

# Oil and natural gas extraction data

**Richard Heede**  
 Climate Mitigation Services  
 File started: 11 January 2005  
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## British Gas Group, UK

yellow column indicates original reported units **Investor-owned**

www.bg-group.com Reading

## Production / Extraction data

Year

Crude Oil & NGL

Natural Gas

Miscellaneous

Net production	Net production	Net production	Net production	Net production	Net production		
Thousand bbl /d	Million bbl /yr	Million tonnes/yr	Million bbl oil eq/yr	Million SCM/yr	Billion cf/yr	Million tons/yr	Million tonnes/yr
	British Gas 1950-2010				British Gas 1950-2010		



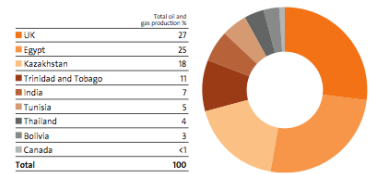
Emissions (tonnes)	Venting		Fugitive	Flaring	Fuel use	Electricity generation	Distribution losses	Total 2008	Total 2007 <sup>(1)</sup>	Total 2006 <sup>(1)</sup>	t/mmboe 2008	t/mmboe 2007 <sup>(1)</sup>	t/mmboe 2006 <sup>(1)</sup>
	485 775	2											
Carbon dioxide	485 775	2	6 67 412	2 748 583	3 911 300	1 260	7 814 332	8 328 778	5 216 620	19 336	22 217	15 580	
Carbon monoxide	-	-	2 170	5 703	2 299	-	10 172	8 918	8 677	25	24	26	
Nitrogen oxides	-	-	750	13 259	4 146	-	18 155	18 371	13 592	45	49	41	
Sulphur dioxide	-	-	3 618	9 549	560	-	13 727	10 955	9 216	34	29	28	
Methane	5 156	390	2 407	368	581	36 089	44 991	45 759	44 824	111	122	134	
Volatile organic compounds	5 689	69	732	322	84	3 564	10 460	10 513	10 619	26	28	32	
Greenhouse gases (carbon dioxide equivalent)	594 053	8 201	726 254	2 777 511	3 956 088	759 134	8 821 241	9 355 329	6 199 524	21 827	24 955	18 515	

BG Group, Data Book 2009, page 40.

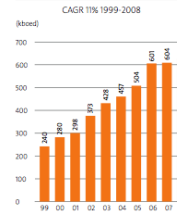
BG Group GHG emissions			
2003	emissions	CO2e	Percent of total
CO2 vented	621,582	621,582	11.4%
CO2 fugitive	650	650	0.0%
CO2 flaring	411,049	411,049	7.5%
CO2 fuel use	1,141,650	1,141,650	21.0%
CO2 elec gen	1,721,146	1,721,146	31.6%
CO2 T&D loss	2,148	2,148	0.0%
<b>Total CO2</b>	<b>3,898,225</b>	<b>3,898,225</b>	<b>71.6%</b>
CH4 vented	6,563	137,823	2.5%
CH4 fugitive	1,098	23,058	0.4%
CH4 flaring	3,352	70,392	1.3%
CH4 fuel use	655	13,755	0.3%
CH4 elec gen	192	4,032	0.1%
CH4 T&D loss	61,854	1,298,934	23.9%
<b>Total methane</b>	<b>73,714</b>	<b>1,547,994</b>	<b>28.4%</b>
<b>Total GHG</b>	<b>5,446,223</b>	<b>5,446,223</b>	<b>100%</b>

BG Group	
Gas production	Bcf / yr
estimated based on rpt sales 63-72	41.9
	45.4
	49.9
Parliament data 1973-1990	53.8
	60.2
	66.8
	75.0
	87.9
UK Parliament million m <sup>3</sup> per yr	114.5
	145.9
	160.1
	194.8
	219.9
	241.3
	275.5
	259.3
	246.3
	258.1
	272.4
	271.6
	279.8
	294.2
	325.4
	332.7
	340.6
	323.2
	314.0
	324.7
	314.0
	344.0
	409.0
	466.0
	430.0
	431.9
	433.9
	435.8
	437.8
	439.7
	456.7
	533.1
	640.0
	719.0
	805.0
	947.8
	885.0
	964.7
	1,010.5
	1,033.6

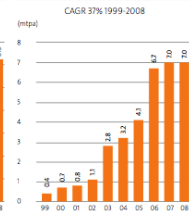
Oil and gas production 2008



E&P production volumes



LNG liquefaction volumes



	OGJ100	million bbl /yr
1988	0.8	0.8
1989	16.4	16.4
1990	20.4	20.4
1991	22.5	22.5
1992	19.7	19.7
1993	19.9	19.9
1994	23.5	23.5
1995	20.5	20.5
1996	interpolate	21.7
1997	interpolate	22.8
1998	interpolate	24.0
1999	25.1	25.1
2000	24.8	24.8
2001	28.1	28.1
2002	41.9	42.2
2003	42.9	42.9
2004		47.0
2005		49.0
2006		51.7
2007		63.9
2008		65.9
2009		66.5
2010		63.5

million bbl oil equiv	
48.13	5,712
47.99	5,821
49.44	4,727
51.98	5,645
57.50	5,505
58.80	6,797
60.19	
57.11	
55.48	
57.38	
1 bbl = 5,659 cf	

mmboe	
168	
156	
161	

Forecast prod'n	
	Bcf / yr
	110
	125
	156
	140
	165
	155
	190
	180
	170
	165

EI, 00-01, Mcf/d	EI, Bcf/yr
1,273	465
1,326	484

Conversion rate of 5.659 Bcf gas per million bbl oil.

Total	na	na	783	na	na	17,813
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**Cell:** I9

**Comment:** Rick Heede:

The company was created in 1997 when British Gas plc divested Centrica and became BG plc, which was reorganised in 1999 as BG Group plc. BG Group plc is a British multinational oil and gas company headquartered in Reading, United Kingdom. It has operations in 25 countries across Africa, Asia, Australasia, Europe, North America and South America and produces around 680,000 barrels of oil equivalent per day. It has a major Liquefied Natural Gas (LNG) business and is the largest supplier of LNG to the United States. As at 31 December 2009 it had total proven commercial reserves of 2.6 billion barrels (410,000,000 m<sup>3</sup>) of oil equivalent. (Wikipedia)

BG Group Profile. bg-group.com: BG Group is a world leader in natural gas, with a strategy focused on connecting competitively priced resources to specific, high-value markets. Active in more than 20 countries on five continents, BG Group has a broad portfolio of business interests focused on exploration and production and liquefied natural gas. It combines a deep understanding of gas markets with a proven track record in finding and commercialising reserves. While our headquarters are in United Kingdom (UK), the majority of our 6 000+ employees, drawn from more than 70 nationalities, work outside the UK.

**Cell:** E27

**Comment:** Rick Heede (Jan10):

See BG table (in Data Book 2004, p. 49) in 2003: eg vented CO<sub>2</sub> totals 0.622 MtCO<sub>2</sub> + 0.411 MtCO<sub>2</sub> from flaring vs methane: 0.138 MtCO<sub>2</sub>e (vented CH<sub>4</sub>) and 0.023 MtCO<sub>2</sub> (fugitive CH<sub>4</sub>) and 0.070 MtCO<sub>2</sub>e (flaring CH<sub>4</sub>), plus 1.30 MtCO<sub>2</sub>e (CH<sub>4</sub> T&D losses...?). All at CH<sub>4</sub> at 21xCO<sub>2</sub>. CMS calc of total methane vs CO<sub>2</sub> sources: methane 73,714 tonnes CH<sub>4</sub> = 1.55 MtCO<sub>2</sub>e s total CO<sub>2</sub> of 3.90 million, total GHG 5.45 MtCO<sub>2</sub>e, of which methane is 28.4 percent of total BG GGH emissions in 2003. Note that BG is chiefly gas production, plus LNG, plus electricity generation, etc.

- 6/5/06 - Heede: Also re: British Gas:

**Cell:** J29

**Comment:** Rick Heede:

CMS assumes that the data from the Parliamentary inquiry is correct, and further assumes that the proportion of production to sales (160 Bcf / 1,091 Bcf = 0.147) can be applied to sales data reported for 1963-1973; see notes below.

**Cell:** I39

**Comment:** Rick Heede:

CMS received data via the UK Parliament, 22May06:

[www.publications.parliament.uk/pa/cm200506/cmhansrd/cm060522/text/60522w0473.htm#060523119000006](http://www.publications.parliament.uk/pa/cm200506/cmhansrd/cm060522/text/60522w0473.htm#060523119000006)

British Gas

Alan Simpson: To ask the Secretary of State for Trade and Industry how much natural gas was produced by the British Gas Corporation in each year of its existence. [65886]

22 May 2006 : Column 1447W

Malcolm Wicks: The British Gas Corporation (BGC) existed from 1973 to 1986. During this period BGC had various gas production interests, as an operator or through an interest in production licences in the Rough, Morecambe South and Indefatigable fields; the extent of the interests varied between the different fields and through time. Full details are not readily available from the Department of Energy 'Brown Books' but the total production from these fields was: (data follows below for 1973-1986 in million cubic metres - presumably per annum).

**Cell:** J39

**Comment:** Rick Heede:

British gas Corporation report and accounts 1973, p. 10, shows sale of 2.8 Bcf per day, or 1,022 Bcf for 1973. The "supplies and operations" section mentions exploration activities, but no data on production; "Gas available" totaled 11,171 million therms, or 1,091 Bcf. The report suggests own production from oil- and coal-based gas and purchases primarily of natural gas, but unclear of source. CMS assumes that the data from the Parliamentary inquiry is correct, and further assumes that the proportion of production to sales (160 Bcf / 1,091 Bcf = 0.147) can be applied to sales data reported for 1963-1973; see above.

**Cell:** H47

**Comment:** Rick Heede:

Gas production data 1981-1990 from BG (1991) Annual Report, p. 14. While the units are unclear, using billion cubic meters per year to Bcf/yr leads to a discontinuity with OJG data by a factor of ~15 to one. Hence we assume data is shown in million bbl of oil equivalent, as the company data is in later years, at a conversion ratio of 1 mboe = 5.6585 Bcf. Earlier annual reports do not show production data at all; instead show sales data in therms, landings, plant capacities, etc.

**Cell:** M50

**Comment:** Rick Heede:

British Gas, Prospects and Pricing, Nov86, p. 62, forecasts equity production 1986-1995. This is substantially smaller quantities than the data supplied by Alan Simpson MP, May06; CMS relies on the later data, which also fits the Oil & Gas Journal data for 1991.

**Cell:** E54

**Comment:** Rick Heede:

Oil and gas production for 1988-1995 from OJG (various) OJG100. No mention of BG Group in 1987 or 1996-2001.

**Cell:** D65

**Comment:** Rick Heede:

From BG Group data book 2004, pp. 53. Data for 1999-2003.

El data differs significantly (68 million bbl in 2000, and 77 million bbl in 2001). Oil and gas production data from Energy Intelligence (2003) Top 100: Ranking the World's Oil Companies, p. 108.

**Cell:** H66

**Comment:** Rick Heede:

British Gas, annual report for 2003, p.6, shows gas production in million bbl of oil equivalent (at 6 Bcf per mboe). This conversion is made in column J. Gross or net production is not specified.

**Cell:** L66

**Comment:** Rick Heede:

Oil and gas production data from Energy Intelligence (2003) Top 100: Ranking the World's Oil Companies, p. 108.

**Cell:** F72

**Comment:** Rick Heede:

BG (2009) Statistical Rpt, page 47. Roughly 50/50 oil and liquids.

**Cell:** H72

**Comment:** Rick Heede:

BG (2009) Statistical Rpt, page 47. Data in million bbl of oil equivalent.

**Cell:** J74

**Comment:** Rick Heede:

BG Group AR 2010, pg 139, updated 2008 value