



WELCOME TO COAA'S FEBRUARY LUNCHEON



FEATURING
MARK PLAMONDON
EXECUTIVE DIRECTOR

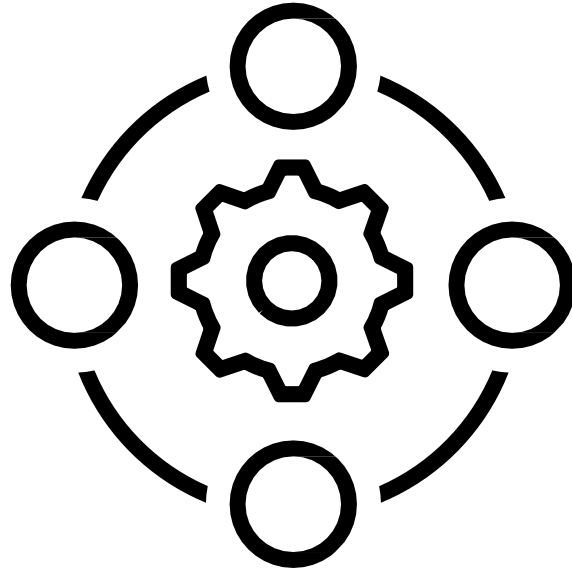


Alberta's Industrial Heartland: Driving Economic *and* Environmental Outcomes

Mark Plamondon, Executive Director

February 15, 2023

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



AIHA is a 24-year partnership of **five** municipalities and **three** associate members. AIHA is non-profit and does not seek any financial reward from project sponsors.

CITY OF
FORT SASKATCHEWAN
FORTSASK.CA

Lamont County

STRATHCONA
COUNTY

Edmonton

Sturgeon
COUNTY

Gibbons
ROOTED IN FAMILY

Redwater
TOWN OF
A NATURAL HOME

the town of
Bruderheim
Alberta

M U N I C I P A L I T I E S

A S S O C I A T E
M E M B E R S



BUSINESS DEVELOPMENT

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



GOVERNMENT RELATIONS

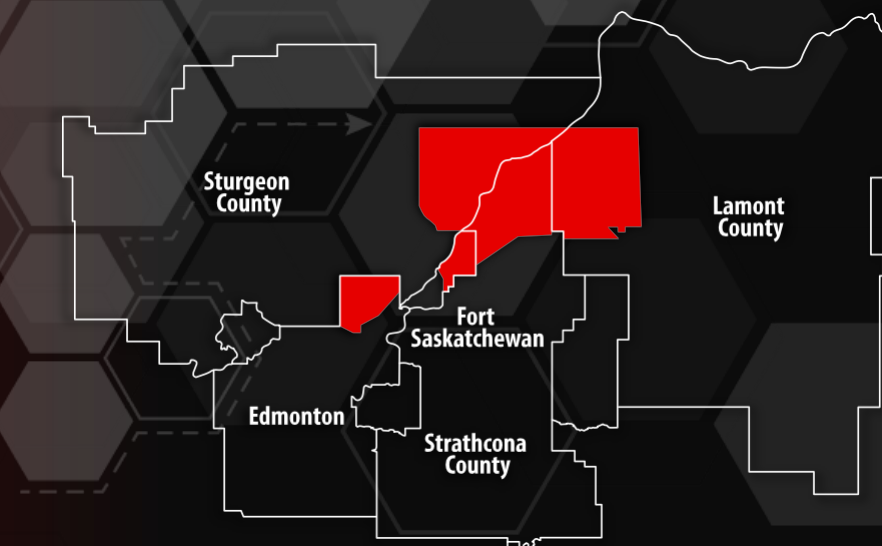
Advocates for project sponsors at all levels of government



COMMUNICATIONS AND COMMUNITY OUTREACH

Connects the community and stakeholders to activity in region

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.



WORLD CLASS PROJECT PARTNERS EXISTING IN AIH



Nutrien



MEGlobal



oerlikon
metco



cenovus
ENERGY



AUX SABLE



ATCO



sherritt



Petrogas
Energy Corp.



CHEMICALS & FUELS

- Ethylene
- Polyethylene
- Polymer-grade propylene
- Polypropylene
- MEG/EO/EG
- Iso-octane
- Styrene monomer
- Urea
- Ammonium sulphate
- Ammonia
- Hydrogen
- Refined fuels
- Bitumen upgrading
- Benzene
- Aromatics
- Petcoke

MIDSTREAM & UTILITIES

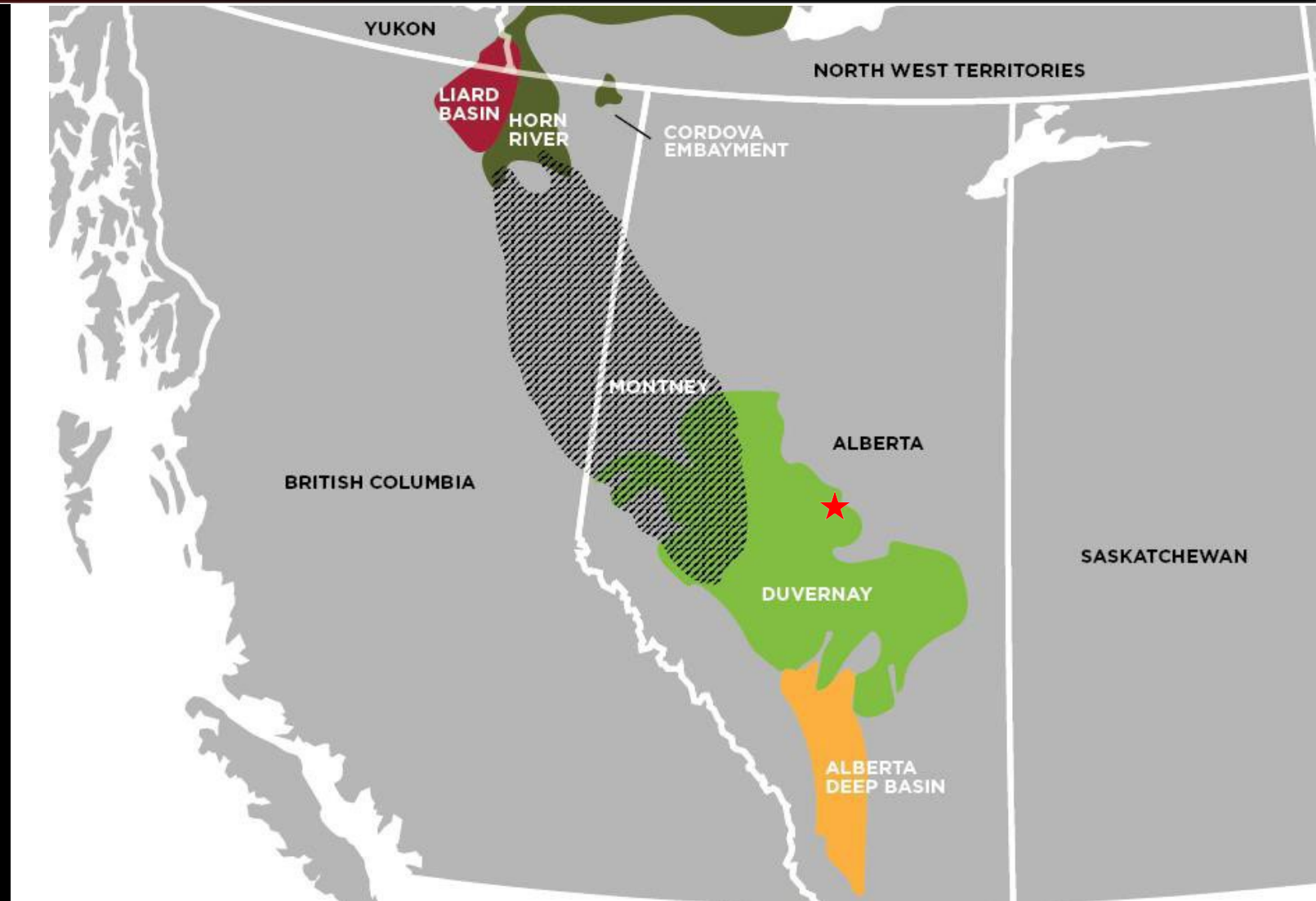
- NGL fractionation
- Salt cavern storage
- Oil, natural gas, and NGL pipelines
- Water and industrial gas systems
- Two operating world-scale CCUS systems

DIVERSIFIED PRODUCTS

- High-purity nickel & cobalt
- Nickel based composite powders
- Cobalt powders
- Hydrogen peroxide
- Prilled sulphur
- Third party rail storage
- Renewable power

AIH is the HEART of a World Scale Energy Hub and is at the center of the second largest oil and gas reserve in the world.

- Over 1,100 TCF of natural gas reserves, representing over 200 years of production at current demand
- 18 bcf/d of gas produced in the WCSB
- Nearly 4.0 million barrels of oil produced and processed in Alberta
- 471,000 barrels of refining capacity in the Heartland



Natural gas price benchmarks –September 2022 (\$/mmbtu)



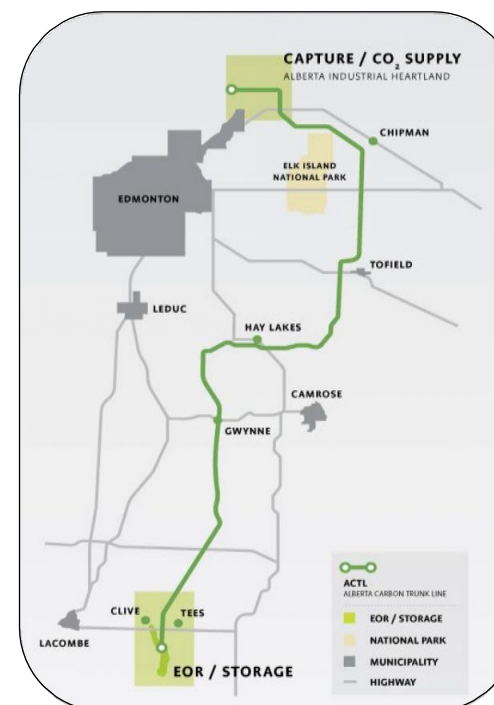
Source: Global LNG Hub. Spimex = Domestic NG price in Russia, TTF = Spot LNG price in Netherlands, IGX = Spot domestic NG price in India, JKM = Spot LNG price in Japan/Korea, Adelaide = Domestic NG price in Australia.

AIHA is home to ~10% of the large-scale carbon capture storage/utilization projects operating in the world



Quest Carbon Capture and Storage

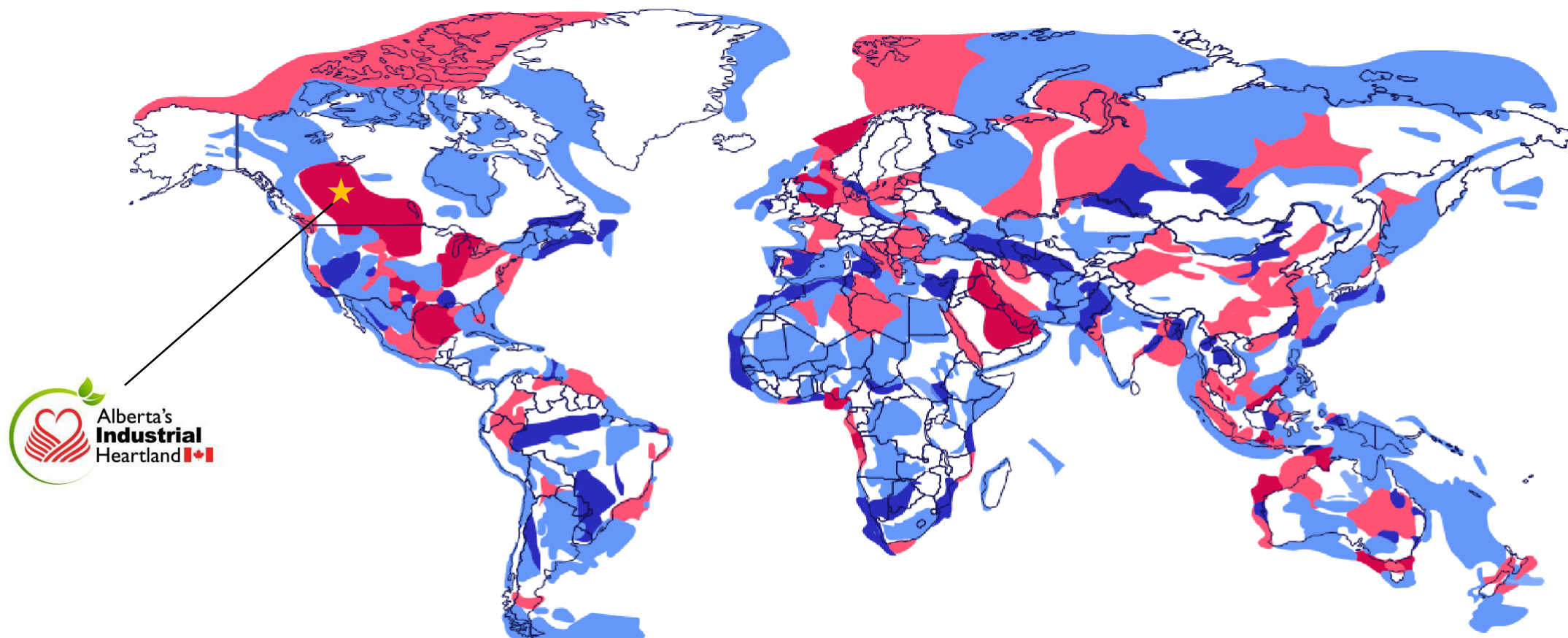
- A world-class capture project designed to capture and store over 1 million tonnes of CO₂ per year
- Quest began operations in 2015 and, to date, has captured and stored more than 4 million tonnes of CO₂
- Quest is owned by the Athabasca Oil Sands Project (70% CNRL, 20% Chevron, 10% Shell) and operated by Shell Canada



Alberta Carbon Trunkline

- 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
- Developed as a partnership between Wolf Carbon Solutions (Wolf), Enhance Energy, Nutrien, and NWR

HIGHLY SUITABLE CARBON SEQUESTRATION GEOLOGY



■ HIGHLY SUITABLE ■ SUITABLE ■ POSSIBLE ■ UNLIKELY

Source: Global CCS Institute

SUPPORT FROM ALL LEVELS OF GOVERNMENT



Federal Government

- Strategic Innovation Fund (flexible supports for strategic projects)
- Scientific Research & Experimental Development Tax Credits (tax credits for R&D)
- Accelerated Capital Cost Allowance (accelerated depreciation for favourable tax treatment)
- CCUS Tax Credit (50% tax credits for carbon capture equipment and 37.5% tax credits for CO2 transportation, storage, and utilization)
- Clean hydrogen investment tax credit
- Pledge to develop a North American clean hydrogen market at the N.A. Leaders Summit in 2023



Provincial Government

- Alberta Petrochemical Incentive Program (12% of eligible capital costs returned to projects through cash grants upon completion)
- Technology, Innovation and Emissions Reduction regulations
- Designated Industrial Zone



Municipal Government

- Heartland Incentive Program (2 - 2.5% of project capital cost returned through property tax abatement and infrastructure supports)



Classification: Protected B

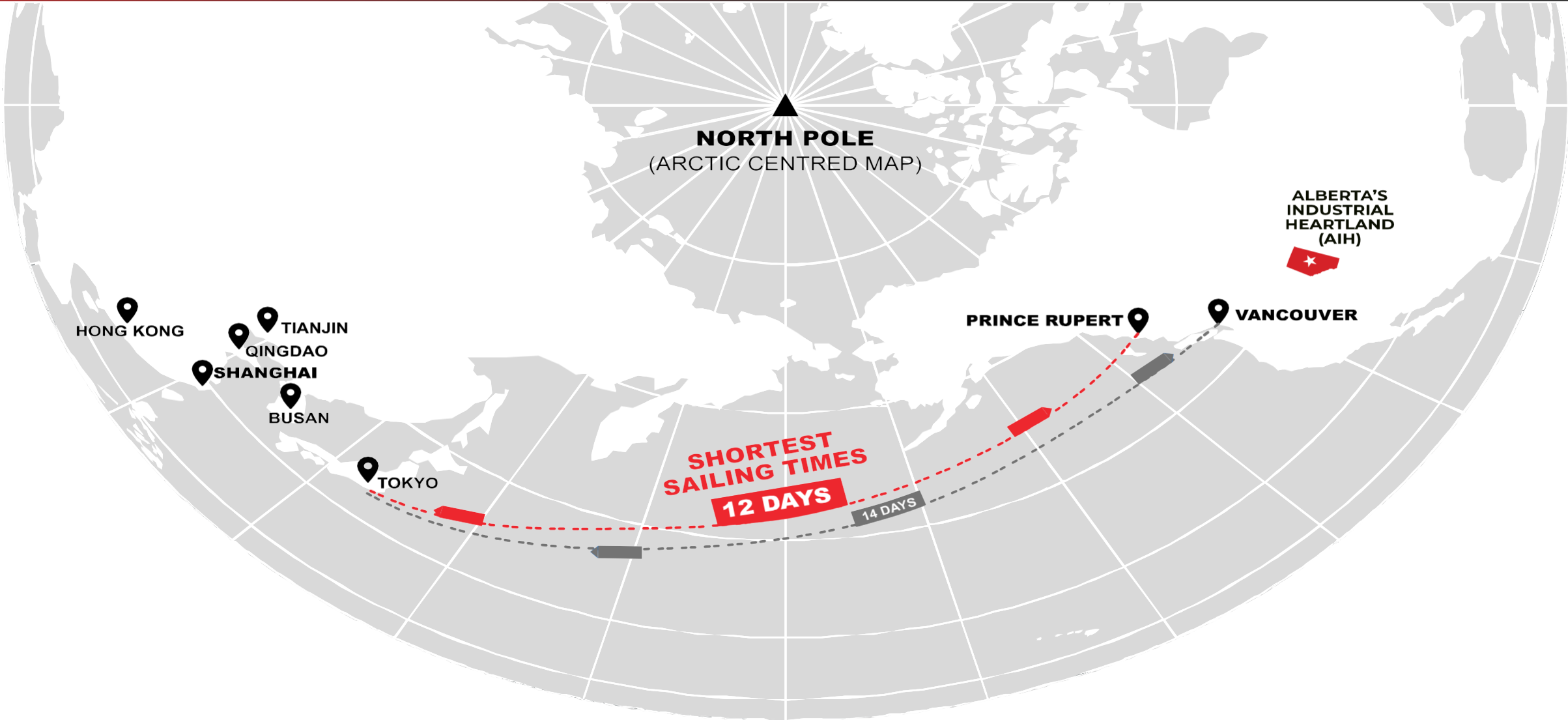
- Facilitate regulatory streamlining
 - Clarity in requirements for facilities
 - Provide investor certainty
 - Reduce approval timelines
- Improve environmental outcomes
 - Clear expectations for operators
 - Improved understanding of environmental conditions
 - Management of cumulative effects.
- Centralize infrastructure

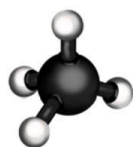
The logo consists of the word "Alberta" in a stylized, cursive script font, followed by a small red and white Canadian flag.

Canada's two class 1 railroads, the Canadian National (CN) and the Canadian Pacific (CP), connect Heartland industries and markets. Alberta rail services offer seamless intermodal transport solutions through its network of professional partners. Two third party rail service providers at AIH can provide efficient and economical supply chain services to industries.



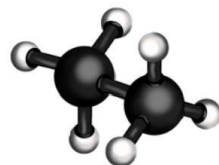
PROXIMITY TO ASIAN MARKETS





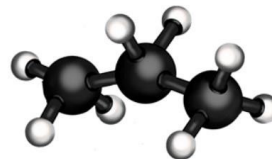
Methane

- Methanol
- Urea
- Ammonia
- Hydrogen
- Liquid organic hydrogen carriers
- Animal nutrition



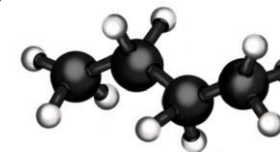
Ethane

- Ethylene
- Ethylene Derivatives (PE, PO, EDC, etc.)



Propane

- Propylene
- Propylene derivatives (PP, PO, IPA, SAP)
- Animal nutrition









Butane

- Iso-octane
- Maleic anhydride
- C4 derivatives



- Specialty chemicals
- Bio-oil / Bio-refining
- Small modular reactors
- Lithium processing
- Waste to energy
- Renewable power
- Battery precursor materials
- Circular plastics

CURRENT PROJECTS IN AIH

| Under Construction | | | Under Study | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>Project: Heartland Petrochemical Complex (HPC)</p> <p>Description: HPC is Canada's first propane dehydrogenation and polypropylene production facility</p> <p>Project Type: PDH & PP Capacity: 550 KTA Status: Under Commissioning Expected in-service: 2023</p> |  <p>Project: NGL North</p> <p>Description: NGL North is an NGL recovery, transportation, and fractionation system, connecting Northern Alberta to AIH.</p> <p>Project Type: NGL capture, transportation and fractionation Capacity: 70 KBbl/d Status: Under Construction Expected in-service: 2023</p> |  <p>Project: Scotford Solar</p> <p>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</p> <p>Project Type: Solar Power Capacity: 58 MW Status: Under Construction Expected in-service: 2023</p> |  <p>Project: Path2Zero</p> <p>Description: Path2Zero is Dow's first net-zero integrated ethane cracking complex which will utilize hydrogen as a clean fuel and third-party CCS</p> <p>Project Type: Ethylene and derivatives Capacity: 1.8 MMTPA Status: Under Study</p> |  <p>Project: Blue Hydrogen and Ammonia</p> <p>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).</p> <p>Project Type: Hydrogen and ammonia Capacity: 165 KTA hydrogen Status: Under Study</p> |  <p>Project: Blue Ammonia and Blue Methanol</p> <p>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.</p> <p>Project Type: Ammonia and Methanol Capacity: 1.8 MMTPA Status: Under Study Expected in-service: 2027</p> |

Under Study

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|  <p>Project: Blue Hydrogen</p> <p>Description: Suncor and ATCO announced collaboration on a blue hydrogen plant utilizing ATR technology and carbon capture and storage (CCS).</p> <p>Project Type: Blue Hydrogen Capacity: 300 KTA Status: Under Study Expected in-service: 2028</p> |  <p>Project: Fort Sask Expansion</p> <p>Description: Plains Midstream Canada has announced it is exploring expansion of its =fractionator in Fort Saskatchewan.</p> <p>Project Type: NGL Frac Capacity: 50 kbbl/d Status: Under Study Expected in-service:</p> |  <p>Project: NICO Critical Mineral Refinery</p> <p>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.</p> <p>Project Type: Mineral Refinery Capacity: Status: Under Study Expected in-service:</p> |  <p>Project: Sol Aurora</p> <p>Description: Alpin Sun is proposing to build a 200 MW solar farm in AIH to make clean energy available to nearby industrials.</p> <p>Project Type: Solar Farm Capacity: 200 MW Status: Under Study Expected in-service: 2024</p> |  <p>Project: Clean Energy Terminal</p> <p>Description: CN and Keyera announced a MOU to develop a specialized clean energy terminal in AIH. The infrastructure would aggregate conventional and clean energy from multiple sources to support transportation and export of products</p> <p>Project Type: Energy Terminal Capacity: Status: Under Study Expected in-service:</p> |  <p>Project: RFS Expansion</p> <p>Description: Pembina commenced pre-sanctioning development activities for a new 55,000 barrel per day, propane-plus fractionator at its Redwater Complex.</p> <p>Project Type: NGL Frac Capacity: 55 kbbl/d Status: Under Study Expected in-service:</p> |
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QUESTIONS

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MARCH 15



UPCOMING EVENTS



March 15 Networking LUNCHEON

COLLABORATIVE CONTRACTING: Improve Productivity and Increase Predictability

On March 15 at the Petroleum Club in Calgary, join us for an engaging networking lunch and feature presentation by William Schreiber, VP Commercial West for Kent PLC. William will highlight his experience and insights relative to Collaborative Contracting models, including alliances used in the oil and gas and power industries.

The presentation will focus on using collaborative contracting models to improve productivity, de-risk projects and bring predictability to upcoming projects in Canada.



WILLIAM SCHREIBER

Register:

<http://bit.ly/40UiOnS>

WEDNESDAY
MARCH 15
PETROLEUM CLUB
CALGARY
11:30 - 1:00 pm

TICKETS
\$55 + GST



Sponsored by:



MAY 2-3

2023 | COAA ANNUAL CONFERENCE

MAY 2/3 Edmonton Convention Centre



REGISTRATION NOW OPEN



KEYNOTE SPEAKER
Rex Murphy

Join Us for a 2-day conference event bringing together construction, labour, and investment industry experts to discuss topics and themes critical to the heavy industrial construction and maintenance sectors.

Tuesday
May 2
5:00pm - 8:00pm

Welcome Gala Dinner &
Executive Panel Session

Wednesday
May 3
8:00am - 5:00pm

Full Day
Conference Event



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