



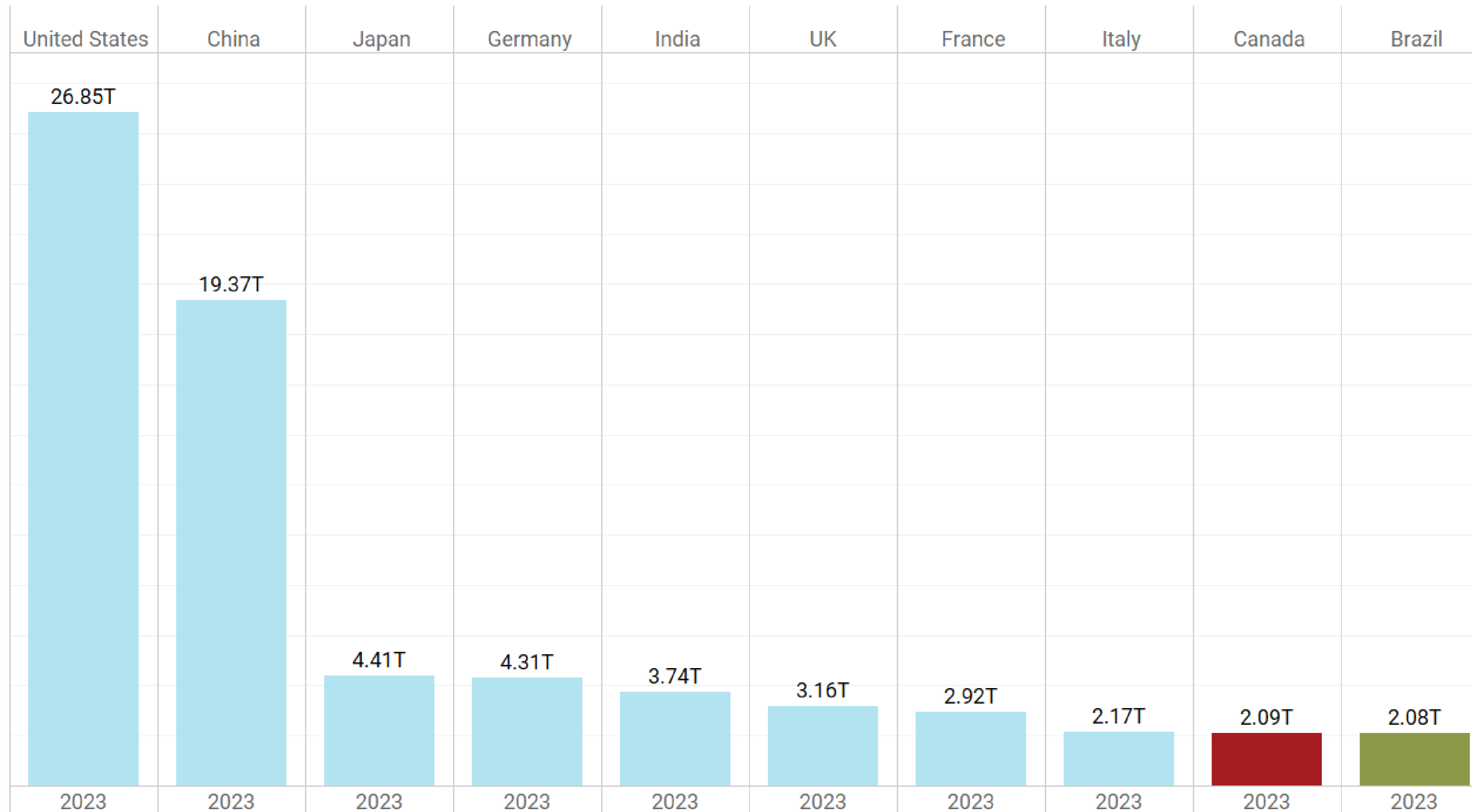
Edmonton
Global 

Edmonton Metropolitan Region



Why Canada

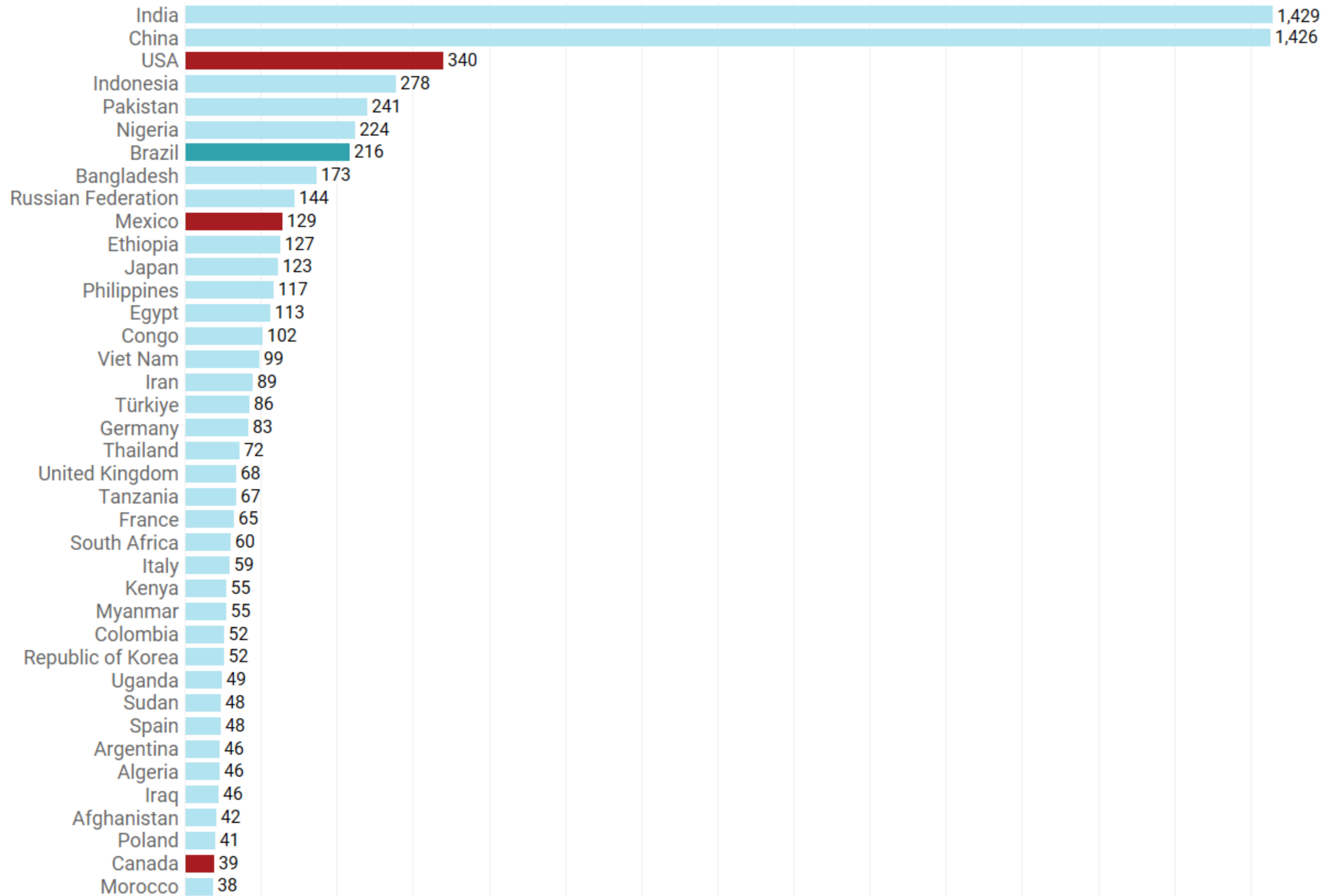
Top 10 Countries with the Largest GDP (trillion USD)



Similar size economies

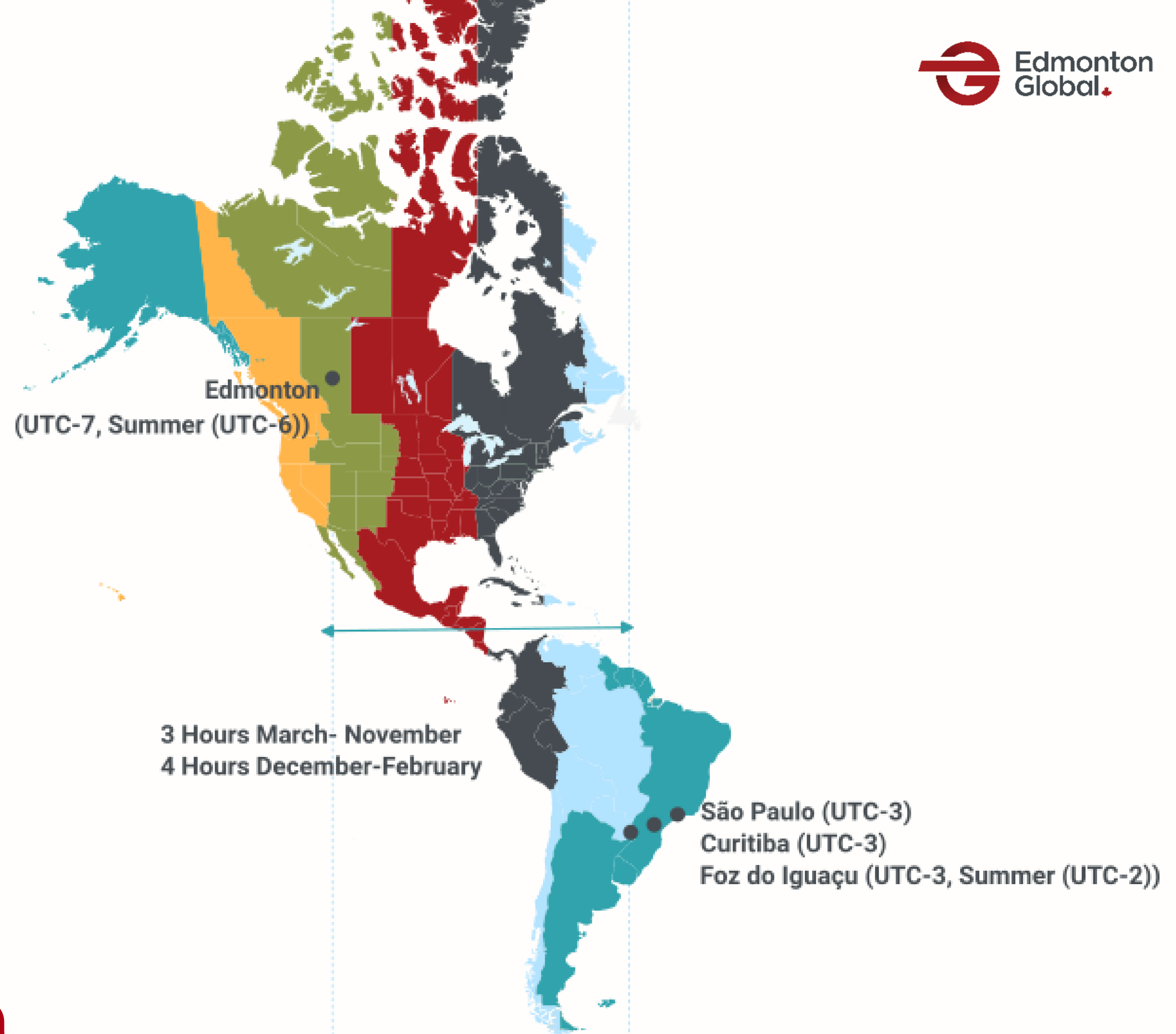
Why Canada


Top 40 most populous countries by population (millions)



Direct access to North
American market of
~500 million people

Why Canada




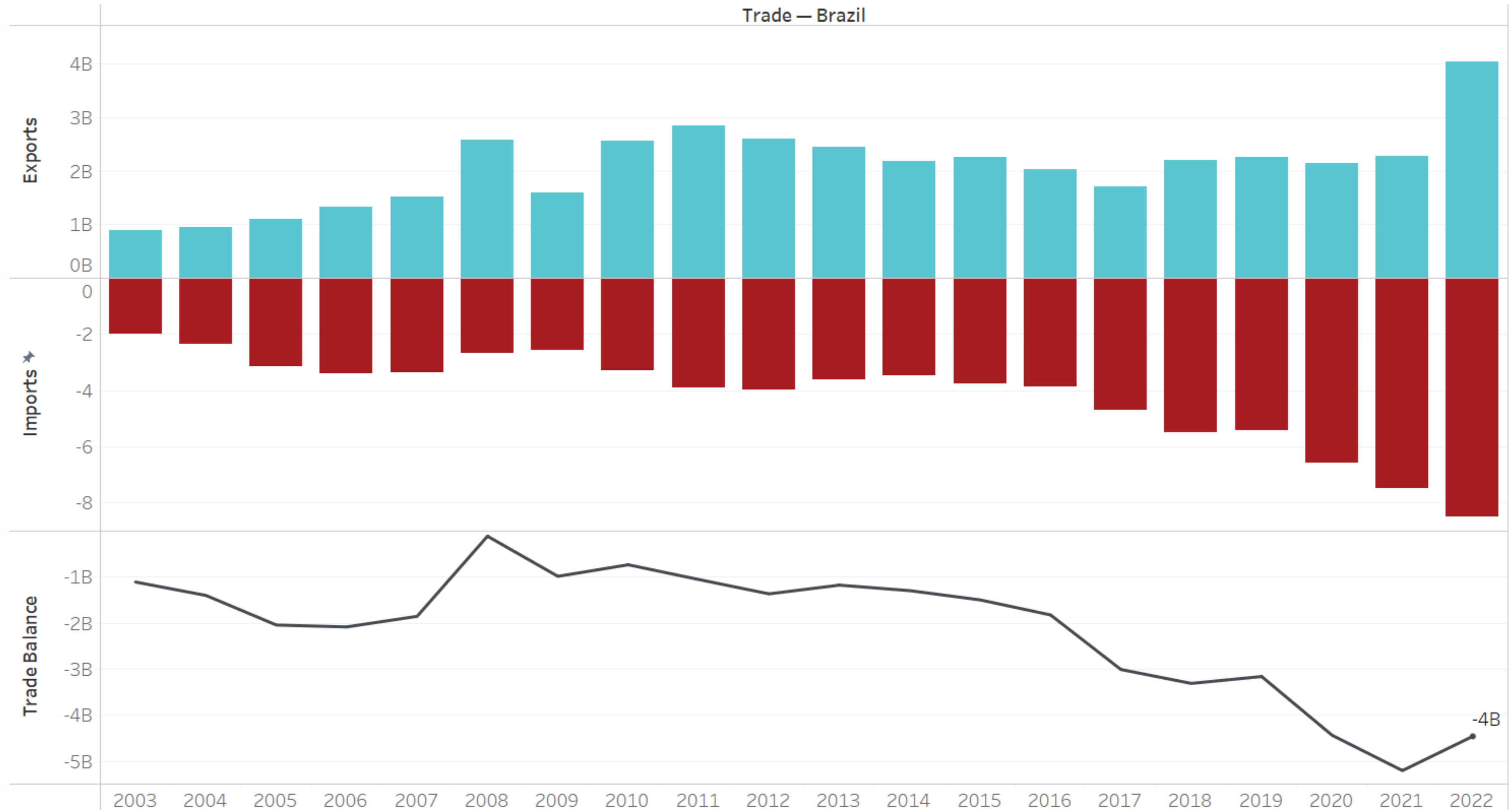
 Similar Time Zone

Why Canada

Trade Balance Between Canada and Brazil Over time

Source: <https://www150.statcan.gc.ca/n1/pub/71-607-x/71-607-x2019005-eng.htm>

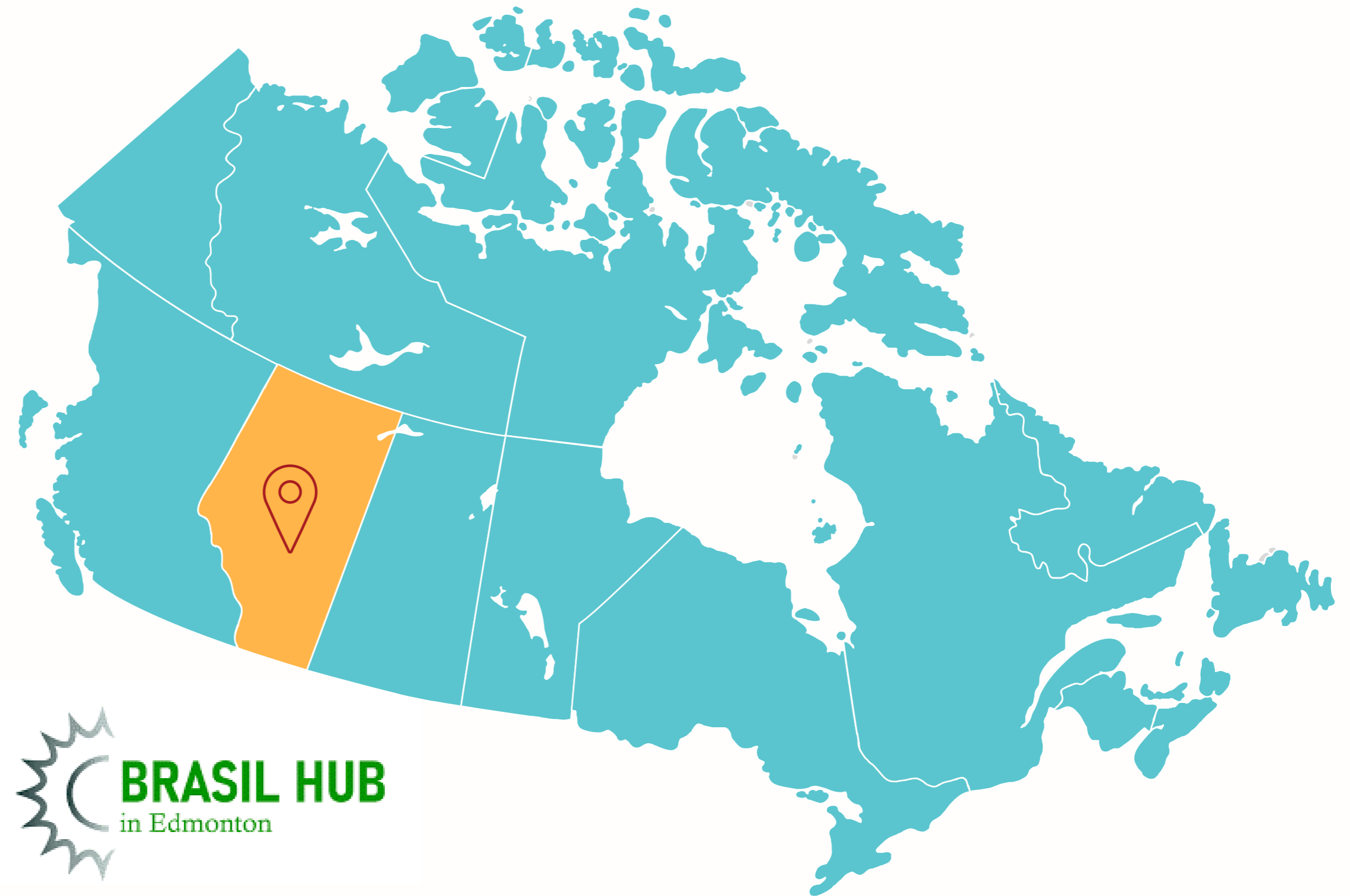
 Experience to build on



Edmonton: Your home away from home

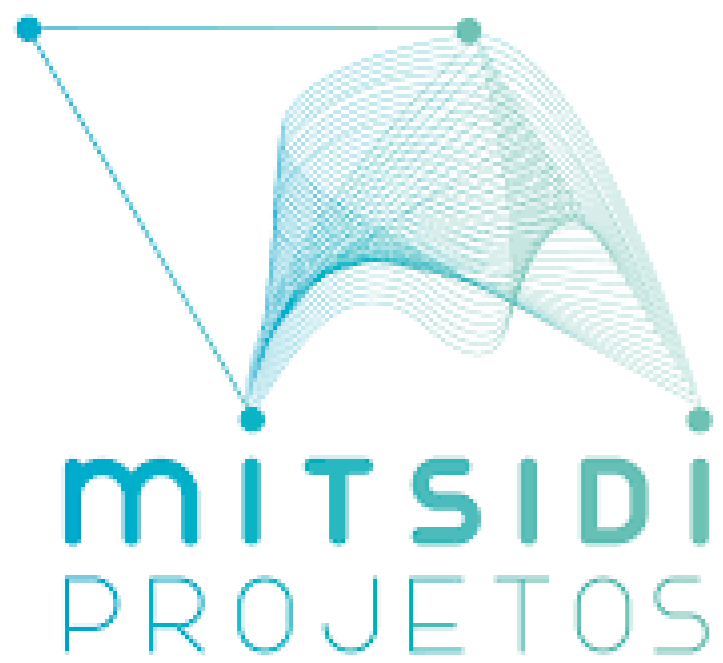


CANADA HUB
your office in Brazil



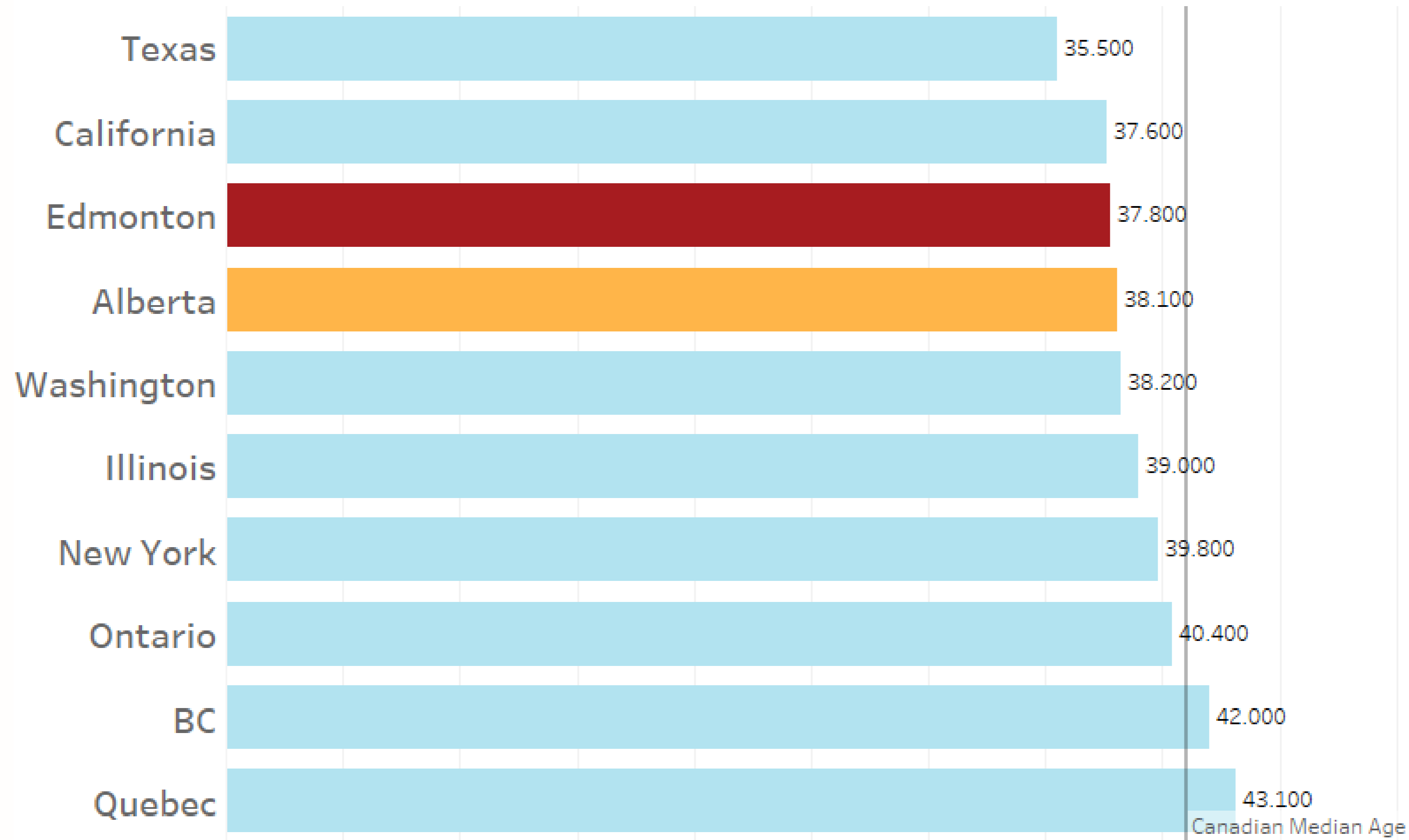
BRASIL HUB
in Edmonton

Existing Investments



Young

Median Age by North American Jurisdiction



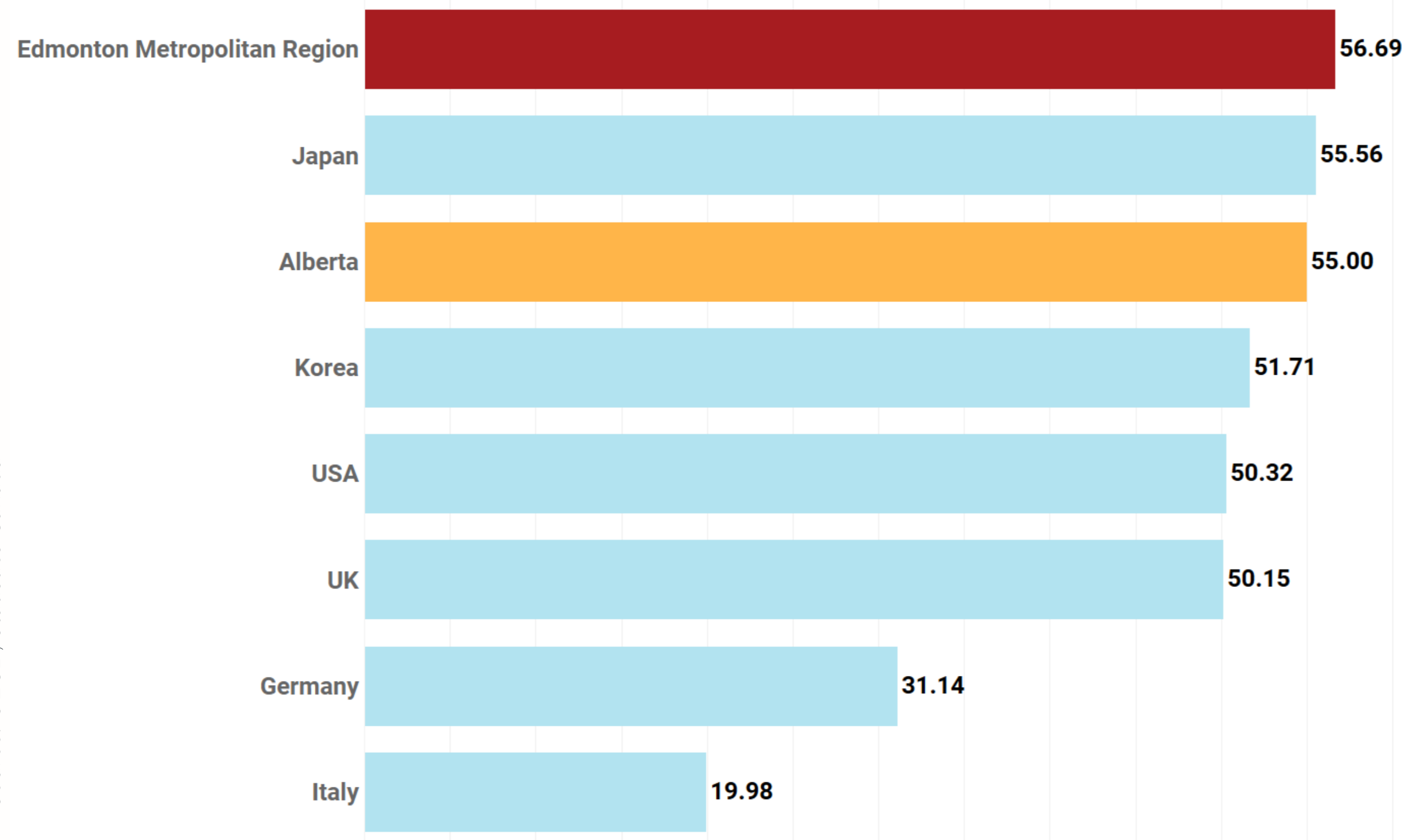
Source: Statistics Canada and US Census



The Edmonton Region has one of the youngest populations in North America

Educated

Percentage of Citizens with University or College Education



The 130,000 post-secondary students



Graduating 22,000-30,000 every year

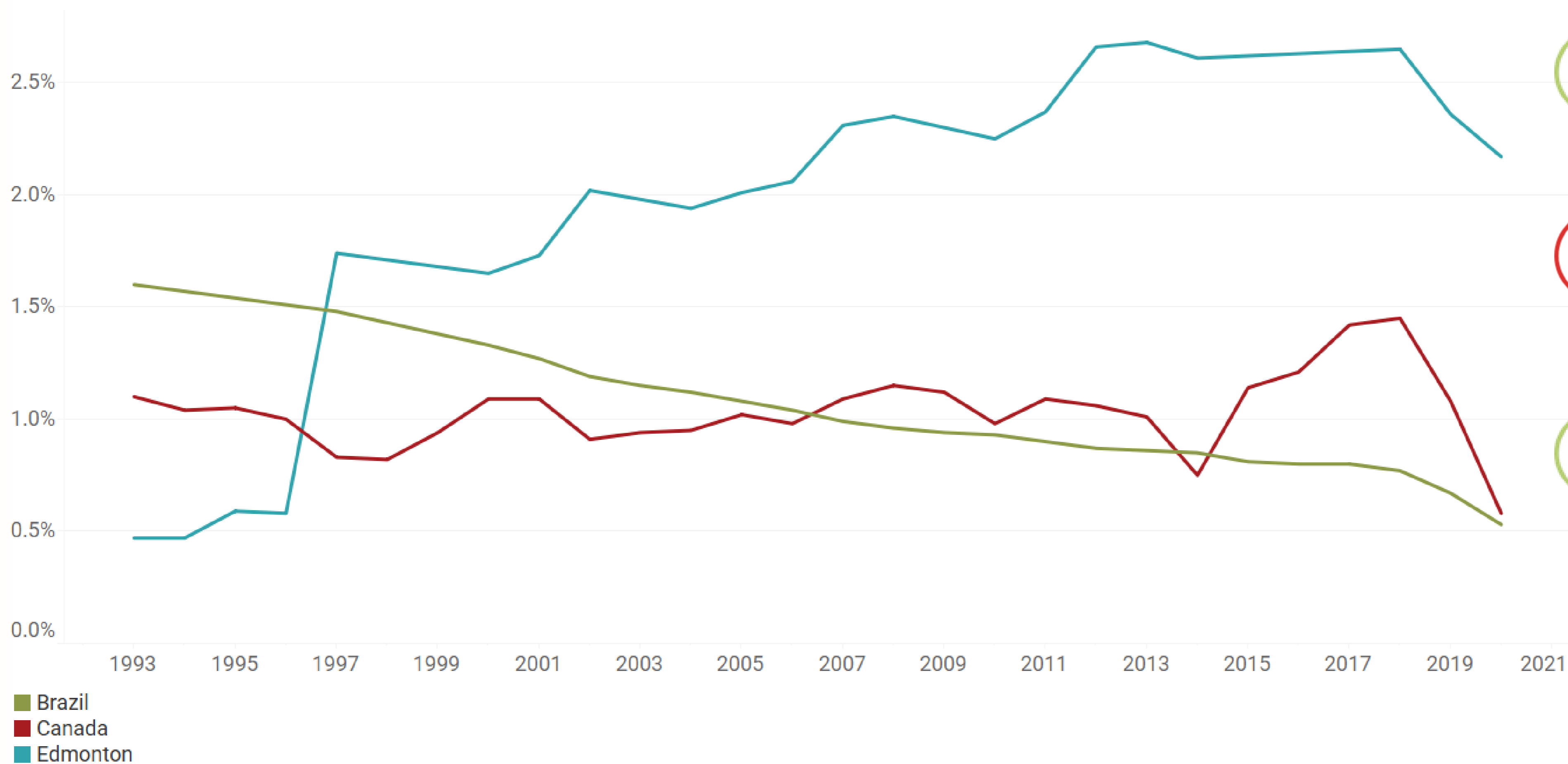


20.3% of degrees are STEM-related



Growing

Population Growth Rate Over Time



Among the fastest growing in Canada



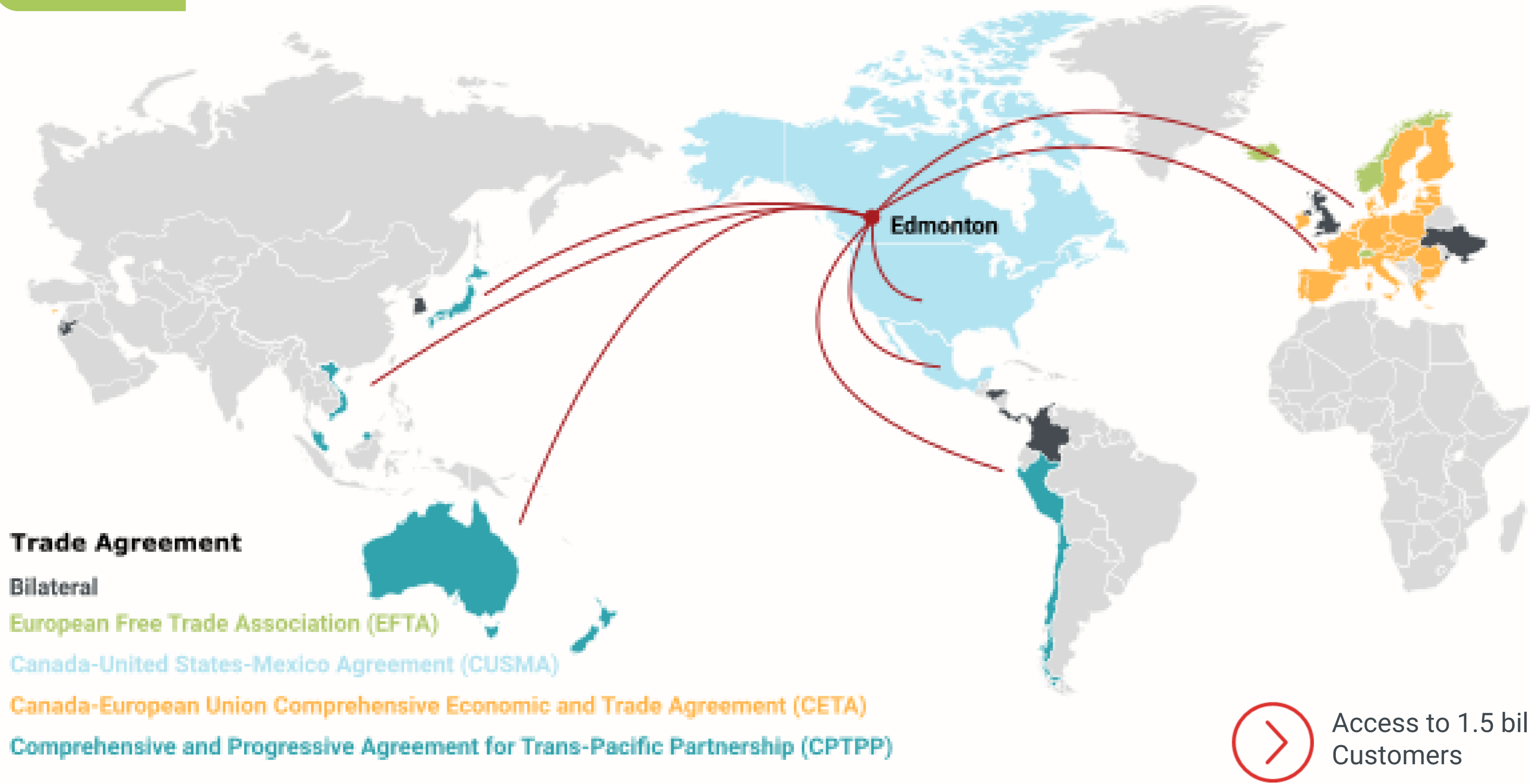
2022 was the biggest year for international migration on record



Most growth coming from international migration

■ Brazil
■ Canada
■ Edmonton

Connected



Source IMF

Technology



Thriving tech ecosystem



Leader in Engineering, Nanotechnology robotics and software



Third globally for AI research



Agriculture



Over 2.4 million acres of arable land



Major growing and food processing center



Fertile soil and high yields



Leading in sustainable agriculture practices








Extensive Research and Development Infrastructure

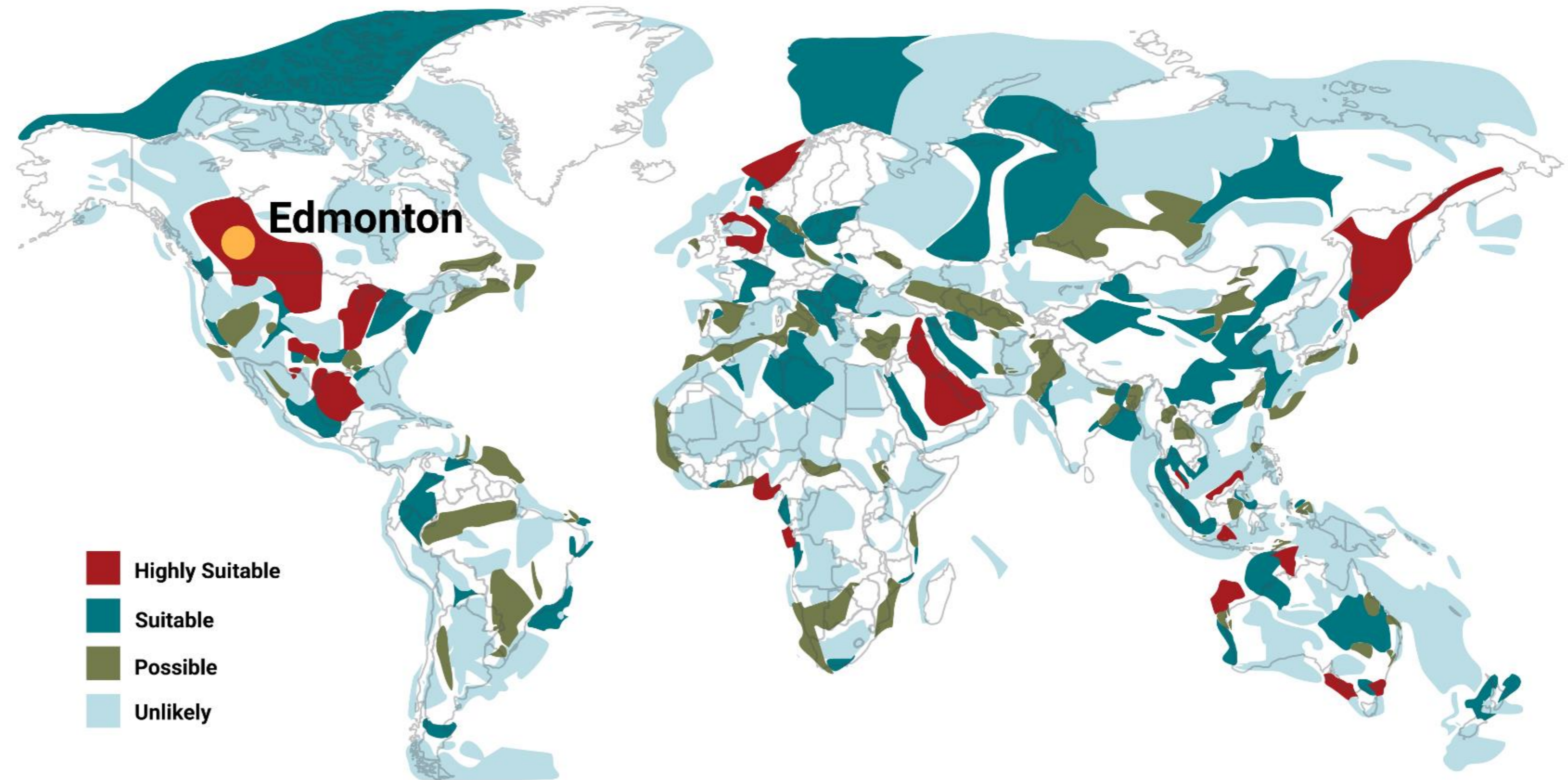


Confidential for Discussion

Clean Energy

Regions of the World Suitable for Carbon Storage Based on the Global CCS Institute's Storage Basin Assessment Database

-  Rich in renewable and non-renewable energy
-  20% of global net zero hydrogen production
-  "highly suitable" for carbon capture and storage
-  10% of global operational carbon capture capacity
-  Leadership in biofuels, solar, community energy and others



Source: GCCS

Health and Life Science



Cluster of health tech companies and research



Leader in nanotechnology and artificial intelligence applied to health



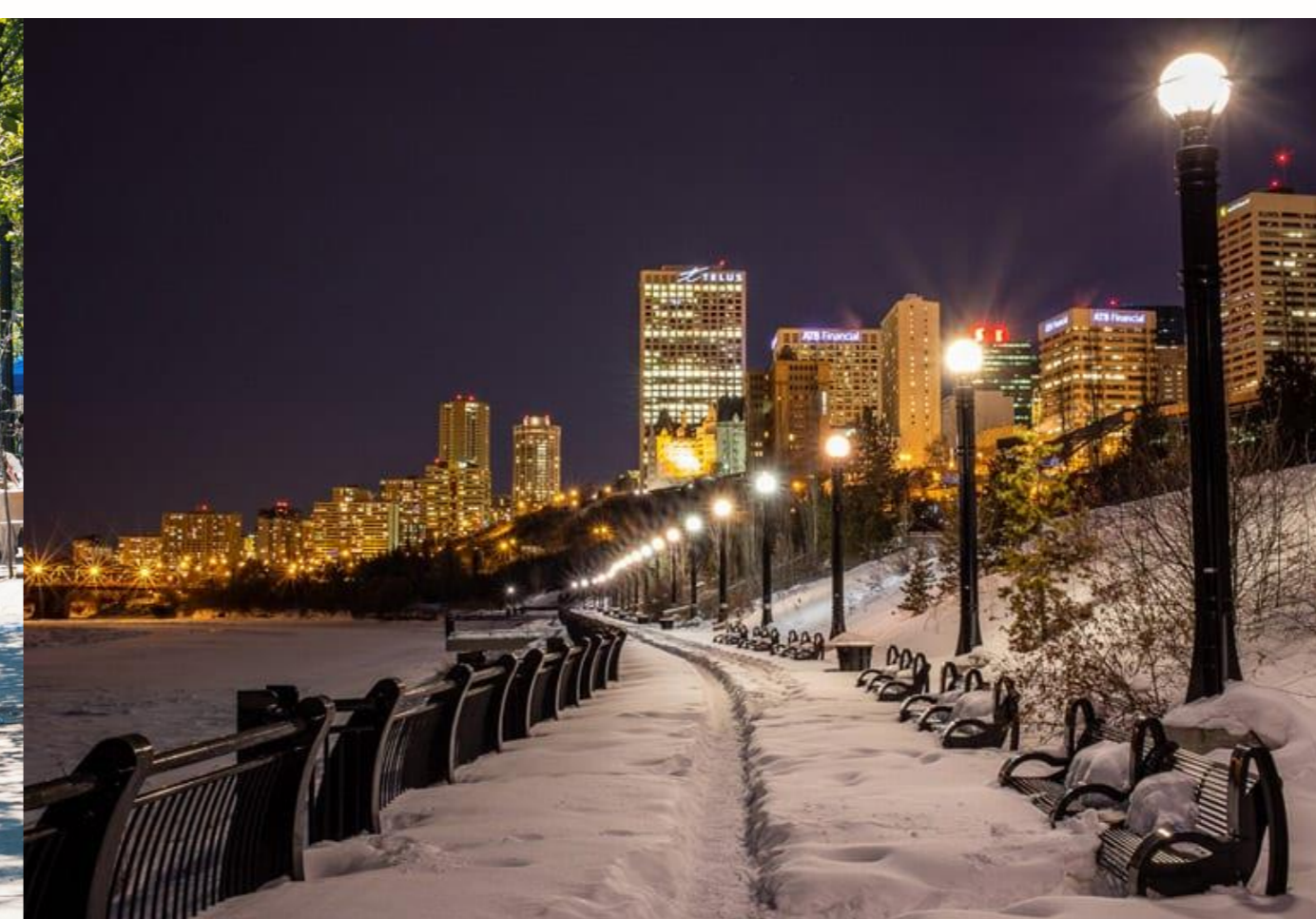
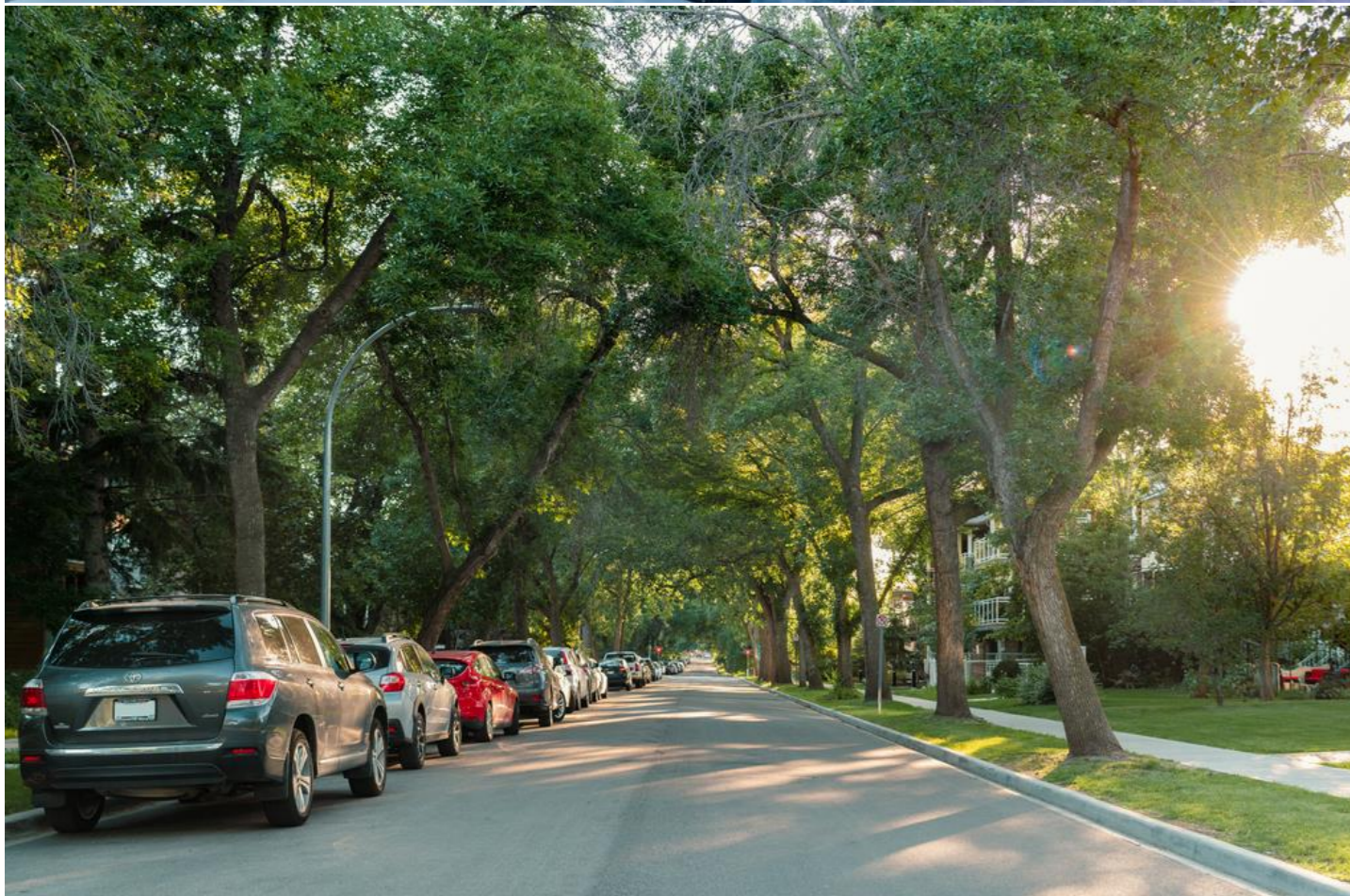
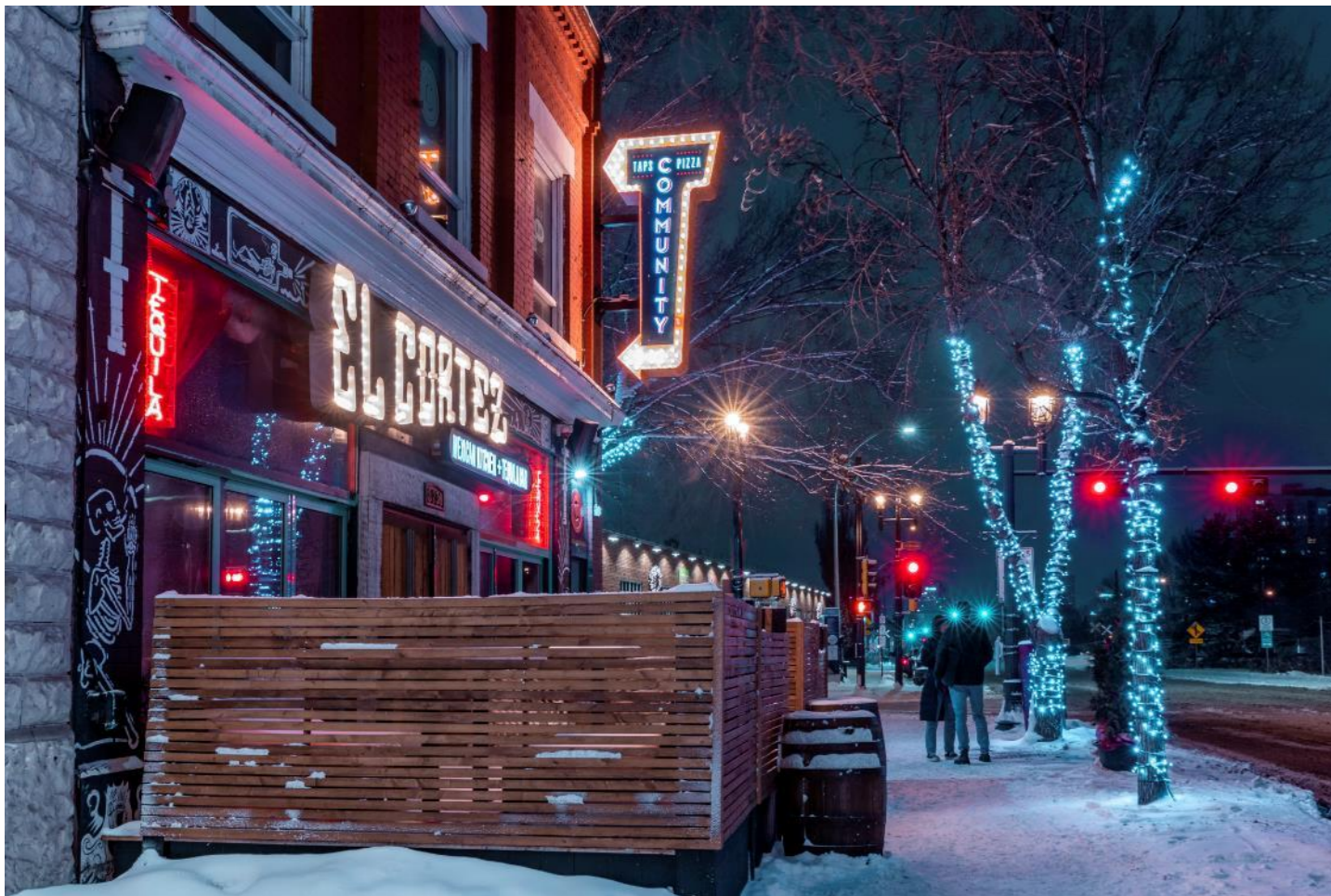
CEIV Pharma certified Supply Chain



Significant R&D infrastructure

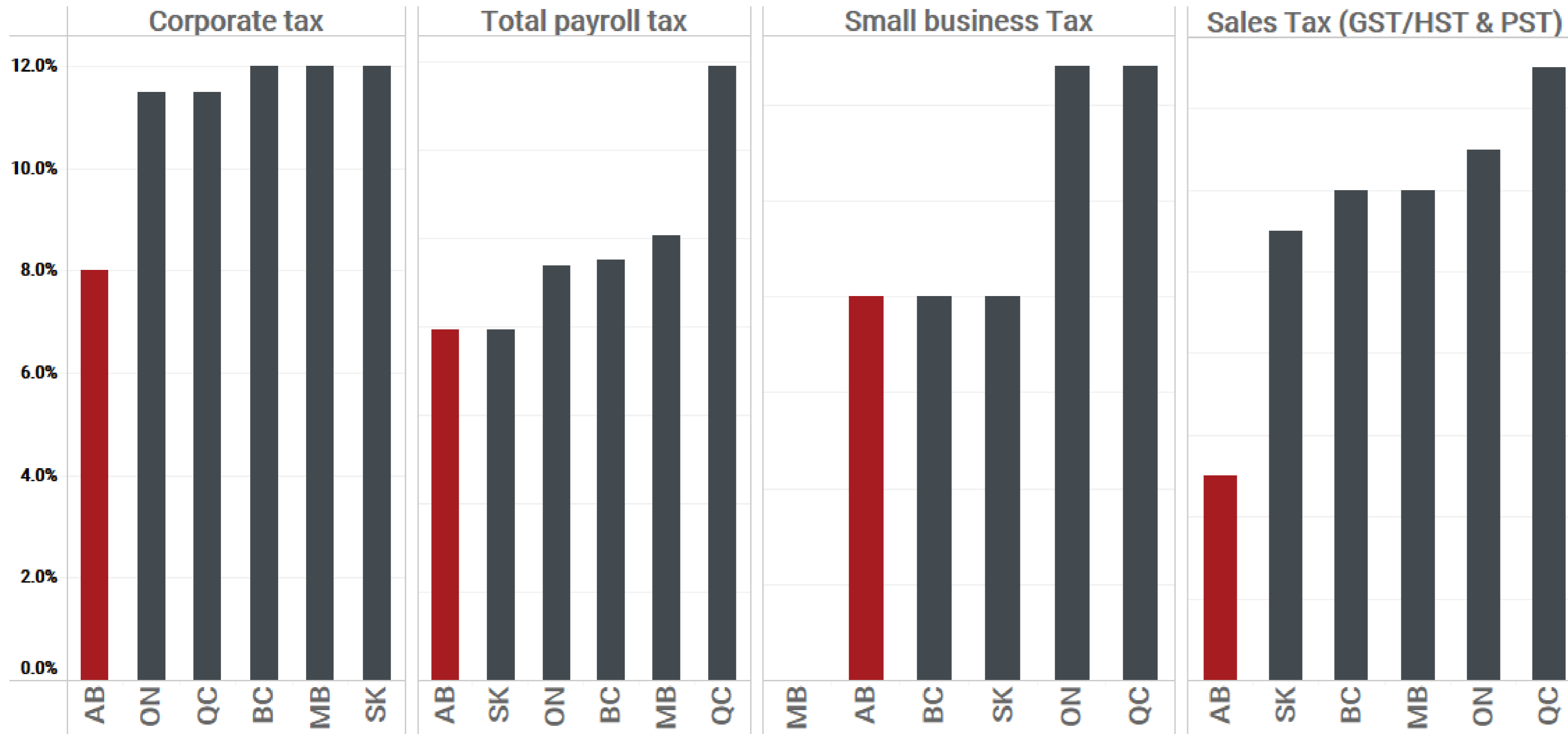


GILEAD *Creating Possible* **SynInnova**® *Synthesis for Innovation* **api** APPLIED PHARMACEUTICAL INNOVATION **SINOVEDA**
DynaLIFE_{Dx} *Diagnostic Laboratory Services* **Roche** **PhoenixBio Group** **UNIVERSITY OF ALBERTA**
ARC Alberta Research Chemicals Inc. **PACYLEX** ACCELERATING THE PACE OF CANCER CARE **48Hour Discovery**
FEDORA PHARMACEUTICALS INC. **PAL** PHARMACEUTICAL ANALYSIS LABORATORY **DRUGBANK** **entos**
ami **NAEJA** RSM **Aurinia** **RANE Pharmaceutical Inc.** *Research for Tomorrow*
OncoQuest INC. **MEDAI** **BLINC** *BASIC LINES FOR IMPROVED NATURAL CONTROL* **areto labs**
MediPharm Labs **DDIC** *Formulation | Analytics | Regulatory Affairs* **bio-stream** **PULSEMedica**
Maxima Pharmaceuticals Inc. **innovotech** *a new direction in fighting infection* **PBG** **CHENOMX** *NMR Mixture Analysis* **PfM**™ *SCHEDULING SERVICES* **Metabolomic Technologies Inc.**
MEROS POLYMERS **AURORA** *Better Together*



Low Taxes

Employer Taxes by Province

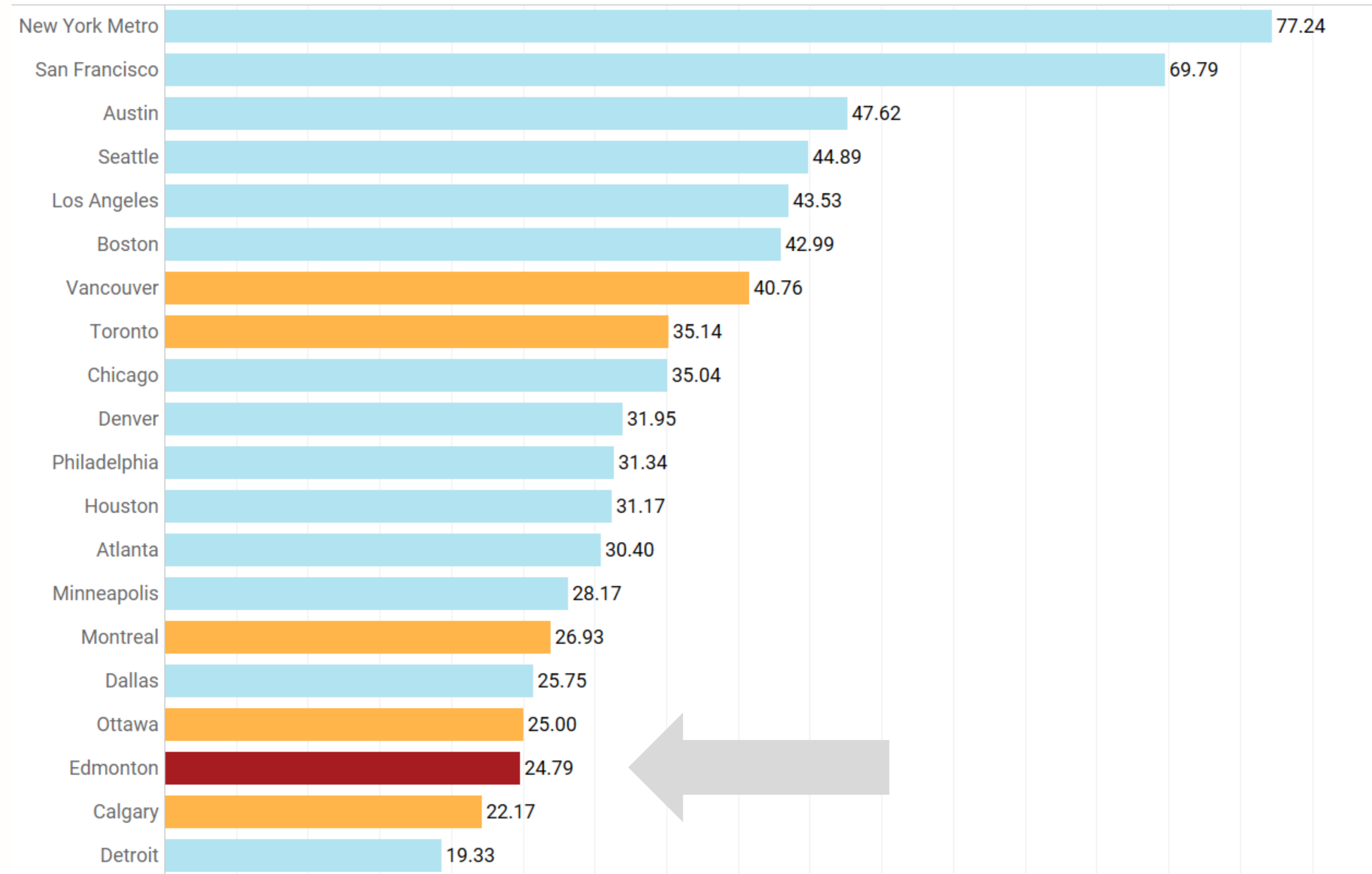


The Edmonton Region has among the lowest business taxes in North America

Source: Edmonton Global based on various

Affordable Real Estate

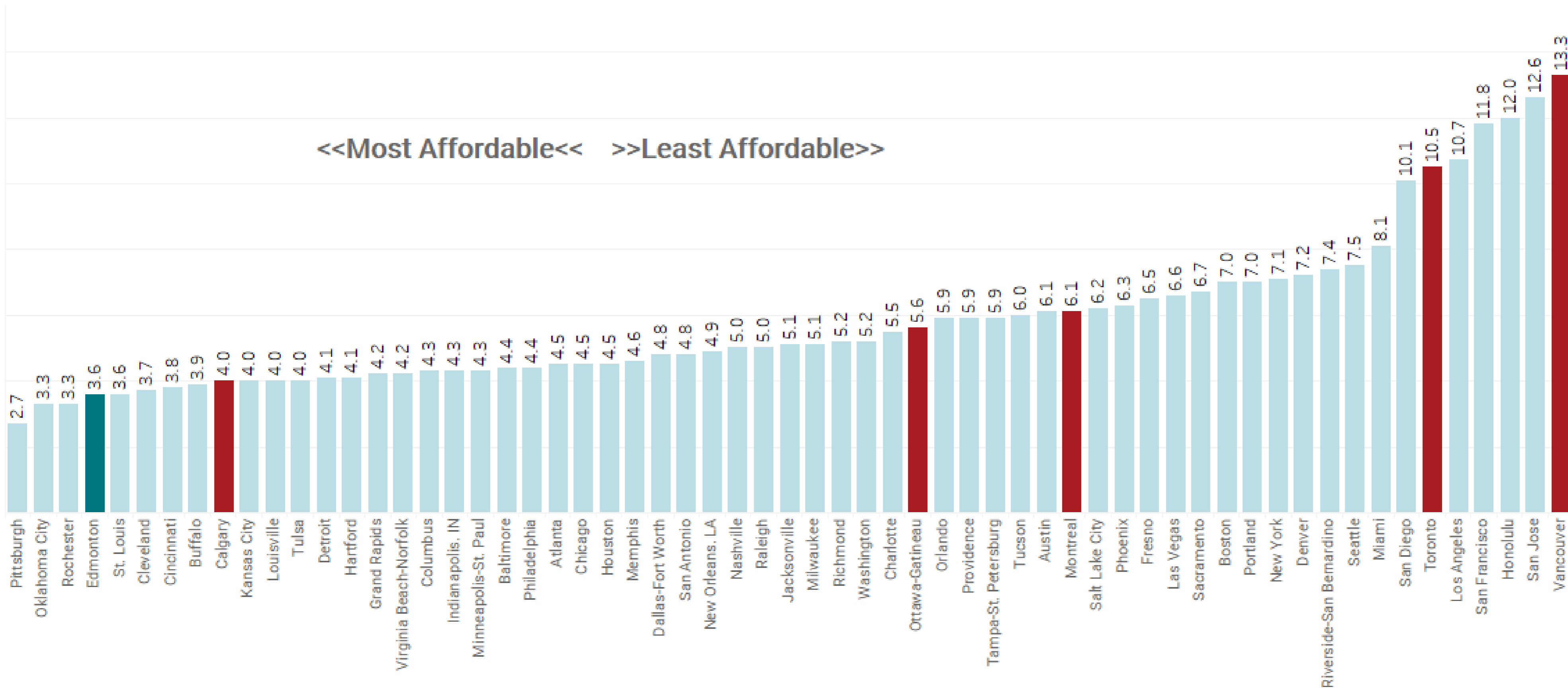
Asking Office Rent (Q4 2022) by Select Canadian and US Cities



The Edmonton Region has among the lowest downtown office rents of any major city in North America

Housing Affordability

Affordability Index for Housing by North American City
(Median House Price Divided by Gross Median Pre-tax Household Income)

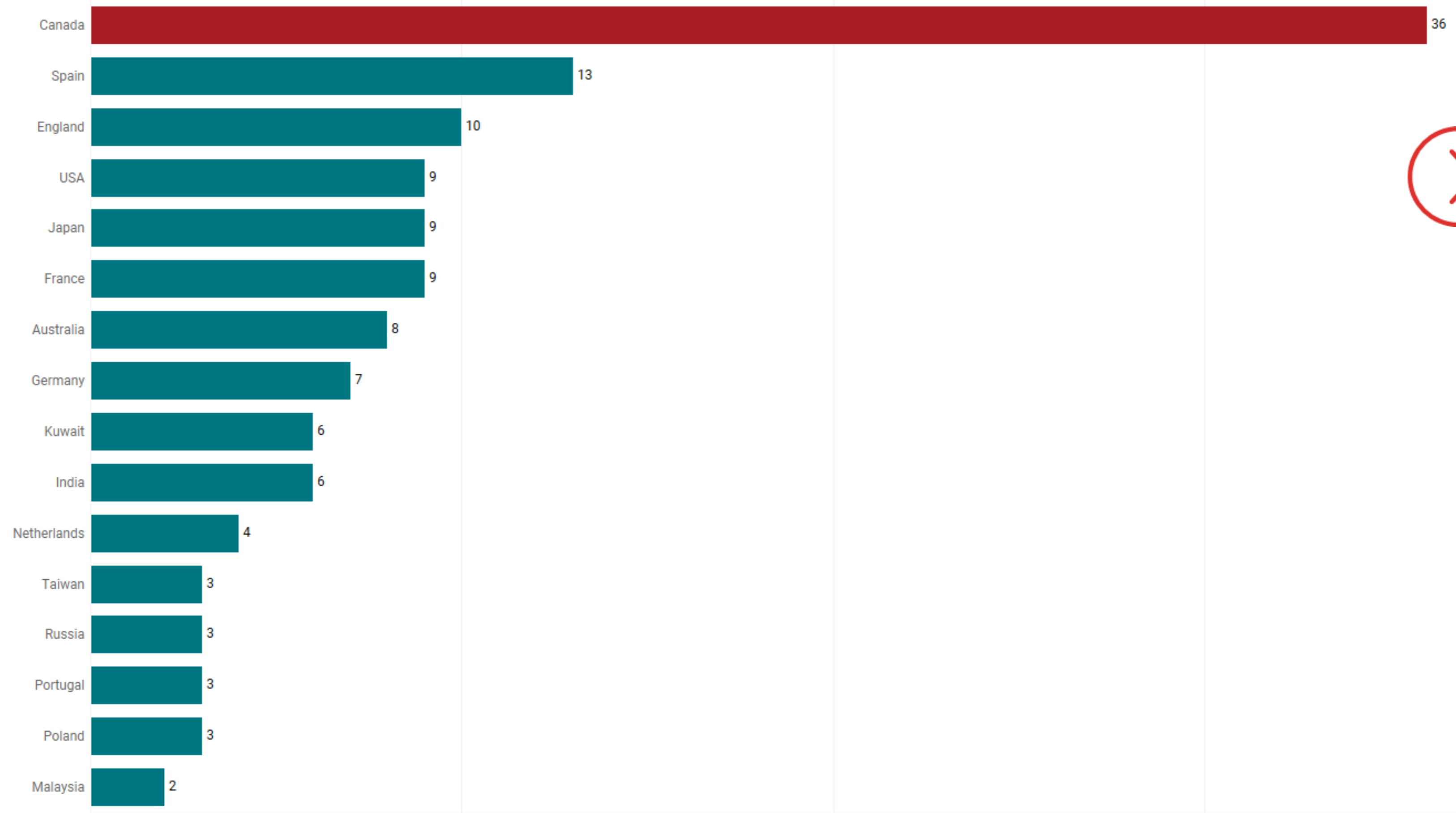


The Edmonton Region leads North America in housing affordability

Source: Urban Reform Institute

International Students

Most Searched-for Countries by Prospective International Students



Canada is the most sought-after country for international students

Source: Remitly

Number of countries searching to study here the most

We Speak Your Language



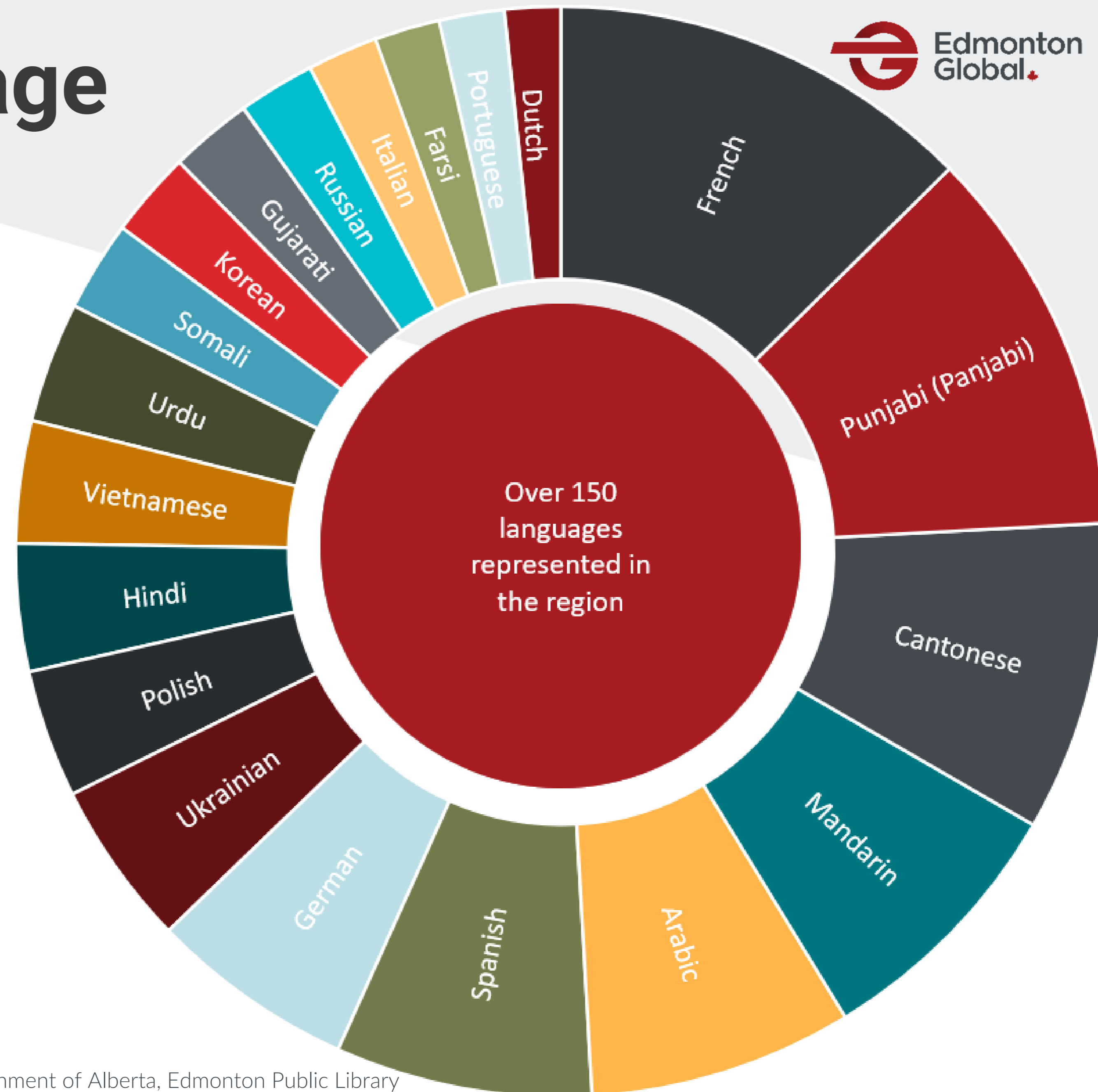
Total population

1,514,212 (Alberta Government, 2022)



Total bilingual speakers (English and other)

33.3% of Edmontonians speak another language (Edmonton Public Library, 2021)



Source: Government of Alberta, Edmonton Public Library



Edmonton
Global 

Transportation and Logistics





Gateway to Asia



Edmonton is the closest city in North America to New Delhi



Edmonton is closer to Beijing than any continental US city



| City | Distance to Edmonton (km) | Distance to Seattle* (km) | Δ |
|---------------------|---------------------------|---------------------------|------|
| New Delhi, India | 10875 | 11365 | -490 |
| Beijing, China | 8652 | 8727 | -75 |
| Guangzhou, China | 10386 | 10397 | -11 |
| Seoul, Korea | 8413 | 8394 | 19 |
| Singapore | 13022 | 12988 | 34 |
| Taipei, China | 9848 | 9775 | 73 |
| Manila, Philippines | 10870 | 10720 | 150 |
| Tokyo, Japan | 7852 | 7675 | 177 |

* Closest US city in the lower 48

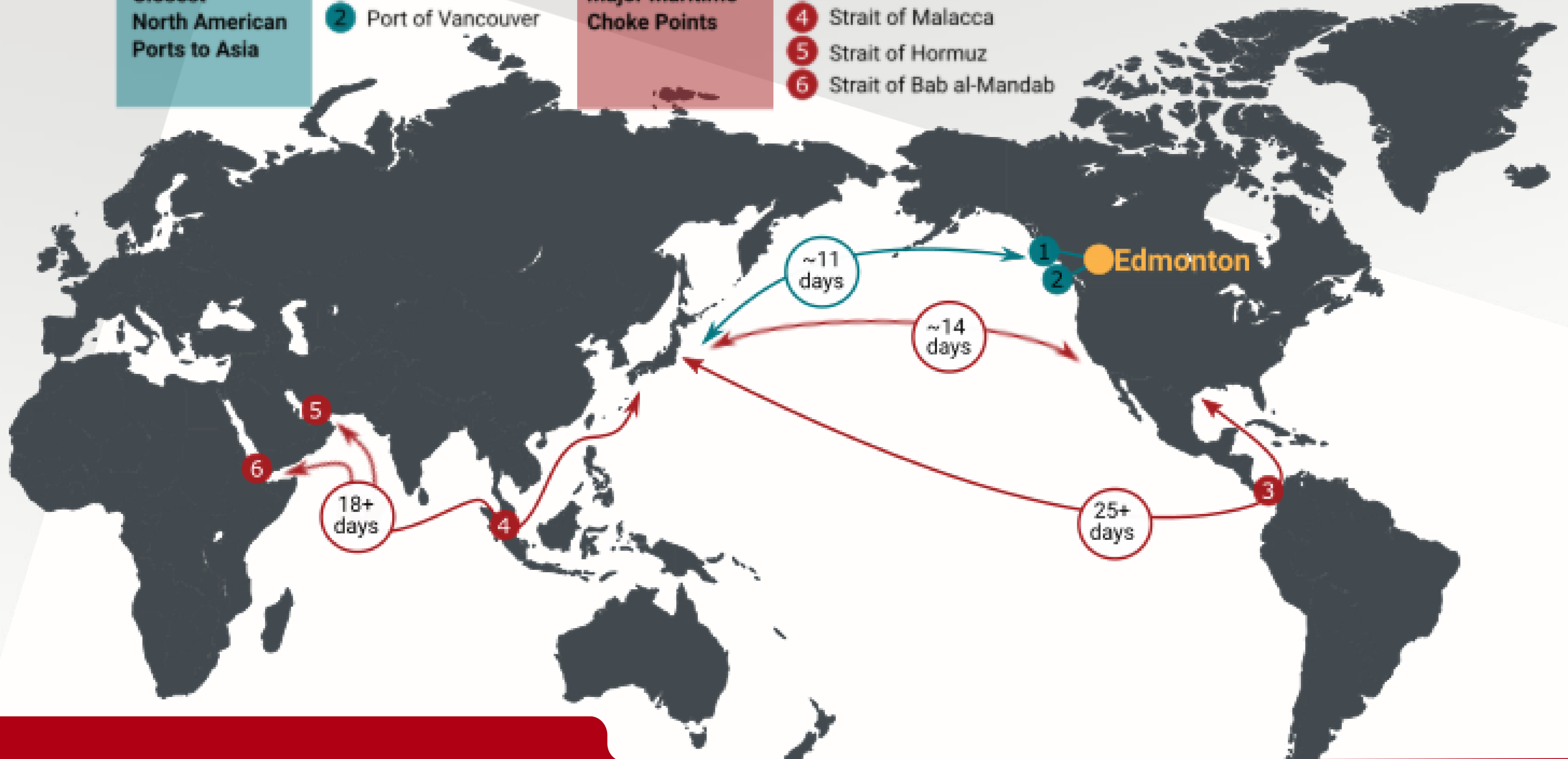
Gateway to Asia

Closest
North American
Ports to Asia

- 1 Port of Prince Rupert
- 2 Port of Vancouver

Major Maritime
Choke Points

- 3 Panama Canal
- 4 Strait of Malacca
- 5 Strait of Hormuz
- 6 Strait of Bab al-Mandab



THE EDMONTON METROPOLITAN REGION – GLOBALLY CONNECTED



The Port of Prince Rupert is the closest North American Port to Asia.



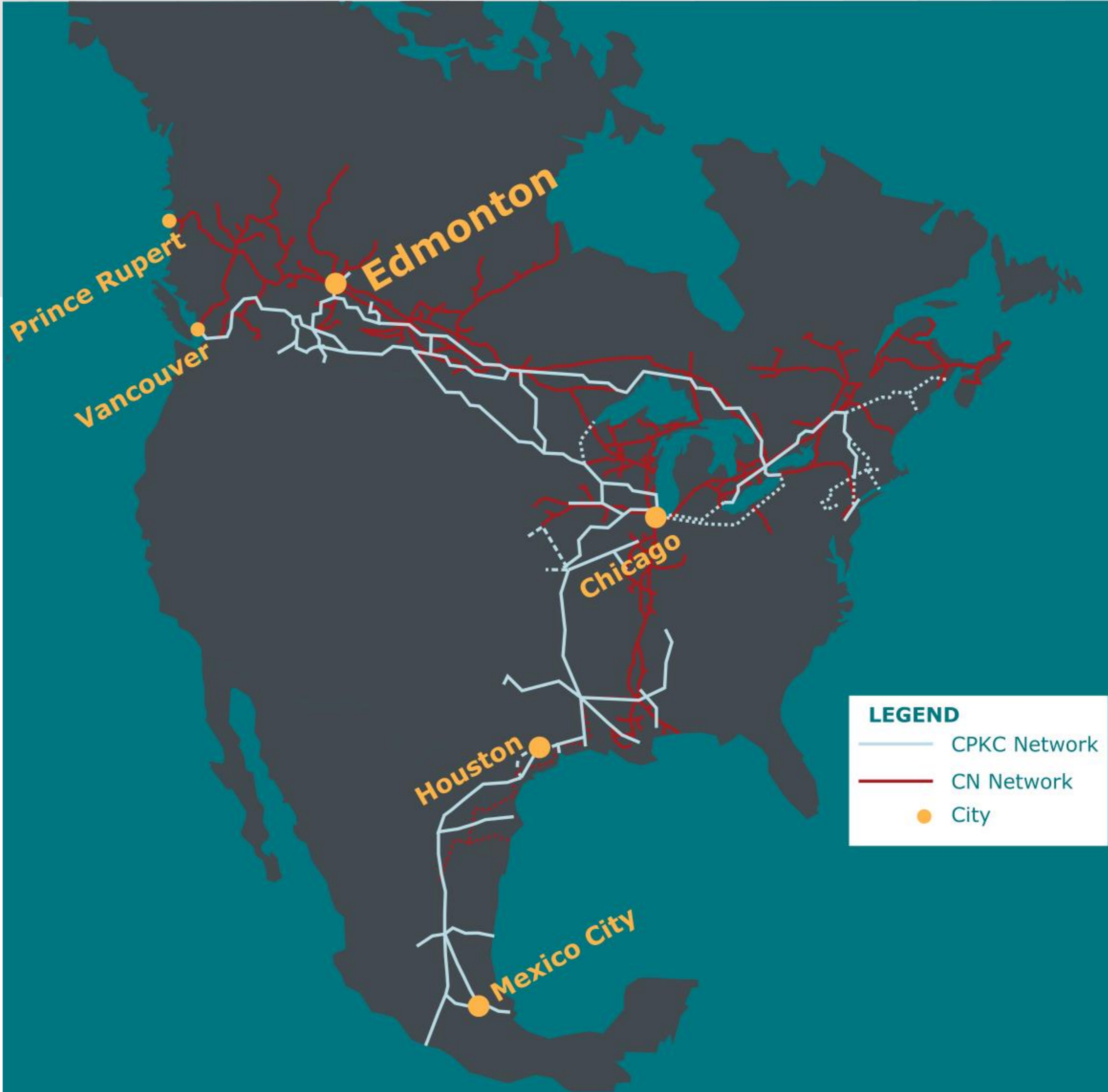
Edmonton is the first major city that cargo enters upon reaching land at the Port of Prince Rupert.



**THE EDMONTON METROPOLITAN REGION –
GLOBALLY CONNECTED**



**CN & CPKC Networks
go from coast to coast
to coast.**



Source: Edmonton Global based on maps from CN and CPKC

Shipping Times (including dwell times)

| Origin | Estimated Hours by Sea | Destination Port | Average Dwell Times (Hours) | Estimated Hours by Rail | Final Destination | Total Hours |
|---------|------------------------|--------------------------------|-----------------------------|-------------------------|-------------------|-------------|
| Tokyo > | 192 | Prince Rupert (via Edmonton) > | 84 | 132 | Chicago | 408 |
| Tokyo > | 214 | Seattle > | 312 | 177 | Chicago | 703 |
| Tokyo > | 243 | Los Angeles > | 432 | 81 | Chicago | 756 |

Source: Edmonton Global based on Various

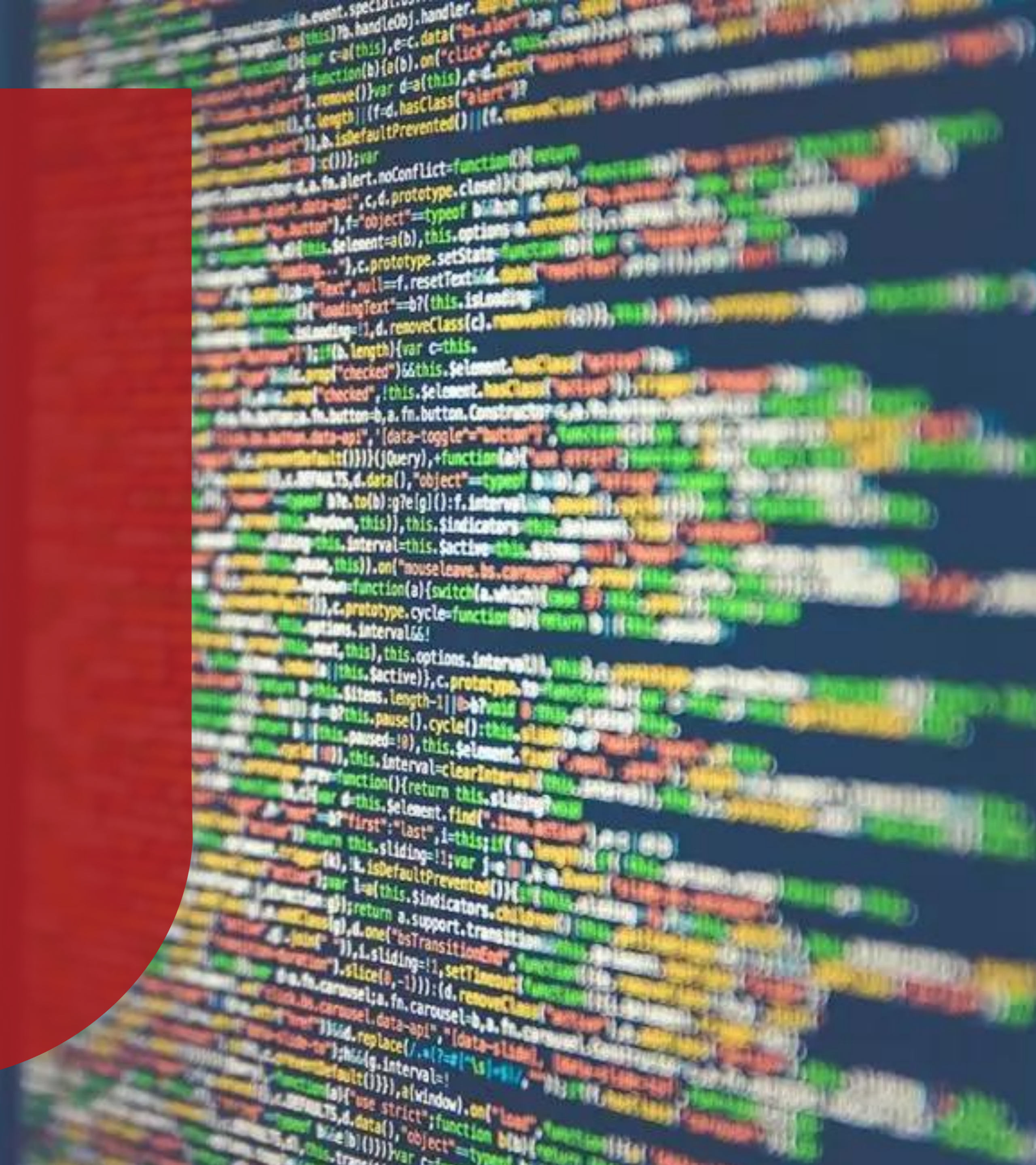


Once dwell times are considered, travel via Edmonton can be up to two weeks faster than Los Angeles.



Edmonton
Global 

Technology



Research Excellence: Engineering

NTU Rankings for the University of Alberta by Engineering Discipline (2022)



Source: NTU



The University of Alberta is a globally important source of engineering talent



Alberta has twice as many engineers per capita than any other province and the majority of those engineers are trained at the University of Alberta

The Edmonton Region: Nanotechnology Leader



National Institute
for Nanotechnology



UNIVERSITY OF
ALBERTA

Alberta



**Partnership between
National Research
Council, University of
Alberta and Government
of Alberta**



**The center partners with
private companies for
joint research projects**



**A number of companies
have been spun out of
local research projects**

The Edmonton Region: Autonomous Systems Leader



**University of Alberta
Ranked first in Canada
for Robotics**



**First Connected Vehicle
Network in Canada
(Active-Aurora)**



**Edmonton International
Airport is a global leader
in the integration of and
use of Remotely Piloted
Aircraft Systems**



**The 1st GPS software
engine in the world was
created in Alberta**



Research Excellence: Computer Science

CS Rankings for the University of Alberta by Computer Science Discipline (2020)



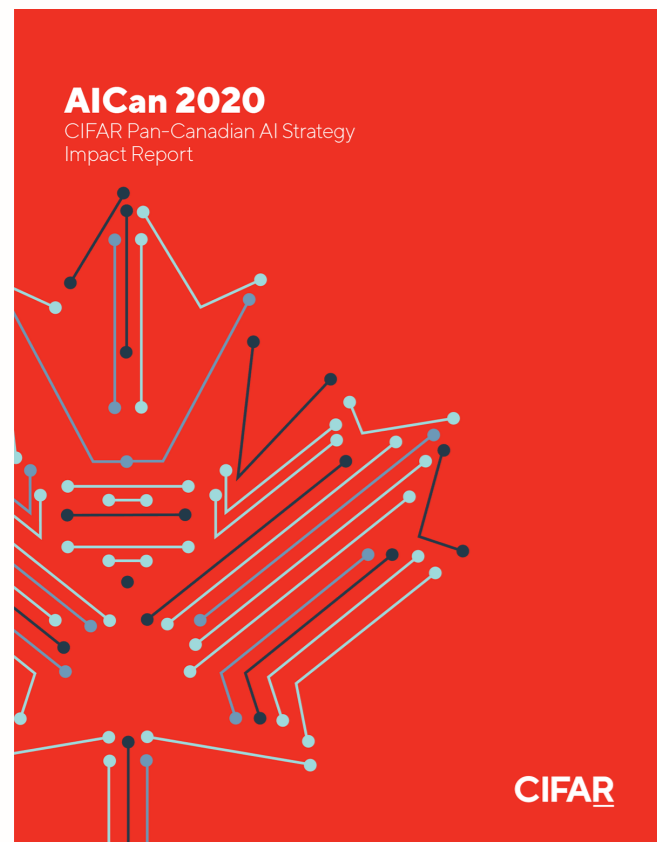
Source: CS Ranking

Legend:
■ Canada Rank
■ Global Rank

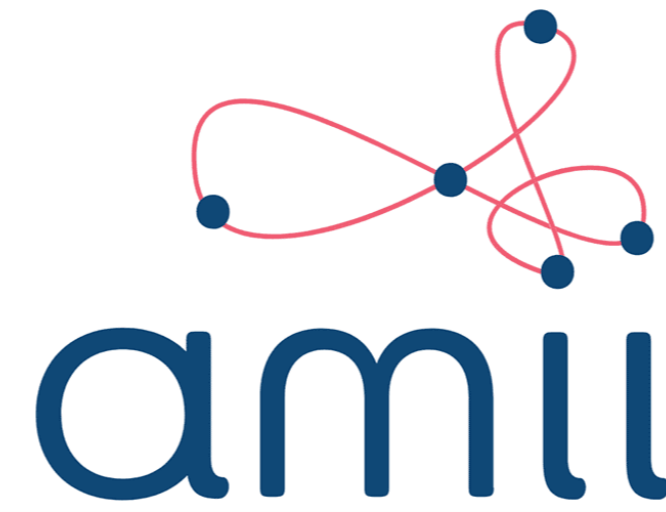


The University of Alberta is a global leader in artificial intelligence

The Edmonton Region: Artificial Intelligence Leader



Edmonton is one of Canada's three centers of excellence identified in Canada's Pan Canadian AI Strategy



Amii is one of the world's top AI and ML research institutes.



Select AI Research Labs in Alberta



"The Father of Modern AI"



DR. RICHARD S. SUTTON

Credited as the father of modern AI, Dr. Richard S. Sutton is one of the pioneers of reinforcement learning, an approach to artificial and natural intelligence that emphasizes learning and planning from sample experience, and a field in which he continues to lead the world.

What it means to be intelligent, to predict and influence the world, to learn, perceive, act, and think, he seeks to identify general computational principles underlying what we mean by intelligence and goal-directed behaviour.

*"WE'RE GOING TO SOLVE AI. AND WE'RE GOING TO DO THAT IN EDMONTON, ALBERTA, CANADA."
– ADAM WHITE, SENIOR RESEARCHER, DEEPMIND*

Tech Talent Competitiveness

Source: Edmonton Global based on CBRE Data



Edmonton has the fastest growing tech ecosystem of any of the 50 North American cities studied



Edmonton
Global 

Agri-food



Agriculture Land



The Edmonton region is rich in agricultural land- Over 2.4 million acres of arable land



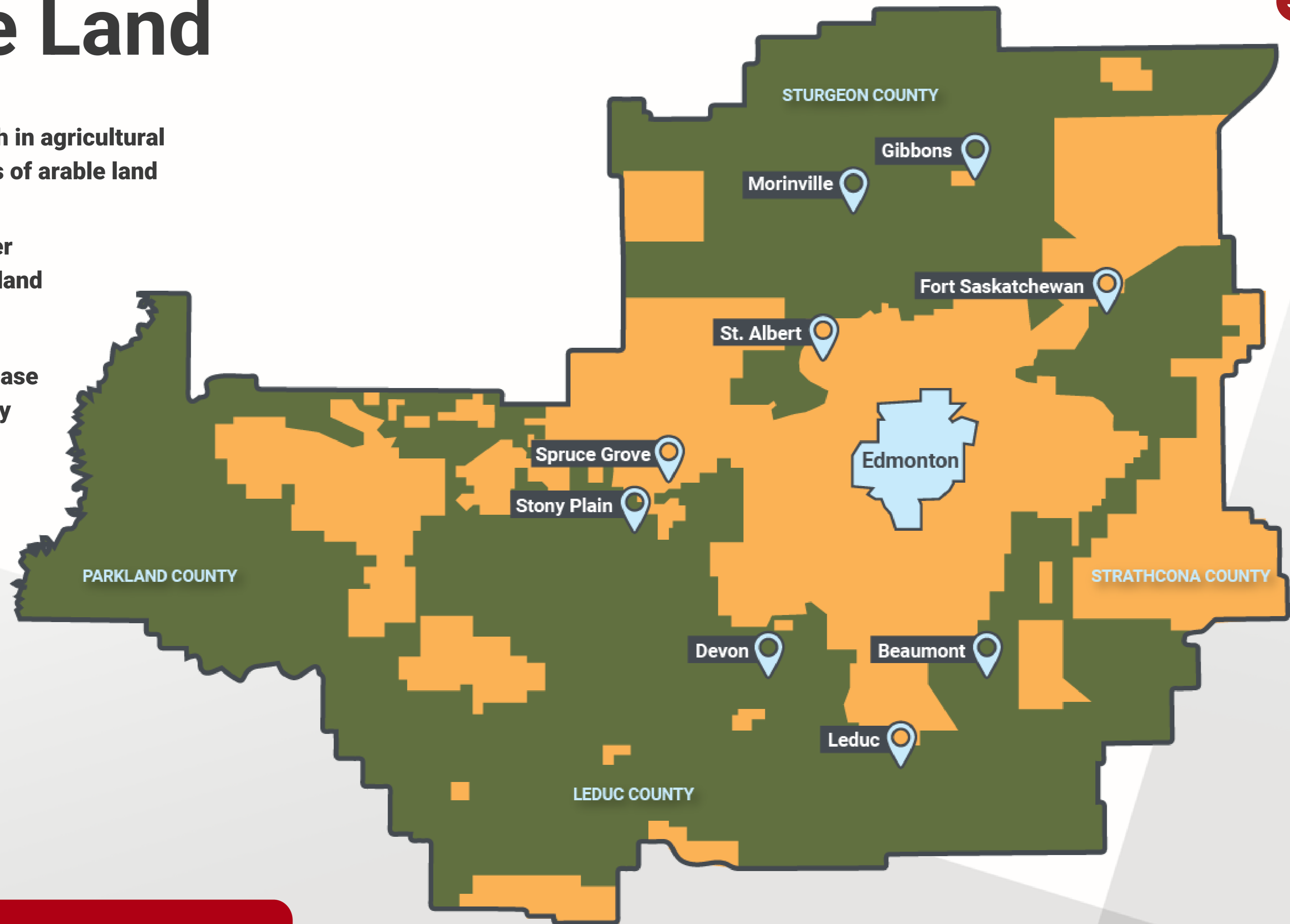
Regional Agricultural Master Plan – protects agriculture land



Combined urban and rural base creates a unique opportunity for agrifood processing



Affordable rural land with direct access to processing inputs within a large urban labour/talent pool



| |
|-------------------------------------|
| Rural/Agricultural |
| Blended Agricultural and Industrial |
| Urban |

Research Excellence: Agriculture

US News Best Global Universities Rankings for the University of Alberta by AgriFood Discipline (2022)



Source: US News Ranking



The University of Alberta is a global leader in agriculture

Alberta Yield Advantage



High yields without irrigation

| DRY PEAS | FABA BEANS | CANOLA |
|---|--|---|
| 1,799,200 Alberta Production (metric tonnes) | 41,000 Alberta Production (metric tonnes) | 5,212,100 Alberta Production (metric tonnes) |
| 2,253 Alberta Yield (kg per hectare) | 2,185 Alberta Yield (kg per hectare) | 2,792 Alberta Yield (kg per hectare) |
| 2,231 Saskatchewan Yield (kg per hectare) | 1,627 Saskatchewan Yield (kg per hectare) | 2,655 Saskatchewan Yield (kg per hectare) |

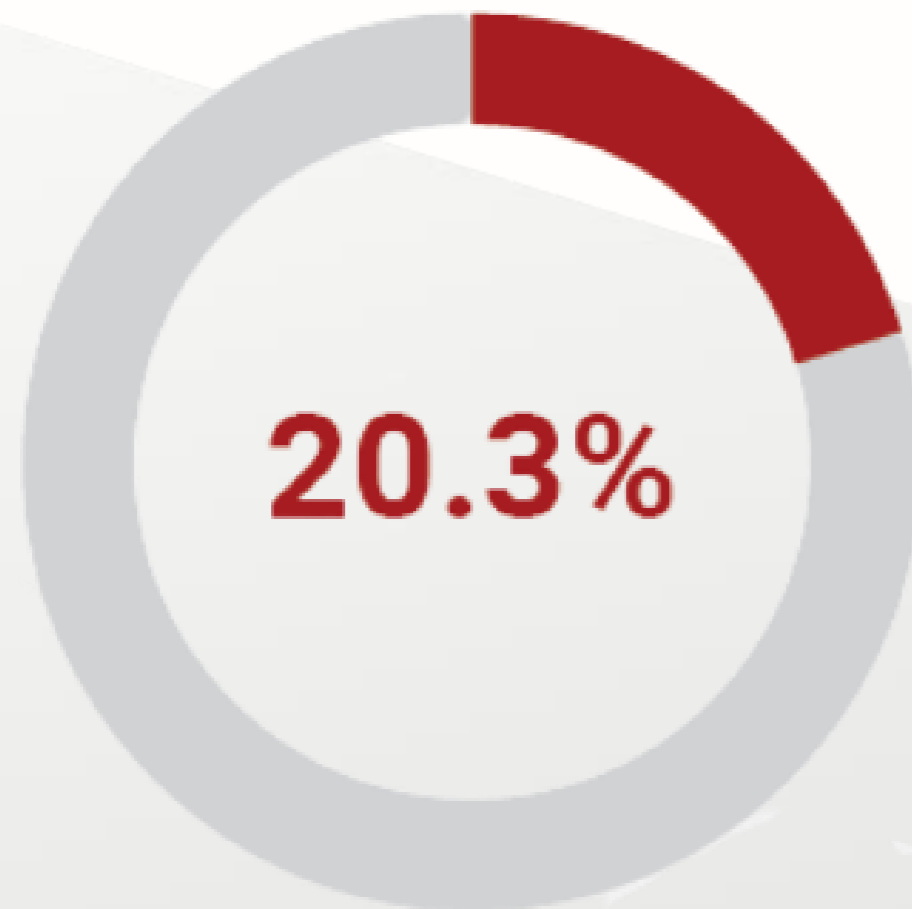
Post-secondary Enrollment 2018-2019

| ALBERTA | SASKATCHEWAN | MANITOBA |
|--|---|---|
| 20,985 Architecture, engineering and related technologies | 6,369 Architecture, engineering and related technologies | 5,298 Architecture, engineering and related technologies |
| 4,050 Agriculture, natural resources and conservation | 1,245 Agriculture, natural resources and conservation | 1,497 Agriculture, natural resources and conservation |
| 200,391 Total Enrollment in all fields of study | 59,130 Total Enrollment in all fields of study | 63,186 Total Enrollment in all fields of study |

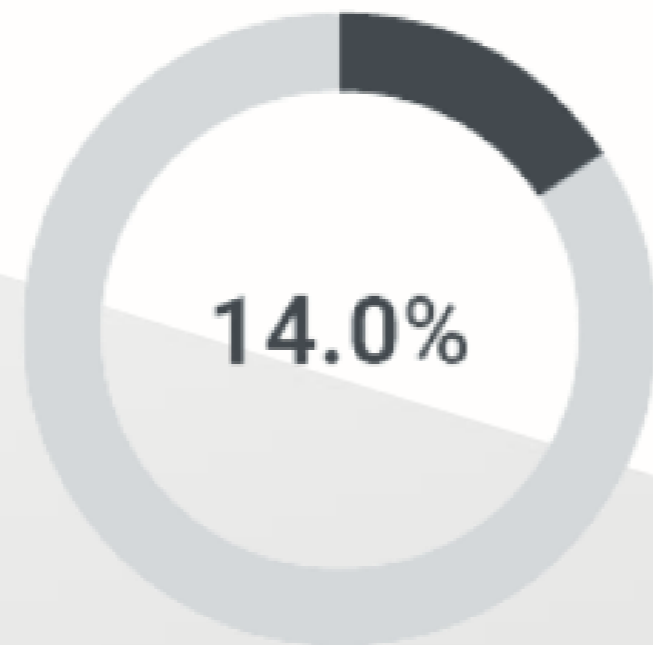


Alberta graduates more skilled workers than competing provinces

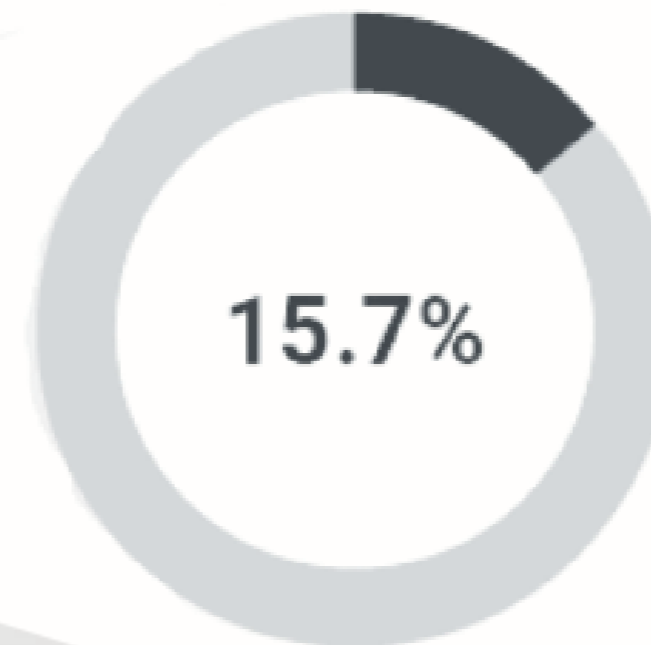
Post-secondary degrees in STEM fields



Alberta
354,930 degrees



Saskatchewan
57,845 degrees



Manitoba
75,120 degrees

Regional Research and Development Facilities⁴²

- Food Processing Development Centre
- Alberta Bio-Processing Innovation Centre
- University of Alberta Research Farms & Agri-Food Discovery Place
- Innotech Alberta
- Canmet Energy Devon
- Olds College
- Lakeland College
- NAIT Centre for Culinary Innovation
- Ag-Celerator at Edmonton International Airport
- Corteva Edmonton Seed Research Facility





Edmonton
Global 

Health and Life Sciences




Health & Life Sciences

 **Over 69% of Alberta life science companies are located in the Edmonton Metropolitan Region, contributing nearly 7.5% of the region's GDP.**

 **Biotechnology, pharmaceuticals, medical devices, and research on the causes and treatment of diseases are all areas of innovation in the region.**

 **200% growth in biotech research and development spending since 2014**

 **Canada's foremost cluster in nanotechnology.**



Health & Life Sciences



Abundant talent- chemists, virologists, researchers



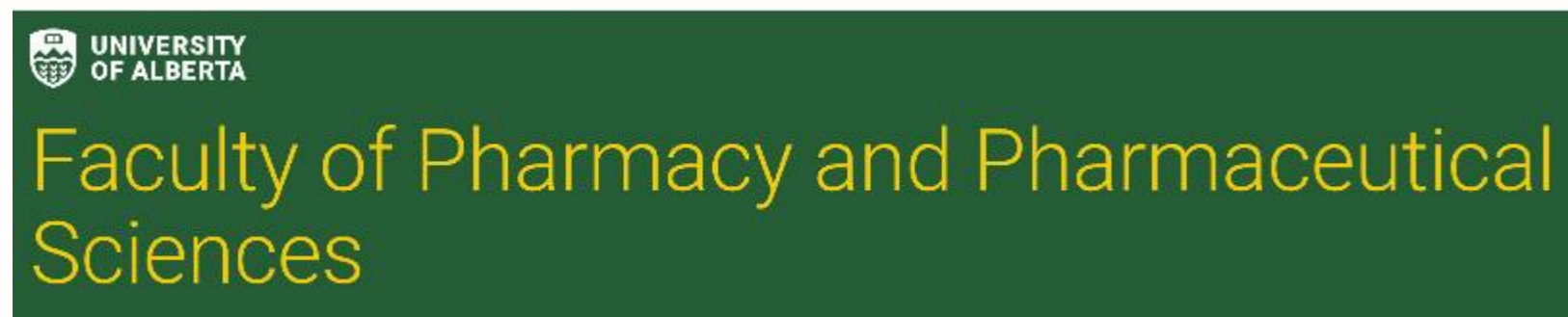
CEIV Pharma certified Supply Chain



The Canadian Critical Drug Initiative is a first in Canada. It will:

- **nurture the developers of new drugs**
- **fill the supply chain gaps for critical drugs**
- **manufacture small-molecule therapeutics**





Research Network and Education

7 universities and colleges with +130,000 students

- **Canada's Top Research Universities**
 - No. 4 University of Alberta
- **Canada's Top Universities by # of active clinical trials (2020)**
 - No. 3 University of Alberta (176)
- **Canada's Top Polytechnic Colleges**
 - No. 3 NAIT

Research Excellence: Health Science

QS University Rankings for the University of Alberta by Health Sciences Discipline (2021)



The University of Alberta is a global leader in health sciences

Source: QS University Rankings

Legend
■ Canada Rank
■ Global Rank

A global leader in the intersection of life sciences and AI/ML





 Why Edmonton? We have it here!

Anchor Tenant University of Alberta

- Driver of innovation
- Attracting Global Talent
- **Top 3** globally for AI/ML (Pioneer for Reinforced Learning)
- **Top 30** globally for pharmacology/pharmacokinetics
- **Top 10** globally for nursing
- **Top 20** globally for anatomy and physiology

San Francisco – Stanford Uni
Boston – MIT & Cambridge Uni
Houston – Texas A&M



**UNIVERSITY
OF ALBERTA**



Confidence Boost In Pharma Investment

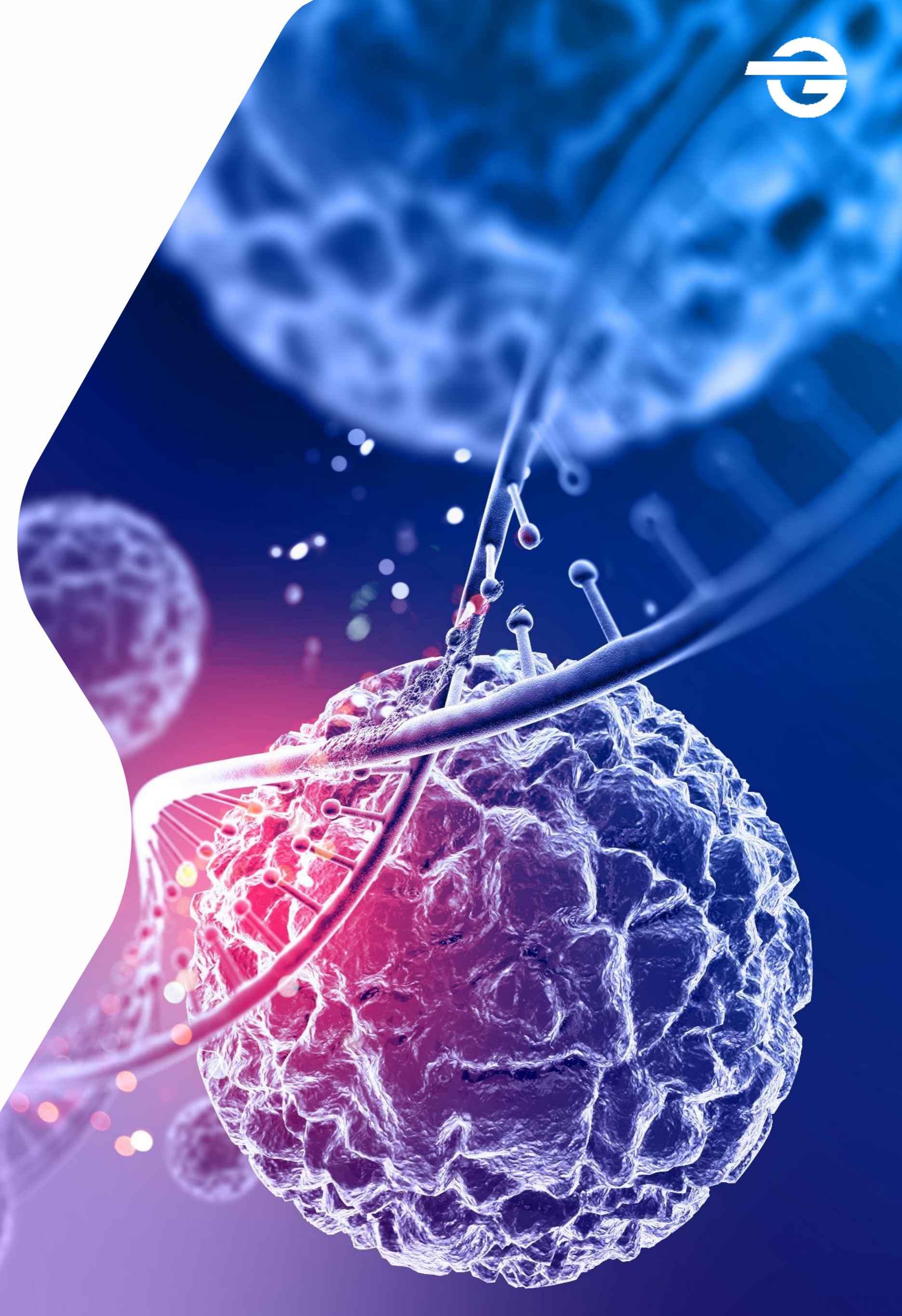
- **Gilead Sciences:** Over \$400MM in continuous investment since 2005
 - Largest global site for API development
- **CCDI (Applied Pharmaceutical Innovation):** \$180MM investment in 2023
 - 50,000 square feet (approximately).
 - Multipurpose robotic filling line (liquids and powder)
 - capacity to handle RNA vaccines.
 - Small molecule specialization





Growth in therapeutics, nanoparticles and Stem Cell Research

- Successful companies breaking into DNA drug delivery platforms
- Alberta Cell Therapy Manufacture
 - Stem cell + Artificial Intelligence = Diabetes Cure
 - Canada's first successful CAR T cell therapy procedure
- 2 of Canada's only nanotech institutes are located in Edmonton
 1. NINT-National Institute of Nanotechnology
 2. NanoFab





Edmonton
Global 

Hydrogen



Hydrogen



350,000
HYDROGEN
SECTOR JOBS



\$50 BILLION
IN DOMESTIC
REVENUE



PART OF AN
\$11 TRILLION
GLOBAL
OPPORTUNITY



UP TO 30% OF
CANADA'S
ENERGY MIX
BY 2050



REDUCE CO₂
EMISSIONS IN
HEAVY-
EMITTING
INDUSTRIES

The Edmonton region is the epicentre of Canada's hydrogen economy



Abundant low-cost feedstock



International collaboration



Strong energy sector



Access to export markets



Clean energy innovations

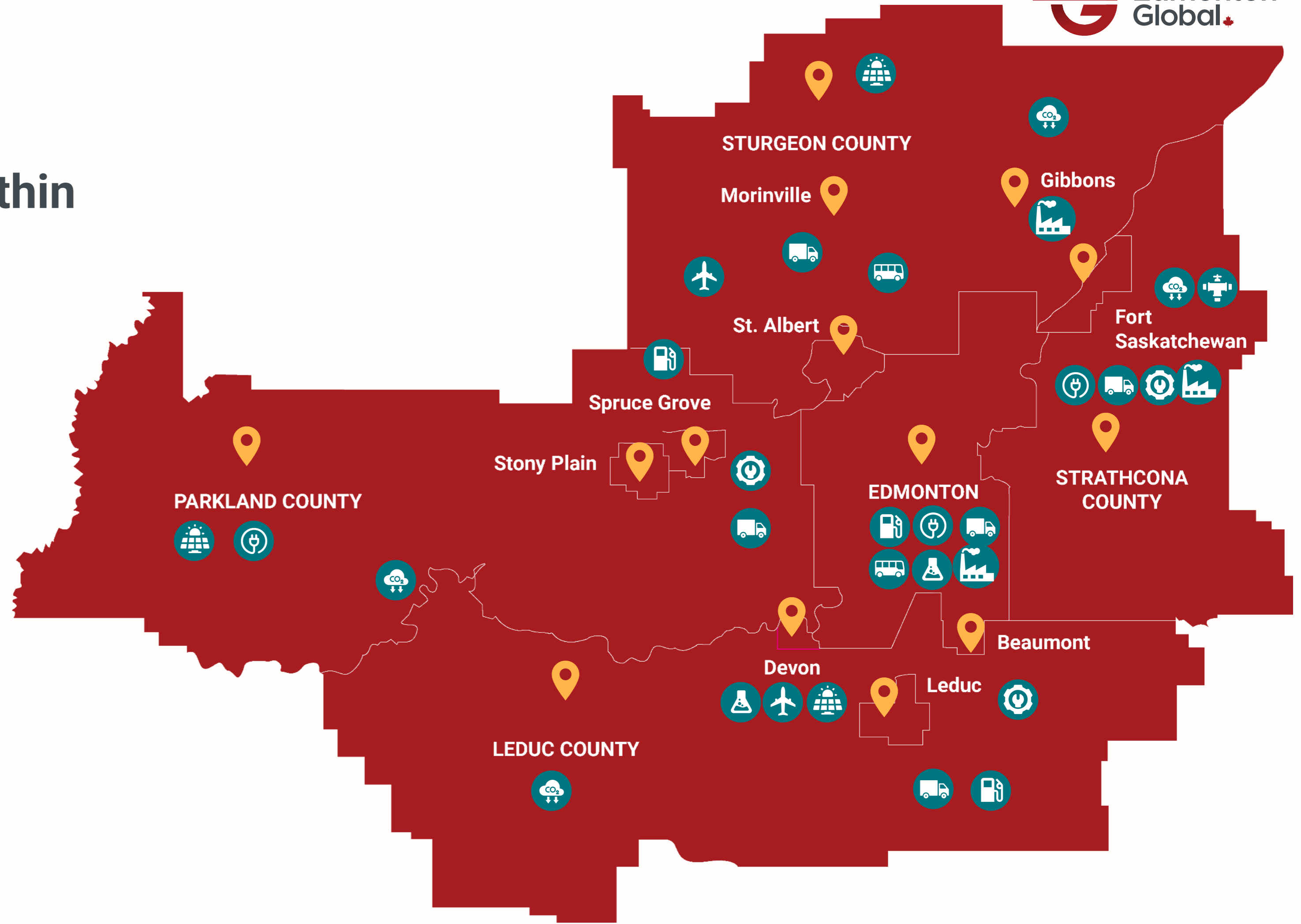
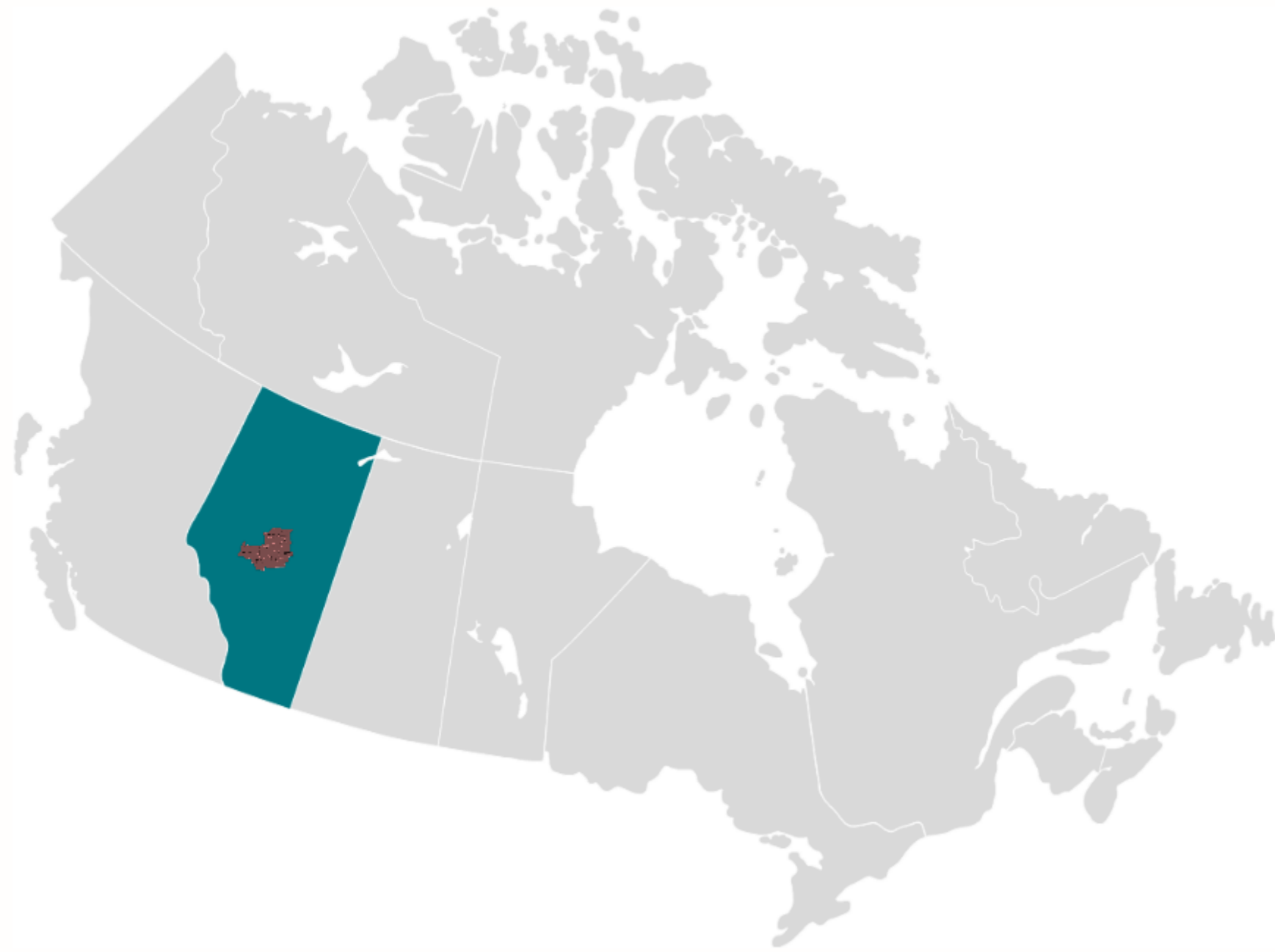


Experience in deployment



Hydrogen
















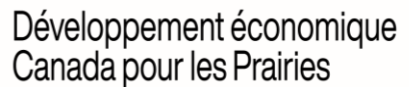

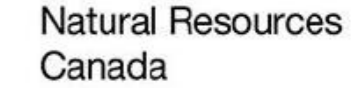

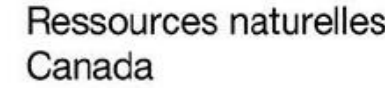





















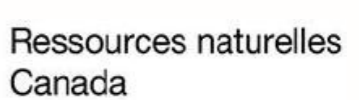





Hydrogen Value Chain Opportunities within the Edmonton Region



- | | | | |
|------------------|-------------|-------------------------------|-------------------------|
| Power Generation | Maintenance | Aviation | H ² Blending |
| CCUS | Bus Fleets | Solar (Green H ²) | Production |
| Trucking | Research | Hydrogen Fueling Stations | |

Hydrogen

Building Demand from Pilot Projects within the Edmonton Region

| | | |
|--------------|--|---|
| TRUCKS | Alberta Zero-Emissions Truck Electrification Collaboration (AZETEC) |       |
| | Dual Fuel Commercialization Program |       |
| | H ₂ Truck Demonstration Road Show |         |
| | Electric Vehicle Infrastructure Demo (EVID) |    |
| BUSES | Fuel Cell Electric Bus Demonstrations (AZEHT) |     |
| AIR | Edmonton International Airport Zero-emission Fleets |      |
| | Edmonton International Airport Zero-emission Aviation Fuel and Aircrafts |      |
| RAIL | CP Rail Hydrogen Locomotive Pilot |       |
| HEAT & POWER | Fort Saskatchewan Hydrogen Blending Pilot |   |
| | Bremner neighbourhood |   |

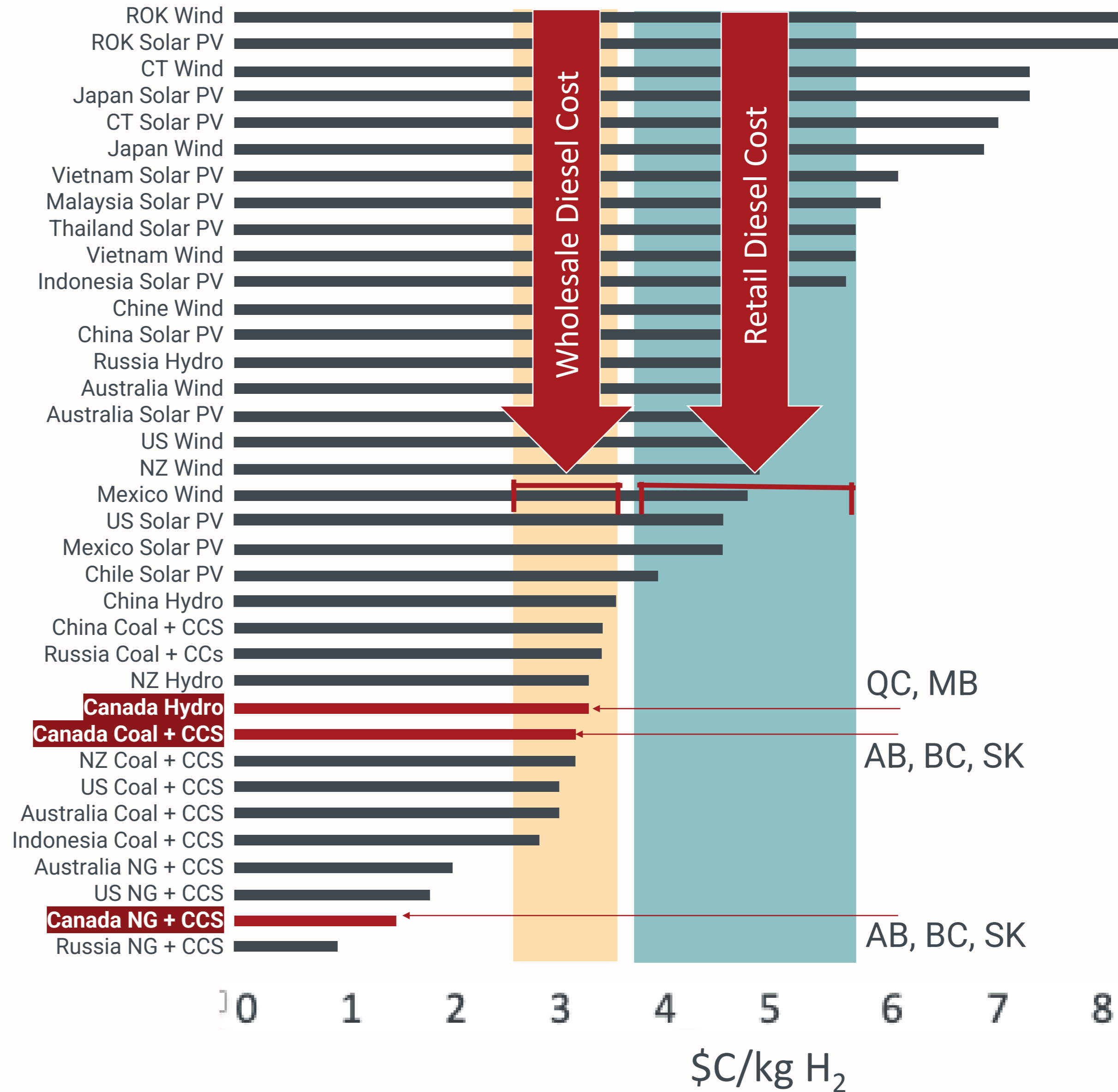
Hydrogen



- **Canada is among the world's lowest cost producers of hydrogen**

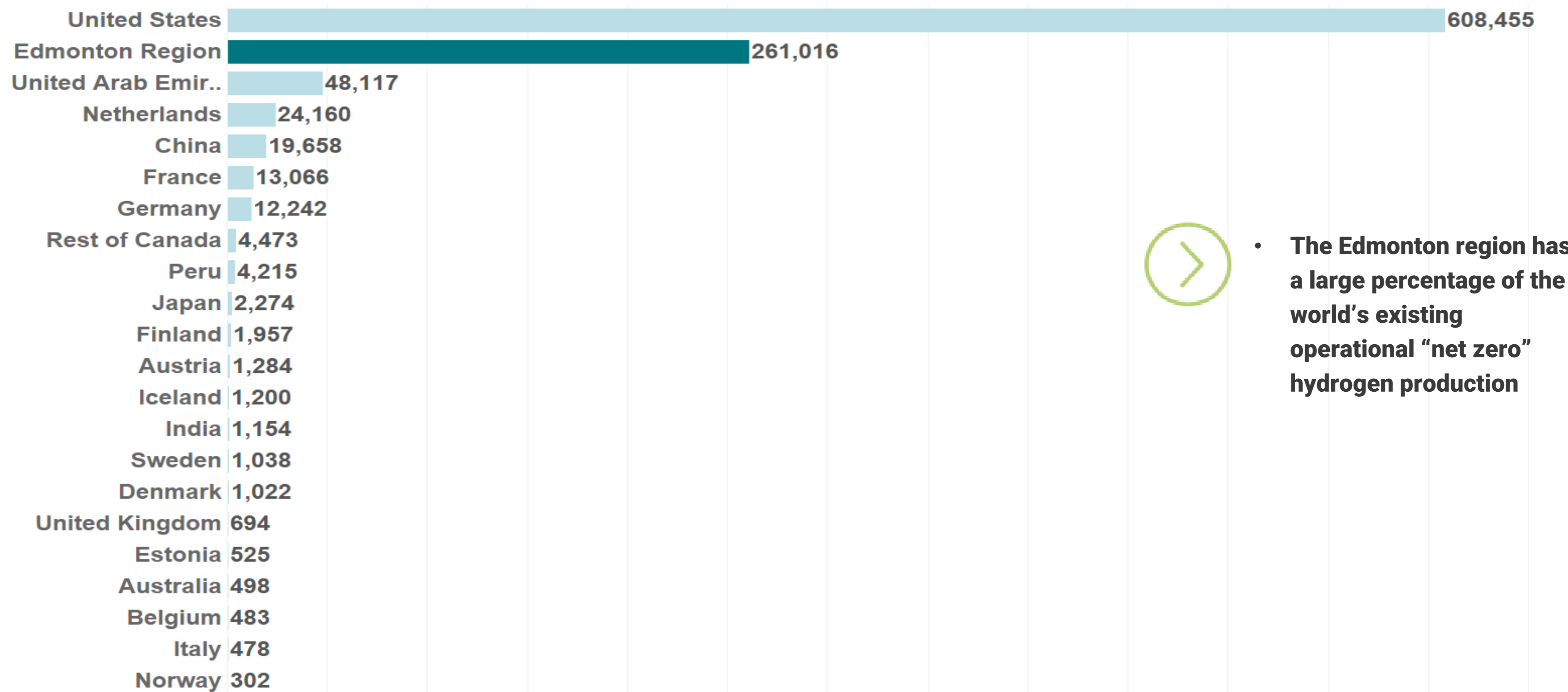


- **Alberta can make hydrogen at half the cost of wholesale (one third the cost of retail) diesel**



Hydrogen

2021 Global Geographic Distribution of Operational Low Carbon Hydrogen Production Capacity (normalized m3 H2/hour)



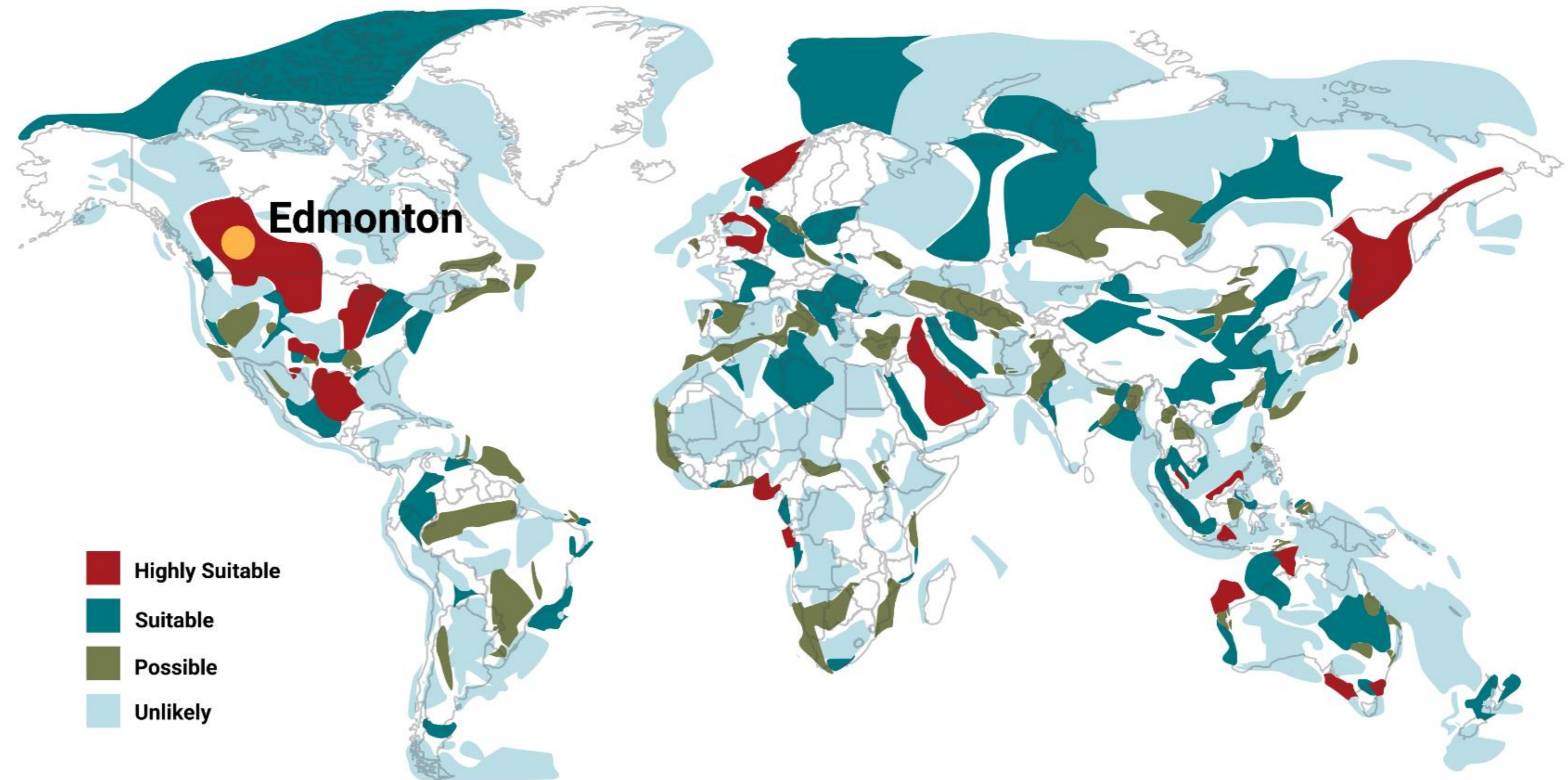
- The Edmonton region has a large percentage of the world's existing operational "net zero" hydrogen production

Carbon Capture

Regions of the World Suitable for Carbon Storage
Based on the Global CCS Institute's Storage Basin Assessment Database



- The Edmonton region is one of the few regions in the world that are “highly suitable” for CCUS



Source: GCCS

Carbon Capture



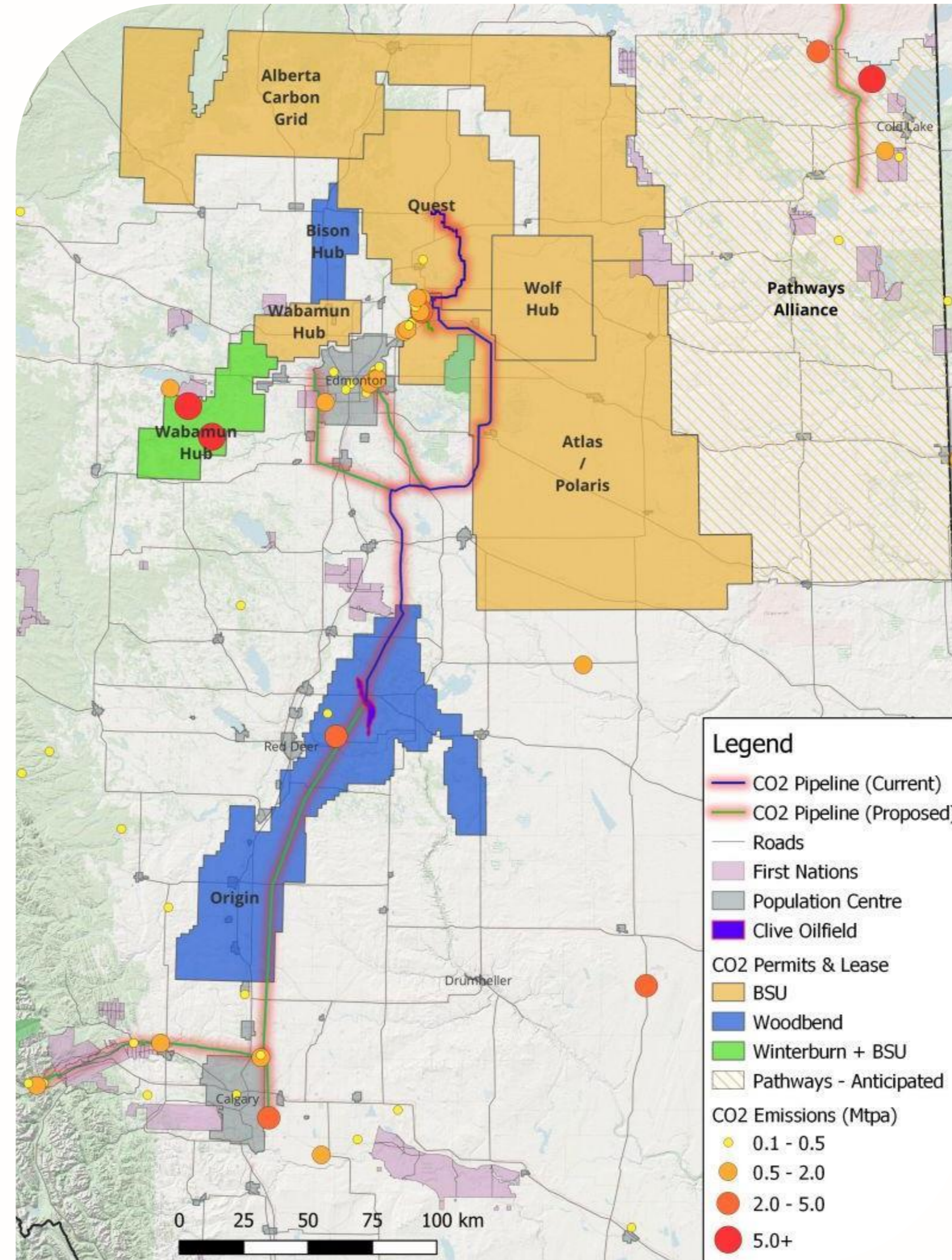
- The region has natural geology suitable for CCUS



- The region has existing operational pipelines for CO2 and H2



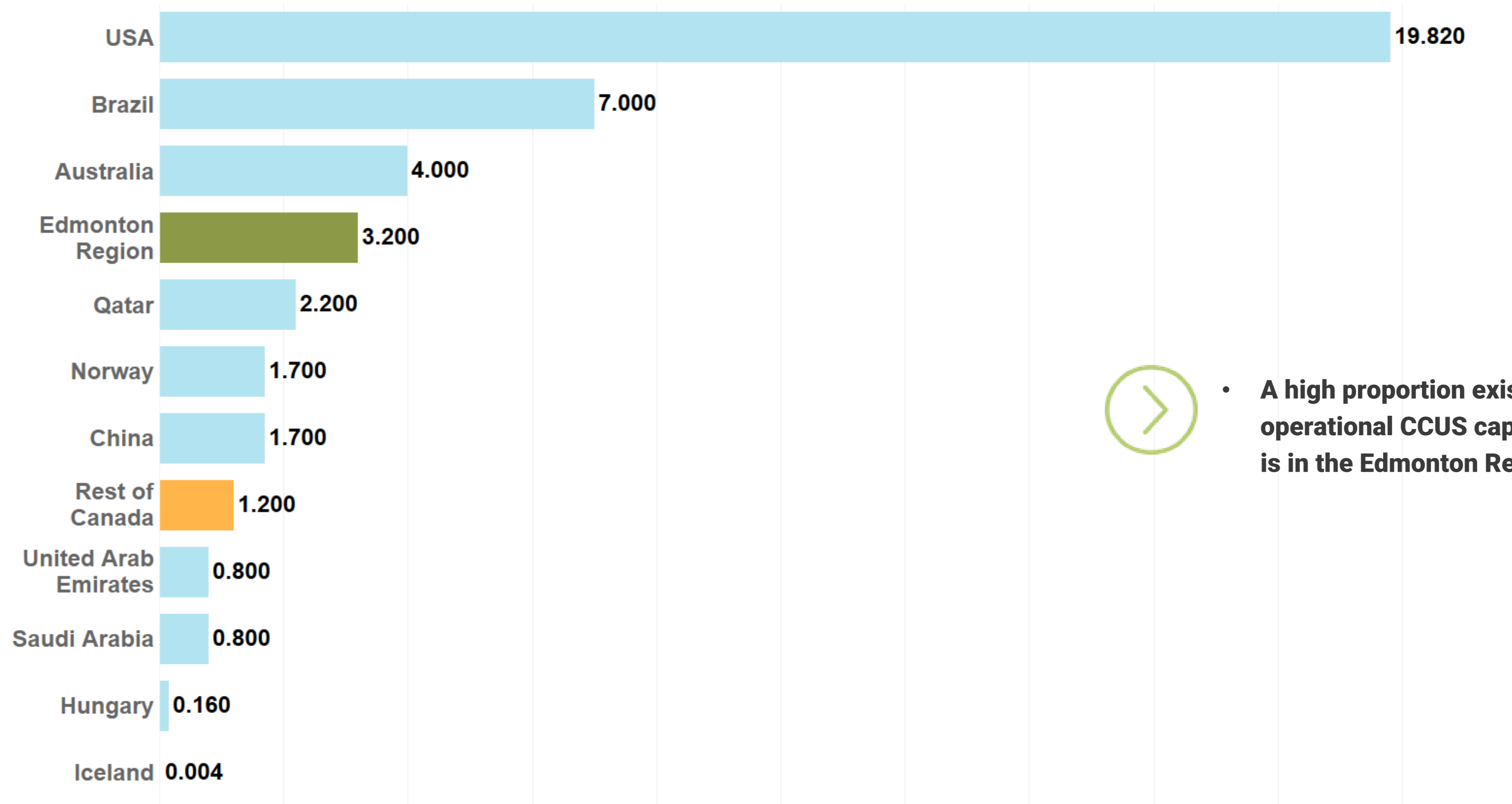
- The region has a regulatory/legal framework for CCUS that provides investor confidence



Source: McDaniel

Carbon Capture

2022 Global Operational CO2 Storage Capacity of Projects by Jurisdiction (MTPA)



- A high proportion existing operational CCUS capacity is in the Edmonton Region

Carbon Capture



USA

Plastics

~\$10B



Germany

Cement

~\$1.4B



Malaysia

Ammonia

~\$1.3B



USA

Hydrogen

~\$1.6B



Canada

Biodiesel

~\$1.4B

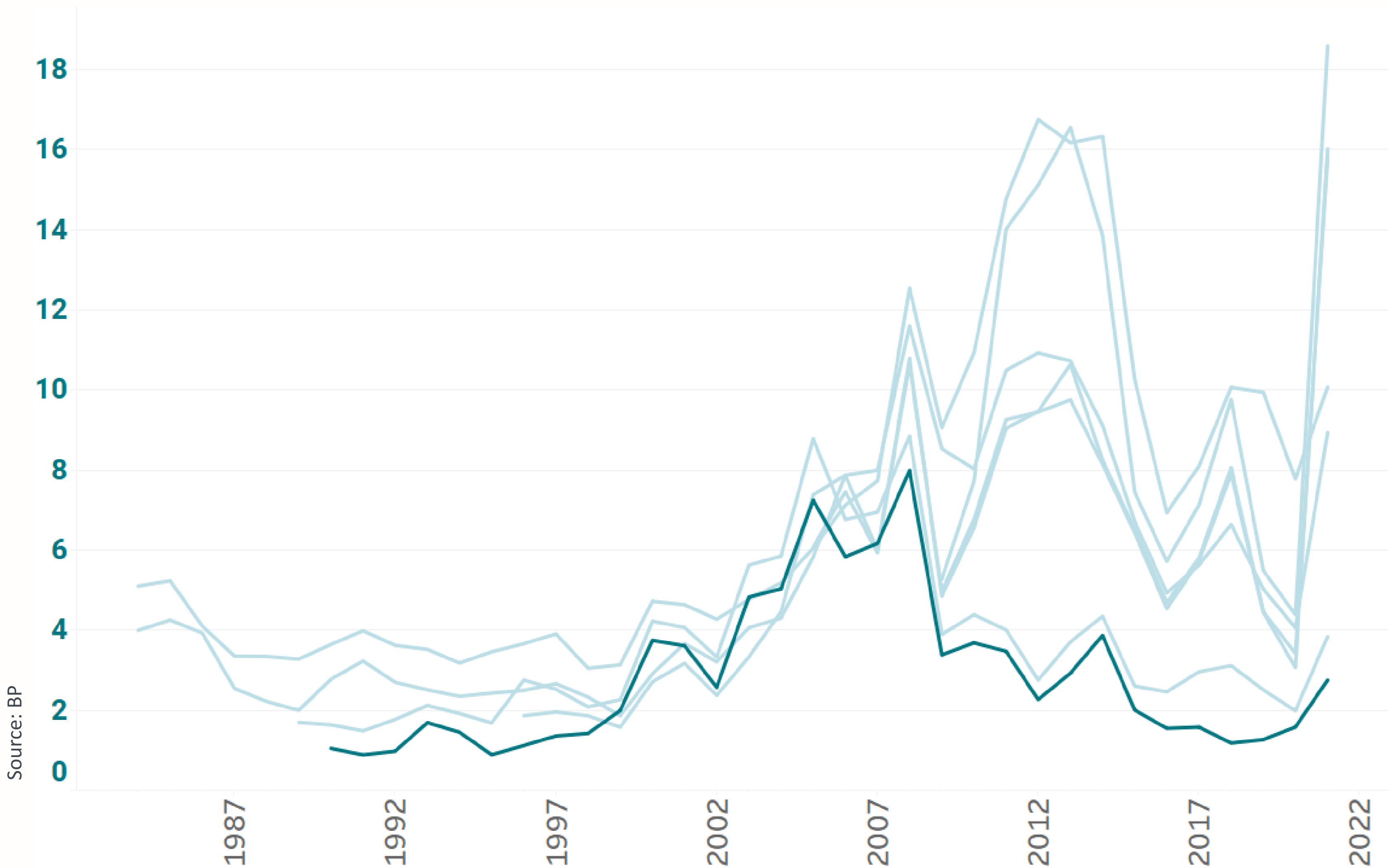


Japan

Ammonia

~\$3B

Natural Gas



Source: BP



- **Alberta has some of the cheapest natural gas in the world**

- Natural Gas - Canada (Alberta) (BP)
- LNG - Japan CIF (BP)
- LNG - Japan Korea Marker (JKM) (BP)
- Natural Gas - Average German Import price (BP)
- Natural Gas - Netherlands TTF (DA Heren Index) (BP)
- Natural Gas - UK (Heren NBP Index) (BP)
- Natural Gas - US Henry Hub (BP)