

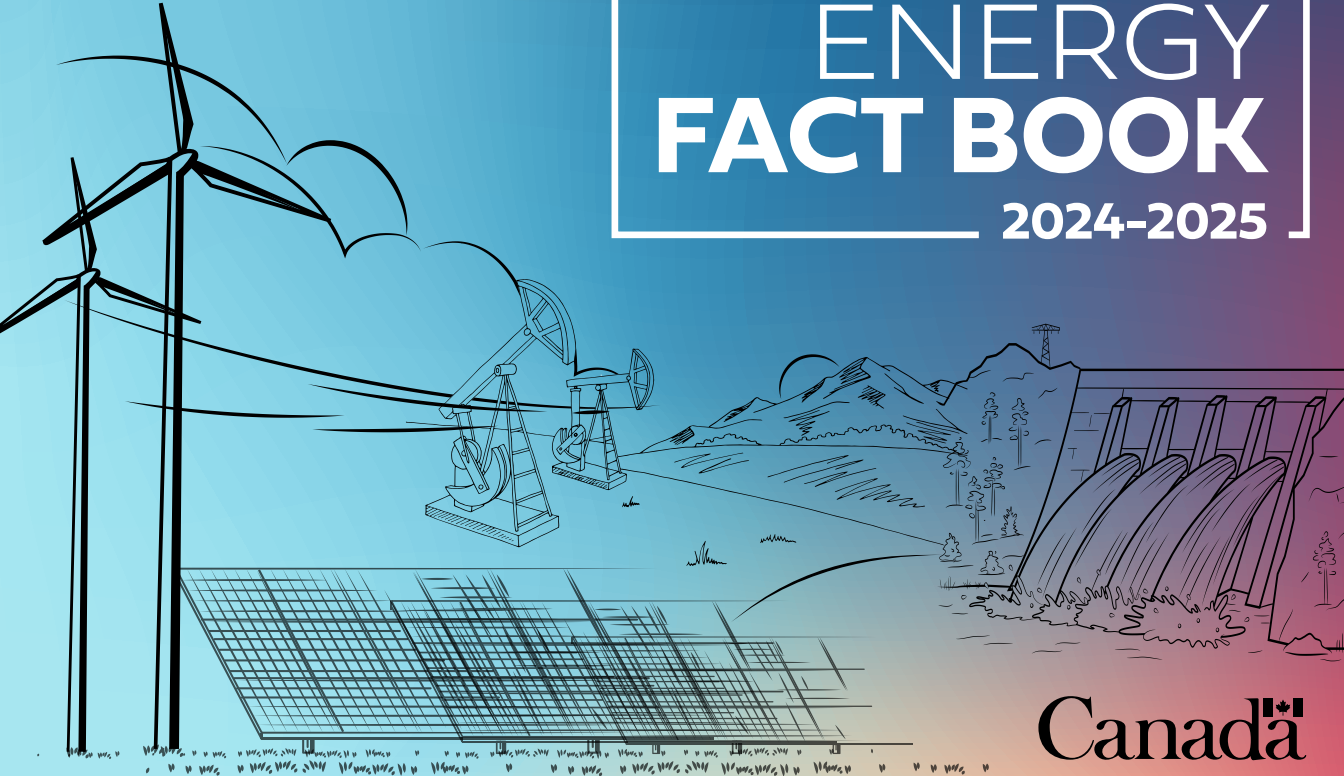


Natural Resources
Canada

Ressources naturelles
Canada

ENERGY FACT BOOK

2024-2025



Canada



Natural Resources
Canada

Ressources naturelles
Canada

ENERGY **FACT BOOK** 2024–2025

Canada 

Aussi disponible en français sous le titre : Cahier d'information sur l'énergie, 2024-2025

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Cat. No. M136-1E (Print) M136-1E-PDF (online)

ISSN 2370-3105 ISSN 2370-5027

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PREFACE

The purpose of the *Energy Fact Book* is to provide key information on energy markets in Canada in a format that is easy to consult. Resources including a summary of units and conversion factors, abbreviations, and data sources used throughout this publication are available in the annexes.

All data is subject to revisions by statistical sources. In some instances, more than one source may be available and discrepancies in numbers may occur because of conceptual or methodological differences. In addition, some numbers may not add up precisely due to rounding.

This publication was assembled by the Energy and Economic Analysis Division of the Energy Policy Branch with the help of subject experts from across Natural Resources Canada (NRCan).

For questions or comments, contact NRCan at **energyfacts-faitsenergetiques@nrcan-rncan.gc.ca**.

In this publication, energy industries are generally considered to include oil and gas extraction; coal mining; uranium mining; electric power generation, transmission and distribution; pipeline transportation; natural gas distribution; biofuels production; petroleum refineries; and support activities for oil and gas extraction. The petroleum sector is a subset of these industries, and in this publication consists of oil and gas extraction and support activities, pipeline transportation and distribution of oil and gas, and petroleum refineries.

Clean energy industries such as renewable and nuclear electricity generation, biofuels production and carbon capture and storage facilities are contained within the definition of energy industries. Some energy-related industries (e.g. petroleum product wholesaler-distributors and coal product manufacturing) are excluded because of a lack of data.

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INTRODUCTION

From an energy perspective, Canada is very fortunate. We have a large land mass, small population and one of the largest and most diverse supplies of energy in the world. Our rivers discharge close to 7% of the world's renewable water – a tremendous source of hydroelectric power. We have the fourth-largest proven oil reserves and third-largest reserves of uranium; our energy resources are a source of strength that continues to shape our economy and society.

Canada is at the forefront of innovative technologies for how we produce and use energy. For example, low- or non-emitting forms of energy are growing in significance as part of our evolving electricity mix. In fact, wind and solar photovoltaic (PV) energy are the fastest-growing sources of electricity generation in Canada. In addition, technological advancements, such as co-generation, have resulted in an increase in energy-efficient practices and a reduction in greenhouse gas (GHG) emissions in areas such as the oil sands. Ongoing developments in areas such as grid-scale electricity storage, carbon capture and storage, hydrogen, and electric and alternative fuel vehicles have the potential to further transform the energy system.

For over ten years, the *Energy Fact Book* has provided a solid foundation for Canadians to understand and discuss important developments across the energy sector. A significant milestone in Canadian energy information was achieved in 2019 with the launch of the Canadian Center for Energy Information (CCEI). Housed at Statistics Canada, the CCEI brings together Canada's existing energy information in one place, facilitating access to products like the Energy Fact Book.

Section 1: Key Energy, Economic and Environmental Indicators

Energy production and supply

Economic contributions

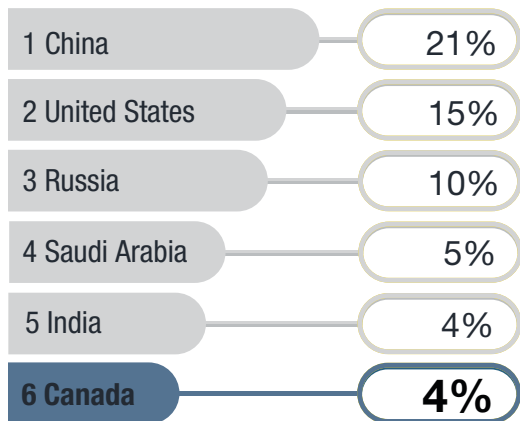
Energy and GHG emissions

ENERGY PRODUCTION AND SUPPLY

CANADA: A GLOBAL ENERGY LEADER

The amount of primary energy produced by Canada in 2022 is **40% more** than in 2005. The world, on average, has increased energy production by **32%** in the same period.

WORLD TOTAL PRIMARY ENERGY PRODUCTION TOP ENERGY PRODUCERS, 2022



GLOBAL ENERGY RANKINGS FOR CANADA

	Proved reserve/ capacity	Production	Exports
Crude oil	4	4	3
Uranium	3	2	2
Hydroelectricity	4	3	-
Electricity	8	7	2
Coal	18	15	8
Natural gas	15	5	6

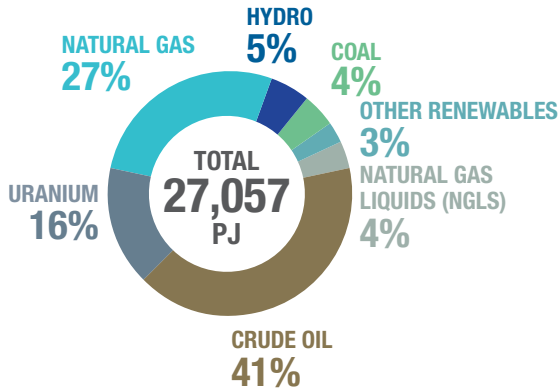
CANADIAN ENERGY PRODUCTION

Primary energy is energy that is found in nature before any processing or conversion. The *Energy Fact Book* calculates primary energy production by using two methods. The first method treats the energy embodied in uranium as primary energy, thereby capturing the uranium Canada produces and then exports. This method provides a more accurate picture of energy production in Canada.

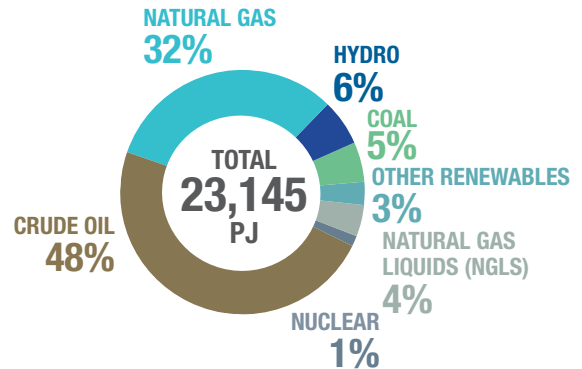
The second method—also employed by the International Energy Agency (IEA), the Energy Information Administration (EIA) and others—treats domestic electricity production from nuclear energy as primary energy, but not uranium itself. Uranium is energy-dense, and Canada exports most of its uranium production, which explains why the two methods produce such different results.

PRIMARY ENERGY PRODUCTION BY SOURCE (2022)

PRIMARY ENERGY PRODUCTION,
INCLUDING URANIUM



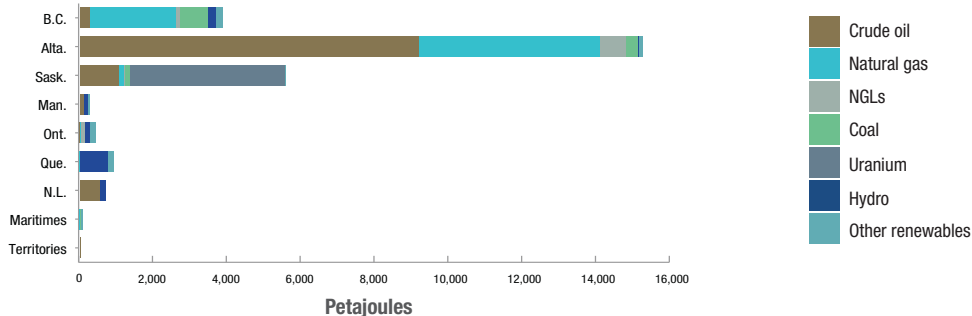
PRIMARY ENERGY PRODUCTION,
EXCLUDING URANIUM



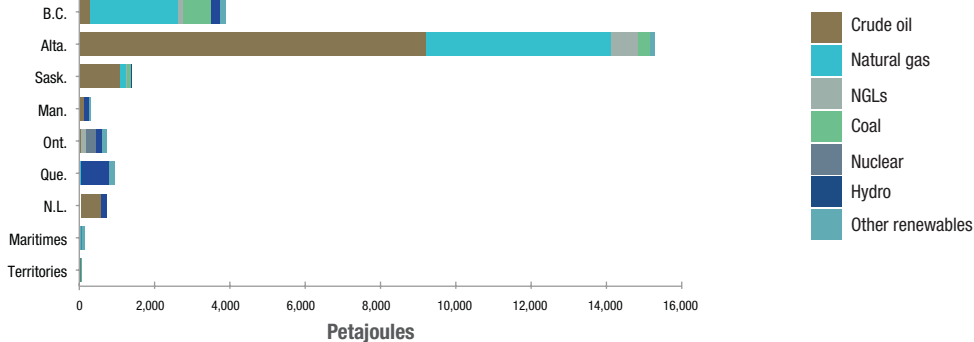
"Other renewables" includes wind, solar, wood/wood waste, biofuels and municipal waste.

PRIMARY ENERGY PRODUCTION BY REGION AND SOURCE (2022)

PRIMARY ENERGY PRODUCTION, INCLUDING URANIUM



PRIMARY ENERGY PRODUCTION, EXCLUDING URANIUM

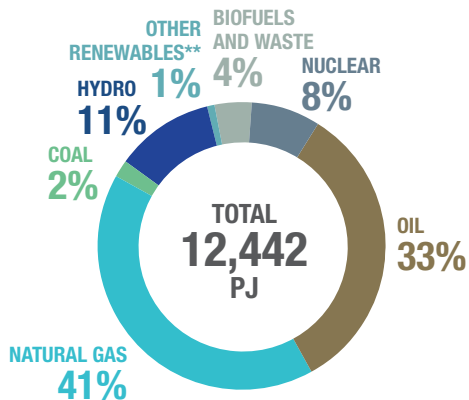


CANADA'S ENERGY SUPPLY

A look at Canada's total energy supply (TES) helps to better understand the impact of energy sources on GHG emissions. The TES¹ is calculated as:

$$\text{TES} = \text{PRODUCTION} + \text{IMPORTS} - \text{EXPORTS} + \text{STOCK CHANGES}$$

**CANADA TOTAL ENERGY SUPPLY,*
BY SOURCE, 2022**



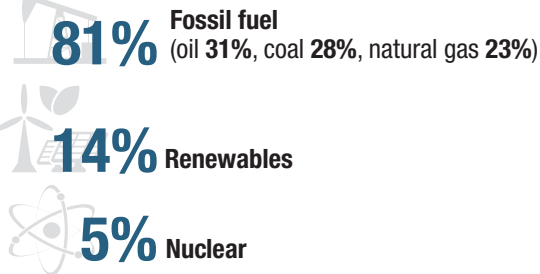
* not including electricity trade

**"Other renewables" includes wind, solar and geothermal.

¹ For the purposes of TES, electricity production is calculated by using the energy content of the electricity (i.e. at a rate of 1 TWh = 0.086 Mtoe), with the exception of nuclear electricity, which is calculated assuming a 33% conversion efficiency factor increase (i.e. 1 TWh = 0.086 ÷ 0.33 Mtoe).

- Fossil fuels made up **77%** of Canada's TES in 2022.
- Renewable energy sources made up **16.8%** of Canada's TES in 2022.

Comparatively, the global TES is made up of

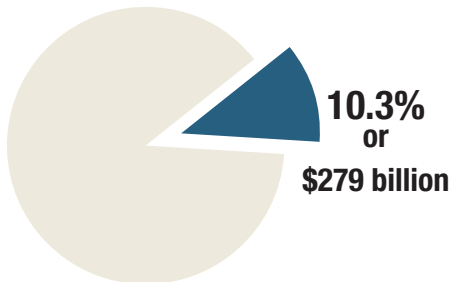


ECONOMIC CONTRIBUTIONS

NOMINAL GROSS DOMESTIC PRODUCT (2023)

ENERGY'S NOMINAL GDP CONTRIBUTION FOR CANADA

NOMINAL GDP (% OF CURRENT DOLLARS)



CANADIAN GDP

ENERGY DIRECT 8.2% (\$222 billion)

PETROLEUM 6.1%

ELECTRICITY 1.9%

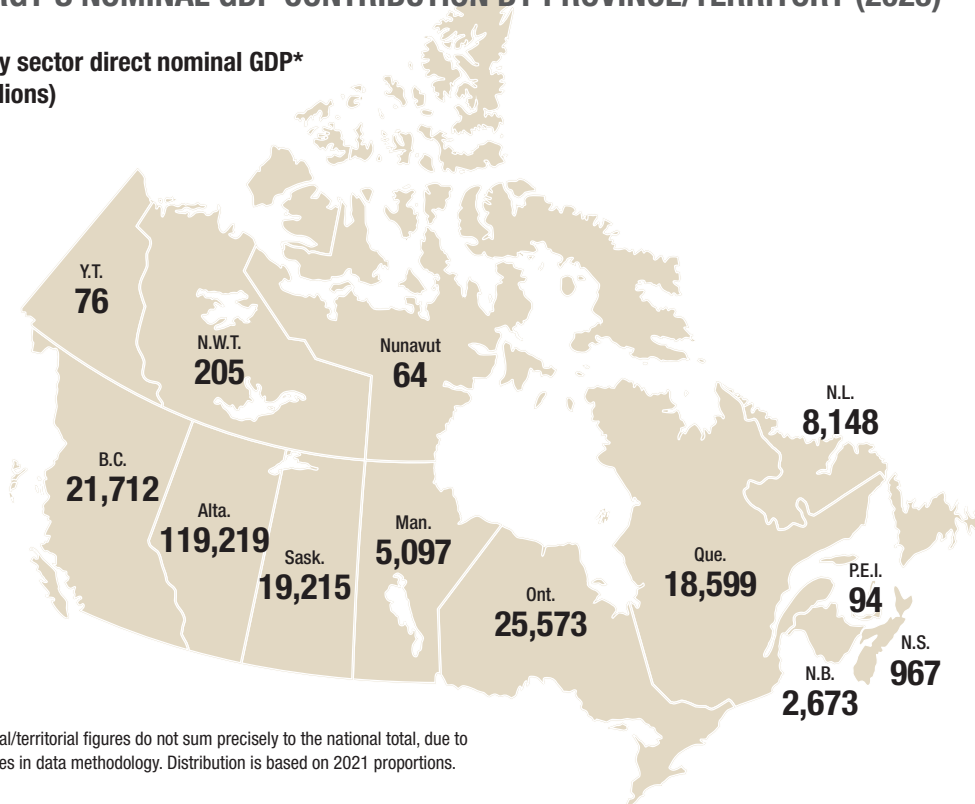
OTHER 0.1%

ENERGY INDIRECT 2.1% (\$57 billion)

Parts may not sum to total due to rounding. For more information on the methodology used by Statistics Canada to estimate indirect contributions, please contact statcan.iadinfoddc-dciinfoiad.statcan@statcan.gc.ca.

ENERGY'S NOMINAL GDP CONTRIBUTION BY PROVINCE/TERRITORY (2023)

Energy sector direct nominal GDP*
(\$ millions)



*Provincial/territorial figures do not sum precisely to the national total, due to differences in data methodology. Distribution is based on 2021 proportions.

EMPLOYMENT IN CANADA'S ENERGY SECTOR (2023)

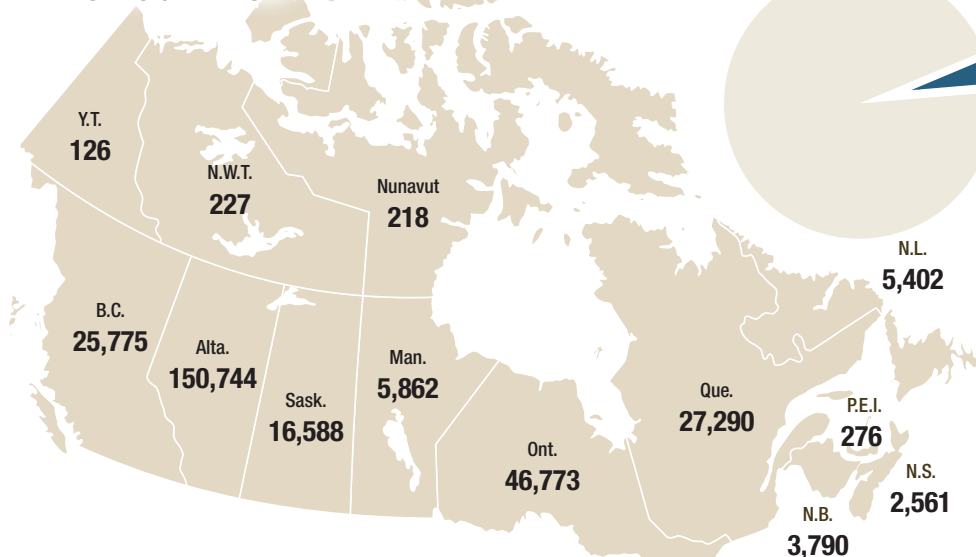
DIRECT: 285,600 JOBS

INDIRECT: 411,400 JOBS

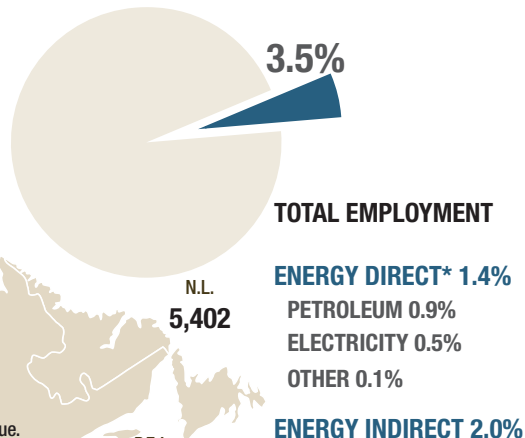
TOTAL: 697,000 JOBS

- About **15,800 Indigenous people** were directly employed in the energy sector in 2022.

ENERGY SECTOR DIRECT EMPLOYMENT BY PROVINCE/TERRITORY*



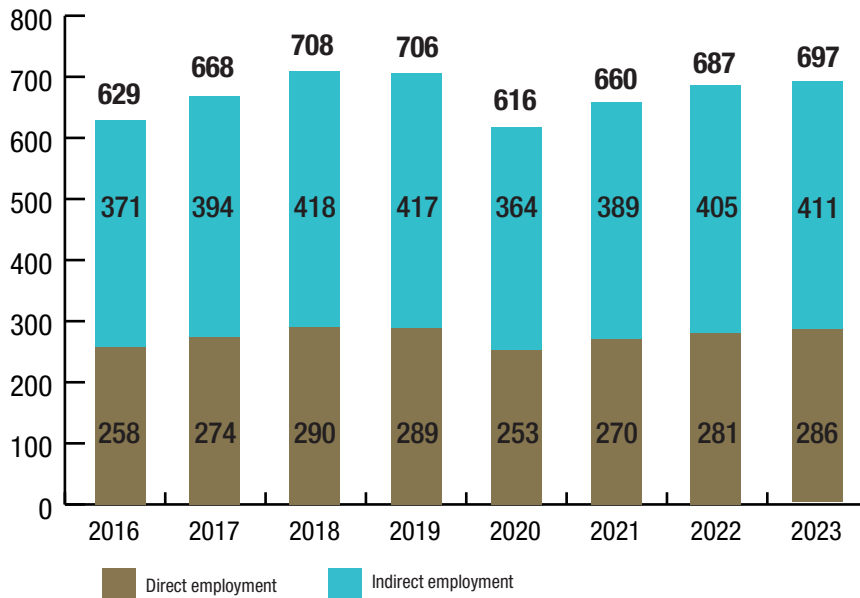
SHARE OF TOTAL EMPLOYMENT, 2023



*Provincial/territorial and sectoral employment figures do not sum precisely to the national total due to rounding.

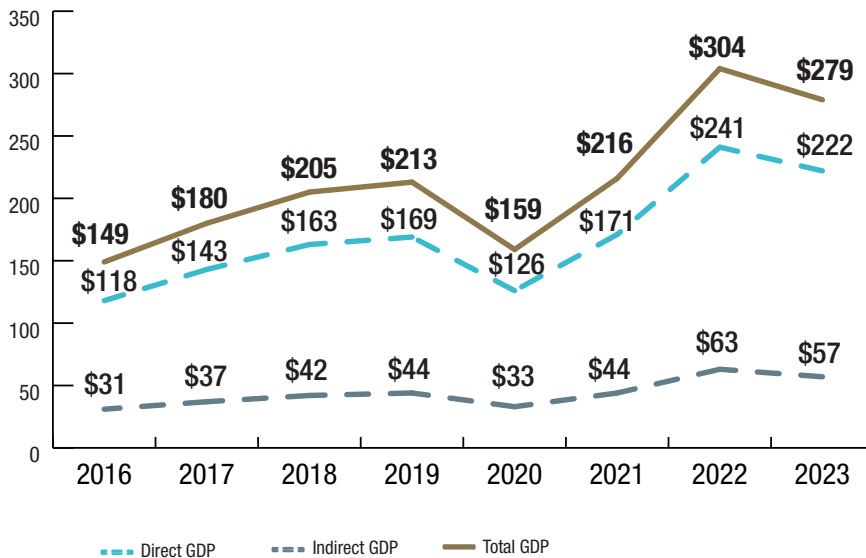
The indirect contribution is not comparable to previously published estimates due to revisions and a change in estimation methodology by Statistics Canada. For more information on Statistics Canada's estimation methodology, please contact statcan.iadinfoddc-dciinfoiad.statcan@statcan.gc.ca.

ENERGY SECTOR EMPLOYMENT (Thousands of jobs)



Parts may not sum to total due to rounding. The indirect contribution is not comparable to previously published estimates due to revisions and a change in estimation methodology by Statistics Canada. For more information on Statistics Canada's estimation methodology, please contact statcan.iadinfoddc-dciinfoiad.statcan@statcan.gc.ca.

ENERGY SECTOR GDP (Billions of dollars)



Parts may not sum to total due to rounding. The indirect contribution is not comparable to previously published estimates due to revisions and a change in estimation methodology by Statistics Canada. For more information on Statistics Canada's estimation methodology, please contact statcan.iadinfoddc-dciinfoiad.statcan@statcan.gc.ca.

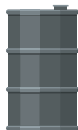
ENERGY TRADE (2023)

Energy exports

\$199.1 billion
representing

28%

of total Canadian
goods exports

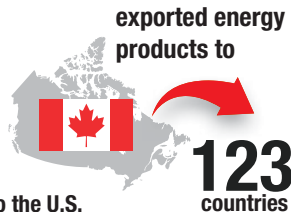


Oil and gas domestic
exports totalled

\$177 billion

of which

95% were to the U.S.



The U.S. accounts for



89%

of energy exports
by value
(\$177.3 billion)

Exports to the U.S.



Crude oil

Natural gas

Electricity

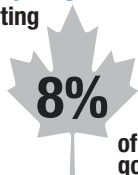
Coal

% of Canadian exports destined for U.S.	% of Canadian production exported to U.S.	% of U.S. imports coming from Canada	% of U.S. consumption supplied by Canada
97	78	60	24
>99 *	44	>99	9
100	10	85	1
2	2	19	0.1

*Canada exports trace amounts of Liquefied Natural Gas (LNG) to trade partners other than the United States.

Energy imports

\$57.9 billion
representing



of total Canadian
goods imports

imported energy
products from



120
countries

The U.S. accounts for



78%

of energy imports
by value
(\$45 billion)

Imports from the U.S.



Crude oil



Natural gas



Electricity



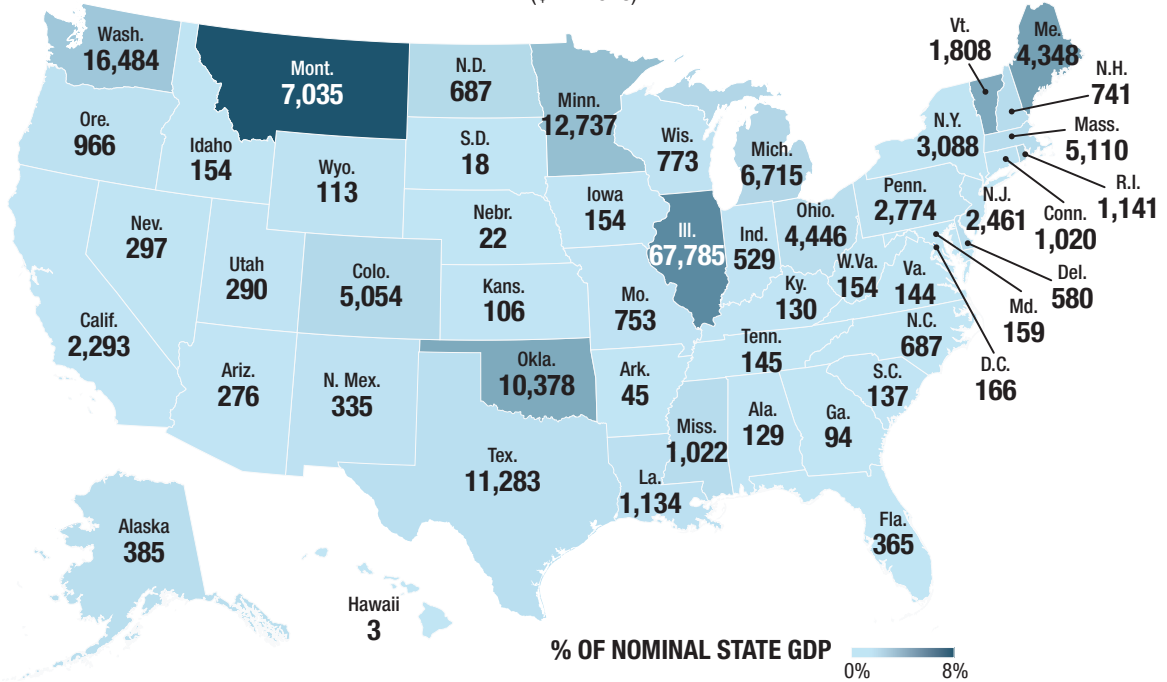
Coal



% of Canadian imports originating from U.S.	% of U.S. exports destined for Canada	% of Canadian consumption supplied by U.S.
52	8	20
97	13	17
100	91	4
76	5	32

CANADIAN ENERGY EXPORTS TO THE U.S. BY STATE (2023)

(\$ millions)

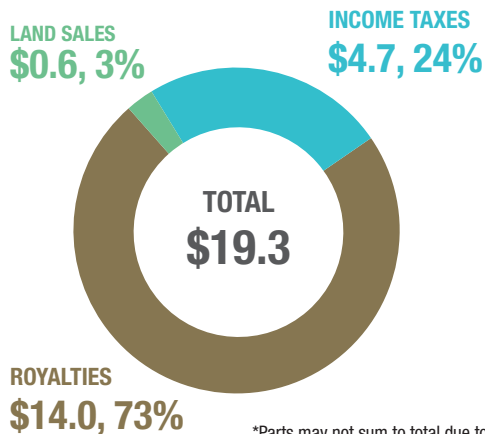


* All exports values in Canadian dollars. Values may not sum to U.S. total due to rounding and additional exports to overseas U.S. Territories.

GOVERNMENT REVENUES

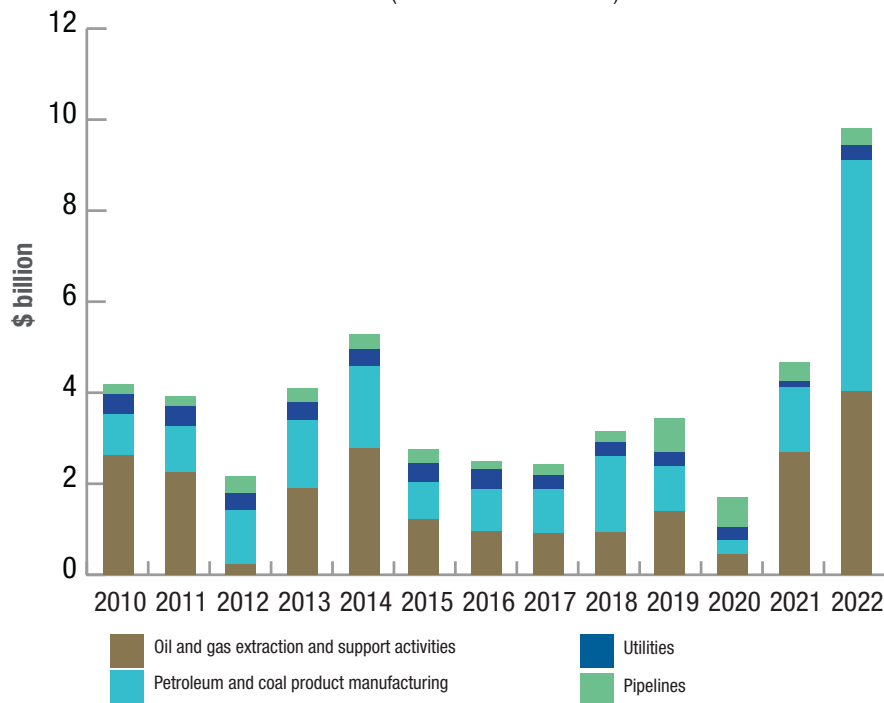
Federal and provincial/territorial governments in Canada receive direct revenues from energy industries through corporate income taxes, crown royalties, which are the share of the value of oil and gas extracted that is paid to the Crown as the resource owner, and crown land sales, which are paid to the Crown in order to acquire the resource use for specific properties.

GOVERNMENT ENERGY REVENUE, 2018-2022 AVERAGE (\$ BILLIONS)



- An important share of government revenues is collected from the petroleum sector, which averaged **\$19 billion** over the last five years, including **\$17 billion** from upstream oil and gas extraction and its support activities.
- Between 2018 and 2022, the energy sector's share of taxes paid by all industries was **6.0%**. Operating revenues of the energy sector represented **9.1%** of all operating revenues earned by industries in Canada.

CORPORATE INCOME TAXES PAID BY ENERGY INDUSTRIES (Federal and Provincial)



ENERGY AND GHG EMISSIONS



In 2021,

78%

of global GHG emissions from human activity were from the production and consumption of energy.



This includes activities such as using gasoline for transportation, fossil fuel-fired electricity generation, oil and gas production, and heating and cooling buildings.



In Canada, **about 82%** of emissions come from energy. Canadians use more energy because of our extreme temperatures, vast landscape and dispersed population.

The challenges of **transitioning** to a **lower-carbon energy system** are numerous, but they also present opportunities for **Canada to be a global leader** by **supporting innovative technologies in the energy sector**, including **promoting our growing renewables and cleantech sectors**.



Since 2000, there has been a decoupling between the growth of Canada's economy and GHG emissions, largely because of technological improvements, regulations, and more efficient practices and equipment.

In 2022, emissions increased slightly as economic activity continued to recover from the impacts of the COVID-19 pandemic, with 2022 emissions 44 Mt lower than in 1999 (-5.9%).

Between 2000 and 2022,
Canada's GHG emissions
decreased by

5.3%

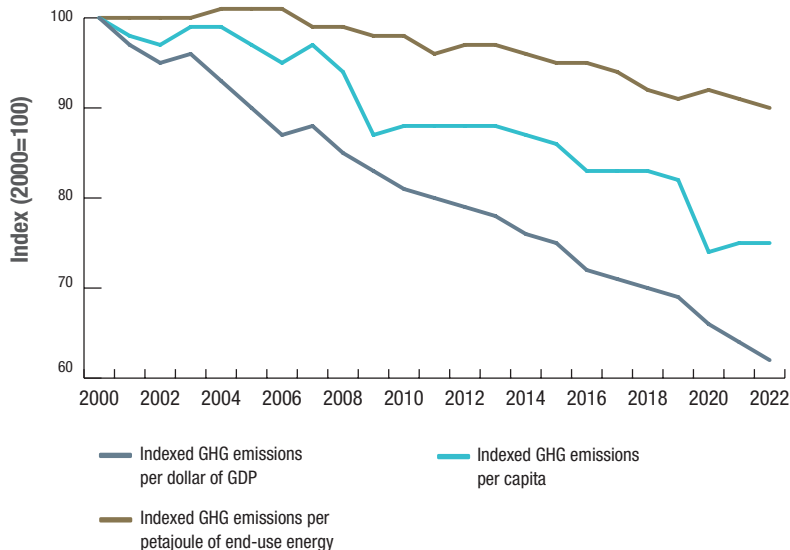
while GDP increased

52%

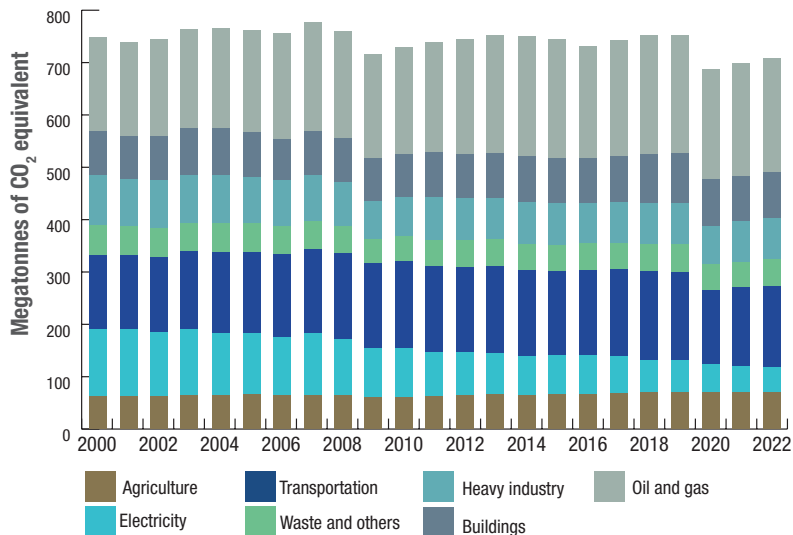
GHG emissions decreased

38%
per dollar of GDP and
25%
per capita.

INDEXED TREND IN GHG EMISSIONS PER PERSON, PER UNIT OF GDP AND PER UNIT OF ENERGY CONSUMED, 2000–2022



GHG EMISSIONS BY CANADIAN ECONOMIC SECTOR, 2000–2022



- Between 2000 and 2022, **emissions from electricity production decreased 63%**, largely because of Ontario's successful coal phase-out action plan, which started in 2001.
- **Emissions from oil and gas production increased 21%** largely due to an increase of 67% in production.
- **Emissions from heavy industry have decreased by 19%** despite an increase in output of the industrial sector. This is due in part to improvements in energy efficiency and fuel switching.

ANNEXES

ANNEX 1: UNITS AND CONVERSION FACTORS

PREFIXES AND EQUIVALENTS

Prefix				
SI/Metric		Imperial	Equivalent	
k	kilo	M	thousand	10^3
M	mega	MM	million	10^6
G	giga	B	billion	10^9
T	tera	T	trillion	10^{12}
P	peta	-	quadrillion	10^{15}

Notes

- Tonne may be abbreviated to “t” and is not to be confused with “T” for tera or trillion.
- Roman numerals are sometimes used with imperial units (this can create confusion with the metric “M”).

CRUDE OIL

Upstream

- reserves usually in barrels or multiples (million barrels)
- production/capacity often in barrels per day or multiples (thousand barrels/day or Mb/d, million barrels/day or MMB/d)
- metric: 1 cubic metre = 6.2898 barrels
- International Energy Agency: uses weight (tonnes) rather than volume

Downstream (petroleum products)

- volumes of refined products usually in litres
- 1,000 litres = 1 cubic metre
- U.S.: 1 U.S. gallon = 3.785 litres

NATURAL GAS

Volume

- reserves/production usually in cubic feet or multiples (billion cubic feet or Bcf, trillion cubic feet or Tcf)
- production/capacity often in cubic feet per day or multiples (Bcf/d, Tcf/d)
- metric: 1 cubic metre = 35.3147 cubic feet

Density

- 1 million t LNG = 48.0279 billion cubic feet

Pricing

Volume-based:

- cents per cubic metre (¢/m³) (customer level in Canada)
- \$ per hundred cubic feet (\$/CCF) (customer level in the U.S.)

Energy content-based:

- \$ per gigajoule (\$/GJ) (company level in Canada)
- \$ per million British thermal units (\$/MMbtu) (company level in the U.S., LNG)

URANIUM

- 1 metric tonne = 1,000 kilograms of uranium metal (U)
- U.S.: in pounds of uranium oxide (U₃O₈)
- 1 lb. U₃O₈ = 0.84802 lb. U = 0.38465 kg U

COAL

- 1 metric tonne = 1,000 kilograms
- U.S.: 1 short ton = 2,000 pounds
- 1 metric tonne = 1.10231 short tons

ELECTRICITY

Capacity

- maximum rated output that can be supplied at an instant, commonly expressed in megawatts (MW)

Total capacity

- installed generator nameplate capacity

Generation/sales

- flow of electricity over time, expressed in watt-hours or multiples:
 - kilowatt-hours or kWh (e.g. customer level)
 - megawatt-hours or MWh (e.g. plant level)
 - gigawatt-hours or GWh (e.g. utility level)
 - terawatt-hours or TWh (e.g. country level)

From capacity to generation

- A 1-MW unit operating at full capacity over one hour generates 1 MWh of electricity
- Over one year, this unit could generate up to 8,760 MWh (1 MW × 24 hr × 365 days)

- Units are rarely used at full capacity over time because of factors such as maintenance requirements, resource limitations and low demand
- “Capacity factor” is the ratio of actual generation to full capacity potential

ENERGY CONTENT

Rather than using “natural” units (e.g. volume, weight), energy sources can be measured according to their energy content – this allows comparison between energy sources

- metric: joules or multiples (gigajoules or GJ, terajoules or TJ, petajoules or PJ)
- U.S.: 1 British thermal unit (BTU) = 1,055.06 joules
- IEA: energy balances expressed in oil equivalent: :
 - thousand tonnes of oil equivalent (ktoe)
 - million tonnes of oil equivalent (Mtoe)

Typical values

- 1 m³ of crude oil = 39.0 GJ
- 1,000 m³ of natural gas = 38.3 GJ
- 1 MWh of electricity = 3.6 GJ
- 1 metric tonne of coal = 29.3 GJ
- 1 metric tonne of wood waste = 18.0 GJ
- 1 metric tonne of uranium = 420,000 GJ to 672,000 GJ

ANNEX 2: ABBREVIATIONS

AC	alternating current	EIA	Energy Information Administration (U.S.)
AECO	Alberta Energy Company	EU	European Union
AESO	Alberta Electric System Operator	EV	electric vehicle
AER	Alberta Energy Regulator	FDI	foreign direct investment
B	billion	G7	seven wealthiest major developed nations: Canada, France, Germany, Italy, Japan, U.K. and U.S.
b/d	barrels per day		
Bcf/d	billion cubic feet per day	GDP	gross domestic product
Bcm/d	billion cubic metres per day	GHG	greenhouse gas
BEV	battery electric vehicle	GJ	gigajoule
CANDU	Canada deuterium uranium	GST	Goods and Services tax
CAPP	Canadian Association of Petroleum Producers	GWh	gigawatt hours
CanREA	Canadian Renewable Energy Association	HGL	hydrocarbon gas liquids
CCS	carbon capture and storage	HST	Harmonized sales tax
CCUS	carbon capture, utilization and storage	IEA	International Energy Agency
CDIA	Canadian direct investment abroad	IHA	International Hydropower Association
CEA	Canadian energy assets	kg	kilogram
CER	Canada Energy Regulator	km	kilometre
CFS	Canadian Forest Service	km ²	square kilometre
CO ₂ equivalent	carbon dioxide equivalent	kt	kilotonne
CPI	consumer price index	kWh	kilowatt hour
CPL	cents per litre	lb.	pound
DC	direct current	L	litre
ECCC	Environment and Climate Change Canada	LCOE	levelized cost of electricity
ECTPEA	Environmental and Clean Technology Products Economic Account	LNG	liquefied natural gas
EGS	enhanced geothermal system	LPG	liquefied petroleum gases
		LWR	light water reactor

m	metre
m ²	square metre
m ³	cubic metre
Mb/d	thousand barrels per day
MJ	megajoule
MMb/d	million barrels per day
MMcf/d	million cubic feet per day
MMbtu	million British thermal units
Mt	million tonnes; megatonne
Mtoe	million tons of oil equivalent
MW	megawatt
NGCC	natural gas combined cycle
NGL	natural gas liquids
NRCan	Natural Resources Canada
OEE	NRCan Office of Energy Efficiency
NRSA	Natural Resources Satellite Account
NSERC	National Science and Engineering Research Council of Canada
NYMEX	New York Mercantile Exchange
OECD	Organisation for Economic Co-operation and Development
PHEV	plug-in hybrid electric vehicle
PHWR	pressurized heavy water reactor
PJ	petajoule
Pkm	passenger-kilometre

Provinces

Alta.	– Alberta
B.C.	– British Columbia
Man.	– Manitoba
N.B.	– New Brunswick
N.L.	– Newfoundland and Labrador
N.S.	– Nova Scotia
N.W.T.	– Northwest Territories
Ont.	– Ontario
P.E.I.	– Prince Edward Island
Que.	– Quebec
Sask.	– Saskatchewan
Y.T.	– Yukon
Atl.	– Atlantic provinces
Terr.	– Territories
P/T	provincial/territorial
PV	photovoltaic
RD&D	research, development and demonstration
R&D	research and development
RPP	refined petroleum products
SDTC	Sustainable Development Technology Canada
StatCan	Statistics Canada
States	
Ala.	– Alabama
Ariz.	– Arizona
Ark.	– Arkansas
Calif.	– California

Colo. – Colorado		Okla.– Oklahoma
Conn. – Connecticut		Ore. – Oregon
Del. – Delaware		Penn. – Pennsylvania
D.C. – District of Columbia		R.I. – Rhode Island
Fla. – Florida		S.C. – South Carolina
Ga. – Georgia		S.D. – South Dakota
Ill. – Illinois		Tenn. – Tennessee
Ind. – Indiana		Tex. – Texas
Kans. – Kansas		Vt.– Vermont
Ky. – Kentucky		Va. – Virginia
La. – Louisiana		Wash. – Washington
Me. – Maine		W.Va. – West Virginia
Md. – Maryland		Wis. – Wisconsin
Mass. – Massachusetts		Wyo. – Wyoming
Mich. – Michigan	Tcf	trillion cubic feet
Minn. – Minnesota	Tcm	trillion cubic metres
Miss. – Mississippi	Tkm	tonne-kilometre
Mo. – Missouri	t	tonnes
Mont. – Montana	TPES	total primary energy supply
Nebr.– Nebraska	TWh	terawatt-hour
Nev. – Nevada	TSX	Toronto Stock Exchange
N.H. – New Hampshire	U.K.	United Kingdom
N.J. – New Jersey	U.S.	United States
N.Mex. – New Mexico	US\$	United States dollars
N.Y.– New York	V	volt
N.C.– North Carolina	WCS	Western Canadian Select
N.D. – North Dakota	WTI	West Texas Intermediate

ANNEX 3: SOURCES

SECTION 1: KEY ENERGY, ECONOMIC AND ENVIRONMENTAL INDICATORS

- **ENERGY PRODUCTION AND SUPPLY**
 - **Global Primary Energy Production:** IEA. *Annual Database*
 - **Global Energy Rankings:** IEA. *Annual Database*; IHA. *World Hydropower Outlook*
 - **Primary Energy Production by Region & Source:** StatCan. Tables 25-10-0020-01, 25-10-0029-01, 25-10-0030-01, 25-10-0031-01, and 25-10-0082-01; NRCan OEE. *National Energy Use Database*; ECCC. *Special tabulations*
 - **Canada's energy supply:** IEA. *Annual Database*
 - **Primary and secondary energy use:** NRCan OEE. *National Energy Use Database*
- **ECONOMIC CONTRIBUTION**
 - **GDP:** StatCan. Tables 38-10-0285-01, 36-10-0221-01, 36-10-0103-01 and 36-10-0400-01; StatCan. *Custom tabulations*; NRCan estimates
 - **Employment:** StatCan. Tables 38-10-0285-01, 36-10-0480-01 and 14-10-0023-01; StatCan. *Custom tabulations*; NRCan estimates
 - **Energy Trade:** StatCan. *International Merchandise Trade Database*; IEA. *Annual Database*; U.S. EIA. *U.S. Imports by Country of Origin Trade Database*; U.S. EIA. *U.S. Imports by Country of Origin*; U.S. Bureau of Economic Analysis. *Gross Domestic Product by State*
 - **Government Revenues:** StatCan. Tables 33-10-0500-01 and 25-10-0065-01; CAPP. *Statistical Handbook, Table 01-01*; geoLOGIC Systems Ltd. *Daily Oil Bulletin. Land sales data*;

Canada-Newfoundland and Labrador Offshore Petroleum Board; *Annual Report*; Canada-Nova Scotia Offshore Petroleum Board. *Annual Report*

- **ENERGY AND GHG EMISSIONS**
 - **Emissions by Sector:** ECCC. *National Inventory Report*; Climate Watch. *Data Explorer*
 - **Indexed Trend in GHG Emissions:** ECCC. *National Inventory Report*; StatCan. Tables 17-10-0005-01 and 36-10-0434-03

SECTION 2: INVESTMENT

- **Capital expenditures:** StatCan. Tables 34-10-0035-01, 34-10-0036-01 and 34-10-0040-01
- **Canada's Energy Infrastructure:** StatCan. Table 36-10-0608-01
- **Canada's Major Energy Projects:** NRCan. *Major Projects Inventory*
- **Foreign Direct Investment and Canadian Direct Investment Abroad:** StatCan. Table 36-10-0009-01
- **Foreign Control of Canadian Assets:** StatCan. Tables 33-10-0033-01, 33-10-0005-01 and 33-10-0006-01
- **Canadian Energy Assets:** Compiled by NRCan from S&P Global Market Intelligence and annual financial statements from publicly traded Canadian energy companies
- **Research, Development and Demonstration:** Compiled by NRCan from internal sources
- **Environmental Protection Expenditures:** StatCan. Tables 38-10-0130-01 and 38-10-0132-01

SECTION 3: SKILLS, DIVERSITY AND COMMUNITY

- **Energy Sector Demographics:** StatCan. *NRSA Human Resources*

Module custom tables

- **Energy Affordability:** StatCan. Estimation of Energy Poverty Rates Using the 2021 Census of Population ; StatCan. Table 11-10-0222-01
- **Household Expenditures on Energy:** StatCan. Table 11-10-0222-01
- **Energy Retail Prices:** StatCan. Table 18-10-0004-01 and 18-10-0001-01; IEA. *Annual Database*
- **Energy Reliant Communities:** NRCan analysis based on StatCan 2021 Census Data

SECTION 4: ENERGY EFFICIENCY

- **Energy use, efficiency and trends:** NRCan OEE. *National Energy Use Database*; NRCan estimates

SECTION 5. CLEAN POWER AND LOW CARBON FUELS

• CLEAN TECHNOLOGY AND THE ECONOMY

- **Environmental and clean technology:** NRCan. *2022 Cleantech Industry Survey*; StatCan. Tables 14-10-0023-01, 36-10-0103-01, 36-10-0629-01 and 36-10-0632-01; Toronto Stock Exchange. *TSX & TSXV Listed Companies*

• ELECTRICITY

- **World production and exports:** IEA. *Electricity Information* [note: IEA production/generation data is expressed on a “gross” basis, i.e. before generating station use])
- **Trade:** CER. *Commodity Tracking System*
- **Canadian and provincial supply:** Compiled by NRCan’s Energy Systems Sector from various sources

- **Prices:** Hydro-Québec. *Comparison of Electricity Prices in Major North American Cities*
- **Electricity energy use:** NRCan OEE. *National Energy Use Database*

• RENEWABLES

- **Electricity GHG emissions:** ECCC. *National Inventory Report*
- **International context – Production:** IEA. *Renewables Information*
- **International context – share of energy supply:** IEA. *World renewables and waste energy supply*
- **Domestic production:** IEA. *Renewables Information*
- **Hydro – international generation:** IEA. *Electricity Information*; IEA. *Energy Balances of OECD Countries*; IEA. *Energy Balances of Non-OECD Countries*
- **Hydro – capacity in Canada:** WaterPower Canada. *Hydropower Refurbishments and Redevelopments in Canada*
- **Hydro – facilities and projects:** WaterPower Canada. *Hydropower Refurbishments and Redevelopments in Canada*
- **Biomass – Renewable balance:** IEA. *Renewables balances*
- **Biomass – production and facilities:** StatCan. Table 25-10-0031-01; NRCan CFS data compiled from various sources
- **Biomass – wood fuel use by sector:** StatCan. Tables 25-10-0025-01 and 25-10-0084-01; NRCan estimates
- **Wind – international context:** Global Wind Energy Council. *Global Wind Report*
- **Wind – generation and capacity in Canada:** CanREA. *By the Numbers*; NRCan analysis based on various sources
- **Wind – wind farms:** AESO. *Current Supply Demand Report*; CanREA. *By the Numbers*; Government of Ontario. *Renewable*

Energy Projects Listing; Hydro Québec. *Electricity supply contracts in force in Québec*; SaskPower. *System Map*

- **Solar PV – international context:** IEA Photovoltaic Power Systems Programme. *2024 Snapshot of Global PV Markets*
- **Solar PV – capacity in Canada:** NRCan and CanREA. *National Survey Report of PV Power Applications in Canada - 2022*
- **Solar PV – generation in Canada:** Compiled by NRCan from various sources
- **Solar PV – solar PV farms:** CanREA. *By the Numbers*; AESO. *Current Supply Demand Report*; Government of Ontario. *Renewable Energy Projects Listing*; NRCan analysis based on various sources
- **URANIUM AND NUCLEAR**
 - **World uranium production and exports:** World Nuclear Association. *World Uranium Mining*; NRCan estimates
 - **World known recoverable resources of uranium:** OECD Nuclear Energy Agency and International Atomic Energy Agency. *Uranium: Resource, Production and Demand*; World Nuclear Association. *Supply of Uranium*
 - **World generation of nuclear power:** International Atomic Energy Agency. *Nuclear Power Reactors in the World*
 - **Canadian supply and demand:** World Nuclear Association. *Uranium in Canada*; Cameco. *Annual report*; NRCan estimates
 - **Nuclear in Canada infographic:** NRCan. *Nuclear Energy and Uranium*
 - **Purchases by U.S. nuclear reactors:** U.S. EIA. *Uranium Marketing Annual Report*
 - **CANDU nuclear reactors and nuclear power plants in Canada:** International Atomic Energy Agency. *Power Reactor Information System*; NRCan analysis based on various sources
 - **Spot prices:** U.S. EIA. *Annual Uranium Market Report*

• **BIOFUELS AND TRANSPORTATION**

- **Biofuels – international context:** IEA. *Renewables Information*
- **Biofuels – production, supply and demand:** StatCan. Tables *25-10-0081-01* and *25-10-0082-01*
- **Transportation – Electric vehicle sales:** StatCan. Tables *20-10-0021-01* and *20-10-0024-02*
- **Transportation – Electric vehicle chargers:** NRCan. *Electric vehicle charging – EV charging basics*; NRCan. *Electric Charging and Alternative Fuelling Stations Locator*
- **Transportation – GHG emissions:** ECCC. *National Inventory Report*
- **Hydrogen:** IEA. *Global Hydrogen Review*; NRCan. *Hydrogen Strategy for Canada*

SECTION 6: PETROLEUM, GAS AND COAL

• **PETROLEUM AND THE ECONOMY**

- **GDP and employment:** StatCan. Tables *38-10-0285-01* and *36-10-0480-01*; StatCan. *Special tabulations of the NRSA Human Resources Module*
- **Capital expenditures:** StatCan. Table *34-10-0036-01* and *special tabulations*
- **Exports:** StatCan. *International Merchandise Trade Database*

• **CRUDE OIL**

- **World production and exports:** IEA. *Annual Database*
- **World proved reserves:** Oil and Gas Journal. *Worldwide Look at Reserves and Production*
- **Canadian resources – remaining established reserves:** AER. *Alberta Energy Outlook (ST98)*; CAPP. *Conventional reserves special tabulation*
- **Oil wells in Western Canada:** AER. *ST59: Alberta Drilling*

Activity Monthly Statistics; BCER. *Drilling Data for All Wells in BC [BCOGC-41984]*; Petrinex. *Saskatchewan Public Data*; Province of Manitoba. *Oil & Gas Statistics*

- **Canadian and provincial production:** StatCan. Tables 25-10-0063-01 and 25-10-0014-01; NRCan analysis
- **Canadian Supply and Demand:** StatCan. Tables 25-10-0063-01 and 25-10-0014-01; StatCan. *International Merchandise Trade Database*
- **Trade:** StatCan. Table 25-10-0063-01; StatCan. *International Merchandise Trade Database*; U.S. EIA. *Imports by Country of Origin and Refining and Processing*
- **Oil Sands:** CAPP. *Statistical Handbook, Table 04-14*; StatCan. Tables 34-10-0036-01 and 25-10-0063-01; AER. *Alberta Energy Outlook (ST98)*
- **Prices:** U.S. EIA. Table *Cushing, OK WTI Spot Price FOB*; Sproule. *Price Forecast*
- **Pipelines:** CER. *Crude Oil Pipeline Transportation System*
- **Transportation by Rail:** CER. *Canadian Crude Oil Exports by Rail – Monthly Data*; StatCan. Table 23-10-0062-01
- **Oil Sands Environmental Considerations:** ECCC. *National Inventory Report*; World Resources Institute. *Country Greenhouse Gas Emissions Data*; Alberta Government. *Oil Sands Information Portal*; Alberta Government. *Oil Sands 101*; Alberta Government. *Lower Athabasca Regional Plan*; AER. *Oil Sands Mining Water Use*; AER. *Oil Sands In Situ Recovery Water Use*; AER. *Alberta Mineable Oil Sands Plant Statistics Monthly Supplement (ST39)*; AER. *Alberta In Situ Oil Sands Production Summary (ST53)*; StatCan. Table 25-10-0063-01; NRCan. *Boreal forest data*

• NATURAL GAS

- **World production and exports:** IEA. *World natural gas statistics*
- **World proved reserves:** Oil and Gas Journal. *Worldwide look at reserves and production*
- **Canada and U.S. – Proved reserves:** U.S. EIA. *International Data Browser*; Oil and Gas Journal. *Worldwide look at reserves and production*
- **Canada and U.S. – Marketable and technically recoverable resources:** CER. *Canada's Energy Future 2023, Macro Indicators*; U.S. EIA. *Annual Energy Outlook 2023*; U.S. EIA. *Shale Gas, Proved Reserves as of Dec. 31*; NRCan analysis
- **Canadian average marketable production:** CER. *Canada's Energy Future 2023, Figure Data (Excel)*; StatCan. Table 25-10-0055-01
- **U.S. average marketable production:** U.S. EIA. *Annual Energy Outlook 2023*; U.S. EIA. *Dry Natural Gas Production, Annual*
- **LNG imports, Canada:** StatCan. *Canadian International Merchandise Trade Database*
- **LNG imports, U.S.:** U.S. EIA. *U.S. Liquefied Natural Gas Imports (MMcf)*
- **LNG exports, Canada:** CER. *Commodity Tracking System*
- **LNG exports, U.S.:** U.S. EIA. *Liquefied U.S. Natural Gas Exports (MMcf)*
- **Natural gas wells in Western Canada:** AER. *ST59: Alberta Drilling Activity Monthly Statistics*; BCER. *Drilling Data for All Wells in BC [BCOGC-41984]*; Petrinex. *Saskatchewan Public Data*; Province of Manitoba. *Oil & Gas Statistics*
- **Canadian and U.S. marketable production of natural gas:** StatCan. Table 25-10-0055-01; U.S. EIA. *Dry Natural Gas Production, Annual*

- **Canadian trade of natural gas:** CER. *Commodity Tracking System*; StatCan. *Canadian International Merchandise Trade Database*
- **Marketable production by province:** StatCan. Table 25-10-0055-01
- **Upstream prices:** Sproule. *Sproule Price Forecast*; StatCan. Table 33-10-0163-01
- **Pipelines:** CER. *Facilities we regulate*
- **Natural gas energy use:** NRCan OEE. *National Energy Use Database*
- **HGLs**
 - **Processing plant production:** StatCan. Table 25-10-0036-01
 - **Refinery production:** StatCan. *Monthly Refined Petroleum Product Survey*
 - **Shares of NGL Production by province:** CAPP. *Custom report for NRCan*
 - **NGLs end use:** NRCan OEE. *National Energy Use Database*
 - **Exports:** CER. *Commodity Tracking System*
 - **Imports:** StatCan. *International Merchandise Trade Database*
- **RPPs**
 - **Canadian refineries:** Compiled by NRCan from various sources
 - **Supply and Demand:** StatCan. Table 25-10-0081-01
 - **Crude oil shipped to domestic refineries:** StatCan. Table 25-10-0063-01
 - **Domestic consumption by product:** StatCan. Table 25-10-0081-01; NRCan analysis
 - **Trade:** StatCan. Table 25-10-0081-01; StatCan. *International Merchandise Trade Database*. U.S. EIA. *U.S. Imports by Country of Origin for Petroleum and Other Liquids*
- **Gasoline prices:** Kalibrate Technologies Ltd. *Petroleum price data, Pricing analytics: Margin*
- **Refinery capacity:** Oil Sands Magazine. *List of Canadian Refineries; NRCan analysis*
- **COAL**
 - **World proved reserves:** U.S. EIA. *Coal Reserves*
 - **World production and exports:** IEA. *Coal Information*
 - **Canadian supply and demand:** IEA. *Coal Information*; StatCan. *International Merchandise Trade Database; NRCan analysis*
 - **Canadian Production:** StatCan. Table 25-10-0046-01; NRCan analysis
 - **Electricity Generation:** StatCan. Tables 25-10-0017-01 and 25-10-0084-01; Data compiled by NRCan from StatCan and other public sources
- **GHG EMISSIONS FROM PETROLEUM**
 - **GHG Emissions by Sector:** ECCC. *National Inventory Report*

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