


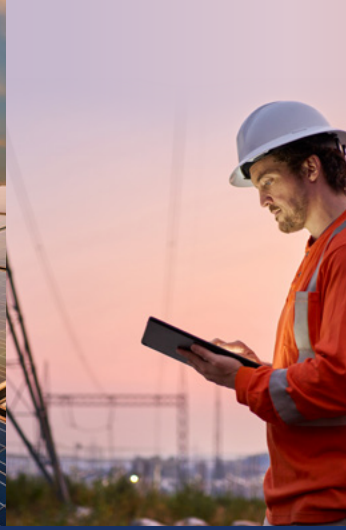

Natural Resources Canada

Ressources naturelles Canada

Energy Fact Book

Spring 2026 Edition

Canada

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Preface

The Energy Fact Book provides **reliable, up-to-date statistics and analysis** to support evidence-based dialogue on Canada's energy sector. The new spring and fall release schedule will help ensure the publication continues to reflect the latest data and developments across Canada's energy system.

Designed for a wide audience—including government, industry, academia, educators, media and the public—**this resource aims to bridge technical depth with broad accessibility**.

The contents of this publication span a wide array of indicators including energy production and consumption, prices and trade; as well as economic contributions, technology trends and environmental impacts—curated to provide a holistic overview of the sector.

The Energy Fact Book draws on the expertise of Natural Resources Canada, Statistics Canada, the Canada Energy Regulator and Environment and Climate Change Canada, and **benefits from ongoing collaboration across federal and provincial agencies**, under the scope of the **Canadian Centre for Energy Information**.

Refer to the annexes for definitions, methodology, and notes on data availability and consistency. For questions and comments, contact **energyfacts-faitsenergetiques@nrcan-rncan.gc.ca**.

Contents

Introduction

Canada is an energy nation. From hydroelectricity to the oil sands to emerging renewables, our vast and varied natural resources have helped build a resilient economy, connect our communities, and support energy security at home and abroad.

Today, the energy landscape is evolving. Canada is innovating in how energy is produced, delivered, and used. Renewable electricity continues to grow, led by wind and solar. Oil and gas remain foundational to the mix, meeting energy needs at home and abroad, supported by efficiency gains and operational advancements in production and use. At the same time, clean fuels are emerging and technologies such as carbon capture, energy storage, and electrification are reshaping industrial processes and transportation.

These changes are part of a global energy transformation—driven by technological change, shifting demand, affordability needs, and the imperative to maintain international competitiveness. With its geography, skilled workforce, and commitment to research, Canada is positioned to lead in this transformation, —leveraging regional strengths, priorities, energy mixes, and economic pathways.

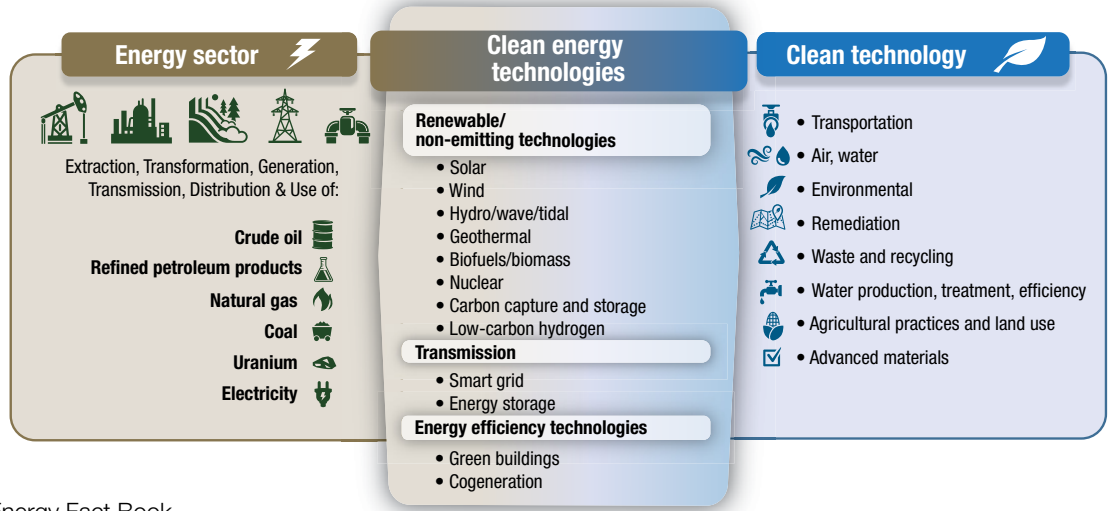
Reliable data are essential to understanding these developments and seizing the opportunities they create for innovation, investment, and long-term economic growth. By presenting key facts and indicators on Canada's energy system in a clear and accessible format, the Energy Fact Book has remained a trusted reference for over fifteen years.

Section 5:
Clean Power and Low Carbon Fuels

Clean technology and electricity generation mix
Renewable energy
Biofuels and transportation

Clean Technology and the Economy

- In 2017, the Government of Canada invested in a Clean Technology Data Strategy to provide the foundation for measuring the economic, environmental and social impacts of clean technology in Canada.
- As part of this strategy, Statistics Canada has developed the Environmental and Clean Technology Products Economic Account (ECTPEA), which provides a comprehensive picture of the state of Canada's clean technology economy for the years from 2007 to 2023.
- The ECTPEA includes processes, products and services that reduce environmental impacts through environmental protection and resource management activities and the use of goods that have been adapted to be significantly less energy- or resource-intensive than the industry standard.



Environmental and clean technology (2024):

$87.6 billion of GDP
(**3.0%** of total GDP)

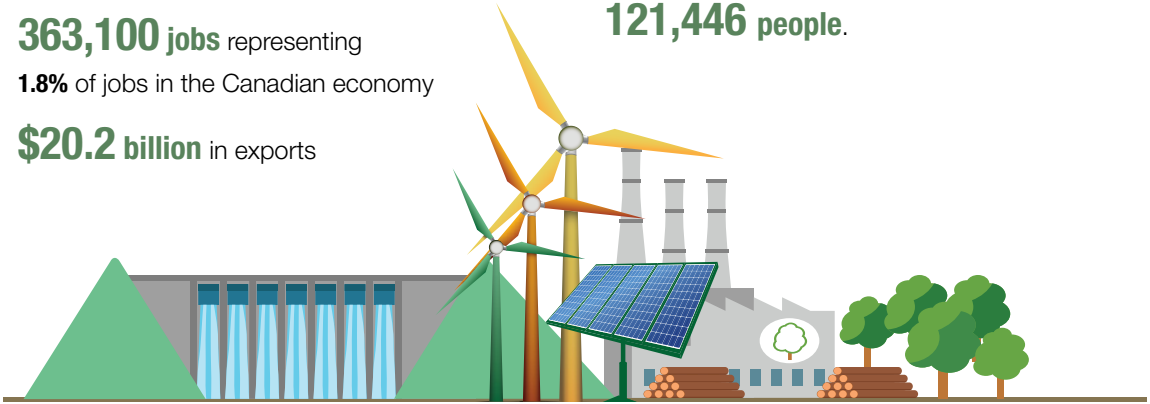
363,100 jobs representing
1.8% of jobs in the Canadian economy

$20.2 billion in exports

Of this, clean energy alone accounted for

1.5% of Canada's GDP

and employed
121,446 people.

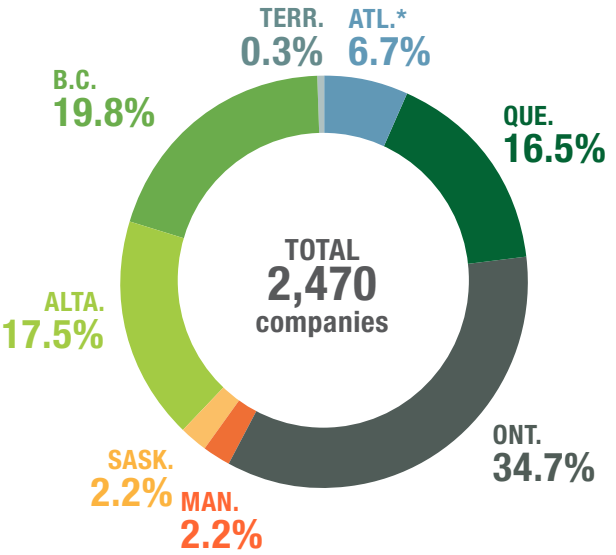


The TSX and TSX-Venture exchanges list **82 companies in the cleantech sector**, with a total market capitalization of **$49.3 billion**. Of these companies, 74 are headquartered in Canada, with a total market capitalization of **$40.3 billion** (as of January 31, 2026).

CLEANTECH COMPANIES

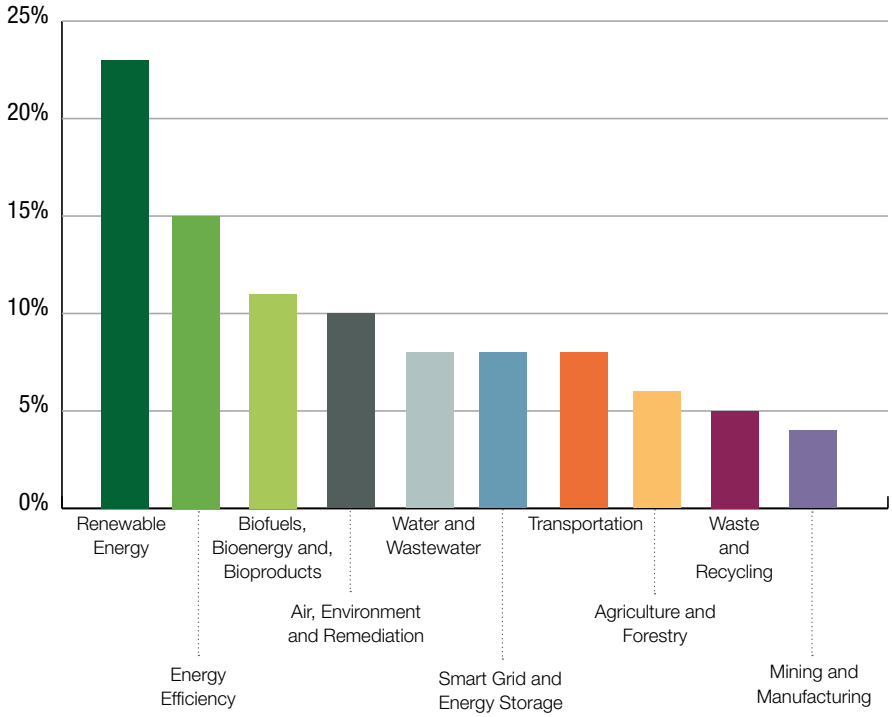
Over half of Canada's 2,470 pureplay cleantech companies have operations in the energy industry. They are concentrated in Ontario, British Columbia, Alberta, and Quebec.

CANADIAN CLEANTECH COMPANIES BY PROVINCE, 2025



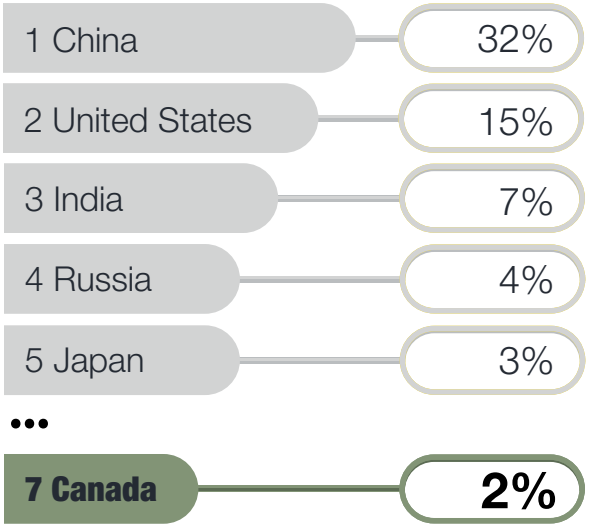
* Atlantic provinces

CANADIAN CLEANTECH COMPANIES BY INDUSTRY, 2025

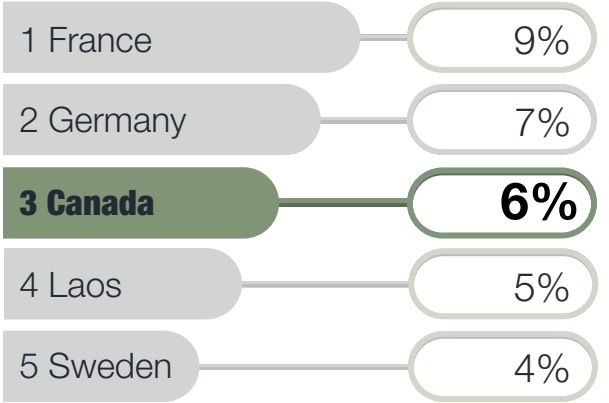


ELECTRICITY
INTERNATIONAL CONTEXT

World production – 30,122 TWh (2023)



World exports – 820 TWh (2023)



TRADE (2025)

All Canadian electricity trade is with the U.S.

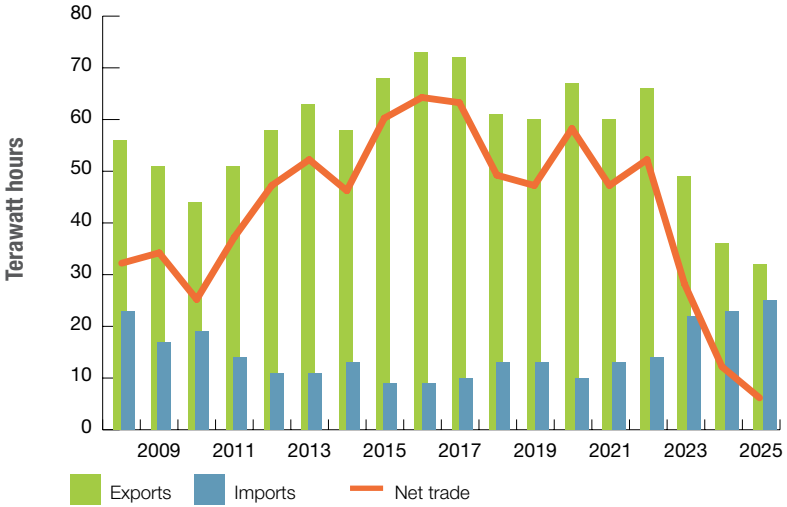
EXPORTS

31.6 TWh

IMPORTS

25.2 TWh

CANADA'S ELECTRICITY TRADE WITH THE U.S.*

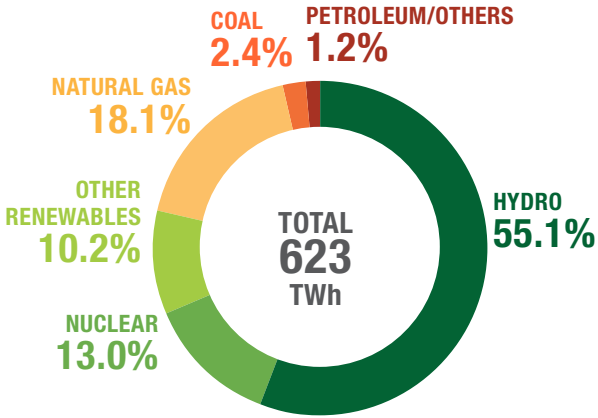


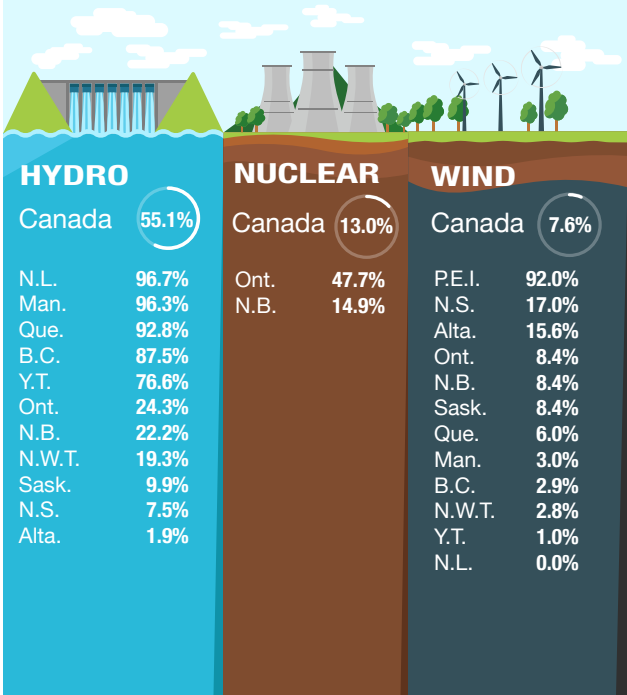
* includes only electricity traded under purchased contracts; excludes electricity transferred under non-financial agreements (e.g. under treaty obligations)

CANADIAN SUPPLY

GENERATION IN CANADA – 623 TWh

GENERATION BY SOURCE, 2024





PROVINCIAL ELECTRICITY GENERATION BY SOURCE, 2024

BIOMASS

Canada 1.5%

B.C.	6.6%
N.B.	5.6%
N.S.	3.8%
Alta.	2.1%
Que.	0.8%
P.E.I.	0.6%
Ont.	0.6%
Sask.	0.3%
Man.	0.2%
N.L.	<0.1%

NATURAL GAS

Canada 18.1%

Alta.	73.0%
Sask.	52.1%
N.S.	25.5%
N.B.	18.3%
Ont.	16.5%
N.W.T.	13.7%
Y.T.	9.2%
B.C.	1.9%
N.L.	0.6%
Man.	0.3%
Que.	<0.1%

PETROLEUM

Canada 1.0%

Nvt.	99.9%
N.W.T.	63.6%
Y.T.	11.4%
N.B.	10.5%
N.S.	6.4%
N.L.	2.2%
Alta.	1.4%
B.C.	0.9%
P.E.I.	0.5%
Que.	0.3%
Man.	<0.1%
Ont.	<0.1%
Sask.	<0.1%

SOLAR

Canada 1.1%

P.E.I.	3.0%
Alta.	3.0%
Ont.	2.3%
Y.T.	1.9%
N.S.	0.9%
N.W.T.	0.6%
Sask.	0.5%
Man.	0.2%
B.C.	0.1%
N.B.	0.1%
Nvt.	<0.1%
Que.	<0.1%
N.L.	<0.1%

COAL

Canada 2.4%

N.S.	38.9%
Sask.	28.4%
N.B.	19.9%
Alta.	2.1%

OTHER

Canada 0.2%

Alta.	0.8%
Sask.	0.5%
Ont.	0.2%
Que.	<0.1%
B.C.	<0.1%

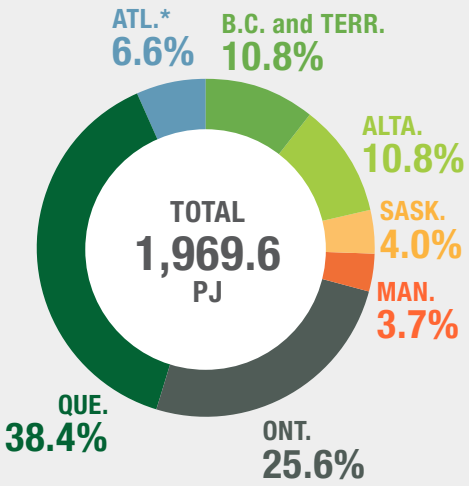
ELECTRICAL ENERGY USE

TOTAL ELECTRICAL ENERGY USE* FELL TO 1,969.6 PJ IN 2023

Sector	Energy use (PJ)	% of the total
Residential	636.8	32.3%
Commercial	536.0	27.2%
Industrial	753.7	38.3%
Transportation	4.5	0.2%
Agriculture	38.6	2.0%
Total	**1,969.6**	**100%**

*secondary energy use

ELECTRICAL ENERGY USE BY PROVINCE, 2023

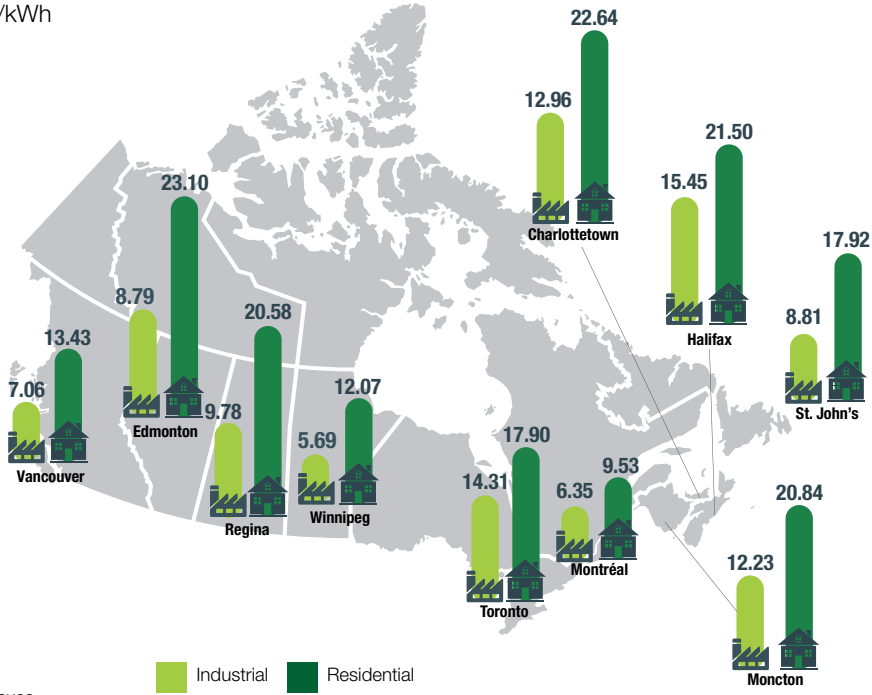


* Atlantic provinces

ELECTRICITY PRICES

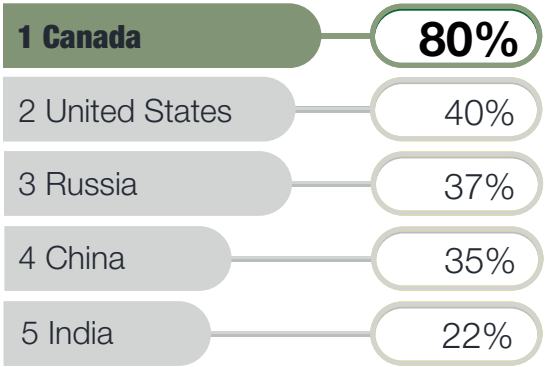
AVERAGE LARGE INDUSTRIAL AND RESIDENTIAL ELECTRICITY PRICES* (AS OF APRIL 2025)

in cents/kWh



*including taxes

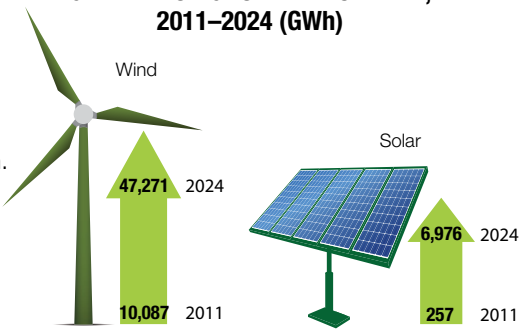
PERCENTAGE OF TOTAL ELECTRICITY FROM NON-EMITTING SOURCES FOR THE TOP FOUR ELECTRICITY-GENERATING COUNTRIES AND CANADA, 2023



- **Renewable electricity generation** has **increased 4%** between 2011 and 2024, with solar and wind having the largest growth.
- In 2024, **78% of electricity in Canada** came from non-GHG emitting sources. **Hydro** made up **55%**, **nuclear was 13%**, and other renewables were the remaining **10%***.

*Parts may not sum to total due to rounding.

WIND AND SOLAR NET ELECTRICITY GENERATION GROWTH IN CANADA, 2011–2024 (GWh)

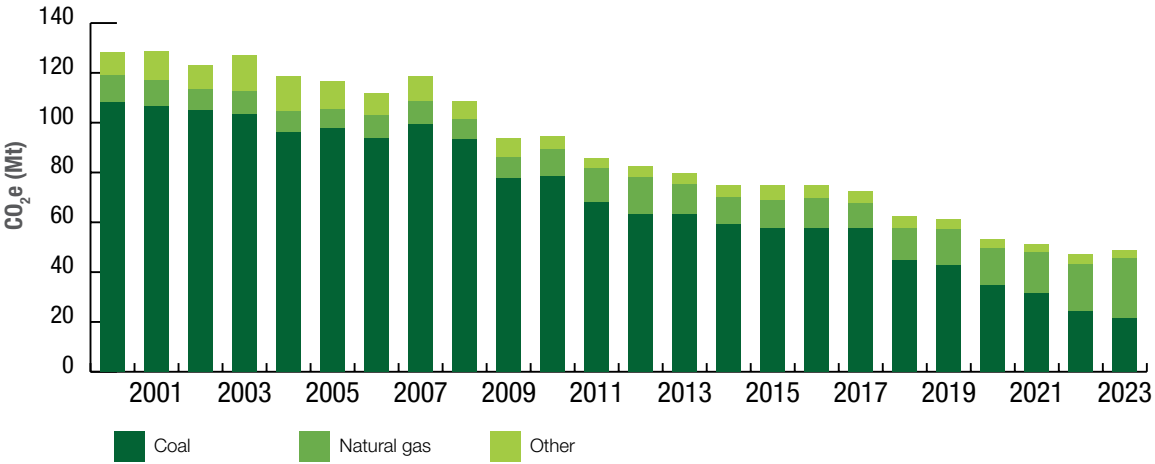


GHG SPOTLIGHT: ELECTRICITY

Total electricity emissions **decreased by 62%** from 2000 to 2023 because of increased generation from non-emitting sources.

Coal-fired electricity generation accounted for **3% of generation** and **44% of electricity-related** GHG emissions in 2023.

ELECTRICITY SECTOR GHG EMISSIONS FOR CANADA, 2000–2023



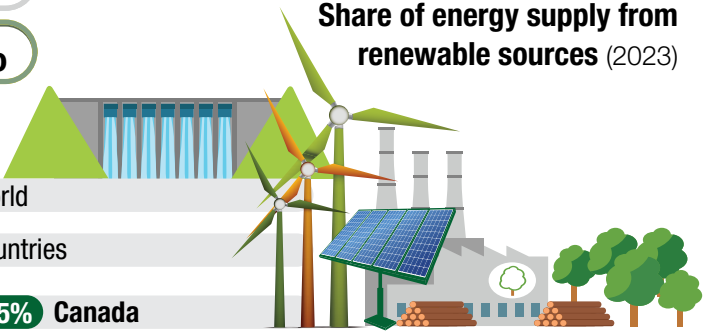
Renewable Energy

INTERNATIONAL CONTEXT

World production – 89,633 PJ or 2,141 MTOE (2023)

1 China	19%
2 India	11%
3 United States	9%
4 Brazil	7%
5 Indonesia	3%
6 Canada	**2%**

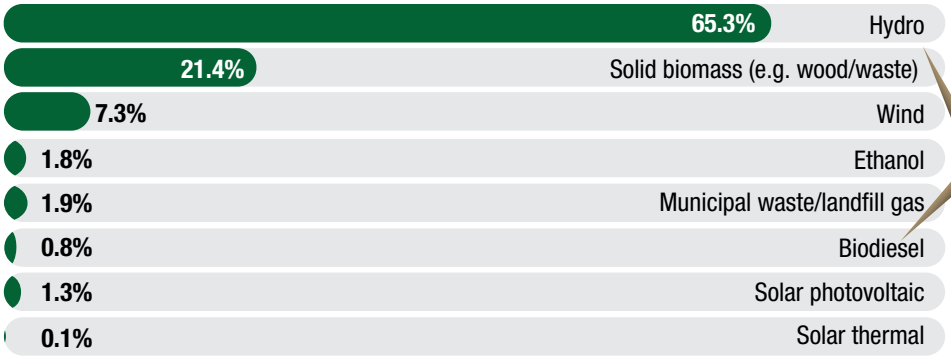
Share of energy supply from renewable sources (2023)

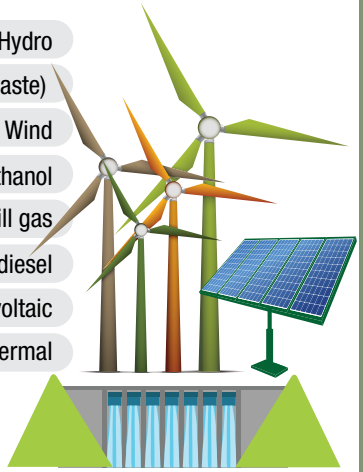


14.1%	World
12.6%	OECD countries
16.5%	Canada

CANADIAN PRODUCTION (2023)

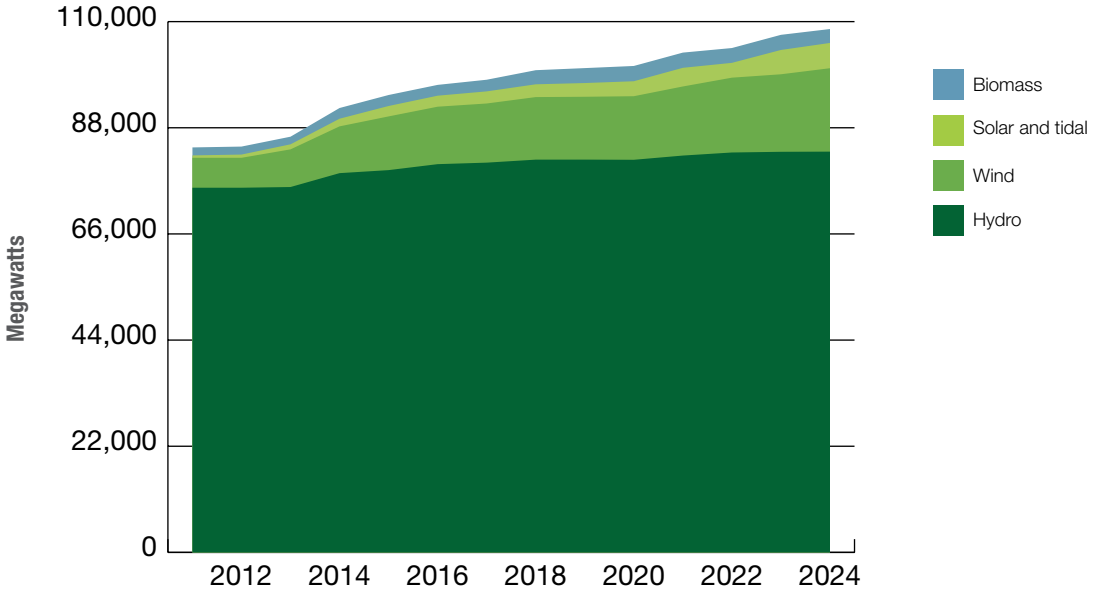
Total renewable energy* – 1,987 PJ or 47.5 MTOE



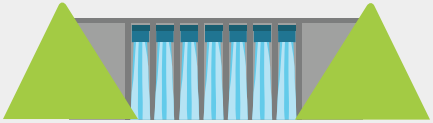


*includes energy consumed for electricity and heat production and for biofuels in the transportation sector

CANADIAN RENEWABLE ELECTRICITY GENERATING CAPACITY



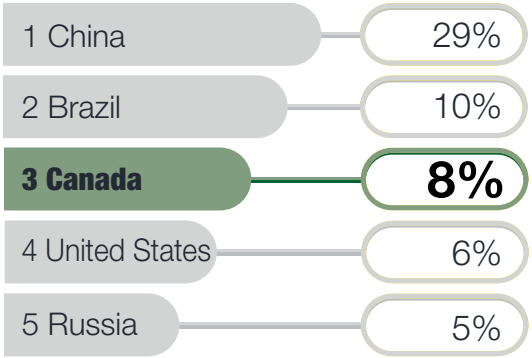
HYDROELECTRICITY



Moving water is the most important renewable energy source in Canada, providing **55%** of Canada's electricity generation. In fact, in 2023, Canada was the third-largest producer of hydroelectricity in the world.

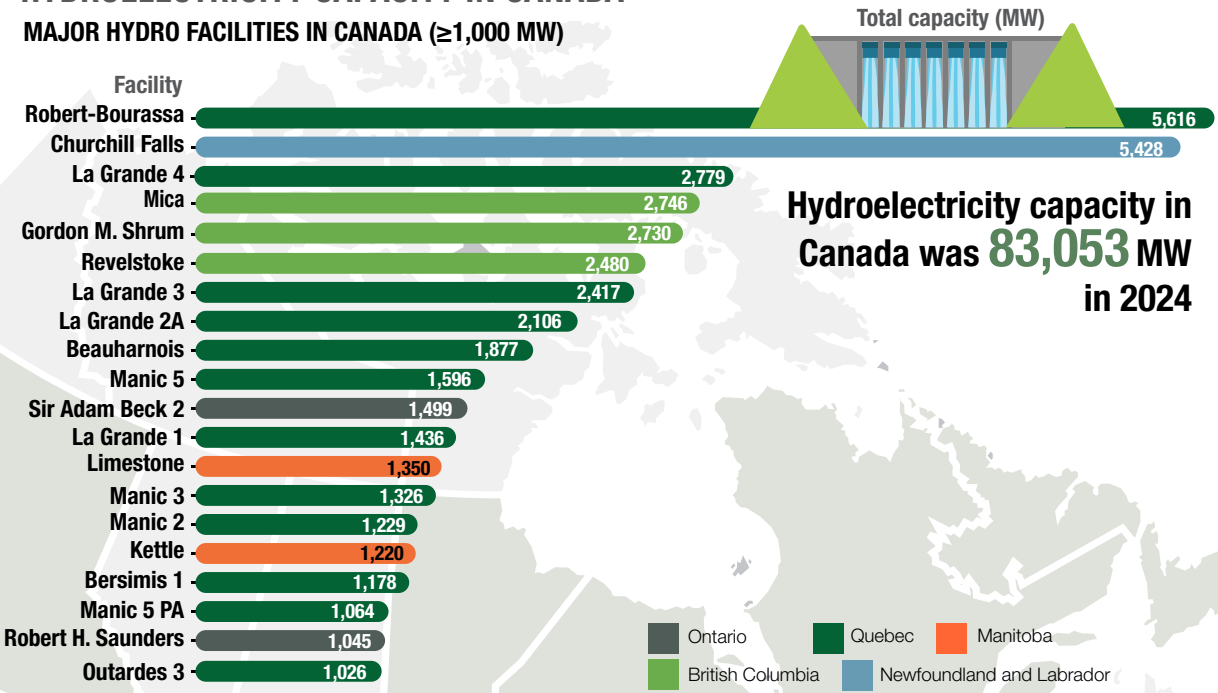
INTERNATIONAL CONTEXT

World generation of hydroelectricity – 4,252 TWh
(2023)



HYDROELECTRICITY CAPACITY IN CANADA

MAJOR HYDRO FACILITIES IN CANADA (≥1,000 MW)



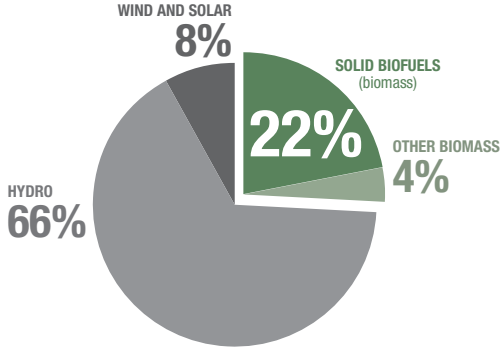
Hydroelectricity capacity in Canada was 83,053 MW in 2024

BIOMASS

- Biomass is a renewable energy resource derived from living organisms and/or their by-products.
- In 2023 there were **41 operational** co-generation units at pulp and paper mills and **35 Independent Power Providers (IPP)** using biomass.
- Electrical capacity of pulp and paper co-generation was **1,551 MW**, while heat capacity was **10,154 MW**. IPP capacity for electricity and heat was **831 MW** and **701 MW**, respectively.
- In 2023, there were about **640 operational** bioheat systems with installed capacity of **480 MWth**. **83%** of the biomass heating systems are less than **1 MW** in size.

Biomass* accounts for the **largest share of renewable energy production** in the OECD**, at

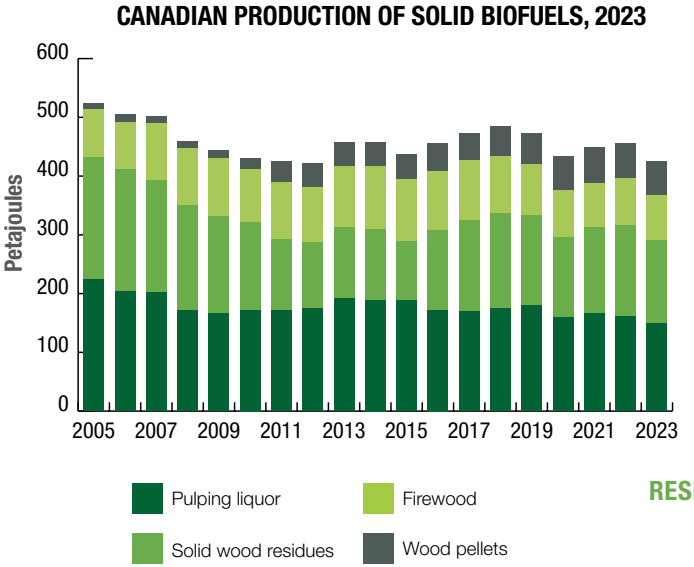
In Canada, that share is 26%.

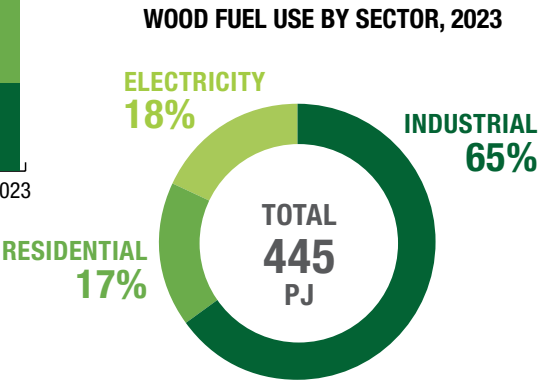


*Includes solid biofuels, liquid biofuels, biogases and renewable municipal waste

**Organization for Economic Cooperation and Development

CANADIAN PRODUCTION OF SOLID BIOFUELS



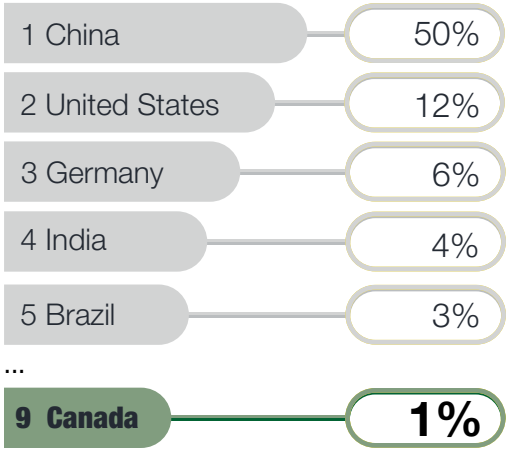


WIND POWER

- Electricity from wind energy is one of the **fastest growing sources** of electricity in the world and in Canada.
- Wind accounted for **7.6%** of electricity generation in Canada in 2024.

INTERNATIONAL CONTEXT

World capacity of wind power – 1,299 GW (2025)



WIND POWER IN CANADA

Capacity (2024):

17.3 GW

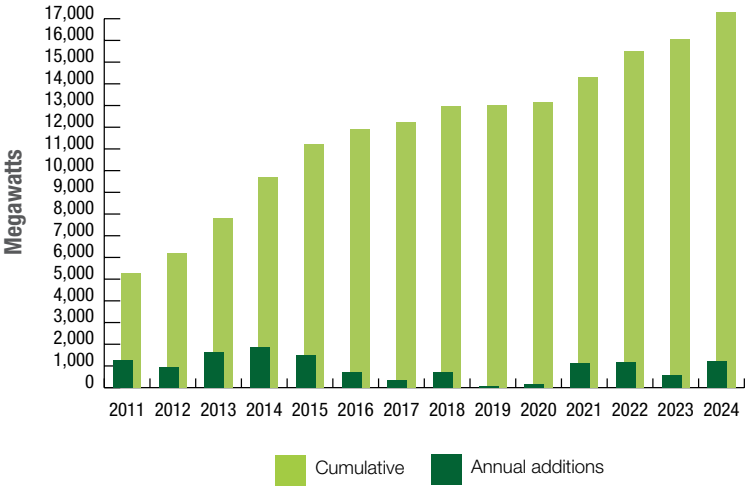
quadrupled

Generation (2024):

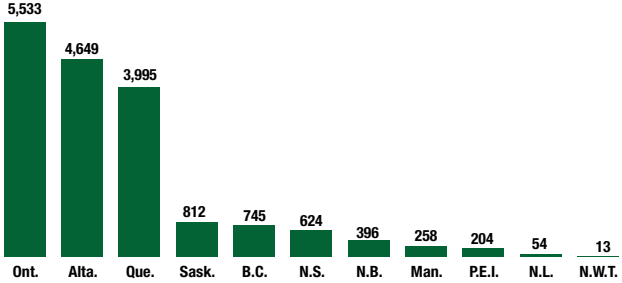
40.4 TWh

more than tripled

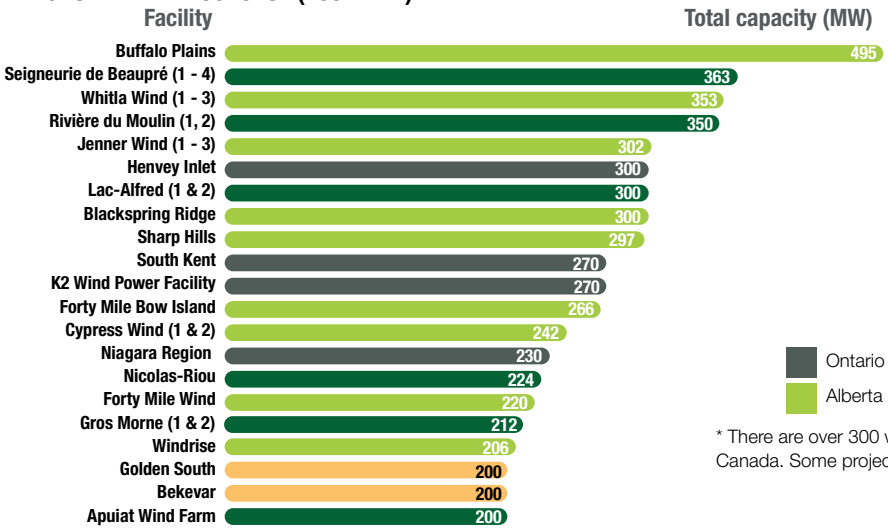
INSTALLED CAPACITY



CAPACITY BY PROVINCE (MW)



LARGEST WIND PROJECTS* (200 MW+)



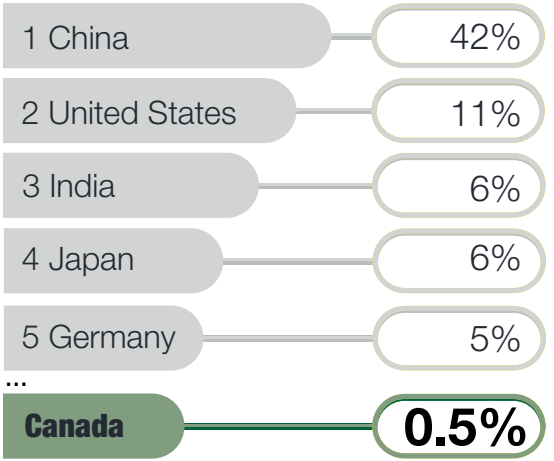
* There are over 300 wind energy projects across Canada. Some projects are part of a larger wind farm.

SOLAR PHOTOVOLTAIC

- Solar power is the conversion of energy from sunlight into electricity. Solar PV is rapidly becoming an economical, renewable technology to harness renewable energy from the sun.

INTERNATIONAL CONTEXT

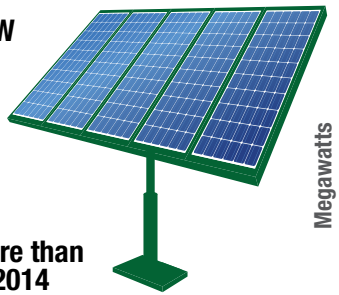
World capacity of solar PV – 1,581 GW (2023)



SOLAR PV IN CANADA

Capacity (2024):

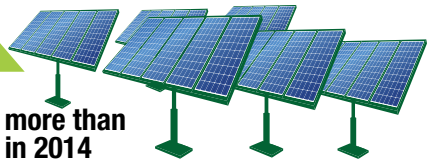
5,290 MW



2.4x more than in 2014

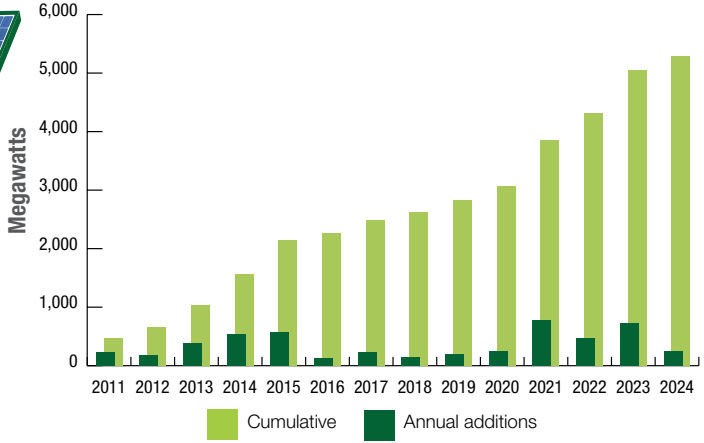
Generation (2024):

7 TWh

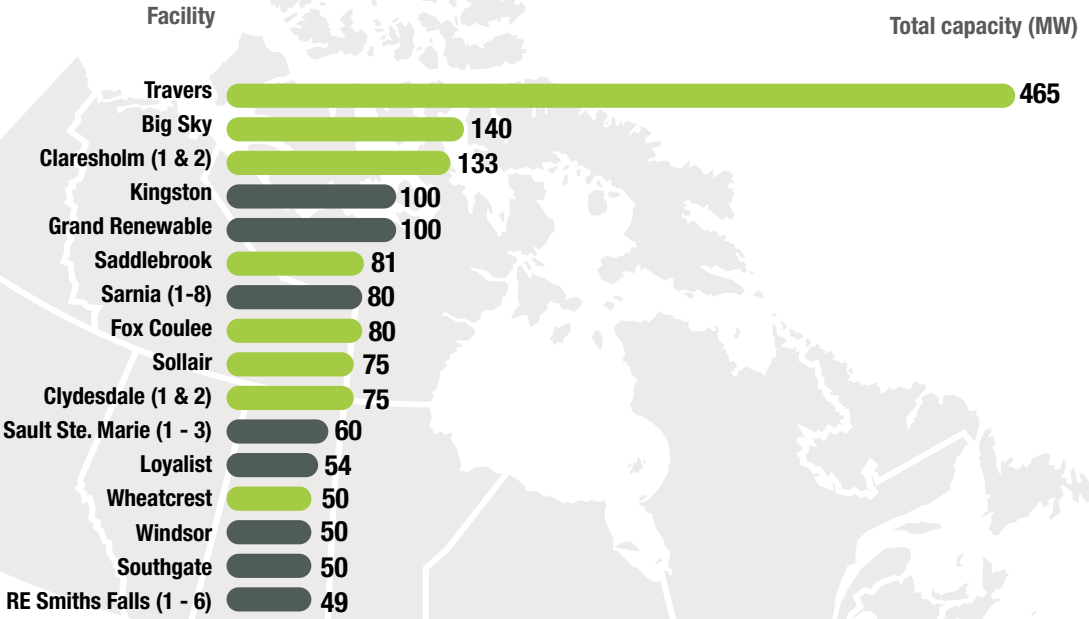


3.0x more than in 2014

INSTALLED CAPACITY



LARGEST SOLAR PROJECTS* (50 MW+)



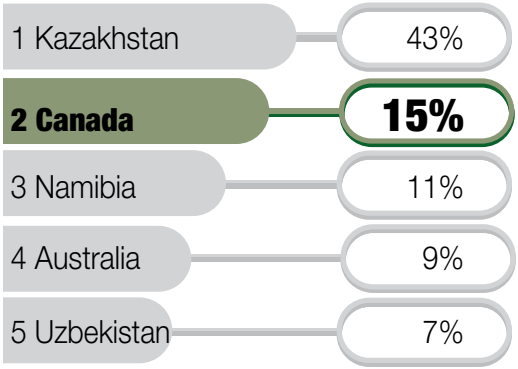
*There are 200+ major solar energy projects, and 48,000+ solar energy installations across Canada.

URANIUM

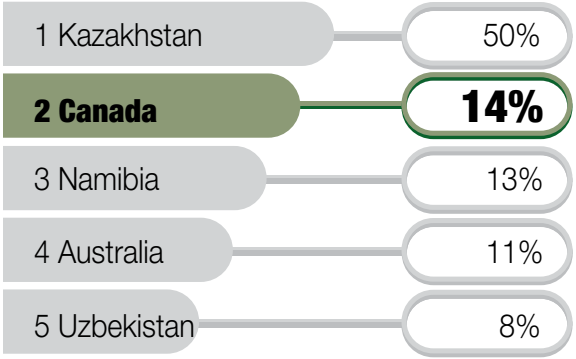
- Uranium is a silvery-white metal and a primary energy source. After raw uranium is mined and milled, it is **processed to make fuel for nuclear reactors** to generate electricity.

INTERNATIONAL CONTEXT

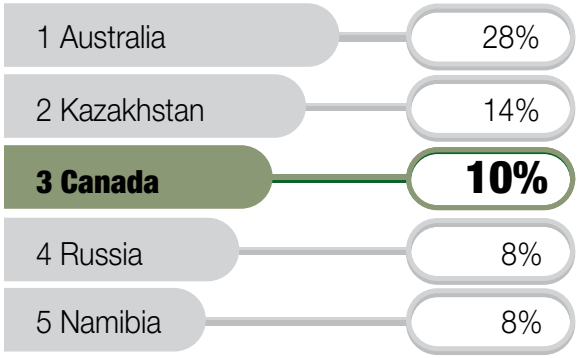
World production – 49.4 kt (2022)



World exports – 42.6 kt (2022)



World known recoverable resources – 5.9 Mt (2023)

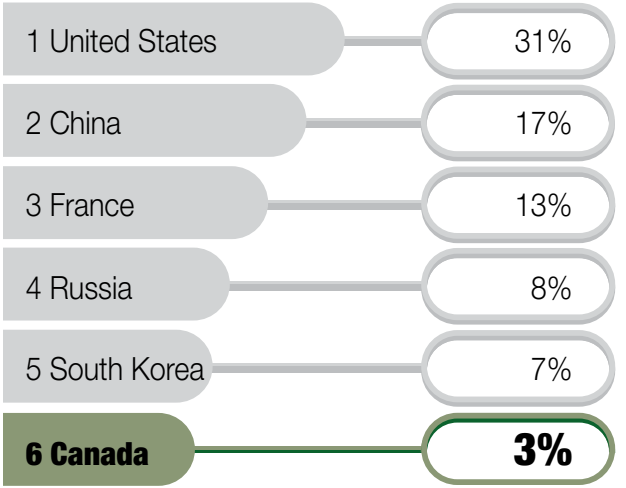


NUCLEAR POWER

- Nuclear energy is the second largest contributor of non-emitting electricity in Canada. In 2024, nuclear energy provided approximately **13% of Canada's total electricity needs** (50%in Ontario).

INTERNATIONAL CONTEXT

World generation – 2,552 TWh (2023)



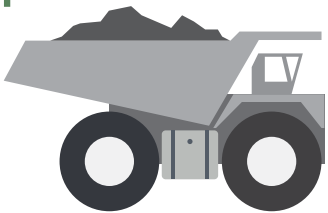
CANADIAN SUPPLY AND DEMAND (2024)

URANIUM

Canadian production **14.3 ktU**
All uranium comes from mines in Saskatchewan.

VALUED AT
about

$3 billion



About 90% of production
was available for export.

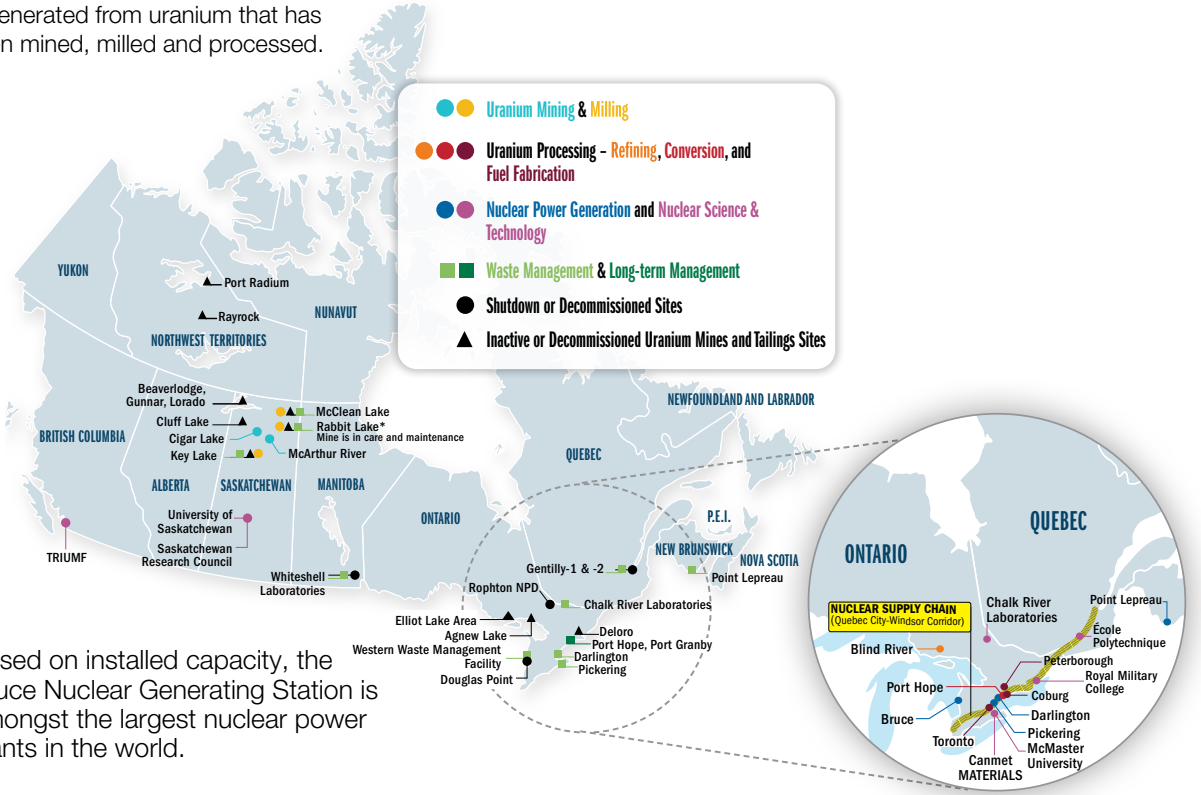
33% of uranium purchased by U.S. nuclear reactors in 2024 came from Canada, making Canada the largest foreign supplier of uranium to the U.S.

DOMESTIC USE:

About 10% of production

Used in Canada's CANDU reactors (Ontario and New Brunswick), including the Bruce Generating Station, amongst the world's largest operating nuclear facilities.

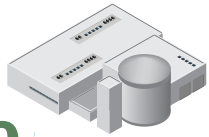
Across the country, nuclear power is generated from uranium that has been mined, milled and processed.



Based on installed capacity, the Bruce Nuclear Generating Station is amongst the largest nuclear power plants in the world.

CANDU NUCLEAR REACTORS

- **Canada has developed a unique nuclear reactor technology called CANDU**, for CANada Deuterium Uranium. Canada is one of roughly half a dozen countries that offer domestically designed reactors to the open commercial market.
- The CANDU reactor is a pressurized heavy water reactor (PHWR) that uses heavy water (deuterium oxide) as a moderator and coolant and natural uranium for fuel. The majority of power reactors in use in the world are light water reactors (LWR), which use normal water as the moderator and coolant and enriched uranium for fuel.
- There are 17 CANDU reactors operating in Canada, and nine operating in five other countries. These 26 reactors represent nearly 7% of global reactors and 5% of global nuclear electricity capacity (17.9 GWe).
- CANDU reactor refurbishment in Ontario is one of the largest infrastructure projects in Canada and will extend the life of Ontario's nuclear fleet past mid-century.



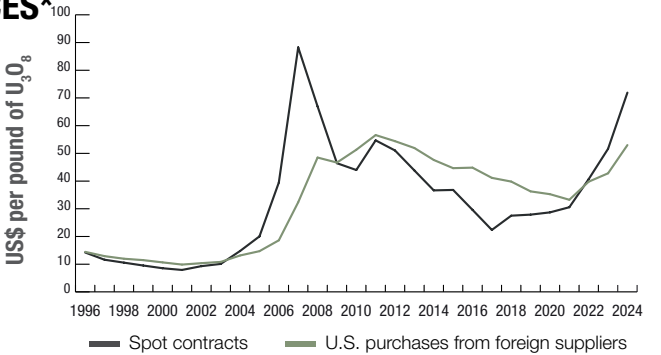
9 CANDU reactors

are in operation outside of Canada.

GROSS ELECTRICAL OUTPUT OF NUCLEAR POWER PLANTS IN CANADA

Facility	Province	Gross Electrical Output (MW)	Units
Darlington	Ontario	3,736	4
Bruce B	Ontario	3,507	4
Bruce A	Ontario	3,437	4
Pickering B	Ontario	2,160	4
Point Lepreau	New Brunswick	705	1

URANIUM - PRICES*



* The majority of Canadian uranium production is sold by long-term contract, as opposed to the spot market.

Biofuels and transportation

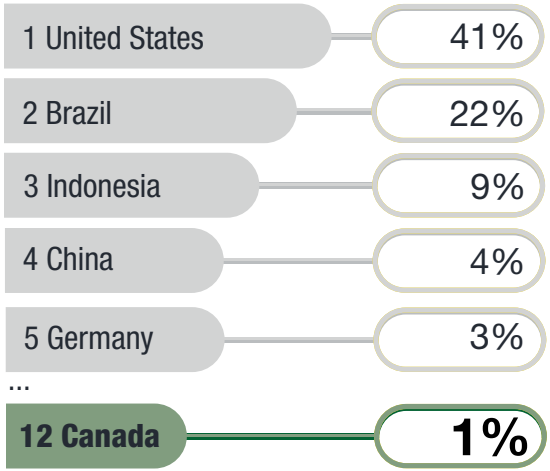
LIQUID BIOFUELS

- Liquid biofuels are enhanced biomass-derived fuels that can take the form of a liquid such as ethanol or renewable diesel fuels. The liquid biofuels are mixed with traditional gasoline and diesel to reduce the overall GHG emissions associated with the blended fuel.
- The federal *Renewable Fuels Regulations* require fuel producers and importers to have an average renewable content of **at least 5%** based on the **volume of gasoline** that they produce or import and **at least 2%** of the **volume of diesel fuel** that they produce and import.*

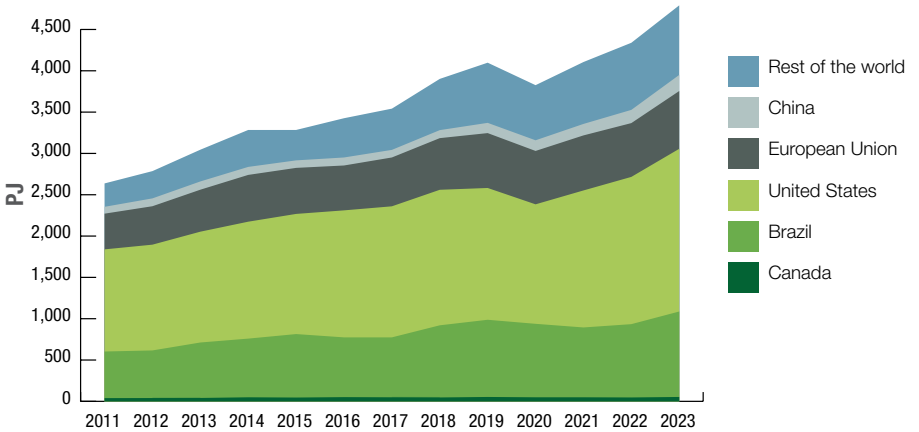
* Heating distillate oil volumes for space-heating purposes are excluded from the diesel regulations.

INTERNATIONAL CONTEXT

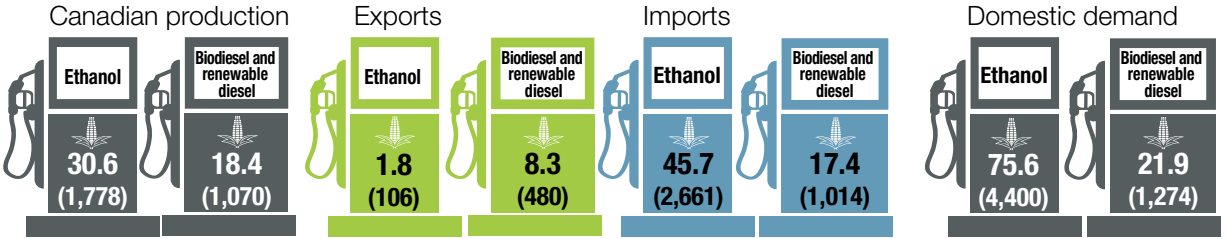
World production of biofuels – 4,791 PJ (2023)



WORLD BIOFUELS PRODUCTION



CANADIAN SUPPLY AND DEMAND (2025) - MB/D (MILLION LITRES)

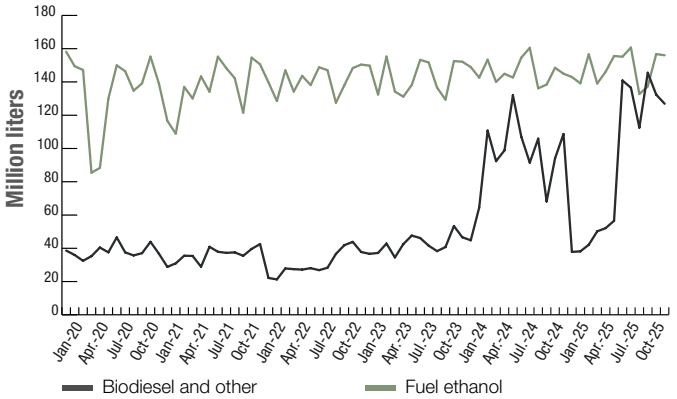


CANADIAN BIOFUEL PRODUCTION

- Liquid biofuels are made of **feedstocks such as cereal grains and vegetable oils**.
- In 2025, **4.3 million tonnes** of cereal grain, and **990 thousand tonnes** of vegetable oil were used in domestic production of biofuels.

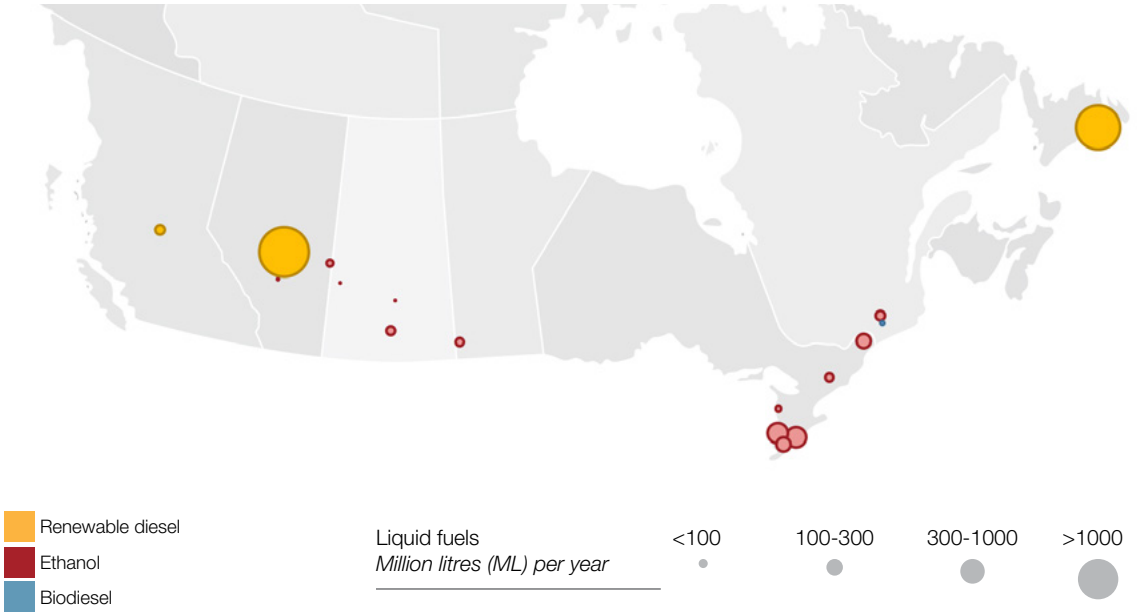
- Canada produced **1.8 billion liters of fuel ethanol** and **1.07 billion liters of biodiesel and other products** in 2025.
- Co-products are secondary goods that are generated during the biofuel manufacturing process and can be sold or reused. Biofuel production generated **1.4 million tonnes of co-products in 2025**, primary distillers grains which can be used as animal feed.

MONTHLY PRODUCTION OF LIQUID BIOFUELS, 2020–2025

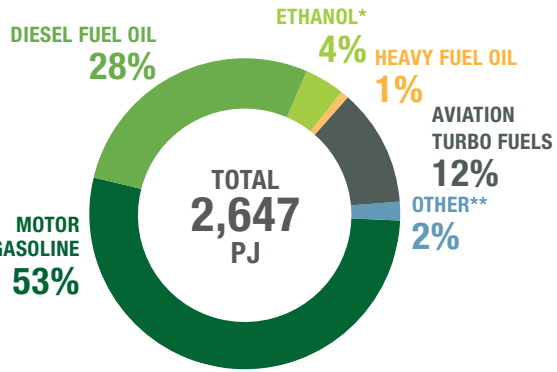


Currently the **majority of liquid biofuel facilities** in Canada are **located in southern Ontario and Saskatchewan**. The largest facility is located in Alberta.

BIOFUEL PRODUCTION CAPACITY (2025)

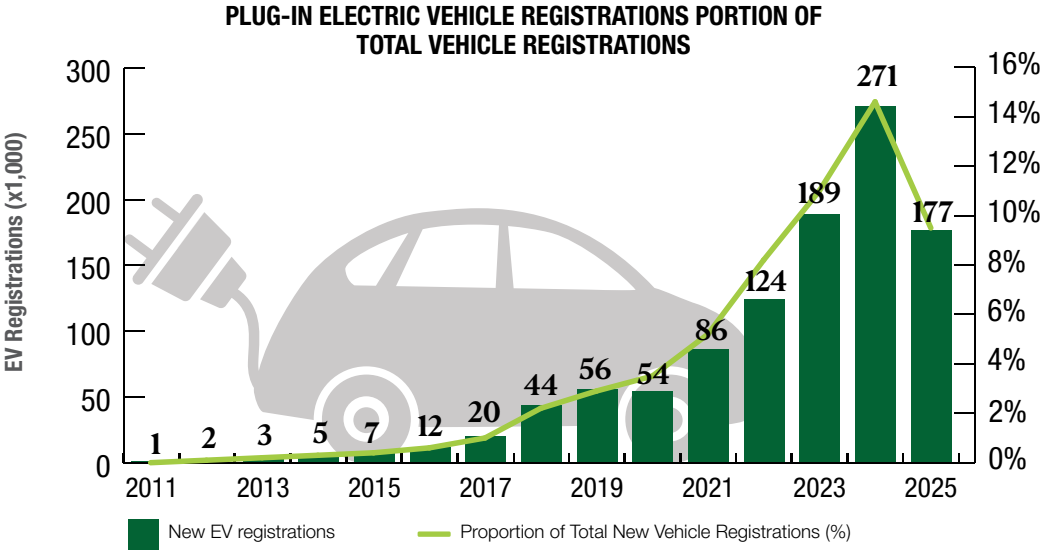


FUEL MIX OF THE TRANSPORTATION SECTOR, 2023



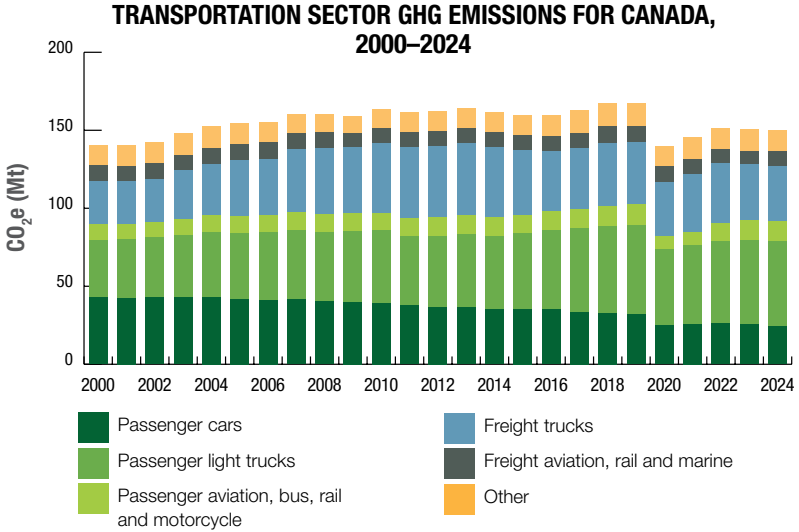
- Total transportation energy use **increased 17%** from 2000 to 2023.
- Energy efficiency improvements in the transportation sector saved Canadians **657 PJ** of energy and over **$26 billion** in energy costs in 2023.
- Passenger transportation contributes **51%** to the total emissions, freight emissions are **44%**, and off-road emissions are **5%**.

* The ethanol proportion is estimated based on disposition data.
** The category "Other" includes electricity, natural gas, biodiesel, light fuel oil, aviation gasoline and propane
Parts may not sum to total due to rounding.



- In 2025, **177,000** new electric vehicles (EVs) were registered in Canada, accounting for **9.5% of all new motor vehicle registrations**.
- This was down from a 2024 peak of **271,000 new EV registrations,** or **14.6% of the national total**.
- The decline coincided with global trade uncertainty and the rollback of federal and provincial EV purchase incentives.

GHG SPOTLIGHT: TRANSPORTATION



- **Transportation GHG emissions** (from passenger, freight, and other forms of transport) **increased** 3% from 2021 to 2024, reflecting a gradual rebound from the pandemic. Despite the increase, transportation emissions were 10% below their pre-pandemic level in 2019.

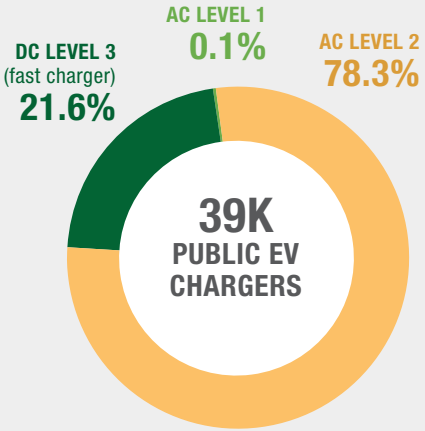
ELECTRIC VEHICLE CHARGING

EV chargers deliver electricity to the on-board batteries of both **battery electric vehicles (BEV)** and **plug-in hybrid electric vehicles (PHEVs)**. There are two main types of EV chargers: **alternating current (AC) chargers** provide electricity to the vehicle via Level 1 and Level 2 chargers. **Direct current (DC) chargers**, also known as **Level 3 fast chargers**, provide electricity much more rapidly.

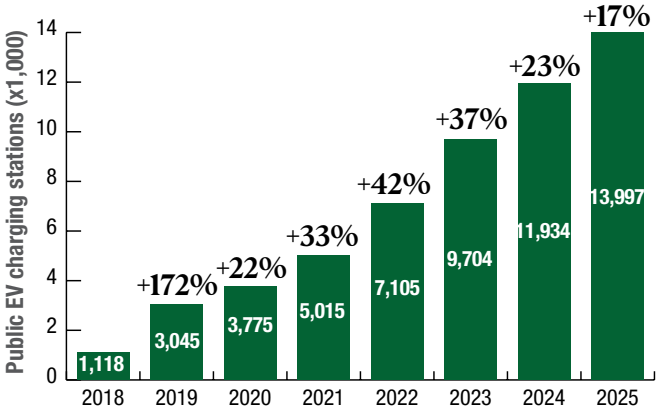
Charger	Input	Outlet type	Estimated charging time*	Estimated range per hour of charging*	Typical uses
AC Level 1	120 V	Standard electrical outlet (for example, phone charger)	8–50+ hours	3-8 km	Home charging and back-up situations
AC Level 2	208/240 V	Special electrical outlet (for example, stove or dryer plug)	4–10 hours	16-50 km	Home charging, charging at businesses and public spaces
DC Level 3 (fast charger)	480 V	DC outlet (not found in homes)	25–30 minutes	Up to maximum driving range of vehicle	Charging at dedicated stations, public spaces, and highway corridors

*Estimates assume 80% charging level limit. Time to full charge and range per hour of charging will vary depending on the vehicle, battery, and charger, as well as fluctuating temperatures, battery state, and tire pressure.

TYPES OF EV CHARGERS AT PUBLIC CHARGING STATIONS IN CANADA (2026)*



PUBLIC EV CHARGING STATIONS IN CANADA*



Canada's network of public charging facilities for EVs has expanded rapidly in recent years. In 2026, roughly **19%** of publicly accessible EV charging facilities nationwide supported at least one DC fast charger.

*Total includes publicly accessible stations reserved for patrons of businesses

HYDROGEN

Hydrogen is a versatile energy carrier that can be produced from a variety of feedstocks.

Hydrogen can be converted to electricity through a fuel-cell in electric vehicles and power generation equipment, combusted to produce heat, or used as a feedstock in a range of chemical and industrial processes.

Hydrogen produced via low-carbon production pathways such as electrolysis or natural gas using carbon abatement can be ideal for decarbonizing hard-to-abate sectors such as heavy industry, truck freight or bus transit.

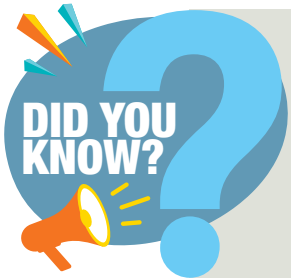
Versatile energy carrier

Carbon free at point of use

Can be produced from variety of feedstocks

Can be transported long distances

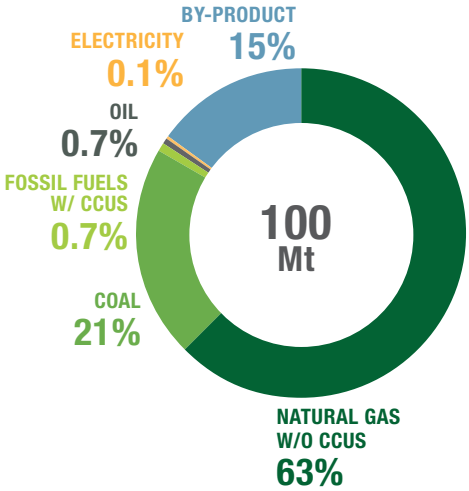
Highest energy per mass of any fuel



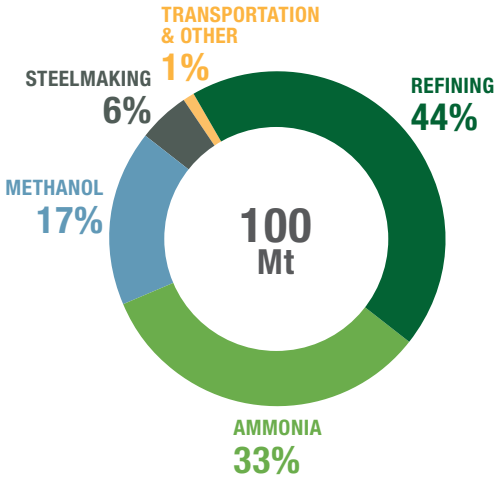
The energy in **1 kg** of hydrogen is the same as approximately **2.8 kg** of gasoline.

- The total global production of hydrogen in 2024 was **100 million tonnes (Mt)**, in which **85%** of production was deliberate, and **15%** was produced as a by-product to industrial processes.
- Global demand for hydrogen in 2024 was **100 Mt**. Hydrogen for oil refining and ammonia production were the most common end-uses, accounting for approximately **44%** and **33%** of total demand, respectively.

GLOBAL HYDROGEN PRODUCTION BY ENERGY SOURCE, 2024



GLOBAL HYDROGEN DEMAND BY END-USE, 2024



- Canada is **one of the top 10 hydrogen producers in the world today, with an estimated 4 Mt** of hydrogen produced per year (low-carbon and carbon-intensive).
- Most hydrogen in Canada is produced from natural gas and used by the chemical industry and the oil and gas sector. Some of this hydrogen is now being produced using carbon abatement technologies, with several facilities already producing low-carbon hydrogen and others coming online soon.
- Air Liquide's **20 MW** electrolyser is **Canada's largest electrolysis** facility, producing low-carbon hydrogen using electricity to split water. Canada's total deployed low-carbon hydrogen production capacity is currently **over 12,000 tonnes** per year.
- There are more than **100 established hydrogen and fuel cell companies** spanning the full value chain, **employing almost 4,300 people** in direct jobs within Canada, and generating **revenues in excess of $525 million** and **investing $125 million in research, development and demonstration**.

ANNEXES

Annex 1: Notes on methodology

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.

This publication represents data availability at the time of its preparation. 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.

Annex 2: 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 (¢/m^3) (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 (U_3O_8)
- 1 lb. U_3O_8 = 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 m^3 of crude oil = 39.0 GJ
- 1,000 m^3 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

NATURAL GAS RESOURCES AND RESERVES

Proved reserves

Volumes of natural gas from known accumulations, of marketable quality, demonstrated with reasonable certainty to be recoverable, as of the estimate date, under current economic, technological, regulatory, and operating conditions, and suitable for delivery to market within a reasonable time frame.

Marketable/technically recoverable resources

Estimated volumes of natural gas – discovered or undiscovered – that exist in subsurface accumulations. Discovered resources are estimated quantities of gas in known drilled reservoirs, which are too remote to be connected to existing pipelines and markets. If pipelines were built, gas volumes would be recoverable under existing technological and economic conditions.

Undiscovered resources are an estimate, inferred from geological data, of gas volumes thought to be recoverable under current or anticipated economic and technological conditions, but not yet discovered by drilling. These resources may be near or remote from pipelines.

Annex 3: Abbreviations

AC	alternating current
AECO	Alberta Energy Company
AESO	Alberta Electric System Operator
AER	Alberta Energy Regulator
B	billion
b/d	barrels per day
Bcf/d	billion cubic feet per day
Bcm/d	billion cubic metres per day
BEV	battery electric vehicle
CANDU	Canada deuterium uranium
CAPP	Canadian Association of Petroleum Producers
CanREA	Canadian Renewable Energy Association
CCEI	Canadian Centre for Energy Information
CCS	carbon capture and storage
CCUS	carbon capture, utilization and storage
CDIA	Canadian direct investment abroad
CEA	Canadian energy assets
CER	Canada Energy Regulator
CFS	Canadian Forest Service
CO_2 equivalent	carbon dioxide equivalent
CPI	consumer price index
CPL	cents per litre
DC	direct current
ECCC	Environment and Climate Change Canada
ECTPEA	Environmental and Clean Technology Products Economic Account
EGS	enhanced geothermal system
EIA	Energy Information Administration (U.S.)
EU	European Union
EV	electric vehicle
FDI	foreign direct investment
G7	seven wealthiest major developed nations: Canada, France, Germany, Italy, Japan, U.K. and U.S.
GDP	gross domestic product
GHG	greenhouse gas
GJ	gigajoule
GST	Goods and Services tax
GWh	gigawatt hours
HGL	hydrocarbon gas liquids
HST	Harmonized sales tax
IEA	International Energy Agency
IHA	International Hydropower Association
kg	kilogram
km	kilometre
km^2	square kilometre
kt	kilotonne
kWh	kilowatt hour
lb.	pound
L	litre
LCOE	levelized cost of electricity

LNG	liquefied natural gas
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 and territories	
	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
Conn. – Connecticut
Del. – Delaware
D.C. – District of Columbia
Fla. – Florida
Ga. – Georgia
Ill. – Illinois
Ind. – Indiana
Kans. – Kansas
Ky. – Kentucky
La. – Louisiana
Me. – Maine
Md. – Maryland
Mass. – Massachusetts
Mich. – Michigan
Minn. – Minnesota
Miss. – Mississippi
Mo. – Missouri
Mont. – Montana
Nebr.– Nebraska
Nev. – Nevada
N.H. – New Hampshire
N.J. – New Jersey
N.Mex. – New Mexico
N.Y.– New York
N.C.– North Carolina
N.D. – North Dakota
Okla.– Oklahoma
Ore. – Oregon
Penn. – Pennsylvania
R.I. – Rhode Island
S.C. – South Carolina
S.D. – South Dakota
Tenn. – Tennessee
Tex. – Texas
Vt.– Vermont
Va. – Virginia
Wash. – Washington
W.Va. – West Virginia
Wis. – Wisconsin
Wyo. – Wyoming

Tcf	trillion cubic feet
Tcm	trillion cubic metres
Tkm	tonne-kilometre
t	tonnes
TPES	total primary energy supply
TWh	terawatt-hour
TSX	Toronto Stock Exchange
U.K.	United Kingdom
U.S.	United States
US$	United States dollars
V	volt
WCS	Western Canadian Select
WTI	West Texas Intermediate

Annex 4: 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*
  - **Canada-U.S. Energy Trade:** StatCan. *International Merchandise Trade Database*; U.S. EIA. *U.S. Imports by Country of Origin*; U.S. Bureau of Economic Analysis. *Gross Domestic Product by State*
  - **Canada's Global Energy Trade:** StatCan. *International Merchandise Trade Database*; StatCan. Table: 12-10-0168-01; NRCan estimates
  - **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 Energy Regulator (formerly Offshore Petroleum Board). Annual Report; Canada–Nova Scotia Offshore Energy Regulator (formerly Offshore Petroleum Board). Annual Report; Government of the Northwest Territories. *Consolidated Financial Statements*; Government of Yukon. *Public Accounts*; Crown–Indigenous Relations and Northern Affairs Canada. *Northern Oil and Gas 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 Repor*t; 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: OIL, NATURAL 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)*; Government of Alberta. News release: "*New gas reserves take Canada into global top 10*" (March 12, 2025); 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. *U.S. Crude Oil and Natural Gas Proved Reserves, Year-end 2023*; Oil and Gas Journal. *Worldwide look at reserves and production*; AER. *Alberta Energy Outlook (ST98)*; Government of Alberta. News release: "*New gas reserves take Canada into global top 10*" (March 12, 2025); BC Energy Regulator. *2023 Gas Reserves Report*; Saskatchewan Ministry of Energy and Resources. *Five-Year Gas Reserve Summary Report*; Headwater Exploration Inc. *Annual Information Form*; CER. *Provincial and Territorial Energy Profiles*; Consultations with provincial and territorial governments and energy regulators, the CER, CAPP, and the Canada–Newfoundland and Labrador Offshore Energy Regulator (formerly Offshore Petroleum Board), and the Canada–Nova Scotia Offshore Energy Regulator (formerly Offshore Petroleum Board); *NRCan estimates*
  - **Canada and U.S. – Marketable and technically recoverable resources:** CER. *Canada's Energy Future 2023, Macro Indicators*; U.S. EIA. *Annual Energy Outlook 2025*; 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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