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Energy supply and demand

2004

Canada's appetite for energy from fossil fuels increased for the third year in a row in 2004, although the pace of growth is slowing.

Despite increases in prices, energy use derived from the three main fossil fuels (natural gas, refined petroleum products and coal) increased 1.4%, due to gains among the industrial, road transportation and retail and wholesale sectors.

However, this rate of growth in consumption was slower than the revised 2.7% gain in 2003 and the 2.9% gain in 2002. Energy use actually fell 3.0% in 2001.

Canada consumed 7 690 petajoules of energy in 2004, up from 7 587 petajoules in 2003. One petajoule equals roughly the amount of energy required to operate the Montréal subway system for one year.

Canada's industrial sector, the biggest user of energy, consumed 1.5% more in 2004 than the year before. The gain was due primarily to two industries: iron and steel, and chemical. Historically, the industrial sector accounts for just under one-third (31%) of total energy consumption, the highest proportion of all sectors.

Energy consumption also rose in two other areas: transportation (+3.5%), and public administration and commercial (+1.1%). The transportation sector is the second largest user of energy, accounting for about 30% of final demand.

Crude oil production rising

Canadian companies churned out about 149 million cubic metres of crude oil in 2004, up 3.3% over 2003. (A cubic metre contains 1 000 litres).

Increases in synthetic and bitumen production from Western Canada more than offset declines from the Terra Nova production facility in Newfoundland and Labrador.

Canada's oil sands are becoming an increasingly important source of crude oil production. In 2004, the oil sands accounted for over 38% of total crude oil and equivalent production, up 4% over 2003, and 10% higher than 2000.

In 2005, it is estimated that Alberta's oil sands will produce 159 000 cubic metres of oil a day, roughly 45% of Canada's total crude oil production.

Note to readers

In addition to the estimates for 2004, revised data are also available for the reference year 2003.

Factors influencing revisions include late receipt of company data and revisions to previously estimated or reported data. The revised data are available in the appropriate CANSIM tables.

By 2010, oil sands production is forecasted to surpass 317 000 cubic metres of oil a day, or 67% of total Canadian crude oil production. Capital investment is estimated to reach \$8.5 billion in 2005 and total \$45 billion by 2010.

Exports of crude oil, primarily to the United States, increased 5.3% from 2003. These exports now account for more than 63% of all Canadian production. Almost 88% of total crude bitumen and 41% of total synthetic crude oil produced in Canada was exported south of the border in 2004.

The US Midwest is the most significant market for Western Canadian crude oil, consuming 59% of total exports to the United States. According to the United States Energy Information Administration, Canadian imports now represent 22% of total US demand for crude oil.

In 2004, average Canadian crude oil prices rose to more than \$40 a barrel. This represented an increase of more than 20% over 2003 and 90% above 1990 prices.

Natural gas production posts modest gain

Natural gas production increased 1.0% in 2004 from 2003. Despite record gas drilling activity in the last two years, production gains were not more robust because initial productivity from the new gas wells was lower than expected.

Natural gas exports increased 3.6% in 2004 to 4 015 petajoules from 3 876 petajoules in 2003. Slightly higher production levels combined with lower domestic demand, due to milder weather in Canada, resulted in higher exports in 2004.

Exports of natural gas represent over 56% of total Canadian natural gas production, while in the United States, imports of natural gas from Canada account for 17% of total American demand for natural gas.

Canada's trade surplus for crude petroleum, refined petroleum and other products, natural gas,

coal and electricity reached \$56.6 billion in 2004, up from \$44.9 billion the year before.

Electricity production rebounds

Electricity production from primary sources (hydro, nuclear, wind and tidal) increased 4.5% in 2004 as a result of higher water levels combined with increases in nuclear generation.

In 2003, low water levels and the blackout in Ontario resulted in a 3.2% decline in electricity production nationally.

Hydro generation represented the largest source of generation of electric power in 2004 at 59%. Nuclear energy provided about 15% of total Canadian electricity production.

However, in Ontario, nuclear power accounts for more than 50% of total electricity generation, enough to supply all the homes in the province.

Nationally, electricity generated using fossil fuels declined 6.8% in 2004 from 2003, due to higher generation from primary sources. Although electricity generation from wind, solar and tidal continues to increase, total generation from these sources currently represents less than one-half of 1% of total generation.

Canadian thirst for automotive fuels continues to rise

Despite the highest prices ever recorded for motor gasoline and diesel fuel for automotive purposes, Canadians continued to increase their use of both fuels.

In 2004, consumption of motor gasoline and diesel fuel for automotive purposes increased 3.1% over 2003, hitting the highest levels ever recorded.

One possible explanation could be a gain in the production of SUVs, or sport utility vehicles, in Canada for both the domestic and export market. According to information from DesRosiers Automotive Consultants Inc., SUV production rose a staggering 43.9% in 2004 to 478,185 units from 332,372 units in 2003.

Total demand for all refined petroleum products posted a 3.2% increase over 2003 levels.

Coal production and consumption increases

New coal mines opened in Alberta and British Columbia in 2004 as coal prices strengthened. As a result, total coal production rose 6.8% from 2003.

Final demand for coal by the manufacturing sector rose 4.4% over 2003. In contrast, exports of coal fell 4.3% in 2004, due primarily to lower demand for Canadian coal from Japan.

British Columbia fastest growing province in energy consumption

Energy consumption increased faster than the national average in five provinces in 2004: British Columbia, New Brunswick, Nova Scotia, Manitoba, and Alberta.

British Columbia's growth in consumption led the pack, increasing 3.6% from 2003. Wood product manufacturing and residential building construction contributed more to the growth of the economy than any other industry.

Energy use by all sectors, or "final demand," declined 2.4% in Newfoundland and Labrador; 1.4% in Saskatchewan and a marginal 0.1% in Quebec.

Energy consumption rose 1.1% in Ontario, the most populous province, which accounted for 34% of the country's entire energy demand. Consumption in Quebec remained relatively stable, putting its share at 21%.

In Alberta, energy consumption increased 2.4%, giving the oil-producing province 18% of total national consumption. The gain was due primarily to energy use in Alberta's oil patch.

Available on CANSIM: tables 128-0001 to 128-0003.

Definitions, data sources and methods: survey numbers, including related surveys, 2003, 2147, 2148, 2149, 2150, 2151, 2166, 2167, 2168, 2191, 2194, 2196 and 2198.

The 2004 issue of *Report on Energy Supply/Demand in Canada* (57-003-XIB, \$23), will soon be available.

For general information or to order data, contact the dissemination officer (613-951-9497; 1-866-873-8789; energ@statcan.ca). To enquire about the concepts, methods or data quality of this release, contact Gary Smallbridge (613-951-3567; gary.smallbridge@statcan.ca) or Justin Lacroix (613-951-0775; Justin.Lacroix@statcan.ca), Manufacturing, Construction and Energy Division. □

Energy supply and demand

	2003 ^f	2004	2003 ^f to 2004
	Petajoules ¹		% change
Production²	16 171	16 594	2.6
Exports ²	8 499	8 814	3.7
Imports ²	3 460	3 473	0.4
Availability ²	11 479	11 617	1.2
Electricity generation	1 749	1 625	-7.1
Producer consumption	1 340	1 350	0.7
Non-energy use	903	1 017	12.6
Final demand³	7 587	7 690	1.4
Industrial	2 319	2 354	1.5
Transportation	2 266	2 346	3.5
Residential and agriculture	1 550	1 522	-1.8
Commercial and government	1 452	1 468	1.1
	2003 ^f	2004	2003 ^f to 2004
	Petajoules ¹		% change
Final demand³	7 587	7 690	1.4
Canada	7 587	7 690	1.4
Newfoundland and Labrador	126	123	-2.4
Prince Edward Island	25	25	0.0
Nova Scotia	181	187	3.3
New Brunswick	175	181	3.4
Quebec	1 630	1 628	-0.1
Ontario	2 591	2 620	1.1
Manitoba	248	256	3.2
Saskatchewan	354	349	-1.4
Alberta	1 343	1 375	2.4
British Columbia	888	920	3.6
North ⁴	26	26	0.0

^f Revised data.

1. A 30-litre gasoline fill-up contains about one gigajoule of energy. A petajoule is one million gigajoules.
2. Primary energy sources: coal, crude oil, natural gas, natural gas liquids, and hydro and nuclear electricity.
3. Final demand represents the sum of energy use by mining, manufacturing, forestry, construction, transportation, agriculture, residential, public administration and commercial and other institutional.
4. North includes Yukon, Northwest Territories and Nunavut.



Energy consumption by manufacturers

2004 (revised)

Energy consumption in the manufacturing sector rose 3.2% in 2004, up from July's preliminary estimate of 2.0%. This was the third consecutive annual increase.

Manufacturers consumed 2 638 974 terajoules of energy in 2004, compared to 2 556 692 terajoules the year before. One thousand terajoules equal roughly the amount of energy required to operate the Montréal subway system for one year.

As energy consumption increased in 2004, economic output in manufacturing as measured by gross domestic product also rose 4.6%.

Energy use in manufacturing is concentrated in the wood, paper, petroleum and coal product, chemical and primary metal manufacturing industries. These industries were responsible for 31% of manufacturing GDP in 2004 and accounted for 83% of total manufacturing energy consumption.

The most common sources of energy used by the manufacturing sector were electricity, which accounted for 28% of consumption, and natural gas, which accounted for 26%. Both fuels showed increased levels of consumption in 2004.

Wood and spent pulping liquor contributed another 19%, and petroleum products represented almost 18%. Coal, coal coke, coke oven gas, purchased steam and liquefied petroleum gases accounted for the remainder.

Available on CANSIM: tables 128-0005 and 128-0006.

Definitions, data sources and methods: survey number 5047.

Note: These estimates are from the Industrial Consumption of Energy Survey and are based on a sample of 4,000 manufacturing establishments. The coefficient of variation at the national level is 1%. The data are classified according to the North American Industrial Classification System.

Statistics Canada would like to acknowledge the help and assistance of the Office of Energy Efficiency at Natural Resources Canada for sponsoring this project.

For general information or to order data, contact the dissemination officer (1-866-873-8789; 613-951-9497; energ@statcan.ca), Manufacturing, Construction and Energy Division. □

Energy consumption by manufacturing industries

	2003 ¹	2004 ¹	2003 ¹ to 2004 ¹
	Terajoules ²		% change
Total manufacturing	2 556 692	2 638 974	3.2
Food manufacturing	94 248	96 189	2.1
Beverage and tobacco product manufacturing	12 850	13 105	2.0
Textile mills	8 755	8 987	2.7
Textile product mills	3 851	3 620	-6.0
Clothing manufacturing	5 526	4 695	-15.0
Leather and allied product manufacturing	861	709	-17.7
Wood product manufacturing	127 061	133 518	5.1
Paper manufacturing	835 318	836 133	0.1
Printing and related support activities	9 677	10 119	4.6
Petroleum and coal products manufacturing	368 931	395 971	7.3
Chemical manufacturing	255 288	281 437	10.2
Plastics and rubber products manufacturing	39 487	39 919	1.1
Non-metallic mineral product manufacturing	120 171	128 402	6.9
Primary metal manufacturing	522 091	531 028	1.7
Fabricated metal product manufacturing	42 469	43 155	1.6
Machinery manufacturing	16 665	18 159	9.0
Computer and electronic product manufacturing	5 232	5 673	8.4
Electrical equipment, appliance and component manufacturing	7 250	7 781	7.3
Transportation equipment manufacturing	61 288	60 176	-1.8
Furniture and related product manufacturing	12 379	12 742	2.9
Miscellaneous manufacturing	7 296	7 458	2.2

r. Revised.

1. Data for 2003 are final.

2. 1 000 terajoules roughly equals the amount of energy required to operate the Montréal subway system for one year.

Cable and satellite television 2004

The cable industry saw the first signs of an end to the erosion of its traditional customer base in 2004.

The number of subscribers to cable television reached 7.6 million at the end of August 2004, up 0.4% from a year earlier. This modest increase followed four consecutive years of decline during which the industry lost a total of 442,000 multi-channel video services customers. Despite the turnaround, the market share of cable operators continued to decline last year.

Meanwhile, wireless competitors, principally direct-to-home satellite television providers, increased their market share to 23.4% in 2004 from 22.5% in 2003. This was the smallest year-over-year gain since the introduction of competition late in 1997.

As of August 31, 2004, there were 2.3 million subscribers to satellite and wireless cable television, a 5.4% increase compared to the previous year.

The total number of subscribers to multi-channel video services increased 1.5% to 9.9 million. This overall increase was about the same as the gain in the number of households.

The increasing popularity of digital cable was certainly a factor behind the improved customer loyalty for the cable industry.

Digital cable was the fastest growing market segment for the industry last year. There were 1.8 million subscribers to this service on August 31, 2004, a huge 33.5% increase from a year earlier. Just over 24% of subscribers to cable television had adopted digital cable at that date compared to 18% in 2003.

High speed Internet continued to be a high growth market for cable operators. The number of subscribers to Internet by cable increased 20.1% to 2.8 million between August 31, 2003 and August 31, 2004. This compares with gains of 26.1% in 2003 and 35.4% in 2002.

Last year's increase in subscriptions was robust in both large communities, where the gain was 19.0%, and small- and medium-sized communities, where it was 25.3%.

The financial performance of the cable industry improved significantly last year. Revenues rose 7.4% to \$4.8 billion, while operating profits surged 39.2% to \$1.1 billion. Cable operators earned 23.2 cents of operating profits for every dollar of revenues in 2004, well above the 17.9 cents earned the previous year.

The financial performance of the wireless segment of the industry also improved, but the ink at the bottom of the income statement remained red.

Wireless competitors have incurred losses before interest and taxes every year since joining the industry,

but are now approaching the break-even point. In 2004, wireless segment losses amounted to \$92.9 million, down from \$110.1 million in 2003 and \$245.9 in 2002.

From 1998 to 2004, the segment's loss before interest and taxes totalled \$1.5 billion, or 32.5 cents per dollar of revenue earned during that period.

In a few short years, the multi-channel video services market has changed drastically. In 2004, 42% of the 11.2 million subscribers to multi-channel video services had chosen digital over analogue services. In 2000, that proportion was barely above 15%.

Available on CANSIM: table 353-0003.

Definitions, data sources and methods: survey number 2728.

More detailed information will soon be available in the publication *Broadcasting and Telecommunications Service Bulletin*, Vol. 35, no. 4 (56-001-XIE, \$11/\$35).

For more information, or to enquire about the concepts, methods or data quality of this release, contact Daniel April (613-951-3177; daniel.april@statcan.ca), Science, Innovation and Electronic Information Division. ■

New products

Quarterly Telecommunications Statistics, First quarter 2005, Vol. 29, no. 1
Catalogue number 56-002-XIE (\$23/\$43).

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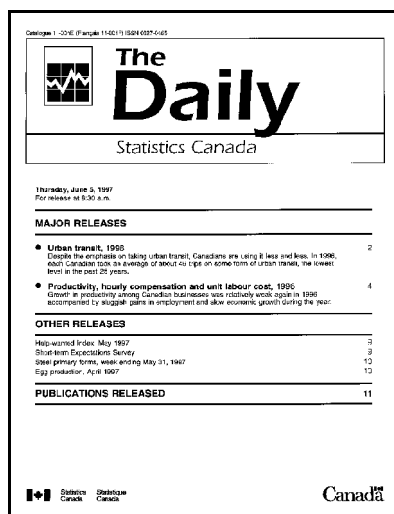
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