



Overview of Canada's Coal Sector

Kevin Stone
Natural Resources Canada



APP 5th Coal Mining Task Force Meeting
Las Vegas, the United States of America
September 20, 2008



Presentation Outline



- Canada's coal reserves and resources
- Structure of Canada's coal sector
- Canada's coal production
- Canada's coal consumption
- Canada coal trade
- Government policy
- Canada coal sector's sustainable mining practice

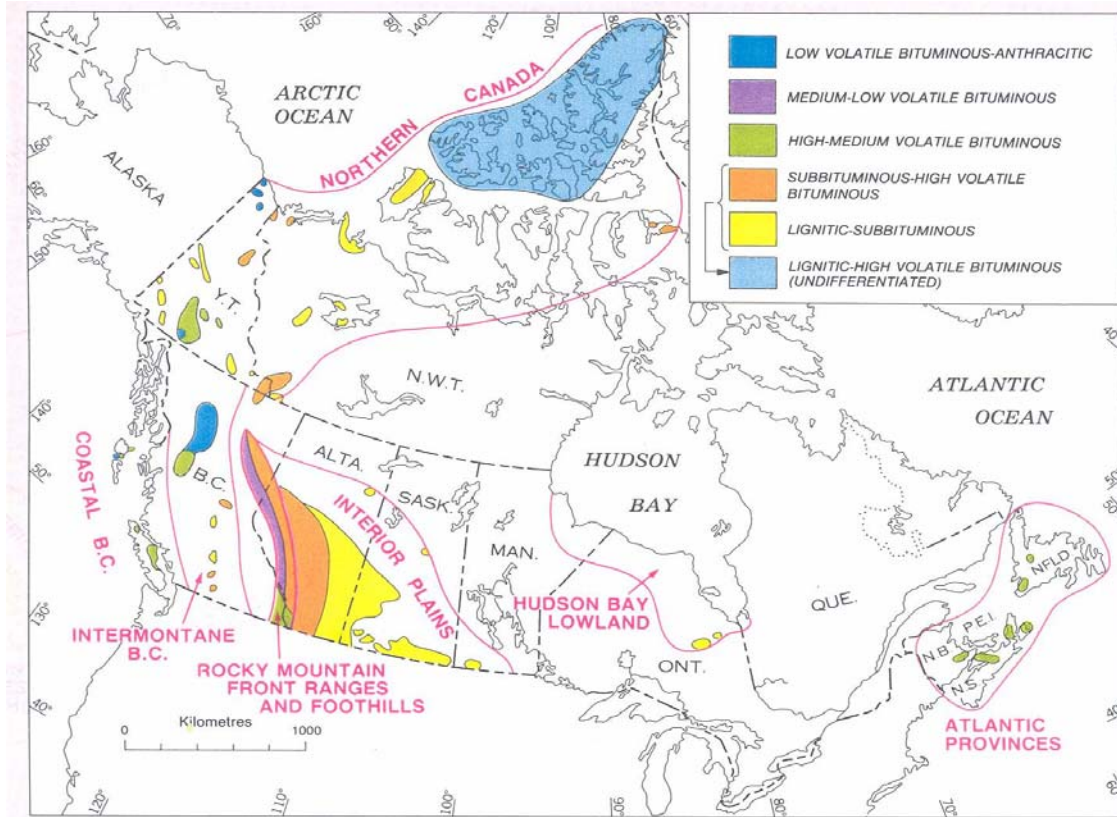


Figure 1.1. Distribution of coal in Canada.

Reserves and Resources (End of 2005)



- Proven Amount in Place 8.7 billion tonnes
 - Proved Recoverable Reserves 6.6 billion tonnes
 - 3.5 billion tonnes of bituminous
 - 3.1 billion tonnes of sub-bituminous and lignite
- Additional Resources in Place 192 billion tonnes
 - 92 billion tonnes of bituminous
 - 100 billion tonnes of sub-bituminous and lignite
- Recoverable Resources 120 billion tonnes

Source: World Energy Council, Survey of Energy Resources

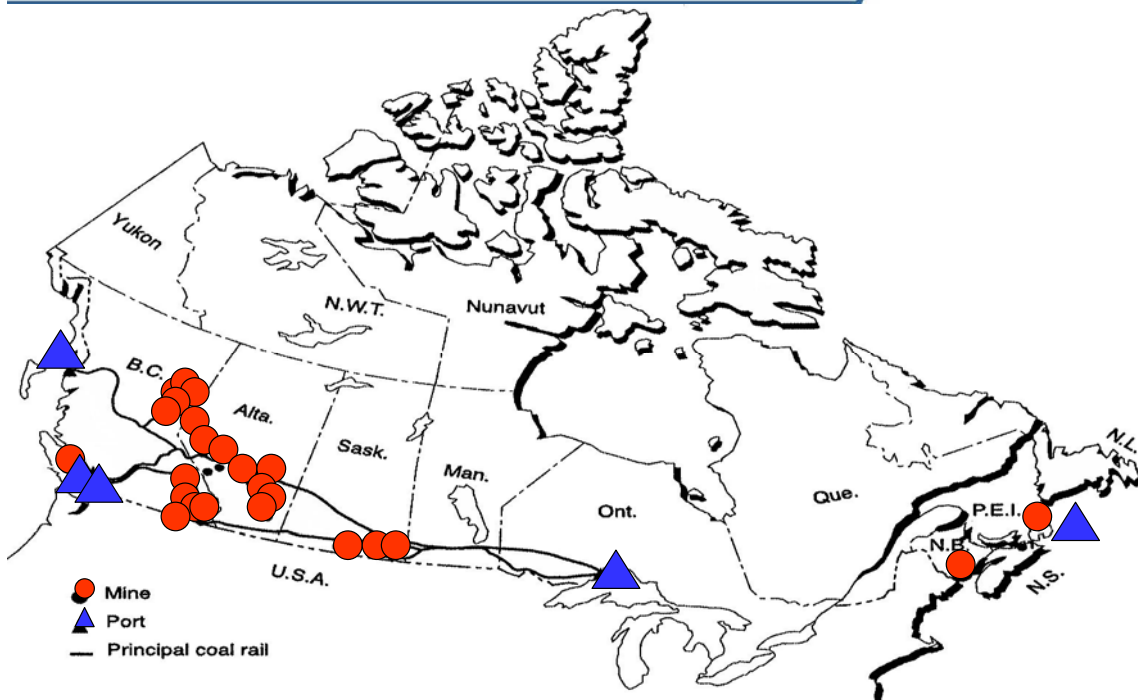
Structure of Coal Sector



- Canada's coal sector includes 22 mines, of which 20 are open pit and 2 are underground mines.
- The 22 mines belong to 8 publicly traded companies.
- The sector includes 21 coal-fired power generation plants and accounts for 90% of Canada's coal consumption.
- The sector is serviced by coal transporting railways, ports, equipment suppliers, and, exploration and engineering firms.
- The Coal Association of Canada is an industry organization.

Canada's Natural Resources – *Now and for the Future*

Mines (22), Ports and Railroads



Coal Production



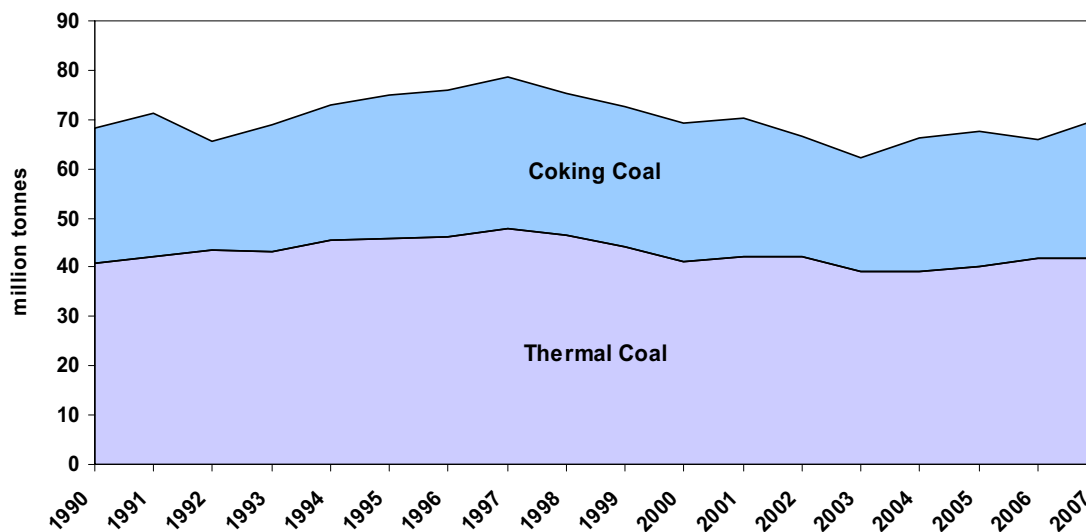
- Canada is a mid-size coal producer, ranked the 14th among global coal producing countries (2007).
- Canada's coal production has remained relatively steady over the past decade.
- In 2007, Canada produced 70 million tonnes of coal valued at C\$2.7 billions.
- About 60% of the coal production was thermal coal and 40% was metallurgical (coking) coal.
- Thermal coal production is mainly for domestic consumption.
- Coking coal, almost all of the output, is for exports.

Canada's Natural Resources – *Now and for the Future*

Canadian Coal Production



Canadian Coal Production



Source: Statistics Canada, NRCan

Canada's Natural Resources – *Now and for the Future*

Coal Consumption



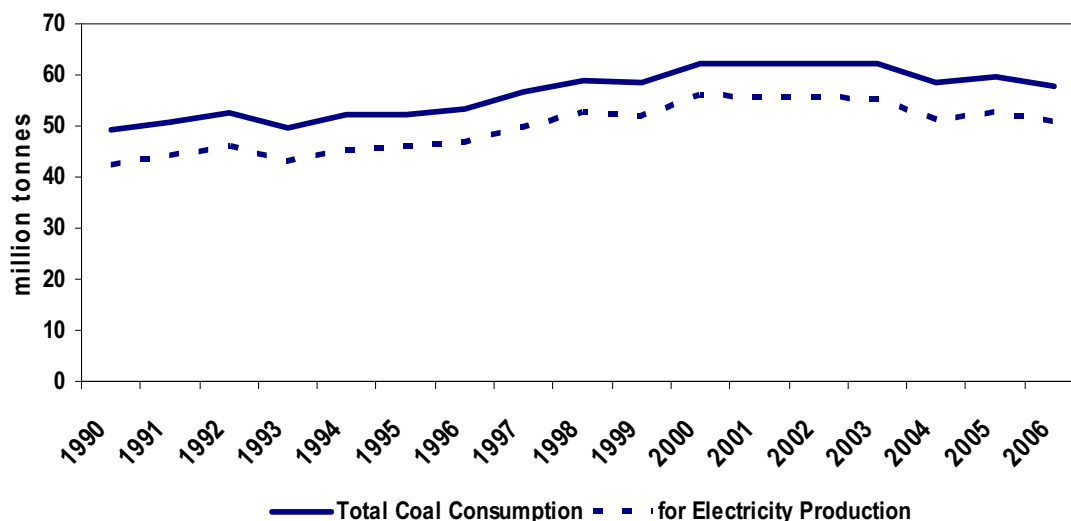
- Coal is primarily consumed for electricity generation.
- Canada consumed 58 million tonnes of coal in 2006.
- The 21 coal-fired generation plants consumed 51 million tonnes to produce electricity.
- A small portion is used in iron and steel making, and other industries. In 2006, Canada's steel industry used about 4 million tonnes. Cement and other Industries used close to 3 million tonnes.
- The readily available and low-cost makes coal the choice of fuel for electricity production in some provinces such as Alberta and Saskatchewan.

Canada's Natural Resources – *Now and for the Future*

Canadian Coal Consumption



Canadian Coal Consumption



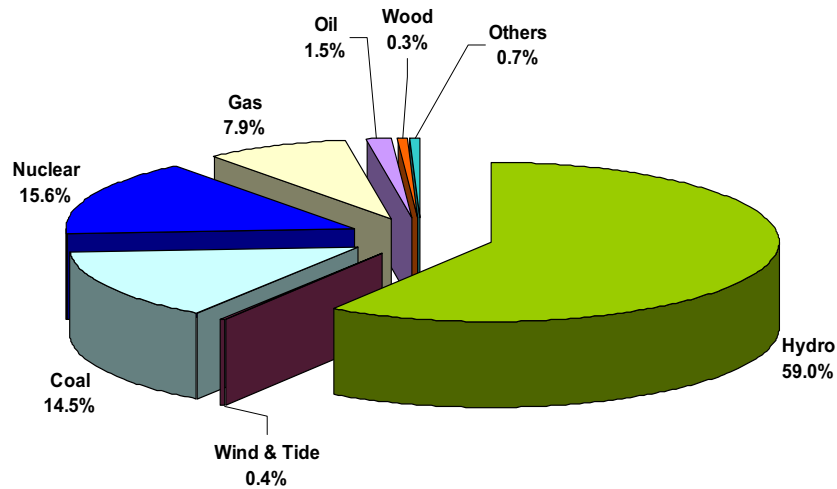
Source: Statistics Canada, NRCan

Canada's Natural Resources – *Now and for the Future*

Canadian Electricity Generation



Canada Electricity Generation by Source, 2006



In 2006, 50.8 Mt of coal consumed for electricity generation

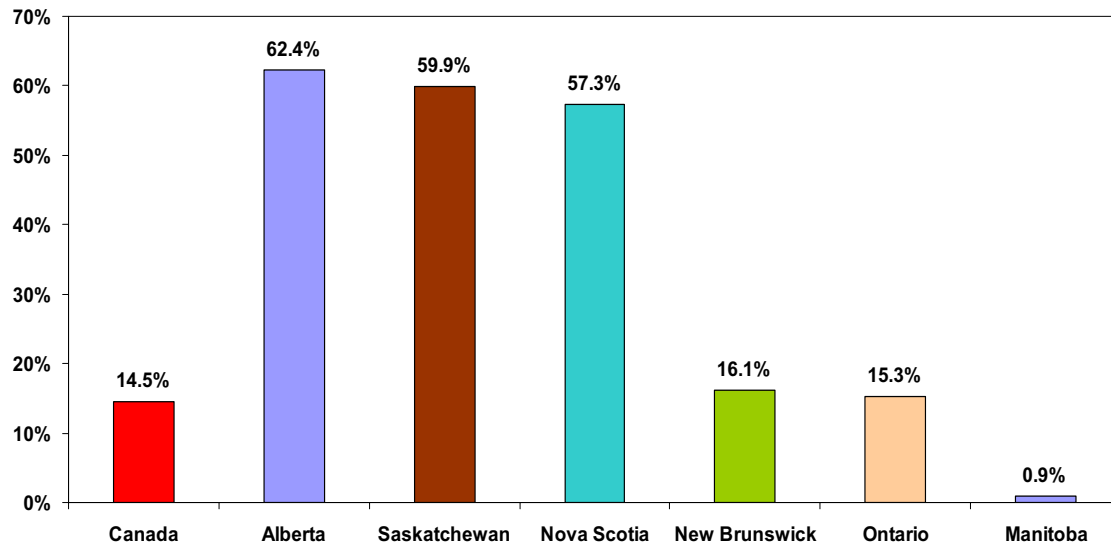
Source: Statistics Canada, NRCan

Canada's Natural Resources – Now and for the Future

Coal-fired Power Generation



Coal Share of Total Electricity Generation by Province, 2006



Source: Statistics Canada, NRCan

Canada's Natural Resources – Now and for the Future

Coal Trade



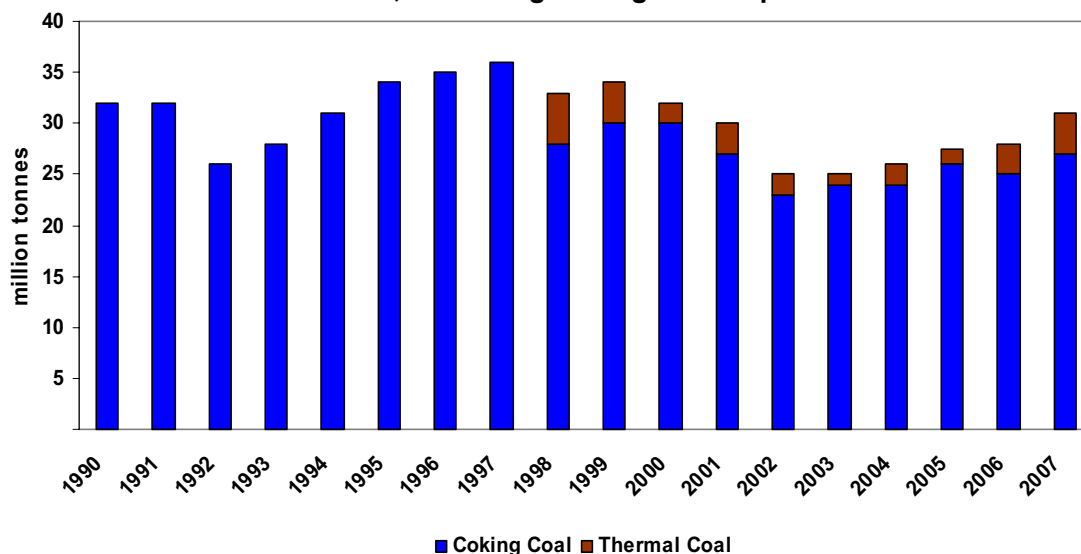
- Canada exports its entire coking coal output and is one of the world leading coking coal suppliers.
- In 2007, Canada exported 31 million tonnes of coal, of which 90% was coking coal valued at \$2.9 billion.
- Canada exports coal to more than 50 countries. Japan is Canada's largest coal trading partner, accounting for 34% of Canada's total exports in 2007. South Korea was the second, accounting for 20% of Canada's total. The US was the third, accounting for 6% of Canada's total.
- Canada also imports coal into central and eastern Canada due to its geographic proximity to the US east and central coal producing regions. About 80% of coal imports go to Ontario and is mostly used for coal-fired generation.
- Canada imported 19 million tonnes of coal in 2007.

Canada's Natural Resources – *Now and for the Future*

Leading Coking Coal Exporter



Canada, A Leading Coking Coal Exporter



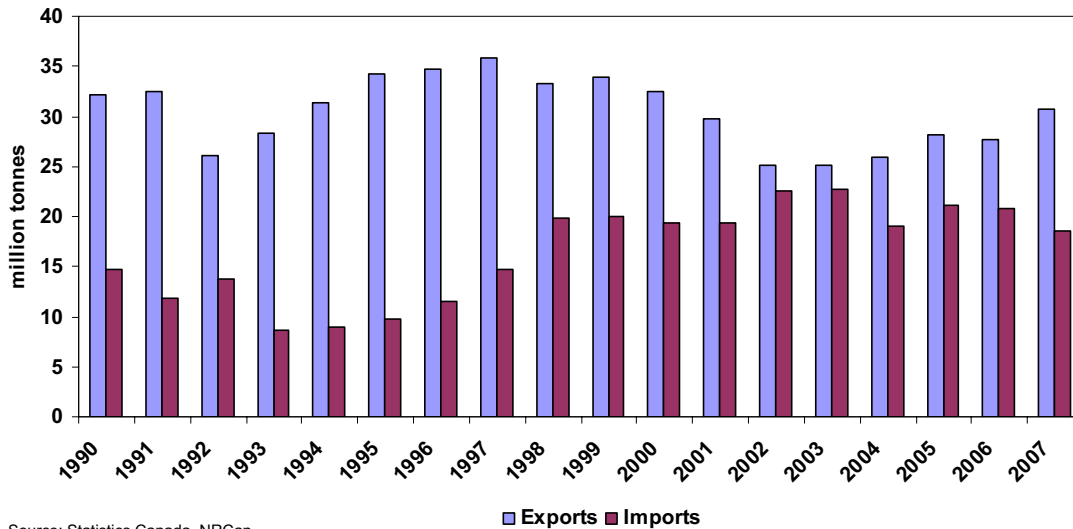
Source: Statistics Canada, NRCan

Canada's Natural Resources – *Now and for the Future*

Canadian Coal Trade



Canadian Coal Trade



Canada's Natural Resources – Now and for the Future

Government Policy



- The Government of Canada's Minerals and Metals Policy promotes partnership for sustainable mining and affirms provincial jurisdiction over mining, delineates a role for the Government in minerals and metals that is tied to federal responsibilities, and commits the Government to pursue partnerships with stakeholders in addressing issues within its jurisdiction such as environment, science and international trade.
- Canada is committed to sustainable mining and works to ensure the protection of the environment through various laws and regulations such as the *Canadian Environmental Assessment Act*, and the *Canadian Environmental Protection Act*.
- In 2007 Canada launched its ecoENERGY Technology Initiative aimed at accelerating the development and market-readiness of technology solutions in clean energy. Two areas of focus include clean coal, and carbon capture and storage, to which the objectives are to advance the science and technologies for coal-fired power generation and minimize the environmental impacts associated with the use of coal.

Canada's Natural Resources – Now and for the Future

Sustainable Mining Practice



- Canada's coal produces ensure that mining activities, such as the removal of vegetation, relocation of overburden, construction of roads, storage of waste rocks, reclamation of previous mined areas, and mining operations, is done in a way that manages the negative effect on the environment.
- Canada's coal sector has been recognized for its progress on sustainable mining practice.
- Multiple awards have been awarded to several coal mines across Canada on mine reclamation and rehabilitation.



Canada's Natural Resources – *Now and for the Future*

Conclusion



- Coal is an abundant and widely distributed resource in Canada. Coal is affordable and readily available. The current proved coal reserves could support 100 years of production.
- IEA forecasts coal to have the highest annual growth rate among fossil fuels between 2006 and 2030. Forecast growth of coal will demand more coal supply from Canada and drive up investment and production.
- With the sustainable mining practice, clean coal technology development and deployment, coal will continue to play an important role in Canada's energy supply.

Canada's Natural Resources – *Now and for the Future*

Further Information



- The Minerals and Metals Policy of the Government of Canada
http://www.nrcan.gc.ca/mms/policy/policy_e.htm
- ecoENERGY Technology Initiative
<http://www2.nrcan.gc.ca/ES/OERD/english/View.asp?x=1603>
- Canadian Minerals Yearbook - Coal
<http://www.nrcan.gc.ca/mms/cmym/content/2006/22.pdf>
- The Coal Association of Canada
<http://www.coal.ca/content/>

Thank You!

Kevin Stone, Natural Resources Canada
kstone@nrcan.gc.ca

Canada's Natural Resources – *Now and for the Future*

Annex 1. Coal Mine Details



Product	Market	Mine Name	Capacity (Mt/y)		Province	Company	Operator
			Mine	Plant			
Coking Coal	Export	Cheviot	2.2	2.5	AB	Fording/Teck	EVCC
Coking Coal	Export	Coal Mountain	2.7	3.5	BC	Fording/Teck	EVCC
Coking Coal	Export	Elkview	5.5	7	BC	Fording/Teck	EVCC
Coking Coal	Export	Fording River	8.9	10	BC	Fording/Teck	EVCC
Coking Coal	Export	Greenhills	5.1	5	BC	Fording/Teck	EVCC
Coking Coal	Export	Line Creek	2.7	3.5	BC	Fording/Teck	EVCC
Coking Coal	Export	Wolverine	2.2	3	BC	WCC	WCC
Coking Coal	Export	Trend	2	2	BC	PRC	PRC
Coking Coal	Export	Grande Cache	2	2	AB	GCC	GCC
PCI Coal	Export	Brule	1.2	1.2	BC	WCC	WCC
Bituminous steam	Export	Coal Valley	3.8	3.8	AB	Sherritt	Sherritt
Bituminous steam	Export	Quinsam	0.5	0.5	BC	Hillsborough	Hillsborough
Sub-bituminous	Domestic	Genesee	5.6		AB	Sherritt	Sherritt
Sub-bituminous	Domestic	Highvale	13		AB	TransAlta	Sherritt
Sub-bituminous	Domestic	Paintearth	3.5		AB	Sherritt	Sherritt
Sub-bituminous	Domestic	Sheerness	4		AB	Sherritt	Sherritt
Sub-bituminous	Domestic	Whitewood	1.4		AB	TransAlta	Sherritt
Lignite	Domestic	Poplar River	4		SK	Sherritt	Sherritt
Lignite	Domestic	Bienfait	2.8		SK	Sherritt	Sherritt
Lignite	Domestic	Boundary Dam	6.5		SK	Sherritt	Sherritt
Bituminous steam	Domestic	Salmon Harbour	0.15		NB	NB Power	NB Coal
Bituminous steam	Domestic	Stellarton			NS	Pioneer	Pioneer

Annex 2. Coal-fired Generation Plants



Province	Name	Company	Capacity (MW)
AB	Battle River	ATCO Power	679
AB	Sheerness	ATCO Power	750
AB	Genesee	EPCOR Utilities	1,315
AB	H.R. Milner	Maxim Energy	150
AB	Keephills	Transalta Utilities	800
AB	Sundance	Transalta Utilities	2,158
AB	Wabamun	Transalta Utilities	300
SK	Boundary Dam	SaskPower	875
SK	Poplar River	SaskPower	610
SK	Shand	SaskPower	305
ON	Atikokan	Ontario Power Generation	215
ON	Lambton	Ontario Power Generation	1,972
ON	Nanticoke	Ontario Power Generation	3,840
ON	Thunder Bay	Ontario Power Generation	310
NB	Belledune	New Brunswick Power	480
NB	Grand Lake	New Brunswick Power	61
NS	Lingan	Nova Scotia Power	620
NS	Point Aconi	Nova Scotia Power	191
NS	Point Tupper	Nova Scotia Power	156
NS	Trenton	Nova Scotia Power	321

Annex 3. Railways and Coal Terminals



- Canadian Pacific Railways
- Canadian National Railways

- Westshore Terminals, Vancouver, BC
- Neptune Terminals, Vancouver, BC
- Ridley Terminals, Prince Rupert, BC
- Thunder Bay Terminals, Thunder Bay, ON
- International Peer, Sydney, NS

Abbreviations



AB – Alberta
BC – British Columbia
SK – Saskatchewan
NB – New Brunswick
NS – Nova Scotia
ON - Ontario

Fording - Fording Canadian Coal Trust
Teck - Teck Cominco Limited
EVCC - Elk Valley Coal Corporation
WCC - Western Canadian Coal Corporation
PRC – Price River Coal (A limited partnership among Anglo Coal Canada Inc., Northern Energy and Mining Inc., and Hillsborough Resources Limited)
GCC - Grande Cache Coal Corporation
Sherritt - Sherritt International Corporation
Hillsborough - Hillsborough Resources Limited
TransAlta - TransAlta Corporation
NB Coal – NB Coal Corporation
Pioneer - Pioneer Coal Limited

Canada's Natural Resources – Now and for the Future