

[Background](#) | [Oil](#) | [Natural Gas](#)
[Coal](#) | [Electricity](#) | [Environment](#) | [Profile](#) | [Links](#)

Canada

Canada is a net exporter of oil, natural gas, coal, uranium, and hydropower. It is one of the most important sources of U.S. energy imports.

Note: Information contained in this report is the best available as of February 2005 and is subject to change.



BACKGROUND

Canada is the United States' most important trading partner, with over \$460 billion worth of goods, services, investments, and financial transfers exchanged between the two countries in 2003. Canada and the U.S. also enjoy an interdependent energy relationship, trading oil, natural gas, coal, and electricity.

Canada has experienced sustained economic growth during the past several years; its real gross domestic product (GDP) grew at a rate of 2.7% in 2004, an increase from 2.0% in 2003. Continuing economic recovery in the United States and higher prices for Canada's natural resource exports (39% of Canada's total exports in 2003) should allow the Canadian economy to

sustain its growth trajectory in 2005. Other macroeconomic indicators, such as inflation (1.8%) and unemployment (7.2%), continue to improve from past levels.

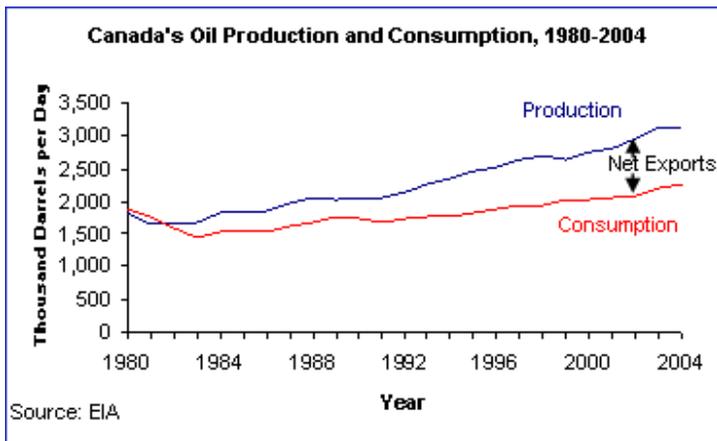
In June 2004, Canada's prime minister, Paul Martin, called for early elections as a means to increase the parliamentary majority of his Liberal Party. However, the elections resulted in a Liberal minority government. The most pressing political issues facing the Canadian government include demands for increased spending on social programs and renegotiation of fiscal relations between the federal and provincial governments.

OIL

Overview

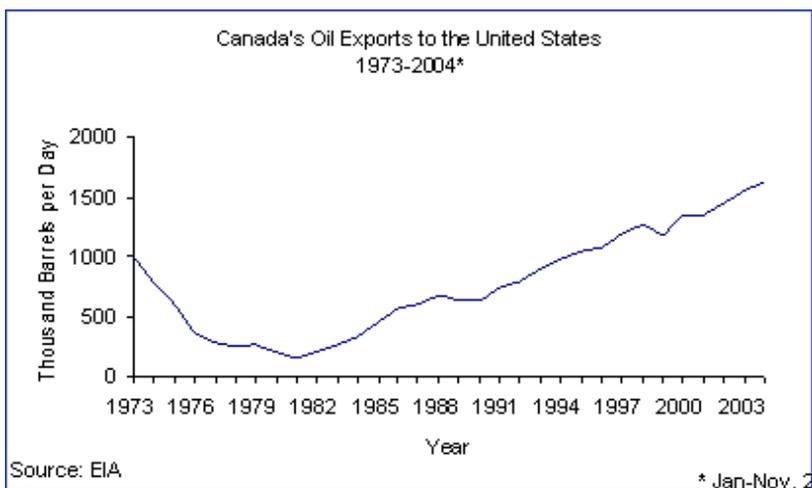
Canada's total oil production (including all liquids) was 3.1 million barrels per day (bbl/d) in 2004, making it the seventh-largest oil producer in the world. Canada was also the seventh-largest world oil consumer in 2004 at 2.3 million bbl/d. The country's oil production has been increasing since 1999, as new oil sands and offshore projects have come on-stream to replace aging fields in the

western provinces. Overall, analysts predict that oil sands production will increase significantly in coming years and offset the decline in Canada's conventional crude oil production.



According to *Oil and Gas Journal*, Canada had a reported 178.8 billion barrels of proven oil reserves in 2005, second only to Saudi Arabia. However, the bulk of these reserves (over 95%) are oil sands deposits in Alberta. The inclusion of oil sands in official reserve estimates is not without controversy, because oil sands are much more difficult to extract and process than conventional oil.

Canada sends over 99% of its crude oil exports to the U.S., and the country is one of the most important sources of U.S. oil imports. During the first eleven months of 2004, Canada exported 1.62 million bbl/d of crude oil to the U.S., the single-largest component of U.S. crude oil imports. Canada also sent some 500,000 bbl/d of petroleum products to the U.S. during this period, the most from a single country. The largest share of U.S.-bound Canadian oil exports (65%) go to the Midwest ([PAD District II](#)), with smaller amounts heading to the Rocky Mountains ([PAD District IV](#)) and the East Coast ([PAD District I](#)).



Sector Organization

Canada has a privatized oil sector that has witnessed considerable consolidation in recent years. The largest integrated operator in the country is Imperial Oil, majority owned by ExxonMobil. In 2002, Alberta Energy Company and PanCanadian Energy merged to create EnCana, Canada's largest independent upstream operator. Other significant oil producers in Canada include Talisman Energy, Suncor, EOG Resources, Husky Energy, and Apache Canada. U.S.

companies maintain a sizable presence in the Canadian oil industry, though they have begun a slow retreat in recent years.

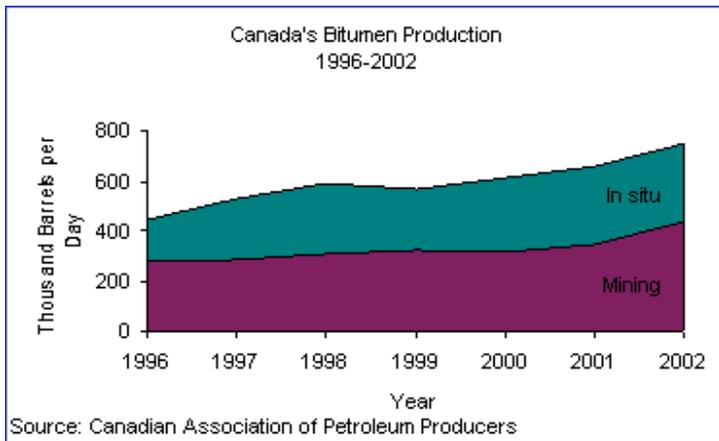
The Canadian government formed Petro-Canada in 1975 in an effort to reduce the dominance of U.S. companies in Canada's oil industry. The company received considerable initial resources from the Canadian government in its early years, though critics accused Petro-Canada of inefficiently deploying those resources and interfering with the operations of private companies. In 1991, the Canadian government began to privatize Petro-Canada, and in late 2004, the government sold its remaining 20% stake in the company.

Exploration and Production

Canadian oil production comes mainly from three different sources: the Western Canada Sedimentary Basin; the oil sands deposits of northern Alberta; and offshore fields.

Western Canada Sedimentary Basin (WCSB)

The WCSB, underlying most of Alberta and parts of British Columbia, Saskatchewan, Manitoba and the Northwest Territories, has been the main source of Canadian oil production for the past 50 years. The age of many of the fields, though, has led to a steady decline in conventional oil production in the WCSB. Analysts predict that oil sands will completely supplant conventional sources as the focus of future oil production in the WCSB.



Oil Sands

Oil sands contain deposits of bitumen, a heavy, viscous oil. There are two methods currently used to extract bitumen from the ground: open pit mining and *in situ* (Latin for “in place”). Open pit mining resembles conventional mining techniques and is effective in extracting oil sands deposits near the surface. However, the bulk of Canada’s estimated oil sands deposits (80%) are too deep below the surface to use open pit mining. The second method, *in situ*

can reach these deeper deposits. *In situ* extraction involves the use of steam to separate bitumen from the surrounding sands and lift it to collection pools near the surface. To date, Canadian oil sands producers have employed each method almost equally, but future production will likely shift to emphasize *in situ* extraction. Once extracted, oil sands producers must add lighter hydrocarbons to the bitumen to allow it to flow through pipelines. Upgraders then process the bitumen into “synthetic crude.” In general, it takes about 1.16 barrels of bitumen to make 1 barrel of synthetic crude.

The Athabasca Oil Sands deposit, in northern Alberta, is one of largest oil sands deposits in the world. There are also sizable oil sands deposits on Melville Island in the Canadian Arctic, and two smaller deposits in northern Alberta.

There are four major oil sands projects in Canada, each centered on the Athabasca deposit. The first, operated by Suncor Energy, produced 216,000 bbl/d of synthetic crude in 2003, with plans to upgrade future production capacity. Suncor sends about one-third of its synthetic crude to its refinery in Sarnia, Ontario; one-third to its refinery in Denver, Colorado; and one-third to other customers. An accidental fire at the Suncor plant in early 2005 halved synthetic crude production there for an estimated six months. The second, the Syncrude Project, is a joint venture composed principally of Canadian Oil Sands Limited (32%), Imperial Oil (25%), and Petro-Canada (12%). Syncrude produced 212,000 bbl/d of synthetic crude in 2003, and a planned expansion of the plant would increase production to 350,000 bbl/d by the end of 2005. The third, the Athabasca Oil Sands Project, is a consortium majority-owned by Shell Canada. Athabasca produced about 64,000 bbl/d of synthetic crude in 2003, though a fire at the plant in January 2003 shut production down for three months; the planned, long-term capacity of Athabasca is 155,000 bbl/d. The fourth, Imperial Oil’s Cold Lake, produced 110,000 bbl/d in 2003.

The Athabasca deposit is also the focus of most planned expansions of the oil sands industry. Companies with oil sands projects scheduled for 2006 start-up include ConocoPhillips, Nexen and OptiCanada. Imperial Oil and ExxonMobil also intended to build an open-pit mine by 2009, with initial production capacity of 100,000 bbl/d of bitumen.

Despite the considerable excitement surrounding the development of Canada's oil sands reserves, there are still several difficulties that could impede the future development of the industry. Analysts predict that the production of synthetic crude from oil sands is only economically viable with synthetic crude prices in the \$30 range. While further advances in oil sands technology could reduce production costs, it is likely that synthetic oil production will continue to be dependent upon high crude oil prices. Second, the oil sands industry is heavily reliant upon water and natural gas, which is necessary in both the extraction of bitumen from oil sands and the upgrading of bitumen to synthetic oil. Even though there have been some efforts to reduce this dependence on natural gas, any increase in natural gas prices or sharp reduction in natural gas supply would have critical repercussions for the oil sands industry.

Offshore

Canada has considerable, proven offshore oil reserves, which have received more attention in recent years due to the decline in production of conventional crude oil from the WCSB. So far, all offshore production has occurred in the Jeanne d'Arc Basin, off the Atlantic coast of Newfoundland. The Hibernia field, discovered in 1979, contains an estimated 615 million barrels of recoverable oil. Production in Hibernia began in 1997, and the field produced some 203,000 bbl/d in 2003. ExxonMobil and Chevron Canada are majority owners of Hibernia.

The Terra Nova field, owned by a consortium led by Petro-Canada and ExxonMobil, began operations in 2002; production at Terra Nova averaged 134,000 bbl/d in 2003. Operators at both Atlantic oil fields must content with harsh natural conditions, including rough seas, seasonal icebergs, and extreme temperatures, and these condition increase the difficulty and costs of oil production in the region.

Besides these established oil fields, there are considerable plans for future developments off Canada's Atlantic coast. Husky Energy plans to begin production in the White Rose field in late 2005, with a potential peak capacity of 90,000 bbl/d. There is also significant exploration activity in the Orphan Basin, located in the deep waters north of the Jeanne d'Arc Basin.

Industry experts believe that the Pacific coast off British Columbia also contains significant oil reserves. However, there has been no production to date on the Pacific coast because of a federal ban on offshore oil activities in the Pacific Ocean. The provincial government of British Columbia has continually lobbied to lift this ban, hoping to begin production by 2010.

Pipelines

Domestic System

An extensive pipeline system transports western Canadian oil to domestic and U.S. markets. There are two major oil pipeline operators in Canada: Enbridge Pipelines and Terasen. Enbridge operates a 9,000-mile network of pipelines and terminals, delivering oil from Edmonton, Alberta, to eastern Canada and the U.S. Great Lakes region. Terasen operates the Trans Mountain Pipe Line (TMPL), which delivers oil mainly from Alberta west to refineries and terminals in the Vancouver, British Columbia area. Both companies have considerably expanded their networks in recent years. In early 2004, Enbridge completed its Terrace Expansion Project, which added over 520,000 bbl/d of capacity to its network, while Terasen recently increased the capacity of the TMPL by 30,000 bbl/d.

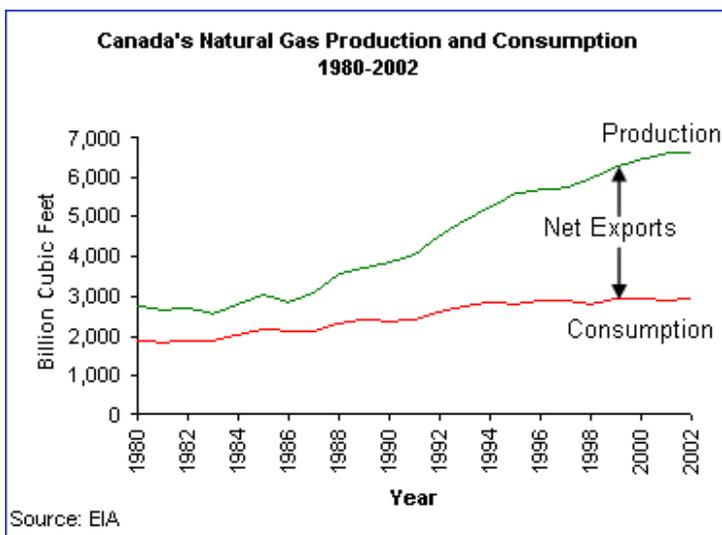
The expansion of Alberta's oil sands industry has necessitated the construction of several new pipelines to transport diluted bitumen and synthetic crude to downstream facilities in the Edmonton area. In 1999, Enbridge completed construction of its 920-mile, 570,000-bbl/d Athabasca pipeline, which links Suncor's oil sands operations to Enbridge's terminal in Hardisty, Alberta. Terasen operates the 280-mile, 220,000-bbl/d Corridor pipeline linking oil sands production near the

Muskog River to an upgrader facility at the Shell oil refinery in Scotford, Alberta. Both companies plan to link other oil sands projects as they come on-stream, such as those proposed by ConocoPhillips, Nexen, and ExxonMobil.

One of the most anticipated foreign markets for Alberta oil sands is China, and there has been considerable talk of building additional pipelines to link the Athabasca deposit with Canada's Pacific coast. Enbridge has sought regulatory approval for the construction of a 720-mile, 400,000-bbl/d pipeline from Edmonton to a port in British Columbia in order to facilitate exports to Asia and California. Terasen has discussed plans to build a similar pipeline and upgrade the capacity of the TMPL.

Export Pipelines

Canada has extensive oil pipeline connections with the United States. Enbridge maintains connections between major Canadian cities and Chicago, seamlessly integrating the Canadian and U.S. components of its network. Enbridge also operates Spearhead, a 650-mile pipeline with a capacity of 300,000-bbl/d that originally carried oil from Cushing, Oklahoma to Chicago. Enbridge received regulatory approval in late 2004 to reverse the flow of the pipeline, allowing it to export oil from Canada deep into the U.S. market. Terasen exports oil to the U.S. through an extension of the TMPL that reaches northern Washington. It also operates Express, a 790-mile, 170,000-bbl/d pipeline that links Hardisty, Alberta and Casper, Wyoming; from Casper, the company's 930-mile, 120,000-bbl/d Platte pipeline runs to Wood River, Illinois.



NATURAL GAS

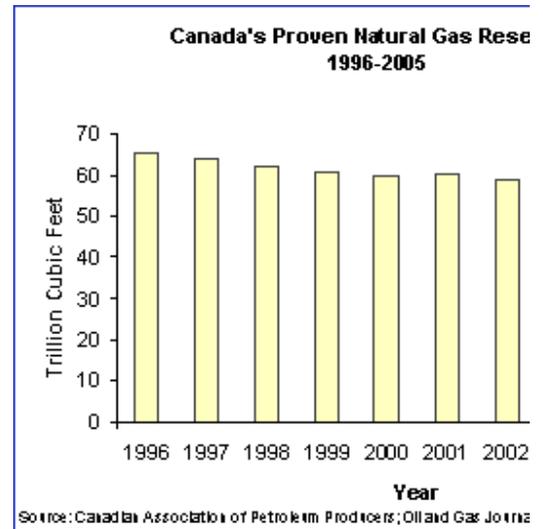
Overview

In 2002, Canada produced 6.6 trillion cubic feet (Tcf) of natural gas, the third-highest level in the world behind Russia and the United States; the country also consumed 3.0 Tcf in 2002. Despite its high level of natural gas production, Canada's proven natural gas reserves, 56.1 Tcf as of January 2005, only rank 19th in the world. These reserves have decreased by 13.3% since 1996, and at current rates, production will completely deplete reserves in 8.6 years.

Canada is an important source of the U.S. natural gas supply. In 2003, Canada exported some 3.5 Tcf of natural gas to the United States, representing almost all of Canada's natural gas exports. Canada's exports represented 16% of U.S. natural gas consumption in 2003. Most Canadian natural gas exports enter the U.S. through pipelines in Idaho, Montana, North Dakota, and Minnesota.

Exploration and Production

Like the oil industry, Canada's natural gas production is concentrated in the WCSB; Alberta contains almost 80% of current natural gas production in Canada. Even though there have been some new conventional natural gas finds in the WCSB, many analysts predict that conventional natural gas production in the WCSB has reached its zenith. Future natural gas production should center on coal bed methane deposits in the WCSB, Arctic frontier natural gas deposits, and natural gas fields off the Atlantic and Pacific coasts.



16.1 billion cubic feet per day (Bcf/d) in 2003, almost all of which occurred in Alberta. High natural gas prices motivated increased drilling activity in the WCSB, even though average returns from each well declined

Production in the WCSB has begun to move away from Alberta towards new discoveries in British Columbia. Production in British Columbia was 3.0 Bcf/d, all of which occurred in the northeastern part of the province. The Great Sierra field, owned by Encana, holds an estimated 5 Tcf of natural gas reserves and averaged 140 million cubic feet per day (Mmcf/d) in 2003.

As mentioned before, the British Columbia government hopes to lift the moratorium on offshore drilling. It is estimated that 43.4 Tcf of natural gas is believed to exist off its coastline.

Atlantic Coast

The Scotian Basin, off the coast of Nova Scotia, is the center of natural gas production on the Atlantic Energy Project (SOEP), majority owned by ExxonMobil and Shell Canada, began production in 1999. Numerous offshore fields, with the Alma and South Venture fields the latest brought on-line. SOEP produced 1.2 Bcf of natural gas in 2003, and production should increase by 125 Mmcf/d in 2005, when the South Venture stream begins.

Offshore oil operators in Newfoundland predict that they could also produce sizable natural gas volumes. The Hibernia and White Rose fields contain a combined 4 Tcf in recoverable natural gas reserves. Though production at either site, both ExxonMobil (Hibernia) and Husky Energy (White Rose) plan to commence in the near future.

Arctic

The Mackenzie Delta, located in the Northwest Territories, holds an estimated 9-10 Tcf of recoverable natural gas. Gas from the region could begin flowing to southern markets by 2010, if natural gas companies can complete the pipeline according to plan (see below). There are three large, proven natural gas fields in the Mackenzie region: the Taglala field (3 Tcf), ConocoPhillips' Parsons Lake field (1.8 Tcf), and the joint Shell Canada-Exxon field (1.2 Tcf). Nearly every Canadian natural gas company has conducted exploration activities in the region.

Liquefied Natural Gas

In order to compensate for reduced domestic production, Canadian natural gas companies have begun receiving liquefied natural gas (LNG) terminals. Natural gas companies either could sell re-gasified LNG or re-export it to the United States. Petro-Canada and TransCanada Pipelines planned to construct a \$1.5 billion LNG terminal at Gros Cacouna, Quebec, along the St. Lawrence River; in 2004, Petro-Canada announced it

to feed the Gros Cacouna terminal from Gazprom's Shtokman field. There are several more LNG receiving terminals in various stages of planning: Irving Oil began construction of a 500-Mmcf/d LNG terminal at Canaport, New Brunswick; and Anadarko received environmental approval for a 1-Bcf/d LNG terminal at Port Hawkesbury, Nova Scotia. In total, there are plans to build over 4-Bcf/d of LNG receiving capacity by 2008 in eastern Canada. While not without controversy, the Canadian LNG terminals have not met with the same level of resistance from local residents and environmentalists that similar facilities in the U.S. have faced.

Unconventional Natural Gas Sources

Coal bed methane (CBM) production is still in its infancy in Canada, with the first wells drilled only in 1997. There is a strong belief that CBM production will eventually replace the decline in conventional natural gas production: in 2004, CBM production was at 100 Mmcf/d, with predictions that it could average over 1,400 Mmcf/d by 2010. Analysts estimated that Canada has 500 Tcf of recoverable CBM deposits, concentrated in British Columbia and Alberta.

Pipelines

Domestic System

TransCanada Pipelines is the largest operator of natural gas pipelines in Canada. Its 600-mile network transports the bulk of Canada's natural gas production. Important parts of the TransCanada network include the 13,900-mile, 10.6-Bcf/d Alberta System, the 120-mile, 0.9-Bcf/d British Columbia System, the 8,900-mile, 7.2-Bcf/d Canadian Mainline, and the 600-mile, 3.0-Bcf/d Foothills System.

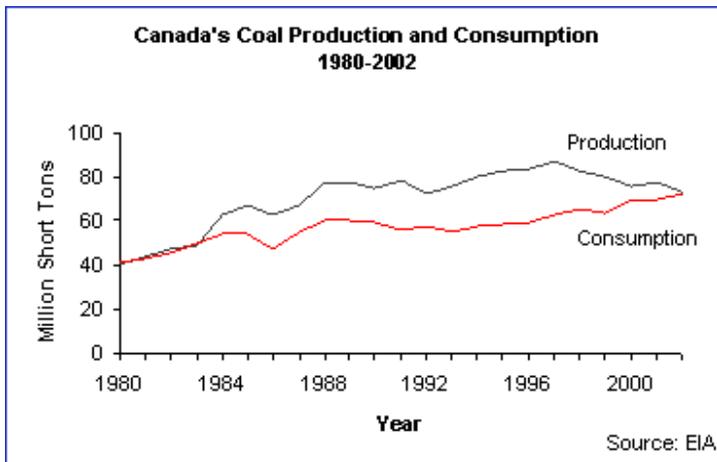
A consortium of gas companies, led by Imperial Oil, plan to build the Mackenzie Valley natural gas pipeline. The 760-mile, 1.2-Bcf/d pipeline would carry natural gas from inside the Arctic Circle to northern Alberta, where it would flow into the existing natural gas transportation system; there would also be a parallel pipeline to carry natural gas liquids (NGL). The consortium plans to begin construction on the C\$7 billion project in 2006, following the completion of a regulatory and environmental review. Completion of the project, however, could deviate from this schedule, or even fail completely, due to legal challenges from indigenous and environmental groups that oppose the project.

Supporters of the Mackenzie pipeline also worry about the completion of a rival natural gas pipeline from Alaska's North Slope to the United States. The U.S. Congress approved US\$18 billion in loan guarantees in late 2004 for the US\$20 billion project. There are some legal questions concerning who will construct and operate the Canadian portion of the pipeline, but the Canadian government has promised that these issues will not impede completion of the project. The 3,400-mile, 4.6-Bcf/d Alaskan pipeline would likely not enter service until 2012.

Export Pipelines

Canada's natural gas pipeline system is highly interconnected with the United States. The 1,300-mile, 1.9-Bcf/d Gas Transmission Northwest pipeline runs from the British Columbia-Idaho border to the Oregon-California border, connecting TransCanada's western Canadian network to the U.S. domestic market. The 2,000-mile, 2.4-Bcf/d Great Lakes Gas Transmission pipeline runs from Emerson, Manitoba to St. Clair, Ontario, servicing Minnesota, Wisconsin, and Michigan. Running from the New York-Canada border to Long Island, the 400-mile, 0.9-Bcf/d Iroquois Gas Transmission System pipeline serves natural gas distribution networks in New York state. The 280-mile, 0.2-Bcf/d Portland Natural Gas Transmission System distributes natural gas from Quebec to greater New England. The 780-mile, 650-Mmcf/d Maritimes and Northeast Pipeline transports natural gas from Canada's Atlantic natural gas fields to Dracut, Massachusetts, where it interfaces with the U.S. domestic network.

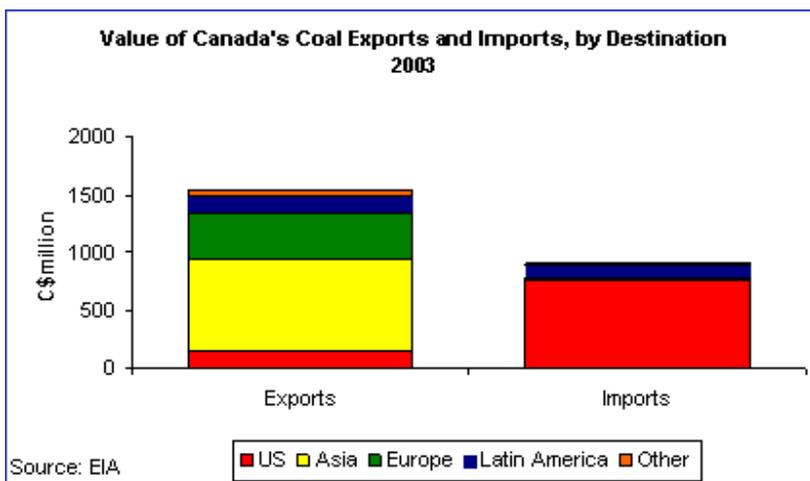
Alliance Pipeline Limited, a partnership of Enbridge and the Fort Chicago Energy Partners income fund, operates the 970-mile, 1.3-Bcf/d Alliance pipeline from Gordondale, Alberta to the Saskatchewan-Montana border; its U.S.-based partner company operates the U.S. portion of the pipeline, which runs 890 miles to Illinois.



COAL

Canada holds an estimated 7.3 billion short tons of recoverable coal reserves. Coal production in the country has declined steadily in recent years. The country produced 73.2 million short tons (Mmst) in 2002, down from a peak of 86.7 Mmst in 1997. Coal production is concentrated in the western part of the country, specifically in Alberta (50% of production), British Columbia (30%), and Saskatchewan (15%). The largest coal producer in Canada is Luscar Limited, which controls over half of the

market. In contrast to Canadian coal production, coal consumption has increased over the past decade, reaching 72.2 Mmst in 2002. The bulk of consumption (90%) fuels electricity generation, with the remainder used in the production of steel.



Canada exports over half its coal production, mostly to Asia (57%), with the rest going chiefly to Europe and Latin America. Canada also imported 22.2 Mmst of coal in 2003, predominantly from the United States (87%). In general, Canada exports coking coal (for steel making) and imports thermal coal (for electricity generation).

ELECTRICITY

Overview

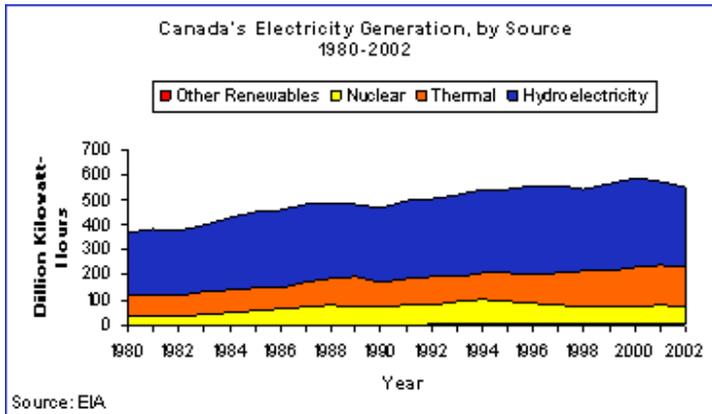
Canada produced 548.9 billion kilowatt hours (Bkwh) of electricity in 2002, while the country consumed 487.3 Bkwh. Some 57% of Canada's electricity generation comes from hydroelectricity, followed by conventional thermal (28%), nuclear (13%), and other renewables (1%).

Canada enjoys a vigorous electricity trade with the United States, and the electricity networks of the two countries are heavily integrated. In 2003, Canada exported 29.3 Bkwh of electricity to the United States while importing 23.6 Bkwh from the United States. In recent years, Canadian exports to the U.S. have decreased while imports have increased, because investment in Canadian generating capacity has not matched increased domestic demand. Due to the increasing interdependence of the networks in both countries, a dependency made clear during the [2003 Northeast blackout](#), there have been greater efforts to increase cooperation and coordination between Canada and the U.S. A bilateral commission is planning the formation of the Electric Reliability Organization, an intergovernmental organization that would monitor network reliability,

settle trans-border disputes, and formulate common industry standards.

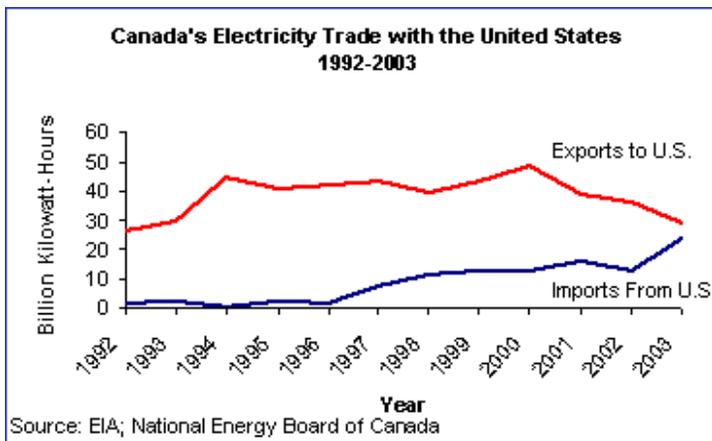
Sector Organization

Canada's provinces hold most responsibility for regulating the electricity industry. Province-owned utility companies dominate generation, transmission, and distribution activities. The three largest such companies are Ontario Power Generation, Hydro-Quebec, and B.C. Hydro. There are some privately owned firms, and most provinces allow open access to the electricity grid, but they are marginal to the overall market.



There have been efforts to restructure the Canadian energy sector, with an eventual aim to privatize the industry. Alberta began deregulation in 2001, followed by Ontario in 2002. However, in both places, electricity prices surged following initial deregulation efforts, causing the provinces to initiate price caps on residential utility rates; both provinces have plans to remove these caps in the near future. Privatization of province-owned utility companies has also stalled, facing pressure from

organized labor and consumer groups.



Hydroelectricity

Canada is the world's largest producer of hydroelectricity, generating over 315.5 Bkwh from the source in 2002. Quebec's La Grange plant is one of the world's largest hydroelectric facilities, with an installed capacity of 15,000 MW. Quebec has the largest share of Canada's hydroelectric production, followed by British Columbia. It is estimated that Canada still has 180,000 MW of hydroelectricity potential remaining, though only 34,000 MW is currently deemed economically feasible.

Conventional Thermal

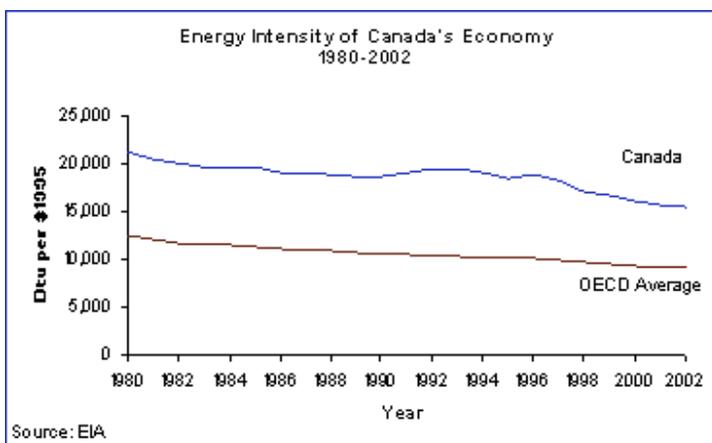
The large majority of Canada's conventional thermal electricity generation comes from coal, representing about three-quarters of such production. There are efforts in many provinces to convert thermal generation capacity to natural gas, in order to reduce pollution and help meet Canada's requirements under the Kyoto Protocol to cut carbon dioxide emissions (see below). In 2004, the government of Ontario announced plans to convert over 7,000 megawatts (MW) of coal-fired generating capacity to natural gas. On the other hand, competing demands for natural gas, especially from oil sands producers, and dwindling domestic reserves could hinder the large-scale transition from coal to natural gas.

Nuclear

Ontario dominates Canada's nuclear industry, containing the vast majority of that country's nuclear energy capacity. Canada's nuclear energy production peaked in 1994 at 102.4 Bkwh and has since decline over the past decade, as new construction has not replaced retiring capacity. Recently, though, there has been renewed interest in nuclear energy, spurred by desires to comply with Canada's Kyoto obligations. The Canadian government floated plans in 2004 to build a new nuclear power plant in Ontario, the first such plant in Canada in twenty years.

Other Renewables

Estimates maintain that Canada has some 28,000 MW of wind power potential, spread throughout the country, with current installed capacity of 370 MW. The largest wind project in Canada is Le Nordais, on the shores of the St. Lawrence River in Quebec, with an installed capacity of 100MW. Quebec is positioning itself as the leader of Canada's nascent wind industry: Hydro-Quebec, the province-owned electric utility, has signed future contracts for an estimated 1,000 MW of wind generation capacity.



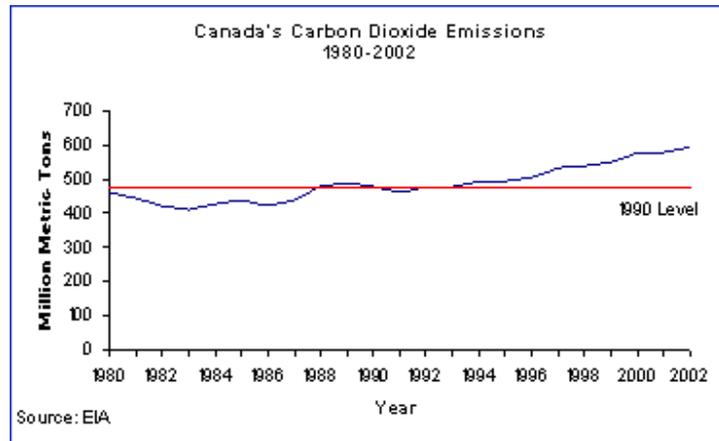
ENVIRONMENT

In 2002, Canada consumed 13.1 quadrillion British thermal units (Btu) of total energy and emitted 592 million metric tons (Mmt) of carbon dioxide from energy production. Per capita energy consumption (418 million Btu) and per capita carbon dioxide emissions (18.9 metric tons) were some of the highest amongst the 25 member of the Organization for Economic Co-operation and Development (OECD). Owing to its focus on energy-intensive industries,

Canada had the third-most energy-intensive and the fourth-most carbon-intensive economy in the OECD.

Canada's energy abundance has encouraged the development of a highly fuel-intensive economy based on natural resource extraction and processing. This heavy reliance on energy-intensive industries has led to serious environmental concerns, primarily regarding air pollution and climate change.

Canada is a signatory to the Kyoto Protocol. As an Annex I country, Canada has pledged to reduce its carbon dioxide emissions to 6% below 1990 levels by 2012. The Canadian government plans to spend over C\$6 billion to meet the Kyoto requirements, chiefly by purchasing over C\$1 billion worth of emissions credits, greater investment in green technologies, and tax credits for industrial reductions in carbon dioxide emissions.



COUNTRY OVERVIEW

Prime Minister: Paul Martin (since 12/12/03)

Independence: July 1, 1867 (from UK)

Population (2004E): 32.5 million

Location/Size: Northern North America/3.85 million sq. miles (slightly larger than the United States)

Administrative divisions: 10 provinces and 3 territories*; Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Northwest Territories*, Nova Scotia, Nunavut*, Ontario, Prince Edward Island, Québec, Saskatchewan, Yukon Territory*

Major Cities: Toronto, Montreal, Vancouver, Ottawa (capital), Edmonton, Calgary, Winnipeg, Québec

Languages: English (official), French (official)

Ethnic Groups: British Isles origin (28%), French origin (23%), other European (15%), Amerindian (2%), other, mostly Asian, African, Arab (6%), mixed background (26%)

Religions: Roman Catholic (46%), Protestant (36%), other (18%)

ECONOMIC OVERVIEW

Minister of Finance: Ralph Goodale

Currency: Canadian Dollar

Exchange Rate (1/18/2005): \$1 U.S. = \$1.22 Canadian dollars

Gross Domestic Product (GDP) (2004E): \$959 billion

Real GDP Growth Rate (2003E): 2.0% **(2004E):** 2.7% **(2005F):** 2.9%

Inflation Rate (2003E): 2.8% **(2004E):** 1.8% **(2005F):** 1.3%

Unemployment Rate (2003E): 6.7% **(2004E):** 6.7%

Merchandise Exports (2004E): \$333 billion

Merchandise Imports (2004E): \$278 billion

Merchandise Trade Surplus (2004E): \$53 billion

Current Account Balance (2004E): \$30 billion

Major Export Products: Motor vehicles and parts, industrial machines, aircraft, telecommunications equipment, chemicals, plastics, fertilizers, wood pulp, timber, crude petroleum, natural gas, electricity, aluminum

Main Destinations of Exports (2003E): United States (87%), Japan (2%), United Kingdom (1%)

Major Import Products: Machinery and equipment, motor vehicles and parts, crude oil, chemicals, electricity, durable consumer goods

Main Origins of Imports (2003E): the United States (61%), China (6%), Japan (4%)

ENERGY OVERVIEW

Minister of Natural Resources: John Efford

Oil Reserves (2005E): 178.8 billion barrels (of which 95% are oil sands)

Oil Production (2004E): 3.1 million bbl/d, of which 2.4 million bbl/d was crude oil

Oil Consumption (2004E): 2.3 million bbl/d

Net Oil Exports (2004E): 0.8 million bbl/d

Oil Exports to the United States (Jan. - Nov. 2004E): 2.1 million bbl/d, of which 1.6 million bbl/d was crude oil

Oil Imports from the United States (Jan. - Nov. 2004): 155,000 bbl/d, of which 24,000 bbl/d was crude oil

Natural Gas Reserves (1/1/05E): 56.6 trillion cubic feet (Tcf)

Natural Gas Production (2002E): 6.6 Tcf

Natural Gas Consumption (2002E): 3.0 Tcf

Net Natural Gas Exports (2002E): 3.6 Tcf

Natural Gas Exports to the United States (Jan. – Oct. 2004): 2.9 Tcf

Natural Gas Imports from the United States (Jan. – Oct. 2004): 0.2 Tcf

Coal Reserves (2002E): 7.3 billion short tons

Coal Production (2002E): 73.2 Mmst

Coal Consumption (2002E): 72.2 Mmst

Electric Generation Installed Capacity (2002E): 111.0 million kilowatts

Electricity Generation (2002E): 548.9 Bkwh (57% hydroelectric, 28% conventional thermal, 13% nuclear)

Electricity Consumption (2002E): 487.3 Bkwh

Electricity Exports to the United States (Jan. – Nov. 2004): 29.8 Bkwh

Electricity Imports from the United States (Jan. – Nov. 2004): 20.8 Bkwh

ENVIRONMENTAL OVERVIEW

Minister of Environment: Stephane Dion

Total Energy Consumption (2002E): 13.1 quadrillion Btu* (3.2% of world total energy consumption)

Energy-Related Carbon Dioxide Emissions (2002E): 592 Mmt of carbon dioxide (2.4% of world carbon dioxide emissions)

Per Capita Energy Consumption (2002E): 418 million Btu (vs. U.S. value of 339 million Btu)

Per Capita Carbon Dioxide Emissions (2002E): 18.9 metric tons of carbon dioxide (vs. U.S. value of 20.0 metric tons of carbon dioxide)

Energy Intensity (2002E): 15,496 Btu/ \$1995 (vs. U.S. value of 10,618 Btu/ \$1995)**

Carbon Dioxide Intensity (2002E): 0.70 metric tons of carbon dioxide per thousand \$1995 (vs. U.S. value of 0.63 metric tons of carbon dioxide per thousand \$1995)**

Fuel Share of Energy Consumption (2002E): Oil (34%), Hydroelectricity (24%), Natural Gas (23%), Coal (13%), Nuclear (6%)

Fuel Share of Carbon Dioxide Emissions (2002E): Oil (46%), Natural Gas (28%), Coal (6%)

Status in Climate Change Negotiations: Annex I country under the United Nations Framework Convention on Climate Change (ratified December 4th, 1992). Under the negotiated Kyoto Protocol (signed on April 29, 1998 and ratified on December 17, 2002), Canada has agreed to reduce greenhouse gases 6% below 1990 levels by the 2008-2012 commitment period.

Major Environmental Issues: Air pollution and resulting acid rain severely affecting lakes and damaging forests; metal smelting, coal-burning utilities, and vehicle emissions impacting on agricultural and forest productivity; ocean waters becoming contaminated due to agricultural, industrial, mining, and forestry activities

Major International Environmental Agreements: A party to Conventions on Air Pollution, Air Pollution-Nitrogen Oxides, Air Pollution-Sulphur 85, Air Pollution-Sulphur 94, Antarctic Treaty, Biodiversity, Climate Change, Desertification, Endangered Species, Environmental Modification,

Hazardous Wastes, Marine Dumping, Nuclear Test Ban, Ozone Layer Protection, Ship Pollution, Tropical Timber 83, Tropical Timber 94, Wetlands and Whaling. Has signed, but not ratified, Air Pollution-Volatile Organic Compounds, Antarctic-Environmental Protocol, Law of the Sea and Marine Life Conservation

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power. The renewable energy consumption statistic is based on International Energy Agency (IEA) data and includes hydropower, solar, wind, tide, geothermal, solid biomass and animal products, biomass gas and liquids, industrial and municipal wastes. Sectoral shares of energy consumption and carbon emissions are also based on IEA data.

**GDP figures from OECD estimates based on purchasing power parity (PPP) exchange rates.

OIL and GAS INDUSTRIES

Organization: private sector (major companies: ExxonMobil's Imperial Oil, Royal Dutch/Shell's Shell Canada, Petro-Canada, Suncor, EnCana, Talisman Energy).

Major Oil and Gas Producing Provinces: Alberta; British Columbia; Saskatchewan; Nova Scotia; Newfoundland

Major Oil Pipelines: Terasen; Enbridge

Major Gas Pipeline Companies: Enbridge, TransCanada PipeLines Ltd.

Oil Refineries (Capacity): Irving Oil- St. John (250,000 bbl/d), Valero-St. Romuald (215,000 bbl/d), Imperial Oil-Edmonton (187,200 bbl/d), Shell Canada-Montreal (129,900 bbl/d), Petro-Canada-Edmonton (125,200 bbl/d)

Sources for this report include: Access Northeast Energy; Alberta Energy and Utilities Board; British Columbia Ministry of Energy and Mines; the Calgary Herald; Cambridge Energy Research Associates; Canadian Association of Petroleum Producers; Canada's National Energy Board; Canadian Business; Canadian Press; CIA World Factbook; ConocoPhillips; Deutsche Bank; Devon Energy; Dow Jones; Economist Intelligence Unit ViewsWire; Edmonton Journal; Electric Utility Week; Enbridge Pipelines; EnCana Energy Corporation; Energy Daily; ExxonMobil; Foster Natural Gas Report; Financial Times; Gas Daily; Gas-To-Liquids News; Global Insight; Husky Energy; Imperial Oil; International Energy Agency; International Herald Tribune; International Oil Daily; Inside F.E.R.C.; Investor's Business Daily; Missoulian; National Post; Natural Gas Week; Natural Resources Canada; Newfoundland Offshore Petroleum Board; Montreal Gazette; New York Times; Nova Scotia Department of Energy; Oil and Gas Journal; Oil and Gas Investor; Oil Daily; Oilweek; Offshore; Ottawa Citizen; Petro-Canada; Petroleum Economist; Petroleum Intelligence Weekly; Pipeline and Gas Journal; Platt's; Shell Canada; Power Engineering; Statistics Canada; Suncor; Syncrude; Terasen; TransCanada Pipelines; Toronto Star; U.S. Energy Information Administration; World Markets Online.

LINKS

For more information from EIA on Canada, please see:

[EIA - Country Information on Canada](#)

Links to other U.S. Government sites:

[CIA World Factbook - Canada](#)

[U.S. Department of Energy's Office of Fossil Energy's International section - Canada](#)

[U.S. Department of Energy on Electricity Trade and Canada](#)

[U.S. Department of State Country Background Notes - Canada](#)

[U.S. Department of State Country Report on Economic Policy and Trade Practices](#)

[U.S. Embassy in Canada](#)

[U.S. International Trade Administration, Country Commercial Guide - Canada](#)

The following links are provided solely as a service to our customers, and therefore should not be construed as advocating or reflecting any position of the Energy Information Administration (EIA) or the United States Government. EIA does not guarantee the content or accuracy of linked sites.

Associations and Institutes

[Canadian Association of Oilwell Drilling Contractors](#)

[Canadian Association of Petroleum Producers](#)

[Canadian Centre for Energy Information](#)

[Canadian Electricity Association](#)

[Canadian Energy Pipeline Association](#)

[Canadian Energy Research Institute](#)

[Canadian Wind Energy Association](#)

[Energy Council of Canada](#)

[Oil Sands Discovery Centre](#)

[The Coal Association of Canada](#)

Electric Generation

[Atomic Energy of Canada Limited \(AECL\)](#)

[British Columbia Hydro](#)

[Hydro-Québec](#)

[Ontario Power Generation](#)

[SaskPower](#)

Government

[Alberta Department of Energy](#)

[Alberta Energy and Utilities Board](#)

[British Columbia Ministry of Energy and Mines](#)

[Manitoba Petroleum Division](#)

[National Energy Board of Canada](#)

[Natural Resources Canada, Energy Sector Nova Scotia Department of Energy](#)

[New Brunswick Ministry of Energy](#)

[Newfoundland and Labrador Ministry of Mines and Energy](#)

[Newfoundland Offshore Petroleum Board](#)

[Northwest Territories Government, Oil and Gas Division](#)

[Nova Scotia Offshore Petroleum Board](#)

[Ontario Ministry of Energy](#)

[Québec Ministry of Energy](#)

[Saskatchewan Industry and Resources](#)

Oil and Natural Gas Companies

[Anadarko Petroleum Corporation](#)

[Apache Canada Limited](#)

[BP Canada](#)

[Burlington Resources Incorporated](#)

[Canadian Natural Resources Limited](#)

[Canadian Superior Energy Incorporated](#)

[ChevronTexaco Canada](#)

[ConocoPhillips Canada](#)

[Deer Creek Energy Limited](#)
[Devon Energy](#)
[EnCana](#)
[EOG Resources](#)
[Husky Energy](#)
[Imperial Oil](#)
[Japan Canada Oil Sands Limited](#)
[Murphy Oil Corporation](#)
[Nexen Incorporated](#)
[Norsk Hydro Canada](#)
[Petro-Canada](#)
[Opti Canada Incorporated](#)
[Shell Canada Limited](#)
[Suncor Energy](#)
[Syncrude](#)

Pipelines

[Aboriginal Pipeline Group](#)
[Alliance Pipeline](#)
[Athabasca pipeline](#)
[Corridor Pipeline](#)
[Enbridge](#)
[Maritimes and Northwest Pipeline](#)
[Millennium Pipeline](#)
[Terasen](#)
[TransCanada Pipelines](#)

You may be automatically notified via e-mail of updates to this or other Country Analysis Briefs. To join any of our mailing lists, go to http://www.eia.doe.gov/listserv_signup.html and follow the directions given.

[Return to Country Analysis Briefs home page](#)

Last Updated: February 1, 2005

Contact: Charles Esser
charles.esser@eia.doe.gov
Phone: (202) 586-6120
Fax: (202) 586-9753

EIA Home
Contact Us

URL: <http://www.eia.doe.gov/emeu/cabs/canada.html>