

AIHA Update

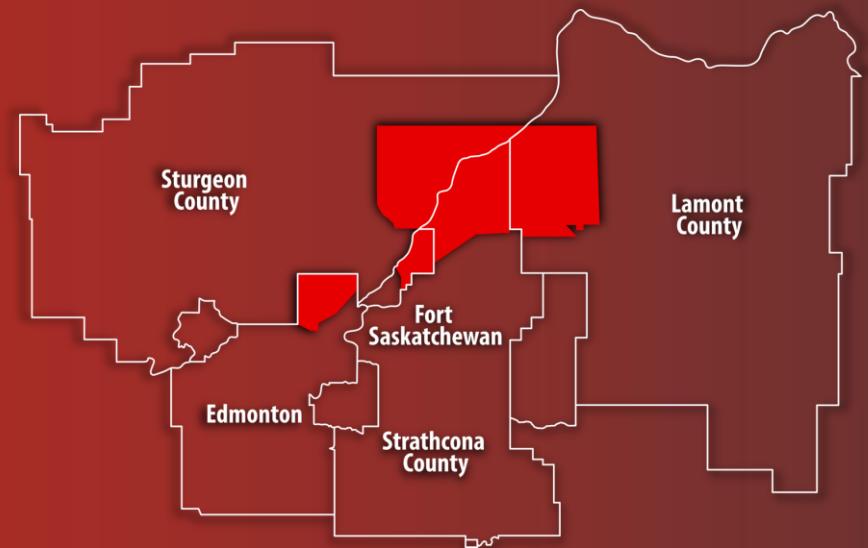
City of Fort Saskatchewan Council

April 16, 2024

Mark Plamondon,
Executive Director, Alberta's Industrial Heartland Association

ALBERTA'S INDUSTRIAL HEARTLAND

Alberta's Industrial Heartland is Canada's largest hydrocarbon processing region, consisting of over \$45 billion in industrial investments. AIH is home to 40+ companies in a variety of sectors, including producing and processing oil, gas, and petrochemicals, as well as advanced manufacturing



ABOUT US

Alberta's Industrial Heartland Association (AIHA) is a municipal government supported economic development association. AIHA's mandate is to attract industrial assets into Alberta's Industrial Heartland.

AIHA is a 25-year partnership of five municipalities and three associate members. AIHA is non-profit and does not seek any financial reward from project developers.



HOW WE ASSIST POTENTIAL INVESTORS

INTERNAL DEPARTMENTS



BUSINESS DEVELOPMENT

Works with companies to understand if AIH makes sense for their next investment



EXTERNAL RELATIONS

Advocates for project sponsors at all levels of government



COMMUNICATIONS AND COMMUNITY OUTREACH

Connects the community and stakeholders to activity in region

STRATEGIC PILLARS

Promote Project Opportunities in AIH

Attendance at notable global industry events, such as Gas Tech and World Methanol Conference

Marketing and advertising campaigns focusing on competitive advantages of the region

Improve the Business Case for AIH

Robust study and intelligence building programs

Policy and engagement opportunities, such as the Designated Industrial Zone

Advance AIH Social License and Community Support

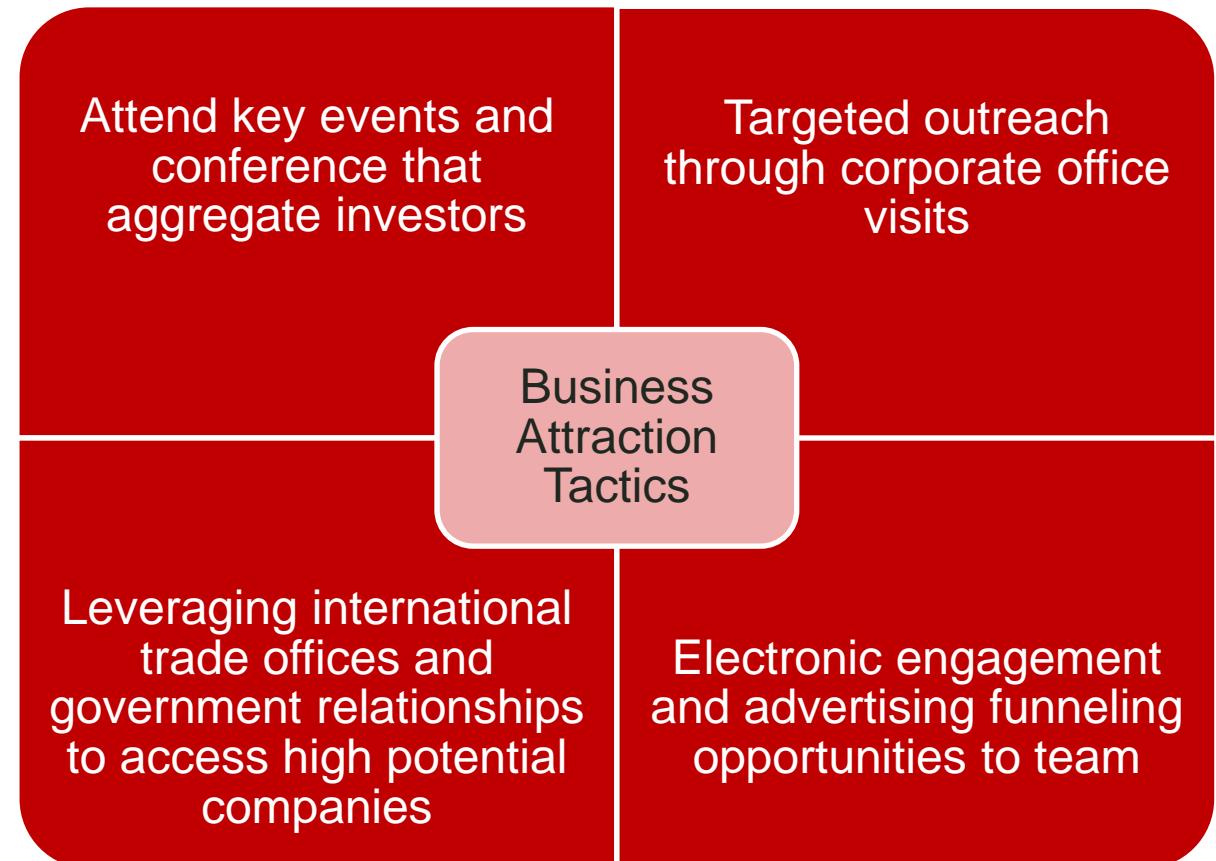
Supporting community engagement organizations such as Life in the Heartland

Indigenous engagement and Reconciliation Action Plan

Pillar 1: Promote Project Opportunities in AiH

Primary opportunities sought:

- Chemicals/Petrochemicals:
 - Methanol
 - Fertilizer (i.e. ammonia)
 - Ethylene and derivatives
 - Propylene and derivatives
 - Animal nutrition
 - Specialty chemical products and plastics
 - Midstream supporting infrastructure (fractionation, storage, short rail)
- Diversification and Sustainability:
 - Renewable fuels (SAF, Biodiesel)
 - Battery materials
 - Municipal waste to energy
 - Small modular nuclear reactors
 - Low-carbon power
 - Carbon capture, sequestration, and utilization (CCUS)
 - Hydrogen



CURRENT PROJECTS

RECENTLY COMPLETE



Project: Heartland Petrochemical Complex (HPC)

Description: HPC is Canada's first propane dehydrogenation and polypropylene production facility.

Project Type: PDH & PP

Capacity: 550 KTA

Status: Complete



Project: NGL North

Description: NGL North is an NGL recovery, transportation, and fractionation system, connecting Northern Alberta to AIH.

Project Type: NGL capture, transportation and fractionation

Capacity: 70 KBbl/d

Status: Complete



Project: Scotford Solar

Description: Shell Canada and Silicon Ranch are constructing a 58-megawatt behind-the-meter solar farm to power Shell Canada Energy and Chemicals Park Scotford.

Project Type: Solar Power

Capacity: 58 MW

Status: Under Construction

UNDER DEVELOPMENT



Project: Fort Sask Expansion

Description: Plains Midstream Canada sanctioned an expansion of their fractionation facility at Fort Saskatchewan.

Project Type: NGL

Frac

Capacity: 30 kbbl/d

Status: Under construction



Project: RFS IV

Description: Pembina is constructing its fourth fractionator in AIH. The C3+ frac will add 55 kbbl/d, bringing total frac capacity to 256 kbbl/d on site

Project Type: NGL

Frac

Capacity: 55 kbbl/d

Status: Under construction



Project: Path2Zero

Description: Path2Zero is Dow's, and the world's, first net-zero integrated ethane cracking complex which will utilize hydrogen as a clean fuel and third-party CCS.

Project Type: Ethylene and derivatives

Capacity: 1.8 MMTPA

Status: Sanctioned

RECENT ANNOUNCEMENTS - UNDER STUDY



Project: Blue Hydrogen and Ammonia
Description: Shell and Mitsubishi have signed a MOU relating to the production of low-carbon hydrogen/ammonia through the use of carbon capture and storage (CCS).

Project Type: Hydrogen and ammonia
Capacity: 165 KTA hydrogen
Status: Under Study



Project: Blue Ammonia and Blue Methanol
Description: Itochu Corp., Petronas Canada and Inter Pipeline announced a partnership to evaluate the development of a world-scale integrated blue ammonia and blue methanol production facility.

Project Type: Ammonia and Methanol
Capacity: 1.8 MMTPA
Status: Under Study



Project: Blue Ammonia
Description: Pembina and Marubeni announced an MOU to jointly develop a low carbon ammonia facility utilizing CCUS. The ammonia will be produced to serve the Asian market

Project Type: Low-carbon ammonia
Capacity: 1.0 million mt/year
Status: Under Study



Project: Hydrogen Canada Ammonia
Description: Hydrogen Canada and E1 ae collaborating on a blue ammonia facility in AIH.

Project Type: Blue ammonia
Capacity: 1.0 MMTPA
Status: Under Study



Project: Clean fuel export
Description: ATCO and Kansai are collaborating to develop a clean fuels supply chain, producing clean hydrogen and derivatives for Asia.

Project Type: Hydrogen and derivatives (ammonia)
Capacity:
Status: Under Study

RECENT ANNOUNCEMENTS - UNDER STUDY



Project: AIH Waste-to-Energy

Description: Varme signed an MOU with a major industrial partner in AIH to pursue the development of a waste-to-energy facility with integrated carbon capture in AIH.

Project Type: Waste-to-energy

Capacity:

Status: Under Study



Project: Sol Aurora

Description: Alpin Sun is proposing to build a 200 MW solar farm in AIH to make clean energy available to nearby industrials.

Project Type: Solar Farm

Capacity: 200 MW

Status: Under Study



Project: NICO Critical Mineral Refinery

Description: Fortune is studying the development of a critical mineral refinery in AIH which will produce cobalt, gold, copper, and bismuth from ore sourced from NWT, Canada.

Project Type: Hydrometallurgical Refinery

Capacity:

Status: Under Study

PILLAR 2: IMPROVE THE BUSINESS CASE FOR AIH

INCENTIVES

- Federal investment tax credits for hydrogen production, Carbon Capture and Sequestration (CCS), clean technology
- Provincial ACCIP Program funded in 2024

INFRASTRUCTURE

Alberta budget 2024 included:

- \$32 million over three years to the Designated Industrial Zone to construct new water intakes to attract new investment.
- Continued funding for Vinca Bridge Replacement

STREAMLINING REGULATORY APPROVALS

Designated industrial zone continued to develop with funding for Zone Wide Environmental Impact Assessments, approval of the Master Drainage Plan, and installation of two new water monitoring stations in the North Saskatchewan River.



Pillar 3: Advance AIH's social license and community support



LITH continues to engage with the community through a 360-degree approach:

- LITH Info Eve – April 10th in Gibbons
- Regional Advisory Committee – more meetings added
- Launch of In the Zone podcast
- Expanded digital presence by joining LinkedIn
- Community survey recently completed to better understand how residents want to hear from LITH and what issues they are concerned about
- FAP will be rebranding and launching a new name in May



The Capital Investment Destination

THANK YOU

Executive Director
Mark@industrialheartland.com

Industrialheartland.com





ALBERTA'S
INDUSTRIAL
HEARTLAND

Reference Materials

Industrialheartland.com



AIHA ORGANIZATION

BUSINESS DEVELOPMENT

Works with project sponsors to efficiently and effectively develop projects in AIH

GOVERNMENT RELATIONS

Advocates for industry friendly policies and regulations

COMMUNICATIONS AND COMMUNITY RELATIONS

Connects the communities and stakeholders with relevant association and development activities



EXISTING INDUSTRY

CHEMICALS & FUELS

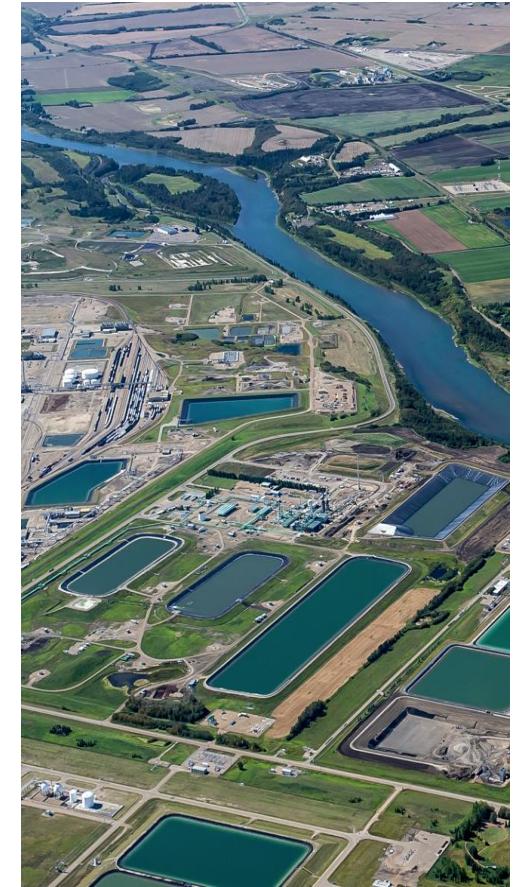
- Ethylene – 1,300 KTA
- Polyethylene – 850 KTA
- PG propylene – 115 KTA
- Polypropylene – 550 KTA
- MEG/EO/EG – 800 KTA
- Iso-octane – 521 KTA
- Styrene monomer – 450 KTA
- Urea – 1,400 KTA
- Ammonium sulphate – 355 KTA
- Ammonia – 376 KTA
- Hydrogen – 821 KTA
- Refined fuels – 447 Kbpd
- Bitumen upgrading – 270 Kbpd
- Benzene – 370 KTA
- Aromatics
- Petcoke

MIDSTREAM & UTILITIES

- NGL fractionation – 485 Kbpd
- Over 40 Salt cavern storage
- Oil, natural gas, and NGL pipelines
- Water and industrial gas systems
- Two operating world-scale CCUS systems
- Rail storage and loading

DIVERSIFIED PRODUCTS

- High-purity nickel
- High-purity cobalt
- Nickel composite powders
- Cobalt powders
- Hydrogen peroxide
- Prilled sulfur
- Renewable power





Nutrien

 **TC Energy**

 **NWR**
NORTH WEST REDWATER PARTNERSHIP

 **Canadian Natural**

PEMBINA

 **AIR LIQUIDE**

 **SUNCOR**
ENERGY

MEGlobal

 **KEYERA**

 **oerlikon**
metco

 **Inter pipeline**

 **Dow**

 **Chevron**

 **Imperial Oil**

 **PRODUCTS**

 **cenovus**
ENERGY

 **PLAINS**
MIDSTREAM
CANADA

AUX SABLE

 **ACCESS**
PIPELINE

 **CN**



 **Linde**

 **ATCO**

 **EVONIK**
INDUSTRIES

 **ENBRIDGE**

 **WOLF**
MIDSTREAM

 **sherritt**

 **umicore**

 **CANDO**
RAIL & TERMINALS

 **ALBERTA**
MIDLAND
RAILWAY TERMINAL

 **CHEM TRADE**

 **Petrogas**
Energy Corp.

 **CIELO**

 **GRAYMONT**

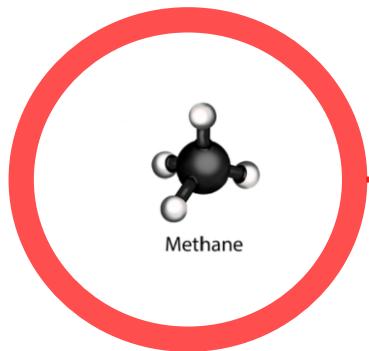
 **ALBERTA'S**
INDUSTRIAL
HEARTLAND

Industrialheartland.com



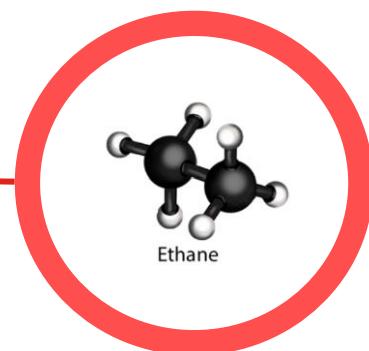
TARGETED INDUSTRIAL OPPORTUNITIES IN AIH

PETROCHEMICALS



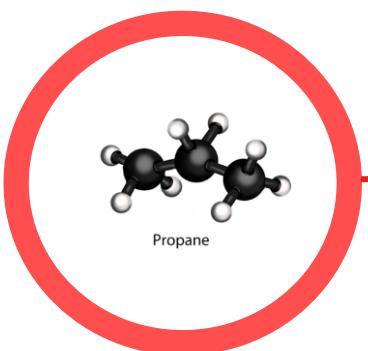
METHANE

Methanol
Fertilizer
Fuel Ammonia
Animal Nutrition
Hydrogen
Hydrogen Carriers



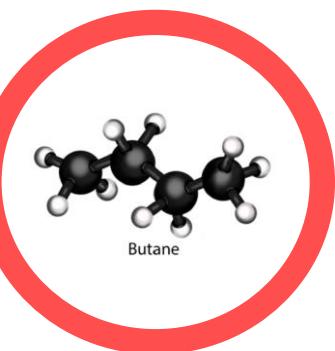
ETHANE

Ethylene
EO / EG
Chlor Alkali / EDC



PROPANE

Propylene
PO / PG
SAP
IPA
Animal Nutrition



BUTANE

Maleic Anhydride
Iso-butane
Butadiene

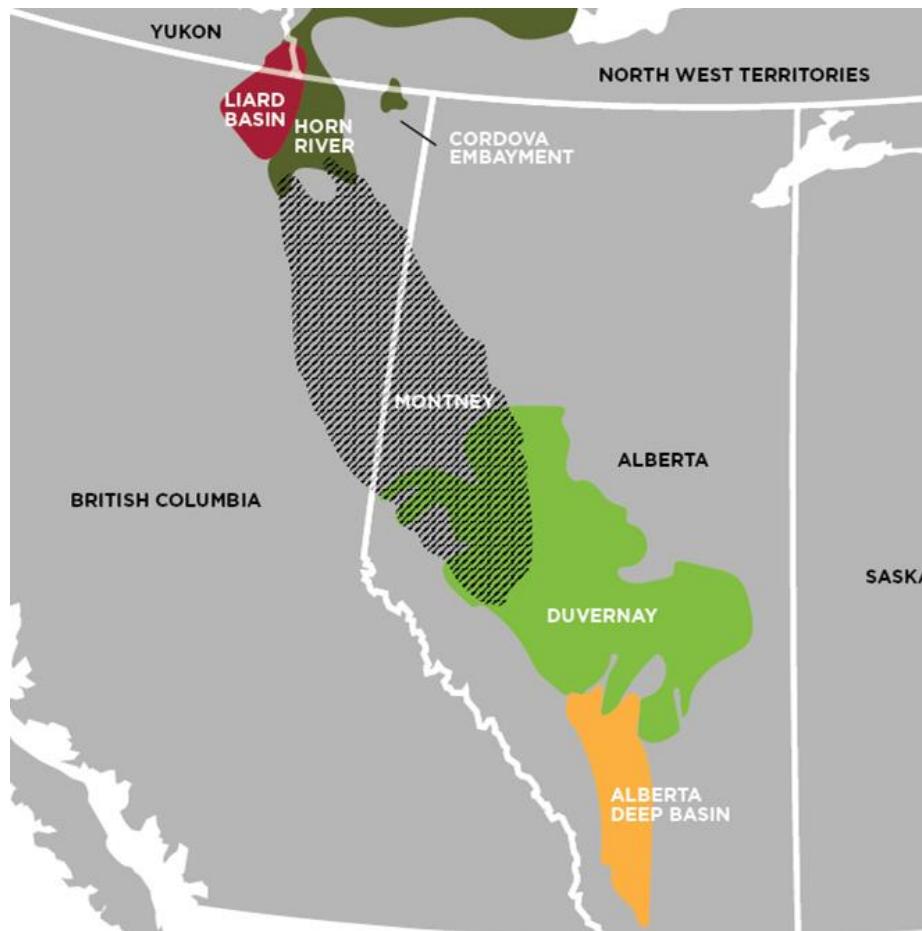
DIVERSIFICATION



HEAVY INDUSTRY

Renewable Fuels
Synthetic graphite
Critical Mineral Refining
Low-carbon Power
Waste-to-energy
Industrial Biotech

FEEDSTOCK



VAST NATURAL GAS AND NGL RESERVES

- Over 1,100 TCF of natural gas reserves, representing over 200 years of production at current demand
- Over 25 billion barrels of NGL representing over 100 years of production

PROVEN PRODUCTION

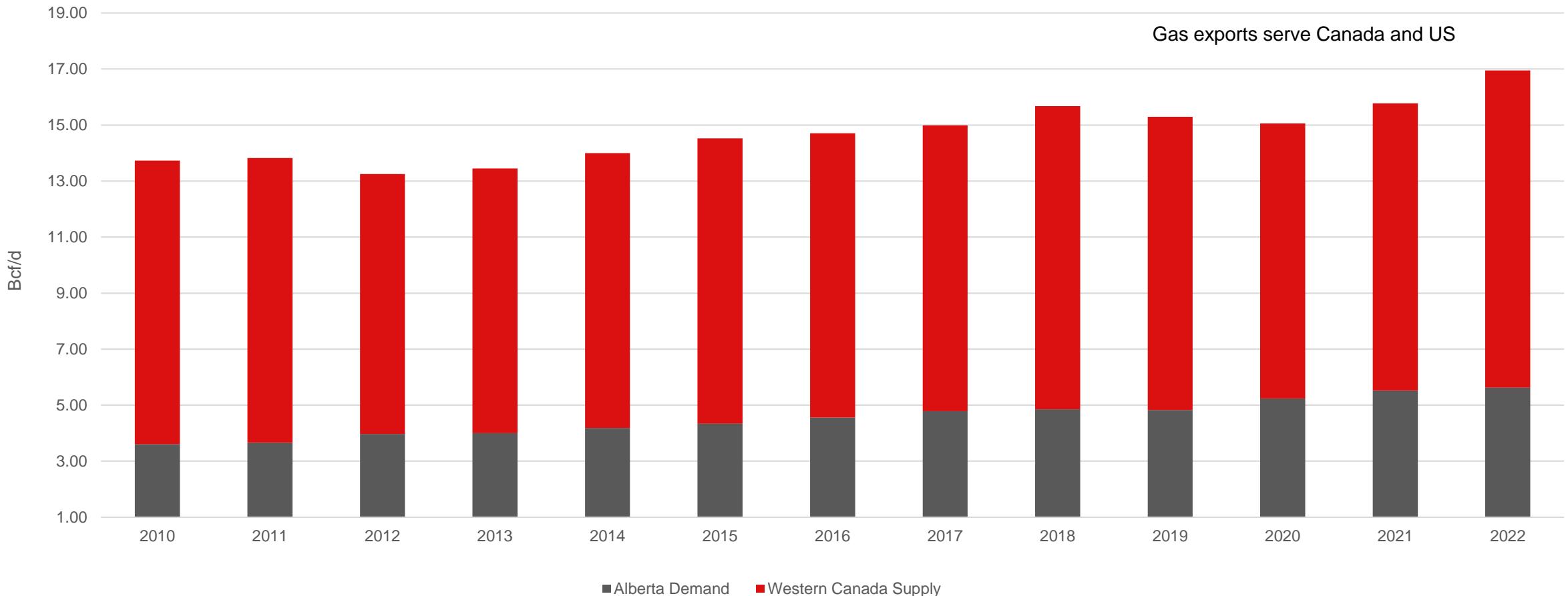
- Approximately 17 bcf/d of gas production with significant volumes flowing through AIH
- Over 500 kbpds of fractionation capacity in AIH

OPTIONALITY ON SUPPLY

- TC Energy's NGTL pipeline system extends over 24 thousand kilometers connecting producers, marketers, and aggregators across western Canada to downstream users in AIH
- At peak, NGTL moves ~14.3 bcf/d of natural gas

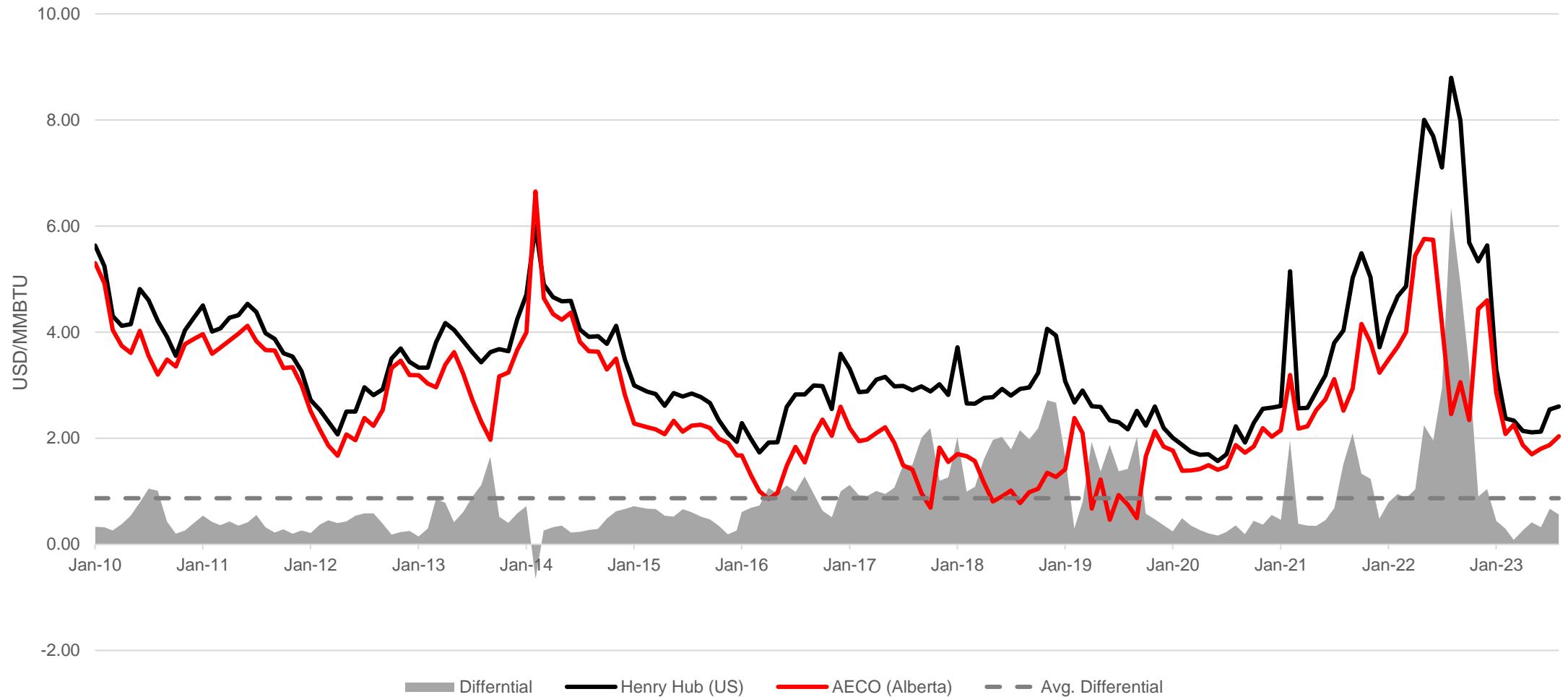
NATURAL GAS

Abundant and available



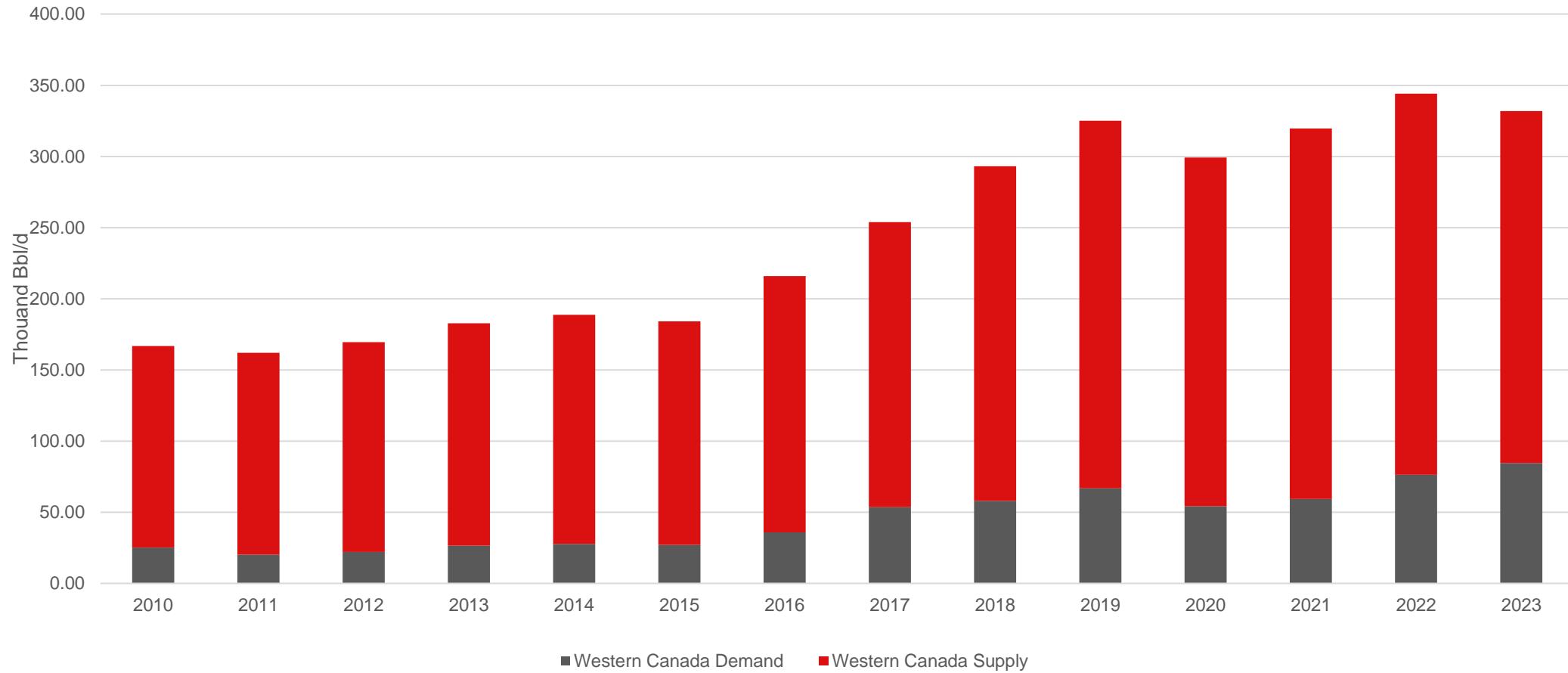
NATURAL GAS

Low cost and secure



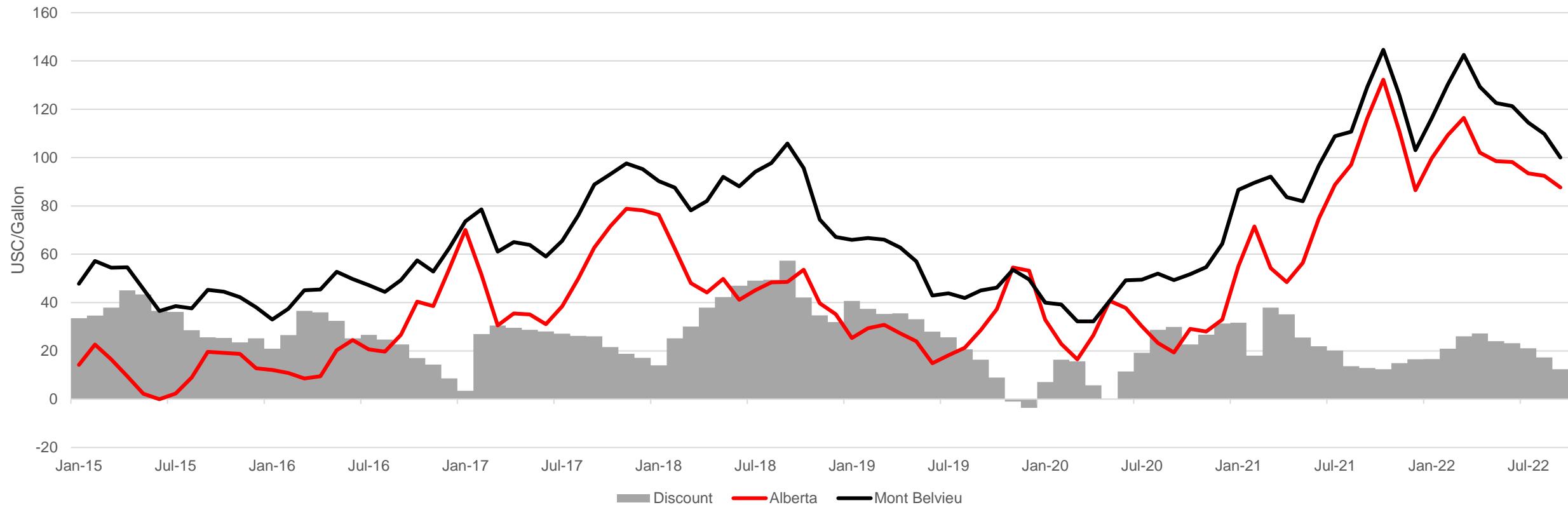
PROPANE

Abundant and available



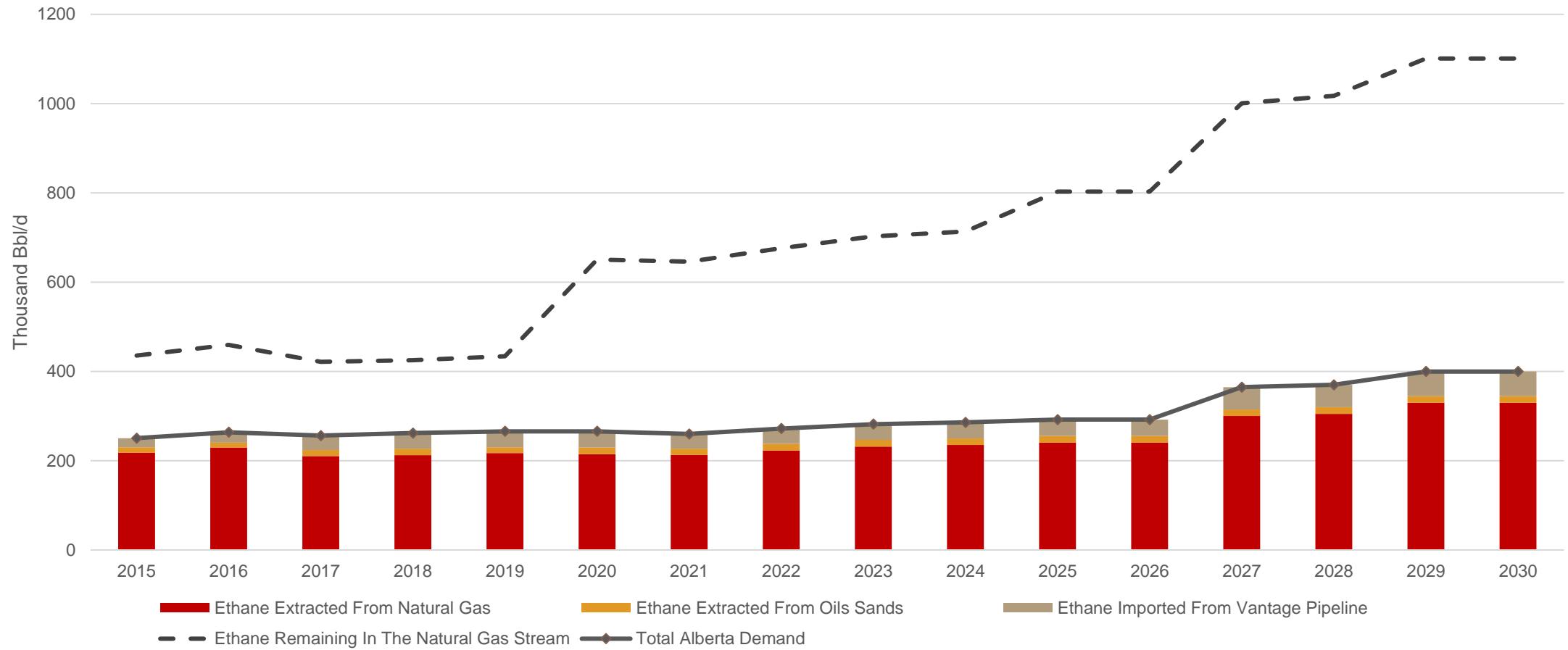
PROPANE

Low cost and secure



ETHANE

Opportunity for Petrochemical Expansion



EXISTING CCUS INFRASTRUCTURE

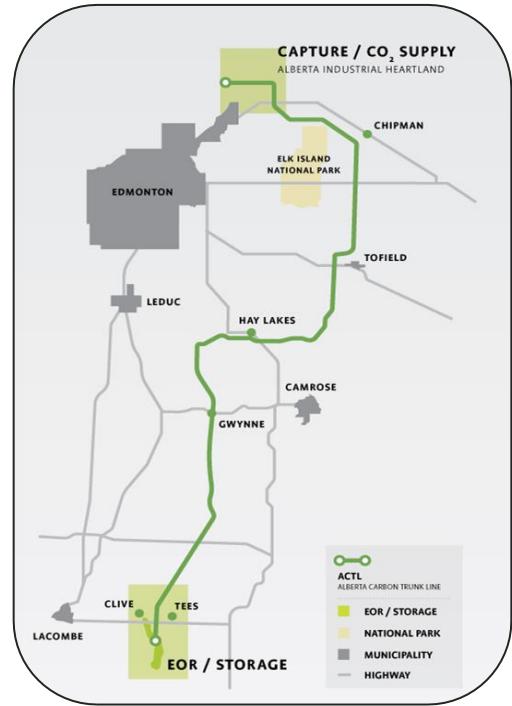


- A world-class capture project designed to capture and store over 1 million tonnes of CO₂ per year
- Quest began operations in 2015 and, to date, has captured and stored more than 4 million tonnes of CO₂

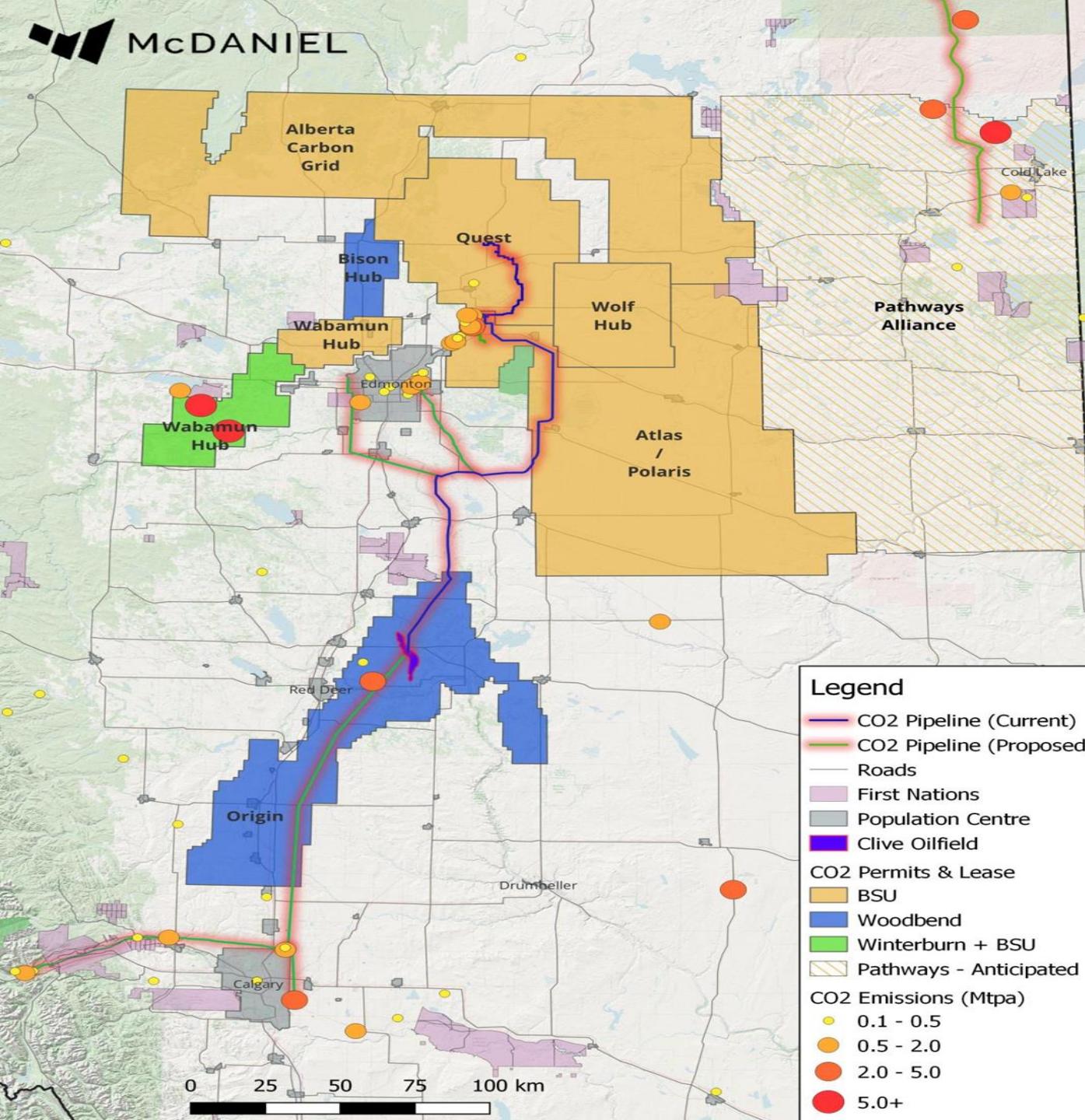
QUEST



ACTL



- Alberta's first large-scale carbon capture utilization and storage project
- Consists of a 240-kilometre pipeline collecting and transporting up to 14.6 million tonnes per year of CO₂ for enhanced oil recovery and storage

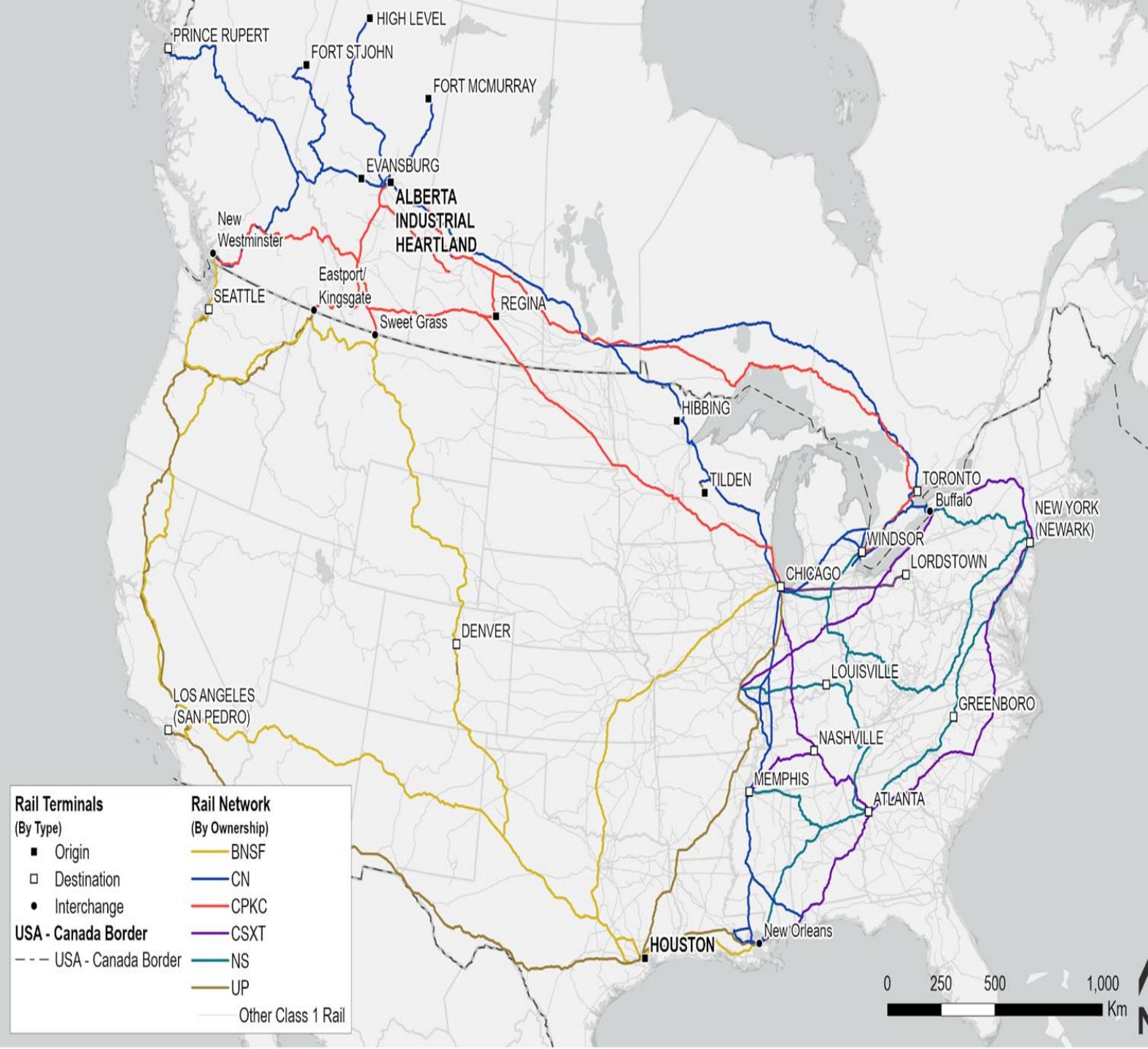


NEW CCUS OPERATORS

Alberta has moved to a regulated sequestration market when certain parties have been granted the exclusive right to sequester CO2 emissions in Alberta.

- This allows new emitters to work with a designated number of companies that have proven technical proficiency in sequestering emissions.
- New emitters have options to negotiate the commercial value of their emissions and cost of transportation / sequestration services
- In AIH, 6 companies/partnerships were granted exclusivity to sequester emissions:

Atlas Carbon - Shell Canada, ATCO, & Suncor
Meadowlark - Bison Low Carbon Ventures
Alberta Carbon Grid - Pembina & TC Energy
Wabamun Hub - Enbridge
Wolf Hub - Wolf Midstream
Origin Hub - Enhance Energy



TIER 1 RAIL IN AIH

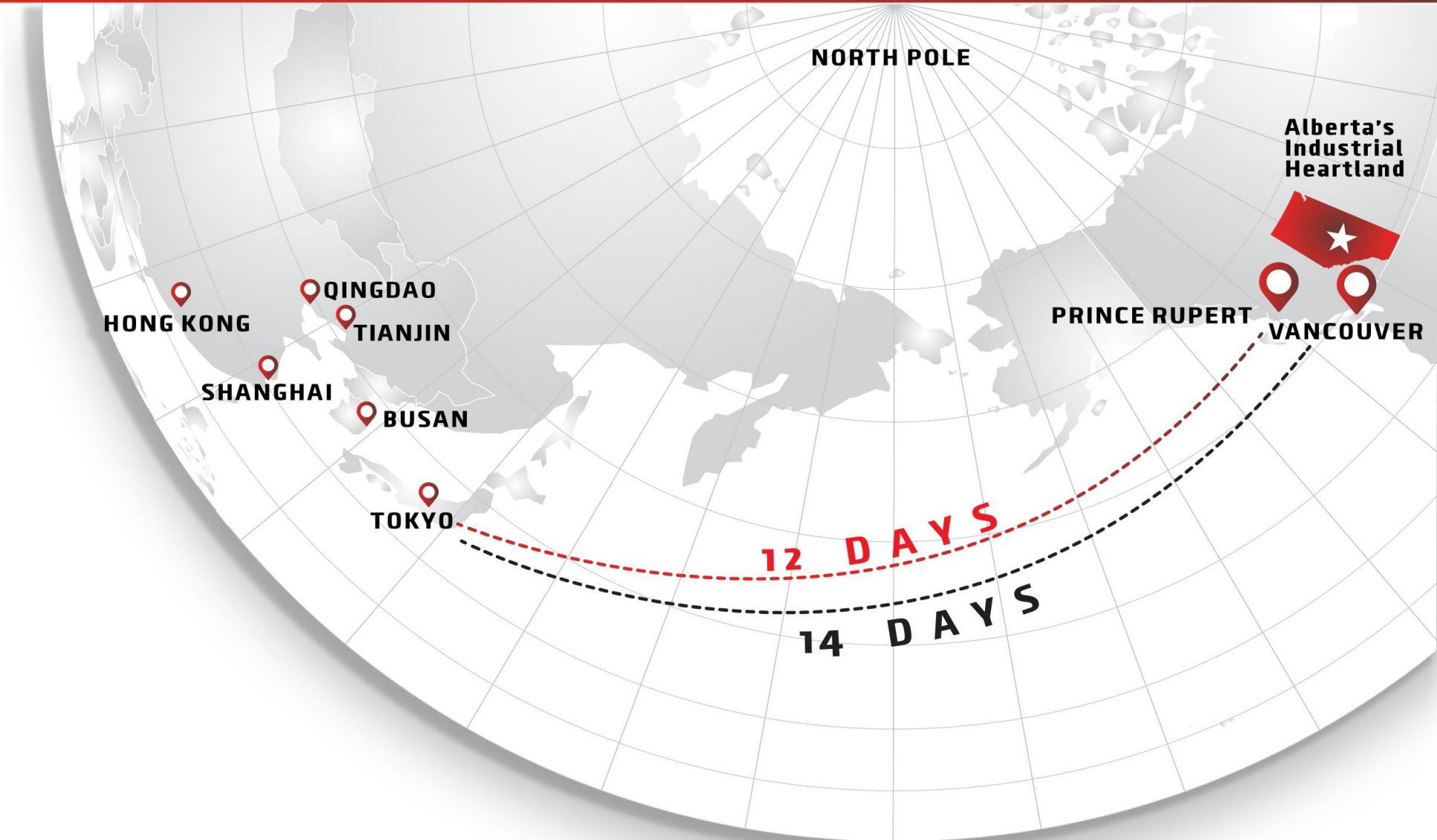
- Canada's two class 1 railroads, the Canadian National (CN) and the Canadian Pacific Kansas City (CPKC), provide direct and indirect access to North American markets and export ports on three coasts.

THIRD PARTY SERVICE

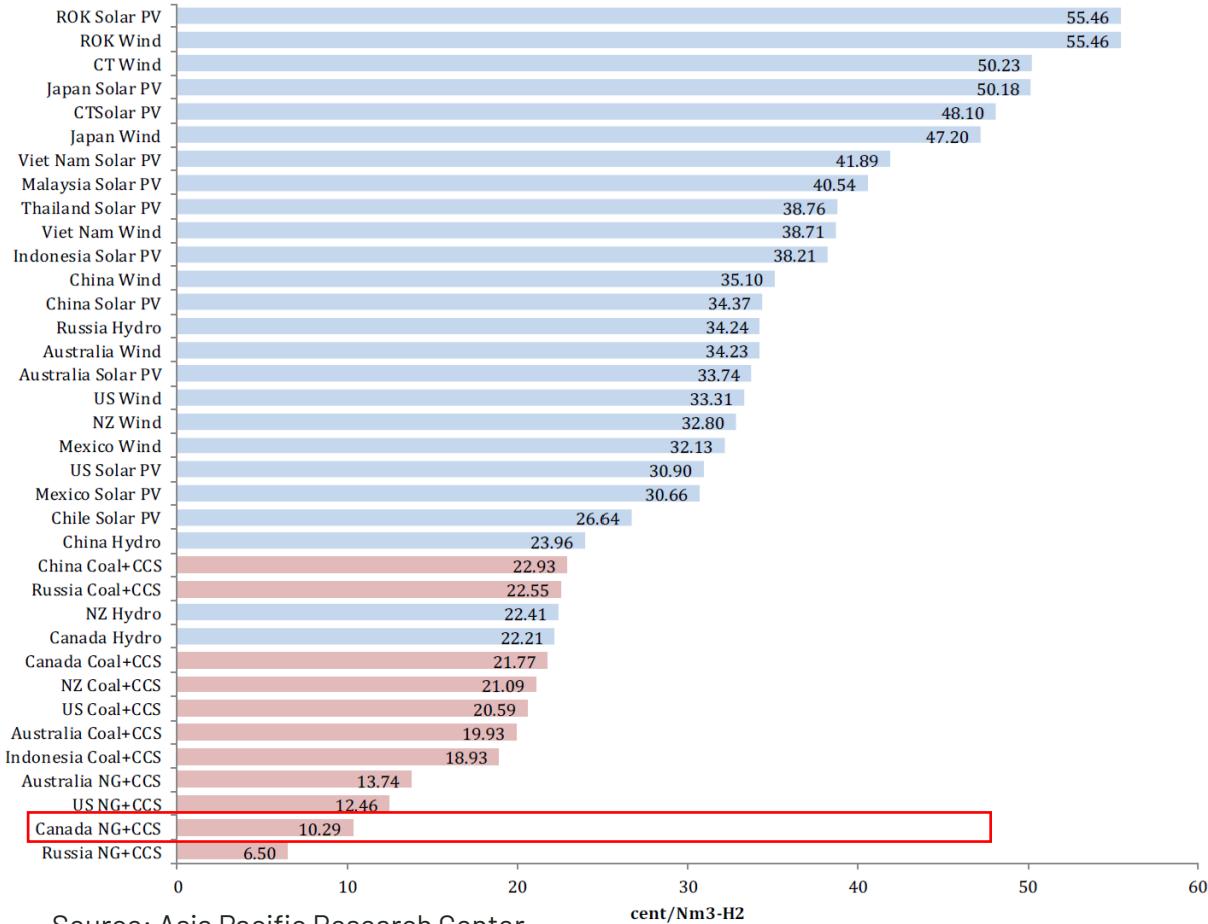
- Alberta rail services offer seamless intermodal transport solutions through its network of professional partners.
- Existing third party rail service providers in AIH can provide efficient and economical supply chain services to industries.

GLOBAL MARKET ACCESS

Gateway to Asia



LOW-COST HYDROGEN



Source: Asia Pacific Research Center

COMPREHENSIVE GOVERNMENT SUPPORT

Federal Incentives

Strategic Innovation Fund – Funding envelopes for strategic projects

Scientific Research and Experimental Design – Tax credits for research and design in Canada

Accelerated Capital Cost Allowance – Accelerated depreciation for manufacturing projects

Clean Technology Investment Tax Credit (ITC) – 30% refundable tax credit for ‘clean technologies’

Carbon Capture Utilization and Storage ITC – Refundable tax credits for CCUS; 60% for DAC, 50% for carbon capture (other than from ambient air), and 37.5% for carbon transpiration, sequestration, and utilization

Clean Hydrogen ITC – 15-40% refundable tax credit for projects that produce hydrogen (based on CI)

Clean Technology ITC – 30% refundable tax credit for investments to be used in clean technology manufacturing and critical mineral and processing.

Provincial Incentives

Alberta Petrochemical Incentive Program – Grants for 12% of capital cost of petrochemical projects

Alberta Carbon Capture Incentive Program – Grants for 12% of capital cost of carbon capture projects

TIER – Heavy emitter regulation in which new facilities can generate monetizable carbon credits for facilities which have better emission profiles than stated benchmarks

Municipal incentives

Heartland Incentive Program – Property tax abatement up to 2.5% of capital cost of project

Designated Industrial Zone – Regulatory streamlining for projects in Alberta’s Industrial Heartland (fast tracked environmental permitting in region)