



Natural Resources Canada
Ressources naturelles Canada



IMPORTANT FACTS ON CANADA'S NATURAL RESOURCES

(as of October 2007)

www.nrcan.gc.ca/statistics



Canada



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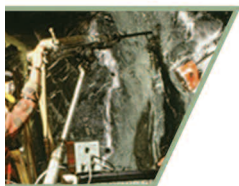


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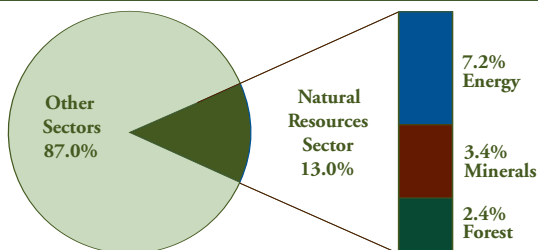


CANADA'S NATURAL RESOURCES – NOW AND FOR THE FUTURE

Canada's natural resource sectors – our forests, energy, and minerals and metals are a vital part of Canada's economy and society. Canada enjoys extraordinary economic and social benefits thanks to its rich endowment of natural resources. The natural resource sectors and related industries have been an engine of economic growth and job creation for generations. As a leading exporter of natural resources and resource-based technology and knowledge, Canada contributes to the well-being of people in many countries. Canada shares information and knowledge globally to promote the sustainable development of natural resources in a competitive investment climate. This brochure provides a statistical snapshot of the importance of Canada's natural resources.

Natural Resources Canada, a department of the Government of Canada, has a mandate to ensure the sustainable development and responsible use of Canada's natural resources. Through innovation and partnership, the department plays a pivotal role in helping shape the enormous contributions of the natural resource sectors and related industries to the high quality of life of Canadians. Through its expertise in Earth sciences, science and technology, the department develops policies and implements programs for the well-being of all Canadians.

Figure 1 Natural Resource Sectors and Canada's Gross Domestic Product (GDP) in 2006



Canada's total GDP is \$1,195.5 billion.

Note: Totals may not add due to rounding.

Facts for 2006 ¹	Forest	Minerals	Energy	Total natural resources	Canada
Gross domestic product (\$ billions)	\$28.8 (2.4%)	\$40.9 (3.4%)	\$85.5 (7.2%)	155.2 (13.0%)	\$1,195.5 (100.0%)
Direct employment ² (thousands of people)	273 (1.9%)	369 (2.6%)	269 1.9%	911 (6.5%)	14 041 (100.0%)
New capital investments (\$ billions)	\$3.1 (1.0%)	\$7.2 (2.4%)	\$68.4 (23.0%)	\$78.7 (26.5%)	\$297.3 (100.0%)
Trade (\$ billions)					
▶ Total exports	\$38.4 (8.7%)	\$74.7 (17.0%)	\$86.0 (19.5%)	\$199.1 (45.2%)	\$440.1 (100.0%)
▶ Domestic exports (excluding re-exports)	\$38.2 (9.3%)	\$71.9 (17.5%)	\$85.0 (20.7%)	\$195.1 (47.4%)	\$411.3 (100.0%)
▶ Imports	\$10.3 (2.6%)	\$62.0 (15.6%)	\$35.4 (8.9%)	\$107.7 (27.2%)	\$396.6 (100.0%)
▶ Balance of trade	+\$28.1	+\$12.7	+\$50.6	+\$91.4	+\$43.5

¹ The data reported for each of the natural resource sectors reflect the value of the primary industries and related downstream manufacturing industries as of October 2007. "Minerals" include uranium and coal mining. Balance of trade is the difference between total exports and imports of goods. Services and capital flows are not included.

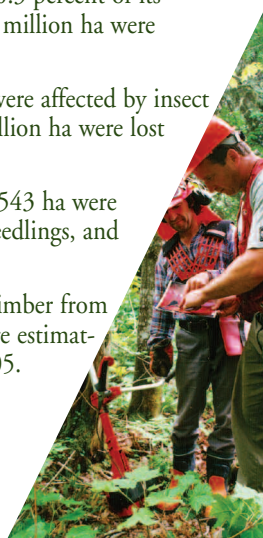
² Statistics Canada, Survey of Employment, Payrolls and Hours (SEPH).

Note: All dollar amounts shown are in current Canadian dollars, except GDP, which is shown in 2002 constant dollars.

FOREST



- ▶ Canada has 10 percent of the world's forests.
- ▶ Canada has 402.1 million hectares (ha) of forest and other wooded lands, which represent 41.1 percent of its total surface area of 979.1 million ha.
- ▶ Canada's forest and other wooded lands are made up of 310.1 million ha (77 percent) of forest and 92 million ha (23 percent) of other wooded land; 294.8 million ha (95.1 percent) of the forest are potentially available for commercial forest activities.
- ▶ In 2005, Canada harvested 191.0 million cubic metres (m³) of roundwood.
- ▶ Annually, Canada harvests 0.3 percent of its commercial forest area (0.9 million ha were harvested in 2005).
- ▶ A total of 16.0 million ha were affected by insect defoliation in 2005; 2.1 million ha were lost due to forest fires in 2006.
- ▶ In 2005, an estimated 407 543 ha were planted with 502 million seedlings, and 21 529 ha were seeded.
- ▶ Revenues from the sale of timber from provincial Crown lands were estimated to be \$1.5 billion in 2005.





NATIONAL ECONOMIC IMPORTANCE

- ▶ The forest sector's contribution to the Canadian economy (GDP) in 2002 constant dollars was 2.4 percent, or 28.8 billion, in 2006.
- ▶ Direct employment was 273 300 people (2.0 percent) in 2006 of total employment in Canada: wood industries, 128 900 people; paper and allied industries, 84 400 people; logging, 35 500 people; and forestry services, 24 500 people. Employment is spread across Canada but is primarily in Quebec (86 400 people), British Columbia (71 300 people) and Ontario (61 300 people).
- ▶ Wages and salaries for direct employment were \$12.5 billion in 2005.
- ▶ In 2006, shipments of pulp and paper reached a level of 29.1 million tonnes, a decrease of 3.8 percent from the previous year.
- ▶ Production of softwood lumber was 80.9 million m³ in 2006.
- ▶ New capital investments totalled \$3.1 billion in 2006: paper and allied industries, \$1.3 billion (42.0 percent); wood industries, \$1.5 billion (48.0 percent); and logging, \$0.3 billion (10 percent).
- ▶ Revenue from goods manufactured was \$78.3 billion in 2005.

INTERNATIONAL IMPORTANCE

- ▶ In 2006, Canada was the world's largest forest-product exporter (15.9 percent).
- ▶ Forest products were a major contributor to Canada's surplus balance of trade in 2006 (\$28.1 billion).
- ▶ The total value of Canadian forest-product exports decreased by 8.9 percent in 2006 to \$38.2 billion. British Columbia accounted for \$13.3 billion (34.8 percent); Quebec, \$11.1 billion (29.1 percent); Ontario, \$6.9 billion (18.1 percent); and other provinces and territories, \$6.9 billion (18.1 percent).

Commodities	World production ¹ ranking 2006	Exports 2006	Destination
Total forest products	–	\$38.2 B (100%)	U.S. \$29.9 B (78%) E.U. \$1.9 B (5%) Japan \$1.9 B (5%)
Softwood lumber	Second (17.6%)	\$8.8 B (23.0%)	U.S. \$7.2 B (82%) E.U. \$0.2 B (3%) Japan \$1.0 B (12%)
Newsprint	First (20.3%)	\$4.9 B (13.0%)	U.S. \$3.5 B (72%) E.U. \$0.3 B (7%) India \$0.2 B (4%)
Wood pulp	Second (14.5%)	\$6.5 B (17.0%)	U.S. \$2.7 B (42%) E.U. \$0.9 B (14%) China \$1.1 B (17%)
Other	–	\$18.0 B (47.0%)	U.S. \$16.5 B (92%) E.U. \$0.5 B (3%) Japan \$0.2 B (1%)

¹ Food and Agriculture Organization of the United Nations data for 2006.

E.U. – European Union

U.S. – United States

FOREST AND OTHER WOODED LAND



	Percentage of forest and other wooded land	Total land area (millions of ha)	Area of forest and other wooded land (millions of ha)
	0 – <5	363.1	1.2
	5 – <20	70.9	8.3
	20 – <40	74.0	22.3
	40 – <60	83.0	41.3
	60 – <80	121.8	86.9
	80 – <100	266.3	241.7
	Total	979.1	402.1

- ▶ Canada has the largest area of certified forest in the world, more than 134 million ha. Approximately 40 percent of the world's certified forest area is in Canada.
- ▶ Approximately 8 percent of Canada's forest area is protected by legislation. By law, all forests harvested (less than 1 percent annually) on Canada's public land must be successfully regenerated.

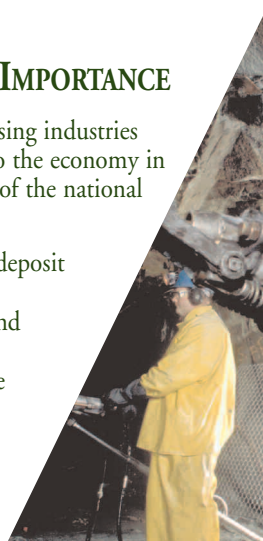
MINERALS



- ▶ Canada is one of the largest mining nations in the world, producing more than 60 minerals and metals.
- ▶ In 2006, more than 180 production establishments (metal, non-metal including peat bogs, and coal mines), more than 3000 stone quarries and sand and gravel pits, and approximately 50 nonferrous smelters and refineries and steel mills were operating in Canada.
- ▶ Canada's mineral production in 2006 is estimated at \$33.6 billion; 70 percent of the total is accounted for by Ontario (28 percent), British Columbia (17 percent), Quebec (14 percent), and Saskatchewan (11 percent).

NATIONAL ECONOMIC IMPORTANCE

- ▶ Mining and mineral-processing industries contributed \$40.9 billion to the economy in 2006, which is 3.4 percent of the national gross domestic product.
- ▶ The 2006 exploration and deposit appraisal expenditures were approximately \$2 billion, and revised company spending intentions for 2007 indicate a further increase to \$2.5 billion, a record high.





- ▶ Capital investment spending intentions in the mining and mineral-processing industries are expected to reach \$8.0 billion in 2007 – an increase of 12.4 percent from 2006. In 2006, these industries were responsible for 9.0 percent of capital investment in the natural resources sector and 2.4 percent of all capital investment in Canada.
- ▶ In 2006, total direct employment in the mining and mineral-processing industries was 369 000 people – 2.7 percent of Canada's total employment. Approximately 49 000 people were employed in mining, 80 000 people in smelting and refining, and 240 000 people in the mineral-processing and manufacturing industries.
- ▶ The mining industry has some of the highest weekly earnings in the economy; earnings averaged almost \$1,110 in 2006. Weekly earnings in the Canadian economy averaged just over \$747.
- ▶ Spending intentions on research and development by the mining and mineral-processing industries for 2006 was \$538 million – a \$7-million increase from 2005 preliminary indications.
- ▶ In 2006, nickel was the top metallic mineral produced in Canada, with shipments valued at \$6.2 billion, followed by copper at \$4.6 billion. The leading non-metallic minerals were potash at \$2.2 billion followed by cement at \$1.7 billion and diamonds at \$1.6 billion. Coal had shipments valued at \$2.2 billion.

- ▶ Canada continues to be the third largest producer of primary aluminum in the world – producing 3.0 million tonnes from imported ores in 2006.
- ▶ Mineral and metals products (including coal) accounted for almost 36 percent of coastwise shipping and almost 52 percent of international shipping in 2005. It also accounted for 53 percent of the country's rail freight traffic in 2006.

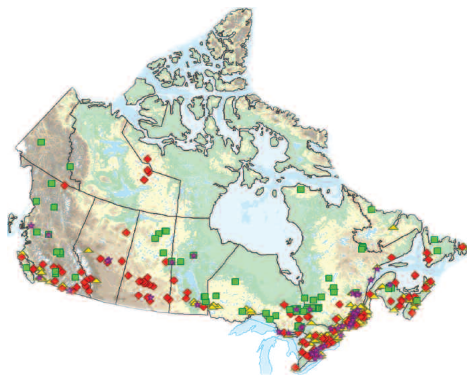
Commodities	World Production Ranking 2006	Domestic Exports 2006	Destination
Total mineral products	–	\$71.9 B	U.S. \$47.1 B (66%) E.U. \$10.7 B (15%) Japan \$3.2 B (4.5%)
Selected metals			
Uranium	First (25.0%)	\$1.8 B	U.K. \$0.7 B (38%) U.S. \$0.5 B (26%)
Nickel	Second (11.4%)	\$5.8 B	U.S. \$1.4 B (25%) Norway \$1.4 B (25%)
Zinc	Fifth (6.0%)	\$2.3 B	U.S. \$1.8 B (78%)
Gold	Seventh (4.4%)	\$5.6 B	U.K. \$3.1 B (55%) U.S. \$2.2 B (40%)
Copper	Eighth (4.0%)	\$6.3 B	U.S. \$3.9 B (62%) Japan \$0.8 B (14%)
Selected non-metals			
Potash	First (34.0%)	\$2.4 B	U.S. \$1.4 B (58%) China \$0.2 B (10%)
Gypsum	Fourth (7.9%)	\$0.3 B	U.S. \$0.3 B (97%)
Salt	Fifth (6.3%)	\$0.5 B	U.S. \$0.5 B (90%)
Diamonds	Sixth (7.5%)	\$1.6 B	Belgium \$1.0 B (64%) U.K. \$0.5 B (34%)

E.U. – European Union

U.S. – United States

U.K. – United Kingdom

SELECTED MINING ACTIVITIES



- ◆ Industrial minerals (including diamonds)
- Metal mines
- ▲ Stone producers
- ★ Metallurgical works (steel mills, non-ferrous smelters and refineries)

INTERNATIONAL IMPORTANCE

- ▶ Canada is one of the world's leading exporters of minerals and mineral products. These products make a significant contribution to Canada's international trade, accounting for 17.5 percent of Canada's domestic exports in 2006.
- ▶ Canada continues to be the world's leader in the production (by volume) of potash and uranium, and it ranks in the top five countries for the production of aluminum, cadmium, cobalt, gypsum, magnesium, molybdenum, nickel, platinum group metals, salt, titanium concentrate and zinc. Canada ranks third in the world in the value of diamond production.



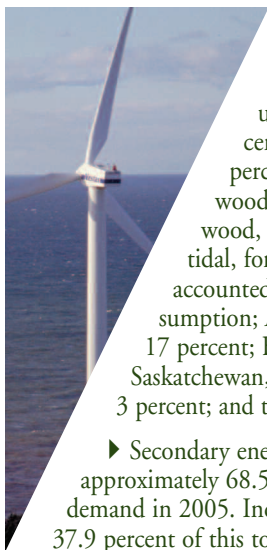
ENERGY

- ▶ Remaining established reserves of natural gas at the beginning of 2006 were 1412.3 billion cubic metres (bcm) – 1402.2 bcm in conventional areas and 10.1 bcm in frontier areas. The total in-place, raw, undiscovered potential of natural gas in the Western Canada Sedimentary Basin is estimated to be 10 029 bcm.
- ▶ Crude oil reserves¹ in 2006 were estimated at 28.3 bcm – consisting of 0.8 bcm from conventional areas (which include 0.333 bcm from frontier areas) and 27.5 bcm from oil sands. The ultimate recoverable potential from the Alberta oil sands is more than 50.0 bcm.
- ▶ Primary energy production by commodity in 2006 was 37.8 percent gas, 37.5 percent petroleum, 7.6 percent coal, 7.2 percent hydro, 6.1 percent nuclear², 3.7 percent waste wood, spent pulping liquor and firewood, and 0.1 percent solar, wind, and tidal – for a total of 17 544 petajoules (PJ). Alberta accounted for 65 percent of total production; British Columbia, 12 percent; Saskatchewan, 9 percent; Quebec, 4 percent; and Ontario, 3 percent.

¹ Data about oil sands reserves are from the Alberta Energy and Utilities Board; reserves include proven plus probable reserves and are calculated as initial established reserves less cumulative production. Probable reserves are contiguous recoverable reserves that are interpreted to exist from geological or geophysical information with reasonable certainty. Data about conventional and frontier reserves are from the Canadian Association of Petroleum Producers (CAPP) and are calculated as proven reserves plus probable remaining established reserves.

Sources: *CAPP Statistical Handbook October 2007*; *Alberta's Energy Reserves 2006*.

² Based on nuclear electricity conversion factor of 11.564 megajoules per kilowatt hour.



► Primary energy consumption by commodity in 2006 was 39.8 percent petroleum, 24.0 percent gas, 11.1 percent coal, 10.2 percent hydro, 9.2 percent nuclear³, 5.6 percent waste wood, spent pulping liquor and firewood, and 0.1 percent solar, wind and tidal, for a total of 11 626 PJ. Ontario accounted for 36 percent of total consumption; Alberta, 22 percent; Quebec, 17 percent; British Columbia, 10 percent; Saskatchewan, 5 percent; Manitoba, 3 percent; and the Atlantic Provinces, 7 percent.

► Secondary energy consumption accounted for approximately 68.5 percent of primary energy demand in 2005. Industry accounted for 37.9 percent of this total; transportation, 29.5 percent; residential, 16.5 percent; commercial and institutional, 13.6 percent; and agriculture, 2.5 percent.

- Marketable production of natural gas in Canada in 2006 was 190.5 bcm.
- Production of crude oil in Canada in 2006 was 238.9 thousand cubic metres (tcm) per day of light crude oil and 183.4 tcm per day of heavy crude oil, which totals 422.3 tcm per day (154 million cubic metres [mcm]) for the year.
- Electricity generation in 2006 by source was 591 net terawatt hours: 59.2 percent hydro; 16.9 percent coal; 15.6 percent nuclear; 7.9 percent oil, gas and other sources; and 0.4 percent solar, wind and tidal. Quebec accounted for 30 percent of total generation (97 percent from hydro), and Ontario accounted for 27 percent (53 percent from nuclear sources).

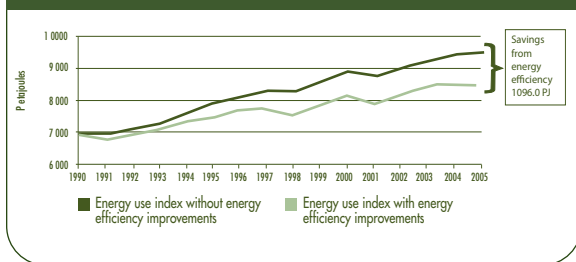
³ *Ibid.*

NATIONAL ECONOMIC IMPORTANCE

- ▶ Energy (all sources) contributed 7.2 percent to the gross domestic product in 2006. Of the \$85.5 billion (2002 constant dollars) total energy GDP, crude oil and natural gas industries accounted for \$41.8 billion (49 percent); electric power, \$25.1 billion (29 percent); and pipelines, \$5.6 billion (7 percent).
- ▶ Approximately 75 percent (\$79.6 billion) of petroleum and natural gas production in 2006 was in Alberta.
- ▶ Direct employment, excluding service stations and wholesale trade in petroleum products, was 269 116 people in 2006 – 1.9 percent of total employment in Canada. Service stations and wholesale trade in petroleum products accounted for 96 583 people (0.6 percent).
- ▶ In 2006, energy accounted for 20.7 percent of total merchandise exports. The energy trade balance ranked first as a contributor to Canada's positive overall trade balance.

- ▶ In 2006, new capital investments in energy-related industries represented 23.0 percent of total Canadian investment and 5.7 percent of GDP.
- ▶ Despite a 51.1 percent increase in GDP between 1990 and 2005, end-use energy consumption grew by only 21.9 percent. As shown in Figure 2, energy efficiency played a major role in limiting this growth.

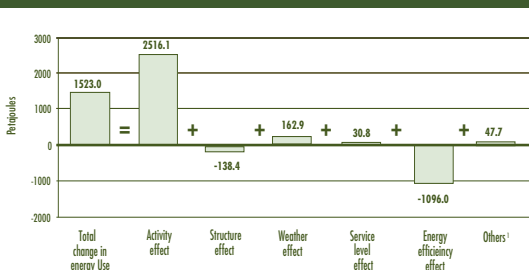
Figure 2 Secondary energy use, with and without energy efficiency improvements, 1990–2005



As Figure 3 shows, end-use energy consumption grew by 1523 PJ between 1990 and 2005. This increase takes into account such factors as

- growth in economic activity
- warmer weather (the 2005 winter was similar to the winter in 1990, but the summer was warmer)
- changes in the structure of the economy that favour less energy-intensive industries
- increased service level for auxiliary equipment in the commercial/institutional buildings and appliances in homes
- increased amount of floor space cooled
- significant gains in energy efficiency

Figure 3 Impact of activity, structure, weather, service level and energy efficiency on the change in energy use, 1990-2005 (petajoules)



¹ "Other" refers to street lighting, non-commercial airline aviation, off-road transportation and agriculture, which are included in "Total Change in Energy Use" but are excluded from the factorization analysis.

- ▶ Overall, energy efficiency improved by 16 percent between 1990 and 2005, which corresponds to a reduction in energy consumption of 1096 PJ in 2005. The gain in energy efficiency translated into savings of \$20.1 billion in 2005 and represent an estimated 64.0 megatonnes of avoided greenhouse gas emissions.

INTERNATIONAL IMPORTANCE

- ▶ The United States (U.S.) is Canada's major trade market for energy products, accounting for 99 percent (\$84.2 billion) of all Canadian energy exports. In 2006, Canada imported \$35.4 billion of energy products, mainly from the U.S. (25 percent), Norway (14 percent) and the United Kingdom (11 percent).

- ▶ Canada exported 102.1 bcm of natural gas, which is 54 percent of its marketable production – all to the U.S. The value of this export was \$27.8 billion. In volume terms, Canada accounted for more than 85 percent of U.S. gas imports and had a 15 percent share of the U.S. market.
- ▶ Exports of crude oil were 282 tcm per day in 2006, valued at \$38.0 billion. More than 99 percent of these exports were to the U.S. Canadian crude oil held a 12 percent share of the U.S. market in 2006 and accounted for 17 percent of U.S. crude imports. Exports of refined petroleum products in 2006 reached \$13.8 billion (\$13.1 billion [95 percent] to the U.S.) for 24.5 mcm.

Commodities	World Production Ranking ² 2006		Exports 2006 (\$ billions)	Destination (\$ billions)
Total energy	—		\$85.0 B (100%)	U.S. \$84.2 B (99%)
Petroleum ¹	Seventh	(3.8%)	\$54.8 B (64%)	U.S. \$53.9 B (98%)
Natural gas	Third	(6.5%)	\$27.8 B (33%)	U.S. \$27.8 B (100%)
Electricity	Seventh	(3.1%)	\$2.5 B (3%)	U.S. \$2.5 B (100%)

U.S. – United States

¹ Trade data include crude oil; liquefied petroleum gases (LPGs) and petroleum products. The production ranking includes crude oil and LPGs.

² The world production ranking is based on British Petroleum statistics, *Statistical Review of World Energy*.

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- ▶ Survey of Employment, Payrolls and Hours (SEPH), 2006

Natural Resources Canada would also like to acknowledge the contribution of information from the following organizations:

- ▶ Energy Resources Conservation Board (formerly part of the Alberta Energy and Utilities Board)
- ▶ Alberta Utilities Commission (formerly part of the Alberta Energy and Utilities Board)
- ▶ Statistics Canada, Transportation Division
- ▶ U.S. Department of Energy, Energy Information Administration (EIA)

NOTES