

ANNEX 1: PROVINCIAL AND TERRITORIAL TABLES

TABLE A-1: PROVINCIAL AND TERRITORIAL ECONOMIC INDICATORS AND ENERGY STATISTICS, 2006¹⁵⁸

	NL	PE	NS	NB	QC	ON	MB	SK	AB	BC	Territs
Total GDP (in 2002 billions of dollars)*	16.56	3.65	26.60	20.87	245.26	448.37	37.42	36.94	184.82	147.87	5.88
Energy GDP (in 2002 billions of dollars)*	4.46	–	1.39	1.01	10.08	12.17	1.96	6.30	48.41	8.50	0.40
Energy GDP (%)	26.9	–	5.2	4.8	4.1	2.7	5.2	17.1	26.2	5.7	6.8
Population (in thousands)	510	139	934	749	7 652	12 687	1 178	985	3 376	4 310	104
Unemployment (%)	14.8	11.0	7.9	8.8	8.0	6.3	4.3	4.7	3.4	4.8	n/a
Energy-sector direct employment	n/a	n/a	n/a	n/a	6 235	50 516	n/a	8 648	116 099	6 553	n/a

*GDP is measured here in billions of chained 2002 dollars. Due to methodological differences, these numbers are not directly comparable with GDP figures presented in Chapter 2 (which are reported in constant 2002 dollars).

TABLE A-2: ENERGY STATISTICS, 2005

(TERAJOULES)¹⁵⁹

	NL	PE	NS	NB	QC	ON	MB	SK	AB	BC	Territs	Canada
Primary energy production												
<i>Crude and NGL*</i>	681,438	–	39,467	–	–	5,362	31,274	939,614	4,413,723	132,118	45,215	6,288,211
<i>Natural gas</i>	22,466	–	157,081	–	–	9,740	–	356,739	5,545,814	1,134,128	23,897	7,249,865
<i>Coal and derivatives</i>	–	–	137	4,862	–	124,776	–	165,260	564,883	665,368	–	1,525,286
<i>Electricity**</i>	145,796	144	4,278	29,711	641,722	408,510	131,375	16,794	11,088	217,177	2,088	1,608,683
Total	849,700	144	200,963	34,573	641,722	548,388	162,649	1,478,407	10,535,508	2,148,791	71,200	16,672,045
Electricity generation												
<i>Coal</i>	–	–	31,749	13,181	–	110,189	1,551	39,061	168,526	37	–	364,294
<i>Natural gas</i>	965	–	840	3,861	1,071	45,033	29	15,161	39,554	14,455	294	121,263
<i>Oil</i>	4,959	23	7,316	26,861	4,152	3,343	54	112	158	360	1,486	48,824
<i>Hydro</i>	145,796	144	4,278	13,950	625,583	127,822	131,375	16,794	11,088	217,177	2,088	1,296,095
<i>Nuclear</i>	–	–	–	15,761	16,139	280,688	–	–	–	–	–	312,588
<i>Biomass</i>	–	–	606	2,209	2,123	3,433	361	945	4,346	10,924	92	25,039
Energy consumption												
<i>Industrial</i>	37,880	2,897	28,548	55,830	556,397	664,023	54,400	92,802	528,028	254,517	7,803	2,283,125
<i>Commercial</i>	24,455	6,613	52,041	34,931	303,247	528,453	57,900	65,393	242,142	153,496	8,082	1,476,753
<i>Residential</i>	15,784	3,788	28,714	27,295	274,721	537,177	43,575	41,788	176,220	144,276	2,793	1,296,131
<i>Transportation</i>	45,159	10,125	73,001	61,544	456,248	841,022	82,293	119,224	359,180	335,327	5,647	2,388,770
<i>Agriculture</i>	377	1,638	3,992	1,973	28,791	48,066	23,403	40,578	48,225	11,238	415	208,696
Demand by fuel												
<i>Oil and NGL</i>	n/a	n/a	n/a	n/a	856,900	1,386,900	111,000	186,100	1,056,600	467,500	13,100	4,632,800
<i>Natural gas</i>	n/a	n/a	n/a	n/a	212,000	1,081,800	91,200	234,700	886,600	287,400	3,100	2,828,600
<i>Coal and derivatives</i>	n/a	n/a	n/a	n/a	24,100	452,800	9,300	145,200	505,000	18,800	–	1,270,200
<i>Electricity</i>	n/a	n/a	n/a	n/a	737,500	410,000	76,900	15,000	14,400	209,800	2,100	1,522,900
<i>Other</i>	n/a	n/a	n/a	n/a	132,400	119,400	9,000	21,500	75,800	193,100	–	642,500

*NGL is natural gas liquids.

**Includes hydro and nuclear generation, but excludes secondary generation from fossil fuels.

TABLE A-3: CANADIAN CRUDE OIL PRODUCTION, 2006*¹⁶⁰

	NL	PE	NS	NB	QC	ON	MB	SK	AB	BC	NU	YT	NT	Canada
	Thousands of barrels per day													
<i>Heavy oil</i>	–	–	–	–	–	–	–	333.5	183.5	–	–	–	–	517.0
<i>Light/medium oil</i>	303.8	–	–	–	–	2.2	21.4	94.7	359.7	28.8	–	–	18.7	829.3
<i>Condensates</i>	–	–	12.0	–	–	–	–	–	11.0	3.9	–	–	–	26.9
<i>Pentanes</i>	–	–	–	–	–	–	–	0.5	140.8	8.0	–	–	1.5	150.8
<i>Bitumen</i>	–	–	–	–	–	–	–	–	636.9	–	–	–	–	636.9
<i>Synthetic crude oil</i>	–	–	–	–	–	–	–	–	495.9	–	–	–	–	495.9
Total production	303.8	–	12.0	–	–	2.2	21.4	428.7	1827.8	40.7	–	–	20.2	2656.8
Percent	11.4	–	0.5	–	–	0.1	0.8	16.1	68.8	1.5	–	–	0.8	100.0

* Due to rounding, numbers may not add to totals.

ENDNOTES

¹ *Oil & Gas Journal*, vol. 105.48 (December 24, 2007), p. 25; and *Oil & Gas Journal*, vol. 77, no. 53 (December 31, 1979), p. 71.

² Energy Information Administration (EIA) *International Energy Outlook 2007*, www.eia.doe.gov/oiaf/ieo/excel/ieoreftab_1.xls

³ Natural Resources Canada (NRCan), *Canada's Energy Outlook: The Reference Case 2006*, p.iv.

⁴ International Energy Agency (IEA), *Energy Balances of OECD Countries (2007)*, www.iea.org/Textbase/country/index.asp

⁵ EIA (2007), www.iea.org/Textbase/stats/prodresult.asp?PRODUCT=Balances

Data, which are presented in millions of tonnes of oil equivalent, have been converted to petajoules by using the factor 41.9.

Data on Canada's energy demand are from NRCan, *Canada's Energy Outlook: The Reference Case 2006*, Figure PR1, "Primary Energy Demand," p. 51.

⁶ IEA, *World Energy Outlook 2007*, Table 1.2, p. 80.

⁷ *Ibid.*, Table 1.3, p. 82.

⁸ EIA (2007), www.eia.doe.gov/oiaf/ieo/excel/figure_45data.xls.

⁹ NRCan, *Mineral and Metal Commodity Reviews*, 2006 review of coal, pp. 20.1–20.16, www.nrcan-rncan.gc.ca/mms/cm/com_e.html.

¹⁰ EIA (2007), www.iea.org/Textbase/stats/electricitydata.asp?COUNTRY_CODE=29&Submit=Submit

¹¹ IEA, *Renewables Information 2007*, Table 1, "Selected Renewables Indicators by Country for 2005," p. 6; and for Canada, Table 2, "Net Generating Capacity of Renewable and Waste Products (MW)," and Table 3, "Gross Electricity Generation From Renewable Sources (GWh)," pp. 109–110.

¹² See Section 3.6, "Renewable Energy," of this document for further details on major hydroelectric projects under consideration.

¹³ IEA, *Oil Crises & Climate Challenges: 30 Years of Energy Use in IEA Countries*, Table A6, (2004), p. 210, www.iea.org/Textbase/nppdf/free/2004/30years.pdf.

¹⁴ Statistics Canada, www.statcan.ca/english/Subjects/Standard/naics/2007/naics07-menu.htm

¹⁵ The modified version will cover petroleum and coal product manufacturing (NAICS 324) in its entirety (which includes asphalt paving, roofing and saturated materials manufacturing [NAICS 32412]) because certain data are unavailable at the five-digit NAICS code level of disaggregation. Moreover, this modified version will not include other metal ore mining (NAICS 21229) as data are generally not available for this industry.

¹⁶ A broader definition of the energy sector would also include the following industries:

- Oil and gas pipeline and related structures construction (NAICS 23712)
- Power and communication line and related structures construction (NAICS 23713)
- Petrochemical manufacturing (NAICS 32511)
- Industrial gas manufacturing (NAICS 32512)
- Other basic organic chemical manufacturing (NAICS 32519)
- Power boiler and heat exchanger manufacturing (NAICS 33241)
- Metal tank (heavy gauge) manufacturing (NAICS 33242)
- Mining and oil and gas field machinery manufacturing (NAICS 33313)
- Engine, turbine and power transmission equipment manufacturing (NAICS 3336)
- Gasoline stations (NAICS 447)
- Fuel dealers (NAICS 45431)

¹⁷ Statistics Canada, CANSIM (2007), Table 379-0027, Gross domestic product (GDP) at basic prices, by NAICS; Canada; seasonally adjusted at annual rates; 2002 constant prices; vectors v41881502, v41881504, v41881517, v41881519, v41881521, v41881578, v41881699 and v41881478. Total energy is the sum of all vectors except v41881478. Share of energy is total energy divided by v41881478.

¹⁸ Statistics Canada, CANSIM (2007), Table 281-0024, Employment (Survey of Employment, Payrolls and Hours [SEPH]) by type of employee for selected industries, annual (persons); vectors v1699194, v1700294, v1700587, v1700613, v1701080, v13922126, v13922413 and v1695625. Total energy is the sum of all vectors except for industrial aggregate, v1695625. Share of energy is total energy divided by v1695625.

¹⁹ Statistics Canada, CANSIM (2007), Table 281-0027, Average weekly earnings (SEPH) by type of employee for selected industries, annual (dollars); vectors v1740728, v1740730, v1740733, v1740735, v1740736, v13922633 and v1740722. Natural Resources Canada (NRCan) calculated an average wages and salaries estimate for the energy sector based on the above vectors (except for total industry, v1740722).

²⁰ Excludes pipeline transportation (NAICS 486) as data were not available.

²¹ NRCan, Trade Retrieval and Aggregation System (TRAGS) (2007), based on Statistics Canada, *Canadian International Merchandise Trade*, Cat. No. 65-001-XIB.

²² Statistics Canada, CANSIM (2007):

Table 029-0007, Capital and repair expenditures, industry sector 21, mining and oil and gas extraction, annual (dollars); capital vectors v754048, v754195 and v754167; repair vectors v754051, v754198 and v754170; capital and repair vectors v754047, v754194 and v754166.

Table 029-0008, Capital and repair expenditures, industry sector 22, utilities, annual (dollars); capital vectors v754230 and v754237; repair vectors v754233 and v754240; capital and repair vectors v754229 and v754236.

Table 029-0012, Capital and repair expenditures, industry sectors 48–49, transportation and warehousing, annual (dollars); capital vector v755329, repair vector v755332, capital and repair vector v755328.

Table 029-0009, Capital and repair expenditures, industry sectors 31–33, manufacturing, annual (dollars); capital vector v754671, repair vector v754674, capital and repair vector v754670.

Table 029-0005, Capital and repair expenditures, by sector and province, annual (dollars); capital vector v753950, repair vector v753953, capital and repair vector v753949.

²³ Statistics Canada, CANSIM (2007):

Table 301-0003, Annual survey of manufactures, principal statistics by NAICS, incorporated businesses with employees having sales of manufactured goods greater than or equal to \$30,000 (dollars unless otherwise noted); vectors v761859, v766535, v767679, v770105, v770240, v770300, v761876, v766536, v767696, v770106, v770241, v770301, v761978, v766542, v767798, v770112, v770247 and v770307.

Table 301-0006, Principal statistics for manufacturing industries, by NAICS, annual (dollars unless otherwise noted); vectors v3281324, v32870340, v32871183, v32870561, v32870582, v32870589, v41554012, v41554094, v41554139, v41554252, v41554262, v41554266, v32877075, v32876095, v32876935, v32876315, v32876335 and v32876342.

²⁴ Statistics Canada, CANSIM (2007), Table 326-0021, “Consumer price index (CPI), 2005 basket, annual (2002 = 100 unless otherwise noted); vectors v41693271, v41693536 and v41693537.

²⁵ Statistics Canada, Detailed Average Household Expenditure by Household Income Quintile for Canada and Provinces, Cat. No. 62F0032XDB. Energy is the sum of line 20310, electricity; line 20320, natural gas; line 20330, other fuels; and line 30500, gasoline and other fuels. Disposable income is line 1700, household income before taxes, minus lines 49000–49300, personal taxes.

²⁶ Data presented in this chapter may differ slightly from similar data in Chapter 2 due to differences in data sources and concepts.

²⁷ In section 3.2, “Oil,” statistics on oil volumes are presented in units of measurement commonly used in the marketplace. As a result, statistics on upstream markets are presented in barrels; those on downstream markets, in litres. Because some sources publish statistics in cubic metres, some of the data in this section have been converted from their original sources, as follows: one cubic metre is equivalent to 6.29 barrels of oil and one cubic metre is equivalent to 1000 litres of oil.

²⁸ Alberta Energy and Utilities Board (EUB), *Alberta’s Energy Reserves 2006 and Supply/Demand Outlook 2007–2016*, Report No. ST98-2007, Reserves and production summary table, p. 3.

Canadian Association of Petroleum Producers (CAPP), *Summary of 2006 Oil and Natural Gas Reserves*, p. 4.

Also published in *Oil & Gas Journal*, vol. 105.48 (December 24, 2007), p. 25. In its assessment of Canada’s total proven oil reserves, the *Oil & Gas Journal* uses the combined total of EUB’s established oil sands reserves and CAPP’s conventional oil reserves.

²⁹ CAPP does not segregate conventional oil and gas capital investment into categories. In financial reports, most companies report the combined total of conventional oil and gas investment.

³⁰ Statistics Canada, *Energy Statistics Handbook* (October to December 2006), Cat. No. 57-601-XIE, tables 3.1 and 3.2, pp. 39–40.

³¹ Statistics Canada, *Pipeline Transportation of Crude Oil and Refined Petroleum Products 2001*, (Cat. No. 55-201-XIB), Text Table 1.

³² Most of the section on oil in this report uses barrels as the unit, which is the common measurement for crude oil. The section on petroleum products in this report uses litres as the unit, which is the measurement most familiar to consumers.

³³ A detailed forecast is available in Natural Resources Canada (NRCan), *Canada’s Energy Outlook: The Reference Case 2006*, pp. 35–36.

³⁴ This price assumption represents the views of experts in 2006 and reflects long-term market fundamentals. A discussion on oil prices is provided in NRCan, *Canada's Energy Outlook: The Reference Case 2006*, pp. 10–11. Since 2006, some forecasters have revised upward their long-term price outlook.

³⁵ Proved reserves of natural gas are estimates of the quantities of gas remaining in known drilled reservoirs that are economic to produce and are connected to pipelines and markets or can be connected easily.

³⁶ EIA, *U.S. Natural Gas Statistics* (2006), "Natural Gas Reserves Summary as of Dec. 31," Dry Natural Gas, http://www.eia.doe.gov/oil_gas/natural_gas/info_glance/natural_gas.html.

Statistics Canada, *Energy Statistics Handbook* (2006), Table 6.4, "Natural gas – Deliveries of marketable gas by province."

³⁷ NEB, *Northeast British Columbia's Ultimate Potential for Conventional Natural Gas* (2006), p. 13.

³⁸ A detailed forecast is available in NRCan, *Canada's Energy Outlook: The Reference Case 2006*.

³⁹ Information and statistics on reserves are from World Energy Council, *2007 Survey of Energy Resources*, Table 1-1, p. 9, and the section on Canada, p. 25.

⁴⁰ "Proved amounts in place" is the resource remaining in known deposits that has been carefully measured and assessed as exploitable under present and expected local economic conditions and existing available technology. "Proved recoverable reserves" are the tonnage within the proved amount in place that can be recovered in the future under present and expected local economic conditions with existing available technology.

⁴¹ "Estimated additional amount in place" is the indicated and inferred tonnage additional to the proved amounts in place that is of foreseeable economic interest. It includes estimates of amounts that could exist in unexplored extensions of known deposits or in undiscovered deposits in known coal-bearing areas, as well as amounts inferred through knowledge of favourable geological conditions. Speculative amounts are not included.

⁴² Information and statistics on production are from NRCan, *Mineral and Metal Commodity Reviews* (2007), 2006 review of coal, pp. 20.2–20.3.

⁴³ Ibid, pp. 20.3–20.4, and Table 1, "Canada, coal production and trade, 2004–06," pp. 20.8–20.10.

⁴⁴ Ibid, pp. 20.4–20.5, and Table 4, "Canadian coal consumption," p. 20.11.

⁴⁵ Ibid, p. 20.4.

⁴⁶ The coal year starts April 1 and ends March 31 of the following year.

⁴⁷ Reserve estimates are calculated as a function of price. Higher prices would mean higher reserve estimates, because more mineral deposits would be deemed economically recoverable.

⁴⁸ Further information on reserves and production information provided in this section are available from NRCan, *Canadian Minerals Yearbook 2004*, Mineral and Metal Commodity Reviews, "Uranium," www.nrcan.gc.ca/ms/cmy/2006CMY_e.htm.

⁴⁹ OECD Nuclear Energy Agency and the International Atomic Energy Agency, *Uranium 2005: Resources, Production and Demand*, Appendix 5, "Energy Conversion Factors."

⁵⁰ NRCan, *Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures* (2006).

⁵¹ RFPs are a method for governments to solicit proposals from interested parties. After proposals are received, the government selects the best proposals and typically signs long-term supply contracts.

⁵² RPSs are typically legislated requirements for utilities to source a certain percentage of its electricity from renewable energy.

⁵³ SOCs provide a guaranteed sales price to electricity generators that meet certain conditions. For example, in Ontario, a standard offer price of \$0.11/kWh is available for wind farms smaller than 10 MW.

⁵⁴ Statistics Canada, *Electric Power Generating Stations 2005* (2006), Cat. No. 57-206-XIB.

⁵⁵ International Energy Agency, *Review and Analysis of Ocean Energy Systems Development and Supporting Policies: A Report by AEA Energy & Environment on behalf of Sustainable Energy Ireland for the IEA's Implementing Agreement on Ocean Energy Systems* (2006), p. 11.

⁵⁶ A. Cornett, *Inventory of Canada's Marine Renewable Energy Resources* (2006), National Research Council Canada, Canadian Hydraulics Centre, Technical Report No. CHC-TR-041.

⁵⁷ Science Applications International Corporation, *Final Report: Survey of Active Solar Thermal Collectors, Industry and Markets in Canada* (2005), p. iii. Survey funded by NRCan, final report at www.cansia.ca/downloads/STC_survey_2005_English.pdf

⁵⁸ NRCan, *Energy Use Data Handbook Tables, Canada*, Residential Sector, Table 5, http://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/tableshandbook2/res_00_5_e_2.cfm?attr=0

⁵⁹ Science Applications International Corporation, *Final Report: Survey of Active Solar Thermal Collectors, Industry and Markets in Canada* (2005), Table 8, "Analysis of avoided GHG emissions, using four reference systems, 2004," p. 23.

⁶⁰ NRCan (prepared for the IEA), *National Survey Report of PV Power Applications in Canada – 2006* (May 2007), p. 6.

⁶¹ Ontario Power Authority, Ontario's Standard Offer Program Web site, <http://www.powerauthority.on.ca/sop/>.

⁶² NRCan, Photovoltaic Potential and Solar Resource Maps of Canada Web page, https://glfc.cfsnet.nfis.org/mapserver/pv/index_e.php.

⁶³ NRCan, *An Evaluation of the Potential of Building Integrated Photovoltaics in Canada* (2006), p. 6, http://cetc-varenes.nrcan.gc.ca/fichier.php/codectec/En/2006-047/2006-047_OP-J_411-SOLRES_BIPV.pdf

⁶⁴ Science Applications International Corporation, *Survey on Canadian Geoeconomic Industry: 2004–2006* (2006), Figure 2, "Total sales, by capacity and number of units," p. 6.

⁶⁵ The *National Inventory Report, 1990–2005: Greenhouse Gas Sources and Sinks in Canada* (2007) was prepared by Environment Canada. It says that **carbon dioxide** produced from the combustion or aerobic decomposition of biomass is considered to be sequestered when biomass regenerates, i.e. biomass combustion and aerobic decomposition are carbon-neutral. Other greenhouse gases produced from either the combustion of biomass (**methane and nitrous oxide**) or the anaerobic decomposition of biomass (**methane**) are not sequestered in biomass regeneration.

⁶⁶ NRCan, *Energy Use Data Handbook Tables (Canada)* (2007), Tables 5 and 12, http://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/handbook_res_ca.cfm?attr=0.

⁶⁷ Quebec, Agence de la santé et des services sociaux de Montréal, Qualité de l'air extérieur – Prévenir les problèmes de santé liés à l'environnement, Web page, www.santepub-mtl.qc.ca/environnement/chauffage/index.html.

⁶⁸ Figures comparing 1990 and 2005 are from the following:

Statistics Canada, CANSIM (2007), Table 127-0001, "Electric power statistics monthly (megawatt hour)," vectors v222416, v222422 and v222429.

Statistics Canada, *Quarterly Report on Energy Supply-demand in Canada, 1990* (1991), Cat. No. 57-003-X, Table 15, "Electricity generated from fossil fuels, 1990."

Statistics Canada, *Report on Energy Supply-demand in Canada, 2005* (2007), Cat. No. 57-003-XWE, Table 8-1, "Electricity generated from fossil fuels – Total electricity generated," p. 112, and Table 9, "Primary electricity generation," p. 113.

⁶⁹ Total consumption data are from Statistics Canada, CANSIM (2007), Table 128-0003, "Supply and demand of primary and secondary energy in natural units, quarterly," vector v340872 (1990–2001 data), and Table 128-0010, "Supply and demand of primary and secondary energy in natural units, annual," vector v32452656 (2002–2005 data). Growth-rate figures are calculated for year y as follows, where C_y denotes total consumption in year y : $(C_y - C_{y-1})/C_{y-1}$.

⁷⁰ Total consumption data by province are from Statistics Canada, CANSIM (2007), Table 128-0010, "Supply and demand of primary and secondary energy in natural units, annual," vectors v32453647, v32453888, v32454172, v32454478, v32454817, v32455359, v32455925, v32456352, v32456679, v32457182, v32457797, v32457943 and v32458083.

⁷¹ Per capita consumption figures were calculated by dividing total consumption data by total population.

For total consumption data by province, see the following:

Data on hydro, wind and tidal, and nuclear generation are from Statistics Canada, *Electric Power Generation, Transmission and Distribution, 2005* (2007), Cat. No. 57-202-X, Table 2, "Generation of electric energy, 2005," pp. 10–11.

Data on non-nuclear thermal generation are from Statistics Canada, *Report on Energy Supply-demand in Canada, 2005* (2007), Cat. No. 57-003-XIE, Table 8-1, "Electricity generated from fossil fuels – Total electricity generated," p. 112.

Data on total population by province are from Statistics Canada, CANSIM (2007), Table 051-0001, "Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual," vectors v466668, v466983, v467298, v467613, v467928, v468243, v468558, v468873, v469188, v469503, v469818, v470133, v479937 and v480252.

⁷² Per capita residential consumption figures were calculated by dividing total residential consumption data by total population.

Total residential consumption data by province are from Statistics Canada, CANSIM (2007), Table 128-0010, "Supply and demand of primary and secondary energy in natural units, annual," vectors v32453658, v32453894, v32454182, v32454486, v32454832, v32455374, v32455937, v32456363, v32456692, v32457195, v32457800, v32457946 and v32458086.

For total population by province, see the following:

Data on hydro, wind and tidal, and nuclear generation are from Statistics Canada, *Electric Power Generation, Transmission and Distribution, 2005* (2007), Cat. No. 57-202-X, Table 2, "Generation of electric energy, 2005," pp. 10–11.

Data on non-nuclear thermal generation are from Statistics Canada, *Report on Energy Supply-demand in Canada, 2005* (2007), Cat. No. 57-003-XIE, Table 8-1, "Electricity generated from fossil fuels – Total electricity generated," p. 112.

Data on baseboard heaters are from Natural Resources Canada, Comprehensive Energy Use Database (2007), www.oeenrncan.gc.ca/corporate/statistics/neud/dpa/comprehensive_tables/index.cfm?attr=0, Residential Sector, Table 14, "Total households by building type and energy source," of each province and territory.

⁷³ Per capita industrial consumption figures were calculated by dividing total industrial consumption data by total population.

Total industrial consumption data by province are from Statistics Canada, CANSIM (2007), Table 128-0010, "Supply and demand of primary and secondary energy in natural units, annual," vectors v32452657, v32453648, v32453889, v32454173, v32454479, v32454818, v32455360, v32455926, v32456353, v32456680, v32457183, v32457798, v32457944 and v32458084.

For total population by province, see the following:

Data on hydro, wind and tidal, and nuclear generation are from Statistics Canada, *Electric Power Generation, Transmission and Distribution, 2005* (2007), Cat. No. 57-202-X, Table 2, "Generation of electric energy, 2005," pp. 10–11.

Data on non-nuclear thermal generation are from Statistics Canada, *Report on Energy Supply-demand in Canada, 2005* (2007), Cat. No. 57-003-XIE, Table 8-1, "Electricity generated from fossil fuels – Total electricity generated," p. 112.

⁷⁴ Data on total consumption by sector are from Statistics Canada, CANSIM (2007), Table 128-0010, "Supply and demand of primary and secondary energy in natural units, annual," vectors v32452657, v32452658, v32452660, v32452661, v32452662, v32452663, v32452664, v32452665, v32452666, v32452667, v32452668, v32452671, v32452672, v32452673 and v32452674.

⁷⁵ Data are from Hydro-Québec, *Comparison of Electricity Prices in Major North American Cities* (2007), p. 26. Residential electricity rates are in the column entitled "Residential, 1,000 kWh." Large industrial rates are in the column entitled "General, Large Power, 5,000 kW, 3,060,000 kWh, 85%."

⁷⁶ Conclusion of NERC's *2007 Long-Term Reliability Assessment 2007–2016*.

⁷⁷ *Ibid.*, p. 18.

⁷⁸ Canadian Electricity Association, *Addressing Challenges to Electricity Infrastructure Development* (2007), p. 5.

⁷⁹ North American Electric Reliability Corporation (2007), *Long-term Reliability Assessment 2007–2016*, p. 10.

⁸⁰ A detailed outlook is available in Natural Resources Canada, *Canada's Energy Outlook: The Reference Case 2006* (2006).

⁸¹ Natural Resources Canada (NRCAN), National Energy Use Database (NEUD), 1990 to 2005 (2007), Energy Use Data Handbook Tables (Canada), Residential Sector, Table 18, "Residential energy prices and background indicators." **For all statistics on NEUD, visit oeenrncan.gc.ca/statistics.**

⁸² *Ibid.*, Total End-Use Sector, Table 5.

⁸³ This rapid growth rate could be due in part to data quality and availability issues.

⁸⁴ In the commercial/institutional sector, only limited data are available on stocks, sales and unit energy consumption levels related to this equipment. Hence an index has been estimated to capture the impact of these changes over time.

⁸⁵ NRCAN, NEUD (2007), Energy Use Data Handbook Tables (Canada), Transportation Sector, Table 1 and Table 7.

⁸⁶ NRCAN, NEUD (2007), Energy Efficiency Trends Analysis Tables (Canada), Total End-Use Sector, Table 1.

⁸⁷ NRCAN, NEUD (2007), Energy Use Data Handbook Tables (Canada), Residential Sector, Table 1.

⁸⁸ NRCAN, NEUD (2007), Energy Efficiency Trends Analysis Tables (Canada), Total End-Use Sector, Table 1.

⁸⁹ A detailed forecast is available in NRCAN, *Canada's Energy Outlook: The Reference Case 2006* (2006).

⁹⁰ The secondary energy use described in this section includes the energy demand for pipelines and non-energy use from the industrial sector. It excludes consumption by petroleum refining and oil and gas industries.

⁹¹ NRCAN, NEUD (2007), Energy Use Data Handbook Tables (Canada), Total End-Use Sector, Table 2.

⁹² *Ibid.*, Residential Sector, Table 18.

⁹³ NRCAN, NEUD (2007), Comprehensive Energy Use Database, Residential Sector, Canada, Table 21.

⁹⁴ NRCan, Residential End-Use Model (REUM), Ottawa, February 2007. **For further information, contact NRCan's Energy Technology Programs Sector, Office of Energy Efficiency (OEE), Demand Policy Analysis Division (DPAD), Market Analysis group.**

⁹⁵ NRCan, NEUD (2007), Energy Use Data Handbook Tables (Canada), Residential Sector, Table 18.

⁹⁶ NRCan, NEUD (2007), Comprehensive Energy Use Database, Residential Sector, Canada, Table 1.

⁹⁷ NRCan, REUM, Ottawa, February 2007.

⁹⁸ NRCan, NEUD (2007), Comprehensive Energy Use Database, Residential Sector, Canada, Table 27 and Table 32.

⁹⁹ Ibid., Table 18.

¹⁰⁰ Ibid., Table 5.

¹⁰¹ NRCan, NEUD (2007), Energy Efficiency Trends Analysis Tables (Canada), Residential Sector, Table 3 (a).

¹⁰² NRCan, NEUD (2007), Comprehensive Energy Use Database, Residential Sector, Canada, Table 8.

¹⁰³ Ibid., Table 27.

¹⁰⁴ Ibid., Table 2.

¹⁰⁵ Ibid., Table 14.

¹⁰⁶ Ibid., Table 37.

¹⁰⁷ Ibid., Table 18.

¹⁰⁸ Ibid., Table 18.

¹⁰⁹ Ibid., Table 1 and Table 33.

¹¹⁰ Ibid., Table 2.

¹¹¹ Ibid., Table 33.

¹¹² Assumes that CFLs entered the residential lighting market in 2000 and that various bulb types are perfect substitutes. Trends are extrapolated from data collected from NRCan, *2003 Survey of Household Energy Use* (2006).

¹¹³ NRCan, *2003 Survey of Household Energy Use* (2006).

¹¹⁴ NRCan, NEUD (2007), Comprehensive Energy Use Database, Residential Sector, Canada, Table 1.

¹¹⁵ A detailed forecast is available in NRCan, *Canada's Energy Outlook: The Reference Case 2006* (2006).

¹¹⁶ NRCan, NEUD (2007), Energy Use Data Handbook Tables (Canada), Transportation Sector, Table 1.

¹¹⁷ Ibid., Table 2.

¹¹⁸ Ibid., Table 7.

¹¹⁹ Ibid., Table 1.

¹²⁰ NRCan, NEUD (2007), Energy Efficiency Trends Analysis Tables (Canada), Total End-Use Sector, Table 1.

NRCan, Transportation Energy Use Model (TEUM), 2005. **For further information, contact NRCan's Energy Technology Programs Sector, OEE, DPAD, Market Analysis group.**

¹²¹ NRCan, NEUD (2007), Comprehensive Energy Use Database, Transportation Sector, Canada, Table 7 and Table 11.

¹²² Ibid., Table 1.

¹²³ Ibid., Table 4.

¹²⁴ Transport Canada, Canadian Motor Vehicle Traffic Collision Statistics: 2005, www.tc.gc.ca/roadsafety/tp/tp3322/2005/page12.htm.

¹²⁵ NRCan, NEUD (2007), Energy Use Data Handbook Tables (Canada), Transportation Sector, Table 7.

¹²⁶ Ibid., Table 7.

¹²⁷ Ibid., Table 4.

¹²⁸ Ibid., Table 7.

¹²⁹ Ibid., Table 8.

¹³⁰ Ibid., Table 11.

¹³¹ Ibid., Table 1.

¹³² NRCan, NEUD (2007), Energy Efficiency Trends Analysis Tables (Canada), Total End-Use Sector, Table 1.

NRCan, TEUM, 2005.

¹³³ A detailed forecast is available in NRCan, *Canada's Energy Outlook: The Reference Case 2006* (2006).

¹³⁴ NRCan, NEUD (2007), Energy Efficiency Trends Analysis Tables (Canada), Total End-Use Sector, Table 1.

¹³⁵ NRCan, NEUD (2007), Energy Use Data Handbook Tables (Canada), Commercial/Institutional Sector, Table 5.

¹³⁶ Ibid., Table 1.

¹³⁷ NRCan, NEUD (2007), Energy Efficiency Trends Analysis Tables (Canada), Commercial/Institutional Sector, Table 5(a).

¹³⁸ NRCan, NEUD (2007), Comprehensive Energy Use Database, Commercial/Institutional Sector, Canada, Table 1.

¹³⁹ NRCan, NEUD (2007), Energy Efficiency Trends Analysis Tables (Canada), Total End-Use Sector, Table 1.

NRCan, TEUM, 2005

¹⁴⁰ NRCan, NEUD (2007), Energy Use Data Handbook Tables (Canada), Commercial/Institutional Sector, Table 1 and Table 5.

¹⁴¹ NRCan is working with Statistics Canada to determine the reasons for this anomaly to improve the quality of the commercial/institutional data reported.

¹⁴² NRCan, NEUD (2007), Comprehensive Energy Use Database, Commercial/Institutional Sector, Canada, Table 25.

¹⁴³ Ibid., Table 25 and Table 31.

¹⁴⁴ NRCan, NEUD (2007), Energy Efficiency Trends Analysis Tables (Canada), Total End-Use Sector, Table 1.

NRCan, TEUM, 2005.

¹⁴⁵ A detailed forecast is available in NRCan, *Canada's Energy Outlook: The Reference Case 2006* (2006).

¹⁴⁶ NRCan, NEUD (2007), Energy Use Data Handbook Tables (Canada), Total End-Use Sector, Table 5.

¹⁴⁷ Ibid., Table 2.

¹⁴⁸ Ibid., Table 2.

¹⁴⁹ Ibid., Industrial Sector, Table 2.

¹⁵⁰ NRCan, NEUD (2007), Energy Efficiency Trends Analysis Tables (Canada), Industrial Sector, Table 7(a).

¹⁵¹ NRCan, Industrial End-Use Model (IEUM), 2005.

¹⁵² NRCan, NEUD (2007), Energy Use Data Handbook Tables (Canada), Industrial Sector, Table 2.

¹⁵³ Ibid., Table 7.

¹⁵⁴ Ibid., Table 2 and Table 5.

¹⁵⁵ NRCan, NEUD (2007), Energy Efficiency Trends Analysis Tables (Canada), Industrial Sector, Table 7(a).

¹⁵⁶ Data are also from NRCan, IEUM, 2005.

¹⁵⁷ A detailed forecast is available in NRCan, *Canada's Energy Outlook: The Reference Case 2006* (2006).

¹⁵⁸ Source: Statistics Canada, CANSIM (2006 data):

Gross Domestic Product (GDP) at basic prices, by special industry aggregates based on the North American Industry Classification System (NAICS) and by province, annual (dollars), Table 379-0026. Total GDP vectors: v41890489+v41890490,v41890498+v41890499,v41890507+v41890508, v41890516+v41890517,v41890525+ v41890526,v41890534+v41890535,

v41890543+v41890544,v41890552+ v41890553,v41890561+v41890562, v41890570+v41890571,v41890579+v41890580,v41890597+v41890598 and v41890606+v41890607. Energy GDP vectors: v41890497, v41890506, v41890515, v41890524, v41890533, v41890542, v41890551, v41890560, v41890569, v41890578, v41890587, v41890605 and v41890614.

Estimates of population, by economic region, sex and age group for July 1, 2001 Census boundaries, annual (persons), Table 051-0038. Population vectors: v32417544, v32419194, v32419524, v32421504, v32423484, v32429424, v32433384, v32436354, v32438664, v32441634 and v32444604+v32444934+v32445264.

Labour force survey estimates (LFS), supplementary unemployment rates by sex and age group, annual, Table 282-0086. Unemployment vectors: v2170417, v2170633, v2170849, v217065, v2171281, v2171497, v2171713, v2171929, v2172145 and v2172361.

Employment (SEPH), unadjusted for seasonal variation, by type of employee for selected industries classified using the North American Industry Classification System (NAICS), annual (persons), Table 281-0024, and NRCan calculations based on Statistics Canada data. Direct Energy Employment vectors: Quebec – v1715989 and v13922127; Ontario – v1716257, v1716259 and v13922128; Saskatchewan – v1716693 and v1716696; Alberta – v1716836, v13922042, v1716837, v1716839 and v1716840; and British Columbia – v1716840 and v1717031.

¹⁵⁹Source: Statistics Canada, *Report on Energy Supply-demand in Canada 2005* (2006), Cat. No. 57-003-X, Primary Energy Production, vectors:

Canada: v32446088, v41708883, v32446131, v32446145, v32446183 and v32446209
 Newfoundland: v32447127, v32447148, v32447157 and v32447187
 Prince Edward Island: v32447529 and v32447564
 Nova Scotia: v32447871, v41709336, v32447908, v32447917, v32447932 and v32447957
 New Brunswick: v32448334, v41709390, v32448369, v32448381 and v32448423
 Quebec: v32448790 and v32448889
 Ontario: v32449275, v32449312, v32449324, v32449362 and v32449388
 Manitoba: v32449816, v32449851, v32449892 and v32449924
 Saskatchewan: v32450284, v41709006, v32450322, v32450334, v32450367 and v32450398
 Alberta: v32450717, v41709068, v32450750, v32450761, v32450797 and v32450826
 British Columbia: v32451227, v41709136, v32451264, v32451276, v32451312 and v32451341
 Territories: v32451718, v32451727, v32451736, v32451749 and v32451774

Electricity Generation: Statistics Canada, *Report on Energy Supply-demand in Canada 2005* (2008), Cat. No. 57-003-XIB, Energy Consumption vectors:

Canada: v32446074, v32446081, v32446082, v32446083 and v32446085
 Newfoundland: v32447113, v32447120, v32447121, v32447122 and v32447124
 Prince Edward Island: v32447516, v32447522, v32447523, v32447524 and v32447526
 Nova Scotia: v32447857, v32447864, v32447865, v32447866 and v32447868
 New Brunswick: v32448320, v32448327, v32448328, v32448329 and v32448331
 Quebec: v32448776, v32448783, v32448784, v32448785 and v32448787
 Ontario: v32449261, v32449268, v32449269, v32449270 and v32449272
 Manitoba: v32449802, v32449809, v32449810, v32449811 and v32449813
 Saskatchewan: v32450270, v32450277, v32450278, v32450279 and v32450281
 Alberta: v32450703, v32450710, v32450711, v32450712 and v32450714
 British Columbia: v32451213, v32451220, v32451221, v32451222 and v32451224
 Territories: v32451704, v32451711, v32451712, v32451713 and v32451715

Statistics Canada NRCan former *Energy Statistics Handbook*, Cat 57-601, Table 2.9, Demand by fuel.

¹⁶⁰Source: Statistics Canada, CANSIM (2006), Supply and disposition of crude oil and equivalent, monthly, Table 126-0001, and NRCan calculations based on Statistics Canada data, vectors:

Canada: v17948, v17944, v17945, v17946, v17947, v17949 and v17950
 Newfoundland: v17719 and v17718
 Nova Scotia: v1408975
 Ontario: v17997 and v17996
 Manitoba: v18004 and v18003
 Saskatchewan: v18024, v18022, v18023 and v18025
 Alberta: v18050, v18046, v18047, v18048, v18049, v18051 and v18052
 British Columbia: v18079, v18078, v18080 and v18081
 Territories: v18099, v18098 and v18101