

# Coal

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**C**oal is an organically derived material. It is formed from the remains of decayed plant material compacted into a solid through millions of years of pressure and heat. Coal is the world's most abundant and widely distributed fossil fuel. About 4.5 billion t are mined annually in more than 40 countries.

Coal is used primarily for the generation of electricity and the production of steel. Nearly 50% of the world's electricity is generated from coal and about 75% of the world's steel is produced with coal. Coal is also used as an energy source in industrial processes (such as cement manufacture and pulp and paper) and to produce a wide range of products (such as tars and chemicals). In some developing countries, coal is still used as a residential heating fuel.

## **CANADIAN DEVELOPMENTS**

Canada is the world's fifth largest coal exporter and eleventh largest coal producer.

### **Production**

Preliminary estimates for 1996 show a record production of 76 Mt valued at \$1.9 billion, representing increases of 1% and 5% respectively. About 60% of the production is thermal coal, with the remainder being metallurgical coal.

Production occurs to meet domestic demand for thermal coal, primarily for the generation of electricity, and to meet export demand, primarily for metallurgical coal.

Nearly all (96%) of Canada's coal is produced in the three westernmost provinces. The remainder comes from Nova Scotia and New Brunswick.

British Columbia's coal production, all bituminous, increased in 1996 by 4% to 25.4 Mt. With virtually

all of British Columbia's production exported, the increase is a direct reflection of increased export demand. More than 90% of British Columbia's coal is metallurgical.

Alberta remained Canada's largest coal-producing province in 1996. Its production is estimated to be down 3% to 36.2 Mt, consisting of 25 Mt of sub-bituminous coal (down from 25.6 Mt in 1995) and 11.2 Mt of bituminous coal (down from 11.6 Mt in 1995). The drop in sub-bituminous production is a result of lower coal-fired electrical generation in the province. This is explained more fully in the section on consumption. About 85% of Alberta's production is thermal coal.

Saskatchewan was again the country's third largest coal-producing province. Its production, all lignite, was up 1% to 10.9 Mt. All of Saskatchewan's coal is used for thermal purposes.

Nova Scotia's bituminous coal production was up 0.6 Mt to 3.1 Mt because of increased production by the Cape Breton Development Corporation (DEVCO), a federal Crown corporation, and operation of a new surface mine at Stellarton. Nearly all of the coal produced in Nova Scotia in 1996 was thermal.

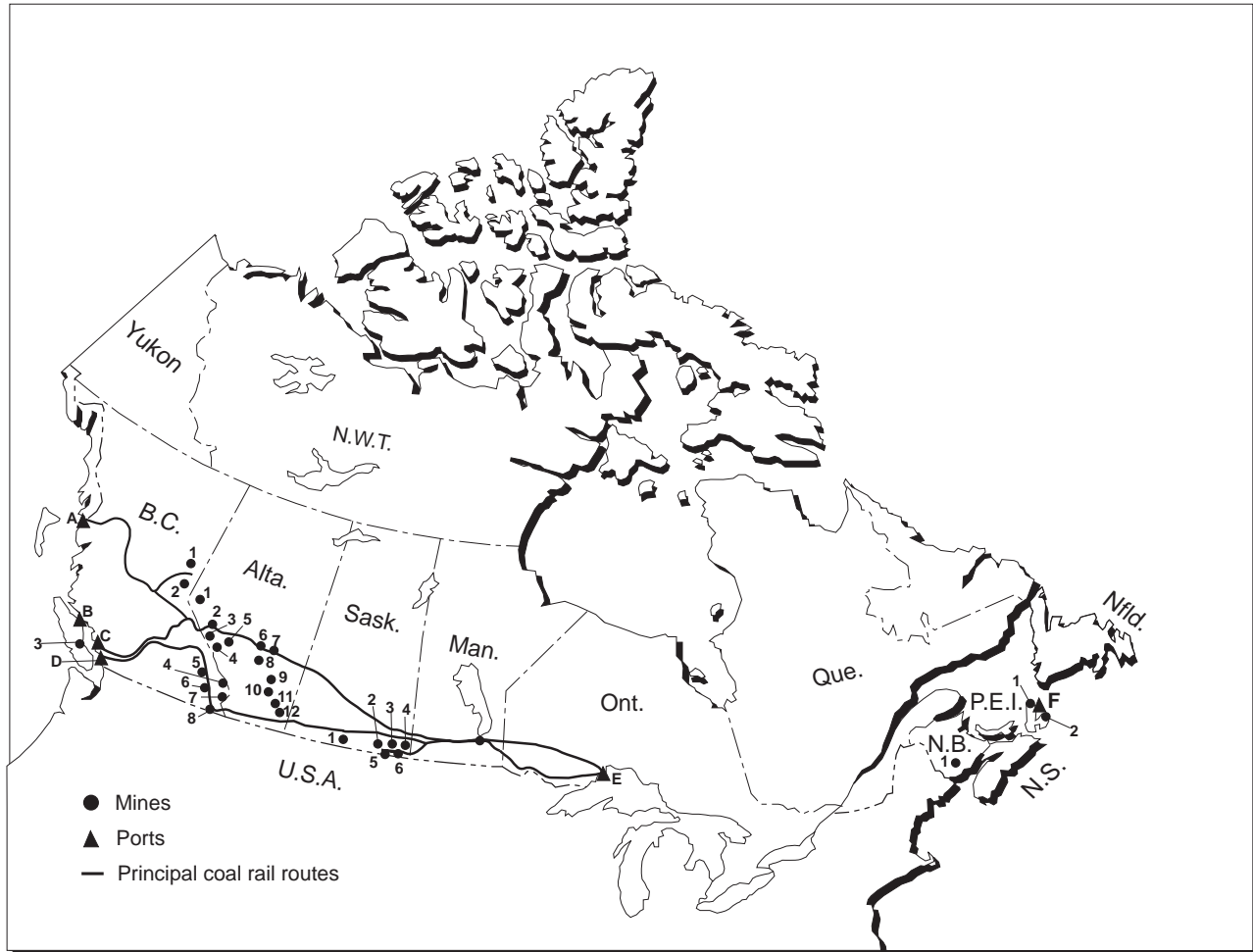
New Brunswick's bituminous production was constant at 0.3 Mt. N.B. Coal Limited, the only coal producer in the province, is owned by, and sells exclusively to, the provincial electric utility, New Brunswick Power Corporation.

### **Consumption**

Canadian coal consumption in 1996 is estimated at 53.5 Mt, somewhat above the 1995 level of 52.7 Mt. In 1996, an estimated 47 Mt of coal were consumed for electricity generation, about 4.5 Mt were used in steel-making, and about 2 Mt were used by other industries, mainly cement.

Alberta, the largest consuming province, used about 25.8 Mt of coal to generate electricity. This is about 0.6 Mt less than the previous year. High water levels in both British Columbia and Alberta in the spring of 1996 led to increased hydro generation in both provinces and the displacement of some coal-fired electricity in Alberta by hydro-generated electricity from British Columbia. With the exception of about

**Figure 1**  
**Principal Canadian Coal Mines and Ports**



● **MINES**

**British Columbia**

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

**Alberta**

1. Smoky River
2. Obed
3. Gregg River
4. Luscar
5. Coal Valley
6. Highvale
7. Whitewood
8. Genesee
9. Paintearth
10. Vesta
11. Sheerness
12. Montgomery

**Saskatchewan**

1. Poplar River
2. Utility
3. Boundary Dam
4. Costello
5. Shand
6. Bienfait

**New Brunswick**

1. Minto

**Nova Scotia**

1. Prince
2. Phalen

▲ **PORTS**

**British Columbia**

- A. Ridley Island
- B. Texada Island Facility
- C. Neptune
- D. Roberts Bank

**Ontario**

- E. Thunder Bay

**Nova Scotia**

- F. International Pier

0.5 Mt of Alberta bituminous coal, all of the coal used was sub-bituminous coal from Alberta.

In Saskatchewan, coal consumption by the electric utility was an estimated 9.7 Mt, about 0.1 Mt more than the previous year. All the coal used by the utility comes from provincial lignite mines.

While Manitoba does not produce coal, it consumes a small amount of coal for electricity generation and general industrial uses. Consumption in 1996 is expected to be similar to the 1995 level at approximately 0.2 Mt, mostly for electricity generation. Most of Manitoba's coal for electricity generation in 1996 was sourced from the United States, with the remainder coming from Saskatchewan.

Ontario remains Canada's second largest coal consumer, using coal for electricity generation, steel-making, and general industrial purposes. After four years of steadily diminishing consumption, Ontario's use of coal increased in 1995 to approximately 11.7 Mt. It rose again in 1996 to 12 Mt.

The use of coal for electricity generation in Ontario reached an estimated 7 Mt. The higher coal use made up for the less-than-forecast nuclear generation. Nearly 40% of the coal consumed by the utility was Canadian, with the rest coming from the United States. The Canadian portion consisted of bituminous coal from Alberta and lignite from Saskatchewan.

Coal utilization by the steel industry in Ontario in 1996 is estimated to be 4.5 Mt, somewhat above the 1995 level. With the exception of about 0.3 Mt of western Canadian coal, all the coal used by the steel industry was imported from the United States. Coal use by Ontario's industrial sector was similar to the previous year's level at somewhat under 1 Mt.

Like Manitoba, Quebec does not produce coal. However, it does consume coal for general industrial uses. Quebec's coal consumption in 1996 is expected to be similar to the 1995 level at 0.7 Mt. All of the coal consumed in Quebec (about half bituminous, the rest anthracite) is imported from the United States.

New Brunswick's 1996 coal consumption is similar to that of the previous year at about 1.4 Mt. Nearly all of its consumption is by New Brunswick Power Corporation's Belledune generating plant. Coal from New Brunswick supplied about one fifth of the utility's needs, while imports from Colombia and the United States provided the remainder.

In Nova Scotia, coal consumption by the provincial power utility in 1996 was approximately 2.9 Mt, up about 0.3 Mt over 1995. The province did not increase its total generation of electricity. However, for price reasons, it increased the proportion generated by coal. With the exception of about 0.2 Mt sourced from small producers in the province, the utility bought all of its coal from DEVCO.

## Exports

In 1996, Canadian coal companies increased their exports by an estimated 0.5 Mt to 34.5 Mt. Canadian coal was sold to 21 countries. About 80% of Canada's exports were metallurgical coal.

The single largest buyer of this coal is Japan. In 1996, Canadian coal exports to Japan are expected to be up about 3% to approximately 18.5 Mt. With a market share of about 15%, Canada was Japan's second largest coal supplier after Australia. About 80% of Canadian coal exports to Japan are metallurgical coal.

In 1996, Canadian coal exports to South Korea, which is Canada's second largest market, are estimated at 5.6 Mt. With a market share of about 14%, Canada is South Korea's third largest coal supplier after Australia and China. Nearly 75% of Canadian coal exports to South Korea are metallurgical coal.

Canada's third and fourth largest coal markets in 1996 were, respectively, the United Kingdom (1.4 Mt) and Brazil (1.3 Mt).

British Columbia remains the single largest exporting province with exports up about 0.5 Mt over 1995 to about 24.5 Mt in 1996. About 90% of British Columbia's exports are metallurgical coal.

Alberta's coal exports remained constant at 9.9 Mt. About two thirds of Alberta's exports are metallurgical coal.

Nova Scotia's coal exports increased slightly in 1996, but still remained under 0.1 Mt. The only exporting company in the province is DEVCO. In 1996, as in 1995, nearly all of DEVCO's production was sold to its major customer, Nova Scotia Power Inc.

## Imports

Canada's 1996 coal imports are projected at 11.7 Mt, some 2 Mt above the 1995 level. With the exception of under 1 Mt from Colombia, all imports come from the United States.

The electric power industry imported about 5.5 Mt. Ontario Hydro, the single largest importer of coal, bought about 4.5 Mt of U.S. coal in 1996, up from the previous year. New Brunswick Power bought about 0.9 Mt, somewhat lower than in 1995. Most of this coal came from Colombia.

Imports by the Ontario steel industry were over 4 Mt in 1996, similar to the 1995 level. All of this coal came from the United States.

The remaining imports, all from the United States, went to industrial users located primarily in Quebec and Ontario.

## Changes

In mid-1996, Hillsborough Resources Limited completed the doubling of its production capacity to 1.2 Mt/y at its Quinsam coal mine on Vancouver Island. Production in 1996 was 1 Mt, compared to 0.6 Mt in 1995. A nominal expansion will generate a planned production in 1997 in excess of 1.4 Mt. Quinsam is an underground mine producing thermal and PCI (pulverized coal injection) coal.

Fording Coal Limited is increasing production at its Coal Mountain mine in southeastern British Columbia. Fording acquired the mine, formerly known as Byron Creek and Corbin Creek, late in 1994. Its production increased from 0.3 Mt in 1994 to a little more than 1 Mt in 1995, and to 1.8 Mt of metallurgical, PCI and thermal coal in 1996. The company plans to increase production to about 2.5 Mt in 1997.

In late 1996, Manalta Coal Ltd. issued a "project concept plan" for its proposed Telkwa mine located approximately 6 km southwest of Telkwa, British Columbia. The proposed surface mine will produce about 1-1.5 Mt/y of metallurgical and thermal coals for export. Subject to completion of the regulatory process and coal sales arrangements, construction could begin in 1998, with production starting in 2000.

During the year, progress was made on the proposed Willow Creek project in British Columbia. In February, BC Rail, Globaltex Industries Inc. and Mitsui Matsushima Co. Ltd. concluded a joint-venture agreement under which they created Pine Valley Coal Ltd. as the operator of the proposed project. The proposed open-pit mine, 45 km west of Chetwynd, British Columbia, is expected to produce about 0.6 Mt/y of coking and thermal coal. Subject to favourable feasibility results expected in the first six months of 1997, and completion of the regulatory process, construction could begin by the late summer of 1997 and production could start by the spring of 1998. Globaltex Industries Inc. is a Vancouver-based junior resource company listed on the Vancouver Stock Exchange.

Also during the year, Cardinal River Coals Ltd. (CRC), a 50%-owned subsidiary of Luscar Ltd., continued the environmental assessment process for its proposed Cheviot open-pit mine near Hinton, Alberta. A joint federal-provincial environmental assessment panel is scheduled to begin hearings in January 1997. Subject to completion of the regulatory process, CRC plans for Cheviot to begin operations in 1999 with production of about 3.5 Mt/y of metallurgical coal. The Cheviot mine will replace production from the existing Luscar mine some 20 km away where reserves are expected to be depleted in a few years.

Also in 1996, Prairie Coal Ltd. applied for approval under Saskatchewan's *Environmental Assessment*

*Act* and began its environmental impact assessment to expand the Costello lignite mine near Estevan, Saskatchewan. Approval is anticipated in the summer of 1997. Costello's operations were suspended in 1993 because of shrinking demand. However, Prairie Coal now intends to expand Costello to a 3.5-Mt/y operation, beginning in 1998, to replace coal from the nearby Utility mine, whose economically recoverable reserves will be depleted by 1998. The expanded Costello mine, which will feed Saskatchewan Power Corporation's Boundary Dam power plant, is expected to employ approximately 100 people. Prairie Coal Ltd. is a wholly owned subsidiary of Manalta Coal Ltd.

Pioneer Coal Ltd. began working a new open-pit mine in Stellarton, Nova Scotia, in March 1996. Its production is expected to be about 0.2 Mt/y of thermal coal.

## WORLD DEVELOPMENTS

The Canada-Chile Free Trade Agreement signed on November 18, 1996, includes removal of the 11% Chilean tariff on metallurgical coal imports from Canada on the date the agreement comes into force, scheduled for July 4, 1997. For thermal coal, the 11% tariff is to drop to 5.5% on the date the agreement comes into force, to 4.4% on January 1, 1998, to 3.3% on January 1, 1999, to 2.2% on January 1, 2001, and to zero on January 1, 2002.

In the past quarter century, international coal trade has grown substantially. The International Energy Agency (IEA) dates the beginning of significant trade in coal to the sharp oil price increase of 1973, with a further spur in coal trade occurring with the second major oil price increase at the end of 1978. IEA statistics show coal trade growing from about 175 Mt in 1973 to 333 Mt in 1985, and to 455 Mt in 1995. Trade in 1996 is estimated to be about 458 Mt. Nearly 95% of this trade is by sea.

Trade continues to be split about 60:40 between thermal and metallurgical coal. Demand continues to be high for thermal coal for the generation of electricity, particularly in Asia-Pacific nations. Demand for metallurgical coal for steel-making is fairly flat, reflecting increasing efficiency in the ratio of coke to steel in blast furnaces, and technological changes in the production of steel, including the greater use of pulverized coal injection.

Two countries account for close to half of world coal exports. Australia will maintain its premier position in 1996 with exports projected to reach a record 142 Mt, up about 6 Mt from 1995. The second largest exporter, the United States, increased its exports by about 2 Mt in 1996 to an estimated 82 Mt.

The third largest coal exporter, South Africa, is expected to have foreign sales of about 62 Mt, up 2 Mt over 1995. Indonesia, a relative newcomer to

the export coal industry, became in 1996 the world's fourth largest exporter, with exports estimated at 36 Mt, up about 5 Mt from 1995.

As mentioned earlier, Canada's exports increased somewhat in 1996 to close to 35 Mt. Poland's exports are forecast to be down slightly in 1996 to some 33 Mt. China, the world's largest coal producer and consumer, is estimated to have increased its 1996 exports by about 0.5 Mt to about 29 Mt.

On the buying side, Japan remains the world's largest importer of coal, accounting for more than one quarter of all purchases. Its 1996 imports are estimated at 129 Mt, about 3 Mt higher than in 1995. Approximately 60% of Japan's imports are metallurgical coal.

South Korea, the world's second largest coal importer, is estimated to have increased its imports from 44 Mt in 1995 to some 46 Mt in 1996. The increase was mostly thermal coal, which accounts for about 60% of imports.

The third largest importer, Taiwan, increased its foreign coal purchases by an estimated 2 Mt to about 31 Mt.

The European Union (EU) as a bloc accounts for about 30% of world hard coal imports. In 1996, the 15 countries of the EU are estimated to have decreased their imports from non-EU countries by an estimated 2 Mt to approximately 137 Mt. The four largest importing countries were Italy, the Netherlands, the United Kingdom and Germany. EU countries, which were at one time significant coal producers (280 Mt in 1973), saw 1996 production decrease to an estimated 128 Mt, some 9 Mt below the 1995 level.

## PRICES

Coal prices are quoted in U.S. currency and either "free on board trimmed" (f.o.b.t.) or "cost, insurance and freight" (c.i.f.). In 1996, the Japanese steel industry, representing the largest coal-buying entity, changed the way it negotiated coking coal prices. Previously, there was a "bench mark" price for hard coking coal sales. After that bench mark was negotiated it was, in principle, applied to all other coals.

In 1996, the Japanese steel industry replaced the bench mark system with the "fair treatment system." As the IEA describes the change, the new system values each individual coal brand on its own quality and properties to individual steel mills. As a result, different prices can be set for the same brand of coal to different steel mills.

While there is no longer a "bench mark" in the old sense, coking coal prices in Japan's 1996 fiscal year (April 1996 through March 1997) rose US\$2.70/t to US\$53.30/t f.o.b.t. for hard coking coal. Settlements

for the 1997/98 coal year indicate that pricing will remain largely unchanged.

The bench mark price for Japan's thermal coal imports in 1996 increased US\$5.90/t to US\$40.30/t f.o.b.t. Early indications show a drop of US\$2.65/t in 1997 to US\$37.65/t.

For the EU, the guide c.i.f. price for imported coking coal was US\$58.40/t at the end of 1995, and US\$57.60/t at the third quarter of 1996.

## THE ENVIRONMENT

*(This section was prepared by Bob Lomas and Frank Mourits of the Minerals and Metals Sector, Natural Resources Canada, telephone (613) 992-8468 and 996-7857, respectively.)*

Environmental protection is being addressed at all stages of the coal chain. At the mining stage, environmental assessments are an integral part of the provincial mine permitting process. In certain instances, mining projects also trigger a federal environmental review.

Federal and provincial governments are committed to streamlining the environmental review process and eliminating overlap between the various regulatory agencies. The federal government is implementing reforms to reduce uncertainty, costs and delays at all stages of the mining development process. The result will be a more efficient and effective environmental regulatory regime. An example of this new process is the joint federal-provincial environmental assessment panel established in 1996 to review the proposed Cheviot metallurgical coal mine near Hinton, Alberta. More information is given on Cheviot elsewhere in this chapter under the section on "Changes."

Environmental assessments ensure that activities associated with coal mining, including the removal of vegetation, relocation of overburden, construction of roads, blasting, and reclamation of previously mined areas, are carried out in a manner that minimizes any negative effect on the environment. Several Canadian coal mining companies have been recognized for their successful environmental mine management programs.

At the coal utilization stage, air emissions are a concern. Coal accounts for about 20% of sulphur dioxide (SO<sub>2</sub>), 15% of nitrogen oxide (NO<sub>x</sub>) and 20% of carbon dioxide (CO<sub>2</sub>) emissions in Canada. Coal is also a source of heavy metals emissions.

In 1995, eastern Canadian coal-burning utilities, including Nova Scotia Power Inc., New Brunswick Power Corporation, and Ontario Hydro, were all below their SO<sub>2</sub> emission limits. Emissions were 273 000 t, compared to a legislated limit of 443 000 t. However, in several acid-sensitive areas of eastern

Canada, even with the implementation of existing programs to control SO<sub>2</sub> emissions in Canada and the United States, sulphate deposition will continue to cause lake acidification. In 1996, the multi-stakeholder Acidifying Emissions Task Group, chaired by Environment Canada, continued work to develop a national strategy to address acidifying emissions in the post-2000 period. The group will hold a workshop in the spring of 1997 and plans to present its final recommendations to the federal and provincial ministers of energy and environment in September 1997.

In 1995, Environment Canada established a working group to develop guidelines for NO<sub>x</sub> emissions from coal-fired utility boilers to be constructed after the year 2000. In 1996 a technical background report was completed and working group activity is expected to increase in 1997.

The issues of climate change and greenhouse gas (GHG) emissions continue to receive attention. In 1995, The Coal Association of Canada and the Canadian Electrical Association each signed a Memorandum of Understanding with Natural Resources Canada to participate in the Voluntary Challenge and Registry (VCR) Program. In 1996, both associations filed progress reports on these action plans. The reports describe activities and plans by three major coal mining companies and all thermal generating electric utilities. The coal producers reported on measures being implemented to improve the energy efficiency of their mining operations. In addition, they are expanding their tree and shrub planting programs, which will enhance the capturing of atmospheric CO<sub>2</sub>. The plans registered by the electric utilities indicate that their GHG emissions in 2000 will be below their 1990 levels.

With respect to heavy metals, the United Nations Economic Commission for Europe decided in 1996 to begin negotiation in 1997 of a protocol under the Convention on Long-Range Transboundary Air Pollution to address the transboundary impacts of heavy metals emissions. The negotiations will focus on mercury, lead and cadmium.

Also in 1996, the Electric Power Generation (Fossil Fuel) Issue Table established under the Strategic Options Process met several times to prepare recommendations on the management of metal and organic compounds declared toxic under the *Canadian Environmental Protection Act*. The group was not able to reach a consensus recommendation. Therefore, the final report, which is expected to go to the federal and provincial ministers of health and environment in March 1997, contains several minority positions on particulate matter reductions, their management options, and areas for further collaboration among stakeholders.

In addition to air emissions, coal-fired generating sta-

tions produce large volumes of ash and waste products. Most ash is a powder-like fly ash and the remainder is a coarser bottom ash. Fly ash utilization in the manufacture of cement is increasing and this results in several environmental benefits, including reduced landfill costs for the utility as well as reductions in emissions of carbon dioxide, particulates, organic compounds and sulphur dioxide for the cement manufacturer. Other major uses for coal ash include road construction and backfill for mines.

Flue gas desulphurization units produce large volumes of gypsum by-product. This material is increasingly being sold to wallboard manufacturers and again results in reduced landfill costs for the utility.

## OUTLOOK

Domestically, consumption is expected to remain more or less constant over the remainder of the decade, and to grow in the first part of the next century as more coal is used in those provinces that use coal to generate electricity. Most of this coal will come from indigenous sources, although some will be imported, primarily from the United States.

On the world scene, thermal coal trade is expected to continue to grow because of increasing coal consumption for electricity generation in Asia. While most of this coal will come from established thermal coal exporters such as Australia, newer exporters such as Indonesia will likely increase their market share. Although overall coking coal demand is forecast to be flat during the next few years, some forecasters expect growth in Brazil, India, Korea, Taiwan and Thailand.

*Notes: (1) For definitions and valuation of mineral production, shipments and trade, please refer to Chapter 70. (2) Information in this review was current as of January 29, 1997.*

**TABLE 1. COAL SUPPLY AND DEMAND, 1982-96**

	Production	Imports	Total Supply	Exports	Domestic Consumption	Total Demand	Stock Changes and Adjustment
	(000 tonnes)						
1982	42 811	15 775	58 586	16 004	41 353	57 357	1 229
1983	44 780	14 667	59 447	17 011	43 649	60 660	(1 213)
1984	57 402	18 359	75 761	25 138	48 699	73 837	1 924
1985	60 854	14 620	75 474	27 378	48 666	76 044	(570)
1986	57 812	13 312	71 124	25 904	44 532	70 436	688
1987	61 211	14 345	75 556	26 741	50 140	76 881	(1 325)
1988	70 644	17 418	88 062	31 725	54 466	86 191	1 871
1989	70 529	14 521	85 050	32 827	53 795	86 622	(1 572)
1990	68 331	14 113	82 444	31 009	49 036	80 045	2 399
1991	71 138	12 417	83 555	34 112	50 173	84 285	(730)
1992	65 610	12 834	78 444	28 097	51 683	79 780	(1 336)
1993	69 027	8 392	77 419	28 313	48 979	77 292	127
1994	72 823	9 176	81 999	31 746	52 348	84 094	(2 095)
1995	75 036	9 684	84 719	33 992	52 773	86 766	(2 046)
1996	75 809	11 692	87 501	34 459	53 511	87 971	(470)

Sources: Natural Resources Canada; Statistics Canada.

**TABLE 2. COAL DISPOSITION FROM MINES, 1996**

	Nova Scotia	New Brunswick	Saskatchewan	Alberta	British Columbia	Canada
	(000 tonnes)					
<b>DELIVERIES TO:</b>						
Newfoundland	—	—	—	—	—	—
Prince Edward Island	—	—	—	—	—	—
Nova Scotia	3 033	—	—	—	—	3 033
New Brunswick	1	273	—	—	—	274
Quebec	—	—	—	—	—	—
Ontario	—	—	1 008	830	20	1 857
Manitoba	—	—	244	—	64	308
Saskatchewan	—	—	9 591	—	—	9 591
Alberta	—	—	—	25 212	—	25 212
British Columbia	—	—	—	16	326	342
Total Canada	3 034	273	10 843	26 058	410	40 618
To Pacific ports	—	—	—	9 896	24 579	34 475
To Atlantic ports	77	—	—	—	—	77
Total ports	77	—	—	9 896	24 579	34 531
To U.S.A. by land	—	—	11	197	433	641
Total	3 110	273	10 854	36 150	25 422	75 809

Sources: Natural Resources Canada; Statistics Canada.

— Nil.

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

**TABLE 3. COAL SUPPLY BY RANK, 1980-96**

	Production				Imports			Total Supply
	Bituminous	Sub-Bituminous	Lignite	Total	Anthracite	Bituminous	Total	
	(million tonnes)							
1980	20.2	10.5	6.0	36.7	0.3	15.5	15.8	52.5
1981	21.7	11.6	6.8	40.1	0.4	14.4	14.8	54.9
1982	22.3	13.0	9.5	42.8	0.3	15.5	15.8	58.6
1983	22.5	14.5	7.8	44.8	0.3	14.4	14.7	59.4
1984	32.1	15.4	9.9	57.4	0.3	18.1	18.4	75.8
1985	34.4	16.8	9.7	60.9	0.1	14.5	14.6	75.5
1986	32.3	17.3	8.2	57.8	0.4	12.9	13.3	71.1
1987	32.7	18.5	10.0	61.2	0.1	14.2	14.3	75.6
1988	38.6	19.9	12.1	70.6	0.5	16.9	17.4	88.1
1989	38.8	20.9	10.8	70.5	0.2	14.3	14.5	85.1
1990	37.6	21.3	9.4	68.3	0.3	13.8	14.1	82.4
1991	39.9	22.2	9.0	71.1	0.2	12.2	12.4	83.6
1992	32.6	23.0	10.0	65.6	0.2	12.6	12.8	78.4
1993	35.3	23.7	10.0	69.0	0.3	8.1	8.4	77.4
1994	36.6	25.5	10.7	72.8	0.3	8.9	9.2	82.0
1995	38.6	25.6	10.8	75.0	0.4	9.3	9.7	84.7
1996	40.0	25.0	10.9	75.8	0.5	11.2	11.7	87.5

Sources: Natural Resources Canada; Statistics Canada.

**TABLE 4. COAL SUPPLY BY RANK AND VALUES, 1992-96**

	1992		1993		1994		1995		1996	
	(000 t)	(\$000)	(000 t)	(\$000)	(000 t)	(\$000)	(000 t)	(\$000)	(000 t)	(\$000)
<b>DOMESTIC<sup>1</sup></b>										
<b>Bituminous</b>										
Nova Scotia	4 488	273 000	3 646	232 000	3 509	217 000	2 460	161 178	3 110	183 718
New Brunswick	399	32 000	387	34 000	332	28 000	263	24 410	273	24 032
Alberta	10 507	352 000	10 659	348 000	10 196	319 000	11 615	337 985	11 164	349 836
British Columbia	17 169	689 000	20 627	849 000	22 608	894 000	24 350	967 073	25 422	1 026 577
Subtotal	32 563	1 346 000	35 319	1 463 000	36 645	1 458 000	38 688	1 490 645	39 969	1 584 163
<b>Sub-Bituminous</b>										
Alberta	23 020	187 000	23 662	197 000	25 494	228 000	25 608	232 033	24 986	231 736
<b>Lignite</b>										
Saskatchewan	10 027	100 000	10 046	95 000	10 685	104 000	10 740	116 200	10 854	116 092
Total domestic	65 610	1 633 000	69 027	1 755 000	72 824	1 790 000	75 036	1 838 879	75 809	1 931 990
<b>IMPORTED<sup>2</sup></b>										
Bituminous and anthracite briquettes	12 834	577 000	8 392	416 000	9 176	642 000	9 684	697 000	11 692	825 000
Total supply	78 444	2 210 000	77 419	2 171 000	82 000	2 432 000	84 719	2 535 879	87 501	2 756 990

Sources: Natural Resources Canada; Statistics Canada.

<sup>1</sup> f.o.b. mines. <sup>2</sup> Value at U.S. port of exit.

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



**TABLE 5. EXPORTS OF CANADIAN COAL BY TYPE AND DESTINATION, 1996**

Country	Metallurgical	Thermal	Total
(000 tonnes)			
Japan	15 333	3 124	18 457
South Korea	4 142	1 442	5 584
United Kingdom	1 130	312	1 442
Brazil	1 107	218	1 325
Italy	1 211	34	1 244
United States	1 207	22	1 229
Taiwan	1 049	–	1 049
France	607	102	708
Chile	334	207	541
Turkey	503	–	503
Netherlands	402	–	402
Spain	375	–	375
Mexico	264	–	264
Portugal	233	–	233
Pakistan	219	–	219
Belgium	170	41	212
Germany	71	102	173
Egypt	172	–	172
Romania	154	–	154
Philippines	–	123	123
Sweden	51	–	51
<b>Total</b>	<b>28 733</b>	<b>5 726</b>	<b>34 459</b>

Sources: Natural Resources Canada; Statistics Canada.

– Nil.

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

**TABLE 6. COAL CONSUMED BY THERMAL POWER STATIONS, 1972-96**

	Nova Scotia	New Brunswick	Ontario	Manitoba	Saskatchewan	Alberta	Total Canada
(000 tonnes)							
1972	663	281	7 599	410	2 145	4 113	15 211
1973	585	193	6 615	386	2 806	4 474	15 059
1974	606	292	6 721	132	2 902	4 771	15 424
1975	571	248	6 834	323	3 251	5 345	16 572
1976	730	207	7 612	979	3 521	5 996	19 045
1977	572	198	8 795	1 113	4 304	7 461	22 443
1978	771	151	9 097	341	4 585	8 029	22 974
1979	644	198	9 901	73	4 956	9 181	24 953
1980	1 052	315	10 779	240	4 972	10 424	27 782
1981	1 126	515	11 460	332	4 935	11 445	29 813
1982	1 300	548	12 484	184	5 897	13 242	33 655
1983	1 400	564	13 025	109	6 625	14 492	36 215
1984	2 974	610	13 413	163	7 925	16 123	41 208
1985	2 235	521	10 985	253	8 290	18 112	40 396
1986	2 137	469	9 172	111	6 786	17 719	36 394
1987	2 077	526	12 016	457	7 672	19 077	41 825
1988	2 266	678	13 079	780	8 637	20 538	46 055
1989	2 141	705	12 809	327	8 534	21 410	45 839
1990	2 184	496	10 362	298	7 462	21 340	42 142
1991	2 290	426	10 850	232	7 548	22 480	43 826
1992	2 344	471	10 022	233	8 419	23 752	45 241
1993	2 416	506	7 004	178	8 428	24 194	42 726
1994	2 672	1 208	5 170	164	8 502	28 207	45 923
1995	2 578	1 304	6 707	117	9 597	26 201	46 504
1996	2 864	1 370	6 984	176	9 719	25 794	46 906

Sources: Natural Resources Canada; Statistics Canada.

TABLE 7. COAL DEMAND, 1987-96

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
	(000 tonnes)									
<b>THERMAL ELECTRIC</b>										
Canadian	33 932	37 614	37 447	35 858	36 413	38 612	38 470	42 017	41 289	41 260
Imported	7 892	8 441	8 392	6 284	7 413	6 629	4 256	3 906	5 215	5 646
Total	41 824	46 055	45 839	42 142	43 826	45 241	42 726	45 923	46 504	46 906
<b>METALLURGICAL</b>										
Canadian	290	19	—	—	—	—	—	227	288	101
Imported	6 019	6 242	5 918	4 996	4 906	4 886	4 665	4 552	3 901	4 345
Total	6 309	6 261	5 918	4 996	4 906	4 886	4 665	4 779	4 189	4 446
<b>GENERAL INDUSTRY</b>										
Canadian	591	673	608	465	461	602	664	541	769	770
Imported	1 416	1 477	1 430	1 433	980	954	924	1 105	1 312	1 389
Total	2 007	2 150	2 038	1 898	1 441	1 556	1 588	1 646	2 080	2 160
<b>EXPORTS</b>										
Canadian	26 741	31 725	32 827	31 009	34 112	28 097	28 313	31 746	33 992	34 459
<b>TOTAL</b>										
Canadian	61 554	70 031	70 882	67 332	70 986	67 311	67 447	74 531	76 338	76 591
Imported	15 327	16 160	15 740	12 713	13 299	12 469	9 845	9 563	10 428	11 380
Total demand	76 881	86 191	86 622	80 045	84 285	79 780	77 292	84 094	86 766	87 971

Sources: Natural Resources Canada; Statistics Canada.

— Nil.

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