

# Hydrogen & Cleantech

With Alberta's abundance of low-cost natural gas and world-scale Carbon Capture, Utilization and Storage (CCUS) capacity, the province is aiming to be one of the world's lowest cost producers of clean hydrogen. Alberta's unique geology allows it to develop significant capacity for CCUS in areas close to hydrogen production. This combination allows Alberta to produce significant amounts of low-carbon hydrogen.

The cost competitiveness of hydrogen in the province presents a key market opportunity to expand its distribution and use as a clean fuel source. Alberta is among the largest global hydrogen producers, with 2.5 million tonnes produced in 2021, opening Canada's hydrogen transition pathway.

## The Numbers



**1<sup>st</sup>**  
Highest capital investment per capita in Canada



**\$81B**  
Direct contribution to Alberta GDP in 2021



**142**  
Number of countries Alberta exports to



**945**  
Cleantech companies

## The Opportunity



**\$50B**  
Projected value of hydrogen market in Canada by 2050



**23%**  
Alberta's combined federal-provincial business tax rate is lower than that of 44 US states



**60%**  
Canada's hydrogen supply is produced in Alberta



**40%**  
15 to 40 per cent refundable tax credit for eligible hydrogen project costs

## Areas of Focus

### World Leader in CCUS

Alberta is an international leader in carbon capture technology and the province is expected to account for 83 per cent of Canada's new energy and cleantech projects by 2025.

Shell's Quest carbon capture and storage (CCS) facility, near Edmonton, Alberta, has captured and stored more than 5 million tonnes of CO<sub>2</sub>.

### Hydrogen Roadmap

In 2021, the province developed the 'Hydrogen Roadmap' to build a provincial hydrogen economy, meet market demand, and pursue hydrogen exports.

Alberta's Hydrogen Roadmap initiatives include residential and commercial heating, power generation and energy storage, transportation, export market, and industrial processes.

## Company Spotlight

### AIR PRODUCTS

\$1.3 billion investment to build the world's largest net-zero hydrogen network, including the only liquid hydrogen production facility in Western Canada.



Hydrogen-powered Airport Sustainability Campus initiative with several companies to include hydrogen fueling stations and vehicles, and technology partnerships.



\$1.6B plant will manufacture ammonia and methanol from natural gas, producing up to 1M tonnes of blue ammonia per year to be exported by sea.

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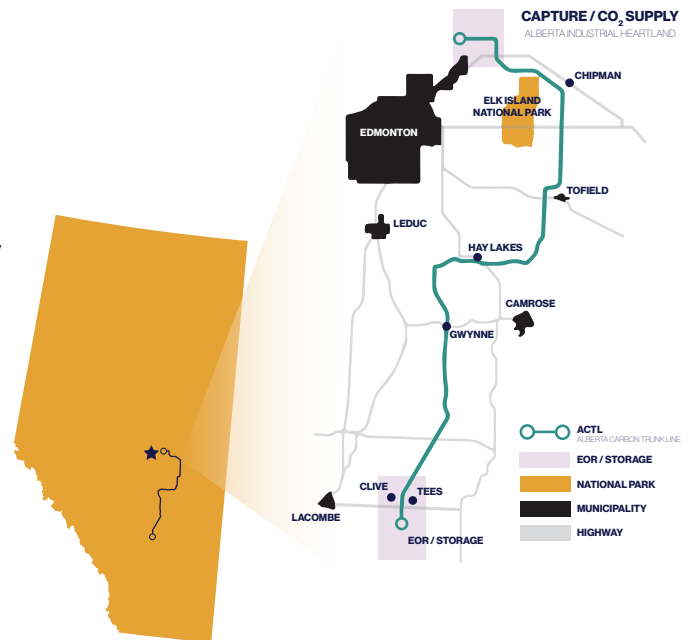
Alberta is quickly becoming a North American launch point for the hydrogen economy due to its ability to produce low-cost, zero-emission hydrogen on a global scale. There is extensive support for hydrogen investment in the province which includes capital and tax support from federal programs and funds to incentivize cleantech projects.

Alberta is home to four leading commercial CCUS projects, including Alberta Carbon Trunk Line and Shell's Quest project. The province will lead the way for the commercialization of CCUS as carbon offsetting becomes a necessary feature for future hydrogen and other carbon-emitting industries.

## Carbon Capture, Utilization and Storage (CCUS): Alberta Carbon Trunk Line

In 2022, the Alberta government selected a total of 25 new CCUS projects for further evaluation. This has the potential to increase the province's CCUS capacity to about 56 million tonnes of CO<sub>2</sub> per year by 2030.

Home to four leading commercial CCUS projects, the province is leading the way as housing the largest hydrogen hub in Canada. The Alberta Carbon Trunk Line is the world's largest CCUS project and has the capacity to transport 14.6 million tonnes of CO<sub>2</sub> every year.



## Why Alberta?

### Young & Educated Talent

#### Educated

Alberta has the highest number of engineers per capita, as well as the highest proportion of workers under the age of 45. The University of Alberta is ranked eighth globally for energy research and third globally for AI research.

### Access to Key Markets

#### Globally Connected

Alberta's world-class infrastructure supports business development and growth. The Edmonton region is the province's pipeline node—connecting major pipelines to a 373,000 km regional network and delivering oil, natural gas, hydrogen, and CO<sub>2</sub> products throughout North America. The region serves as a major transportation hub with CP Rail and CN Rail.

The province's market access, internationally integrated airports, and telecommunication network make it a hub for companies looking to do business worldwide.

### Low Cost of Doing Business

#### Natural Resources

Alberta's supply of natural resources (including critical minerals) keeps production costs competitive.

#### Alberta's Tax Advantage

Alberta businesses and residents pay the lowest overall taxes in the country and amongst the lowest in North America.

**Big. Bold.**  
Alberta.