Natural Resources Canada

\*

Ressources naturelles Canada

## **Important Facts** on Canada's Natural Resources (as of October 2011)





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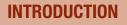


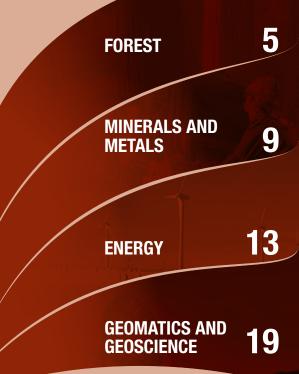
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Photographs from *The Forests of Canada* collection, Natural Resources Canada, Canadian Forest Service, 2003

## INTRODUCTION

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

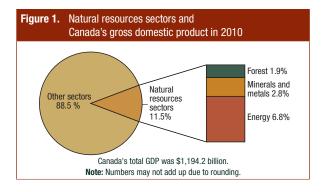
Natural resources – our forests, minerals and metals, and energy – are fundamental to the daily lives of Canadians. How Canada harnesses and uses these resources has a significant impact on our global competitiveness, the health of our environment and our overall quality of life. The natural resources sectors and earth sciences industries have been an engine of economic growth and job creation for generations. In 2010 alone, the sectors generated 11.5 percent, or \$142.5 billion, of Canada's gross domestic product (GDP) and directly employed close to 763 000 people. These numbers are significant in light of the recent global financial crisis that unleashed a worldwide economic recession.

As a leading exporter of natural resources and resource-based technology and knowledge, Canada contributes to the wellbeing of people in many countries and promotes the sustainable development of natural resources in today's investment climate. The new global context for natural resources demands that Canada continue to adapt, act strategically and challenge itself to maintain and enhance its status as a world leader in sustainable development and in the management of natural resources.

Natural Resources Canada (NRCan), a department of the Government of Canada, has a mandate to ensure the sustainable development and responsible use of the country's natural resources. NRCan aims to strengthen conditions for Canada's economic success, sound environmental leadership, and safety and security. This goal requires working innovatively with its partners to provide a prosperous, sustainable and secure natural resources future for Canadians.

This brochure provides a statistical snapshot of the importance of Canada's natural resources industrial sectors in 2010.

Please provide us with your comments on the brochure at nrcan-rncan.gc.ca/stat/contact-eng.php.



#### Table 1. Natural resources facts

Facts for 2010 *	Forest	Minerals and metals	Energy	Total natural resources	Canada		
Gross domestic product (GDP)	\$23.5 B (1.9%)	\$34.7 B (2.8%)	\$84.3 B (6.8%)	\$142.5 B (11.5%)	\$1,234.9 B (100.0%)		
Direct employment** (thousands of people)	191 (1.3%)	308 (2.1%)	264 (1.8%)	763 (5.2%)	14 701 (100.0%)		
New capital investments	\$1.6 B (0.5%)	\$12.6 B (3.7%)	\$80.3 B (23.8%)	\$94.5 B (27.9%)	\$338.1 B (100.0%)		
Trade							
<ul> <li>Total exports</li> </ul>	\$26.1 B (6.5%)	\$84.5 B (21.2%)	\$90.0 B (22.5%)	\$200.6 B (50.2%)	\$399.4 B (100.0%)		
<ul> <li>Domestic exports (excluding re-exports)</li> </ul>	\$26.0 B (6.9%)	\$81.4 B (21.8%)	\$89.7 B (24.0%)	\$197.1 B (52.6%)	\$374.3 B (100.0%)		
► Imports	\$9.5 B (2.3%)	\$66.6 B (16.5%)	\$40.3 B (10.0%)	\$116.4 B (28.8%)	\$403.7 B (100.0%)		
<ul> <li>Balance of trade</li> </ul>	+\$16.6 B	+\$18.0 B	+\$49.7 B	+\$84.3 B	-\$4.3 B		

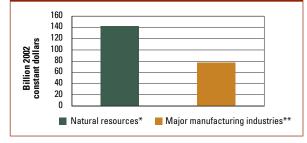
\* The data reported for each of the natural resources sectors reflect the value of primary industries and related downstream manufacturing industries as of October 2010. "Minerals" includes uranium and coal mining. "Balance of trade" is the difference between the total exports and the total imports of goods. Services and capital flows are not included.

\*\* 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.

Table 2.Natural resources facts: percentage change between 2009 and 2010							
	Forest	Minerals and metals	Energy	Total natural resources	Canada		
GDP	8.6%	8.8%	5.1%	6.5%	3.6%		
Direct employment	-2.1%	0.3%	2.7%	0.5%	0.9%		
New capital investments	12.7%	28.6%	29.1%	28.7%	10.3%		
Trade							
<ul> <li>Total exports</li> </ul>	10.1%	27.7%	15.5%	19.4%	11.0%		
<ul> <li>Domestic exports (excluding re-exports)</li> </ul>	10.0%	27.0%	15.7%	19.3%	11.9%		
► Imports	1.7%	21.0%	18.5%	18.1%	10.5%		
<ul> <li>Balance of trade</li> </ul>	15.4%	57.2%	13.2%	21.3%	19.3%		

## Figure 2. Gross domestic product in 2002 constant dollars by major manufacturing industry sectors, 2010

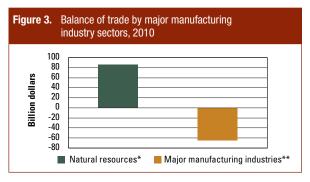


- \* Natural resources includes energy, forest and mining sectors
- \*\* Major manufacturing industries include automotive manufacturing, chemical manufacturing, machinery manufacturing, food manufacturing, information and communications technologies, and aerospace product and parts manufacturing

Source: Statistics Canada, Gross Domestic Product (GDP) at basic prices, by North American Industry Classification System (NAICS 2002, monthly (dollars).

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In 2010, the natural resources sectors contributed to the Canadian economy with a GDP of \$142.5 billion, while the major manufacturing industry sectors' GDP totalled \$77.2 billion. The major contribution was from the food manufacturing sector, with a GDP of \$19.4 billion, and the automotive sector, with a GDP of \$19.0 billion.



\* Natural resources includes energy, forest and mining sectors.

\*\* Major manufacturing industries include automotive manufacturing, chemical manufacturing, machinery manufacturing, food manufacturing, information and communications technologies, and aerospace product and parts manufacturing.

Source: Statistics Canada, merchandise trade data (special extraction), monthly data.

In 2010, the natural resources sectors (energy, forest and mining) contribution to the Canadian trade balance totalled \$86.1 billion. The major manufacturing sectors' had a negative trade balance of -\$64.4 billion.

## FOREST

- Canada has 10 percent of the world's forests.
- Canada has 397.3 million hectares (ha) of forest, other wooded land and other land with tree cover, which represent 53.8 percent of its total surface area of 738.5 million ha.<sup>1</sup>
- Canada's forest, other wooded land and other land with tree cover are made up of 347.7 million ha (87.5 percent) of forest, 41.8 million ha (10.5 percent) of other wooded land and 7.8 million ha (2 percent) of other land with tree cover.
- In Canada, the predominant tree species on forest land are spruce (53.2 percent), poplar (11.6 percent) and pine (9.3 percent).
- In 2009, Canada harvested 118.3 million cubic metres (m<sup>3</sup>) of roundwood.
- Annually, less that 1 percent of Canada's forests are harvested; 0.6 million ha were harvested in 2009. The area of forest harvested is slightly larger than Prince Edward Island.
- A total of 15.2 million ha were affected by insect defoliation in 2009; 3.2 million ha were lost due to forest fires in 2010.
- In 2009, an estimated 386 840 ha were planted with 578 million seedlings, and 15 978 ha were seeded.
- Revenues from the sale of timber from provincial and territorial crown lands were estimated to be \$0.1 billion in 2009.

<sup>&</sup>lt;sup>1</sup> The Arctic ecozones (Arctic Cordillera, Northern Arctic, Southern Arctic) and a portion of the Hudson Plains ecozone in Nunavut are not inventoried. The total land and water areas amount to 242.5 million ha and 18.7 million ha respectively. For more information, see Canada's National Forest Inventory 2006 (http://nfi.nfis.org).

## **National Economic Importance**

- The forest sector's contribution to the Canadian economy (GDP) in 2002 constant dollars was \$23.5 billion, or 1.9 percent, in 2010.
- In 2010, the sector provided direct employment for 190 658 people, representing 1.3 percent of total employment in Canada: wood industries, for 88 276 people; pulp and paper product manufacturing industry, for 62 821 people; forestry and logging industry, for 28 485 people; and support activities for forestry industry, for 11 076 people. Employment is spread across Canada but is primarily in Quebec (64 213 people), British Columbia (45 624 people) and Ontario (40 219 people).
- Wages and salaries for direct employment were \$8.8 billion in 2009.
- In 2010, shipments of pulp, paper and paperboard reached a level of 22.0 million tonnes (t), an increase of 4.4 percent from the previous year.
- Production of softwood lumber was 52.4 million m<sup>3</sup> in 2010.
- New capital investments totalled \$1.6 billion in 2010: pulp and paper product manufacturing industry, \$0.9 billion (60 percent); wood product manufacturing industry, \$0.5 billion (29.1 percent); and forestry and logging industry, \$0.2 billion (10.9 percent).
- Revenue from goods manufactured was \$50.8 billion in 2009.



## **International Importance**

- In 2010, Canada was the world's second-largest forest product exporter (10.2 percent).
- Forest products were a major contributor to Canada's surplus balance of trade in 2010 (\$16.6 billion).
- The total value of Canadian forest-product domestic exports increased by 10.1 percent in 2010, to \$26 billion. British Columbia accounted for \$9.0 billion (34.8 percent); Quebec, \$7.5 billion (28.8 percent); Ontario, \$4.1 billion (15.8 percent); and other provinces and territories, \$5.4 billion (20.6 percent).
- In 2010, Canada ranked first as the world producer of newsprint, contributing 4.6 million tonnes to, or 13.6 percent of, the world's production.

Table 3.   Forest facts						
Commodities	World production ranking 2010*	Domestic exports 2010	Destina	tion		
Total forest pro ducts	—	\$26 B (100%)	U.S.	\$16.8 B	64.7%	
pro uncis			China	\$3.0 B	11.5%	
			E.U.	\$1.4 B	5.3%	
Softwood	Second (13.6%)	\$4.8 B (18.5%)	U.S.	\$2.9 B	60.7%	
lumber	(13.070)	(18.3%)	Japan	\$0.7 B	14.8%	
			China	\$0.68 B	14.0%	
Newsprint	First (13.8%)	\$2.8 B (10.8%)	U.S.	\$1.4 B	52.1%	
	(10.0707		E.U.	\$0.3 B	10.5%	
			Brazil	\$0.2 B	7.9%	
Wood pulp	Second	\$7.0 B	U.S.	\$2.9 B	40.9%	
	(11.0%)	(26.9%)	China	\$2.0 B	28.6%	
			E.U.	\$0.5 B	7.1%	
Other	—	\$11.4 B (43.8%)	U.S.	\$9.5 B	84.3%	
		(40.070)	E.U.	\$0.5 B	4.5%	
			China	\$0.3 B	2.7%	

E.U. - European Union (27 countries)

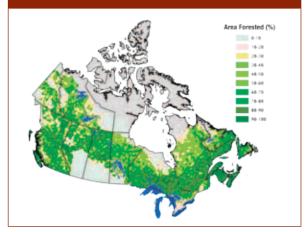
U.S. - United States

\* United Nations Food and Agriculture Organization data for 2010.

Forest

## **Forest Land**





- Canada has the largest area of certified forest in the world more than 149.8 million ha. Approximately 42 percent of the world's certified forest area is in Canada. The area of certified forests in Canada is approximately the size of Quebec.
- 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.





- Canada is one of the leading mining nations in the world, producing more than 60 minerals and metals.
- In 2010, more than 220 principal producing mines (metal, non-metals and coal mines), more than 3000 stone quarries and sand and gravel pits, and about 50 non-ferrous smelters and refineries and steel mills were operating in Canada.
- Canada's estimated mineral production in 2010 was \$41.3 billion; more than 80 percent of the total was accounted for by Ontario (18.6 percent), Saskatchewan (17.2 percent), British Columbia (17.1 percent), Quebec (16.4 percent), and Newfoundland and Labrador(11.1percent).

## National Economic Importance

- In 2010, mining and mineral-processing industries generated 2.8 percent of the national GDP and contributed \$34.7 billion to the Canadian economy.
- The 2010 exploration and deposit appraisal expenditures were \$3.4 billion, and revised spending intentions for 2011 indicate an increase to \$4.6 billion.
- Capital investment spending in the mining and mineralprocessing industries was \$12.6 billion in 2010. These industries were responsible for 3.7 percent of all capital investment in Canada. Spending intentions for 2011 are expected to reach \$16.1 billion.
- In 2010, total direct employment in the mining and mineralprocessing industries – 308 000 people – accounted for 2.1 percent of Canada's total employment. Approximately 53 000 people were employed in mining, 61 000 people

were employed in smelting and refining, and 194 000 people were employed in the mineral-processing and manufacturing industries.

- Wages and salaries remained very competitive in mining and mineral-processing industries, with 2010 average weekly earnings at \$1,079. Weekly earnings in the Canadian economy averaged \$853.
- In 2010, iron ore was the top metallic mineral produced in Canada, with shipments valued at \$5.0 billion, followed by gold at \$3.9 billion and copper at \$3.8 billion. The leading non-metallic minerals were potash, which had a value of \$5.7 billion; diamonds, at \$2.3 billion; and cement, at \$1.5 billion. Coal had the second-largest value of production, with shipments valued at \$5.5 billion.
- Canada continues to be the third-largest producer of primary aluminum in the world, producing about 3.0 million t from imported ores in 2010.
- Mineral and metals products (including coal) accounted for almost 35 percent of coastwise shipping and more than 52 percent of international shipping in 2008. They also accounted for 56 percent of the country's rail freight traffic in 2010.

Table 4.         Minerals and metal facts						
Commodities	World production ranking 2010* by volume		Domestic exports 2010	Destination		
Total mineral	-		\$81.4 B	U.S.	\$42.9 B	(53%)
products				E.U.	\$18.2 B	(22%)
				China	\$4.6 B	(6%)
Selected metal	s					
Uranium	Second	(18.2%)	\$1.8 B	U.K.	\$0.7 B	(40%)
				U.S.	\$0.6 B	(33%)
Nickel	Fourth	(10.0%)	\$5.0 B	Norway	\$1.8 B	(36%)
				U.K.	\$0.9 B	(17%)
Zinc	Sixth	(5.6%)	\$1.7 B	U.S.	\$1.3 B	(77%)
Gold	Ninth	(3.6%)	\$15.1 B	U.K.	\$8.4 B	(56%)
				U.S.	\$5.5 B	(36%)
Copper	Ninth	(3.0%)	\$5.2 B	U.S.	\$2.8 B	(54%)
				China	\$0.9 B	(17%)
Selected non-metals						
Potash	First	(28.8%)	\$5.2 B	U.S.	\$3.1 B	(60%)
				India	\$0.5 B	(9%)
Diamonds	Fifth	(8.9%)	\$2.6 B	U.K.	\$1.7 B	(65%)
				Belgium	\$0.7 B	(28%)
Salt	Fifth	(5.2%)	\$0.6 B	U.S.	\$0.4 B	(85%)
Gypsum	Ninth	(2.4%)	\$0.1 B	U.S.	\$0.1 B	(91%)

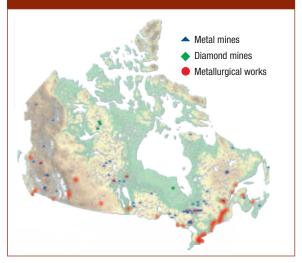
E.U. - European Union (27 countries)

U.K. – United Kingdom

U.S. – United States

\* United States Geological Survey preliminary data for 2010.

#### Figure 5. Selected mining activities



For a complete map of the principal producing mines in Canada, visit http://mmsd.mms.nrcan.gc.ca/stat-stat/map-car/index-eng.aspx.

### 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 21.8 percent of Canada's domestic exports in 2010.
- Canada continues to be the world's leader in the production (by volume) of potash, and it ranks in the top five countries for the production of primary aluminum, cadmium, molybdenum, nickel, platinum group metals, salt, titanium concentrates, elemental sulphur and uranium. Canada ranks third in the world in the value of diamond production.

## ENERGY

- Canada has a vast and diversified portfolio of energy resources. Taking advantage of this endowment, Canada produces large quantities of energy for both domestic consumption and export. It is also an energy-intensive country, given its northern climate, vast territory, industrial base and high standard of living.
- Canada's production of "primary" energy i.e. energy found in nature before conversion or transformation – totalled 16 494.5 petajoules (PJ) in 2010. Fossil fuels accounted for the greatest share of this production, with crude oil representing 41.4 percent; natural gas, 36.5 percent; and coal, 9.2 percent. Renewable energy sources were also important, with hydroelectricity representing 7.5 percent; biomass, 3.5 percent; and emerging forms (e.g. wind, tidal and solar), 0.1 percent. Nuclear energy (generated from the primary source of uranium) accounted for 1.9 percent.<sup>2</sup>
- On a regional basis, Alberta accounted for 62.8 percent of Canada's primary energy production. Other leading energy provinces were British Columbia (14.1 percent), Saskatchewan (8.7 percent), Quebec (4.1 percent) and Ontario (2.7 percent). Alberta is the leading producer of fossil fuels, Quebec is the largest producer of hydroelectricity, and Ontario is the largest producer of nuclear energy.
- Crude oil proved reserves (recoverable under current technological and economic conditions) at the end of 2010 were estimated at 27.6 billion cubic metres (bcm) – providing Canada with the third most important resource base, after Saudi Arabia and Venezuela. Oil sands represented the majority of these reserves with 26.9 bcm, while conventional

<sup>&</sup>lt;sup>2</sup> Based on nuclear electricity conversion factor of 3.6 megajoules per kilowatt hour (MJ/kWh).

sources amounted to 0.7 bcm. The ultimate resource potential (recoverable as technology improves) from the Alberta oil sands is estimated to be more than 50.0 bcm.

- Production of crude oil in Canada totalled 167.4 million m<sup>3</sup> in 2010. Oil sands accounted for 51.9 percent of production, exceeding conventional sources for the first time.
- About two thirds of crude oil production is exported, while the balance is processed by Canadian refineries into refined petroleum products, such as gasoline, diesel and heating oil. Canadian refineries – especially those far from major domestic production areas – also process imported crude oil purchased on the international market.
- Natural gas proved reserves at the end of 2010 totalled 1 727.5 bcm. Of this amount, about 95 percent is from conventional sources, and the remainder is from unconventional sources (such as coal bed methane and shale gas). The total potential from conventional resources is estimated to be 10.1 trillion cubic metres (tcm), while recent estimates suggest that the potential from unconventional resources is in the range of 10.7 to 26.8 tcm.
- Marketable production of natural gas in Canada amounted to 144.4 bcm in 2010. Close to two thirds of this production was exported to the United States (U.S.), and the balance was sold to Canadian consumers.
- Electricity generation in Canada amounted to 588.9 terawatt hours in 2010. Canada's abundant water resources provided a significant contribution in this regard, as hydroelectricity represented 59.1 percent of total generation. Meanwhile, other emerging forms of renewable electricity (i.e. biomass, wind, solar and tidal) contributed to 3.0 percent of generation. Other sources of electricity supply included coal (12.6 percent), nuclear (14.5 percent), natural gas (8.6 percent) and petroleum products and waste (2.2 percent).
- Quebec accounted for 31.5 percent of electricity generated in Canada in 2010 (96.0 percent from hydro), and Ontario accounted for 25.6 percent (54.4 percent from nuclear sources).

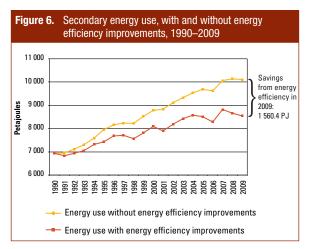
- Canadians use energy for several purposes: to heat and cool their homes and offices, to power appliances and equipment, to transport people and goods and for industrial processes.
- Secondary energy consumption in Canada is the energy used by final consumers in various sectors of the economy; and hence excludes exports, energy consumed by energy producers, and non-energy uses. In 2009, secondary energy use accounted for about 71.8 percent of total energy use, which is equivalent to 8541.6 PJ. The industrial sector constituted 37.1 percent of secondary energy consumption; transportation, 30.2 percent; residential, 16.7 percent; commercial and institutional, 13.9 percent; and agriculture, 2.2 percent.

## National Economic Importance

- In 2010, the GDP of Canada's energy sector i.e. industries involved in the production, transformation and transportation of energy – reached \$84.3 billion (in 2002 constant dollars), accounting for 6.8 percent of Canadian GDP. The oil and gas extraction industry accounted for about half of this amount, while the electric power industry accounted for about one third.
- The production, transformation and transportation of energy are activities that are "capital intensive" – which means they have extensive needs for various equipment and structures. This generates economic activity throughout the Canadian economy, in particular in such industries as equipment manufacturing, construction and engineering services. In 2010, new capital investments in energy-related industries represented 23.8 percent of Canadian investments.
- The energy sector, excluding service stations and wholesale trade in petroleum products, provided direct employment for 264 000 people in 2010, or 1.8 percent of employment in Canada. In addition, service stations and wholesale trade in petroleum products provided direct employment for 92 000 people (0.6 percent).
- In 2010, energy accounted for 22.5 percent of merchandise exports. The energy trade balance ranked first as a contributor to Canada's positive overall trade balance.



 Despite a 56.6 percent increase in GDP between 1990 and 2009, end-use energy consumption grew by only 23.1 percent. As shown in Figure 6, energy efficiency played a major role in limiting this growth.

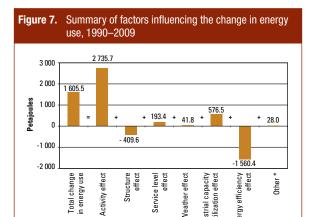


As Figure 7 shows, end-use energy consumption grew by 1605.5 PJ between 1990 and 2009. This increase takes into account such factors as

- growth in economic activity, including the energy-intensive upstream oil and gas industry
- weather effect (in 2009, the winter was colder and the summer was cooler than in 1990; the net effect was more energy use)
- changes in the structure of the economy, favouring less energy-intensive industries
- increased service levels for auxiliary equipment in commercial/institutional buildings and for appliances in homes
- increased amount of floor space cooled
- capacity utilization rate, which is the proportion of the installed production capacity that is in use. In 2009, sectors such as mining, transportation equipment, and iron and

steel showed significant declines. (For more details, consult Energy Efficiency Trends in Canada, 1990 to 2009)

significant gains in energy efficiency



\* "Other" refers to street lighting, non-commercial airline aviation, off-road tr ansportation and agriculture, which are included in "Total change in energy use" but are excluded from the factorization analysis.

ilization

Overall, energy efficiency improved by 23.5 percent between 1990 and 2009. This "change" corresponds to a reduction of 1560.4 PJ in energy consumption. The gain in energy efficiency translated into savings of \$26.8 billion in 2009 and an estimated 81.1 megatonnes of avoided greenhouse gas emissions.



## **International Importance**

- Canada is an open economy, and taking advantage of its sizeable energy resources, it has become an important and reliable energy provider to the world. In 2010, Canada exported \$90.0 billion of energy, of which 98.4 percent was to the United States.
- Exports of crude oil amounted to 112.5 million m<sup>3</sup> in 2010, representing a value of \$52.0 billion. Canadian crude oil accounted for 21.5 percent of U.S. crude imports and held a 13.0 percent share of the overall U.S. market. Exports of refined petroleum products in 2010 totalled 24.3 million m<sup>3</sup>, or \$17.6 billion.
- Canada exported 91.3 bcm of natural gas, all of it to the United States. The value of these exports was \$15.6 billion. Canadian natural gas accounted for more than 87.7 percent of U.S. gas imports and held a 13.5 percent share of the overall U.S. market.
- Canada also imported \$40.3 billion of energy products, mostly crude oil, refined petroleum products and natural gas. Imports originated from a range of countries that included the United States, Algeria, Norway and the United Kingdom.

Table 5.   Energy facts							
Commodities	World production* ranking 2009		Exports 2009		Destination		
Total energy	-	-	\$90.0B	(100%)	U.S.	\$88.6 B	(98%)
Petroleum**	Sixth	(4.%)	\$72.3 B	(80%)	U.S.	\$70.9 B	(98%)
Natural gas	Third	(5%)	\$15.6 B	(17%)	U.S.	\$15.6 B	(100%)
Electricity	Sixth	(3%)	\$2.0 B	(2%)	U.S.	\$2.0 B	(100%)

U.S. - United States

\* British Petroleum's BP Statistical Survey of World Energy.

\*\* Trade data include crude oil, refined petroleum products and liquefied petroleum gases (LPGs). The production ranking includes crude oil and LPGs.



## GEOMATICS AND GEOSCIENCE

- Geomatics and geoscience are complementary earth sciences that provide a detailed picture of the physical world and our place in it.
- Geomatics consists of products, services and tools involved in the collection, integration and management of geographic data. Geographic information can be retrieved from various sources, including earth-orbiting satellites, ground-based instruments and airborne and seaborne sensors. These data are transformed into digital maps and other usable forms with state-of-the-art information technology.
- Geoscience includes geology, geophysics, geochemistry and geodesy. It deals with all aspects of the physical earth, including mineral and energy resources; hazards such as earthquakes, tsunamis, landslides and space weather phenomena; and geological controls on groundwater and climate.
- Industry, governments and the public rely on geomatics and geoscience information and technologies for many purposes, ranging from forest management and energy and mineral exploration to environmental stewardship, emergency management and the monitoring of Canada's territory and borders.

## National Economic Importance

 Geographic information systems (GISs), global positioning systems (GPSs), remote sensing, location-based services and technologies, and Web-based services are growing rapidly, bringing modern geomatics tools to the computers and cell phones of the average citizen and small business.

Canada's resource-based economy depends on innovations in geoscience for the life cycle of resource exploration, development and rehabilitation. Modern geoscience has helped Canada become a leading producer of diamonds.

## International Importance

- Geomatics is rapidly growing as a professional field in the global market. Technological innovations and value-added applications in such fields as satellite-based remote sensing, GISs and GPSs are experiencing considerable growth and show export potential.
- Canada is a world leader in the niche markets of remote sensing data and applications, including mapping from space, sea-floor mapping and hydrography.
- Canada is recognized internationally for developing customized GIS applications for urban planning, agriculture, geo-marketing and natural resources management.
- Major international markets for Canadian geomatics firms include North America, the Middle East and Latin America. International demand for geomatics products and services will continue to increase, stimulating the growth of the industry in the coming years.
- Canada continues to be a world leader in geoscience and geomatics applications and technology, principally in minerals and energy exploration and development. Canada provides much of the information, expertise and technology used around the world for the responsible development of natural resources.

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- Crude Oil and Natural Gas survey
- GDP at basic prices by North American Industry Classification System (NAICS), Seasonally adjusted at annual rates, 2002 constant prices, CANSIM Tables 379-0027 and 384-0013
- Sawmills, monthly survey, Cat. No. 35-003-XIB
- Private and Public Investment in Canada, Intentions, Cat. No. 61-205-XWE
- Rail in Canada, Cat. No. 52-216-XWE
- Report on Energy Supply and Demand in Canada, Cat. No. 57-003-XWE
- Survey of Employment, Payrolls and Hours (SEPH)

#### North American Industry Classification System (NAICS)

#### **Forest sector**

- 113 Forestry and logging
- 1153 Support activities for forestry
- 321 Wood product manufacturing
- 322 Paper manufacturing

#### **Energy sector**

- 211 Oil and gas extraction
- 213 Support activities for mining and oil and gas extraction
- 2211 Electric power generation, transmission and distribution
- 2212 Natural gas distribution
- 324 Petroleum and coal product manufacturing
- 486 Pipeline transportation
- Note: In this document, data related to the mining and trade of coal and uranium minerals used primarily for energy purposes – are included under the mining sector.
- Note: The definition of energy sector can be set to include the industries "petroleum product wholesaler-distributors" (NAICS 412) and "gasoline stations" (NAICS 447), but data availability is limited for these industries.



#### Mining sector

- 212 Mining and quarrying (except oil and gas)
- 327 Non-metallic mineral product manufacturing
- 331 Primary metal manufacturing
- 332 Fabricated metal product manufacturing

#### NAICS codes used in Figures 2 and 3

#### Automotive sector

326193	Motor vehicle plastic parts manufacturing
326210	Tire manufacturing
3361	Motor vehicle manufacturing
3362	Motor vehicle body and trailer manufacturing
3363	Motor vehicle parts manufacturing

### **Chemical sector**

- 3251 Basic chemical manufacturing
- 3252 Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing
- 3253 Pesticide, fertilizer and other agricultural chemical manufacturing
- 3254 Pharmaceutical and medicine manufacturing
- 3255 Paint, coating and adhesive manufacturing
- 3256 Soap, cleaning compound and toilet preparation manufacturing
- 3259 Other chemical product manufacturing

### Machinery sector

- 3331 Agricultural, construction and mining machinery manufacturing
- 3332 Industrial machinery manufacturing
- 3333 Commercial and service industry machinery manufacturing
- 3334 Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing
- 3335 Metalworking machinery manufacturing
- 3336 Engine, turbine and power transmission equipment manufacturing
- 3339 Other general-purpose machinery manufacturing



#### Food sector

- 3111 Animal food manufacturing
- 3112 Grain and oilseed milling
- 3113 Sugar and confectionery product manufacturing
- 3114 Fruit and vegetable preserving and specialty food manufacturing
- 3115 Dairy product manufacturing
- 3116 Meat product manufacturing
- 3117 Seafood product preparation and packaging
- 3118 Bakeries and tortilla manufacturing
- 3119 Other food manufacturing

### Information and communications technologies sector

- 3341 Computer and peripheral equipment manufacturing
- 3342 Communications equipment manufacturing
- 3343 Audio and video equipment manufacturing
- 3344 Semiconductor and other electronic component manufacturing
- 3345 Navigational, measuring, medical and control instruments manufacturing
- 3346 Manufacturing and reproducing magnetic and optical media

### Aerospace product and parts manufacturing sector

3364 Aerospace product and parts manufacturing





## Notes