...	...	...
Total	**845**	**510**	**703**	**825**	**797**	**843**	**1 083**	**1 277**	**1 166**	**1 149**	**934**

The FGD plant at the 2000 MW West Burton power station in Nottinghamshire, which is owned by EDF Energy, came on stream in December 2003. The new plant produced 274 000 tonnes of desulphogypsum in 2004 of which 225 000 tonnes was sold for plasterboard manufacture. FGD capacity has also been fitted to two of the four units at the Eggborough 2000 MW station in North Yorkshire, with desulphogypsum production commencing in 2005. During 2007 EDF Energy opened a new FGD plant at its 2000 MW Cottam station in Nottinghamshire. New FGD systems are due to be commissioned in 2008 at the Fiddler's Ferry and Ferrybridge power stations. As a result of the installation of FGD plant at Ferrybridge Lafarge are developing a new plasterboard manufacturing facility to utilise the synthetic gypsum produced. An FGD plant is currently being installed at Rugeley power station in Staffordshire and FGD systems are planned for other power stations in the UK. It is reported that British Gypsum have exclusive rights to the synthetic gypsum produced at the Ratcliffe, Drax and West Burton power stations.

The amount of desulphogypsum produced at FGD plants is dependent on two main factors: the electricity output of the station and the amount of sulphur in the coal. About 0.7 tonnes of high purity limestone are required for each tonne of desulphogypsum produced.

Synthetic gypsum is also produced by the neutralisation of acid effluent from the manufacture of titanium dioxide by the sulphate process at Huntsman Tioxide Ltd's plant at Grimsby. Production of white titanogypsum is used by Knauf for the manufacture of plasterboard at their Immingham plant. UK titanogypsum production reduced by half in 2004 (to approximately 100 000 tonnes per year) due to a reduction in plant capacity.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Gypsum and plaster										
Production										
Gypsum, natural	(a) 1 700 000	(a) 1 700 000	1 686 000	(a) 1 700 000	(a) 1 700 000					
Imports										
Gypsum–										
Gypsum	(b) 234 397	(b) 47 751	(b) 64 043	627 595	369 714	6 944	8 603	8 160	9 738	8 415
Calcined gypsum (plasters)	(b) 412 492	(b) 855 317	(b) 163 025	133 522	92 069	7 576	8 441	8 780	11 003	10 976
Exports										
Gypsum–										
Gypsum	14 460	2 601	3 903	2 299	2 679	692	463	593	599	558 828
Calcined gypsum (plasters)	44 827	39 515	49 945	54 356	63 533	10 283	8 689	11 677	11 836	13 680

(a) BGS estimates.

(b) Large quantities of gypsum are imported into the UK. These appear to have been wrongly classified as calcined gypsum (plasters).

Hafnium

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Hafnium										
Imports	2	7	3	23	14	320	217	285	934	919
Exports	...	11	57	1	8	248	66	244	137	336

Igneous rock (for graph, see Crushed rock)

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Igneous rock – see also Building and dimension stone										
Production (a)	51 225 000	51 356 000	53 037 000	53 104 000	53 954 000					
Imports										
Granite–										
Unworked	1 656 235	1 145 887	1 643 221	1 331 520	491 438	29 447	30 386	39 988	43 026	33 622
Worked	57 885	66 177	81 551	88 916	114 802	37 543	45 125	50 079	57 884	66 403
Exports										
Granite–										
Unworked	931	1 369	1 806	1 974	2 394	252	251	238	292	983
Worked	732	290	489	607	517	755	399	546	623	1 233

(a) Excluding a small production of granite in Northern Ireland.

Great Britain production of igneous rock by end-use and area of origin 2006

Thousand tonnes

Area of origin	Roadstone											Total
	Building stone	Sold coated	For coating at remote plants	Uncoated	Surface dressing chippings	Railway ballast	Concrete aggregate	Other screened & graded	Other con-structional uses	Armour-stone & gabion	Industrial uses	
North East	…	…	256	…	…	…	62	287	262	…	—	1 686
East Midlands	15	1 334	2 494	…	…	1 526	…	2 656	2 367	…	…	14 510
South West	4	…	…	…	…	50	…	…	500	6	—	3 459
West Midlands	…	536	…	655	—	…	…	…	…	…	—	…
North West	…	—	222	…	…	…	…	53	…	…	—	…
England	**20**	…	**3 418**	**4 071**	…	…	**2 961**	**3 277**	**3 492**	…	…	**22 076**
Wales	…	…	…	**243**	…	…	**156**	**452**	**412**	…	—	**2 596**
Scotland	…	**1 685**	…	**5 332**	**230**	**1 107**	**2 431**	**6 754**	**3 291**	**173**	—	**23 194**
Great Britain	…	**4 581**	**4 990**	**10 646**	**832**	**3 102**	**5 548**	**10 484**	**7 195**	**317**	…	**47 867**

England		**Wales**		**Scotland**	
County	Total	County	Total	Region	Total
Northumberland	…	Powys	…	South of Scotland	910
Durham	…	Dyfed	…	West Central Scotland	8 865
Lancashire	…	Gwynedd	…	East Central Scotland	2 696
Cumbria	…			Tayside and Fife	2 319
West Midlands	…	**Wales**	**2 596**	North East Scotland	1 601
Shropshire	…			Highlands	6 459
Warwickshire	…			Western Isles	164
Leicestershire	14 510			Shetland	181
Avon	…				
Somerset	…			**Scotland**	**23 194**
Devon	…				
Cornwall	2 675				
England	**22 076**				

Source: Office for National Statistics.

England production of igneous rock by end-use 1994–2006

Thousand tonnes

Year	Roadstone												Total
	Building stone	Sold coated	For coating at remote plants	Uncoated	Surface dressing chippings	Railway ballast	Concrete aggregate	Other screened & graded	Other constructional uses	Armour-stone & gabion	Industrial uses	Other uses	
1994	…	3 970	4 072	6 183	…	1 197	1 173	…	8 303	…	…	…	25 134
1995	…	4 171	3 657	6 212	…	…	1 272	…	7 434	…	…	185	24 651
1996	7	3 753	3 733	5 816	…	921	1 399	…	5 793	…	…	105	21 526
1997	49	3 120	4 412	5 141	…	1 020	1 434	…	5 073	…	…	87	20 335
1998	26	2 505	3 384	2 935	…	944	…	…	5 926	…	…	…	17 228
1999	37	2 568	3 919	…	…	…	1 724	…	7 538	…	…	…	20 803
2000	27	2 726	3 916	3 587	…	…	2 106	…	6 799	…	…	…	20 435
2001	…	2 792	3 523	2 844	…	…	4 059	…	8 051	…	…	6	22 647
2002	12	2 778	4 872	3 477	…	1 612	2 110	…	7 028	…	…	—	21 889
2003	28	2 974	4 066	3 185	…	1 701	3 458	…	6 460	…	…	5	21 878
2004	12	2 868	1 473	3 722	938	1 779	2 623	3 493	3 203	60	3	…	20 174
2005	1 054	2 571	1 699	3 619	449	…	1 457	4 105	3 727	86	…	…	20 576
2006	20	…	3 418	4 071	…	…	2 961	3 277	3 492	…	…	…	22 076

Source: Office for National Statistics.

Wales production of igneous rock by end-use 1994–2006

Thousand tonnes

Year	Roadstone												Total
	Building stone	Sold coated	For coating at remote plants	Uncoated	Surface dressing chippings	Railway ballast	Concrete aggregate	Other screened & graded	Other constructional uses	Armour-stone & gabion	Industrial uses	Other uses	
1994	14	…	…	1 079	…	…	217	…	1 128	…	…	…	4 208
1995	…	…	…	1 222	…	…	204	…	735	…	…	29	3 259
1996	…	…	…	…	…	…	157	…	386	…	…	—	2 272
1997	(a) 11	…	359	472	…	…	…	…	486	…	…	—	2 172
1998	4	…	339	578	…	…	203	…	364	…	…	…	2 110
1999	6	…	355	…	…	…	164	…	556	…	…	—	2 730
2000	…	314	227	659	…	…	…	…	…	…	…	—	2 743
2001	…	393	197	266	…	…	369	…	…	…	…	—	2 372
2002	9	375	366	241	…	219	396	…	506	…	…	—	2 111
2003	5	375	257	327	…	—	…	…	…	…	…	—	2 507
2004	3	477	179	209	…	…	357	…	391	10	—	…	2 295
2005	2	427	…	314	…	…	117	492	347	…	—	…	2 364
2006	…	…	…	243	…	…	156	452	412	…	—	…	2 596

(a) BGS estimate.

Source: Office for National Statistics.

Scotland production of igneous rock by end-use 1994–2006

Thousand tonnes

Year	Roadstone												Total
	Building stone	Sold coated	For coating at remote plants	Uncoated	Surface dressing chippings	Railway ballast	Concrete aggregate	Other screened & graded	Other constructional uses	Armour-stone & gabion	Industrial uses	Other uses	
1994	…	…	…	6 995	…	…	1 354	…	8 179	…	…	…	20 672
1995	130	…	…	6 498	…	…	1 546	…	9 407	…	…	16	21 731
1996	128	…	…	…	…	…	1 358	…	8 488	…	…	…	19 933
1997	129	…	693	6 778	…	…	…	…	7 812	…	…	(a) 24	19 863
1998	107	…	934	6 587	…	…	…	…	8 140	…	…	2	20 500
1999	141	…	804	8 367	…	740	2 110	…	7 702	…	…	…	21 761
2000	179	1 762	945	9 148	…	…	…	…	…	…	…	39	21 455
2001	423	1 608	1 010	7 437	…	…	1 922	…	…	…	…	26	20 034
2002	196	1 595	1 037	6 608	…	1 494	2 241	…	7 332	…	…	40	20 543
2003	179	2 101	1 246	7 251	…	967	…	…	…	…	…	308	20 920
2004	171	2 485	1 090	5 568	…	…	2 107	…	4 552	92	—	…	23 724
2005	130	1 993	…	6 322	…	1 036	2 181	6 147	3 866	175	—	…	23 052
2006	…	1 685	…	6 332	230	1 107	2 431	6 754	3 291	173	—	…	23 194

(a) BGS estimate.

Source: Office for National Statistics.

Insulating materials

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Insulating materials										
Imports										
Mineral wools (a)	25 520	27 034	34 567	33 438	44 986	21 003	24 780	27 848	35 145	34 486
Expanded minerals (b)	68 475	77 906	110 410	101 740	98 909	5 899	5 857	6 995	8 127	9 123
Other (c)	33 764	33 690	40 996	46 278	42 734	29 538	30 987	35 298	37 553	40 520
Exports										
Mineral wools (a)	12 709	18 482	21 782	25 329	29 911	21 088	29 829	38 331	41 965	51 274
Expanded minerals (b)	25 782	11 847	18 846	18 214	18 844	14 580	7 087	17 530	15 259	17 693
Other (c)	25 341	38 272	45 815	59 040	65 952	29 491	41 940	42 980	58 321	66 845

(a) Slag wool, rock wool and similar mineral wools.
(b) Exfoliated vermiculite, expanded clays, foamed slag and similar expanded mineral materials.
(c) Mixtures and articles of heat-insulating, sound-insulating or sound-absorbing mineral materials.

Iodine

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Iodine										
Imports	744	826	803	1 093	1 020	5 966	6 366	5 302	8 606	10 728
Exports	207	169	107	197	315	1 887	1 267	819	2 038	3 891

Iron compounds and earth colours

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Iron compounds and earth colours										
Imports										
Natural micaceous oxides	...	...	...	...	…	...	...	...	...	...
Earth colours containing 70% or more ferric oxide	65	111	105	152	122	93	48	50	40	34
Other iron compounds– Oxides and hydroxides	52 314	52 205	43 552	44 125	37 755	24 208	26 567	22 361	23 158	23 389
Exports										
Natural micaceous oxides	...	...	...	...	…	...	...	...	...	...
Earth colours containing 70% or more ferric oxide	144	93	97	58	20	204	170	216	147	34
Other iron compounds– Oxides and hydroxides	20 218	17 572	9 274	7 784	7 894	16 873	14 105	10 111	9 532	9 193

Iron ore

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Iron ore										
Production (a)	464	(b) 500	(b) 500	354	341					
Fe content	255	275	275	195	190					
Consumption										
Home-produced (b)	500	500	500	350	340					
Imported	13 181 000	15 766 200	16 013 200	15 991 100	16 538 800					
Imports										
Iron ore	13 316 026	16 121 350	15 298 713	16 204 615	16 370 705	184 578	243 973	321 118	458 754	539 498
Fe content (b)	8 200 000	9 900 000	9 200 000	9 700 000	9 000 000					
Exports										
Iron ore	350	343	212	2 107	5 229	138	145	213	534	1 256

(a) The Florence mine near Egremont, Cumbria produces high-grade hematite for foundry uses, mineral specimens and jewellery. The mine is also an active tourist attraction.

(b) BGS estimates.

Iron and steel

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005
	Tonnes					£ thousand			
Iron and steel									
Production									
Pig iron	8 560 600	10 277 800	10 179 600	10 188 800	10 695 700				
Crude steel–									
Alloy qualities	932 800	897 800	957 100	862 400	760 100				
Other	10 594 800	12 230 700	12 808 600	12 376 500	13 144 500				
Total	11 527 600	13 128 500	13 765 700	13 238 900	13 904 600				
Consumption									
Scrap (a)	4 138 000	4 390 000	5 123 000	4 531 000	4 811 000				
Pig iron (a)	8 312 000	9 955 000	10 010 000	9 983 000	10 444 000				
Finished steel (b)	12 591 000	12 314 000	13 176 000	10 762 000	13 150 000				
Imports									
Scrap	113 107	139 089	225 483	180 261	154 967	46 034	37 225	70 492	81 783
Pig iron	124 682	116 724	105 007	102 531	81 689	12 229	12 669	18 925	19 955
Shot, powder, sponge etc.	43 111	38 454	43 956	40 574	34 768	20 966	22 240	26 958	32 971
Ferro-alloys	369 966	305 212	369 797	285 640	292 311	130 211	140 783	222 837	194 233
Iron and steel–									
Ingots and other primary forms	1 453 884	540 537	758 615	722 452	1 053 176	257 803	130 116	226 009	258 168
Exports									
Scrap	5 538 569	7 174 934	6 772 111	6 105 955	7 407 174	467 968	716 223	1 005 863	938 844
Pig iron	3 376	94 788	957	1 387	5 407	2 139	147 558	531	905
Shot, powder, sponge etc.	63 346	53 669	53 644	46 947	44 736	28 181	29 988	32 186	35 060
Ferro-alloys	44 191	39 659	57 230	50 368	42 568	90 403	116 686	236 866	457 720
Iron and steel–									
Ingots and other primary forms	560 796	1 305 976	1 712 102	2 246 377	2 692 654	289 055	472 338	775 032	965 422

(a) Consumption in steel making only.

(b) Net home disposals.

Consumption in the United Kingdom iron and steel industry 1997–2006

Thousand tonnes

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Iron ore –										
Home produced (a)	1	1	1	1	1	0	1	1	0	0
Imported (b)	20 371	19 510	18 739	16 955	15 108	13 181	15 766	16 013	15 991	16 539
Manganese ore	36	22	14	36	4	4	0	6	3	6
Iron and steel scrap (f)	7 206	6 409	5 884	5 675	4 864	4 138	4 390	5 123	4 531	4 811
Pig iron (f)	13 018	12 619	11 859	10 970	9 713	8 312	9 955	10 010	9 983	10 444
Alloy metals (c) –										
Nickel	18	14	14	14	14	15	16	17	14	13
Molybdenum	3	3	2	2	2	2	2	2	2	2
Tungsten	0	0	0	0	0	0	0	0	0	0
Vanadium	1	1	1	1	1	1	0	0	0	0
Cobalt	0	0	0	0	0	0	0	0	0	0
Chromium	66	62	56	53	47	46	53	54	52	55
Niobium	1	1	1	0	0	0	0	0	0	0
Ferro-alloys –										
Ferro-manganese	134	125	112	106	91	77	94	95	92	97
Ferro-silico-manganese	34	32	29	27	24	21	23	23	22	24
Ferro-aluminium	3	3	3	3	3	3	3	3	3	3
Ferro-chromium	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Ferro-silico-chromium	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Ferro-silicon	54	51	44	42	36	35	37	37	36	38
Ferro-silico-zirconium	0	0	0	0	0	0	0	0	0	0
Calcium silicide	1	1	1	0	0	0	0	0	0	0
Ferro-phosphorus	2	1	1	1	1	1	1	1	1	1
Ferro-niobium	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Ferro-titanium	1	1	1	1	1	1	1	1	1	1
Dolomite (raw and burnt) (e)	504	495	370	338	261	223	254	262	243	445
Limestone (e)	2 445	2 411	2 408	2 166	1 889	1 684	2 019	2 068	1 951	2 028
Lime (e)	751	739	698	660	561	501	530	584	593	631
Zinc for galvanising	104	97	89	87	64	66	62	53	57	60
Tin for tinplating	3	4	3	3	3	3	2	3	3	2

Average Fe content: (a) 2005: 55%, (b) 2005: 62%.
(c) Metal content.
(d) Included under alloying metals.
(e) Restricted to consumption in blast furnaces, sinter plants and steel furnaces.
(f) Consumption in steel making only.

Source: Iron and Steel Statistics Bureau.

Lead

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Lead										
Production										
Concentrate (a)										
Pb content (c)	700	700	500	400	400					
Unwrought–										
Bullion	36 000	9 000	36 000	36 000	36 000					
Refined–										
Primary (b)	207 719	195 000	125 938	161 350	162 916					
Secondary	166 927	169 574	120 000	143 000	144 000					
Consumption										
Refined	305 664	314 700	330 367	281 686	300 000					
Scrap	41 446	40 045	40 808	—	—					

continued

United Kingdom summary 2002–2006 *continued*

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Lead *continued*										
Imports										
Ores and concentrates	(c) 30 000	(c) 5 000	343	84	78	…	…	226	89	94
Ash and residues	406	423	51	358	447	18	278	19	136	148
Scrap	4 946	6 043	6 278	3 898	5 914	1 654	2 163	2 628	1 948	4 098
Unwrought										
Unrefined–										
Bullion (d)	184 060	168 228	127 970	173 910	120 871	92 054	83 515	93 506	143 042	130 338
Other	697	7 042	16 354	4 170	2 745	519	2 215	6 811	2 092	2 224
Refined	23 993	18 165	31 531	23 366	50 504	8 188	5 417	13 725	13 623	32 754
Alloys	7 778	2 925	3 497	3 811	644	2 547	1 240	2 178	2 424	517
Exports										
Ores and concentrates	16	5	26	507	202	22	50	47	337	147
Ash and residues	0	85	0	99	484	7	79	1	22	113
Scrap	17 116	28 569	45 646	27 248	1 859	3 950	7 259	15 909	11 791	1 364
Unwrought										
Unrefined–										
Bullion	24	70	5	474	73	14	39	14	329	72
Other	4 670	3 688	754	3 046	3 074	2 290	1 775	282	1 302	596
Refined	97 138	57 924	34 100	49 073	86 124	34 907	22 214	19 659	32 048	66 656
Alloys	57 249	44 091	31 148	38 806	48 589	22 813	17 818	17 798	25 241	37 477

(a) Byproduct of Pennine fluorspar operations.
(b) Refined from imported bullion including lead content of alloys.
(c) BGS estimate.
(d) Containing substantial quantities of silver; see p.105.

Limestone, dolomite and chalk (see graph, see Crushed rock)

Great Britain production of limestone, dolomite and chalk by broad end-uses 2006

Thousand tonnes

Mineral	Constructional uses (b)	Cement	Agricultural uses (a)	Industrial uses (a)	Total
Limestone	59 460	…	…	5 911	73 843
Dolomite	10 286	—	…	…	12 101
Chalk	681	…	…	…	7 376
Total	**70 427**	**12 408**	**1 709**	**8 776**	**93 320**

(a) Including material for calcination.
(b) Including building stone.

Source: Office for National Statistics.

Great Britain production of limestone, dolomite and chalk for agricultural and industrial uses (a) 2006

Thousand tonnes

Use	Limestone	Dolomite	Chalk	Total	Of which for conversion by calcination
Agricultural	…	…	…	1 709	—
Iron and steel	…	…	…	4 390	1 230
Glass making	…	…	—	280	—
Asphalt filler	107	…	—	…	—
Other fillers	…	—	…	983	—
Chemical use	…	—	…	…	…
Building materials	…	—	…	624	—
Other uses	…	—	…	…	…
Total	**6 738**	**1 815**	**1 931**	**10 484**	**2 459**

(a) Including material for calcination.

Source: Office for National Statistics.

Great Britain production of limestone and chalk for cement, 1994–2006

Thousand tonnes

Year	Limestone	Chalk	Total
1994	(a) 10 089	(a) 6 731	16 820
1995	(a) 10 234	(a) 6 343	16 577
1996	(a) 9 673	(a) 5 697	15 369
1997	(a) 9 959	(a) 6 157	16 115
1998	(a) 10 465	(a) 6 736	17 201
1999	(a) 9 831	(a) 6 345	16 176
2000	(a) 9 821	(a) 6 288	16 109
2001	10 123	5 111	15 234
2002	9 642	5 550	15 192
2003	9 573	5 360	14 933
2004	9 474	5 177	14 651
2005	…	…	13 235
2006	…	…	12 408

(a) BGS estimate.

Source: Office for National Statistics.

Great Britain production of limestone, dolomite and chalk for agricultural uses, 1994–2006

Thousand tonnes

Year	Limestone	Dolomite	Chalk	Total	Calcination (a)
1994	1 169	1 070	574	2 813	18
1995	1 476	…	…	3 405	18
1996	1 414	(b) 1 321	(b) 624	3 359	20
1997	…	…	590	3 053	42
1998	(b) 1 009	…	…	2 343	10
1999	…	…	…	1 961	8
2000	…	…	…	1 749	2
2001	810	…	…	1 610	11
2002	789	…	…	1 639	…
2003	1 007	…	…	2 036	…
2004	921	…	…	1 811	…
2005	757	…	…	1 595	…
2006	…	…	…	1 709	—

(a) Comprises material included in the total which, after calcination, was used as lime and dolomitic lime.
(b) BGS estimate.

Source: Office for National Statistics.

Great Britain production of limestone, dolomite and chalk for industrial uses, 1994–2006

Thousand tonnes

Year	Limestone	Dolomite	Chalk	Total	Calcination
1994	(c) 7 489	1 397	(c) 1 955	10 841	(a) 4 316
1995	(c) 7 211	…	…	10 774	(a) 5 032
1996	(c) 7 618	(c) 1 551	1 879	11 048	(a) 5 074
1997	…	…	(c) 2 035	11 332	(a) 5 579
1998	(c) 7 705	…	…	11 345	(a) 5 694
1999	…	…	…	10 282	(a) 5 258
2000	…	…	…	9 867	(a) 4 797
2001	6 357	…	…	9 625	(a) 4 925
2002	6 536	…	…	8 915	(b) 3 766
2003	6 799	…	…	9 684	(b) 3 906
2004	6 003	…	…	8 614	(b) 2 897
2005	…	…	…	8 456	(b) 2 721
2006	5 911	…	…	8 776	(b) 2 459

(a) Comprises material included in the total which, after calcination, was used for industrial purposes as lime or dolomitic lime. Excludes small amounts for agricultural purposes.
(b) Including small amounts used for agricultural purposes but excluded from the total.
(c) BGS estimate.

Source: Office for National Statistics.

Great Britain production of limestone, dolomite and chalk for industrial uses by end-use, 1993–2006

Thousand tonnes

Year	Iron and steel making (a)	Chemicals (a)	Glass making	Special fillers	Asphalt fillers	Building materials (a)	Others (a)	Total (a)
1993	4 254	1 952	…	1 710	…	220	966	9 852
1994	4 813	2 004	…	…	408	175	…	10 841
1995	4 778	…	…	…	414	292	1 067	10 774
1996	5 091	2 185	344	1 561	342	399	1 127	11 048
1997	…	…	361	…	340	…	…	11 332
1998	…	2 047	375	…	…	459	…	11 345
1999	…	1 689	203	…	…	460	…	10 282
2000	…	1 864	…	…	192	474	1 144	9 867
2001	…	2 630	278	…	211	957	1 384	9 625
2002	…	…	233	1 759	164	…	1 154	8 915
2003	…	…	…	…	325	…	…	9 686
2004	…	…	…	…	149	…	…	8 615
2005	…	…	…	1 131	126	577	…	10 052
2006	4 390	…	280	983	…	624	…	8 776

(a) Including material for calcination.

Source: Office for National Statistics.

Great Britain production of limestone, dolomite and chalk for calcination by end-use, 1993–2006

Thousand tonnes

Year	Agriculture	Iron and Steel	Chemicals	Building materials	Others	Total
1993	20	2 081	1 952	220	120	4 393
1994	18	2 015	2 004	175	122	4 334
1995	18	2 381	2 289	291	71	5 050
1996	20	2 400	2 184	398	92	5 094
1997	42	2 595	2 332	435	217	5 621
1998	10	3 035	2 047	459	153	5 704
1999	8	2 970	1 689	460	139	5 266
2000	2	2 301	1 864	474	158	4 799
2001	11	1 248	2 630	957	90	4 936
2002	…	1 228	1 922	537	…	3 766
2003	…	1 353	1 858	…	…	3 906
2004	…	1 463	…	…	…	2 897
2005	…	1 460	…	…	…	2 721
2006	—	1 230	…	—	…	2 459

Source: Office for National Statistics.

Great Britain production of limestone, dolomite and chalk for iron and steel making, 1993–2006

Thousand tonnes

Year	Limestone	Dolomite and chalk	Total	Calcination (a)
1993	2 438	1 816	4 254	2 081
1994	2 703	2 110	4 813	2 015
1995	2 699	2 079	4 778	2 381
1996	3 043	2 048	5 091	2 400
1997	2 935	…	…	2 595
1998	3 346	…	…	3 035
1999	3 239	…	…	2 970
2000	2 500	…	…	2 301
2001	1 844	…	…	1 248
2002	1 866	…	…	1 228
2003	1 948	…	…	1 353
2004	1 592	…	…	1 463
2005	1 745	…	…	1 460
2006	…	…	4 390	1 230

(a) Comprises material included in the total which, after calcination, was used as lime or dolomitic lime.

Source: Office for National Statistics.

Great Britain consumption of dolomite, limestone and lime in iron and steel production, 1973–2006

Thousand tonnes

Year	Dolomite, incl. calcined dolomite (dolime)			Limestone			Lime	
	Blast furnaces and sinter plants	Steel furnaces	Other purposes	Blast furnaces and sinter plants	Steel furnaces	Other purposes	Steel Furnaces	Other purposes
1973	446	157	8	2 291	518	288	1 532	22
1974	468	95	8	1 785	303	162	1 251	11
1975	300	90	8	1 735	280	65	1 205	8
1976	517	150	0	1 777	334	7	1 288	36
1977	643	192	—	1 487	252	5	1 175	14
1978	647	183	—	1 399	106	—	1 227	—
1979	859	323	—	1 090	116	—	1 323	—
1980	389	182	—	611	7	—	663	—
1981	400	308	—	1 031	2	—	911	—
1982	280	255	—	888	2	—	799	—
1983	400	298	—	1 164	1	—	865	—
1984	405	310	—	1 143	1	—	824	—
1985	425	284	—	1 562	—	—	801	—
1986	333	270	—	1 494	2	—	680	—
1987	405	275	—	1 827	—	—	761	—
1988	477	319	—	1 948	—	—	810	—
1989	430	315	—	2 062	—	—	822	—
1990	410	287	—	1 992	—	—	778	—
1991	323	264	—	2 124	—	—	696	—
1992	391	246	—	2 033	—	—	682	—
1993	276	238	—	2 077	—	—	719	—
1994	201	264	—	2 236	—	—	767	—
1995	67	316	—	2 318	—	—	787	—
1996	59	397	—	2 225	—	—	744	—
1997	42	462	—	2 445	—	—	751	—
1998	3	492	—	2 411	—	—	739	—
1999	5	364	—	2 408	—	—	698	—
2000	1	337	—	2 166	—	—	660	—
2001	7	254	—	1 889	—	—	561	—
2002	8	215	—	1 684	—	—	501	—
2003	8	246	—	2 019	—	—	530	—
2004	3	260	—	2 068	—	—	584	—
2005	0	243	—	1 951	—	—	593	—
2006	183	262	—	2 028	—	—	631	—

Source: Iron and Steel Statistics Bureau.

This table shows the consumption of fluxes used in iron and steelmaking. Dolomite and limestone are used in blast furnaces and in sinter plants, whilst lime and calcined dolomite, or dolime, are used in steelmaking. These figures do not entirely agree with those shown on p.61 for the production of limestone, dolomite and chalk for iron and steelmaking, even allowing for the conversion of lime and dolime to carbonate.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Limestone–see Building and dimension stone										
Production										
Limestone	80 688 000	78 935 000	81 648 000	77 596 000	88 983 000					
Dolomite	12 946 000	12 167 000	12 226 000	11 514 000	12 101 000					
Imports										
Dolomite	184 947	179 003	170 916	218 932	111 177	3 694	4 129	3 690	4 032	3 135
Limestone flux (a)	...	4 976	9 155	132 061	22 067	1 056	469	646	4 492	1 615
Lime	13 742	15 487	12 651	13 995	20 681	1 616	2 140	2 536	2 035	2 388
Exports										
Dolomite (c)	104 126	…	…	144 707	47 360	4 393	…	…	5 106	2 230
Limestone flux (a)	95 364	247 665	234 101	265 228	307 136	2 513	3 631	3 430	3 991	5 744
Lime	88 783	360 584	110 087	94 648	101 138	8 628	12 745	10 978	10 989	11 740
Chalk										
Production (b)	8 587 000	8 066 000	7 997 000	7 105 000	7 376 000					
Imports	3 935	5 847	6 128	3 675	4 249	338	528	537	384	315
Exports	24 974	26 858	40 942	43 846	36 918	2 079	2 036	2 121	1 994	1 670

(a) Including calcareous stone commonly used for the manufacture of lime or cement. (c) Crude
(b) Great Britain only. There is a small, undisclosed production in Northern Ireland.

Great Britain production of limestone by end-use and area of origin 2006

Area of origin	For constructional uses (a)									For other uses	
		Roadstone									
	Building stone	Sold coated	For coating at remote plants	Uncoated	Surface dressing chippings	Railway ballast	Concrete aggregate	Other screened and graded	Other con-structional uses	Armour-stone & Gabion	Agricul-tural use
North East	…	…	…	1 012	…	…	480	531	967	…	…
Yorkshire and the Humber	3	442	700	2 676	…	—	…	1 227	1 762	44	49
East Midlands	42	631	452	4 235	…	—	3 482	866	5 296	…	…
East of England	—	—	—	—	—	—	—	—	363	—	—
South East	…	—	—	…	…	—	…	76	524	13	…
South West	313	2 636	1 054	3 902	…	…	3 407	3 073	4 233	26	261
West Midlands	…	…	…	…	…	—	…	114	481	…	…
North West	3	484	…	816	…	—	…	793	1 517	159	40
England	**369**	**4 758**	**2 406**	**13 681**	**…**	**…**	**11 605**	**6 681**	**15 142**	**279**	**623**
Wales	**…**	**1 260**	**…**	**1 495**	**…**	**…**	**…**	**1 909**	**4 460**	**…**	**85**
Scotland	**…**	**44**	**…**	**77**	**…**	—	**…**	**30**	**128**	**…**	**…**
Great Britain	**379**	**6 062**	**2 875**	**15 253**	**984**	**…**	**13 819**	**8 619**	**19 730**	**321**	**…**

England

County	Total	County	Total
Avon	3 532	Leicestershire	3 500
Berkshire	…	Lincolnshire	…
Buckinghamshire	1	Northamptonshire	305
Cambridgeshire	363	Northumberland	…
Cleveland	…	North Yorkshire	6 869
Cornwall	…	Nottinghamshire	…
Cumbria	3 883	Oxfordshire	…
Derbyshire	18 589	Shropshire	…
Devon	…	Somerset	11 426
Dorset	…	South Yorkshire	…
Durham	2 933	Staffordshire	…
Gloucestershire	2 114	Tyne and Wear	161
Hereford and Worcester	449	Warwickshire	…
Humberside	26	Wiltshire	24
Isle of Wight	…	West Yorkshire	…
Kent	589		
Lancashire	3 692		
		England	**67 356**

(a) Including dolomite.
(b) For filler in asphalt and as mine dust.
(c) For other fillers, powders and whitings (e.g. in animal feed, polymers, paint, paper and pharmaceuticals).
(d) For water & effluent treatment and pollution control

Source: Office for National Statistics.

Thousand tonnes

Iron and steel	Cement	Chemical uses	Building materials	Environ-mental uses (d)	Glass making	Asphalt filler (b)	Other fillers (c)	Total
—	—	—	—	—	—	—	—	3 621
…	…	—	—	—	—	—	—	9 616
…	…	…	…	…	…	59	666	23 152
—	—	—	—	—	—	—	—	363
—	—	—	—	—	—	—	—	1 045
…	—	—	—	…	—	17	…	19 296
—	…	—	—	…	—	…	—	2 687
…	…	…	—	—	—	…	—	7 576
1 751	**5 981**	**…**	**…**	**…**	**…**	**…**	**…**	**67 356**
…	**…**	**—**	**—**	**—**	**—**	**…**	**—**	**13 707**
—	**1 042**	**—**	**—**	**—**	**—**	**…**	**…**	**1 534**
…	**…**	**…**	**…**	**…**	**…**	**107**	**…**	**82 598**

Wales

County	Total
Clwyd	5 258
Dyfed	1 898
Gwent	…
Gwynedd	…
Mid Glamorgan	4 737
Powys	…
South Glamorgan	1 209
West Glamorgan	…
Wales	**13 707**

Scotland

Region	Total
East Central Scotland	1 042
Highlands	148
North East Scotland	114
Tayside and Fife	…
West Central Scotland	…
Scotland	**1 534**

England production of limestone by end-use 1995–2006

Year	For constructional uses (a)									For other uses	
		Roadstone									
	Building stone	Sold coated	For coating at remote plants	Uncoated	Surface dressing chippings	Railway ballast	Concrete aggregate	Other screened and graded	Other constructional uses	Armourstone & Gabion	Agricultural use
1995	…	6 933	4 551	27 487	…	…	9 793	…	20 968	…	1 174
1996	211	6 020	3 584	21 291	…	14	8 405	…	21 372	…	1 025
1997	212	5 192	3 440	21 380	…	18	11 144	…	22 775	…	947
1998	…	4 441	4 425	21 124	…	12	12 094	…	21 989	…	765
1999	245	4 226	3 528	19 265	…	…	11 610	…	22 616	…	685
2000	278	4 079	3 363	18 648	…	…	10 654	…	23 897	…	537
2001	168	…	4 956	20 502	…	…	16 457	…	19 545	…	561
2002	145	3 726	3 755	13 931	…	—	15 985	…	21 697	…	524
2003	160	3 597	3 720	14 586	…	2	15 925	…	17 627	…	700
2004	…	3 829	1 918	13 029	1 015	394	11 949	7 863	18 760	94	686
2005	…	4 486	2 536	12 618	794	…	10 732	6 604	16 720	126	544
2006	369	4 758	2 406	13 681	…	…	11 605	6 681	15 142	279	623

(a) Including dolomite.
(b) For filler in asphalt and as mine dust.
(c) For other fillers, powders and whitings (e.g. in animal feed, polymers, paint, paper and pharmaceuticals).
(d) For water & effluent treatment and pollution control

Source: Office for National Statistics.

Wales production of limestone by end-use 1995–2006

Year	For constructional uses (a)									For other uses	
		Roadstone									
	Building stone	Sold coated	For coating at remote plants	Uncoated	Surface dressing chippings	Railway ballast	Concrete aggregate	Other screened and graded	Other constructional uses	Armourstone & Gabion	Agricultural use
1995	46	…	183	5 029	…	…	…	…	7 100	…	…
1996	10	…	177	4 164	…	(d) 65	…	…	7 192	…	…
1997	(e) 6	1 123	329	3 588	…	(d) 71	3 322	…	6 952	…	228
1998	37	1 107	341	2 849	…	(d) 110	3 607	…	6 653	…	119
1999	52	…	275	3 136	…	…	3 688	…	6 502	…	110
2000	45	…	206	2 177	…	…	3 375	…	6 676	…	106
2001	44	…	328	1 731	…	…	4 299	…	4 802	…	101
2002	45	912	…	1 280	…	—	4 115	…	4 761	…	…
2003	39	866	…	1 756	…	…	…	…	3 845	…	133
2004	29	953	…	1 416	…	…	2 977	…	3 142	…	99
2005	9	…	…	1 474	…	…	1 829	1 912	3 471	…	100
2006	…	1 260	…	1 495	…	…	…	1 909	4 460	…	85

(a) Including dolomite.
(b) For filler in asphalt and as mine dust.
(c) For other fillers, powders and whitings (e.g. in animal feed, polymers, paint, paper and pharmaceuticals).
(d) For water & effluent treatment and pollution control
(e) BGS estimate.

Source: Office for National Statistics.

Scotland production of limestone by end-use 1995–2006

Year	For constructional uses (a)									For other uses	
		Roadstone									
	Building stone	Sold coated	For coating at remote plants	Uncoated	Surface dressing chippings	Railway ballast	Concrete aggregate	Other screened and graded	Other constructional uses	Armourstone & Gabion	Agricultural use
1995	…	…	—	114	…	—	…	…	79	…	…
1996	—	…	—	97	…	—	…	…	108	…	…
1997	—	41	—	86	…	—	20	…	107	…	…
1998	…	38	—	53	…	—	10	…	123	…	(d) 125
1999	(e) 4	…	—	80	…	—	11	…	144	…	…
2000	…	…	—	90	…	—	17	…	149	…	…
2001	…	…	—	127	…	—	24	…	126	…	148
2002	1	26	…	96	…	—	12	…	119	…	…
2003	…	30	…	104	…	—	…	…	98	…	174
2004	…	77	…	112	…	—	4	…	79	…	136
2005	…	…	…	103	…	—	9	29	111	12	113
2006	…	44	…	77	…	—	…	30	128	…	…

(a) Including dolomite.
(b) For filler in asphalt and as mine dust.
(c) For other fillers, powders and whitings (e.g. in animal feed, polymers, paint, paper and pharmaceuticals).
(d) For water & effluent treatment and pollution control
(e) BGS estimate.

Source: Office for National Statistics.

Thousand tonnes

Iron and steel	Cement	Chemical uses	Building materials	Environ-mental uses (d)	Glass making	Asphalt filler (b)	Other fillers (c)	Other uses	Total
…	…	…	…	…	257	260	…	2 867	85 379
1 884	…	…	…	…	…	211	…	2 961	75 633
2 045	…	…	…	…	…	213	…	3 045	79 342
…	…	…	…	…	255	…	…	2 775	79 780
…	…	…	…	…	…	…	…	…	75 820
1 620	…	…	…	…	115	…	…	2 983	74 954
…	…	…	…	…	…	109	…	…	79 902
…	7 595	…	…	…	…	107	…	3 045	73 528
1 382	7 087	…	…	…	96	209	1 313	3 103	69 507
948	7 122	1 156	…	…	114	113	1 013	…	72 173
1 180	6 485	1 428	…	…	115	88	848	…	67 325
1 751	5 981	…	…	…	…	…	…	…	67 356

Thousand tonnes

Iron and steel	Cement	Chemical uses	Building materials	Environ-mental uses (d)	Glass making	Asphalt filler (b)	Other fillers (c)	Other uses	Total
…	…	…	…	…	—	…	31	—	19 249
1 158	…	…	…	…	—	—	…	—	18 863
890	…	…	…	…	—	—	…	—	17 752
…	…	…	…	…	—	…	…	—	17 136
…	…	…	…	…	—	…	…	…	17 220
880	…	…	…	…	—	12	…	…	15 543
…	…	…	…	…	—	—	8	…	14 238
…	887	…	…	…	—	3	11	—	12 850
565	1 238	…	…	…	—	…	…	—	13 208
643	1 142	—	1	—	—	…	—	…	12 926
565	…	—	—	—	—	…	—	…	12 759
…	…	—	—	—	—	…	—	…	13 707

Thousand tonnes

Iron and steel	Cement	Chemical uses	Building materials	Environ-mental uses (d)	Glass making	Asphalt filler (b)	Other fillers (c)	Other uses	Total
—	…	…	…	…	—	…	…	—	1 540
—	…	…	…	…	—	…	…	—	1 607
—	…	…	…	…	—	…	…	—	1 624
—	…	…	…	…	—	…	…	—	1 535
—	…	…	…	…	—	…	…	—	1 507
—	…	…	…	…	—	…	…	—	1 722
—	1 218	…	…	…	—	…	…	—	1 733
—	1 160	…	…	…	—	…	…	—	1 635
—	1 248	…	…	…	—	…	…	—	1 730
—	1 210	—	—	—	—	…	…	…	1 746
—	1 216	—	—	—	—	…	…	…	1 746
—	1 042	—	—	—	—	…	…	…	1 534

Great Britain production of dolomite by end-use and area of origin 2006

Thousand tonnes

Area of origin	Building stone	Constructional use (a)	Agricultural use (b)	Other uses (b)	Total
North East	—	2 443	…	…	3 262
Yorkshire and the Humber	…	…	…	…	2 812
East Midlands	—	…	…	…	2 948
South West	…	…	…	…	..
West Midlands	—	…	…	—	..
England	…	**8 434**	…	…	**10 238**
Wales	—	…	…	—	…
Scotland	—	…	…	—	…
Great Britain	…	**10 283**	…	…	**12 100**

(a) Data also included in table for 'Limestone'.
(b) Including material for calcination.

Source: Office for National Statistics.

Great Britain production of dolomite by end-use 1994–2006

Thousand tonnes

Year	Building stone	Constructional use (a)	Agricultural use (b)	Other uses (b)	Total
1994	(c) 13	(c) 15 136	1 070	1 397	17 616
1995	14	(c) 15 236	…	…	17 966
1996	(c) 21	(c) 13 662	(c) 1 321	(c) 1 551	16 555
1997	(c) 10	14 465	…	…	17 282
1998	10	13 070	…	…	15 632
1999	14	11 833	…	…	13 698
2000	15	11 409	…	…	13 069
2001	34	12 381	…	…	14 314
2002	9	11 839	…	…	12 946
2003	7	10 391	…	…	…
2004	8	10 832	…	…	12 226
2005	…	…	…	…	11 514
2006	…	10 283	…	…	12 100

(a) Data also included in table for 'Limestone'.
(b) Including material for calcination.
(c) BGS estimate.

Source: Office for National Statistics.

England (d) production of dolomite by end-use 1994–2006

Thousand tonnes

Year	Building stone	Constructional use (a)	Agricultural use (b)	Other uses (b)	Total
1994	(c) 13	…	…	…	…
1995	14	…	…	…	…
1996	(c) 21	…	1 230	…	…
1997	(c) 10	11 607	1 070	(c) 1 593	14 280
1998	…	11 289	…	…	13 723
1999	…	9 681	…	…	11 485
2000	15	9 509	…	…	11 120
2001	…	…	426	…	…
2002	9	…	543	…	…
2003	7	…	676	…	10 327
2004	8	…	…	…	…
2005	…	8 177	568	…	…
2006	…	8 434	…	…	10 238

(a) Data also included in table for 'Limestone'.
(b) Including material for calcination.
(c) BGS estimate.
(d) Small amounts of dolomite are also produced in Wales and very minor amounts in Scotland.

Source: Office for National Statistics.

Great Britain production of chalk by end-use and area of origin 2006

Thousand tonnes

Area of origin	Cement	Construc-tional use	Agricultural use	Industrial uses	Total
Humberside	…	…	…	…	…
North Yorkshire	—	…	…	—	…
Yorkshire and the Humber	**…**	**467**	**35**	**…**	**3 105**
Derbyshire	—	…	—	—	…
Lincolnshire	—	…	…	…	…
East Midlands	**—**	**…**	**…**	**…**	**…**
Cambridgeshire	…	…	…	…	…
Norfolk	—	—	…	—	…
Suffolk	—	—	…	…	…
Essex	—	—	…	—	…
Hertfordshire	—	—	17	—	17
Bedfordshire	…	—	—	—	…
East of England	**…**	**…**	**104**	**…**	**…**
Kent	1 363	90	63	—	1 517
East Sussex	—	—	—	…	…
West Sussex	—	…	…	—	27
Hampshire	—	…	…	—	…
Surrey	—	—	10	1	11
Isle of Wight	—	…	…	—	…
South East	**1 363**	**…**	**110**	**…**	**1 591**
Devon	—	10	4	—	14
Wiltshire	741	—	—	18	759
South West	**741**	**10**	**4**	**18**	**773**
Great Britain (England)	**…**	**681**	**…**	**…**	**7 376**

Source: Office for National Statistics.

England production of chalk by end-use 1994–2006

Thousand tonnes

Year	Cement	Construc-tional use	Agricultural use	Industrial uses	Total
1994	(a) 6 731	976	574	(a) 1 955	10 236
1995	(a) 6 343	828	…	488	9 949
1996	(a) 5 697	1 039	(a) 624	…	9 239
1997	(a) 6 157	768	590	…	9 550
1998	(a) 6 736	768	…	397	9 934
1999	(a) 6 345	1 021	…	…	9 667
2000	(a) 6 288	683	…	352	9 213
2001	5 111	925	…	…	8 205
2002	5 550	904	…	…	8 587
2003	5 360	561	…	…	8 066
2004	5 177	705	…	…	7 997
2005	…	795	…	…	7 105
2006	…	681	…	…	7 376

(a) BGS estimate.

Source: Office for National Statistics.

Lithium

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Lithium										
Imports										
Oxide and hydroxide	409	554	498	446	385	1 129	1 435	950	1 299	1 364
Carbonate	626	687	490	657	650	889	1 037	808	1 158	1 525
Exports										
Oxide and hydroxide	186	169	285	125	94	440	397	288	289	288
Carbonate	147	193	160	203	271	197	323	238	396	723

Magnesia

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Magnesia										
Imports										
Dolomite	184 947	179 003	170 916	218 932	111 177	3 694	4 129	3 690	4 032	3 135
Magnesite	9 252	20 287	11 187	13 896	10 644	617	1 877	1 396	1 843	1 076
Magnesia–										
Dead burned	38 815	32 681	29 362	14 934	5 366	8 047	6 291	6 315	3 987	2 145
Caustic-calcined	46 708	35 217	38 708	49 037	44 641	5 924	6 322	5 549	8 004	6 937
Other	12 553	14 202	15 469	14 872	14 890	4 554	4 842	5 503	4 135	4 824
Kieserite	6 275	13 598	11 463	52 658	150 248	637	1 369	1 336	1 722	2 421
Magnesite or chrome-magnesite refractory bricks and shapes (a) (b)	85 491	77 411	50 259	35 280	27 792	15 347	18 986	19 703	16 519	18 171
Exports										
Dolomite (c)	104 126	…	…	144 707	47 360	4 393	…	…	5 106	2 230
Magnesite	337	34	49	87	26	94	19	59	42	48
Magnesia–										
Dead burned	3 300	4 304	3 514	2 273	1 612	1 574	1 988	1 831	1 488	896
Caustic-calcined	2 356	2 886	2 283	2 712	3 160	1 104	833	2 124	2 457	2 771
Other	20 804	19 058	18 999	15 092	14 264	13 752	14 302	14 169	11 935	12 074
Magnesite or chrome-magnesite refractory bricks and shapes (a) (b)	64 850	58 713	13 132	5 333	3 619	23 266	17 774	5 346	5 045	3 826

(a) Fired bricks and shapes only: unfired (chemically bonded) products excluded.
(b) Including dolomite bricks.
(c) Crude.

Magnesium

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Magnesium										
Consumption										
Magnesium and alloys (a)	10 400	...	...	...	...					
Imports										
Ferro-silico-magnesium	5 820	5 663	4 969	5 448	3 810	2 697	3 010	2 418	2 754	1 738
Scrap	8 470	4 309	2 352	2 389	1 982	8 071	4 170	1 465	966	780
Unwrought	4 380	5 788	3 732	5 322	6 408	5 303	6 197	4 184	5 567	6 325
Unwrought alloys	1 979	2 229	5 737	7 954	7 197	2 361	2 702	6 429	8 628	7 376
Wrought	2 007	3 265	3 216	3 187	3 077	6 963	12 100	10 679	7 724	7 600
Exports										
Ferro-silico-magnesium	431	282	316	542	653	361	330	213	409	441
Scrap	146	23	181	1 933	1 772	133	25	173	1 702	1 413
Unwrought	77	862	380	650	209	146	1 656	605	808	275
Unwrought alloys	7 789	6 184	5 599	5 537	4 872	18 965	14 976	13 195	13 258	12 601
Wrought	552	1 054	273	282	605	2 934	3 821	2 738	2 873	3 084

(a) BGS estimates.

Manganese

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Manganese										
Consumption in iron and steel industry										
Ore	4 300	—	6 400	2 900	6 000					
Ferro-manganese	77 480	93 750	95 490	92 120	96 770					
Ferro-silico-manganese	21 030	22 660	23 080	22 170	23 620					
Apparent consumption (a)	117 000	101 000	116 000	107 000	118 000					
Imports										
Ores and concentrates	1 218	2 102	2 585	698	4 229	598	740	1 140	244	431
Ferro-manganese	86 681	76 686	91 832	79 045	86 598	24 712	26 699	55 380	38 427	37 430
Ferro-silico-manganese	64 565	53 421	63 935	57 136	59 985	18 264	18 537	34 837	24 041	23 440
Scrap	23	—	0	0	1	13	—	0	1	1
Unwrought	7 229	7 949	8 898	7 858	8 169	5 669	5 671	8 309	8 199	6 752
Wrought	348	301	291	365	394	364	333	363	533	542
Oxides	6 053	7 759	5 808	7 232	7 216	1 282	1 800	1 628	1 995	1 813
Exports										
Ores and concentrates	208	220	137	64	200	402	485	347	40	192
Ferro-manganese	1 874	434	1 554	660	473	2 029	1 792	1 734	1 297	949
Ferro-silico-manganese	116	42	8 247	5 003	60	42	22	5 075	1 513	90
Scrap	—	—	62	…	0	—	—	24	…	1
Metal (b)	4 300	5 500	3 100	3 000	1 900	3 000	3 000	7 000	7 500	2 400
Oxides	279	4 820	3 286	3 440	6 284	348	793	1 106	957	1 529

(a) BGS estimates; see p.v.

(b) BGS estimates, based on known imports into certain countries

Marble

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Marble										
Imports										
Dimension stone–										
Unworked	12 708	18 565	29 893	63 046	32 609	8 855	11 930	14 655	18 901	17 463
Worked	48 237	60 473	69 920	77 698	100 555	32 555	40 413	46 701	52 806	65 977
Crushed and powdered	259 012	135 862	112 938	169 551	245 601	4 971	4 772	3 476	4 344	10 242
Exports										
Dimension stone–										
Unworked	4 853	6 203	2 362	2 126	1 549	585	447	203	287	184
Worked	946	1 072	1 658	2 905	4 068	1 893	3 320	3 726	4 951	6 441
Crushed and powdered	4 579	3 133	2 786	2 834	1 176	107	88	247	173	213

Mercury

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Mercury										
Imports										
Elemental	23	30	28	32	2	111	139	169	314	107
Oxide	0	0	0	0	0	10	3	4	3	2
Exports										
Elemental	6	1	3	191	79	68	50	59	996	491
Oxide	0	0	0	0	1	5	—	4	1	10

Mica

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Mica										
Imports										
Crude (a)	240	424	1 769	296	251	161	183	362	125	108
Ground	9 349	8 327	6 286	6 684	5 856	1 874	1 968	1 700	1 710	1 824
Waste	4 224	5 050	4 374	4 485	3 474	489	518	475	563	404
Worked	590	323	598	1 809	726	3 910	2 349	3 314	4 141	4 861
Exports										
Crude (a)	20	34	—	22	0	52	48	—	43	1
Ground	4 023	4 740	9 354	4 030	4 593	2 683	3 035	3 998	2 782	4 694
Waste	46	0	23	0	…	89	1	9	14	…
Worked	394	383	375	361	412	2 415	3 338	3 526	4 517	4 844

(a) Including sheets or splittings.

Molybdenum

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Molybdenum										
Consumption in iron and steel industry (a)	1 800	2 080	2 120	2 040	2 140					
Apparent consumption (a) (b)	6 100	3 500	4 000	7 100	7 900					
Imports										
Roasted molybdenite concentrates	19 654	17 463	16 779	16 916	16 591	48 060	51 607	94 531	188 684	214 773
Other ores and concentrates	1 783	1 421	1 592	1 684	2 441	5 906	6 666	12 384	37 649	44 661
Ferro-molybdenum	338	434	836	861	640	1 545	2 395	6 862	14 352	15 250
Scrap	472	579	668	1 036	899	2 257	2 672	8 298	31 807	23 074
Powders	56	102	65	143	436	216	770	634	695	923
Unwrought	139	104	101	135	145	1 728	1 249	1 559	5 955	4 978
Wrought	553	384	1 020	1 563	1 965	8 533	5 916	6 733	9 077	7 393
Oxides and hydroxides	106	7	2	630	635	621	52	46	26 908	21 064
Exports										
Roasted molybdenite concentrates	351	32	106	119	100	907	160	1 246	2 981	427
Other ores and concentrates	67	52	74	60	66	244	189	318	518	700
Ferro-molybdenum	11 965	14 081	14 213	11 501	12 004	48 756	70 647	150 295	318 935	262 368
Scrap	64	82	116	450	259	416	654	1 672	10 788	5 638
Powders	46	1	17	52	17	395	6	269	857	359
Unwrought	10	23	26	47	1	106	181	375	413	38
Wrought	206	124	153	129	318	1 890	1 665	2 158	4 151	8 202
Oxides and hydroxides	11	7	86	2	0	65	63	1 106	941	3

(a) Metal content.

(b) BGS estimates; see p.v.

Nepheline syenite

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Nepheline-syenite										
Imports	53 692	52 453	49 731	47 672	81 960	4 627	4 465	4 204	4 052	4 201
Exports	82	52	45	38	557	31	28	21	14	271

Nickel

Nickel is generally derived from magmatic sulphide deposits, the main ore minerals being pentlandite pyrrhotite and garnierite. Nickel is valued as an alloying material, predominantly in stainless steel, for its corrosion resistance and strength at high temperatures.

Following the release of data from the Tellus project for Northern Ireland, Lonmin plc have taken out licences over the Antrim Plateau and are actively exploring for magmatic sulphide deposits containing nickel, copper and platinum-group metals.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Nickel										
Production (a) (e)	33 790	26 788	38 606	37 600	36 750					
Consumption (b)										
Iron and steel industry	14 670	15 820	16 800	14 380	13 370					
Other (c)	24 200	16 500	15 700	18 000	19 000					
Total (d)	38 935	32 308	32 470	32 400	32 400					
Imports										
Matte, oxide sinter etc	52 514	43 968	64 192	57 492	56 336	122 987	133 282	237 464	253 895	369 361
Ash and residues	246	12	24	…	50	195	16	157	…	8
Scrap	25 270	20 038	8 697	10 927	7 975	28 359	22 109	22 876	31 417	37 625
Ferro-nickel	11 010	16 437	14 628	11 325	13 169	12 508	19 932	28 544	22 137	34 683
Unwrought	46 610	34 162	45 264	24 019	17 414	129 301	169 206	240 872	195 283	237 631
Unwrought alloys	1 868	31 491	2 238	1 629	2 883	14 129	151 620	16 763	12 304	27 115
Oxides	130	61	103	277	59	690	367	704	1 780	534
Exports										
Matte, oxide sinter etc	128	200	964	196	517	515	754	2 641	1 520	3 612
Ash and residues	8 110	787	18	1 246	4 331	14 954	1 392	74	12 019	25 412
Scrap	7 912	7 861	10 465	14 119	15 555	15 495	19 082	29 820	46 495	50 350
Ferro-nickel	368	424	125	55	329	538	1 124	756	873	1 471
Unwrought	19 775	19 200	38 249	38 524	31 610	86 918	95 233	236 559	267 251	314 738
Unwrought alloys	4 257	4 899	4 710	6 141	6 486	33 750	33 016	38 881	62 045	75 063
Oxides	17	13	10	3	7	97	40	115	38	101

(a) Nickel content of refinery products.
(b) Metal content.
(c) Not independently recorded; obtained by subtraction. Believed to include stocks.
(d) Including the nickel content of ferro-nickel and other smelter products.
(e) Following the increase in the nickel price in 2003, there have been a number of enquiries relating to nickel in north-east Scotland where two small sub-economic deposits were discovered in the late 1960s.

Niobium and tantalum

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Niobium and tantalum										
Consumption in Iron and Steel Industry										
Niobium (a)	350	410	420	410	430					
Imports										
Ores and concentrates	8	1	0	2	13	5	23	15	75	222
Ferro-niobium	1 029	1 148	1 236	1 175	1 098	6 502	6 246	6 132	6 884	7 427
Tantalum	3 480	842	243	97	119	106 350	76 281	60 170	9 895	9 501
Niobium (b)	132	116	103	123	143	2 553	2 331	2 917	2 250	7 953
Exports										
Ferro-niobium	46	59	47	79	74	224	499	373	607	513
Tantalum	280	278	77	131	83	79 636	55 155	19 840	21 641	11 569
Niobium (b)	...	55	23	26	9	674	631	788	357	315

(a) Metal content.
(b) Including rhenium.

Peat

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Thousand cubic metres					£ thousand				
Peat										
Production	973	2 008	1 262	1 505	1 593					
	Tonnes									
Imports										
Peat and agglomerated peat	441 213	520 464	539 854	426 908	433 419	26 787	28 572	30 001	28 463	22 332
Exports										
Peat and agglomerated peat	33 331	38 860	32 776	32 219	20 736	2 842	3 760	3 637	3 631	3 544

Perlite

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Perlite										
Imports	95 912	59 046	91 914	34 450	101 910	4 201	2 986	2 294	2 624	3 357
Exports	695	1 025	7 256	938	885	174	252	437	163	201

Petroleum and natural gas (also see Primary fuels)

In 2007 another new record was set for the price of oil. From mid January to the end of the year the price of a barrel of oil continued its almost inexorable climb towards the psychologically significant value of $100 per barrel with the only slight respite occurring in August when the price temporarily dipped slightly. In fact, the price of oil almost doubled over the course of the year (Figure 1) and finished on approximately $94 per barrel at the end of December, still apparently on an upward trend.

The usual global and regional factors contributed to the high cost including the continuing conflicts in Iraq and Afghanistan and increased tension between the USA and Iran. Worldwide demand for energy continued to be high with the Chinese economy especially hungry for power. The position of Russia, with its vast energy reserves, strengthened. Fears increased that this strength could be used as a geopolitical weapon against western Europe in times of crisis. As production from the UKCS declines, and concerns continued about the UK being at the end of the supply line from eastern Europe and Asia, the government was again considering the nuclear power option to provide a proportion of the UK's future energy requirements.

Early in March the DTI put out a call for additional hydrocarbon recovery R&D proposals. The DTI was looking to sponsor joint industry projects specifically in the areas of advanced seismic imaging, unlocking low permeability and heavy oil reservoirs, and improving recovery in mature water-flooded reservoirs. Proposals had to be submitted by the end of April for review by committee in June.

Oil and Gas UK, a new representative body for companies spread across the entire spectrum of the UK hydrocarbon exploration and production industry (including suppliers and contractors), was launched in April. The new organisation supersedes UKOOA which was limited to operators. The Oil and Gas *UK 2007 Economic Report* highlighted the industry's contribution to UK energy needs and to the economy as a whole. It also expressed concerns about rising operating costs and the fiscal regime which was affecting investment.

In May the DTI published an *Energy White Paper* calling for the economy to be based on more efficient, low carbon and secure energy sources. In particular the twin problems of climate change and maintaining a stable and affordable energy supply in an increasingly unstable world had to be urgently addressed by cutting carbon dioxide emissions, increasing carbon capture and storage (CCS) schemes and supplying more energy from renewable sources such as wind, wave, solar and tidal power.

In June the government department for legislatory control of the UK oil and gas industry changed its name from the Department of Trade and Industry (DTI) to the Department for Business, Enterprise and Regulatory Reform (BERR). The reorganisation did not radically affect government/industry interaction.

As oil and gas fields reach the end of their economic life, the platforms and other production infrastructure will require decommissioning. In July, BERR published forecast removal dates for these structures. Although the process has already commenced, most decommissioning

will occur between 2012 and 2021 when over 250 large steel and concrete structures, nearly 30 per cent of which are currently subsea, will have to be removed from their current location. The whole decommissioning process for the UK offshore industry is a massive undertaking in both tonnage and economic terms.

In September BERR published updated figures (to the end of 2006) for UK ranges of hydrocarbon reserves. These were based on data provided by companies between January and March 2007 and included both onshore and offshore areas. The total UK hydrocarbon resources (reserves plus potential additional resources plus undiscovered resources) were estimated to be in the range 978 – 1811 – 3313 million tonnes of oil (a slight increase on the previous year) and 774 – 1313 – 2276 billion cubic metres of gas (approximately the same as the previous year). Cumulative production to date is 3167 million tonnes of oil and 2086 billion cubic metres of gas.

The Digital Energy Atlas and Library (DEAL) Data Registry contract with Common Data Access (CDA) continued into the first year of a three year contract extension. In 2007, developments continued with enhancing the completeness and quality of data with emphasis on well- and seismic-header metadata. The oil industry was asked to validate seismic and well-header metadata back to 1997 and also to provide details of seismic surveys acquired in the period 1990–2005, enhancing the quality and completeness of DEAL's data catalogue. Licence data on DEAL was enhanced to provide better access to historical and current licence areas and equity participation. This included the display of historical licences on the DEAL map interface.

The Strategic Environmental Assessment (SEA) process for Area 7 (west of Scotland) continued through 2007. A stakeholder dialogue meeting was held in March and this signalled the start of a three-month consultation period which concluded at the end of June. In December BERR produced a post-consultation document and an announcement concerning the next (25th) offshore licensing round (to include the SEA7 area) was expected early in 2008.

Two further documents were published by BERR in December:

(i) With regard to the 24th licensing round, 'Appropriate Assessments' were announced for blocks in Cardigan Bay and the inner Moray Firth as these had been identified as areas of specific wildlife concern.

(ii) As the competent authority, BERR began conducting an SEA for a draft plan to hold further rounds of wind leasing, offshore oil and gas licensing and hydrocarbon gas storage licensing in UK waters.

ICE Brent Crude — daily closing in 12 previous months

Figure 1 The price of a barrel of Brent crude through 2007. The price peaked at over $95 per barrel during November (another new record).

Development and production

Fourteen development wells were spudded onshore in 2007 (including 3 sidetracks) compared with 12 (6 sidetracks) in 2006. During the previous 10 years the number of such wells drilled each year has varied only slightly and has always been in the range 12 to 21.

Offshore a total of 163 development wells was started (including 79 sidetracks). This is a 15 per cent reduction compared to 2006. More than 60 per cent were drilled in the Central North Sea (which includes the inner and most of the outer Moray Firth).

No new onshore oilfields were approved for development in 2007. However the Airth coalbed methane development was approved in January. Offshore there were 15 new approvals:

Name of field	Field type	Block number	Operator at time of approval	When approved
Duart	Oil	14/20b	Talisman	January
Loirston	Oil	9/13b	ExxonMobil	January
Barnacle	Oil	211/29	EDP	February
Saxon	Oil	21/23b	Petro-Canada	February
Curlew C	Oil	29/7	Shell	May
Lybster	Oil	11/24	Caithness Oil	October
Starling	Condensate	29/3a	Shell	January
Jura	Condensate	3/15	Total	August
Minke	Gas	44/24a	Gaz de France	February
Kelvin	Gas	44/23b	ConocoPhillips	March
Caravel	Gas	49/20b	Shell	March
Shamrock	Gas	49/20a	Shell	March
Tristan NW	Gas	49/29b	Granby	July
Wissey	Gas	53/4	Tullow	July
Victoria	Gas	49/17	Silverstone	December

Year 2007 also contained approvals for six incremental projects associated with existing offshore fields. In the period from the beginning of January 1976 to the end of December 2007 there have been 169 oilfield, 136 gasfield and 32 condensate field approvals. A significant milestone was reached at the end of March when the 350th offshore field development, over a period of 40 years, was approved by the Secretary of State.

The Buzzard oilfield in the outer Moray Firth came on stream in January and almost immediately became the most prolific oilfield on the UKCS producing more than twice as much as the second biggest producer, Elgin. The Buzzard reservoir comprises up to 360 feet net of high porosity, high permeability Upper Jurassic turbidite sands in a stratigraphic trap between 8000 and 9000 feet below sea level. The Foinaven, Forties and Captain fields were the next biggest producers. Wytch Farm in Dorset was again the biggest onshore producing oilfield. This produced far more than the combined production from all other onshore fields and, on a monthly basis, regularly accounted for over 84 per cent of onshore oil production.

The largest gas producing field was again Morecambe South which produced twice as much as the Rough storage facility, the second highest producer. The Saturn (combined fields) and Nuggets fields were the next biggest producers.

The Forvie condensate field produced more than twice as much as Carrack, the next biggest condensate producer. Brigantine C was third.

The calendar year 2007 was a bumper year for new oil and gas fields coming on stream although many of the projects were relatively small scale:

Field name	Field type	Block number	Operator	Date on stream
Buzzard	Oil	20/6	Nexen	January
Donan (Maersk)	Oil	15/20a	Maersk	January
Tweedsmuir	Oil	21/1a	Talisman	May
Enoch (UK)	Oil	16/13a	Talisman	May
Brenda	Oil	15/25b	Oilexco	June
Nicol	Oil	15/25a	Oilexco	June
Blane (UK)	Oil	30/3a	Talisman	September
Duart	Oil	14/20b	Talisman	September
Saxon	Oil	21/23b	Petro-Canada	November
Wood	Oil	22/18	Talisman	December
Garrow	Gas	43/21	ATP	February
Tethys	Gas	49/11b	ConocoPhillips	February
Davy East	Gas	53/5b	Perenco	April
Grove	Gas	49/10a	Newfield	May
Mimas	Gas	48/9a	ConocoPhillips	June
Minke	Gas	44/24a	Gaz de France	June
Cavendish	Gas	43/19	RWE	July
Thurne	Gas	49/28	Tullow	August
Chiswick	Gas	49/4	Venture	September
Kelvin	Gas	44/23b	ConocoPhillips	November
Wenlock	Gas	49/12a	ATP	December

Notably, the Minke and Kelvin gas fields were both approved and brought on stream within the calendar year.

Buzzard, one of the largest field developments in the last 10 years, started production on 7th January. It was discovered in 2001 and has estimated recoverable reserves of 500 million barrels of oil equivalent from 1.2 billion barrels in place. From May to October 2007 the field produced on average just over 170 000 barrels of oil per day. The second biggest producer of the new fields was Donan at just under 40 000 average barrels of oil per day over the same time interval.

On 6th October 2007 the World's longest offshore gas pipeline, from the Ormen Lange gasfield in Norway to the Easington terminal in

East Yorkshire, was officially opened over its entire length (over 1160 kilometres). Gas will flow to the UK for an estimated 40 years and, when maximum projected production rates are achieved, approximately 20 per cent of UK needs will be supplied from the field.

Exploration (including appraisal)

Fourteen onshore exploration wells were started in 2007 (including one sidetrack) and apart from 2002, which recorded the same number, is the highest number of starts for more than 10 years. Notably Composite Energy spudded four wells in the Clackmannanshire area of Scotland.

In contrast, onshore appraisal drilling was much reduced compared to 2006 with only the Avington 3Z (Hampshire) and Ebberston Moor 1 (Yorkshire) wells being started.

Offshore, 34 exploration wells were spudded (including two sidetracks drilled for geological purposes). Only five wells were spudded outside the Central and Southern North Sea areas which again were the most popular areas for exploration. Oilexco drilled the most exploration wells followed by Venture, Apache, Lundin and Perenco.

The following exploration wells were classified by BERR as significant discoveries:

Well	Hydrocarbon type	Discovery operator at end of 2007	Date of discovery
12/21c-6	Oil	Ithaca	May
21/8-3	Oil	Lundin	November
204/23-2	Oil	BP	December
22/17-3	Gas/Condensate	Talisman	November
44/19b-6	Gas	ConocoPhillips	September
47/8c-4	Gas	Venture	August
205/5a-1	Gas	Total	September

In the Moray Firth, Ithaca Energy drilled well 12/21c-6 (the Basil prospect), 3 kilometres north-east, and a possible extension, of the Beatrice Field. The well proved 47 feet gross of fully oil-bearing Beatrice 'A' sandstone with an average porosity of 18 per cent. The well was suspended pending re-entry for completion as a producer. In the Central North Sea, Lundin well 21/8-3, drilled to 15 014 feet, targeted the Scolty and Banchory prospects in the Paleocene and Jurassic respectively. Light oil was discovered in Scolty, a four-way dip closure with excellent reservoir properties, but the lower level contained no reservoir. In the same general area Talisman drilled the Cayley prospect with well 22/17-3. This flowed at 29.7 million cubic feet per day of gas and 2846 barrels per day of gas condensate. This was immediately investigated further by three appraisal sidetrack wells designated 3Z, 3Y and 3X. In the Southern North Sea, ConocoPhillips drilled well 44/19b-6 (on the 'Harrison' prospect) to a total depth of 14 070 feet. The well proved a 50-foot gas column in the Carboniferous Lower Ketch Formation. Venture well 47/8c-4, drilled to a total depth of 13 582 feet, flowed at 55 million cubic feet per day of gas from a 215-foot gross (109 feet net) pay interval in the Rotliegendes sandstone. The well will be converted to a producer. There are an estimated 30–40 billion cubic feet of reserves in this play (the 'Channon' prospect).

Two exploration wells were drilled west of Shetland in 2007. The earlier one, 205/5a-1, drilled by Total to a total depth of 12 913 feet on the Tormore prospect 15 kilometres south-west of the existing, but undeveloped, Laggan field, proved to be a gas discovery and flowed at 32 million cubic feet per day with some gas condensate (75 barrels per day). The later well, BP's 204/23-2, was drilled 11 kilometres south-west of the Foinaven field floating production, storage and offloading facility to a total depth of 2528 m. It proved to be an oil discovery and there are plans to develop it as a tie-back to Foinaven.

Other 'non-significant' discoveries included Petro-Canada well 13/21b-7 which flowed 34° API oil from an 80-metre gross interval at two Lower Cretaceous intervals and Oilexco's 15/26b-9 Kildare well which flowed 4216 barrels of oil per day and 3.1 million cubic feet per day of gas from an Upper Jurassic sandstone formation.

Seventy-seven appraisal wells (including 41 sidetracks) were spudded in 2007. This is the highest number for more than 10 years. Fifty-seven (74 per cent) of these were in the Central North Sea. These included an appraisal of the Huntington structural complex by Oilexco well 22/14b-5 drilled to a total depth of 13 325 feet. The well proved and tested hydrocarbons at two different stratigraphic levels. Oil of 41° API flowed at 5580 barrels per day (and gas at 3.4 million cubic feet per day) from the Paleocene Forties sandstone. Flow rates from the lower Upper Jurassic Fulmar reservoir were 4620 barrels per day of 39° API oil and 1.6 million cubic feet per day of gas. Throughout 2007 Antrim Energy undertook an appraisal programme for the Causeway Central field. Four wells (211/22a-6 to 9) were drilled between the end of May and November to test Jurassic Brent sandstone formations. Ithaca Energy continued to appraise the Athena accumulation with directionally-drilled well 14/18b 16. This penetrated 426 feet gross of oil-bearing Lower Cretaceous Leek Sandstone Formation. In the Southern North Sea, Sterling Resources drilled Breagh appraisal well 42/13-3. It flowed at 17.6 million cubic feet per day from a Carboniferous sandstone. West of Shetland, Chevron conducted a second appraisal test of the Rosebank discovery with well 205/1-1. This flowed at 6000 barrels per day of 37° API oil.

Licensing

In January the DTI published a new listing of fallow blocks and discoveries. This eighth release added 49 new fallow blocks and 11 new fallow discoveries to the list.

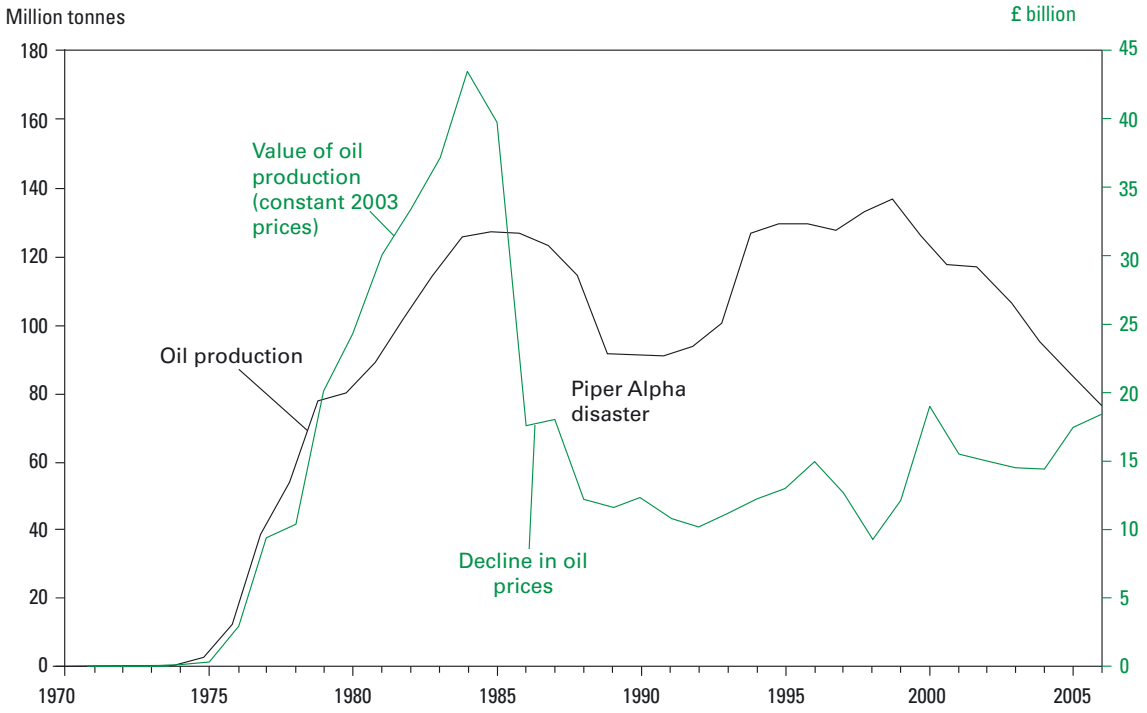
A significant change in the regulations was announced in that blocks and discoveries would now be considered fallow after three years instead of four. This was intended to speed up the turnover of acreage with no planned work programme. The idea of this ongoing fallow-assets process is to force companies to explore further, develop, or relinquish acreage which they hold but on which they have not undertaken significant recent work. The process clearly works. Since it was initiated in 2002 large swaths of fallow acreage have been relinquished and offered for re-licensing in subsequent rounds, 75 exploration or appraisal wells have been drilled on fallow B blocks and 10 field development plans have been approved on previously fallow discoveries.

On 1st February the DTI announced the results of the 24th Offshore Oil and Gas Licensing Round. A total of 1411 blocks or part blocks had been on offer. The DTI stated that 150 licences, covering 246 blocks, would be offered to 104 companies of which 17 were newcomers to the UKCS. Seventy-nine traditional, 6 frontier and 65 promote licences were being offered and 23 promote licences, issued in the 22nd Round, would be allowed to continue. Unusually, a small number of blocks in Cardigan Bay and the Moray Firth was withheld pending further appropriate assessment concerning schools of dolphins.

The year also saw 221 offshore licences, affecting 339 blocks or part blocks, surrendered either on a voluntary or mandatory basis.

At the beginning of March the DTI published its Strategic Environmental Assessment of the possible onshore hydrocarbon prospective areas. Feedback was requested before the end of May and the feedback document was published in August. Finally the much-delayed 13th onshore licensing round was announced by BERR on 7th November with a closing date in February 2008.

United Kingdom production and value of oil, including condensate 1970–2006



United Kingdom production of onshore crude petroleum and natural gas by fields 1995–2006

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Oil fields												Thousand tonnes
Beckingham W	1	1	1	1	1	1	1	1	1	1	1	1
Brockham	—	—	—	—	—	0	—	1	1	4	5	3
Cold Hanworth	—	—	—	2	2	1	4	13	20	15	7	7
Crosby Warren	2	3	4	4	1	0	3	3	3	2	2	2
Ewt Onshore	—	—	—	—	—	1	0	1	1	1	0	—
Farleys Wood	2	0	0	1	0	0	0	0	0	0	0	—
Fiskerton Airfield	—	—	—	1	19	18	5	1	0	0	0	0
Glentworth E	1	1	1	2	2	1	1	1	1	2	4	3
Goodworth	—	—	1	3	2	2	2	2	2	2	1	1
Herriard	4	3	2	1	1	1	—	1	2	1	1	1
Horndean	19	17	15	14	13	10	9	8	11	9	7	7
Humbly Grove	51	36	37	29	24	14	16	11	13	15	13	9
Keddington	—	—	—	2	5	3	1	1	2	2	1	0
Kirklington	0	0	0	0	—	—	—	—	1	0	0	0
Lidsey	—	—	—	—	—	—	—	—	—	—	—	0
Long Clawson	7	8	8	9	10	9	8	9	9	9	9	7
Nettleham	1	1	6	9	7	5	3	3	4	3	2	2
Newton-on-Trent	—	—	—	—	2	1	0	0	0	0	0	—
Palmers Wood	37	24	23	19	10	10	12	15	11	7	6	4
Rempstone	5	3	3	2	2	1	1	1	1	1	0	1
Scampton	—	1	2	0	0	0	0	0	0	0	1	1
Scampton N	8	13	17	12	11	11	11	10	9	9	8	7
Singleton	35	36	36	27	21	21	23	22	20	22	16	25
Stainton	1	1	1	1	0	1	1	1	1	1	0	0
Stockbridge	92	86	79	110	87	42	42	37	36	38	34	42
Storrington	—	—	—	14	15	8	4	20	21	20	9	11
Wareham	56	42	32	20	21	15	19	9	6	9	7	3
Welton	127	153	150	123	90	87	77	64	58	54	54	46
West Firsby	14	26	27	17	10	8	5	6	4	5	6	5
Whisby	4	1	0	0	0	0	0	0	5	9	7	—
Wytch Farm	4 543	4 730	4 481	4 690	3 867	2 919	2 656	2 381	1 915	1 649	1 394	1 139
Other	58	53	23	51	44	42	39	34	31	34	34	29
Total	**5 067**	**5 240**	**4 949**	**5 161**	**4 269**	**3 234**	**2 944**	**2 654**	**2 187**	**1 925**	**1 629**	**1 357**
Gas fields												Million cubic metres
Wytch Farm	182	245	242	156	149	111	115	108	82	73	61	46
Others	140	137	146	179	140	106	91	65	90	49	56	44
Total (a) (b)	**322**	**382**	**388**	**335**	**289**	**217**	**205**	**173**	**172**	**122**	**117**	**90**

(a) Gross production, i.e. includes own use for drilling purposes, production and pumping operations, but excludes gas flared and vented.

(b) Other than colliery methane.

Source: Department of Trade and Industry.

United Kingdom production of offshore crude petroleum and natural gas by fields 1995–2006

Thousand tonnes

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Oil fields												
Alba	3 772	3 808	4 850	4 381	3 993	4 156	4 319	3 329	4 501	3 645	3 147	2 800
Alwyn N	1 391	1 066	966	1 078	1 093	891	808	704	551	449	433	307
Andrew	—	856	2 798	3 244	3 298	2 540	1 856	1 542	1 250	865	847	507
Angus	—	—	—	—	—	—	168	323	112	85	62	25
Arbroath	1 662	1 452	1 109	1 115	1 100	931	778	675	533	589	497	363
Ardmore	—	—	—	—	—	—	—	—	181	404	106	—
Arkwright	—	65	462	300	185	261	253	227	255	202	107	92
Auk	607	458	647	784	621	558	392	421	366	308	219	230
Balmoral	637	410	467	392	354	275	292	219	185	94	129	93
Banff	—	380	278	—	1 102	711	834	546	665	432	330	263
Beatrice	473	438	151	365	194	137	97	357	270	212	185	106
Beauly	—	—	—	—	—	—	480	394	213	94	99	57
Beinn	391	389	286	214	116	30	47	93	75	61	32	37
Beryl	4 426	4 234	3 748	2 961	2 296	1 621	1 541	1 559	1 356	1 198	1 092	1 141
Birch	286	1 025	768	500	226	94	101	0	9	173	196	188
Bittern	—	—	—	—	—	1 150	2 404	2 346	2 330	2 103	1 785	1 435
Bladon	—	—	108	283	145	32	—	—	—	—	—	—
Blair	—	—	—	—	—	—	—	—	—	—	—	—
Blake	—	—	—	—	—	—	1 024	2 024	1 733	1 565	1 245	1 173
Blenheim	1 044	846	399	219	141	38	—	—	—	—	—	—
Brae Central	487	406	385	475	288	242	169	183	227	206	379	261
Brae E	3 323	2 739	2 074	1 459	1 192	837	593	374	269	209	166	136
Brae N	542	468	363	412	335	280	262	228	250	166	89	111
Brae S	533	522	443	412	268	250	275	208	143	183	215	240
Brae W/Sedgwick	—	—	159	1 627	1 505	1 633	1 435	1 159	883	744	911	698
Braemar	—	—	—	—	—	—	—	—	46	245	239	196
Brechin	—	—	—	—	—	—	—	—	—	—	141	161
Brenda	—	—	—	—	—	—	—	—	—	—	—	0
Brent	9 205	9 468	6 264	6 054	4 536	3 538	2 843	1 925	1 122	766	474	395
Brimmond	—	18	60	80	48	48	31	34	16	8	0	0
Britannia	—	—	—	555	1 848	1 618	1 319	1 032	998	899	762	572
Broom	—	—	—	—	—	—	—	—	—	480	1 248	920
Bruce	1 713	1 705	1 289	898	1 845	1 647	1 448	1 328	1 212	744	638	454
Buchan	492	536	445	402	344	351	385	348	340	366	337	323
Buckland	—	—	—	—	474	1 601	1 141	643	566	373	269	211
Caledonia	—	—	—	—	—	—	—	—	406	244	116	43
Captain	—	—	1 461	2 836	2 525	2 458	3 107	3 109	2 974	3 580	2 644	2 363
Carnoustie	—	—	—	—	—	—	—	—	—	—	20	5
Chanter	92	103	48	15	7	8	6	4	2	4	2	0
Clair	—	—	—	—	—	—	—	—	—	0	691	1 299
Clapham	—	—	—	—	—	—	—	—	0	416	367	252
Claymore	2 258	2 154	2 096	1 818	1 658	1 564	1 411	1 425	1 268	1 394	1 237	1 201
Clyde	797	666	698	638	586	450	400	348	297	287	276	224
Columba B & D	288	579	511	319	243	538	931	543	481	558	378	232
Columba D	334	667	332	169	88	—	—	—	—	—	—	—
Columba E	—	—	—	217	170	153	136	112	73	296	198	94
Cook	—	—	—	—	—	406	876	796	544	531	456	385
Cormorant N	2 074	1 470	1 477	1 638	1 541	1 513	1 469	1 110	923	659	669	628
Cormorant S	810	968	1 012	820	1 023	915	626	597	395	171	179	348
Crawford	—	—	—	—	—	—	—	—	—	—	—	—
Curlew	—	—	86	1 438	1 508	817	386	218	212	179	219	243
Cyrus	—	203	603	541	402	253	181	190	141	119	115	30
Dauntless	—	—	197	308	38	—	—	—	—	—	—	—
Deveron	55	58	26	52	40	10	11	19	19	24	25	14
Don	234	169	108	100	89	69	45	19	2	0	0	0
Donan	357	283	193	—	—	—	—	—	—	—	—	—
Douglas	—	768	1 604	1 324	937	779	1 118	918	645	526	406	344
Douglas W	—	—	—	—	—	—	—	—	205	100	93	26
Drake	—	—	80	282	317	261	226	193	75	47	23	33
Dunbar	1 822	2 408	2 491	2 101	1 886	1 627	1 440	1 540	1 093	859	618	661
Dunlin	961	755	807	643	627	525	574	468	308	181	221	186
Dunlin SW	—	259	197	236	232	109	88	84	54	33	50	48
Durward	—	—	273	589	45	—	—	—	—	—	—	—
Egret	—	—	—	—	383	214	95	115	65	282	84	52
Eider	908	815	654	616	601	356	242	216	170	133	120	122
Elgin	—	—	—	—	—	—	1 974	4 146	4 502	3 622	3 061	2 668
Ellon	98	140	377	283	129	152	77	46	57	23	36	106
Emerald	423	41	—	—	—	—	—	—	—	—	—	—
Erskine	—	—	4	791	883	82	837	973	816	665	514	358
Everest	262	277	313	286	235	203	230	238	245	207	164	117
Farragon	—	—	—	—	—	—	—	—	—	—	90	888
Fergus	—	249	562	276	161	81	57	48	60	75	48	46
Fife	745	1 624	1 077	820	362	585	449	539	490	294	253	190
Fleming	—	—	93	507	477	424	367	300	237	216	160	176
Flora	—	—	—	152	506	495	278	168	139	124	89	57
Foinaven	—	—	252	3 691	4 262	4 588	4 419	5 358	4 085	3 521	2 967	2 915
Forties	5 252	5 140	4 109	3 998	3 227	2 720	2 828	2 624	2 038	2 679	3 261	2 888
Franklin	—	—	—	—	—	—	199	1 006	1 175	1 621	2 019	1 872
Fulmar	1 242	1 040	547	468	373	228	172	165	134	100	179	161
Gadwall	—	—	—	—	—	—	—	—	—	—	212	68
Galley	—	—	—	946	1 333	1 602	1 099	795	573	456	352	234
Gannet A	956	1 315	1 192	1 015	866	711	553	562	380	359	373	453
Gannet B	148	97	58	35	29	29	51	72	110	82	95	10
Gannet C	1 573	1 640	1 151	919	688	390	417	310	208	175	146	189
Gannet D	303	389	437	467	359	478	538	320	339	231	186	300
Gannet E	—	—	—	644	366	369	383	446	657	488	443	465
Gannet F	—	—	327	464	327	208	148	114	75	50	33	95
Gannet G	—	—	—	—	261	697	317	232	188	134	120	131
Glamis	152	72	50	47	36	21	16	14	14	9	1	0

continued

United Kingdom production of offshore crude petroleum and natural gas by fields 1995–2006 *continued*

Thousand tonnes

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Oil fields *continued*												
Glenelg	—	—	—	—	—	—	—	—	—	—	—	242
Goldeneye	—	—	—	—	—	—	—	—	—	120	660	574
Goosander	—	—	—	—	—	—	—	—	—	—	—	197
Grant	—	—	—	138	257	217	171	143	133	100	125	96
Gryphon	2 204	1 879	1 542	1 348	1 094	904	962	566	456	574	945	872
Guillemot A	—	249	1 026	688	420	283	213	326	344	334	294	238
Guillemot NW	—	—	—	—	—	20	13	216	194	150	75	71
Guillemot W	—	—	—	—	—	329	467	482	509	407	130	108
Halley	—	—	—	—	—	—	—	175	141	130	0	0
Hamish	5	3	17	10	8	6	3	0	0	3	0	0
Hannay	—	—	—	—	—	—	—	149	194	209	205	221
Harding	—	1 930	3 860	4 655	4 281	4 328	3 178	3 192	2 536	2 024	1 626	1 303
Hawkins	—	—	—	—	—	—	—	17	91	57	27	12
Heather	295	285	251	225	204	191	222	203	183	117	129	103
Heron	—	—	—	—	2 369	2 466	1 604	939	678	326	349	284
Highlander	307	272	149	188	102	160	166	144	105	96	120	94
Howe	—	—	—	—	—	—	—	—	—	65	456	188
Hudson	1 504	1 516	1 595	400	1 245	1 227	981	803	709	613	474	387
Hutton	1 186	901	787	581	558	414	147	0	—	—	—	—
Hutton NW	340	296	308	262	295	83	113	30	0	—	—	—
Innes	—	—	—	—	—	—	—	—	—	—	—	—
Iona	—	—	28	13	77	53	24	9	2	0	0	5
Ivanhoe	619	520	401	282	239	327	309	349	186	100	64	63
Jade	—	—	—	—	—	—	—	507	845	760	701	546
James	—	—	—	—	—	—	—	—	—	53	154	47
Janice	—	—	—	—	1 713	1 351	1 019	720	574	495	246	328
Joanne	40	258	1 200	1 249	924	537	401	385	243	152	131	149
Judy	27	99	651	755	532	428	525	594	810	627	702	994
Keith	—	—	—	—	—	59	293	152	132	106	106	78
Kestrel	—	—	—	—	—	—	51	221	326	161	166	92
Kingfisher	—	—	211	1 315	988	804	874	608	403	257	270	225
Kittiwake	1 365	1 056	629	444	228	157	33	54	113	88	61	73
Kyle	—	—	—	—	—	—	515	439	328	193	236	179
Larch	—	—	—	169	14	73	170	411	106	64	41	38
Leadon	—	—	—	—	—	—	158	971	578	425	329	108
Lennox	—	105	454	894	857	1 376	1 798	1 697	1 573	1 236	905	871
Leven	83	59	83	42	37	125	90	57	52	156	81	35
Linnhe	—	—	—	—	—	—	—	—	—	—	—	—
Lomond	152	181	198	207	182	186	166	160	147	150	117	112
Loyal	—	—	—	98	931	1 190	925	990	893	680	491	472
Lyell	449	433	278	215	146	116	117	88	36	118	111	94
MacCulloch	—	—	583	2 001	1 755	1 354	1 087	1 442	1 409	1 318	1 092	791
Machar	839	444	—	396	1 733	1 496	1 310	756	433	686	632	877
Maclure	—	—	—	—	—	—	—	264	475	514	570	527
Madoes	—	—	—	—	—	—	—	36	1 018	1 140	829	499
Magnus	5 362	4 546	3 091	3 148	3 046	2 924	2 214	1 902	1 852	1 745	1 585	1 528
Magnus S	—	235	383	435	482	311	256	150	249	209	154	188
Mallard	—	—	—	148	701	459	244	219	157	69	70	293
Marnock	—	—	—	12	747	982	656	503	308	190	101	97
Maureen	516	447	495	474	173	—	—	—	—	—	—	—
Medwin	53	7	0	0	0	0	0	0	0	0	7	94
Merganser	—	—	—	—	—	—	—	—	—	—	—	4
Merlin	—	—	75	677	1 001	619	429	302	276	96	115	66
Miller	6 422	6 467	5 195	3 441	2 732	2 057	1 383	947	409	514	412	251
Mirren	—	—	—	—	—	—	—	79	431	270	285	300
Moira	39	29	17	12	3	—	—	—	—	—	—	—
Monan	—	—	—	75	560	163	87	34	26	31	8	0
Montrose	128	90	62	64	55	37	34	16	19	38	61	66
Mungo	—	—	—	706	1 876	2 440	2 534	2 343	1 930	1 694	1 596	1 309
Murchison UK	535	681	806	792	744	495	411	309	338	267	256	254
Nelson	6 869	7 082	5 603	4 695	4 515	4 089	2 913	3 907	3 279	2 255	1 882	1 377
Ness	92	80	171	104	123	41	134	117	94	9	4	35
Nethan	—	—	—	—	—	—	—	—	—	14	1	0
Nevis	—	184	744	1 084	1 595	1 447	1 146	942	971	947	840	805
Nicol	—	—	—	—	—	—	—	—	—	—	—	0
Ninian	2 764	2 423	2 367	2 197	2 054	1 723	1 764	1 510	1 448	1 238	1 192	1 297
Orion	—	—	—	—	137	322	263	211	172	150	201	318
Osprey	1 420	1 299	1 204	764	618	295	450	292	116	148	171	211
Otter	—	—	—	—	—	—	—	96	1 081	1 278	888	738
Pelican	—	1 403	1 269	1 282	1 075	717	462	551	345	221	248	254
Penguin E	—	—	—	—	—	—	—	—	660	738	372	464
Penguin W	—	—	—	—	—	—	—	—	91	140	210	106
Petronella	297	137	119	123	52	61	79	106	81	73	45	40
Pict	—	—	—	—	—	—	—	—	—	—	377	485
Pierce	—	—	—	—	1 416	2 508	1 793	1 418	1 105	773	1 044	650
Piper	4 027	3 148	2 416	1 951	1 490	1 156	957	813	670	567	552	413
Playfair	—	—	—	—	—	—	—	—	—	42	281	27
Renee	—	—	—	—	715	240	44	62	45	41	26	5
Rhum	—	—	—	—	—	—	—	—	—	—	2	48
Rob Roy	1 413	1 076	570	289	272	180	185	152	104	105	91	95
Ross	—	—	—	—	761	1 208	459	483	330	267	176	149
Rubie	—	—	—	—	185	346	215	191	162	141	102	42
Saltire	1 763	1 831	1 908	1 335	757	479	360	311	166	109	127	136
Scapa	847	947	915	770	638	444	370	329	377	300	239	110
Schiehallion	—	—	—	1 100	4 183	5 073	4 780	5 061	5 161	4 795	3 419	3 269
Scoter	—	—	—	—	—	—	—	—	0	180	243	250
Scott	8 769	7 037	5 569	4 531	4 017	2 771	2 162	1 889	1 264	1 127	815	1 005
Seymour	—	—	—	—	—	—	—	—	100	114	56	56
Shearwater	—	—	—	—	—	82	650	2 299	2 353	2 568	1 280	945

continued

United Kingdom production of offshore crude petroleum and natural gas by fields 1995–2006 *continued*

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Oil fields *continued*												Thousand tonnes
Skene	—	—	—	—	—	—	7	329	259	192	113	90
Skua	—	—	—	—	—	—	195	634	290	217	2	0
Staffa	—	—	—	—	—	—	—	—	—	—	—	—
Statfjord UK	3 931	3 424	3 581	2 346	1 768	1 187	797	702	613	897	783	600
Stirling	61	42	37	9	16	17	28	25	25	15	27	31
Strathspey	1 686	1 499	1 331	1 006	643	414	352	530	419	464	243	384
Sycamore	—	—	—	—	—	—	—	—	358	134	21	116
Tartan	453	475	333	332	272	240	177	155	133	170	138	102
Teal	—	—	1 091	1 123	1 216	1 511	1 040	543	289	222	150	1
Teal S	—	44	268	122	136	79	86	42	77	32	0	30
Telford	—	104	1 519	1 521	1 014	1 092	1 141	1 128	853	628	434	377
Tern	3 326	2 781	2 593	2 287	2 125	1 803	1 681	1 370	1 043	780	600	506
Thelma	—	165	1 309	1 051	905	773	669	324	272	283	283	290
Thistle	665	536	430	363	305	288	191	252	219	172	141	164
Tiffany	1 802	1 764	1 205	762	425	275	190	143	129	109	121	170
Toni	1 331	1 057	684	794	655	467	383	378	519	258	218	202
Tullich	—	—	—	—	—	—	—	254	646	452	354	320
Other	—	—	94	—	—	202	—	—	—	—	—	—
Total	**115 096**	**116 500**	**115 395**	**119 049**	**124 886**	**114 830**	**106 547**	**105 369**	**96 868**	**86 906**	**77 180**	**70 069**
Gas fields												Million cubic metres
Alison	31	128	91	97	18	53	55	39	81	51	41	33
Alison KX	27	81	60	62	52	46	58	55	50	48	40	27
Alwyn N (h)	1 876	1 829	2 039	1 730	1 608	1 288	832	1 272	1 254	961	1 400	805
Amethyst E	991	1 416	848	870	724	612	527	297	392	191	351	345
Amethyst W	312	421	515	423	262	471	643	509	469	257	223	187
Anglia	615	439	284	391	296	383	294	209	225	163	136	99
Ann	399	428	270	140	166	160	85	33	98	74	58	110
Annabel	—	—	—	—	—	—	—	—	—	—	567	901
Apollo	—	—	—	—	—	—	—	—	319	392	299	280
Arthur	—	—	—	—	—	—	—	—	—	—	858	661
Audrey	1 179	1 197	1 171	729	531	624	523	172	250	235	192	155
Bains	—	—	—	—	—	—	—	109	505	330	201	61
Baird	219	459	435	374	311	138	228	214	274	274	220	158
Barque	577	1 829	2 244	1 503	1 327	2 190	1 823	910	1 003	654	659	496
Barque S	6	—	8	2	0	0	0	0	0	0	0	0
Beaufort	—	—	—	—	—	—	1	—	—	—	—	—
Bell	—	—	—	—	344	941	662	673	389	124	0	152
Bessemer	139	777	812	735	692	1 204	391	208	128	101	38	48
Boulton	—	—	—	925	459	587	299	607	713	607	511	370
Boulton H	—	—	—	—	—	—	—	—	—	140	28	7
Boyle	—	—	—	—	—	—	—	143	456	349	240	172
Brigantine A	—	—	—	—	—	—	637	597	639	415	252	93
Brigantine B	—	—	—	—	—	—	573	428	166	157	138	59
Brigantine C	—	—	—	—	—	—	—	344	655	347	173	502
Brigantine D	—	—	—	—	—	—	—	0	5	28	0	35
Brown	—	—	—	(d)	(d)	(d)	(d) 118	39	0	0	3	32
Bruce (h)	5 175	6 577	5 613	4 959	5 164	5 678	6 264	6 277	6 195	4 748	4 390	3 255
Bure	58	55	42	64	12	35	21	18	15	2	0	3
Bure W	—	—	—	22	124	157	128	105	71	53	25	17
Caister Bunter	388	295	343	235	315	306	375	232	98	56	56	12
Caister Carboniferous	745	649	642	364	390	257	130	112	176	118	107	21
Calder	—	—	—	—	—	—	—	—	—	3	0	57
Callisto	102	254	254	199	104	24	86	95	69	53	31	24
Callisto N	—	—	—	—	—	16	119	69	40	7	9	5
Camelot C & S	526	403	846	563	187	206	150	114	52	30	29	3
Camelot N	246	84	49	30	1	—	11	0	3	0	0	0
Camelot NE	10	204	58	2	—	—	—	—	—	—	—	—
Captain (h)	—	—	—	—	—	—	71	72	56	76	61	39
Carrack	—	—	—	—	—	—	—	—	75	1 220	1 098	616
CATS (g)	1 941	2 334	4 429	10 126	13 605	13 618	13 038	14 253	14 972	13 812	11 660	11 125
Cleeton	997	1 587	1 466	472	5	—	—	—	—	—	—	—
Clipper	621	1 190	1 152	669	598	1 101	903	459	409	247	357	268
Corvette	—	—	—	—	1 782	1 048	517	154	129	471	403	174
Cutter	—	—	—	—	—	—	—	—	—	—	—	293
Dalton	—	—	—	—	267	471	32	2	110	121	112	1
Davy	197	930	806	(d) 719	(d) 908	(d) 881	(d) 381	109	66	157	111	105
Davy N	—	—	—	—	—	—	75	437	225	141	71	20
Dawn	1	170	92	94	102	29	0	0	0	0	0	0
Deben	—	—	—	66	240	93	28	13	11	6	0	0
Delilah	—	—	—	42	103	100	87	68	34	0	0	172
Dunbar (h)	954	1 371	1 359	1 121	1 133	1 216	1 229	1 476	1 243	1 089	816	708
Ellon (h)	337	521	791	448	162	129	188	116	179	43	33	64
Europa	—	—	—	—	—	322	451	271	220	148	115	115
Esmond	36	—	—	—	—	—	—	—	—	—	—	
Excalibur	811	876	599	681	552	453	427	365	269	224	181	147
FLAGS (e)	6 214	6 459	6 948	7 417	7 596	(k) 10 307	(k) 11 651	(k) 10 578	(k) 7 890	(k) 7 528	(k) 8482	7 579
Forvie	—	—	—	—	—	—	—	—	—	—	0	879
Forbes	—	—	—	—	—	—	—	—	—	—	—	—
Frigg (UK) (h)	474	466	191	511	253	367	463	415	457	495	—	—
Fulmar (f)	1 854	1 716	1 505	1 890	2 104	(k)	(k)	(k)	(k)	(k)	(k)	0
Galahad	106	456	707	509	431	344	337	259	211	175	387	154
Galleon	518	1 398	1 501	1 493	1 168	1 677	1 635	1 311	1 336	1 539	1 227	864
Galley (h)	—	—	—	257	410	460	230	122	-6	-14	22	11
Ganymede	532	1 708	1 655	947	669	197	384	326	285	229	217	145
Gawain	92	929	820	798	666	694	690	579	345	141	114	98
Gordon	22	—	—	—	—	—	—	—	—	—	—	—

continued

United Kingdom production of offshore crude petroleum and natural gas by fields 1995–2006 *continued*

Million cubic metres

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Gas fields *continued*												
Keith (h)	—	—	—	—	—	12	79	50	45	47	59	49
Ketch	—	—	—	—	297	1 233	819	549	478	317	233	244
Kimar	—	—	—	—	—	—	—	—	—	—	—	252
Lancelot	868	685	621	557	761	696	495	504	414	339	289	230
Leman	4 049	3 468	3 013	4 740	3 060	3 957	3 835	3 061	3 009	3 178	2 664	2 295
Lennox	—	—	—	—	—	—	—	—	77	440	730	766
Malory	—	—	—	126	668	571	449	361	305	259	219	204
Markham (UK)	933	807	663	514	485	463	350	304	207	192	342	295
McAdam	—	—	—	—	—	—	—	—	—	514	578	926
Mercury	—	—	—	—	5	402	627	547	333	365	243	119
Miller (i)	2 467	2 534	2 028	1 254	1 109	624	328	302	163	174	144	51
Millom	—	—	—	—	29	144	1 023	1 048	927	801	606	536
Minerva	—	—	—	—	—	—	—	—	577	576	406	317
Mordred	—	26	82	17	39	43	31	37	26	28	22	24
Morecambe N	2 399	2 626	2 930	1 294	848	3 872	3 017	3 128	2 594	2 118	1 396	1 215
Morecambe S	7 675	7 099	6 170	7 993	9 971	8 436	8 328	7 513	7 526	8 055	5 935	2 490
Munro	—	—	—	—	—	—	—	—	—	—	147	354
Murdoch	1 110	1 127	1 150	1 376	836	1 197	948	641	627	447	414	443
Murdochk	—	—	—	—	—	—	—	—	1 378	1 209	864	636
Neptune	—	—	—	—	17	1 466	2 007	1 685	1 301	1 168	922	661
Newsham	—	68	127	94	71	60	44	35	34	39	37	28
Nuggets (h)	—	—	—	—	—	—	134	1 333	1 746	1 681	1 811	1 537
Orwell	1 470	789	720	832	667	716	507	373	389	278	214	171
Pickerill	1 790	1 345	1 288	879	626	366	351	284	208	142	199	141
Piper & Tartan Area (h)	1 037	950	633	452	421	396	353	297	44	69	17	7
Ravenspurn N	1 716	2 942	2 968	1 580	1 319	1 294	761	497	317	362	540	435
Ravenspurn S	852	1 253	1 433	1 186	1 006	871	725	636	465	370	409	329
Renee/Rubie (h)	—	—	—	—	1	…	18	11	2	15	0	0
Rhum	—	—	—	—	—	—	—	—	—	—	44	1 485
Rose	—	—	—	—	—	—	—	—	—	206	227	165
Ross (h)	—	—	—	—	28	89	60	144	126	95	60	42
Rough (b)	—	—	—	—	—	428	17	0	0	0	0	0
SAGE (j)	6 829	7 321	8 035	10 398	15 459	16 802	15 449	15 138	15 707	14 827	13 227	11 910
Saturn (m)	—	—	—	—	—	—	—	—	—	—	433	1 578
Schooner	—	243	1 245	1 088	1 237	882	917	380	485	475	230	337
SEAL (l)	—	—	—	—	—	93	2 207	7 026	7 391	8 464	7 567	7 096
Sean E	501	512	301	227	253	148	124	32	36	7	16	7
Sean N & S	428	942	639	50	312	581	1 120	493	601	306	1 794	956
Sinope	—	—	—	—	75	274	20	0	0	3	0	0
Skiff	—	—	—	—	—	146	843	1 254	1 339	924	714	613
Thames	61	157	119	60	92	90	89	67	53	43	27	43
Trent	—	80	279	347	521	341	228	213	195	150	149	208
Tristan	206	27	18	7	90	35	38	17	3	0	0	—
Tyne N	—	—	76	130	255	222	77	28	22	21	16	41
Tyne S	—	109	539	435	479	360	321	184	153	98	108	62
Valiant N	144	277	295	334	172	274	210	163	167	137	134	108
Valiant S	177	349	391	397	298	538	424	343	238	211	199	169
Valkyrie	—	—	—	—	—	—	—	—	—	210	596	464
Vampire	—	—	—	—	367	727	317	122	81	35	0	0
Vanguard	30	109	120	132	78	166	184	158	107	113	80	74
Victor	1 399	1 657	1 724	1 064	949	970	775	525	563	503	378	618
Viking B	466	628	687	629	2 465	1 542	1 329	992	872	912	708	677
Viscount	—	—	—	—	—	—	—	—	12	3	0	0
Vixen	—	—	—	—	—	499	1 035	771	558	242	234	138
Vulcan	415	656	827	816	584	952	797	642	497	423	358	317
Watt	—	—	—	—	—	—	—	—	—	16	0	0
Waveney	—	—	—	137	741	594	305	194	117	95	70	40
Welland NW	411	358	386	629	326	212	119	17	0	0	0	—
Welland S	208	117	173	210	155	76	44	17	0	0	0	—
Wensum	4	3	3	—	2	0	0	0	0	1	0	0
West Sole	1 214	857	1 224	1 218	1 170	1 050	940	844	765	473	574	584

continued

United Kingdom production of offshore crude petroleum and natural gas by fields 1995–2006 *continued*

Million cubic metres

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Gas fields *continued*												
Whittle	—	—	—	—	—	—	—	—	397	481	422	308
Windermere	—	—	279	438	320	273	196	166	125	87	45	41
Wren	—	—	—	—	—	—	—	—	—	—	138	283
Yare	63	51	14	72	21	11	45	31	39	9	0	22
Others (c)	3 016	3 175	3 361	3 719	3 937	3 763	4 658	4 718	4 503	4 513	4 274	4 454
Total (a)	**75 158**	**89 514**	**91 170**	**95 171**	**104 760**	**114 663**	**112 563**	**109 694**	**107 919**	**100 847**	**92 503**	**80 626**

(a) Gross production, i.e. includes own use for drilling purposes, production and pumping operations, but excludes gas flared and vented.
(b) Rough was converted for use as an off-peak storage unit with effect from 1985.
(c) Associated gas, mainly methane, produced and used mainly on Northern Basin oil production platforms including those in the CATS, FLAGS (including the Fulmar system), SAGE and SEAL.
(d) From December 1998 to January 2001, Davy includes Brown.
(e) Gas delivered to land via the Far-north Liquids and Associated Gas System from Brent, Clapham, North and South Cormorant, Goldeneye, Kyle, Magnus, Magnus South, Murchison (UK), Pelican, Penguin, Statfjord (UK), Strathspey and Thistle.
(f) Gas delivered to land via the Fulmar pipeline from Bittern, Clyde, Cook, Curlew, Fulmar, Gannet A-G, Guillemot A, NW and W, Howe, Kittiwake, Leven, Mallard, Medwin, Nelson, Orion, Pict, Teal and Teal South.
(g) Gas delivered to land via the Central Area Transmission System (CATS) from Andrew, Banff, Drake, Egret, Erskine, Everest, Faragon, Fleming, Hawkins, Heron, Jade, James, Janice, Joanne, Judy, Lomond, Machar, Madoes, Marnock, Mirren, Monan, Mungo Seymour and Skua.
(h) Associated gas used offshore or delivered to land via the Frigg/ Vesterled pipeline system.
(i) Gas delivered direct to Boddam (Peterhead) power station by dedicated pipeline.
(j) Gas delivered to land via the Scottish Area Gas Evacuation system from Beinn, Beryl, Brae (Central, East, North, South and West), Braemar, Britannia, Caledonia, Maclure, Ness, Nevis, Scott, Skene, Thelma, Tiffany, Toni and Tullich.
(k) FLAGS includes Fulmar.
(l) Shearwater - Elgin Area Line (SEAL) includes Elgin, Franklin, Glenelg, Halley, Scoter and Shearwater
(m) Saturn includes Atlas, Hyperio and Rhea

Source: Department for Business Enterprise and Regulatory Reform (Previously Department of Trade and Industry).

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Petroleum										
Production										
Crude petroleum	107 430 000	97 835 000	87 516 000	77 179 000	69 665 000					
Condensates and other (a)	8 514 000	8 238 000	7 858 000	7 543 000	6 913 000					
Refined petroleum products	83 996 000	84 529 000	89 828 000	86 003 000	83 079 000					
Consumption (inland deliveries) of refined products										
Used as fuels–										
Refineries	5 677 000	5 458 000	5 419 000	5 602 000	4 728 000					
Elsewhere	60 145 000	61 107 000	63 181 000	63 717 000	64 336 000					
Not used as fuels	9 673 000	10 411 000	10 584 000	10 678 000	9 995 000					
Total	75 495 000	77 046 000	79 220 000	79 997 000	79 059 000					
Imports										
Crude petroleum	40 838 161	44 511 352	56 128 686	54 067 943	55 735 570	4 985 613	5 954 247	8 496 322	11 519 286	14 579 475
Partly refined petroleum and refined products	21 596 063	23 792 249	26 953 070	28 967 912	32 427 307	3 148 748	3 782 547	4 999 298	7 573 519	9 536 164
Exports										
Crude petroleum	79 943 787	69 617 507	60 743 679	50 619 044	47 864 601	9 834 692	9 254 832	9 373 420	10 979 393	12 929 441
Partly refined petroleum and refined products	25 901 034	27 852 607	32 103 465	31 553 984	31 621 552	3 636 438	4 376 653	5 706 574	7 402 777	8 801 422
Natural gas										
Production										
Methane (c)										
Colliery	60 000	79 000	70 000	65 000	66 000					
Offshore and onshore	103 587 000	102 847 000	96 341 000	88 154 000	79 947 000					
Consumption										
Natural gas (b)	94 166 000	94 494 000	96 576 000	94 020 000	89 219 000					
Imports										
Liquefied natural gas	582 878	509 848	661 898	1 220 190	3 262 955	87 293	132 619	140 779	342 552	810 449
Other natural gas	2 105 453	…	5 343 071	6 945 853	5 405 946	269 849	…	693 076	1 620 566	1 937 111
Exports										
Liquefied natural gas	4 201 100	3 734 960	3 670 296	3 384 448	2 455 229	610 297	673 538	768 850	821 226	740 502
Other natural gas	8 718 186	1 519 493	186 614	1 491 320	113 025	895 802	1 036 236	702 893	703 453	1 252 714

(a) Including ethane, propane and butane, in addition to condensates.
(b) Tonnes oil equivalent: excluding minor consumption for non-energy use.
(c) Oil equivalent: converted from original data at 397 therms = 1 tonne.

Phosphorus

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Phosphorus										
Consumption in iron and steel industry										
Ferro-phosphorus	990	1 130	1 150	1 130	1 200					
Imports										
Phosphate rock	10 275	1 242	11 586	30 177	7 803	1 140	259	1 545	1 925	766
Ammonium phosphates–										
Fertiliser	196 776	192 537	162 292	121 703	129 771	25 437	22 984	23 207	18 127	19 703
Superphosphates	204 073	212 297	178 902	164 196	141 417	19 883	20 327	20 127	18 410	15 974
Basic slag	5 150	6 215	5 931	3 878	6 289	215	244	278	198	262
Other phosphatic fertilisers	17 336	14 425	14 118	11 911	9 409	1 303	1 073	1 517	1 063	1 172
Elemental phosphorus	14 437	12 270	15 739	9 468	—	13 828	12 488	17 369	12 846	—
Phosphoric acids	197 558	220 427	175 986	161 905	170 353	37 068	44 408	34 991	36 875	41 196
Calcium phosphates	120 414	120 167	115 172	111 811	120 402	23 878	23 470	19 506	19 754	22 607
Sodium phosphates and orthophosphates (b)	51 623	45 019	34 188	37 701	52 735	22 560	18 131	13 478	15 228	24 188
Exports										
Phosphate rock	386	111	34	1 548	335	79	85	27	208	254
Ammonium phosphates–										
Fertiliser	630	493	519	221	263	433	444	452	327	305
Other (a)	...	...	...	...		...	...	...	...	
Superphosphates	5 229	2 484	6	0	1 470	670	320	6	0	301
Basic slag	—	1	—	—	0	—	5	—	—	1
Other phosphatic fertilisers	292	333	426	457	476	158	123	136	186	103
Elemental phosphorus	28	422	125	1 227	24	117	1 138	237	2 166	21
Phosphoric acids	18 755	16 322	12 876	8 320	10 760	6 911	6 789	5 414	4 835	5 629
Calcium phosphates	15 123	15 046	15 160	14 750	23 267	8 204	8 752	8 527	9 359	13 226

(a) Including polyphosphates.

(b) Excluding polyphosphates.

Platinum group metals

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Platinum group metals										
Imports										
Scrap	776	367	617	1 271	1 149	115 886	170 533	158 949	213 125	224 707
Unwrought or partly worked–										
Platinum	10	14	48	52	23	106 075	169 110	358 887	383 876	332 670
Palladium	16	48	25	31	37	80 100	245 258	98 921	95 291	178 290
Other platinum group	4	9	8	7	9	38 840	30 306	67 054	96 755	204 830
Exports										
Scrap	914	1 863	2 681	2 881	3 507	15 535	13 676	18 989	24 592	53 027
Unwrought or partly worked–										
Platinum	44	37	45	71	43	448 364	447 735	614 350	619 359	734 052
Palladium	18	28	61	63	49	148 069	117 277	287 094	221 800	261 717
Other platinum group	5	10	13	25	23	47 105	51 748	127 823	243 111	486 989

Potash

Potash is a generic term for a variety of potassium-bearing minerals and refined products. There are many potassium-bearing minerals but only those that are water-soluble are of significant commercial interest. Sylvine (potassium chloride, KCl) is by far the most important source of potash worldwide, because of its solubility and high potassium content, and accounts for all the potash produced in the UK to date. Potassium minerals rarely occur in pure form and the mined material is invariably a physical mixture of salts. Sylvinite is a mixture of sylvine and halite (salt, NaCl) in varying proportions and this is the material that is mined in the UK. Potassium is one of the three primary nutrients essential for plant growth (the others being nitrogen and phosphorus). These nutrients form the basis of fertiliser production in the UK and throughout the world. About 90 per cent of UK potash production is consumed in the manufacture of fertilisers, with the remainder in a range of industrial applications.

There is only one source of potash in the UK, the Boulby Mine in the North York Moors National Park, meeting around 55 per cent of the UK potash demand. Production of potash increased slightly in 2007, to 716 000 tonnes KCl compared with 712 000 tonnes in 2006. A large proportion of this was exported through the company's deepwater terminal on the River Tees. Salt is mined from the arterial roadways in the underlying Boulby Halite to maintain access to potash mining areas and to explore and develop new reserves. Rock salt production is not disclosed for commercial reasons.

Boulby Mine is operated by Cleveland Potash Ltd, a wholly owned subsidiary of Israel Chemicals Ltd. The parent company is the second largest potash producer in Europe, and the fifth largest in the world with a total output of some five million tonnes per year.

The Boulby Mine employs around 1000 people and is the single most important non-hydrocarbon mineral operation in Britain generating total sales approaching £100 million in 2004, including by-product rock salt. The workings extend some 13 kilometres and cover an area of 20 square kilometres. The mine extends 5 kilometres offshore to the north where operations are approximately 800 metres below the seabed. In the south, a combination of seam dip and topographic relief takes the workings to more than 1300 metres below the land surface.

The potash ore is a mixture of sodium and potassium chloride crystals with occasional inclusions of insoluble material, usually clays. Returning the insoluble waste material (mainly clay) into disused mine workings was started in 2003 thereby reducing discharges into the North Sea. Infrastructure and development work for the project was part funded by a European Commission grant. Cleveland Potash has recently announced a £20 million expansion plan for its Boulby mine. The funding will allow Cleveland Potash to further explore the resource and develop new reserves.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Potassium compounds										
Indigenous production										
KCl product	900 000	1 040 000	912 000	732 000	712 000					
Apparent consumption (a)										
Potassic fertilisers (K_2O content)	339 100	388 400	363 700	337 200	301 300					
Imports										
Crude natural salts	19 366	12 751	9 204	9 517	10 696	1 141	661	400	459	573
Chloride	372 031	246 164	207 056	198 893	170 942	19 462	22 023	20 808	22 001	19 835
Sulphate	8 159	3 765	11 742	12 206	14 274	1 676	1 152	1 933	2 149	2 583
Other potassic fertilisers	645	1 674	641	945	1 310	223	343	413	553	519
Exports										
Crude natural salts	26	48	11	14	14	9	71	59	15	41
Chloride (b)	440 000	630 000	510 000	350 000	450 000	...	...	...	...	...
Sulphate	283	153	21	6	39	102	82	12	20	16
Other potassic fertilisers	457	456	641	699	612	497	395	396	463	412

(a) Home deliveries plus imports.

(b) BGS estimate.

Precious and semi-precious stones

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Precious and semi-precious stones (excluding diamond) (a)										
Imports										
Natural stones	492	427	88	98	102	70 129	52 655	52 027	65 870	73 492
Synthetic stones	8	12	23	28	18	3 851	3 653	5 931	5 390	5 686
Dust and powder	0	0	1	2	3	154	166	220	569	935
Exports										
Natural stones	27	6	17	3	2	56 112	43 278	43 605	62 092	61 510
Synthetic stones	0	12	9	1	1	505	4 510	3 714	1 393	844
Dust and powder	...	19	1	0	0	76	40	105	389	87

(a) Unworked, cut or otherwise worked, but not mounted, set or strung.

Primary fuels

United Kingdom production of primary fuels 1981–2006 (energy supplied basis)

Million tonnes of oil equivalent (a)

Year	Coal	Petroleum	Natural gas (b)	Nuclear electricity	Hydro-electricity (c)	Total (d)
1981	78	97	35	10	0	220
1982	76	113	35	12	0	236
1983	73	126	36	14	0	248
1984	31	138	36	15	0	219
1985	57	139	40	17	0	253
1986	66	139	42	15	0	262
1987	63	135	44	14	0	257
1988	63	126	42	17	0	249
1989	61	100	41	18	0	221
1990	56	100	46	16	0	219
1991	58	100	51	17	0	227
1992	52	104	52	19	1	227
1993	42	110	61	22	1	235
1994	30	139	65	21	0	257
1995	33	143	71	21	1	270
1996	31	142	84	22	0	282
1997	30	140	86	23	0	282
1998	26	145	90	23	1	287
1999	23	150	99	22	1	298
2000	20	138	108	20	1	289
2001	20	128	106	21	0	277
2002	19	127	104	20	1	273
2003	18	116	103	20	0	260
2004	16	105	96	18	1	238
2005	13	93	88	18	1	216
2006	11	84	80	17	1	197

(a) Based on a standard 'tonne of oil equivalent' equal to 397 therms.
(b) Including colliery methane.
(c) Including, from 1988, other renewable primary electricity sources (wind, etc.).
(d) Including, from 1988, small amounts of primary heat sources (solar, geothermal, etc.), solid renewable sources (wood, waste, etc.) and gaseous renewable sources (landfill gas, sewage gas, etc.).

Source: Department of Trade and Industry.

United Kingdom production and consumption of primary fuels 1950–2006

United Kingdom consumption of energy (primary fuel input) 1981–2006 (energy supplied basis)

Million tonnes of oil equivalent (a)

Year	Coal	Petroleum	Natural gas (b)	Nuclear electricity	Hydro-electricity (c)	Net imports of electricity	Total (d)
1981	73	70	45	10	0	—	198
1982	68	71	45	12	0	—	196
1983	69	67	47	14	0	—	197
1984	49	85	48	15	0	—	196
1985	65	72	52	17	0	—	206
1986	70	71	53	15	0	0	210
1987	72	69	54	14	0	1	211
1988	70	74	51	17	0	1	213
1989	67	75	49	18	0	1	211
1990	67	77	51	16	0	1	214
1991	67	77	55	17	0	1	220
1992	63	78	55	19	1	1	217
1993	55	78	63	22	1	1	221
1994	51	77	65	21	0	2	218
1995	49	75	69	21	1	1	218
1996	46	78	81	22	0	1	230
1997	41	76	84	23	0	1	227
1998	41	76	87	23	1	1	231
1999	37	76	91	22	1	1	230
2000	38	76	96	20	1	1	234
2001	41	75	95	21	0	1	236
2002	38	74	94	20	1	1	230
2003	41	74	95	20	0	0	232
2004	39	76	96	18	1	1	233
2005	40	77	94	18	1	1	235
2006	43	77	89	17	1	1	232

(a) Based on a standard 'tonne of oil equivalent' equal to 397 therms.
(b) Including colliery methane.
(c) Including, from 1988, other renewable primary electricity sources (wind, etc.).
(d) Including, from 1988, small amounts of primary heat sources (solar, geothermal, etc.), solid renewable sources (wood, waste, etc.) and gaseous renewable sources (landfill gas, sewage gas, etc.).

Source: Department of Trade and Industry.

Pumice

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Pumice										
Imports	...	21 406	35 533	71 598	97 832	2 703	2 978	1 898	1 213	1 659
Exports	319	1 389	242	138	70	654	702	450	275	227

Pyrite

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Pyrite										
Imports										
Iron pyrites (incl. cupreous) –										
Unroasted	85	11	29	26	19	25	13	28	30	7
Roasted	…	19 230	2 436	1 911	1 282	627	406	364	251	171
Exports										
Iron pyrites (incl. cupreous) –										
Unroasted	…	32	4	4	2	76	14	3	20	7
Roasted	—	0	1	4	6	—	3	1	2	5

Quartz and quartzite

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Quartz and quartzite										
Imports										
Quartz	3 645	541	317	1 259	5 235	1 315	173	142	466	1 078
Quartzite	851	472	413	193	306	490	368	596	400	512
Exports										
Quartz	163	94	190	529	1 367	176	399	400	364	291
Quartzite	125	120	1 769	2 652	170	270	388	321	360	296

Radioactive and associated materials

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Radioactive and associated materials										
Imports										
Natural and enriched uranium, plutonium, artificial radioactive isotopes, and their compounds	...	...	...	…		284 737	303 640	569 122	591 337	1 176 048
Exports										
Natural and enriched uranium, plutonium, artificial radioactive isotopes, and their compounds	...	...	...	…		497 413	610 490	647 633	657 761	709 205

Rare earths

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Rare earths										
Imports										
Rare earth metals (a)	64	115	136	166	88	529	978	692	656	486
Cerium compounds	3 070	2 519	1 914	2 324	1 615	8 598	7 278	3 915	4 017	3 253
Other rare earth compounds (b)	491	471	775	775	600	3 384	2 552	4 716	5 082	2 768
Ferro-cerium and other pyrophoric alloys	34	1	9	19	60	102	99	32	2 819	4 012
Exports										
Rare earth metals (a)	148	16	10	26	29	982	312	281	283	453
Cerium compounds	88	118	47	121	111	1 748	2 953	1 776	3 153	1 596
Other rare earth compounds (b)	1 128	1 105	1 157	1 189	954	6 772	6 055	5 415	6 076	5 669
Ferro-cerium and other pyrophoric alloys	...	768	197	2	76	335	323	190	17	125

(a) Including yttrium and scandium.

(b) Including yttrium and scandium compounds.

Salt

Salt (sodium chloride, NaCl), occurs in nature in solid form as rock salt (halite), or in solution as brine. Rock salt occurs in beds, commonly associated with mudstone, up to several hundred metres in thickness. Natural brine is produced by the dissolution of salt-bearing strata by circulating groundwater or by solution mining which entails injecting water into salt beds and pumping out the resulting salt solution. This may contain up to 26 per cent NaCl when fully saturated.

The official figure for total salt production in Great Britain in 2006 was 5 224 000 tonnes. Separate figures for the production of rock salt and white (or brine) salt have not been disclosed for many years, but estimates have been made by the BGS. Production of rock salt, which is largely used for de-icing roads, is dependent on the weather. UK sales are estimated at 2 million tonnes in 2007. Rock salt is produced at three locations in the UK. The Winsford Mine in Cheshire, operated by the Salt Union, is the largest source, but large tonnages are also produced at the Boulby potash mine in the North York Moors National Park. The third producer, Irish Salt Mining and Exploration Co Ltd, operates the Kilroot mine at Carrickfergus in Northern Ireland which can produce around 500 000 tonnes annually. A proportion of the rock salt from this mine is exported to the eastern seaboard of the USA.

The Winsford Mine, with some 26 million cubic metres of space, has a constant temperature and humidity, is dry and gas-free. Part of the mine is currently in use for the secure, long-term and 'active' storage of a wide range of documents and sensitive or fragile materials. The mine's Minosus waste disposal project cleared a final legal challenge in the High Court in December 2004. Limited hazardous waste disposal commenced in August 2005, pending the completion of simulated mine condition test methods that have to be approved by the Environment Agency. Approval was given in March 2006 which meant that Minosus can now accept the full range of 42 different waste types it was designed for. Strict criteria will be used for the type of material stored, which will be dry waste that is non-flammable, non-biodegradable and non-radioactive. The principal waste stream is residues from energy and waste plants.

In addition to the extraction of rock salt by underground mining, large quantities of salt are also produced by controlled solution mining. Production is now confined to Cheshire, where controlled solution mining is undertaken by two companies, INEOS Chlor Ltd and British Salt Ltd. INEOS Chlor supplies brine from the Holford brinefield for its own plant at Runcorn for the production of chlorine and caustic soda by the electrochemical process. The company also supplies brine to two plants operated by Brunner Mond in Northwich for the production of soda ash by the ammonia-soda process. INEOS has recently acquired Salt Union's vacuum (white) salt operations at Runcorn, which also uses brine from Holford.

British Salt Ltd also produces brine from the Warmingham brinefield in Cheshire for the production of white salt at its plant near Middlewich. British Salt is a wholly-owned subsidiary of US Salt Holdings. New Cheshire Salt Works Ltd extracts natural brine at the Wincham brinefield, near Northwich, for the production of small quantities of white salt. Total UK production of white (brine) salt is estimated to be about one million tonnes and salt-in-brine for use as a chemical feedstock, 2.8 million tonnes.

At the Warmingham brinefield, specially created salt cavities have been produced for natural gas storage. Statoil, along with Scottish and Southern Energy (SSE) have secured consent to increase the gas storage capacity at their new Aldbrough Gas Storage Facility, near Hornsea in East Yorkshire. The companies are already developing nine gas storage caverns with a capacity 420 million cubic metres. The companies now plan to develop a further nine gas storage caverns, taking the total at the site to 18 with an overall capacity of over 800 million cubic metres.

E.ON UK started construction of a gas storage facility in August 2005 at the Holford brinefield in Cheshire. The facility consisting of eight separate underground storage caverns will have a capacity of 162 million cubic metres, equivalent to around half of the UK's average daily gas demand. The facility is scheduled to become operational in 2009. E.ON UK is also planning to develop a major underground gas storage facility close to Aldbrough in East Yorkshire. The company has conducted geological surveys across the site to confirm the area's suitability for underground gas storage and a planning application for the facility was submitted in 2007. The proposed facility would have 10 underground caverns with a total capacity of 420 million cubic metres.

Canatxx Gas Storage Limited proposed to construct and operate a natural gas storage facility in underground salt caverns at the Preesall saltfield in Lancashire. Following opposition by local councils and residents and a public enquiry the government have rejected plans for the underground storage facility. Brine extraction ceased at the Preesall saltfield in 1993 because of the closure of the Hillhouse chlorine plant in Fleetwood. Portland Gas Ltd, a wholly owned subsidiary of Egdon Resources Plc, has been granted planning permission to construct a salt cavern gas storage facility on the Isle of Portland, Dorset. The project will involve creating 14 storage caverns, at a depth of 2400 metres, with a capacity of around 1000 million cubic metres. Construction will commence in summer 2008 with a planned completion data of 2015.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Salt										
Production										
Salt, rock (a)	1 500 000	1 700 000	2 000 000	2 000 000	2 000 000					
Salt from brine (a)	1 000 000	1 000 000	1 000 000	1 000 000	1 000 000					
Salt in brine (a) (b)	3 200 000	3 200 000	2 800 000	2 800 000	2 800 000					
Imports	306 488	217 009	219 581	287 623	246 879	12 870	10 928	13 728	17 121	17 673
Exports	326 760	537 497	691 895	538 796	557 311	20 135	23 202	26 763	26 517	29 091

(a) BGS estimate.
(b) Used for purposes other than salt making.
(c) BGS estimates, based on known exports from certain countries.

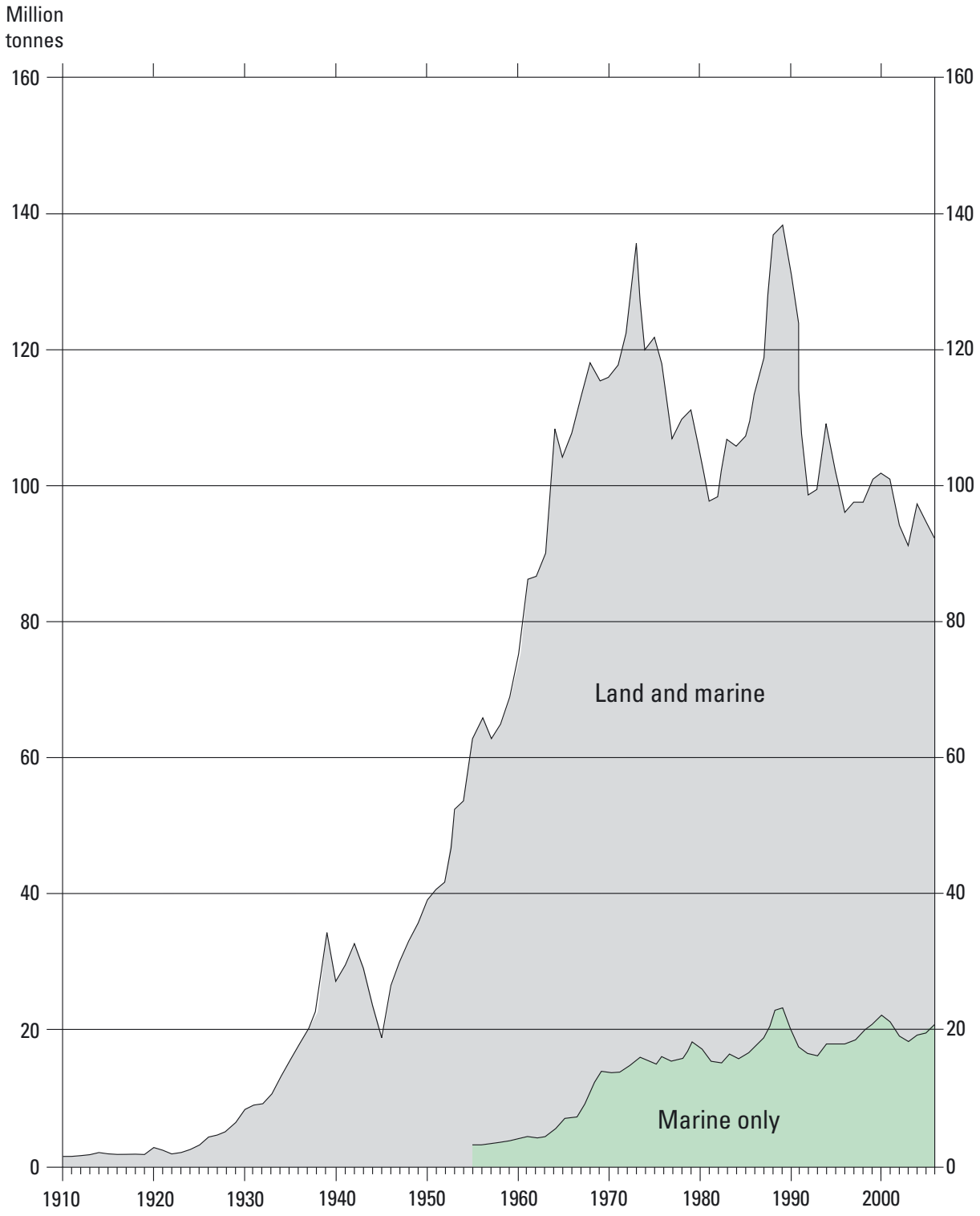
Sand and gravel (see also Aggregates)

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Sand and gravel										
Production										
Sand & gravel (a)	94 424 000	91 211 000	97 333 000	94 666 000	92 107 000					
Consumption (b)										
Building sand	12 947 000	13 395 000	12 761 000	13 233 000	12 105 000					
Concreting sand	31 224 000	31 411 000	32 529 000	29 848 000	29 815 000					
Gravel and hoggin	38 550 000	35 415 000	40 768 000	39 311 000	38 321					
Total	82 721 000	80 211 000	86 057 000	82 392 000	80 242 000					
Imports										
Sand and gravel	413 992	861 439	924 304	643 594	634 844	9 453	11 406	14 481	14 117	17 583
Exports										
Sand and gravel (c)	8 881 454	8 419 845	8 174 262	8 453 949	9 308 961	32 104	36 708	36 414	40 493	45 498

(a) Including production from marine dredging.
(b) Great Britain: production for the home market including landings of marine-dredged materials at British ports.
(c) Principally marine-dredged sand and gravel. Source: HM Revenue and Customs However, the Crown Estate Commissioners give the following figures for marine-dredged sand and gravel landed at foreign ports (tonnes): 2002: 6 190 905; 2003: 6 095 640; 2004: 6 191 867; 2005: 6 471 453; 2006: 6 714 659

United Kingdom production of sand and gravel 1910–2006



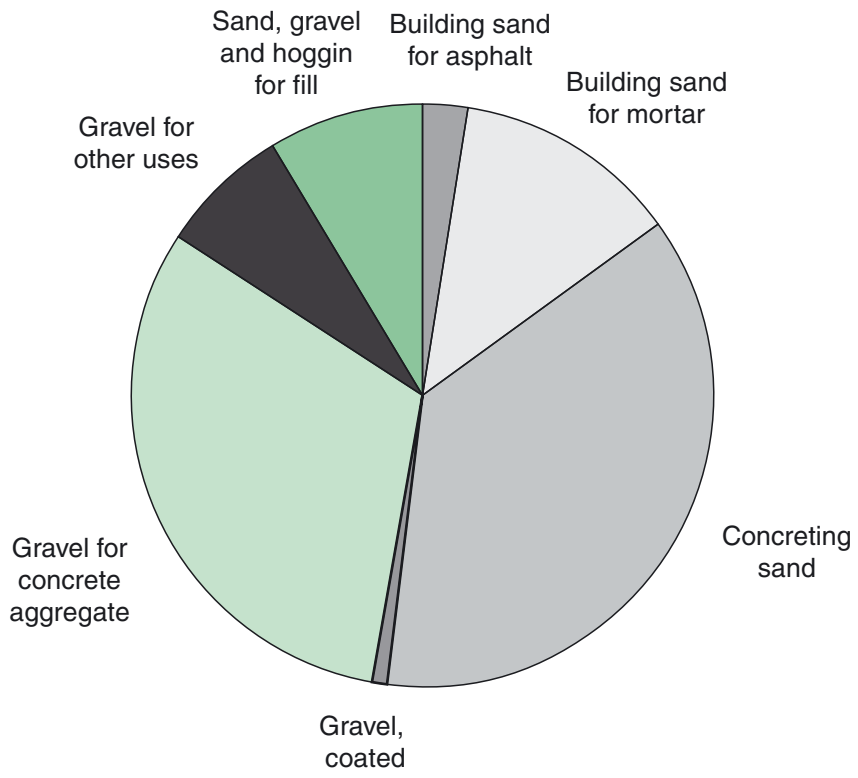
United Kingdom production of sand and gravel 1986–2006

Million tonnes

Year	Land-based production			Marine-dredged			Total production United Kingdom	For beach replenishment (c) (d)
	Great Britain (a)	Northern Ireland (b)	Total	For home market (a)	For export (c)	Total		
1986	90.2	4.2	94.4	15.3	2.3	17.6	112.0	2.2
1987	95.4	3.6	99.0	16.2	2.6	18.8	117.8	5.5
1988	110.5	3.9	114.4	19.6	2.4	22.0	136.4	3.9
1989	110.5	4.6	115.1	20.7	2.6	23.3	138.4	4.3
1990	99.0	4.0	103.0	17.2	3.8	21.0	124.0	2.3
1991	85.5	3.8	89.3	12.4	4.6	17.0	106.3	1.9
1992	78.3	3.7	82.0	10.6	6.3	16.9	98.9	1.3
1993	79.4	4.3	83.7	10.1	6.2	16.3	100.0	0.8
1994	86.3	5.1	91.5	11.3	6.6	18.0	109.4	1.3
1995	78.0	5.3	83.3	11.6	6.8	18.4	101.7	5.2
1996	70.5	5.3	75.7	11.5	6.7	18.2	93.9	7.2
1997	74.4	5.1	79.5	12.0	6.9	18.9	98.4	4.9
1998	73.0	5.3	78.3	13.0	7.0	20.0	98.3	2.4
1999	74.8	5.5	80.3	13.4	7.2	20.7	101.0	2.8
2000	74.9	5.1	80.0	14.4	7.3	21.7	101.6	2.4
2001	74.6	6.2	80.8	13.6	7.0	20.6	101.4	1.6
2002	69.9	5.5	75.4	12.8	6.2	19.0	94.4	1.5
2003	68.1	4.9	73.0	12.1	6.1	18.2	91.2	2.1
2004	73.1	5.1	78.1	13.0	6.1	19.2	97.3	1.8
2005	69.4	5.8	75.2	13.0	6.5	19.5	94.7	1.5
2006	66.3	5.2	71.5	14.0	6.7	20.7	92.1	4.1

Sources:
(a) Office for National Statistics.
(b) Department of Enterprise, Trade & Investment.
(c) Crown Estate Commissioners.
(d) These figures for marine-dredged sand and gravel used for beach replenishment and contract fill may be included in home market production, and have therefore not been included in the totals.

Great Britain production of sand and gravel by end-use 2006 (total production £80.2 million tonnes)



Great Britain production of sand and gravel by end-use and area of origin 2006

Thousand tonnes

Area of origin	Sand		Gravel					Total
	Building sand		Concreting sand	Coated with a bituminous binder	Concrete aggregate	Other screened & graded gravels (c)	Sand, gravel and hoggin for fill	
	For asphalt	For use in mortar						
North East	106	251	(a) 604	…	(a) 363	…	…	(a) 1 471
Yorkshire and the Humber	…	677	(a) 1 819	…	(a) 1 525	554	…	(a) 5 016
East Midlands	…	778	4 152	…	2 544	990	440	8 979
East of England	…	(a) 1 225	(a) 4 554	…	(a) 4 012	(a) 1 006	(a) 2 334	(a) 13 588
South East	190	(a) 1 941	(a) 7 155	—	(a) 9 482	(a) 663	(a) 762	(a) 20 194
South West	…	(a) 1 003	(a) 2 487	…	(a) 1 359	…	(a) 632	(a) 6 793
West Midlands	104	1 051	3 109	51	3 950	601	529	9 396
North West	…	(a) 1 057	(a) 1 738	—	93	…	284	(a) 3 599
England								
Land-won	1 847	…	…	199	…	…	…	56 148
Marine (b)	—	…	…	—	…	…	…	12 887
Total	**1 847**	**(a) 7 985**	**(a) 25 618**	**199**	**(a) 23 328**	**(a) 4 565**	**(a) 5 492**	**(a) 69 035**
Wales								
Land-won	…	…	…	…	…	206	…	1 528
Marine (b)	—	…	…	…	…	—	…	1 087
Total	**…**	**(a) 954**	**(a) 978**	**(a) …**	**(a) 280**	**206**	**(a) 179**	**(a) 2 615**
Scotland								
Total	**…**	**968**	**3 219**	**…**	**1 745**	**877**	**1 197**	**8 592**
Great Britain								
Land-won	2 198	8 969	24 045	…	18 251	…	…	66 268
Marine (b)	—	938	5 770	…	7 103	…	…	13 974
Total	**2 198**	**(a) 9 907**	**(a) 29 815**	**(a) 450**	**(a) 25 354**	**(a) 5 648**	**(a) 6 869**	**(a) 80 242**

(a) Including marine-dredged material.
(b) Excluding marine-dredged landings at foreign ports (exports), see p.87.
(c) This heading is now believed to include material previously classified as construction fill.

Source: Office for National Statistics.

Great Britain production of sand and gravel (a) by region 1978–2006

Thousand tonnes

Year	North East (b)	North West (c)	Yorks. & the Humber	West Midlands	East Midlands	East of England (d)	South East (e)	South West	**England**	**Wales**	**Scotland**	**Great Britain**
1978	3 995	3 371	4 469	9 546	10 620	8 511	39 730	6 067	86 310	4 229	11 817	102 356
1979	4 072	3 445	4 755	9 957	10 449	8 312	39 534	6 350	86 875	4 373	11 507	102 755
1980	3 872	3 207	4 250	9 090	10 440	7 234	36 331	6 279	80 704	4 033	11 421	96 158
1981	2 798	3 043	4 668	8 109	9 217	6 532	35 864	5 843	76 074	3 492	9 886	89 453
1982	2 685	3 410	4 397	9 892	9 100	7 026	35 374	6 017	77 901	3 444	9 861	91 206
1983	3 087	3 730	4 690	9 847	10 470	7 581	39 035	8 017	86 457	4 033	10 309	100 799
1984	3 062	4 080	4 680	10 827	10 604	6 934	38 862	7 010	86 060	3 437	10 178	99 675
1985	2 717	3 823	4 537	10 728	10 609	7 540	39 930	6 981	86 865	3 420	11 320	101 605
1986	2 863	4 036	4 686	10 486	11 743	7 547	42 192	7 152	90 706	4 083	10 710	105 498
1987	2 932	4 006	4 780	11 095	13 348	8 306	43 563	8 495	96 525	4 793	10 311	111 629
1988	3 291	4 156	5 306	14 138	15 603	11 361	50 970	9 843	114 667	4 734	10 753	130 154
1989	3 802	4 709	5 722	14 020	15 892	10 145	51 208	9 142	114 640	4 588	12 004	131 232
1990	3 951	4 641	5 485	12 581	14 051	8 762	42 516	7 559	99 547	3 990	12 634	116 172
1991	3 017	4 243	4 960	10 698	12 683	7 288	33 318	6 045	82 253	3 439	12 226	97 918
1992	2 732	3 894	4 028	9 976	12 072	6 456	28 590	6 171	73 290	3 205	11 774	88 898
1993	2 856	4 028	4 539	10 345	12 364	5 962	28 600	6 138	74 833	3 278	11 359	89 470
1994	3 268	4 843	4 907	12 207	12 860	6 947	31 140	6 765	82 937	3 312	11 423	97 672
1995	3 086	4 529	4 333	10 722	11 556	6 550	28 046	6 684	75 506	3 260	10 889	89 656
1996	2 909	3 792	3 923	9 633	10 827	5 623	26 485	5 790	68 983	3 111	9 904	81 997
1997	3 109	4 294	4 041	9 966	10 899	5 899	29 154	6 054	73 416	3 050	9 900	86 366
1998	3 056	3 579	4 381	9 721	10 416	5 979	29 637	6 166	72 935	2 959	10 074	85 968
1999	3 117	3 801	4 872	9 901	10 216	6 395	30 821	6 016	75 139	3 039	10 031	88 209
2000	2 003	4 003	4 559	9 879	10 253	15 637	22 553	7 385	76 272	2 939	10 022	89 234
2001	1 566	3 402	5 171	9 894	9 716	15 694	22 004	7 126	74 572	2 886	10 753	88 210
2002	1 344	3 890	4 999	9 159	9 608	15 317	19 872	7 131	71 320	2 758	8 643	82 721
2003	1 254	5 220	4 770	9 590	9 842	14 381	17 915	6 413	69 385	2 733	8 103	80 221
2004	1 576	3 992	5 197	9 401	10 906	15 461	19 885	8 065	74 482	3 120	8 455	86 057
2005	1 575	3 674	5 248	9 250	9 235	15 561	19 362	6 934	70 838	2 746	8 808	82 392
2006	1 471	3 599	5 016	9 396	8 979	13 588	20 194	6 793	69 035	2 615	8 592	80 242

(a) Including marine-dredged material.
(b) From 2000, excludes Cumbria.
(c) From 2000, includes Cumbria.
(d) From 2000, includes Essex, Hertfordshire and Bedfordshire.
(e) From 2000, excludes Essex, Hertfordshire and Bedfordshire.

Source: Office for National Statistics.

England production of sand and gravel by end-use 1994–2006

Thousand tonnes

Year	Sand			Gravel				Total
	Building sand		Concreting sand	Coated with a bituminous binder	Concrete aggregate	Other screened & graded gravels (b)	Sand, gravel and hoggin for fill	
	For asphalt	For use in mortar						
1994								
Land-won	…	…	…	…	…	…	…	73 161
Marine (a)	…	…	…	…	…	…	…	9 776
Total	**3 803**	**11 214**	**26 250**	**…**	**26 876**	**…**	**13 535**	**82 937**
1995								
Land-won	…	…	21 306	301	…	1 457	9 131	65 480
Marine (a)	…	…	3 387	—	…	—	450	10 026
Total	**3 402**	**10 776**	**24 693**	**301**	**25 297**	**1 457**	**9 581**	**75 506**
1996								
Land-won	2 663	…	20 734	237	…	752	8 179	59 067
Marine (a)	23	…	3 430	1	…	—	389	9 915
Total	**2 685**	**8 979**	**24 164**	**238**	**23 596**	**752**	**8 568**	**68 983**
1997								
Land-won	…	9 050	21 982	…	19 315	419	…	63 010
Marine (a)	…	326	3 577	…	6 250	—	…	10 406
Total	**2 634**	**9 376**	**25 559**	**653**	**25 565**	**419**	**9 210**	**73 416**
1998								
Land-won	…	8 645	21 892	…	20 495	433	…	61 241
Marine (a)	…	274	3 861	…	7 375	3	…	11 694
Total	**1 991**	**8 919**	**25 753**	**408**	**27 870**	**436**	**7 559**	**72 935**
1999								
Land-won	…	…	22 936	…	20 421	…	7 591	62 954
Marine (a)	…	…	4 297	…	7 292	…	167	12 185
Total	**1 847**	**9 372**	**27 234**	**150**	**27 713**	**1 065**	**7 758**	**75 139**
2000								
Land-won	…	9 189	22 769	…	20 164	746	…	63 196
Marine (a)	…	345	4 206	…	8 272	—	…	13 076
Total	**1 817**	**9 533**	**26 975**	**135**	**28 436**	**746**	**8 631**	**76 272**
2001								
Land-won	…	…	…	…	…	…	…	62 177
Marine (a)	…	…	…	…	…	…	…	12 395
Total	**1 605**	**9 317**	**27 658**	**189**	**26 731**	**3 994**	**5 077**	**74 572**
2002								
Land-won	…	…	…	…	…	…	…	59 633
Marine (a)	…	…	…	…	…	…	…	11 687
Total	**1 397**	**9 233**	**27 331**	**…**	**25 422**	**3 580**	**…**	**71 320**
2003								
Land-won	…	…	…	…	…	…	…	58 484
Marine (a)	…	…	…	…	…	…	…	10 901
Total	**…**	**9 810**	**27 452**	**…**	**24 110**	**2 927**	**3 718**	**69 385**
2004								
Land-won	1 876	…	…	285	…	…	…	62 735
Marine (a)	—	…	…	—	…	…	…	11 747
Total	**1 876**	**9 268**	**27 856**	**285**	**25 013**	**3 931**	**6 253**	**74 482**
2005								
Land-won	1 303	…	…	261	…	4 970	…	58 926
Marine (a)	—	…	…	—	…	66	…	11 912
Total	**1 303**	**9 514**	**25 882**	**261**	**23 382**	**5 036**	**5 459**	**70 838**
2006								
Land-won	1 847	…	…	199	…	…	…	56 148
Marine (a)	—	…	…	—	…	…	…	12 887
Total	**1 847**	**7 985**	**25 618**	**199**	**23 328**	**4 565**	**5 492**	**69 035**

(a) Excluding marine-dredged landings at foreign ports (exports), see p.87.
(b) From 2001, this heading is believed to include material previously classified as construction fill.

Source: Office for National Statistics.

Wales production of sand and gravel by end-use 1995–2006

Thousand tonnes

Year	Sand			Gravel				Total
	Building sand		Concreting sand	Coated with a bituminous binder	Concrete aggregate	Other screened & graded gravels (b)	Sand, gravel and hoggin for fill	
	For asphalt	For use in mortar						
1995								
Land-won	…	…	675	—	…	—	396	1 661
Marine	…	…	631	—	…	—	3	1 599
Total	**97**	**993**	**1 306**	**—**	**464**	**—**	**399**	**3 260**
1996								
Land-won	44	…	610	—	…	—	460	1 519
Marine	33	…	683	—	…	—	4	1 593
Total	**77**	**817**	**1 293**	**—**	**459**	**—**	**464**	**3 111**
1997								
Land-won	27	162	598	—	327	—	338	1 452
Marine	32	590	774	—	201	—	1	1 598
Total	**59**	**752**	**1 372**	**—**	**528**	**—**	**339**	**3 050**
1998								
Land-won	…	270	712	—	370	—	…	1 701
Marine	…	497	570	—	162	—	…	1 258
Total	**45**	**768**	**1 282**	**—**	**532**	**—**	**333**	**2 959**
1999								
Land-won	…	…	683	—	453	2	354	1 800
Marine	…	…	543	—	175	—	3	1 240
Total	**37**	**789**	**1 226**	**—**	**628**	**2**	**357**	**3 039**
2000								
Land-won	…	331	502	—	404	…	386	1 658
Marine	4	620	489	—	164	—	3	1 280
Total	**…**	**951**	**991**	**—**	**568**	**…**	**389**	**2 939**
2001								
Land-won	…	…	…	**—**	…	116	…	1 670
Marine	…	…	…	**—**	…	**—**	…	1 216
Total	**16**	**1 120**	**923**	**—**	**524**	**116**	**187**	**2 886**
2002								
Land-won	…	…	…	**—**	…	**…**	…	1 613
Marine	…	…	…	**—**	…	**—**	…	1 145
Total	**…**	**862**	**1 140**	**—**	**487**	**134**	**…**	**2 758**
2003								
Land-won	…	…	…	—	…	…	…	1 503
Marine	…	…	…	—	…	—	…	1 230
Total	**…**	**987**	**1 073**	**—**	**430**	**…**	**107**	**2 733**
2004								
Land-won	…	…	…	—	…	142	…	1 871
Marine	…	…	…	—	…	—	…	1 249
Total	**16**	**688**	**1 364**	**—**	**526**	**142**	**384**	**3 120**
2005								
Land-won	…	…	…	…	…	262	…	1 634
Marine	…	…	…	…	…	—	…	1 112
Total	**…**	**974**	**824**	**…**	**450**	**262**	**206**	**2 746**
2006								
Land-won	…	…	…	…	…	206	…	1 528
Marine	—	…	…	…	…	—	…	1 087
Total	**…**	**954**	**978**	**…**	**280**	**206**	**179**	**2 615**

(a) BGS estimate.
(b) From 2001, this heading is believed to include material previously classified as construction fill.

Source: Office for National Statistics.

Scotland (land-won) production of sand and gravel by end-use 1995–2006

Thousand tonnes

Year	Sand			Gravel				Total
	Building sand		Concreting sand	Coated with a bituminous binder	Concrete aggregate	Other screened & graded gravels (a)	Sand, gravel and hoggin for fill	
	For asphalt	For use in mortar						
1995	709	1 412	3 391	96	2 106	158	3 018	10 889
1996	546	1 265	3 202	47	1 965	203	2 676	9 904
1997	547	1 268	3 199	48	2 142	64	2 632	9 900
1998	447	1 153	3 210	79	1 968	198	3 020	10 074
1999	455	1 195	3 270	95	2 008	198	2 809	10 031
2000	…	1 274	3 202	67	1 749	…	3 031	10 022
2001	374	1 079	3 075	72	2 715	1 056	2 382	10 753
2002	…	1 096	2 753	…	1 790	1 021	1 581	8 643
2003	359	1 053	2 886	…	1 724	…	1 132	8 103
2004	181	732	3 309	79	1 994	740	1 421	8 455
2005	…	1 070	3 142	…	2 182	851	986	8 808
2006	…	968	3 219	…	1 745	877	1 197	8 592

(a) From 2001, this heading is believed to include material previously classified as construction fill.

Source: Office for National Statistics.

Sandstone (for graph, see Crushed rock)

United Kingdom summary 2002–2006

Tonnes

Commodity	2002	2003	2004	2005	2006
Sandstone–see Building and dimension stone					
Production	18 362 000	18 259 000	18 844 000	18 685 000	18 038 000

Great Britain production of sandstone by end-use and area of origin 2006

Thousand tonnes

Area of origin	Roadstone											Total
	Building stone	Sold coated	For coating at remote plants	Uncoated	Surface dressing chippings	Railway ballast	Concrete aggregate	Other screened & graded	Other constructional uses	Armour-stone & gabion	Industrial uses	
North East	…	—	—	—	—	—	—	—	51	…	—	116
Yorkshire and the Humber	162	—	482	60	…	—	…	431	344	—	—	1 632
North West	61	—	172	…	—	—	…	731	…	…	—	2 765
West Midlands	6	…	…	…	…	…	…	…	…	—	29	1 519
East Midlands	81	—	—	…	—	—	…	—	31	…	—	205
East of England	…	—	—	—	—	—	—	—	133	—	—	…
South East	…	—	—	—	—	—	—	—	31	—	—	…
South West	19	…	…	…	…	74	…	…	305	…	—	638
England	**396**	**…**	**1 046**	**799**	**187**	**…**	**252**	**1 310**	**2 499**	**…**	**30**	**7 041**
Wales	**14**	**…**	**…**	**234**	**185**	—	**…**	**593**	**941**	**11**	—	**3 415**
Scotland	**25**	**141**	**…**	**302**	**143**	**…**	**…**	**134**	**356**	**…**	**…**	**1 372**
Great Britain	**434**	**853**	**2 005**	**1 335**	**515**	**…**	**496**	**2 036**	**3 796**	**58**	**…**	**11 827**

England

County	Total	County	Total
Avon	…	North Yorkshire	990
Bedfordshire	…	Northamptonshire	…
Cheshire	…	Northumberland	92
Cornwall	…	Oxfordshire	…
Cumbria	432	Shropshire	…
Derbyshire	…	Somerset	…
Devon	414	South Yorkshire	6
Dorset	1	Staffordshire	…
Durham	24	Surrey	—
Gloucestershire	…	West Sussex	33
Greater Manchester	1 033	West Yorkshire	636
Hereford & Worcester	5	Wiltshire	—
Lancashire	…		
Norfolk	133	**England**	**7 041**

Wales

County	Total
Clwyd	5
Dyfed	…
Gwent	199
Mid Glamorgan	…
Powys	…
West Glamorgan	698
Wales	**3 415**

Scotland

Region	Total
Highlands	244
North East Scotland	…
Orkney	…
Shetland	1
South of Scotland	682
Tayside and Fife	1
West Central Scotland	259
Scotland	**1 372**

Source: Office for National Statistics.

England production of sandstone by end-use 1994–2006

Thousand tonnes

Year	Roadstone												Total
	Building stone	Sold coated	For coating at remote plants	Uncoated	Surface dressing chippings	Railway ballast	Concrete aggregate	Other screened & graded	Other constructional uses	Armour-stone & gabion	Industrial uses	Other uses	
1994	237	666	811	2 191	…	…	305	…	5 738	…	…	…	10 155
1995	282	640	632	1 900	…	…	367	…	5 684	…	…	…	9 719
1996	257	638	653	1 825	…	66	335	…	3 827	…	…	27	7 627
1997	(a) 243	366	876	1 604	…	55	176	…	4 312	…	…	(a) 14	7 646
1998	254	371	949	1 457	…	63	…	…	4 146	…	…	…	7 792
1999	420	333	1 090	…	…	68	548	…	3 502	…	…	…	7 241
2000	214	332	1 201	1 334	…	…	581	…	3 598	…	…	…	7 401
2001	253	…	1 375	987	…	110	1 061	…	2 474	…	…	…	7 201
2002	269	…	1 442	771	…	121	760	…	3 153	…	…	…	7 006
2003	…	511	1 644	854	…	80	891	…	2 713	…	…	…	7 005
2004	398	377	1 490	813	203	70	728	1 032	1 904	25	36	…	7 076
2005	424	558	1 345	971	184	55	304	967	2 028	36	39	…	6 910
2006	396	…	1 046	799	187	…	252	1 310	2 499	…	30	…	7 041

(a) BGS estimate. Source: Office for National Statistics.

Wales production of sandstone by end-use 1994–2006

Thousand tonnes

Year	Roadstone												Total
	Building stone	Sold coated	For coating at remote plants	Uncoated	Surface dressing chippings	Railway ballast	Concrete aggregate	Other screened & graded	Other constructional uses	Armour-stone & gabion	Industrial uses	Other uses	
1994	4	…	…	279	…	…	20	…	…	…	…	8	1 568
1995	6	634	…	462	…	…	…	…	1 268	…	…	…	2 898
1996	3	648	…	…	…	…	…	…	1 111	…	…	2	2 781
1997	(a) 5	…	443	767	…	…	…	…	1 219	…	…	57	3 098
1998	16	…	667	795	…	…	109	…	…	…	…	…	3 214
1999	21	493	706	…	…	—	99	…	(a) 922	…	…	…	2 973
2000	…	…	673	433	…	…	…	…	1 355	…	…	…	2 941
2001	…	…	913	439	…	—	180	…	1 132	…	…	…	3 094
2002	10	…	…	416	…	—	426	…	1 023	…	…	—	3 136
2003	…	433	792	430	…	…	641	…	871	…	…	—	3 179
2004	…	529	…	246	173	1	399	480	817	…	—	…	3 241
2005	…	…	646	218	206	—	171	524	660	22	—	…	3 233
2006	14	…	…	234	185	—	…	593	941	11	—	…	3 415

(a) BGS estimate. Source: Office for National Statistics.

Scotland production of sandstone by end-use 1994–2006

Thousand tonnes

Year	Roadstone												Total
	Building stone	Sold coated	For coating at remote plants	Uncoated	Surface dressing chippings	Railway ballast	Concrete aggregate	Other screened & graded	Other constructional uses	Armour-stone & gabion	Industrial uses	Other uses	
1994	22	…	…	353	…	…	109	…	…	…	…	…	1 772
1995	15	457	…	382	…	…	…	…	550	…	…	—	2 400
1996	11	258	…	…	…	…	…	…	646	…	…	(a) 7	2 172
1997	8	…	454	370	…	…	…	…	356	…	…	—	1 712
1998	17	…	606	437	…	…	…	…	…	…	…	—	2 539
1999	14	229	290	460	…	(a) 70	126	…	(a) 466	…	…	2	1 657
2000	…	…	523	434	…	…	…	…	371	…	…	—	1 715
2001	18	…	136	305	…	…	184	…	685	…	…	…	1 603
2002	…	108	…	502	…	69	297	…	489	…	…	—	1 645
2003	63	103	104	457	…	65	245	…	442	…	…	1	1 481
2004	28	141	…	145	116	…	87	272	643	…	1	…	1 613
2005	33	…	37	263	…	…	76	170	431	21	1	…	1 466
2006	25	141	…	302	143	…	…	134	356	…	…	…	1 372

(a) BGS estimate. Source: Office for National Statistics.

Selenium

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Selenium										
Imports										
Elemental	434	563	969	488	786	2 070	4 048	5 317	7 629	5 005
Exports										
Elemental	99	139	97	106	95	529	1 046	3 019	5 670	2 533

Sepiolite

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Sepiolite										
Imports	(a) 69 691	(a) 55 483	51 044	65 565	72 340	...	...	4 965	7 955	10 922

(a) Exports from Spain.

Silica sand

Silica (industrial) sands contain a high proportion of silica (SiO_2) in the form of quartz and are used for purposes other than as construction aggregates. They are essential raw materials for the glass and foundry castings industries, but also have a wide range of other industrial applications, including in ceramics and chemical manufacture, for water filtration media, and in sport and horticultural applications. Unlike construction sands, which are used for their physical properties alone, silica sands are valued for a combination of chemical and physical properties.

For several years silica sand production in the UK has remained about four million tonnes per year. An exception was 2004 when total sales increased to more than five million tonnes. The significant increase in silica sand sales in 2004 is believed to principally reflect improved reporting of silica sand sales rather than a marked increase in demand. Silica sand production in 2006 increased to 5 174 000 tonnes. As a percentage of total output in 2006, around 88 per cent was produced in England, with almost all of the remainder from Scotland. However, with significant permitted reserves and identified resources, Scotland may become of increasing importance as a source of silica sand for UK industry in the future. The major producer is WBB Minerals, which accounts for over 50 per cent of total output and an even greater proportion of colourless glass sand production. In 2006 WBB Minerals submitted a planning application for an extension of silica sand extraction operations at its Moneystone Quarry in Staffordshire. WBB required an extension containing at least 10 years of reserves to provide certainty for the planned capital investment at the site. In 2007 Staffordshire County Council refused planning permission for the extension citing the unacceptable impact on the local community. Foundry sand production has been declining for a number of years, reflecting the general decline in UK manufacturing. However, glass sand production has increased somewhat in recent years due, in part, to the commissioning of two new float (flat) glass plants. St Gobain of France operates one at Eggborough in Yorkshire and a further plant at Goole (operated by Guardian) came on stream during 2003. Both plants are supplied from WBB Minerals' colourless glass sand operation at King's Lynn in Norfolk, the latter by rail. WBB Minerals also supplies Pilkington's float glass plants at St Helens from its site at Chelford in Cheshire.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Silica sand										
Production (a)	3 833 000	4 073 000	5 011 000	4 146 000	5 174 000					
Imports	104 232	78 944	79 829	127 992	190 813	13 020	9 646	9 844	8 453	9 234
Exports	39 816	51 095	166 899	174 236	388 440	5 250	3 577	5 244	4 586	6 402

(a) Silica sands for glass making, moulding and other non-constructional uses.

Great Britain production of silica sand by end-use and area of origin 2006

Thousand tonnes

Area of origin	Foundry uses	Glass manufacture	Other industrial uses	Agricultural, horticultural & leisure uses	Total
North East (a)	1	—	—	…	…
Yorkshire and the Humber (b)	…	…	10	…	229
East Midlands (c)	2	—	164	…	…
West Midlands (d)	…	…	…	…	…
East of England (e)	…	…	…	…	1 175
South East (f)	…	…	322	272	761
South West (g)	…	…	57	…	161
North West (h)	…	…	…	398	1 611
England	**358**	**1 925**	**1 171**	**1 086**	**4 540**
Wales (i)	**—**	**—**	**…**	**…**	**92**
Scotland (j)	**…**	**281**	**…**	**164**	**542**
Great Britain	**…**	**2 206**	**1 306**	**…**	**5 174**

(a) From Northumberland, Tyne & Wear and Durham
(b) From North Yorkshire, South Yorkshire and Humberside
(c) From Nottinghamshire and Lincolnshire
(d) From Staffordshire and Hereford and Worcester
(e) From Norfolk, Suffolk, Essex, and Bedfordshire
(f) From Oxfordshire, Berkshire, Surrey, Kent, West Sussex and Hampshire
(g) From Gloucestershire, Wiltshire, Dorset, Devon and Cornwall
(h) From Cumbria, Greater Manchester, Cheshire and Merseyside
(i) From Clwyd, Dyfed and West Glamorgan
(j) From South of Scotland, West Central Scotland, East Central Scotland Tayside and Fife, Highlands, Western Isles and Orkney

Source: Office for National Statistics.

Silicon

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Silicon										
Consumption in iron and steel industry										
Ferro-silicon	35 090	36 640	37 320	35 850	37 610					
Silico-manganese	21 030	22 660	23 080	22 170	23 620					
Calcium silicide	80	90	90	80	90					
Ferro-silico-zirconium	50	60	60	60	60					
Imports										
Elemental silicon–										
Containing not less than 99.99% silicon	1 396	2 204	2 737	2 744	2 203	31 081	41 302	45 773	54 393	46 953
Other	79 370	98 268	97 751	74 359	27 309	61 808	80 300	78 007	61 024	25 192
Doped silicon	158	298	378	319	399	34 095	33 342	36 494	33 309	30 409
Ferro-silicon	76 046	75 469	72 436	58 225	64 610	26 472	31 179	30 803	26 065	28 782
Ferro-silico-manganese	64 565	53 421	63 935	57 136	59 985	18 264	18 537	34 837	24 041	23 440
Ferro-silico-magnesium	5 820	5 663	4 969	5 448	3 810	2 697	3 010	2 418	2 754	1 738
Ferro-silico-chrome	2 309	63	—	728	350	555	35	—	217	128
Exports										
Elemental silicon–										
Containing not less than 99.99% silicon	195	314	376	597	788	7 716	12 874	15 341	23 535	19 922
Other	3 855	2 385	1 179	1 869	6 175	2 477	2 763	2 589	2 148	6 420
Doped silicon	379	270	325	359	545	77 316	105 080	112 031	64 963	80 048
Ferro-silicon	3 155	1 845	2 744	2 652	2 733	3 450	3 362	2 430	3 173	3 331
Ferro-silico-manganese	116	42	8 247	5 003	60	42	22	5 075	1 513	90
Ferro-silico-magnesium	431	282	316	542	653	361	330	213	409	441
Ferro-silico-chrome	10	35	25	8	8	8	89	46	7	12

Sillimanite

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Sillimanite										
Imports										
Sillimanite minerals (a)	18 588	22 649	24 348	39 650	10 268	2 071	2 752	2 525	2 441	1 898
Mullite	10 006	8 656	12 392	10 430	7 468	3 341	2 696	3 198	3 828	3 288
Chamotte earth (b)	14 925	11 013	18 033	23 462	19 120	2 551	1 939	1 874	2 582	2 351
Exports										
Sillimanite minerals (a)	175	47	87	14	41	74	12	26	14	17
Mullite	4 379	3 191	1 929	2 403	1 884	3 308	2 197	1 485	1 833	1 457
Chamotte earth (b)	103	111	198	59	112	41	65	114	65	78

(a) Andalusite, kyanite and sillimanite.

(b) Calcined refractory clay including flint clay.

Silver

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Silver										
Imports										
Scrap (a)	4 074	2 952	2 489	2 283	2 742	266 183	191 927	155 978	157 000	311 032
Unwrought	2 457	2 038	1 521	1 144	6 898	298 772	238 727	211 043	181 193	1 036 089
Partly worked	1 324	447	584	342	419	59 309	47 123	57 760	54 351	53 981
Silver in unrefined lead bullion (b)	390	340	270	370	240					
Exports										
Scrap (a)	3 776	2 444	2 386	3 325	3 785	24 161	21 299	16 120	27 905	37 217
Unwrought	1 388	3 095	1 458	2 050	762	143 895	268 641	188 053	360 137	164 306
Partly worked	110	334	297	240	307	10 675	13 049	22 914	16 469	26 417

(a) Including scrap of platinum group metals.

(b) BGS estimates of silver content of unrefined lead bullion imported

Slate

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Slate										
Production										
Architectural and cladding uses, roofing and damp proof courses	82 000	...	...	…	…					
Powder and granules	...	...	...	…	…					
Crude blocks	38 000	33 000	43 000	92 000	76 000					
Fill and other uses	622 000	728 000	681 000	690 000	714 000					
Total	742 000	832 000	901 000	928 000	865 000					
Imports										
Unworked (a)	28 168	29 690	34 314	27 693	52 135	6 823	7 047	7 480	7 769	11 029
Roofing and wall tiles	125 257	139 819	160 921	165 790	156 784	40 572	45 227	51 248	53 385	51 255
Other worked slate (b)	21 162	15 601	60 720	55 854	55 401	4 825	4 486	9 847	10 237	10 778
Exports										
Unworked (a)	653	774	3 764	4 441	450	359	690	627	565	332
Roofing and wall tiles	7 146	11 978	16 917	24 963	9 348	3 990	7 070	9 445	12 331	5 410
Other worked slate (b)	1 658	2 313	1 919	2 868	4 266	2 500	2 675	2 140	2 515	2 932

(a) Including roughly split or squared.

(b) Including articles of slate or agglomerated slate.

Strontium

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Strontium										
Imports										
Oxides	...	...	...	…	…	...	...	...	…	…
Carbonate	15 300	16 842	12 297	4 672	1	5 109	5 268	3 436	1 287	7
Exports										
Oxides	...	...	...	…	…	...	...	...	…	…
Carbonate	19	66	13	11	425	13	21	76	41	300

Sulphur

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Sulphur										
Supply										
Produced (a)	125 000	115 000	120 000	124 000	115 000					
Imported (b)	87 260	29 028	48 948	31 485	18 942					
Sulphur, zinc concentrates (imported) (c	66 400	4 800	80	260	30					
Consumption										
For sulphuric acid–										
Sulphur	170 400	162 700	...	...	...					
Zinc concentrates (c)	54 600	...	...	...	...					
Imports										
Sulphur–										
Crude	87 260	29 028	48 948	31 485	18 942	4 178	2 430	2 705	2 017	1 679
Sublimed, colloidal etc.	355	541	675	577	1 297	411	809	419	408	1 001
Exports										
Sulphur–										
Crude	580	476	700	431	756	749	842	995	622	1 220
Sublimed, colloidal etc.	657	836	1 387	1 458	1 312	554	479	460	533	392

(a) Produced from oil refineries.
(b) Including waste and residues.
(c) Sulphur content calculated at 29%.

Talc

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Talc										
Production	6 194	6 494	3 881	6 000	4 325					
Imports	66 119	59 172	66 722	65 496	55 200	10 303	9 807	11 205	10 816	10 815
Exports	3 833	3 325	3 317	5 244	4 626	1 257	1 048	1 154	1 415	1 501

Tellurium

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Tellurium										
Imports	23	41	17	104	38	305	504	153	1 780	806
Exports	43	37	46	36	53	564	679	1 125	1 607	1 753

Tin

Tin generally occurs in high temperature veins associated with granite intrusions, the main ore minerals being cassiterite and stannite. Tin is valued for its corrosion resistance and is used for plating steel and alloying with other metals.

No tin has been produced in the UK for 10 years since the closure of the South Crofty mine. A new company, Western United Mines Limited (WUM), has been created by the owner of the mine, Baseresult Holdings Ltd. WUM has been formed to bring the mine back into production and have stated they will invest more of £3.5 million by June 2008. This will contribute to mine development including new tunnelling and drilling. An estimated £50 million is needed to bring the mine back into production.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Tin										
Consumption										
Refined	6 888	7 125	5 301	3 203	4 080					
Imports										
Concentrates	—	—	2	…	0	—	—	12	…	43
Scrap	188	168	215	468	1 728	191	303	204	206	510
Ash and residues	1	—	—	…	…	1	—	—	…	…
Unwrought	7 151	7 488	5 861	4 812	3 558	19 094	22 377	27 342	21 677	17 917
Unwrought alloys	1 437	2 378	1 145	2 067	891	3 585	6 163	4 821	5 605	5 029
Exports										
Concentrates	24	29	0	2	4	589	65	1	10	21
Scrap	2 821	4 499	7 353	20 603	35 252	2 274	2 436	3 539	16 374	31 425
Ash and residues	194	61	243	97	165	179	87	412	210	474
Unwrought	381	283	524	1 608	8 395	1 079	1 080	2 872	7 899	43 259
Unwrought alloys	2 165	2 152	885	442	698	5 092	4 263	3 685	2 336	4 107

Titanium

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Titanium										
Production										
Titanium dioxide pigment ©	305 500	297 000	291 000	274 000	275 000					
Apparent consumption (a)	89 500	36 200	18 200	43 200	78 800					
Consumption in iron and steel industry										
Ferro-titanium	780	940	960	970	1 020					
Imports										
Ores and concentrates										
Ilmenite	106 177	113 852	110 596	80 435	175 882	7 928	7 145	6 068	4 631	25 815
Other (rutile)	82 303	111 754	113 852	109 238	48 147	24 697	27 719	25 336	24 777	12 111
Scrap	13 586	11 097	13 324	12 685	14 375	19 536	21 183	43 071	81 768	88 437
Unwrought	8 971	10 932	10 633	10 490	10 736	37 360	34 162	41 027	78 936	75 833
Wrought	2 761	3 097	3 444	4 763	5 156	60 353	52 231	58 318	94 902	141 150
Ferro-titanium (b)	2 729	2 042	2 457	1 883	1 087	4 313	3 516	8 071	11 011	6 434
Oxides	5 310	5 827	10 276	8 316	10 769	8 011	8 417	12 360	11 095	11 521
Pigments based on titanium dioxide	90 273	68 311	64 511	58 786	60 759	97 680	87 649	82 979	79 997	82 835
Titanium slag	157 020	44 890	...	64 848	91 603	44 468	34 972	31 242	28 718	27 968
Exports										
Ores and concentrates										
Ilmenite	—	—	1	87	58	—	—	11	586	199
Other (rutile)	24	48	42	27	99	179	49	226	256	780
Scrap	2 503	1 423	1 797	3 057	4 280	5 775	2 989	5 762	19 696	28 935
Unwrought	4 010	5 252	5 438	5 443	2 952	14 589	16 485	25 261	49 550	31 888
Wrought	4 998	3 409	4 678	8 712	6 795	79 792	58 664	73 773	133 007	169 621
Ferro-titanium (b)	16 334	14 676	20 703	17 361	17 645	28 094	29 417	66 151	118 690	108 240
Oxides	1 490	2 940	1 221	1 549	1 224	2 811	2 724	2 493	3 506	3 792
Pigments based on titanium dioxide	237 394	239 601	233 370	214 192	181 023	265 434	283 891	264 630	257 482	220 091

(a) BGS estimates; see p.v.
(b) Including ferro-silico-titanium.
(c) Articol estimates.

Tungsten

The main sources of tungsten are the minerals scheelite and wolframite, which are deposited from hydrothermal solutions generally related to granite magmatism. Tungsten veins are commonly associated with tin and molybdenum which can be important by- or co-products. Tungsten is valued for its corrosion resistance, high melting point and tensile strength at high temperature.

Wolf Minerals plc purchased the Hemerdon mine, near Plympton in Devon, one of the largest tungsten and tin resources in the western world, with the intention of resuming tungsten production at the site. The deposit contains an estimated mineable reserve of 40 million tonnes at a grade of 0.183 per cent of tungsten trioxide and 0.029 per cent tin. A new resource estimate, completed by Wolf Minerals, based on re-logging drill cores and re-assaying samples taken by previous exploration programmes infers 82 million tonnes at 0.22 per cent tungsten trioxide and 0.022 per cent tin. The ore is currently accessed by an open pit which, if mining restarted, could be up to 850 metres long, 540 metres wide and 200 metres deep. Wolf Minerals are currently working towards an updated bankable feasibility study for the deposit with a small-scale drilling programme scheduled for June 2008.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Tungsten										
Consumption in iron and steel industry (a)	30	40	40	40	40					
Imports										
Ores and concentrates	...	190	0	4 914	34	28	30	8	813	229
W content	...	140	0	2 530	177					
Scrap	1 206	1 443	1 106	1 978	1 841	3 720	4 019	4 453	12 339	16 240
Unwrought	519	359	413	705	2 766	4 664	2 898	3 550	9 615	22 773
Wrought	396	130	384	521	111	5 647	4 644	6 609	6 240	5 015
Ferro-tungsten (b)	32	60	10	36	134	90	241	45	344	948
Carbide	759	1 232	838	974	913	8 020	10 524	9 071	14 301	18 831
Ash and residues	...	—	—	…	…	...	—	—	…	…
Tungstates	83	121	125	43	39	323	574	422	287	379
Oxides and hydroxides	877	1 321	295	318	707	4 394	6 386	1 341	3 987	9 535
Exports										
Ores and concentrates	—	...	20	5	1	—	48	72	51	44
W content	—	...	10	3	0					
Scrap	1 264	1 431	793	1 130	1 161	3 533	3 421	3 232	5 815	8 062
Unwrought	189	198	177	242	845	1 644	1 689	1 519	3 285	6 659
Wrought	214	424	297	360	93	1 558	1 935	2 741	2 200	2 532
Ferro-tungsten (b)	16	10	39	37	17	55	44	106	315	246
Carbide	5	70	92	83	251	92	1 003	1 697	1 637	3 937
Tungstates	130	182	41	33	12	592	1 118	130	77	181
Oxides and hydroxides	8	5	333	46	4	314	90	1 198	794	143

(a) Metal content.

(b) Including ferro-silico-tungsten.

Vanadium

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Vanadium										
Consumption in iron and steel industry (a)	540	70	70	70	80					
Imports										
Scrap	14	6	—	…	…	71	29	…	…	…
Unwrought	98	67	196	458	174	796	410	1 629	5 598	3 133
Wrought	59	183	141	354	233	482	1 501	1 032	3 893	4 944
Ferro-vanadium	748	1 071	1 262	609	1 623	2 209	3 764	6 073	14 660	10 669
Oxides	962	363	306	339	472	1 874	936	806	3 804	4 063
Exports										
Ash and residues	...	...	…	…	…	...	...	...	…	…
Scrap	46	22	…	…	…	331	188	…	…	…
Unwrought	99	6	(b) 14	(b) 18	0	79	35	(b) 194	(b) 468	47
Wrought	1 280	1 109	1 061	415	69	1 587	2 226	4 148	8 253	127
Ferro-vanadium	55	39	17	…	151	272	228	125	…	2 728
Oxides	20	—	2	20	23	93	3	14	241	80

(a) Vanadium content of ferro-vanadium.

(b) Including scrap.

Vermiculite

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005		2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Vermiculite										
Imports	36 275	30 102	32 778	32 063	34 772	4 002	3 499	3 780	4 073	4 484
Exports	213	230	148	31	101	101	147	249	112	69

Zinc

Zinc is extracted from several different types of deposit, usually as a co-product of other metals, notably lead and copper. It is valued for its corrosion resistance and its workability for die-casting. Zinc is the fourth most widely used metal in the world.

Anglesey Mining plc has continued exploration and development of the Parys Mountain polymetallic Cu-Pb-Zn-Ag-Au deposit on Anglesey in North Wales. In early 2007 a resource review on the deposit was released. This showed significant mineralisation in the previously undefined White Rock Zone with good continuity along strike and down dip. The White Rock Zone, which lies above the previously worked Engine Zone, contains resources totalling 2.15 million tonnes at 0.36 per cent copper, 4.13 per cent zinc, 2.11 per cent lead, 40 grams per tonne silver and 0.42 grams per tonne gold. In early 2008 Anglesey Mining plc announced the sale of the Parys Mountain project to Australian-based Western Metals Limited. Western Metals intends to carry out a major surface drilling programme and to further develop the site by rehabilitating the disused Morris Shaft and conducting an underground drilling programme, expected to last two years.

Based on the results of the Tellus project, Metallum Resources plc has applied for four licences to explore Irish style zinc-lead mineralisation in Northern Ireland.

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Zinc										
Production (a)										
Slab	99 600	16 600	—	—	—					
Consumption										
Slab	202 407	176 200	150 100	161 676	161 676					
Scrap (Zn content)	32 250	57 374	88 782	…	…					
Total	234 657	233 574	238 882	…	…					
Imports										
Ores and concentrates (b)	229 042	16 611	260	903	603	28 010	2 413	435	866	881
Ash and residues	3 414	10 941	26 221	6 838	5 632	4 099	13 800	64 298	2 106	3 863
Scrap	261	172	228	188	334	134	39	69	57	243
Unwrought	108 357	171 219	139 477	135 840	119 676	62 546	91 816	86 214	103 949	215 030
Unwrought alloys	5 738	13 796	15 960	16 128	15 666	3 832	8 075	9 668	10 207	29 565
Exports										
Ores and concentrates	15 744	113	326	141	468	2 883	673	200	90	1 237
Ash and residues	7 417	11 403	20 699	28 472	7 009	2 001	3 479	4 847	24 231	5 807
Scrap	15 248	15 436	9 851	9 881	4 571	7 511	4 715	4 974	6 673	4 948
Unwrought	15 686	3 106	1 581	1 661	5 325	9 098	1 756	1 055	1 406	8 776
Unwrought alloys	22 366	21 770	26 260	38 267	37 120	15 141	13 817	17 629	32 540	61 587

(a) Anglesey Mining Co continued small-scale geological and scientific studies at the Parys Mountain polymetallic Cu-Pb-Zn-Ag-Au deposit on Anglesey in North Wales.

(b) Zinc and mixed zinc-lead concentrates.

Zirconium

United Kingdom summary 2002–2006

Commodity	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
	Tonnes					£ thousand				
Zirconium										
Consumption in iron and steel industry										
Ferro-silico-zirconium	50	60	60	60	60					
Apparent consumption (a)	12 700	19 400	18 200	11 000	8 000					
Imports										
Ores and concentrates (b)	30 656	39 285	32 917	19 519	13 729	9 811	11 383	11 482	9 012	8 769
Scrap	221	173	156	129	114	719	763	408	695	465
Unwrought	35	22	79	65	175	787	383	882	1 252	2 346
Wrought	137	151	209	144	178	2 911	4 848	3 757	1 758	4 131
Exports										
Ores and concentrates	5 033	418	505	699	902	2 303	395	357	534	847
Scrap	184	107	22	20	25	931	702	105	153	111
Unwrought	42	65	75	46	5	107	195	161	73	22
Wrought	37	72	86	61	60	851	934	1 358	411	1 934

(a) BGS estimates; see p.v.

(b) Mainly zircon.

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