Energy, Mines and Resources Canada / Énergie, Mines et Ressources Canada

THE NATIONAL ATLAS OF CANADA 5th EDITION

CANADA - COAL

Produced by the Geographical Services Directorate, Surveys and Mapping Branch, Energy, Mines and Resources Canada. Printed 1982.

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Scale 1:7 500 000 or 1 centimetre represents 75 kilometres

75 0 75 150 225 300 375 450 kilometres

Lambert Conformal Conic Projection, Standard Parallels 49°N and 77°N.
Modified Polyconic Projection, North of Latitude 80°.

ESTIMATES OF COAL RESOURCES OF IMMEDIATE INTEREST IN CANADA (1978)

(data in millions of tonnes)

Area	Coal Rank	Measured	Indicated	Inferred
Nova Scotia				
1 Sydney	hvb	175	502	719
2 Other Areas	hvb	48	41	38
New Brunswick				
3 Minto	hvb	18	2	-
4 Other Areas	hvb	14	14	1
Ontario				
5 Onakawana	lig	218	-	-
Saskatchewan				
6 Estevan	lig	310	497	437
7 Willow Bunch	lig	278	733	1 114
8 Wood Mountain	lig	278	733	1 114
9 Cypress	lig	162	407	465
Alberta				
10 Plains	Mainly sub	30 000	-	102 000
11 Foothills	hvb	3 000	-	5 000
12 Mountains	hvb-mvb	8 000	-	19 000
British Columbia				
13 Southeastern	hvb-mvb	6 286	9 436	36 317
14 Northeastern	mvb	996	462	7 719
15 Other Areas	Mainly lig some sub-hvb	1 845	91	7 429
CANADA TOTAL	lig	3 562	2 772	10 875
	sub	30 000	-	102 000
	hvb	1 555	559	8 457
	hvb-mvb	15 282	9 898	63 036

Note: Resources of immediate interest consist of coal seams that because of favourable combinations of thickness, quality, depth and location are held to be of immediate interest for exploration and development. (Coal Reserves refers to a portion of the resources of immediate interest that have been proven by mining to be able to meet current economic criteria for development.) There are also resources of future interest in the numbered areas. The Alberta data shown here as "Measured" and "Indicated" are equivalent to "Proven" and "Probable" of the Alberta Resources Conservation Board; they include some undetermined amounts that Energy, Mines and Resources Canada would report as "Indicated" and/or "Inferred". The sign "-" means data for these categories are undetermined.

Source:
Grieve, Stephen, H.U., Chrismas, L.P., Latour, B.A., and Tibbetts, T.E. 1979. *Coal Resources and Reserves of Canada*. Report ER 79-5. Ottawa: Energy, Mines and Resources Canada. Based on Table B and Appendix B.

RANKS AND RESOURCES OF CANADIAN COAL

Scale 1:20 000 000

PREDOMINANT COAL RANKS:

- Anthracite and Semianthracite
- Low and medium volatile Bituminous (lvb–mvb)
- High volatile Bituminous (hvb)
- Subbituminous (sub)
- Lignite (lig)
- Other*

*Other: More than one rank is prominent, or rank is unclear

SOUTHERN ALBERTA - SOUTHEASTERN BRITISH COLUMBIA

Scale 1:2 000 000 Base map derived from MCR 5 (1975)

ARDLEY COAL ZONE
LOWER BORSEHOE CANYON COAL ZONE
CARBON-THOMPSON COAL ZONE
LETHBRIDGE COAL ZONE
ELK VALLEY COALFIELD
CROWSNEST COALFIELD
FLATHEAD COALFIELD
TABER COAL ZONE

NORTHEASTERN BRITISH COLUMBIA

Scale 1:2 000 000 Base map derived from MCR 5 (1975)

SOUTHERN SASKATCHEWAN

Scale 1:2 000 000 Base map derived from MCR 27 (1979)

CYPRESS COALFIELD
WOOD MOUNTAIN COALFIELD
WILLOW BUNCH COALFIELD
ESTEVAN COALFIELD

TABLE 1 PRINCIPAL CANADIAN COAL MINES (Over 100 000 tonnes of saleable coal produced in 1980)

Mine Operator (Mine Name)
British Columbia:
1 B.C. Coal Ltd. (Harmer)
2 B.C. Coal Ltd. (Michel)
3 Byron Creek Collieries Limited (Coal Mountain)
4 Fording Coal Ltd. (Fording)
Alberta:
5 Cardinal River Coals Ltd. (Luscar)
6 Coleman Collieries Limited (Tent Mountain)
7 Luscar Sterco (1977) Limited (Coal Valley)
8 Obed Mountain Coal Limited (Obed-Marsh)
9 Forestburg Collieries Ltd. (Coal-Mat)
10 Manalta Coal Ltd. (Highvale)
11 Manalta Coal Ltd. (Roselyn)
12 Manalta Coal Ltd. (Vesta)
13 Manalta Coal Ltd. (Whitewood)
Saskatchewan:
14 Manalta Coal Ltd. (Kilmar)
15 Manalta Coal Ltd. (Utility)
16 Manitoba and Saskatchewan Coal Company (Limited) (Boundary)
17 Manitoba and Saskatchewan Coal Company (Limited) (Boundary Dam)
18 Saskatchewan Power Corporation (Poplar River)
19 Saskatchewan Power Corporation (Souris Valley)
New Brunswick:
20 N.B. Coal Limited
Nova Scotia:
21 Cape Breton Development Corporation (Lingan)
22 Cape Breton Development Corporation (No. 26)
23 Cape Breton Development Corporation (Prince)
Source: Canada, Energy, Mines and Resources, Energy Sector, Ottawa.

TABLE 2 SELECTED COAL PROJECTS UNDER DEVELOPMENT OR UNDER INVESTIGATION (December 31, 1981)

Mine Developer (Mine Name)
British Columbia:
1 B.C. Coal Ltd. (Greenhills)
2 BP Canada Inc. (Sukunka)
3 British Columbia Hydro and Power Authority (Hat Creek)
4 Cinnabar Peak Mines Ltd. (Crinnibar)
5 Crows Nest Resources Limited (Line Creek)
6 Cyprus Anvil Mining Corporation (Tulameen)
7 Denison Mines Limited (Quintette)
8 Denison Mines Limited (Saxon)
9 Elco Mining Limited (Elk River)
10 Fording Coal Ltd. (Fording) expansion
11 Norco Resources Ltd. (Bowron River)
12 Petro-Canada (Monkman)
13 Quinsam Coal Limited (Quinsam)
14 Rocky Creek Resources (Rocky Creek)
15 Saga Creek Coal Ltd. (Saga Creek)
16 Teck Corporation (Bullmoose)
17 Utah Mines Ltd. (Carbon Creek)
Alberta:
18 Denison Mines Limited (Coalspur)
19 Fording Coal Ltd., and Edmonton Power (Genesee)
20 Fording Coal Ltd. (Ghostpine)
21 Forestburg Collieries Ltd. (Parkmarsh)
22 Gregg River Resources Ltd. (Gregg River)
23 Gregg River Resources Ltd. (Gregg River) expansion
24 Manalta Coal Ltd. (Highvale) expansion
25 Manalta Coal Ltd. (McLeod River)
26 Manalta Coal Ltd. (Mercoal)
27 Petro-Canada(Kaiga)
28 Union Oil Company of Canada Limited (Obed-Marsh)
Nova Scotia:
29 Cape Breton Development Corporation (Donkin-Morien)
Yukon Territory:
30 Pan Ocean Oil Ltd. (Bonnet Plume)
Source: Canada, Energy, Mines and Resources, Energy Sector. Ottawa.

TABLE 3 PRINCIPAL CANADIAN COAL CONSUMERS, 1980

Name	Consumption ('000 tonnes)
Electrical Generating Stations:	
1 Battle River, Alta.	1 583
2 H.R. Milner, Alta.	555
3 Wabamun, Alta.	2 406
4 Wabamun, Alta.	1 879
5 Boundary Dam, Sask.	1 399
6 Estevan, Sask.	443
7 Poplar River, Sask.	24*
8 Queen Elizabeth, Sask.	107
9 Brandon, Man.	187
10 Lambton, Ont.	4 396
11 Lambton, Ont.	1 398
12 Nanticoke, Ont.	4 822
13 Richard L. Hearn, Ont.	403
14 Thunder Bay, Ont.	197
15 Tunis, Ont.	105
16 Grand Lake, N.B.	209
17 Belledune, N.B.	1 372
18 Trenton, N.S.	1 372
Primary Steel Plants:	
19 The Algoma Steel Corporation, Limited, Ont.	1 954
20 Dofasco Inc., Ont.	1 509
21 Stelco Inc., Ont.	2 974
22 Sydney Steel Corporation, N.S.	675
Other Consumers:	
23 QIT - Fer et Titane Inc., Que.	320
24 Atomic Energy of Canada Limited, N.S.	271

*Anticipated 1981 Coal Consumption: 1 600 000 tonnes.

Coal Consumption in Canada during 1980 totalled 37 323 000 tonnes, comprised by consumers as follows:
Electrical generating stations: 28 704 000 tonnes (74.4%); Metallurgical: 6 236 000 tonnes (19.4%); Other consumers: 2 310 000 tonnes (6.2%).

Source:
Canada, Energy, Mines and Resources, Energy Sector. Ottawa.

TABLE 4 PRINCIPAL CANADIAN COAL TERMINALS

Facility/Location	Current (1981) Throughput Capacity	Potential Throughput Capacity	Maximum Vessel Size
	Millions of tonnes		dwt
A Neptune Bulk Terminals Ltd., Vancouver, B.C.	6.0	9.0	120 000
B Pacific Coast Terminals Co. Ltd., Port Moody, B.C.	1.5	3.0	60 000
C Westshore Terminals Ltd., Roberts Bank, Delta, B.C.	11.5	30.0	170 000 (1982: 250 000)
D Ridley Terminals Inc., Prince Rupert, B.C.*	12.0*	24.0	250 000
E Thunder Bay Terminals Ltd., Thunder Bay, Ont.	10.0	25.0	32 000
F International Coal Port Corporation (Development Corporation, Sydney, N.S.	1.3	3.5	42 000

* Scheduled to start operations in 1983.

Source:
Canada, Energy, Mines and Resources, Energy Sector. Ottawa.

TABLE 5 CANADIAN COAL PRODUCTION

	1980	(tonnes) 1981
Bituminous:		
British Columbia	9 595 000	11 781 000
Alberta	7 391 000	6 895 000
New Brunswick	439 000	524 000
Nova Scotia	2 726 000	2 539 000
Yukon Territory	1 000 000	1 000 000
	20 171 000	22 737 000
Subbituminous:		
Alberta	10 542 000	11 551 000
Lignite:		
Saskatchewan	5 971 000	6 798 000
CANADA TOTAL	36 684 000	40 106 000

Production represents clean coal output, plus raw coal sales from mines where there is a preparation plant; plus raw coal shipments from mines where there is no preparation plant.

Source:
Canada, Energy, Mines and Resources, Energy Sector. Ottawa.

TABLE 6 FORECAST OF COAL DEMAND (millions of tonnes)

	1980	1985	1990	1995	2000
Total Canadian Demand	41	49	75	107	141
Exports from Canada	15	34	41	50	65

Source:
The Coal Association of Canada. 1980. Submission to the National Energy Board, November 24, 1980. Calgary.

CANADA-COAL

AGE OF COAL-BEARING FORMATIONS:

- Tertiary
- Upper Cretaceous-Tertiary
- Upper Cretaceous
- Lower Cretaceous
- Upper Jurassic-Lower Cretaceous
- Triassic, Jurassic, or Cretaceous (undifferentiated)
- Pennsylvanian
- Mississippian
- Coal Zone Outcrops
- Strike and dip (Alberta Coal Zones)

COAL PRODUCTION OR CONSUMPTION, 1980 (TONNES)
(Projected annual figures for mines and generating stations under development)

	1 000 000 or greater	100 000 - 999 999	Less than 100 000
COAL PRODUCERS:			
Surface Coal Mines	■	■	▪
Surface Coal Mines under development, or under investigation	□	□	▫
Underground Coal Mines	●	●	•
Underground Coal Mines under development, or under investigation	○	○	◦
COAL CONSUMERS:			
Electric Generating Stations	▲	▲	▴
Electric Generating Stations under development	△	△	▵
Primary Steel Producers	⅄	⅄	⅄
Other Consumers	⏃	⏃	⏃

ROUTES OF PRINCIPAL COAL FLOWS (existing; projected)

Selected railway lines (existing; under construction)

Canadian Coal Export Terminals

Notes:

1. In Western and Northern Canada, the map in general indicates the entire surface outcrop or subcrop of the principal coal-bearing formations. Formations are shown regardless of their present feasibility for development. Most small areas consist of a single formation. The large area centred on the Rocky Mountain Foothills and Interior Plains has many formations at the surface and in the subsurface. The formations shown in the Interior Plains are the Upper Cretaceous Bearpaw, Judith River, Belly River, Bullhead, Fort St. John Group, Dunvegan, Kaskapau, Wapiti, Puskwaskau, Gates, Gething and Lower Cretaceous Fort St. John Group, Boulder Creek, Commotion, Hulcross, Pardonet, Charlie Lake, Halfway, Doig, Montney, Belloy, Kiskatinaw, Taylor Flat, Gething and Lower Cretaceous Gates, Gething and Lower Cretaceous formations. Recent work (1980) indicates that in Northeastern British Columbia, the older Minnes Group is also coal-bearing. The formations shown in the Interior Plains are the Upper Cretaceous Belly River, Brazeau, Paskapoo, Porcupine Hills, Wapiti River, Milk River, Oldman, St. Mary's River, and Wapiti formations, the Upper Cretaceous-Tertiary Paskapoo formation, and the Tertiary Ravenscrag formation. As there is not universal agreement on the names or ages of these formations, the names used given here is the map author's alone. Coal occurrences in the eastern part of the blocks of Upper Cretaceous formations are Upper Cretaceous-Tertiary Paskapoo formation, Tertiary Ravenscrag formation, or undifferentiated.
   Only those areas of Pennsylvanian strata containing viable minable coal deposits have been shown for Eastern Canada. Coal-bearing formations on both the eastern and western sides of Cape Breton island have substantial undersea extensions; at present, the offshore limits are not fully known. Present technology and economics limit production to areas found within about 11 km of the shore.
2. There are generally distinct coal zones, deposited at various ages, within coal-bearing formations, and found in various geographical areas of the formation. The coal zone lines for Alberta indicate the outcrop or subcrop of the major coal zones found in the Plains area of that province. The strike and dip symbols indicate the general direction in which the zones dip beneath the surface. In Saskatchewan, the coal zone lines for the Ravenscrag formation indicate the perimeter of all the zones making up each of the four named coalfields.
3. Existing mines, mines under development or under investigation, coal consumers and export terminals are identified by a number or letter keyed to Tables 1 to 4. Tables 1 to 3 are for the year 1980. Tables 4 to 6 are for the year 1981. Only selected generating stations and coal fired Rankin mine are shown to reflect normal coal handling areas rather than the levels indicated by 1990 data.

This map was prepared in collaboration with J.A. Aylesworth, Coal Branch, Energy Sector, Energy, Mines and Resources Canada. Extensive use was also made of maps, open files and published reports of the Geological Survey of Canada. Research by P.T. Harker, Geographical Research Division, Surveys and Mapping Branch, Energy, Mines and Resources Canada.

Cartography by the Cartography and Topography Division, Surveys and Mapping Branch, Energy, Mines and Resources Canada.

Principal Sources:
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Additional Information Supplied by:
British Columbia Railway, Canadian National Railways, Canadian Pacific Limited.

Coal Imports from the U.S.A.
1981: 15 000 000 tonnes
1981: 14 000 000 tonnes

Coal Exports from Vancouver
1981: 11 126 000 tonnes
1980: 11 126 000 tonnes

Canada