

UNITED KINGDOM

By John Shrimpton MBE

The GDP for the UK for 2003 was £1,099.4 billion compared with £1,043.3 billion for 2002. At the year-end, the underlying rate of inflation (RPIX) decreased from 2.9% to 2.5%. From December 10, 2003, the government replaced the RPIX with the internationally recognised harmonised Consumer Prices Index (CPI) which excludes housing costs altogether, and is the first major change to Britain's measure of inflation since its introduction in 1947. The Bank of England's new inflation target has been reduced from 2.5% to 2%; at the year-end CPI was 1.3%. The interest base-rate decreased from 4.0% to 3.75%; the Sterling Index was 100.6 (104.5) and the exchange rate £0.56/US\$1.00 (£0.62) and £1.70/€1.00 (£0.65). The deficit in the total trade balance of payments increased from £31.45 billion to £32.40 billion and the Public Sector Net Cash Requirement was £38.39 billion (£17.17 billion) against a forecast of £27 billion in April 2003. Unemployment fell during the year from 1.52 million to 1.46 million.

From the most recent figure available, the approximate value of minerals produced for 2002 was £26.1 billion (£26.58 billion for 2001) with oil contributing £14.53 billion (£13.77 billion), natural gas (including liquids) £8.20 billion (£9.29 billion), coal £0.89 billion (£1.03 billion), industrial and construction materials £2.48 billion (£2.5 billion) and metals remaining at just £200,000.

The country's goods trade deficit rose unexpectedly in January 2004 to an all-time monthly high of £5.6 billion as against £3.1 billion in the previous month, whereas a figure of £4.2 billion had been expected. However, the trade in services rose to a surplus of £1 billion, giving an overall trade deficit of £4.6 billion. In September, the UK became a net importer of oil for the first time in 13 years owing to unexpected maintenance work, giving a deficit in trade of crude oil of £37 million. It is anticipated that the UK will lose its oil independence in 2008-9 and its gas independence by 2005, now that production from the North Sea has passed its peak.

The European Union's (EU) attempt to bring Britain's North Sea oil reserves under its ultimate control has been dropped from the latest draft European constitution. Britain's oil industry accounts for some 90% of EU reserves, around £5 billion in tax revenue and 265,000 employees.

For the production of electricity, coal accounted for 34% (32%), gas 36% (38%), nuclear 22% (23%) and oil, hydro and renewables 8% (7%). However, for total energy consumption for 2002, according to the 2003 BP Statistical Review of World Energy, coal accounted for 17%, oil 35%, gas 38%, nuclear 9% and hydro 1%.

Following the implementation of the Construction Products Directive in 1988, the UK, together with other EU members, has been developing common standards which for aggregates came into force on January 1, 2004. The government's Aggregate Levy, which was introduced in 2002, is under review for quarry operations in Northern Ireland owing to a surge in small illegal quarries and the increase in trade in aggregates across the border, as Eire does not have the levy.

Coal

Output of coal for 2003 was 28.23 Mt (29.99 Mt); deep mines produced 15.64 Mt (16.39 Mt), opencast 12.13 Mt (13.15 Mt) and 473,000 t (450,000 t) came from other sources. Some 31.42 Mt (28.15 Mt) of coal were imported and 542,000 t (537,000 t) exported.

UK Coal plc produced 17.9 Mt (19.5 Mt) of coal from its UK operations for the year to December 31, 2003. Deep-mine production was down 0.4 Mt to 14.8 Mt largely owing to the poor performance at the Selby Complex, which, at 3.6 Mt, was 1 Mt less than for 2002, and has been losing an annual £30 million; the Complex will be closed in the summer of 2004. The Daw Mill colliery produced 2.2 Mt, and in the last quarter it achieved an average output of 60,000 t/week. At the Maltby colliery, a new British and European record of 312.5 m in seven days (injury free) was achieved for driving underground roadways. Clipstone colliery closed on April 17, 2003, Wistow is to cease production in March 2004 and Riccall and Stillingfleet in July 2004, the latter three forming the Selby Complex.

Opencast production was also down at 3.1 Mt (4.3 Mt), reflecting the exhaustion of long-standing operations and increased difficulty in securing planning permission for new sites. Planning applications during the year, but awaiting Mineral Planning Authority permission, amounted to some 2.7 Mt. New extensions to the Maidens Hall and Stobswood East sites, near Morpeth, and at Grange Farm, Wakefield, commenced, and provided some 2 Mt of coal. Coaling operations ceased on the main Stobswood site and at the Burnfoot site in Ayrshire during the autumn. Crouch Mining, a major contractor in the UK's opencast sector, went into administration at the year-end, its three UK Coal sites being incorporated within UK Coal's own programmes.

A seismic survey system has been introduced to provide better information on colliery reserves.

Despite geological problems at the Ellington, Rossington and Welbeck collieries, the Selby poor performance and increased opencast costs, there was a marginal reduction overall of £0.02/gigajoule to £1.16/gigajoule in costs.

UK Coal made a profit of £3.86 million (£81.76 million loss) after taxation and exceptional operating items. Capital expenditure of £19.7 million (£40.5 million) was made, and is expected to be some £50 million in 2004, which will include a significant expenditure on new coalface equipment at the Kellingley

and Daw Mill collieries. By using methane produced in the mining process, the company has reduced the amount of electricity purchased, and has also reduced emissions into the atmosphere to assist in meeting its target under the UK Emissions Trading Scheme, thereby qualifying for payments amounting to £3.5 million in 2003.

The company has been offered £36.5 million by the Department of Trade and Industry (DTI) for investment schemes at all of its eight on-going deep mines for the period June 2003 to December 2004; the eight being Daw Mill £9.7 million, Harworth £4.7 million, Kellingley £7.2 million, Maltby £2.4 million, Rossington £2.9 million, Thoresby £3.3 million and Welbeck £5.2 million; all were accepted with Ellington's £1.1 million being subject to an internal review process. Some £15.5 million has been awarded to Coalpower Ltd, J. Flack and Son, Eckington Colliery Partnerships and Energybuild.

The Bettws anthracite mine in South Wales has closed owing to spiralling insurance costs; the mine was the first to be bought from the then British Coal in 1993.

On December 2, Coalpower, which owns the Hatfield colliery near Doncaster, went into administration and this could result in the loss of 220 jobs at the mine. The colliery was rescued some two years ago from the previous owner, Hatfield Coal Co, but continued to suffer financially owing to geological problems on the existing coalface; the mine has coal reserves of 675,000 t.

ATH Resources, which has coal interests in Scotland and France, and is the UK's third-largest coal producer, operates the Skares Road and Garleffan coal operations in Scotland; these have a combined production rate of 1.6 Mt/y and combined reserves of 3.28 Mt of thermal coal. The company also has a number of coal projects under development in Scotland.

Ballymoney Power Ltd (a subsidiary of Felix Resources), in Northern Ireland, has applied for planning permission to develop a 30-year open-pit mine and power station at its lignite deposit.

In its annual report to March 2003, the Coal Authority reported that the UK produced 28.9 Mt (32.6 Mt) of coal, 15.8 Mt (18.1 Mt) from deep mines and 13.1 Mt (14.5 Mt) from opencast operations; England produced 15.04 Mt (16.66 Mt) from underground and 4.95 Mt (5.11 Mt) opencast, Scotland 7.08 Mt (8.19 Mt) opencast, and Wales 745,000 t (674,000 t) underground and 1.07 Mt (1.18 Mt) opencast. At the end of March 2003, 9,206 people were employed in 68 underground and opencast operations; England 6,061 underground and 1,122 opencast, Scotland 1,166 opencast, Wales 575 underground and 282 opencast.

The Coal Authority received 45 applications for licences and leases, a 29% decrease on 2001-02, with Wales 10 fewer, England six and Scotland two. There were 23 (20) exploration applications, and 44 (39) licences and agreements were granted. Seven leases were granted in conjunction with opencast operating licences containing around 2 Mt of recoverable coal, and

one underground mine had a replacement lease granted containing around 20 Mt of recoverable reserves. Work commenced at six sites, and four schemes commenced operation in the Authority's mine-water treatment programme.

Estimated underground tonnage of licensed coal in operating mines is 122 Mt (328 Mt), with 50% recoverable, and 227 Mt (311 Mt) in closed mines; for opencast mines in operation 46 Mt (48 Mt) and 4 Mt (5 Mt) for closed operations.

IMC Group Consulting Ltd submitted, early in the year, its draft report commissioned by the DTI entitled 'Review of the remaining reserves at deep mines', which covered each of the remaining 15 deep mines (excluding the Selby Complex, being under closure plans) whose total reserve, at the beginning of 2003, is stated to be 66.61 Mt, of which UK Coal's nine underground mines have 61.83 Mt, with other operators owning the six remaining mines accounting for 4.79 Mt.

The UK ranked fifth (fourth) in 2002 out of 16 major coal-consuming countries in Europe and Eurasia, and its share of the world total of 2,398 Mt of oil equivalent (2,243 Mtoe) was 1.5% (1.8%).

Industrial minerals

The French-based Imerys Minerals produced 1.795 Mt (1.82 Mt) of kaolin and 334,000 t (330,000 t) of ball clay from its operations in southwest England. In January 2003, the group reorganised its activities into four business groups: Refractories and Abrasives, Pigments for Paper (covering kaolin and calcium carbonates), Speciality Minerals and Building Materials. Imerys is planning to recommence kaolin production in some 5-10 years time from two former pits in southwest Dartmoor – Hemerdon and nearby Smallhanger – to supplement declining grades at the existing nearby pits of Lee Moor, Whitehill Yeo and Cholwich. Imerys is to convert the hydraulic mining operation at its Lee Moor pit to the more flexible dry mining technique.

Goonvean Ceramic Products, a subsidiary of Goonvean Ltd, has a capacity of 250,000 t/y of kaolin from its five operations near St Austell in Cornwall, and has developed a range of lightweight aerated and calcined clays. WWB Minerals (UK), part of the Sibelco Group, has a capacity of 200,000 t/y of kaolin from its operations in southwest England and Germany, and some 600,000 t/y of ball clay from southwest England.

Cleveland Potash Ltd's Boulby mine near Whitby in Cleveland, hoisted 2.95 Mt (2.85 Mt) of ore during 2003. This yielded 1.04 Mt (890,000 t) of saleable potash and some 590,000 t (630,000 t) of salt. Owing to resources being concentrated on improving production from the sylvinitic ore, evaluation of a large carnallite resource (hydrous chloride of potassium and magnesium) lying offshore at Boulby was temporarily halted. The return of some of the insoluble waste product from processing operations into the mine workings commenced during the year.

M-I Drilling Fluids produced around 46,000 t (51,000 t) of barytes from its Foss mine near Aberfeldy, Perthshire, Scotland. The reduction reflected adverse market conditions in the oil industry although sales of the filler-grade product remain consistent. The company still has its proposed Duntanlich prospect nearby under review.

Viaton Industries Ltd of Brassington, Derbyshire, the UK's major supplier of a non-drilling barytes product, has closed its barytes Closehouse mine in Teesdale. The company produced around 350,000 t/y of ore from its underground and surface operations and from other sources. At its Cavendish Mill it treats some 60,000 t/y of acid-grade fluorspar, around 56,000 t/y of which is supplied to the hydrofluor industry; barytes, lead concentrate, limestone, sand and clay are also produced.

Natural gypsum is produced by British Gypsum Ltd from its operations, mainly underground, in East Sussex, Cumbria, Staffordshire, Nottinghamshire and Leicestershire; annual output is thought to be around 1.7 Mt. Synthetic gypsum (desulphogypsum) is produced as a by-product from flue gas (FDG) from some coal-fired power stations. Europe's largest is the 4,000 MW Drax power station in North Yorkshire, which was owned until recently by AES Drax Power Ltd (a subsidiary of AES Corp of the US); independent directors are now running the plant on behalf of the creditors. Drax produces around 500,000 t/y of FDG, most of which is sent to British Gypsum's East Leake plant. Another source is Powergen's Ratcliffe station near Loughborough, which produces some 350,000 t/y. During 2003, EDF Energy's West Burton power station at Retford, Nottinghamshire, installed an FDG plant, and Cottam Power near Retford has one under construction.

Fuller's Earth is produced by Rockwood Absorbents (Baulking) Ltd in the Baulking area in Oxfordshire. The original Baulking quarry ceased extraction in 2002, and the company is anticipating production from a new quarry nearby at Moor Hill Farm in 2004. Steetley Bentonite and Absorbents Ltd, which produces the mineral at Woburn in Bedfordshire, had its High Court challenge against refusal to extend operations to the south at its Wavendon Heath South deposit turned down in February 2003. Thereby, operations in the Woburn area will cease.

At Kilroot, northeast of Belfast in Northern Ireland, Irish Salt Mining and Exploration produced 400,000 t of salt in 2003 from halite beds varying in thickness from 6-20 m. The beds have been worked for over 100 years; some 15 km to the north, the beds thicken to over 400 m.

Steel

Consumption of imported iron ore for 2003 amounted to 14.38 Mt at 58.2% Fe (12.5 Mt at 58.2% Fe), in addition 1.31 Mt of pellets at 63.8% Fe (0.67 Mt at 63.5% Fe) were consumed. No imported manganese ore was consumed (4,335 t at 38.2% Mn in 2002). Manganese ore has now been replaced by high carbon FeMn at 61,977 t (47,172 t) and 17,573 t (15,829 t) of refined FeMn. Corus UK produced 11.82 Mt (9.9 Mt) of crude steel and other UK producers some 1.45 Mt (1.72 Mt), making a total of 13.27 Mt (11.67 Mt).

Around 1.3 Mt (0.9 Mt) of scrap were bought from within the UK. Blast-furnace iron production was 9.28 Mt (7.99 Mt).

Corus UK's turnover for 2003 was £2.15 billion (£2.07 billion) out of the Group's total of £7.95 billion (£7.19 billion). The operating loss by the Group was £208 million (£446 million loss) with Corus UK making a loss of £293 million (£453 million loss).

Major capital projects completed by Corus UK were the £65 million rebuild of No.5 blast furnace and the £6 million cold mill link remotoring stands at Port Talbot. Those in progress are: Port Talbot's £75 million heavy end development and the £18 million refurbishment of the Morfa coke ovens and related plant; Rotherham's £68 million UK restructuring plan; and the Scunthorpe £10 million installation of a third ladle furnace. Manning levels at Corus UK declined by 800 to 24,600 in 2003, some 6,000 jobs having gone over the past three years.

The Group's restructuring programme for Corus UK involves its crude steel production being concentrated on just three sites – Rotherham, for steelmaking for engineering steels, casting and rolling, Port Talbot for strip products and Scunthorpe for long products. The concentration of engineering steels at Rotherham will entail the closure of the Stocksbridge plant in South Yorks in 2005. On completion of the restructuring programme, steelmaking at Teesside will cease, but other uses for the site are being considered.

Brazil has replaced Australia as the main source of iron ore for the Anglo-Dutch Corus Group, which has signed a 10-year agreement with Brazilian CVRD, the world's largest iron-ore producer, to supply some 10 Mt/y. Recently, it was reported that the Corus Group might renew its attempt to sell its aluminium business following the unsuccessful approach to French-based Pechiney in 2002.

Celsa UK has re-opened the old Allied Steel and Wire site in Cardiff and re-started steel production. Thamessteel has restarted production at Sheerness and Alpha has started up its mothballed furnace.

The Florence mine at Egremont, Cumbria, produced some 500 t of haematite.

Other metals

The output of refined aluminium for the year to December 31, 2003, from British Alcan Aluminium's two smelters was 197,945 t (202,300 t); Lynemouth in Northumberland produced 156,530 t (161,900 t) and Lochaber, near Fort William in Scotland, 41,415 t (40,400 t). The £27 million investment at the Lynemouth smelter is scheduled to increase production by 15,000 t/y to 175,000 t/y by the end of 2003. The investment will also assist energy-efficiency; the Group qualifies for an 80% rate relief from the Climate Change Levy. Anglesey Aluminium Metals Ltd's smelter at Holyhead, North Wales, produced 144,000 t (139,300 t) of refined aluminium. The plant, in which Rio Tinto has a 51% share, has a capacity of 145,000 t/y.

Britannia Refined Metals, now a subsidiary of Xstrata plc following its acquisition of Australian MIM Holdings in June 2003, produced for the year to December 31 2003 from its Northfleet plant 138,819 t (145,523 t) of Mount Isa sourced lead and 56,098 t (103,070 t) from other sources, and 9.62 Moz (10.94 Moz) of silver from Mount Isa and 1.36 Moz (3.72 Moz) from other sources. Northfleet's No.2 Refinery closed in March 2003, and the recycling operation ceased in September 2003. Output from No.1 Refinery was down 5% owing to lower crude deliveries from Mount Isa. A pre-feasibility study commenced in January 2004 to review expansion opportunities for primary operations. In March 2003, the Avonmouth plant ceased operation and has been sold to a property development company.

Some lead concentrate is produced as a by-product from Glebe Mines' fluorspar Cavendish Mill operation in Derbyshire.

Baseresult Holdings, owners since June 2001 of the South Crofty tin mine near Camborne, Cornwall, which closed some six years ago, has had its application to restart production rejected by the local authorities. However, shortly afterwards, the company commenced developing a connection between the Tuckingmill decline, at the 20 m level, and new Cook's Kitchen shaft in preparation to start dewatering operations. Preparatory work to install the new water-treatment works will be undertaken during this period. The processing plant is to be placed underground to lessen the environmental impact on surface. Baseresult is aiming to begin production during 2006.

Preliminary discussions have taken place with the Coal Authority and the Environment Agency with a view to enlisting their assistance in cleaning up pollution from abandoned Cornish mines.

At the year-end, Inco Ltd had not lifted its declaration of *force majeure* on deliveries of speciality nickel products from its Clydach nickel refinery in South Wales owing to the strike at Sudbury, Canada.

Tournigan Gold Corp, which has 15 licences in the northwest of Northern Ireland, has intersected significant gold mineralisation from seven recently drilled holes at its Curraghinalt property to fill in the results from previous operators and to test possible extensions. The gold mineralisation occurs within veins in a volume 1,000 m long by 250 m wide and 150 m deep. A structural analysis has been completed.

The first licence for platinum group metals (PMG) was issued during the year over the Dromore gravity high south of Cavanacaw, Northern Ireland. In the area, an assessment is being undertaken for PMG-nickel-copper mineralisation.

Oil and gas

For 2003, 97,849 Mt (109,021 Mt) of crude oil were produced from offshore and onshore operations, along with 102,792 Mt, oil equivalent, (103,576 Mtoe) of methane (including colliery) and 8.24 Mtoe (8.51 Mtoe) of mainly condensates.

The UK Continental Shelf yielded 95.64 Mt (104.76 Mt) of crude oil from 140 (133) fields, 8.24 Mt (8.51 Mt) of liquefied natural gas, 46,896 Mm³ (44,457 Mm³) of dry gas from 109 (100) fields, and 66,319 Mm³ (63,574 Mm³) of wet gas from 96 (92) fields. Three (nine) new offshore oilfields and five (seven) new gas fields commenced production. There were 26 (16) exploration and 19 (28) appraisal wells were drilled, and 10 (21) field approvals were granted for oil, gas, condensate and incremental projects. Gross capital expenditure amounted to £3.6 billion (£3.7 billion).

The UK Offshore Operator's Association, in its annual review of the development plans of some 29 oil and gas producers, indicates that capital expenditure is set to increase by £100 million to £3.5 billion this year, totalling £18.5 billion between 2003 and 2010 with no net increase in reserves. Production is forecast to drop from 556,000 t/day in 2003 of oil equivalent to 514,000 t/day in 2004 with no net increase in reserves.

The latest round of offshore licensing received applications to explore 140 blocks, some 100 more than the previous round and the largest since the 1970s. However, British Gas states that some prospects are as deep as 6,000 m and have reserves of between only 1 Mt and 3 Mt of oil.

In April, Shell shed 200 of its workforce in Lowestoft and 100 in Aberdeen. The company's Brent Bravo oil rig suffered an explosion in September killing two operatives and putting the rig out of action.

In June, the Russian and UK governments agreed a £3.47 billion 3,090 km long pipeline to land gas at Bacton, Norfolk, owing to the UK's increasing dependence on imported gas. The pipeline is scheduled to run from Vyborg, near St Petersburg, under the Baltic Sea, then overland in Germany and Holland, finally under the North Sea to Bacton. Among the companies connected with the project are Russia's Gazprom, BP, Shell and TotalFinaElf. Shell is also considering building its own pipeline to bring Norwegian gas into Bacton.

BG Group (BG) is to be the operator and 100% owner of three offshore Norwegian exploration blocks. BG and its partners were awarded four blocks in the North Sea in the UK 21st Licensing Round. Approval was granted for a development plan for the Buzzard oilfield, and for the Atlantic/Cromarty gas and condensate development in the North Sea. The Seymour gas field commenced production during 2003 and the Flank oilfield in September 2003.

The Group has signed a Memorandum of Understanding with Petroplus for the development of a liquefied natural gas (LNG) terminal at Milford Haven, South Wales, and is expecting to take delivery of two new LNG ships in 2004, being part of a £350 million order for such vessels.

During the year, BG sold a number of southern North Sea production assets for some £75 million and its 57% stake in Phoenix Natural Gas in Northern Ireland for £120 million. The Group's new Ballylumford Power Plant in Northern Ireland was fully commissioned in 2003.

BG's production was 8.47 billion m³ of natural gas and 3.26 Mt of oil during the year, and at the year-end had proved developed gas reserves of 26.87 billion m³ and some 12 Mt of oil.

Following Centrica's acquisition of the remaining 60% of the Rose field, the first gas came on stream in January 2004. Also in January, the company agreed to buy for £60.7 million a share in the Orwell and Staffjord fields, providing an additional 823.4 Mm³ of gas and 1.25 Mt of oil. Gas production from the Morecambe North and South fields in the Irish Sea is expected to decline by 10% per year; however, 2004 production is expected to be similar to that for 2003, viz, 10,083 Mm³ (10,710 Mm³), which includes 1,344 Mm³ (1,226 Mm³) from the smaller Galleon and the Rough fields associated with Centrica Storage. The re-perforation of wells in the South Morecambe field has increased daily delivery by some 15%, and it is planned to re-perforate a further 10 wells in the North and South Morecambe fields.

On December 18, the government gave the final clearance to Centrica's acquisition of the Rough storage field and associated assets. The company has won a contract to develop and operate a new gas reception terminal at Easington, landing gas from Norway's Ormen Lange field by 2006.

Centrica's estimated net proven and probable reserves of gas at the year-end were 63,000 Mm³ (69,160 Mm³) and 1.11 Mt (417,000 t) of oil and liquids.

Some 2.2 Mt (2.67 Mt) of oil were produced from onshore operations from 26 (27) fields, dry gas output amounted to 36 Mm³ (19 Mm³) from eight (five) fields and 119 Mm³ (137 Mm³) of wet gas from eight (one) fields. No (one) new oilfields and no (three) new gas fields came on stream. Four (14) exploration and no (nil) appraisal wells were drilled. No (six) field approvals for oil, gas, incremental projects and coal-mine vents were approved.

Pentex Oil has discovered a field with estimated reserves of more than 13 Mt of light oil at Avington near Winchester in Hampshire. The find is regarded as the most significant onshore discovery for 20 years. Pentex is thought to be the third-largest onshore oil supplier after Star Energy, which operates the Humbly Grove field, and BP, the operator of the Wytch Farm field.

In February, the results of the 10th onshore licensing round offered 22 petroleum exploration and production licences. Of these, 14 concentrated on mine gas.

The merger of the National Grid and Lattice to form National Grid Transco took place in October 2002. The enlarged company which owns and operates gas transmission systems in Britain, has 281,000 km of gas pipeline in the country and is the largest integrated gas system in the EU.

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Mining Annual Review 2004

Mineral Production ('000t)			
Commodity	2001	2002	2003*
Coal	31,930	29,989	28,234
Natural gas (oil equiv.)	105,793	103,576	102,792
Crude Petroleum (inc. condensates)	117,783	116,535	106,088
Lead/Iron	1.3*	1.2*	1.2
China/Ball clay (sales)	3,203	3,084	na
Other clays and shale	10,937	10,841	10,884
Limestone and dolomite	102,552	93,634	92,000
Chalk	8,205	8,587	8,500
Slate	551	742	900
Sandstone	19,967	18,362	18,100
Silica sand	3,848	3,833	4,000
Sand/gravel (land/marine)	101,397	94,424	91,000
Igneous rock	51,501	10,306	50,400
Gypsum (natural)	1,700*	1,700*	1,700
Rock salt	1,900*	1,500*	1,700
Brine salt	4,100*	4,200*	4,200
Fluorspar	50*	53*	56
Barytes	66*	59*	57
Potash (KCl)	882	900*	1,040
Peat ('000 m ³)	1,814	973	900
Miscellaneous	22	20	8

na: not available

* British Geological Survey estimate

Source: UK Minerals Yearbook 2003, British Geological Survey; www.mineralsUK.com