

Coal

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Coal is an organically derived material. It is formed from the remains of decayed plant material compacted into a solid through millions of years of chemical changes under pressure and heat. As the organic maturity process continues, the buried plant material is transformed into different kinds of coal. In general, the longer coal is subjected to heat and pressure, the higher its grade and contained heat volume per unit weight. Lignite and subbituminous are low-rank coals, also known as brown coals, consumed only for the generation of electricity. Bituminous coal and anthracite are high-rank coals, also known as hard coal. Bituminous coal is consumed for both metallurgical and thermal purposes. Anthracite, the highest rank coal, is often called smokeless and is consumed for both domestic and industrial purposes.

Coal is the world's most abundant and widely distributed fossil fuel. The current proven world coal reserve is estimated at 984 211 Mt spread over 100 countries. Coal is currently mined in more than 50 countries. Canada holds 8623 Mt, less than 1% of the world's reserves. Coal offers a long-term economical source of energy that, at current production levels, would last for more than 200 years, significantly longer than reserves of oil and gas.

Coal has been consumed as an energy source for hundreds of years. It provided the energy that boosted the industrial revolution of the 19th century and launched the electric era in the 20th century. Coal was the most important source of the world's primary energy until the late 1960s when it was overtaken by oil. Today, about 70% of total world coal production is consumed for electricity generation, providing about 37% of total world electricity production. About 16% of Canada's electricity is generated by coal. Almost all primary steel production worldwide is based on pig iron from blast furnaces fed with coke from coal, and iron ore.

CANADIAN DEVELOPMENTS

The Canadian coal industry plays an important role in the Canadian economy, both as a mining industry and as an energy provider. In 2002, about 67 Mt of coal was produced from 19 major coal mines and the coal industry directly employed approximately 6000 people. Close to one half of Canada's coal production was exported, primarily as metallurgical coal.

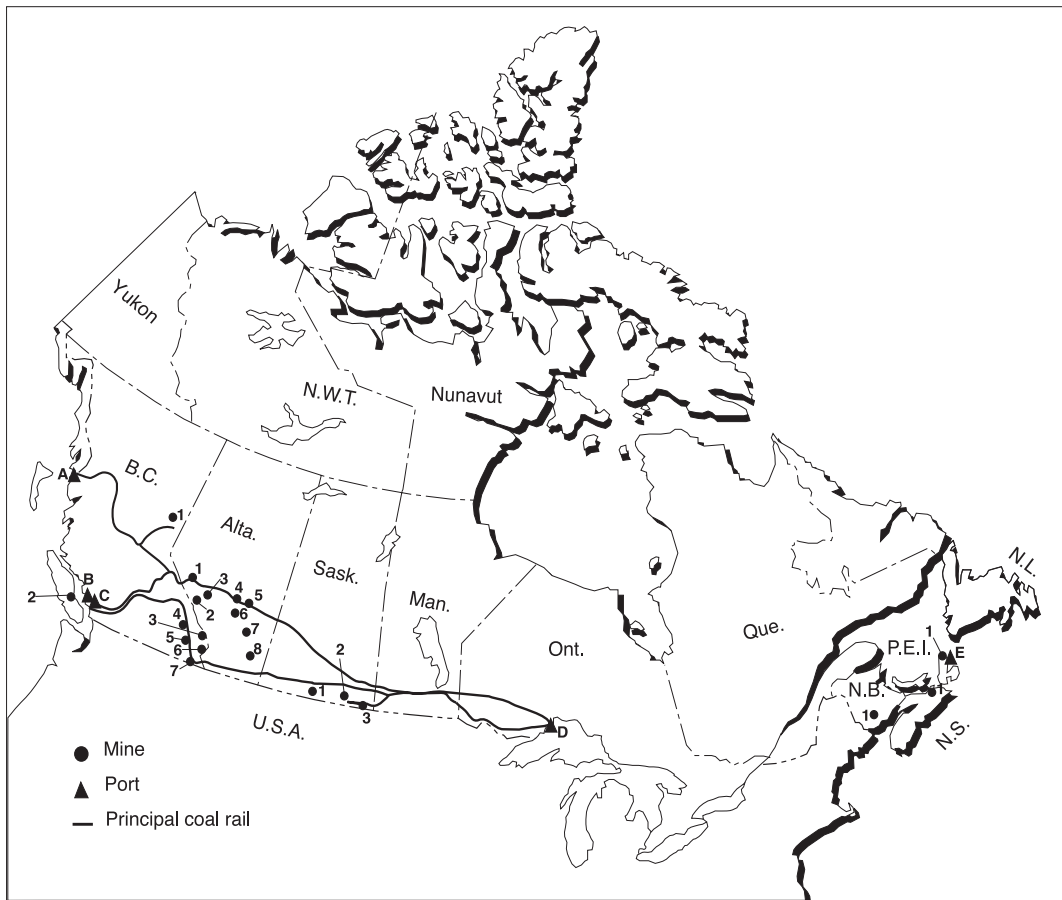
The consolidation of the Canadian coal industry has progressed over the last decade and may have approached its finale in early 2003. The Fording Canadian Coal Trust (Fording Trust) was formed at the end of February 2003 by Fording Inc., Teck Cominco Limited, Westshore Terminals Income Fund, Sherritt International Corporation, and the Ontario Teacher's Pension Plan. This new trust combined Fording, Luscar Energy Partnership and Teck Cominco Limited's metallurgical coal assets and created a subsidiary, the Elk Valley Coal Partnership. Fording's domestic thermal coal assets were transferred to the Luscar Energy Partnership, a 50:50 partnership between Sherritt and the Ontario Teacher's Pension Plan.

The Elk Valley Coal Partnership becomes the world's second largest exporter of metallurgical coal. It includes five mines in the Elk Valley of British Columbia and one mine in Alberta: Fording River, Coal Mountain, Greenhills, Elkview, Line Creek, and Luscar, with a total production capacity of approximately 25 Mt/y of metallurgical coal.

Luscar Coal Ltd., owned by the Luscar Energy Partnership, operates seven surface mines in Alberta: Coal Valley, Obed Mountain, Highvale, Paintearth, Sheerness, Whitewood and Genesee; and three in Saskatchewan: Poplar River, Boundary Dam and Bienfait. Combined these mines have a capacity of 40 Mt/y of bituminous, subbituminous and lignite thermal coal used mainly for domestic electric power generation.

There are several other smaller-scale producers in the Canadian coal industry. The Quinsam Coal Corporation in British Columbia, owned by Hillsborough Resources Limited, is the only underground mine currently in operation. It produced 340 000 t of coal in 2002. N.B. Coal Limited, a subsidiary of New Brunswick Power

Figure 1
Principal Canadian Coal Mines and Ports



Numbers refer to locations on map above.

MINES

BRITISH COLUMBIA

1. Bullmoose
2. Quinsam
3. Fording River
4. Greenhills
5. Elkview
6. Line Creek
7. Coal Mountain

ALBERTA

1. Obed Mountain
2. Luscar
3. Coal Valley
4. Highvale
5. Whitewood
6. Genesee
7. Paintearth
8. Sheerness

SASKATCHEWAN

1. Poplar River
2. Boundary Dam
3. Bienfait

NEW BRUNSWICK

1. Minto

NOVA SCOTIA

1. Stellarton

PORTS

BRITISH COLUMBIA

- A. Ridley Terminals
- B. Neptune
- C. Westshore Terminals

ONTARIO

- D. Thunder Bay

NOVA SCOTIA

- E. International Pier

Corporation, produced 194 000 t in 2002 solely for power generation. With the closure of the Cape Breton Development Corporation's operations in 2001, coal production in Nova Scotia amounted to 189 000 t in 2002, coming from several smaller producers.

MINE OPENINGS AND CLOSURES

There are several new coal projects under development. The Pine Valley coal mine, a joint venture between Pine Valley Coal Ltd., owned by the Pine Valley Mining Corporation (66.7%) and Mitsui Matsushima Canada Ltd. (33.3%), is set to become the first new coal mine opened in British Columbia in 20 years. The mine is located approximately 45 km west of the town of Chetwynd in northeastern B.C. It is projected to produce 950 000 t/y with a mine life of 14 years. The coal will be exported for use as coking coal and pulverized coal injection (PCI). The mine produced a trial shipment of 84 400 t in 2002.

In early 2003, the Grande Cache Coal Company Inc. (GCC) received regulatory approval from the Alberta government to develop an underground mine and a surface mine, and for the operation of coal-processing facilities. The project is located near the town of Grande Cache where Smoky River Coal Limited had operated for over 30 years. The coal reserve is estimated at about 50 Mt and is expected to be mined over 25 years. Construction is scheduled to begin in mid- or late 2003. Upon completion, the mine will produce 2 Mt/y of metallurgical coal with a work force of 200. The coal will be exported to overseas steel producers.

The Wolverine coal project, under the ownership of the Western Canadian Coal Corp., is waiting for its Environmental Assessment approval. The project is located in Tumbler Ridge, an historical coal-producing region. The project includes an open-pit mine with a capacity of 1 Mt/y of metallurgical coal. Once the surface mine reaches full production, an underground mine will be constructed, adding another 1 Mt/y of capacity with a 12- to 15-year mine life. The project has the advantage of using an existing infrastructure, which includes a deep-sea shipping terminal, a railway network, power supply, and a full-service community.

The Cheviot coal mine project, which received federal government regulatory approval in April 2001, has been postponed by the Fording Trust, which believes that the existing production capacity of its subsidiary, the Elk Valley Coal Partnership, will meet market demands. The Fording Trust indicates that Cheviot is still a potential expansion project if market conditions change. If developed, the mine would be capable of producing about 3.5 Mt/y with approximately 500 employees.

The Brooks Power project, launched by Fording Inc. in December 2000, is uncertain due to environmental concerns and a lack of partners. The project, located in Brooks near Calgary, Alberta, would include a surface coal mine plus a two-unit 1000-MW coal-fired power generation plant. The mine would provide 44 Mt of coal for power generation over a 35-year mine life.

The Bullmoose mine, located in Tumbler Ridge in north-eastern British Columbia, owned by Teck Cominco, is scheduled to close in 2003 due to the depletion of its coal reserves. The mine opened in 1983 and has provided more than 32 Mt of metallurgical coal to overseas steel producers.

The Luscar mine, located near Hinton, Alberta, will close by April 2004. The coal deposit is near depletion and its new owner, the Fording Trust, is currently phasing out the operations.

In April 2003, Luscar Ltd. suspended its Obed Mountain mine's operation indefinitely. Luscar cited the low world thermal coal price as the reason. The mine, located near Hinton, Alberta, began operations in 1984 and produced thermal coal for both domestic and international customers. It produced 1.1 Mt of thermal coal in 2002.

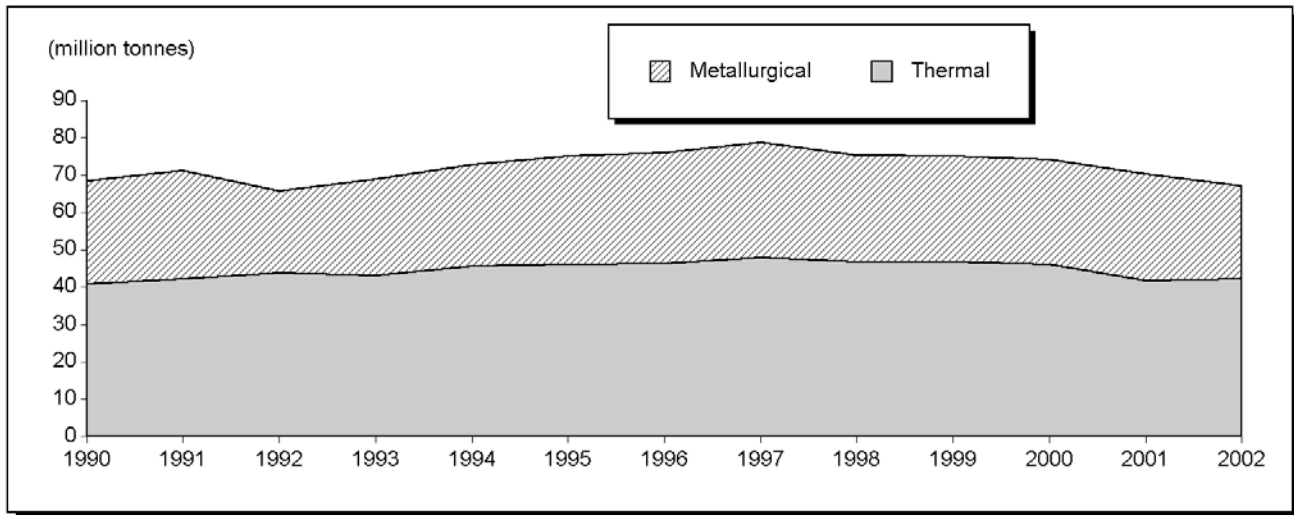
In trying to improve its competitiveness, the Fording Trust's Elk Valley Coal Partnership is reducing the Line Creek's annual production to 2 Mt from the previously planned 3.5 Mt and laying off 50% of its work force.

PRODUCTION

As world market conditions did not improve during 2002, Canadian coal production again suffered a downturn. Canada's production slid 5% to 67 Mt. The 3-Mt decline in metallurgical coal production occurred in British Columbia. Production in the rest of Canada, where most of the coal is consumed by coal-fired power generation plants, remained almost the same.

Three western provinces accounted for 97% of Canadian production. Alberta was Canada's largest coal-producing province with an output of 30 Mt in 2002, of which 90% was thermal and 10% was metallurgical. British Columbia was the second largest coal-producing province at about 24 Mt in 2002, of which 95% was metallurgical coal and the remaining 5% was thermal. Eighty percent of B.C.'s production was exported. Saskatchewan ranked third, producing about 11 Mt of lignite coal in 2002, all for thermal power generation. In Atlantic Canada, New Brunswick produced 194 000 t of thermal coal in 2002, exclusively consumed by New Brunswick Power Corporation to generate electricity. In Nova Scotia, a number of small mines combined to produce 189 000 t of thermal coal in 2002.

Figure 2
Canadian Coal Production, 1990-2002



Sources: Natural Resources Canada; Statistics Canada.

CONSUMPTION

Canadian coal consumption in 2002 was estimated similar to the previous year's at about 60 Mt. Ninety percent of the coal was used to generate electricity by 23 coal-fired generation plants across Canada. The Canadian steel industry consumed about 7% of the total and the remaining 3% was consumed by other industrial and domestic users. Alberta, the largest coal-consuming province, uses about 25 Mt annually for electric power generation, accounting for 40% of total Canadian consumption. Ontario is the second largest coal-consuming province using about 21 Mt in 2002: 17 Mt for power generation and 4 Mt by the steel industry. With no coal mines in the province, Ontario relies largely on U.S. imports, which amounted to about 19 Mt in 2002 with the remainder coming from Alberta and Saskatchewan. Saskatchewan's coal consumption was quite steady at about 9 Mt, all for electricity generation. Nova Scotia used about 1.9 Mt and New Brunswick used about 1.3 Mt, all for power generation. Some other provinces and territories consume a small amount of coal.

TRADE

Coal exports are vital to the Canadian coal industry, with about half of Canada's production exported to the world steel industry. However, Canada's coal exports have been declining continuously since 1998 from 34 Mt to 25 Mt in 2002, sliding from the fifth largest exporter to the eighth largest. This was a result of weaker demand for metallurgical

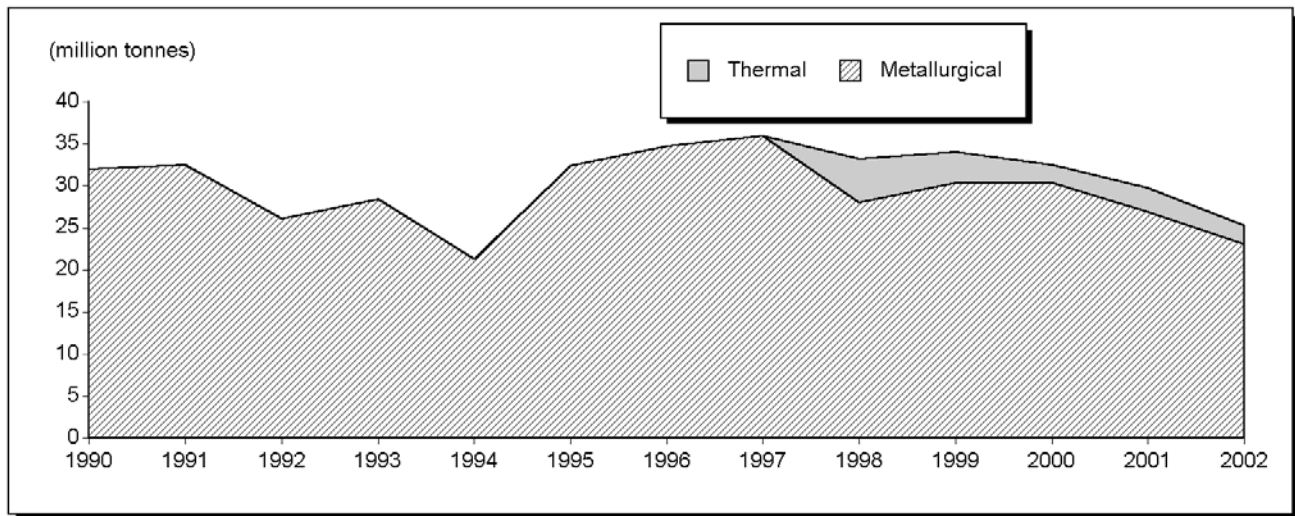
coal in the Japanese market, an oversupply on the world market, and increased exports from China and Australia.

Canadian exports are mainly from British Columbia where most of the coal mines produce metallurgical or coking coal. In 2002, British Columbia contributed 19.5 Mt of total exports while Alberta made up the remaining 5.2 Mt.

In early 2002, following an economic recovery in Asia, coking coal prices turned upward in Japan and South Korea. Canadian coking coal producers settled their contract price at US\$48/t f.o.b., a 10% increase, with Japanese steel mills and Korean steel-makers. However, the world's coking coal markets did not improve much during 2002. In early 2003, Canadian coal producers settled contract prices with Japanese steel mills at US\$46/t f.o.b., US\$2 lower than the 2002 price.

Canada's coal imports have shown an increasing trend due to demand from coal-fired electric power-generating plants. In 2002, Canada imported about 22.7 Mt of coal. Ontario was the major coal importer, followed by Nova Scotia (1.7 Mt) and New Brunswick (1.1 Mt). Quebec imported about 800 000 t of coal for industrial uses. Saskatchewan, Alberta, British Columbia and Manitoba also imported small amounts of coal. Thermal coal, a traditional import, accounted for 80% of total imports (about 18.4 Mt) and the remaining imports (4.3 Mt) were metallurgical coal. Coal imports came mainly from the United States, about 88%; Colombia, 9%; and other countries, 3%.

Figure 3
Canadian Coal Exports, 1990-2002



Sources: Natural Resources Canada; Statistics Canada.

TRANSPORTATION

Coal is the number one commodity carried by rail in Canada. In 2000, both Canadian Pacific Limited and the Canadian National Railway Company transported a total of 34 Mt of coal. The majority of export coal is transported to west coast ports for shipping worldwide. The major coal-loading terminal, Westshore Terminals, located in Roberts Bank, Vancouver, loaded 19.4 Mt of coal in 2002. Neptune Terminals in Vancouver, Ridley Terminals in Prince Rupert, and the Port of Thunder Bay are other coal-loading ports. The International Pier in Sydney, Nova Scotia, previously loaded coal for export but now only receives coal imports.

ENVIRONMENT

Canada formally ratified the Kyoto Protocol in 2002, demonstrating the Canadian government's commitment to limit greenhouse gas (GHG) emissions to protect the environment. Natural Resources Canada (NRCan) established a Large Industrial Emitters Group to work with industries to reduce GHG emissions.

Environmental concerns with respect to the coal industry include the disturbance of lands, acid drainage, GHG emissions and the production of particulate associated with the burning of coal.

New coal mines and expansions are required to have environmental assessments under provincial legislation and, in

some cases, also need a federal environmental review under the *Canadian Environmental Assessment Act*. Environmental assessments ensure that mining activities, such as the removal of vegetation, relocation of overburden, construction of roads, reclamation of previous mined areas, and mining operations, have minimal negative effect on the environment. Several Canadian mining companies have already been recognized for their successful environmental management programs.

Canada and the private sector have invested significant amounts of money into the development of Clean Coal Technologies (CCT) designed to enhance both the efficiency and the environmental acceptability of coal extraction, preparation and consumption.

NRCan has recently invested \$1.66 million in a project led by the Canadian Clean Power Coalition (CCPC) to retrofit an existing coal-burning power plant to reduce GHG emissions by 50%. The CCPC also hopes to build a new plant capable of reducing emissions up to 90% that will serve as a prototype for future plant construction. In the southwest of Edmonton, Alberta, TransAlta Utilities Corporation and EPCOR are building a 450-MW coal-fired power plant, the Genesee 3 project, equipped with new technologies that will reduce GHG emissions up to 50%.

OUTLOOK

No significant change is expected in the coal situation in Canada. Coal production is expected to remain at about 70 Mt/y in the short term.

Coal consumption is also expected to remain unchanged in the short term. In the long term, coal-fired electricity generation use is expected to decline as Ontario is planning to phase out coal used for electricity generation. However, in British Columbia's 2002 energy plan, the province encourages investment in energy development, including coal and coal-fired electricity generation.

Coal exports are expected to stay flat. Although world coal trade is expected to grow, with an oversupplied world coal market and declining world coal prices Canada will have to find ways to maintain its current level of exports. Coal imports are expected to remain unchanged in the short term and are expected to decline in the long term as Ontario, a major coal importer, phases out its coal use in the electricity sector.

Notes: (1) For definitions and valuation of mineral production, shipments and trade, please refer to Chapter 64. (2) Information in this review was current as of July 1, 2003. (3) This and other reviews, including previous editions, are available on the Internet at www.nrcan.gc.ca/mms/cmy/com_e.html.

NOTE TO READERS

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TARIFFS

Item No.	Description	Canada			United States	EU	Japan	Brazil	India	Taiwan	Korea
		MFN	GPT	USA	Canada	MFN	WTO (1)	MFN	MFN	MFN	MFN
27.01	Coal, briquettes, ovoids and similar solid fuels manufactured from coal. Coal whether or not pulverized, but not agglomerated.										
2701.11.00	Anthracite	Free	Free	Free	Free	Free	Free	Free	25%	Free	1%
2701.11.00.10	Buckwheat No. 4, 5 or 6	Free	Free	Free	Free	Free	Free	Free	25%	Free	1%
2701.11.00.20	Buckwheat No. 1, 2 or 3	Free	Free	Free	Free	Free	Free	Free	25%	Free	1%
2701.11.00.30	Egg, stove or nut size	Free	Free	Free	Free	Free	Free	Free	25%	Free	1%
2701.11.00.90	Other	Free	Free	Free	Free	Free	Free	Free	25%	Free	1%
2701.12.00	Bituminous coal, metallurgical coal	Free	Free	Free	Free	Free	Free	Free	25%	Free	1%
2701.12.00.11	High volatile	Free	Free	Free	Free	Free	Free	Free	25%	Free	1%
2701.12.00.12	Low volatile	Free	Free	Free	Free	Free	Free	Free	25%	Free	1%
2701.12.00.91	Other high volatile	Free	Free	Free	Free	Free	Free	Free	25%	Free	1%
2701.12.00.92	Other low volatile	Free	Free	Free	Free	Free	Free	Free	25%	Free	1%
2701.19.00	Other coal	Free	Free	Free	Free	Free	Free	Free	25%	Free	1%
2701.20.00	Briquettes, ovoids and similar solid fuels manufactured from coal	Free	Free	Free	Free	Free	3.9%	Free	15%	Free	1%
27.02	Lignite, whether or not agglomerated, excluding jet	Free	Free	Free	Free	Free	Free	Free	15%	Free	1%
2702.10.00	Lignite, whether or not pulverized, but not agglomerated	Free	Free	Free	Free	Free	Free	Free	15%	Free	1%
2702.20.00	Agglomerated lignite	Free	Free	Free	Free	Free	Free	Free	15%	Free	1%
2704.00.00	Coke and semi-coke of coal, of lignite or of peat, whether or not agglomerated; retort carbon; coke and semi-coke of coal	Free	Free	Free	Free	Free	Free-3.2%	Free	15%	Free - 1%	5%
2704.00.11	Commercially suitable for use as fuel	Free	Free	Free	Free	Free	Free-3.2%	Free	15%	Free-1%	5%
2704.00.19	Coke and semi-coke of coal; other	Free	Free	Free	Free	Free	Free-3.2%	Free	15%	Free-1%	5%
2704.00.90	Coke and semi-coke of coal, of lignite or of peat, retort carbon; other	Free	Free	Free	Free	Free	Free-3.2%	Free	15%	Free-1%	5%

Sources: Canadian Customs Tariff, effective January 2003, Canada Customs and Revenue Agency; Harmonized Tariff Schedule of the United States, 2003; Worldtariff Guidebook on Customs Tariff Schedules of Import Duties for European Union (42nd Annual Edition: 2002); Worldtariff Guidebook on Customs Tariff Schedules of Import Duties of Brazil (9th Annual Edition: 2002); Worldtariff Guidebook on Customs Tariff Schedules of Import Duties of India (9th Annual Edition: 2002); Worldtariff Guidebook on Customs Tariff Schedules of Import Duties of Korea (9th Annual Edition: 2002); Worldtariff Guidebook on Customs Tariff Schedules of Import Duties of Taiwan (7th Annual Edition: 2002); Customs Tariff Schedules of Japan, 2003.

(1) WTO rate is shown; lower tariff rates may apply circumstantially.

TABLE 1. COAL PRODUCTION, 2001 AND 2002

	2001		2002 (p)	
	(tonnes)	(\$000)	(tonnes)	(\$000)
SHIPMENTS				
Nova Scotia	x	x	x	x
New Brunswick	165 000	19 923	194 000	22 088
Saskatchewan	x	x	x	x
Alberta	30 911 000	389 377	30 758 000	386 698
British Columbia	27 007 000	959 292	24 373 000	1 024 311
Total	70 354 500	1 557 115	66 822 000	1 593 091

Sources: Natural Resources Canada; Statistics Canada.

(p) Preliminary; x Confidential.

TABLE 2. CANADIAN COAL TRADE, 2001 AND 2002

	2001		2002 (p)	
	(tonnes)	(\$000)	(tonnes)	(\$000)
EXPORTS				
2701.11 Anthracite				
United States	13	5 397	-	-
2701.12 Bituminous coal, metallurgical				
Japan	9 760 529	603 413 087	8 925 934	573 850 357
South Korea	3 773 307	227 966 028	3 203 568	208 956 686
United States	2 088 111	181 912 458	1 592 612	150 666 389
Turkey	781 777	52 495 616	1 014 403	86 154 114
Brazil	1 578 242	92 670 208	1 172 716	80 401 083
Netherlands	1 567 537	113 049 727	1 036 453	79 642 816
United Kingdom	1 167 900	71 761 150	1 113 706	76 167 671
Germany	1 151 882	75 880 115	1 046 394	74 743 677
Taiwan	1 046 865	61 906 539	1 077 313	67 081 637
Italy	1 257 643	75 025 677	705 458	46 747 609
France	411 573	25 962 878	259 266	20 319 150
Egypt	321 090	18 345 381	266 224	19 556 222
Spain	114 923	7 600 795	331 850	19 187 579
Mexico	436 648	26 392 717	257 398	16 764 284
Pakistan	153 678	7 346 844	257 166	15 936 867
Belgium	237 211	14 104 432	227 569	15 810 824
Chile	633 669	31 143 857	259 076	14 337 080
Finland	301 768	20 052 883	146 909	10 900 985
South Africa	-	-	69 684	5 354 868
Jordan	62 185	3 884 932	-	-
Bulgaria	67 930	4 687 422	-	-
Total	26 914 468	1 715 602 746	22 963 699	1 582 579 898
2701.12 Bituminous coal, other				
South Korea	2 011 545	77 888 418	1 271 395	48 810 566
Japan	525 783	23 211 485	462 148	24 733 803
United States	166 080	7 680 344	202 416	11 263 612
Chile	-	-	142 147	5 970 149
United Kingdom	-	-	23 978	1 659 653
Total	2 703 408	108 780 247	2 102 084	92 437 783
2701.19 Other coal				
Taiwan	-	-	380	181 707
United States	140	61 982	369	169 985
China	-	-	60	30 246
Italy	20	10 814	-	-
Total	160	72 796	809	381 938
2702.10 Lignite whether or not pulverized, but not agglomerated				
United States	68 339	7 770 037	78 307	9 095 156
2702.20 Agglomerated lignite				
United States	10 063	2 156 635	40 625	6 720 294
France	-	-	36	7 118
Total	10 063	2 156 635	40 661	6 727 412
Total exports	29 696 451	1 834 387 858	25 185 560	1 691 222 187

TABLE 2 (cont'd)

		2001		2002 (p)	
		(tonnes)	(\$000)	(tonnes)	(\$000)
IMPORTS					
2701.11	Anthracite				
	United States	309 566	37 349 718	244 347	29 929 798
	China	120 803	18 547 169	88 211	12 363 827
	Ukraine	19 819	2 069 785	48 821	4 383 402
	Russia	44 527	4 948 355	41 826	4 203 942
	Other countries	10	1 366	105	35 205
	Total	494 725	62 916 393	423 310	50 916 174
2701.12	Bituminous coal, metallurgical				
	United States	3 942 073	226 566 005	4 277 629	279 656 642
	Norway	19 356	1 117 998	–	–
	Poland	8 473	692 724	–	–
	Australia	–	–	...	25
	Colombia	16 970	1 098 196	23 967	3 321 395
	Total	3 986 872	229 474 923	4 301 596	282 978 062
2701.12	Bituminous coal, other				
	United States	10 783 930	511 552 712	8 408 993	481 058 272
	Colombia	415 624	31 192 173	1 013 734	62 524 933
	Venezuela	261 991	20 615 436	359 940	28 233 173
	Aruba	–	–	54 631	4 718 257
	United Kingdom	–	–	49 517	4 195 263
	China	–	–	195	14 894
	Total	11 461 545	563 360 321	9 887 010	580 744 792
2701.19	Other coal				
	United States	1 435 812	78 648 272	7 003 938	128 356 028
	Colombia	1 979 905	90 265 636	1 007 614	46 914 253
	Venezuela	65 771	3 298 161	54 144	2 614 085
	Other countries	73	2 233	1 308	63 406
	Total	3 481 561	172 214 302	8 067 004	177 947 772
2701.20	Briquettes, ovoids and similar solid fuels manufactured from coal				
	United States	2 957	316 468	234	28 793
	Other countries	113	8 376	5	349
	Total	3 070	324 844	239	29 142
2702.10	Lignite whether or not pulverized, but not agglomerated				
	United States	1 545	164 120	1 707	161 707
	Finland	1	1	1	140
	Total	1 546	164 121	1 708	161 847
2702.20	Agglomerated lignite				
	Netherlands	24	7 352	–	–
	United States	11	1 600	–	–
	Total	35	8 952	–	–
	Total imports	19 429 355	1 028 463 856	22 680 869	1 092 777 789

Sources: Natural Resources Canada; Statistics Canada.

– Nil; ... Amount too small to be expressed; (p) Preliminary.

TABLE 3. CANADIAN COKE TRADE, 2001 AND 2002

		2001		2002 (p)	
		(tonnes)	(\$000)	(tonnes)	(\$000)
EXPORTS					
2704.00	Coke and semi-coke of coal, of lignite or of peat, whether or not agglomerated; retort carbon				
	United States	57 982	15 435 592	95 853	11 309 897
	United Arab Emirates	—	—	377	264 227
	Trinidad and Tobago	—	—	379	127 331
	Montserrat	—	—	120	25 105
	Costa Rica	—	—	404	23 467
	United Kingdom	—	—	1	6 503
	Total	57 982	15 435 592	97 134	11 756 530
IMPORTS					
2704.00	Coke and semi-coke of coal, of lignite or of peat, whether or not agglomerated; retort carbon				
	United States	1 122 223	121 058 619	769 470	72 277 123
	China	142 621	13 859 275	172 310	20 072 154
	Switzerland	22 934	1 780 561	99 150	4 938 683
	Brazil	1	1	43 833	4 170 520
	Germany	3 828	377 963	7 179	1 343 691
	Other countries	40	5 257	10	874
	Total	1 291 647	137 081 676	1 091 952	102 803 045

Sources: Natural Resources Canada; Statistics Canada.
 — Nil; (p) Preliminary.

TABLE 4. COAL PRODUCTION BY TYPE AND PROVINCE, 1990-2002

		Alberta		Total	British Columbia	New Brunswick	Nova Scotia	Saskatchewan	Canada
		Bituminous	Subbituminous		Bituminous	Bituminous	Bituminous	Lignite	Total
(000 tonnes)									
1990	Metallurgical	5 455	—	5 455	21 691	548	513	—	27 659
	Thermal	3 698	21 252	24 950	2 865	—	2 902	9 407	40 672
	Total	9 153	21 252	30 405	24 556	548	3 415	9 407	68 331
1991	Metallurgical	6 117	—	6 117	22 039	—	918	—	29 074
	Thermal	4 195	22 242	26 437	2 924	498	3 220	8 981	42 060
	Total	10 312	22 242	32 554	24 963	498	4 138	8 981	71 134
1992	Metallurgical	6 395	—	6 395	14 680	—	962	—	22 037
	Thermal	4 113	23 020	27 133	2 494	399	3 524	10 027	43 577
	Total	10 508	23 020	33 528	17 174	399	4 486	10 027	65 614
1993	Metallurgical	6 483	—	6 483	18 770	—	535	—	25 789
	Thermal	5 015	23 660	28 675	1 858	389	3 111	9 000	43 034
	Total	11 498	23 660	35 159	20 628	389	3 647	9 000	68 824
1994	Metallurgical	5 795	—	5 795	20 887	—	582	—	27 265
	Thermal	4 399	25 489	29 888	1 717	331	2 927	10 684	45 550
	Total	10 195	25 489	35 684	22 604	331	3 509	10 684	72 815
1995	Metallurgical	6 783	—	6 783	22 203	—	67	—	29 054
	Thermal	4 739	25 621	30 361	2 146	263	2 414	10 739	45 925
	Total	11 523	25 621	37 144	23 349	263	2 482	10 739	74 979
1996	Metallurgical	6 671	—	6 671	22 890	—	134	—	29 696
	Thermal	4 492	24 985	39 478	2 529	272	3 037	10 838	46 157
	Total	11 164	24 985	36 150	25 420	272	3 171	10 838	75 853
1997	Metallurgical	5 831	—	5 831	25 017	—	70	—	30 919
	Thermal	4 728	25 782	30 511	2 860	173	2 645	11 652	47 843
	Total	10 560	25 782	36 343	27 878	173	2 715	11 652	78 762
1998	Metallurgical	5 422	—	5 422	23 170	—	—	—	28 592
	Thermal	5 449	25 285	30 734	1 695	272	2 118	11 790	46 611
	Total	10 871	25 285	36 156	24 866	272	2 118	11 790	75 204
1999	Metallurgical	5 299	—	5 299	23 126	—	—	—	28 426
	Thermal	4 604	24 299	28 903	1 717	251	1 537	11 659	46 611
	Total	9 903	24 229	34 203	24 844	251	1 537	11 659	75 204
2000	Metallurgical	3 871	—	3 871	24 230	—	—	—	28 101
	Thermal	2 857	24 168	27 025	1 450	229	1 165	11 190	46 061
	Total	6 728	24 168	30 896	25 681	229	1 165	11 190	69 163
2001	Metallurgical	2 950	—	2 950	25 774	—	—	—	28 724
	Thermal	3 021	24 940	27 961	1 233	165	881	11 390	41 630
	Total	5 971	24 940	30 911	27 007	165	881	11 390	70 354
2002 (p)	Metallurgical	..	—	..	..	—	—	—	x
	Thermal	..	..	..	..	194	x	x	x
	Total	..	..	30 485	24 397	194	x	x	66 822

Sources: Natural Resources Canada; Statistics Canada.
 — Nil; .. Not available; (p) Preliminary; x Confidential.

TABLE 5. CANADIAN COAL USE, 1990-2002

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000 (r)	2001 (r)	2002 (p)
	(000 tonnes)												
ELECTRICITY GENERATION													
Domestic													
Bituminous	5 821	5 500	5 880	5 357	5 448	4 976	4 888	4 323	3 362	3 516	1 911	2 076	..
Subbituminous	20 862	22 071	23 156	23 652	27 154	25 796	25 413	25 856	25 343	24 313	24 149	24 919	..
Lignite	9 088	8 849	9 576	9 711	9 415	10 517	10 959	11 290	11 686	11 374	10 857	11 130	..
Subtotal Canadian	35 771	36 420	38 612	38 720	42 017	41 289	41 260	41 469	40 391	39 203	36 918	38 125	..
Imported													
Bituminous	6 371	7 426	6 841	4 282	3 906	5 215	5 646	8 036	10 136	10 245	12 363	11 071	..
Subbituminous	..	..	..	..	..	..	..	..	2 397	2 269	5 004	4 947	..
Subtotal imported	6 371	7 426	6 841	4 282	3 906	5 215	5 646	8 036	12 533	12 514	17 367	16 018	..
Total generation use	42 142	43 846	45 453	43 002	45 923	46 504	46 906	49 505	52 924	51 717	54 285	54 143	..
OTHER INDUSTRY													
Domestic													
Bituminous	277	285	340	367	289	426	256	247	267	287	375	405	..
Lignite	275	227	231	301	252	342	514	331	272	221	312	291	..
Subtotal Canadian	552	512	571	668	541	768	770	578	539	508	687	696	..
Imported													
Anthracite	342	219	274	231	281	396	462	435	514	458	526	339	..
Bituminous	1 008	827	688	689	824	916	929	694	1 010	1 034	1 132	987	..
Subtotal imported	1 350	1 046	962	920	1 105	1 312	1 391	1 129	1 524	1 492	1 658	1 326	..
Total other industry use	1 902	1 558	1 533	1 588	1 646	2 080	2 161	1 707	2 063	2 000	2 345	2 022	..
METALLURGICAL													
Domestic													
Imported	4 996	4 906	4 886	4 665	4 552	3 901	4 345	4 490	4 092	4 183	4 048	4 052	4 302
Total metallurgical	4 996	4 906	4 886	4 665	4 779	4 189	4 446	4 490	4 119	4 360	4 265	4 256	..
TOTAL COAL USE													
Domestic													
Imported	14 840	11 835	13 750	8 723	9 055	9 749	11 647	14 818	19 854	19 960	19 641	19 452	22 681
Total	51 163	48 767	52 933	48 111	51 840	52 095	53 779	56 865	60 811	59 848	57 463	58 477	..

Sources: Natural Resources Canada; Statistics Canada.

.. Not Available; (p) Preliminary; (r) Revised.

Note: Numbers may not add to totals due to rounding.

TABLE 6. COAL USE FOR ELECTRICITY GENERATION, BY PROVINCE, 1990-2002

	Alberta	New Brunswick	Nova Scotia	Manitoba	Ontario	Saskatchewan	Canada
	(000 tonnes)						
1990	21 340	496	2 184	298	10 362	7 462	42 142
1991	22 480	426	2 290	232	10 850	7 548	43 826
1992	23 752	471	2 344	233	10 022	8 419	45 241
1993	24 194	506	2 416	178	7 004	8 428	42 726
1994	28 207	1 208	2 672	164	5 170	8 502	45 923
1995	26 201	1 304	2 578	117	6 707	9 597	46 503
1996	25 794	1 370	2 864	176	6 984	9 719	46 906
1997	26 258	1 327	2 986	106	9 012	9 820	49 508
1998	25 963	1 433	2 597	546	12 342	9 795	52 677
1999	25 171	1 379	2 868	303	12 151	9 844	51 717
2000	24 768	1 242	3 322	561	15 209	9 180	54 284
2001	25 430	1 404	3 350	273	14 250	9 436	54 143
2002	..	..	..	..	..	..	..

Sources: Natural Resources Canada; Statistics Canada.

.. Not available.

Note: Numbers may not add to totals due to rounding.

TABLE 7. CANADIAN COAL TRADE, 1990-2002

	Metallurgical		Thermal		Canada	
	(000 t)	(\$ 000)	(000 t)	(\$ 000)	(000 t)	(\$ 000)
EXPORTS						
1990	31 986	2 109 070	...	...	32 058	2 118 544
1991	32 402	2 043 515	...	...	32 483	2 051 543
1992	25 910	1 666 905	...	...	26 134	1 684 015
1993	28 249	1 845 140	...	...	28 352	1 855 193
1994	31 243	2 039 875	...	...	31 311	2 047 200
1995	34 054	2 228 708	...	...	34 215	2 238 002
1996	34 594	2 495 138	...	...	34 697	2 503 686
1997	35 614	2 572 747	...	...	35 886	2 594 762
1998	27 972	2 060 927	5 215	301 593	33 186	2 362 520
1999	30 289	1 746 020	3 672	154 126	33 960	1 900 146
2000	30 305	1 632 441	2 196	89 358	32 501	1 721 799
2001	26 914	1 715 603	2 782	118 792	29 696	1 834 395
2002 (p)	22 964	1 582 580	2 319	108 642	25 283	1 691 222
IMPORTS						
1990	4 021	185 421	10 819	426 879	14 840	612 300
1991	4 171	189 627	7 665	288 520	11 835	478 147
1992	4 733	216 429	9 017	375 259	13 750	591 688
1993	4 721	227 404	4 002	183 819	8 723	411 223
1994	4 048	201 583	5 007	232 349	9 055	433 932
1995	4 183	211 235	5 566	264 198	9 749	475 434
1996	5 465	283 250	6 183	288 448	11 647	571 697
1997	4 616	238 944	10 202	453 898	14 818	692 843
1998	4 536	258 201	15 318	671 063	19 854	929 264
1999	3 857	204 018	16 103	717 592	19 960	921 609
2000	3 493	183 214	16 148	763 377	19 641	946 591
2001	3 987	229 475	15 465	798 989	19 452	1 028 464
2002 (p)	4 302	282 978	18 379	809 800	22 681	1 092 778

Source: Natural Resources Canada.

... Amount too small to be expressed; (p) Preliminary.