

Coal extraction data

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Climate Mitigation Services
File started: 11 January 2005
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China, Peoples' Republic

yellow column indicates original reported units

www. Beijing

Production / Extraction data

Year	Lignite & Bituminous		Anthracite & Metallurgical		Total Coal	
	Lignite	Bituminous	Anthracite	Metallurgical	Lignite, Bituminous, and Anthracite	Lignite, Bituminous, and Anthracite
	Million tons/yr	Million tons/yr	Million tons/yr	Million tons/yr	Million tons/yr	Million tons/yr

Estimated CO2 from underground coal fires in China. These are non-anthropogenic and are not included below.

109 Mt coal /yr 276 MtCO2/yr

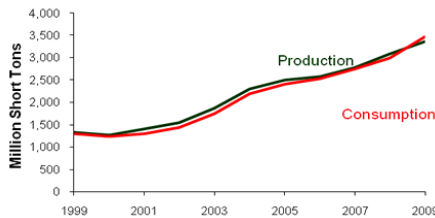
Reserves of lignite & subbituminous coal 52.3 Gt (revised up from 13.3 Gt in 1992)

Reserves of bituminous coal and anthracite 62.2 Gt (revised down from 152.8 Gt in 1992)

World Energy Council, as cited in Energy Watch Group (2007) Coal: Resources and Future Production, Jul07, 47 pp



China's Coal Production and Consumption, 1999-2009



EIA China Country Rpt, May11.

China, Total million tonnes	China, Total million tonnes	Source
7	6	China Mining Assn
16	15	interpolated
26	23	interpolated
35	32	Zimmermann's
45	41	interpolated
54	49	interpolated
63	58	interpolated
73	66	China Mining Assn
121	110	interpolated
170	154	interpolated
218	198	interpolated
266	242	interpolated
315	313	China Mining Assn
363	329	interpolated
412	373	interpolated
460	417	EIA dataset
275	249	EIA dataset
275	249	EIA dataset
300	272	EIA dataset
320	290	EIA dataset
330	299	EIA dataset
360	327	EIA dataset
250	227	EIA dataset
330	299	Zimmermann's
398	361	interpolated
513	466	EIA dataset
517	469	EIA dataset
525	476	EIA dataset
520	472	EIA dataset
548	497	EIA dataset
570	517	EIA dataset
586	532	EIA dataset
606	550	EIA dataset
681	618	EIA dataset
698	633	EIA dataset
684	620	EIA dataset
685	622	EIA dataset
735	666	EIA dataset
788	715	EIA dataset
870	789	EIA dataset
962	872	EIA dataset
986	894	EIA dataset
1,023	928	EIA dataset
1,080	980	EIA dataset
1,162	1,054	EIA dataset
1,190	1,080	EIA dataset
1,195	1,084	EIA dataset
1,229	1,115	EIA dataset
1,311	1,189	EIA dataset
1,407	1,277	EIA dataset
1,531	1,389	EIA dataset
1,539	1,396	EIA dataset
1,499	1,360	EIA dataset
1,414	1,283	EIA dataset
1,328	1,204	EIA dataset
1,272	1,154	EIA dataset
1,406	1,275	EIA dataset
1,551	1,407	EIA dataset
1,864	1,691	EIA dataset
2,300	2,086	EIA dataset
2,501	2,269	EIA dataset
2,574	2,335	EIA dataset
2,781	2,523	EIA dataset
3,086	2,800	EIA dataset
3,362	3,050	EIA dataset
3,661	3,321	EIA dataset

metallurgical coal not included in total

EIA coal production data (from page 2)

Lignite	Bituminous	Anthracite	Metallurgical
EIA coal stats:	EIA coal stats:	EIA coal stats:	EIA coal stats:
million tons	million tons	million tons	million tons

26.8	514.6	142.2	38
25.8	514.9	144.5	35
27.5	553.7	153.3	44
29.7	590.6	167.4	47
33.2	649.7	187.1	50
35.5	725.1	200.9	53
35.3	746.6	203.7	58
36.6	774.3	212.0	64
40.5	816.3	223.3	67
47.2	874.6	240.3	73
50.2	905.6	234.6	81
49.4	909.5	236.3	81
52.1	932.9	243.6	88
63.2	989.3	258.1	103
67.0	1,066.0	274.1	108
70.2	1,169.9	291.4	15
61.3	1,162.7	314.9	150
65.0	1,167.4	266.3	150
59.3	1,102.8	252.0	142
59.6	1,067.6	200.4	133
52.6	1,025.3	193.7	134
58.3	1,138.0	209.2	145
69.3	1,206.8	275.1	157
74.5	1,454.0	335.2	196
87.3	1,701.2	511.3	220
97.7	1,866.4	536.8	277
100.7	1,986.0	487.3	325
107.4	2,147.3	526.5	361
118.6	2,383.6	584.3	353
129.1	2,596.4	636.5	353
est. 140.6	2,827.5	693.1	353

Total	1,971	37,567	9,435	4,453	60,219	54,476
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excludes metallurgical

1980-2010 total: 48,973 31,007

Coal Types:	Lignite	4.03%	Sub-Bituminous	76.71%	Anthracite	19.27%	100.00%
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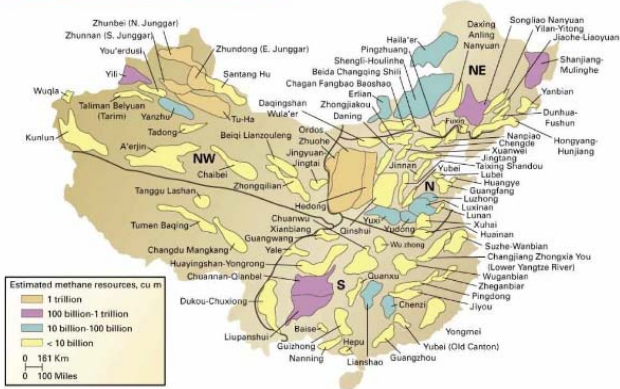
CMS: re-classify to sub-bituminous

China Mining Association: Coal

www.chinamining.org/Facts/2006-09-26/1159249580d1319.html

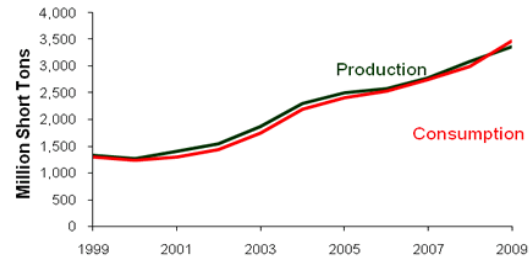
Non-fuel use: According to the statistics of 1995, 444.4 million tons were used for power generation; 183.96 million tons were used for coking, 135.3 million tons for civil use and 108.04 million tons as raw material for chemical industry and its products. Metallurgical and chemical industries have been given the priority to use better coal, so power plants often use coal of poor quality with ash(Ag)>30% and its mixture with coal gangue.

CHINA'S COAL BASINS AND COALBED METHANE RESOURCES



Global Methane Initiative (2010) *Coal Mine Methane Country Profiles*, China, chapter 7, www.globalmethane.org/tools-resources/coal_overview.aspx

China's Coal Production and Consumption, 1999-2009



EIA (2011) *Country Analysis Brief: China*, May11.

China Mining Association (2006) Coal.

After liberation in 1949, coal production was resumed in an all-round way in the years of 1949~1952, and the national output of coal reached 66 million tons in 1952

With these efforts the national output of coal reached 131 million tons in 1957. the output of coal reduced from 397 million tons in 1960 to 215 million tons in 1964 but rose again to 232 million tons in 1965

During the ten-year turmoil, coal production rose and fell repeatedly from 252 million tons in 1966 to

During the ten-year turmoil, coal production rose and fell repeatedly from 252 million tons in 1966 to 220 million tons in 1968 and then reached 483 million tons in 1976 through arduous efforts.

EIA China Country Rpt, May11.

According to the World Energy Council, China held an estimated 114.5 billion short tons of recoverable coal reserves in 2009, the third-largest in the world behind the United States and Russia, and equivalent to about 14 percent of the world's total reserves. Coal production rose to almost 3.4 billion short tons in 2009, making China the largest coal producer in the world. There are 27 provinces in China that produce coal, and slightly greater than half of China's coal is used for power generation. Northern China, especially the Shanxi and Inner Mongolia Provinces, contains most of China's easily accessible coal and virtually all of the large state-owned mines. Coal makes up 71 percent of China's total primary energy consumption, and in 2009, China consumed an estimated 3.5 billion short tons of coal, representing over 46 percent of the world total and a 180 percent increase since 2000. Coal consumption has been on the rise in China over the last nine years, reversing the decline seen from 1996 to 2000. China's coal imports started growing after 2002 because the cost of importing coal became competitive with domestic production. China, typically a net coal exporter, became a net coal importer in 2009, importing from Indonesia, Australia, Vietnam, and Russia. In September 2009, the China Coal Transportation and Distribution Association stated that China signed a \$6 billion loan-for-coal agreement with Russia for 15 to 20 million tons of coal for 25 years.

McCloskey Group (2007) China's Coal Industry 2007.

On the demand side it is not just the electricity sector which is soaring with 90GW added to China's power station fleet in 2006. The iron and steel producers consumed 390mt last year double their demand as recently in 2001. Cement and construction consumed almost as much 325mt. All these sectors expect to see large-scale, sustained growth; the steel producers alone adding a further 70mt by 2009. Chapter Eight: Coal Company Profiles 8.1 China Coal 2006/2005 coal production 8.2 China Coal's mine development and production history 8.3 China Coal specs 8.4 China Coal exports by type and destination 8.5 Datong Coalmine Group 06/05 Coal Production 8.6 Datong Coalmine Group Specs 8.7 Shanxi Companies and production 2005/2006 8.8 Shanxi Coal fields 8.9 Shanxi Coking Coal specs 8.10 Shenhua 06/05 coal production 8.11 Shenhua specs 8.12 Shenhua exports by type and destination 2005/2006 8.13 Yanzhou Coal 2006/2005 Coal Production 8.14 Yanzhou's mine development and production history 8.15 Yanzhou Coal specs

Table 7-3. China's Mines by Category and Percent of Total Production (2004)

Mine Category	Number of Mines	% of Total Production
Local State-owned Key Coal Mine Groups	1,190	12
Other State-owned Key Coal Mine Groups	869	49.7
Mines Belonging to Villages and Towns	10,067	38.2

Source: Guoquan (2010)

Guoquan (2010): Information provided via personal communication with Guoquan Zhao from China Coal Information Institute, July, 2010.
Global Methane Initiative (2010) *Coal Mine Methane Country Profiles*, China, chapter 7, www.globalmethane.org/tools-resources/coal_overview.aspx

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
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115				EIA statistics, "International Energy Statistics" 1980 - 2010										
116				China, Peoples' Republic										
117				Lignite	Bituminous	anthracite	metallurgical coke			total primary coal prod	Lig, Bit, Anthr only			
118				thousand short tons	thousand short tons	thousand short tons	thousand short tons			thousand short tons	thousand short tons			
119		1980		26,797	514,625	142,165	37,530			683,587	683,587			
120		1981		25,783	514,934	144,524	34,963			685,241	685,241			
121		1982		27,525	553,702	153,276	44,302			734,503	734,503			
122		1983		29,652	590,585	167,397	46,518			787,635	787,635			
123		1984		33,191	649,702	187,084	50,235			869,977	869,977			
124		1985		35,516	725,078	200,929	52,934			961,524	961,524			
125		1986		35,296	746,562	203,652	58,152			985,510	985,510			
126		1987		36,597	774,286	212,019	63,880			1,022,901	1,022,901			
127		1988		40,455	816,328	223,339	67,329			1,080,122	1,080,122			
128		1989		47,157	874,563	240,282	73,017			1,162,002	1,162,002			
129		1990		50,166	905,582	234,627	80,781			1,190,375	1,190,375			
130		1991		49,373	909,539	236,302	81,037			1,195,214	1,195,214			
131		1992		52,106	932,908	243,567	88,007			1,228,581	1,228,581			
132		1993		63,167	989,315	258,084	102,710			1,310,566	1,310,566			
133		1994		66,957	1,066,032	274,101	107,814			1,407,089	1,407,089			
134		1995		70,171	1,169,920	291,374	14,797	And		1,531,464	1,531,464			
135		1996		61,332	1,162,695	314,875	149,866			1,538,902	1,538,902			
136		1997		65,018	1,167,390	266,285	150,500			1,498,693	1,498,693			
137		1998		59,273	1,102,754	252,043	142,188			1,414,071	1,414,071			
138		1999		59,593	1,067,559	200,411	133,090			1,327,563	1,327,563			
139		2000		52,577	1,025,260	193,709	134,306			1,271,546	1,271,546			
140		2001		58,308	1,138,038	209,164	144,742			1,405,510	1,405,510			
141		2002		69,328	1,206,782	275,148	157,116			1,551,257	1,551,257			
142		2003		74,513	1,454,017	335,213	195,944			1,863,743	1,863,743			
143		2004		87,277	1,701,196	511,274	219,774			2,299,747	2,299,747			
144		2005		97,750	1,866,351	536,793	276,688			2,500,893	2,500,893			
145		2006		100,661	1,985,981	487,255	324,766			2,573,897	2,573,897			
146		2007		107,382	2,147,264	526,486	361,261			2,781,132	2,781,132			
147		2008		118,560	2,383,624	584,288	353,087			3,086,472	3,086,472			
148		2009		129,146	2,596,447	636,457	352,740			3,362,050	3,362,050			
149		2010		140,640	2,827,531	693,102	352,740			3,661,272	3,661,272			
150														
151														
152		subt. 1980-2010		1,971,263	37,566,550	9,435,225	4,452,814			48,973,039				
153		percent of 2009		3.84%	77.23%	18.93%	100.00%							
154		% 1980-2010:		4.0%	76.7%	81%								
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Note: EIA does not specify rank of bituminous or sub-bituminous for China's coal production
 CMS would normally apply bituminous coal emission factor (2.530 tCO2/tonne)
 However, to bring China's coal emissions within range of CDIAC coal emissions (1,629 tC or 5,962 tCO2) in 2010
 (note: CDIAC includes consumption emissions, and China is slight net importer),
 CMS assigns the sub-bituminous emission factor (1.864 tCO2 per tonne) to China's "bituminous coal emissions."

However, in the table on page 4, production data shows anthracite & bituminous at 96 percent of total for 2008, and lignite & sub-bituminous at 4 percent.
 This runs counter to the re-classification discussed above.
 Coal accounts for 69.91 percent of total national energy consumption in China (EIA, 2007a).

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Coal methane emissions
Global Methane Initiative (US EPA)
CMM emissions | CMM drainage | CMM utilized
million cubic meters million cubic meters

1990			8,830		
1991					
1992			8,320		
1993			8,550		
1994			8,950		
1995	10,441		8,900		
1996			9,280		
1997				760	362
1998				740	362
1999				790	318
2000			9,630	870	318
2001				980	458
2002			9,871	1,150	456
2003			11,674	1,521	629
2004			13,535	1,929	603
2005			9,500		
2006					
2007					
2008					
2009				6,170	1,770
2010			10,767		

Table 7-1. China's Coal Reserves and Production

Indicator	Anthracite & Bituminous (million tonnes)	Sub-bituminous & Lignite (million tonnes)	Total (million tonnes)	Global Rank (# and %)
Estimated Proved Coal Reserves (2005)*	62,200.4	52,300.3	114,500.7	3 (13.7%)
Annual Coal Production (2008)**	2,482.5	101.1	2,583.6	1 (39.17%)

Source: *EIA (2007c); **EIA (2009a) Note: Numbers may not add due to rounding

Global Methane Initiative (2010) *Coal Mine Methane Country Profiles*, China, chapter 7, www.globalmethane.org/tools-resources/coal_overview.aspx

Cell: D11**Comment:** Rick Heede:

Coal production by coal mining companies and state-owned enterprises, including subsidiaries of oil and gas companies.

Coal types produced are not ordinarily reported by coal operators (except for metallurgical coal). We distinguish, where possible and reasonably well known, between hard (bituminous and subbituminous) and soft (lignite or peat) coals, especially for the larger companies operating in regions such as Australia and India where soft coals are predominant. Soft coals have lower carbon content per tonne than do hard coals.

Cell: H18**Comment:** Rick Heede (Feb10):

<http://en.wikipedia.org/wiki/Coal>

"Coal fires in China burn 109 million tons of coal a year, emitting 360 million metric tons of CO₂. There are hundreds of coal fires burning around the world.[41] Those burning underground can be difficult to locate and many cannot be extinguished. Fires can cause the ground above to subside, their combustion gases are dangerous to life, and breaking out to the surface can initiate surface wildfires. Coal seams can be set on fire by spontaneous combustion or contact with a mine fire or surface fire. A grass fire in a coal area can set dozens of coal seams on fire."

CMS note: 360 MtCO₂ / 109 Mt coal is a carbon factor of 3.30, substantially above the carbon factor CMS uses for bituminous coal: 2.53 tCO₂/tonne coal. CMS thus revises the emissions from 109 Mt of coal burned per year to 109 * 2.53 = 276 MtCO₂. A source is not provided in the Wiki entry, is not verified, and is not added to China's emissions from coal production; CMS considers such fires to be non-anthropogenic.

Cell: K36**Comment:** Rick Heede:

EIA (2005) Table 5.3, World Bituminous Production 1980-2003, www.eia.doe.gov/emeu/internationalenergy.html

Cell: M36**Comment:** Rick Heede:

EIA (2005) Table 5.4, World Lignite Production 1980-2003, www.eia.doe.gov/emeu/internationalenergy.html

Cell: P39**Comment:** Rick Heede:

China Mining Association: Coal. In part: "After the July 7 Incident of 1937, Japanese invaders occupied a large number of coal mines in China and made predatory exploitation. During the period from 1931 to 1945, 420 million tons of coal were plundered and coal resources were seriously damaged. In the Anti Japanese War (1937-1945), the Commission of Resources of the then national government made efforts to develop China's mining industry, mainly coal industry, and the annual output of coal reached 6 million tons. When Japanese invaders were defeated, most coal mines occupied by Japanese invaders were taken over by the Kuomintang regime. On the eve of liberation in 1949, the majority of China's coal mines were nearly closed down or stopped production because of war in successive years."
www.chinamining.org/Facts/2006-09-26/1159249580d1319.html

Cell: K40**Comment:** Rick Heede:

China Mining Association (2006) Coal. "After liberation in 1949, coal production was resumed in an all-round way in the years of 1949-1952 and the national output of coal reached 66 million tons in 1952."

Cell: K45**Comment:** Rick Heede:

China Mining Association (2006) Coal. "With these efforts the national output of coal reached 131 million tons in 1957."

Cell: J48**Comment:** Rick Heede:

China's coal production of lignite plus bituminous plus anthracite (not disaggregated) from U.S. Bureau of Mines, Minerals Yearbook, various, 1960-1967.

Cell: J58**Comment:** Rick Heede:

US Energy Information Administration, world coal production 1970-1979.

Cell: F64**Comment:** Rick Heede:

EIA (2011) International Energy Statistics on World Coal Production (lignite, bituminous, anthracite, and metallurgical coal), by country; data for 1980-2009; total Primary Coal Production data extends to 2010.
www.eia.gov/emeu/internationalenergy.html or www.eia.gov/countries/data.cfm.

Cell: G103**Comment:** Rick Heede:

Note: EIA does not specify rank of bituminous or sub-bituminous for China's coal production CMS would normally apply bituminous coal emission factor (2.530 tCO₂/tonne) However, to bring China's coal emissions within range of CDIAC coal emissions (1,629 tC or 5,962 tCO₂) in 2010 (note: CDIAC includes consumption emissions, and China is slight net importer), CMS assigns the sub-bituminous emission factor (1.864 tCO₂ per tonne) to China's "bituminous coal emissions.

Cell: H115**Comment:** Rick Heede:

EIA (2011) International Energy Statistics on World Coal Production (lignite, bituminous, anthracite, and metallurgical coal), by country; data for 1980-2009; total Primary Coal Production data extends to 2010.
www.eia.gov/emeu/internationalenergy.html or www.eia.gov/countries/data.cfm.

Cell: J130**Comment:** Rick Heede:

EIA "International Energy Statistics" for China: "Table: Total Primary Coal Production (Thousand Short Tons)" for 1990 through 2009. Production data for 2010 only available for Total Primary Coal Production, not by rank.

Cell: B149**Comment:** Rick Heede:

EIA has estimated Total Primary Coal Production for several countries, including China, for 2010. CMS allocates to lignite, bit, anthracite and met. Coal on the basis of 2009 percentages.

Cell: AD172**Comment:** Rick Heede:

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