The Pathways Alliance Vision

Pathways Alliance

October 6, 2022

The Pathways Alliance

- The **Oil Sands Pathways to Net Zero Alliance** consists of Canada's six largest oil sands producers, who operate facilities accounting for 95% of oil sands production.
- The **Pathways Alliance goal**, working collectively with the Federal and Alberta governments, is to achieve **net zero greenhouse gas (GHG) emissions from oil sands operations by 2050** to help Canada meet its climate goals, including its Paris Agreement commitments and 2050 net zero aspirations.
- Our plan includes reducing current oil sands GHG emissions by about **22 Mt of CO_2e/yr**[1] by 2030 towards achieving net zero 2050.

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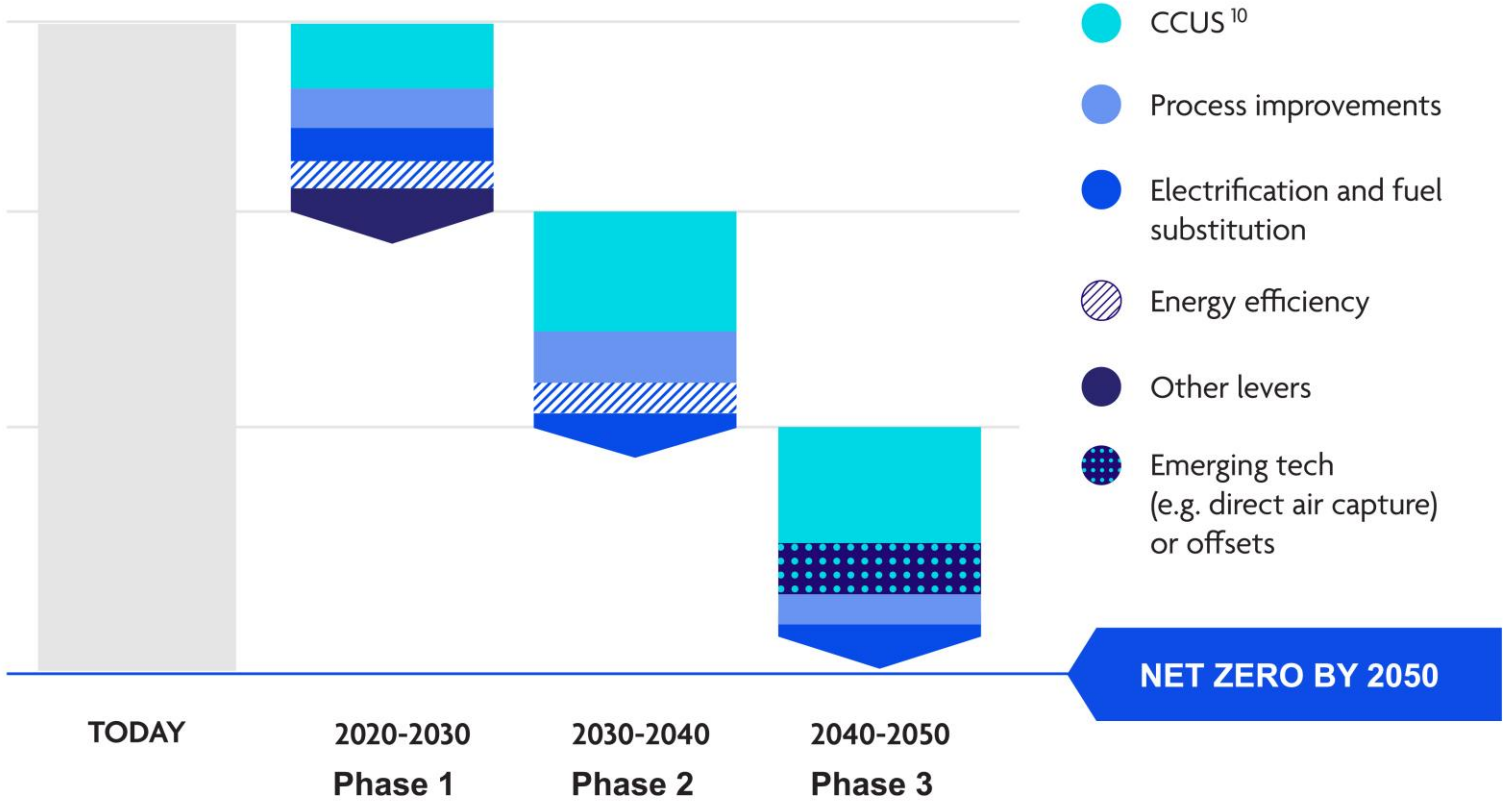
Overall plan to get to net zero

No single solution gets us to net zero – multiple parallel pathways are needed.

Proposed emissions reductions by phase, Mt CO_2e/yr[1]



[1] Magnitude of reductions in each decade can be adjusted based on chosen investment level.

[2] Carbon capture in Phase 1. In Phase 2 or 3, could include carbon capture technology, small modular reactors and/or hydrogen

A phased approach

Phase 1
2021-2030

- Enabling a carbon capture network, CO_2 transportation line and carbon storage hub in Cold Lake
- CO_2 capture on oil sands facilities
- Deployment of innovative in situ oil sands recovery technologies [NTD or Deploy Innovative]
- (e.g. solvents such as propane)
- Significant R&D investment to lower costs of GHG reduction technologies
- Continued deployment of energy efficiency & cogeneration projects

Phase 2
2031-2040

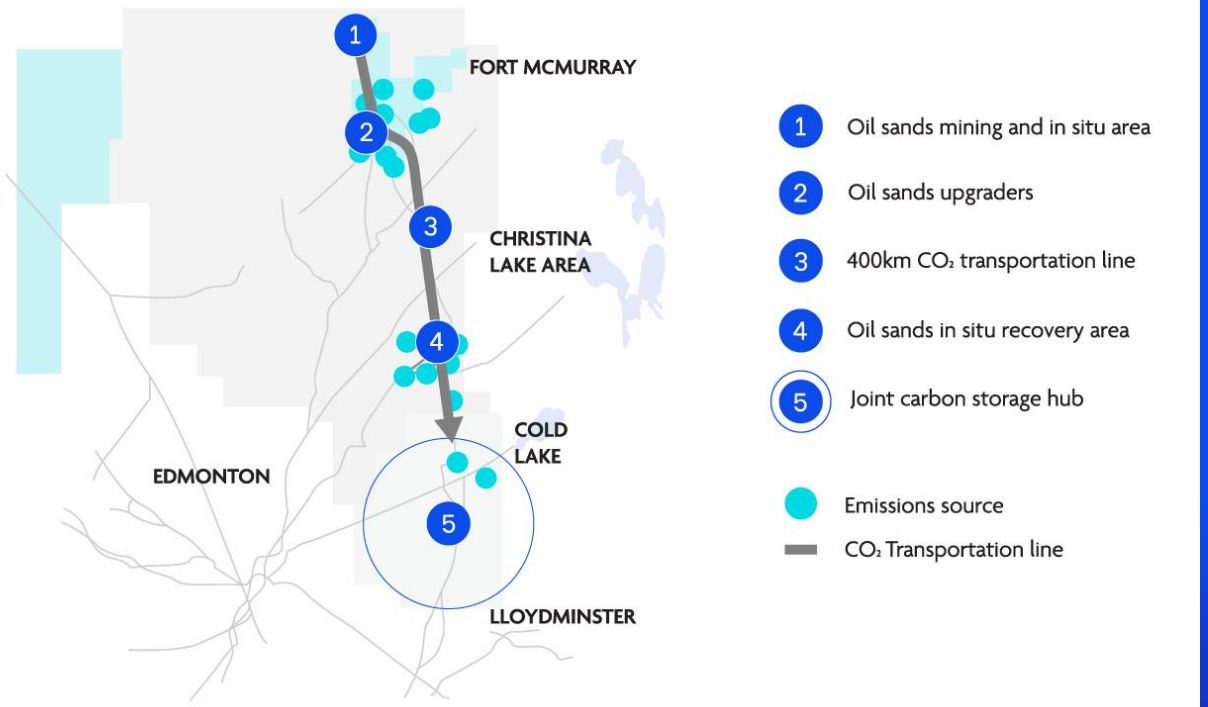
- Expand carbon capture within infrastructure corridor
- Expand application of low GHG intensity in situ oil sands recovery/process improvements
- Advance research and development on potential use of hydrogen or small modular reactors for oil sands power generation

Phase 3
2041-2050

- Carbon capture on remaining accessible streams
- Continued process improvements and innovations including, energy efficiency, fuel switching and electrification projects
- Emerging technologies, including direct air capture
- Expansion of hydrogen or small modular reactor capacity if successful

The Pathways foundation project – the “anchor”

- The Pathways vision is anchored by a **major carbon capture utilization and storage (CCUS)**[1] **system and transportation line** connecting oil sands facilities in the Fort McMurray, Christina Lake and Cold Lake regions to a carbon storage hub near Cold Lake.
- Enables technology development to lower the cost of carbon capture projects
- Accelerates opportunities to deploy innovative capture solutions and positions Canada to export this technology and expertise
- The same infrastructure is also a key enabler for other industries including blue hydrogen production
- The CCUS transportation line would be able to be expanded in phases to gather captured CO_2 from 20+ oil sands facilities.
    - Phase 1 - volumes of 10 Mt/yr from 11 facilities
    - Phases 2/3 - expansion capability for a total of up to 40 Mt/yr



[1] CCUS involves using safe and proven technologies to capture CO_2 from fuel combustion or industrial processes, transport it via pipeline or other methods and use the CO_2 to create valuable products or permanently store it deep underground in geological formations.

The world will continue to require oil

IEA's Net Zero by 2050 scenario shows a significant oil demand and incremental oil supply required to meet demand

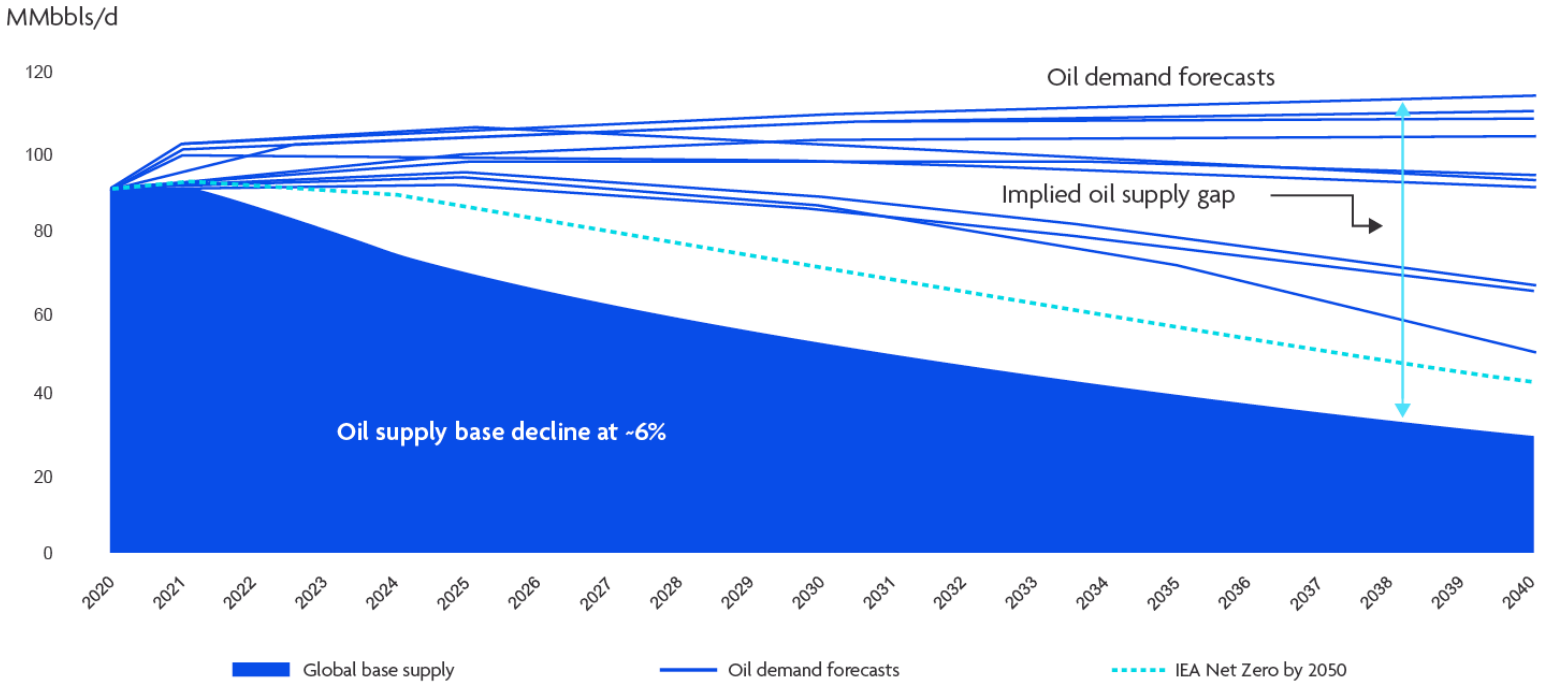


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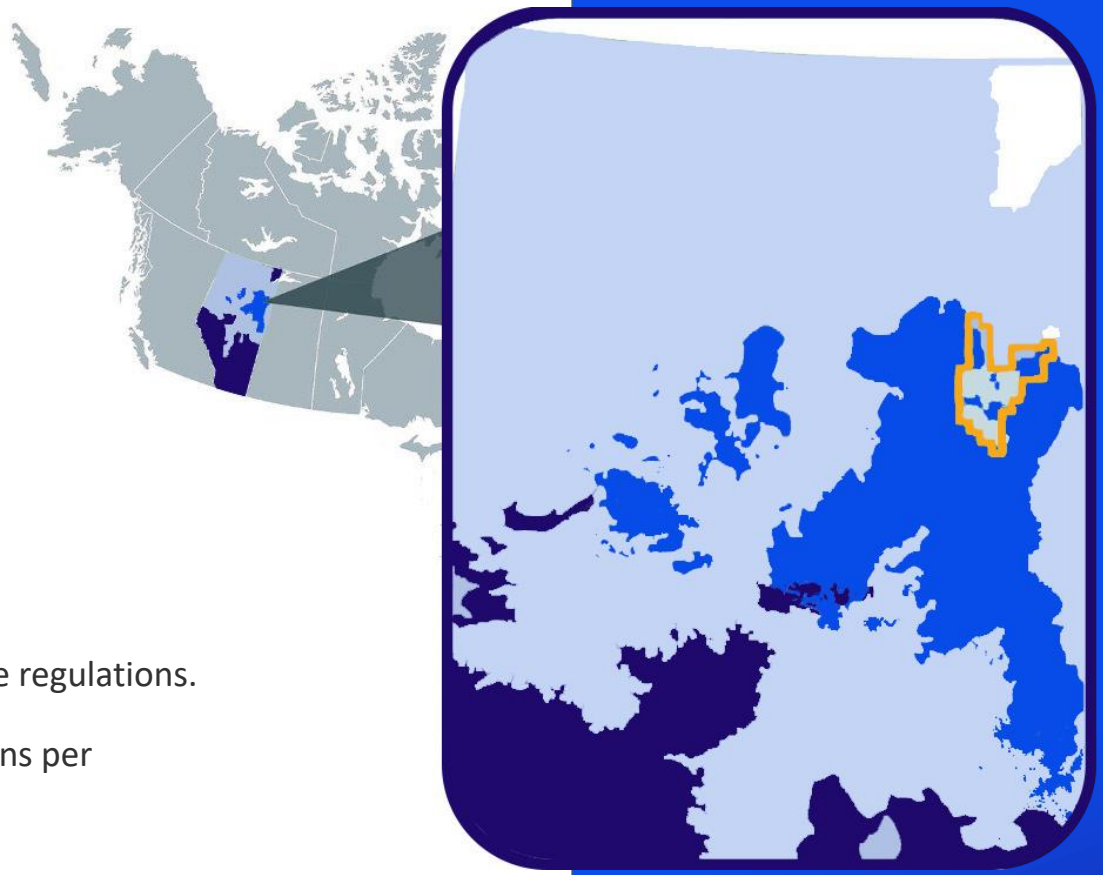
Chart sources: BMO Capital Markets, BP Plc, Equinor, Exxon Mobil, IHS Markit, IEA, OPEC, Shell (2021). [1]U.S. Energy Information Administration, October 2021.

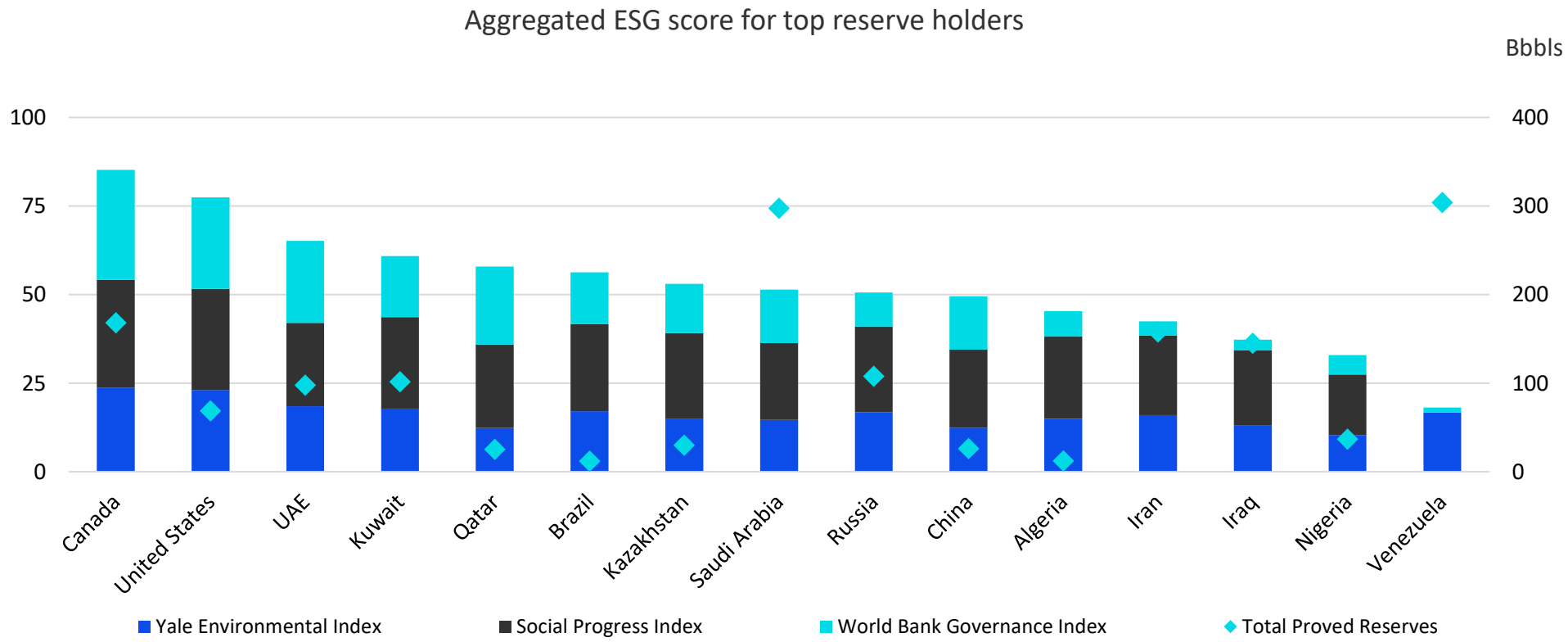
Canada's oil sands are produced responsibly

- 80% of resource recoverable using in situ methods, including steam-assisted gravity drainage (SAGD).
- Working to reduce emissions and water use; accelerate land reclamation.
- Investing in potentially game-changing technologies.
- Operating under stringent environmental and governance regulations.
- Through new technologies and innovations, GHG emissions per barrel have dropped 20% between 2009 and 2018.



Sources: Alberta Biodiversity Monitoring Institute; Alberta Environment and Parks.

Canadian oil should be preferred barrel globally



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Sources: ESG Scores – aggregation using an equal weighting (1/3) for each of Yale Environmental Performance Index, Social Progress Index and World Bank Governance Index. Reserves - BP Statistical Review of World Energy 2021 based on government and published data.

Canada is tackling emissions reduction

A target to reduce GHG emissions **40-45%** from 2005 levels by 2030 and a commitment to net zero by 2050.

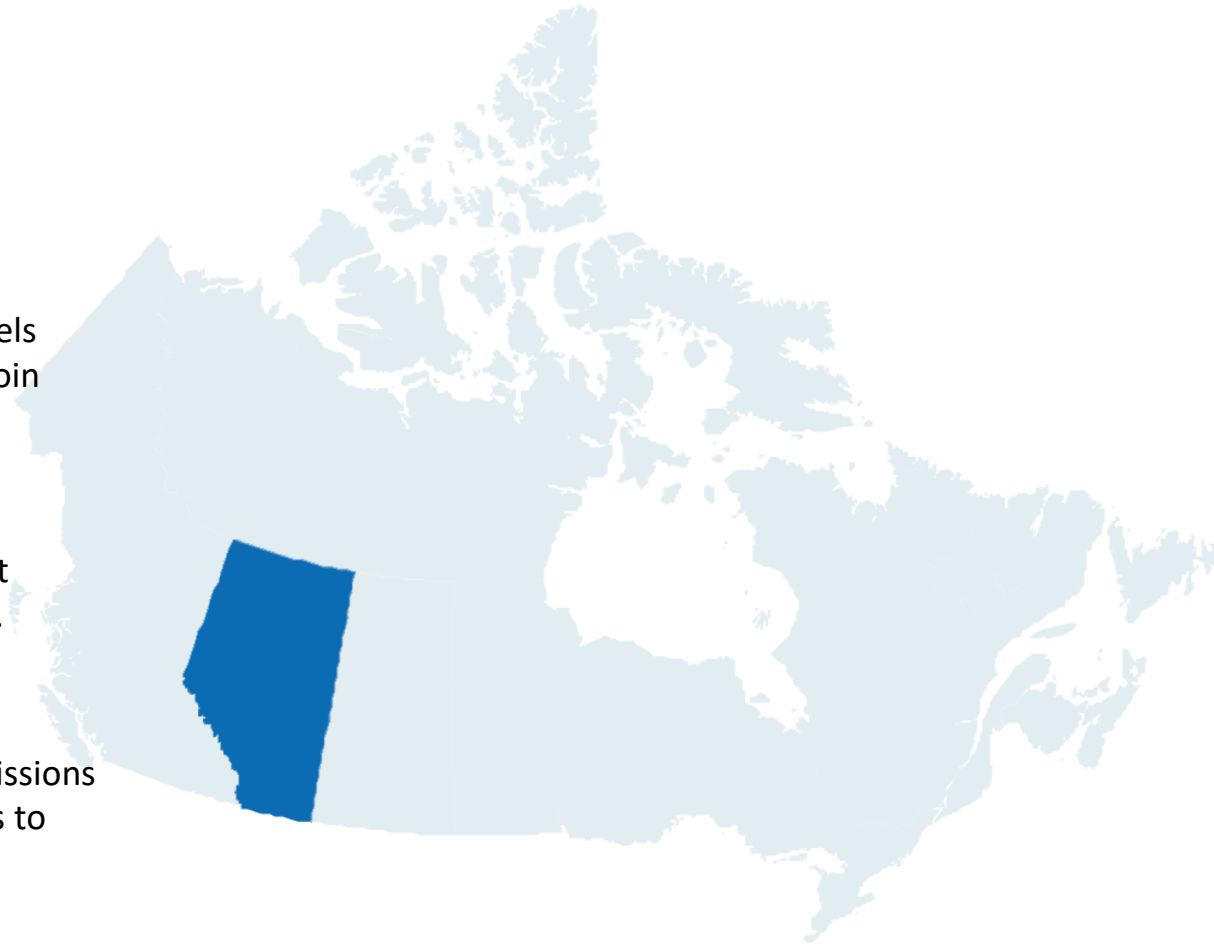
A price on carbon ($50/t in 2022, rising to $170/t in 2030).

Alberta led on carbon pricing – first province to implement output-based pricing in 2007.

A target to reduce methane emissions **75%** below 2012 levels by 2030, and commitment to join the Global Methane Pledge.

Alberta has cap on oil sands emissions; federal commitment to cap all oil and gas emissions.

Alberta directs industry Technology Innovation and Emissions Reduction regulation payments to potential emissions reduction technologies.



Working with Government

Government of Canada

- Investment Tax Credit announced in the federal budget is a positive and welcome support for carbon capture utilization and storage
- Actively discussing other programs, such as Net Zero Accelerator/Strategic Infrastructure Fund, as collaborative approaches to reduce emissions.

Province of Alberta

- Applied for pore space to enable carbon storage in the Cold Lake Region.

We will continue working in collaboration with Canadian federal and provincial governments on an effective fiscal and policy framework as we meet the world's demands for lower GHG emissions and the oil it needs as part of the energy mix.

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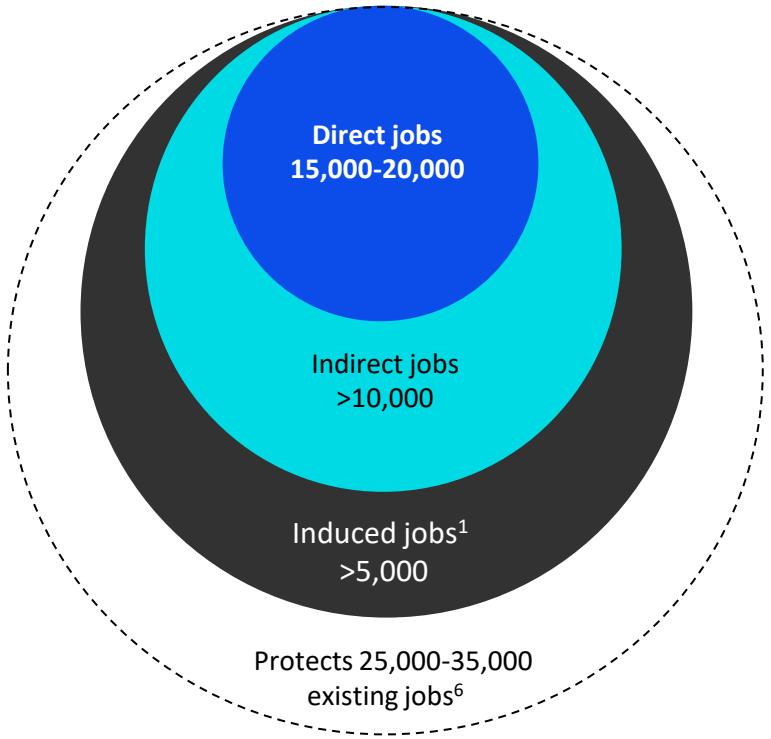
Pathways: 35k direct, indirect and induced jobs

2025-29 Average annual construction jobs created over “do nothing” scenario

Socio economic benefits

- Unlock over $50B of national GDP[4]
- Create an annual average of 15,000 to 20,000 high paying jobs during construction with ~1,000 permanent jobs post construction
- Stimulate the provincial and national economy through the creation of over 15,000 indirect and induced jobs
- Leapfrogs Canada as a leader in CCS project design and execution. Creating the potential for an additional 2,000- 2,500[5] annual engineering jobs supporting international CCS projects



~1,000[3] Permanent direct jobs

45K Tax revenue generated per direct job[2]

1. Jobs created by consumer spending from direct and indirect employees; 2. Assuming annual fully loaded FTE pay of $150,000 and tax rate of 30%; 3. Jobs created in 2021-30 and 2031-40 and 500 jobs created in 2041-50; 4. Assume capex spend over 5 years; GDP multiplier of 2.125; 5. OECD estimate of $350B-440B CCUS investment over next 30 years with ~10% in engineering; assuming a 25% Canadian market share and fully loaded FTE pay of $150K; 6 . Direct, indirect and induced jobs assuming 30% of high cost production is otherwise shut in, assumes $110B of contribution of oil and gas to Canada GDP

Save the Date:
President's Update Webinar

November 24, 11:00 a.m. MT

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Advisory

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Forward-looking statements are based on current expectations, estimates, projections and assumptions at the time the statements are made. Actual future results, including expectations and assumptions concerning: demand growth and energy source, supply and mix; amount and timing of emissions reductions; the adoption and impact of new facilities or technologies, including on reductions to GHG emissions; project plans, timing, costs, technical evaluations and capacities, and the ability to effectively execute on these plans and operate assets; that any required support for the pathways from the Government of Alberta and the Government of Canada will be provided; applicable laws and government policies, including climate change and restrictions in response to COVID-19; production rates, growth and mix; general market conditions; and capital and environmental expenditures, could differ materially depending on a number of factors. These factors include global, regional or local changes in supply and demand for oil, natural gas, and petroleum and petrochemical products and the resulting price, differential and margin impacts; political or regulatory events, including changes in law or government policy and actions in response to COVID-19; the receipt, in a timely manner, of regulatory and third-party approvals including for new technologies; lack of required support from the Government of Alberta and the Government of Canada; environmental risks inherent in oil and gas exploration and production activities; environmental regulation, including climate change and GHG regulation and changes to such regulation; availability and allocation of capital; availability and performance of third-party service providers; unanticipated technical or operational difficulties; project management and schedules and timely completion of projects; reservoir analysis and performance; unexpected technological developments; the results of research programs and new technologies, and ability to bring new technologies to commercial scale on a cost-competitive basis; operational hazards and risks; general economic conditions, including the occurrence and duration of economic recessions; and other factors referenced by the companies' in their most recent respective annual reports and management's discussion and analysis, as applicable.

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