



# Carbon Capture and Storage

As North America's leading energy infrastructure company, Enbridge is an industry leader in the transition to a sustainable, lower-carbon future in which carbon capture and storage (CCS) will be a key enabler. Collaborative solutions will be needed to accelerate this important industry and Enbridge is committed to working with industry, governments, and Indigenous communities to provide solutions that meet emissions reduction goals while supporting economic development and the long-term health of North American energy and industrial sectors.

As industry, governments and communities work to reduce North America's carbon footprint and meet ambitious emissions reduction targets, CCS infrastructure is emerging as a key decarbonization solution. CCS infrastructure and technology will create jobs, lower emissions and support economic growth.

Experts globally agree CCS is vital for meeting greenhouse gas reduction goals. That's why Enbridge is developing CCS solutions. CCS is a viable way to meaningfully reduce greenhouse gas emissions from critical industries like cement production, power generation, energy production and refining, along with fertilizer, plastics, chemicals and steel manufacturing.

## What is CCS?

Carbon dioxide (CO<sub>2</sub>) is emitted naturally and through human activities such as power generation, cement manufacturing, and oil and natural gas production and refining. CO<sub>2</sub> accounts for approximately 80% of all GHGs emitted through human activities, so reducing its impact is critical.

CO<sub>2</sub> can be stored in geological formations like oil and gas reservoirs, unmineable coal seams, and deep saline reservoirs. These are structures that have naturally stored crude oil, natural gas and brine over millions of years.

In an integrated CCS solution, instead of emitting CO<sub>2</sub> into the atmosphere, CO<sub>2</sub> is captured as a gas at source and compressed. It is then transported via pipeline (and sometimes by truck or rail) to a strategically located storage hub, where it is injected and safely and permanently sequestered within deep underground geological formations.

Carbon capture, transportation and storage have been in use for some 50 years in North America. Projects like Quest and the Alberta Carbon Trunk Line are among many other CCS projects operating around the world, from Canada to the United States to Australia to Norway.



**Enbridge is actively building Indigenous partnerships to advance our CO<sub>2</sub> storage and transportation plans.**

## The Open Access Wabamun Carbon Hub

One CCS project under development is Enbridge's Open Access Wabamun Carbon Hub (the Wabamun Hub) to be located west and north of Edmonton, Alberta, Canada.

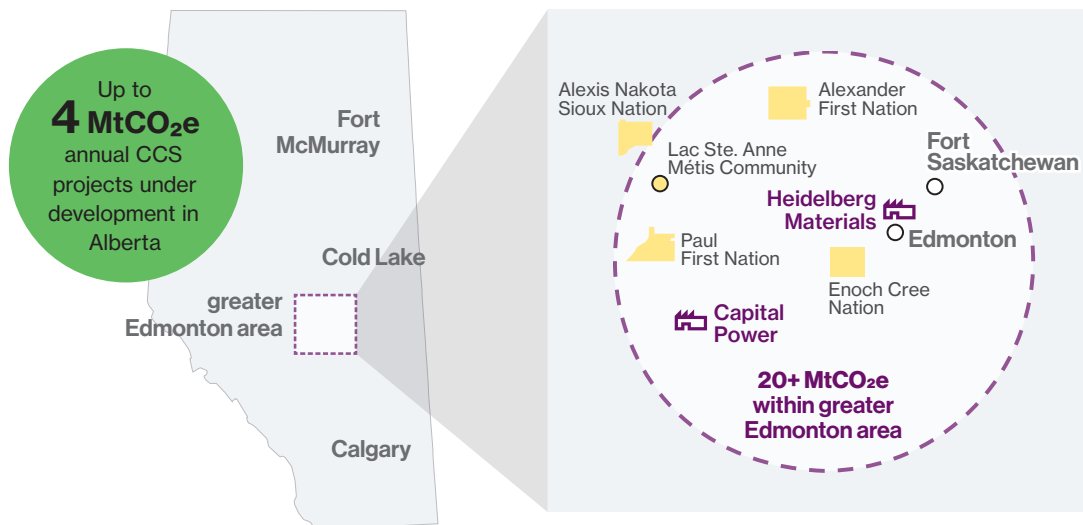
The Wabamun Hub will support a Heidelberg Materials' carbon capture project in Edmonton that is set to revolutionize the cement industry by creating the world's first full-scale carbon capture project at a cement plant. This cutting-edge facility will play a pivotal role in combating climate change, capturing over 1 million tonnes of CO<sub>2</sub> annually from cement production and an integrated heat and power facility.

While focusing on the Heidelberg Materials' project, the Wabamun Hub will remain open access for other nearby capture projects.

In February 2022, Enbridge and local Indigenous communities announced an agreement to advance the Wabamun Hub. Enbridge committed to offering local Indigenous partners, including Alexander First Nation, Alexis Nakota Sioux Nation, Enoch Cree Nation, Paul First Nation and the Lac Ste. Anne Métis Community, a significant equity interest in associated carbon transportation and storage infrastructure.

Enbridge applied to develop the Wabamun Hub through the Alberta government's competitive carbon hub selection process. In late March 2022, the government of Alberta announced that Enbridge had been awarded the right to advance development of the Wabamun Hub. Subject to regulatory approvals, phased in-service dates for projects within the Wabamun Hub are expected to begin as early as late 2026.

Collaborative solutions like the Wabamun Hub are needed across North America to decarbonize industries like power generation, cement and steel manufacturing, petrochemicals, and oil and gas production and refining. Enbridge is committed to working with communities, Indigenous partners, multiple industrial sectors, governments, and CCS experts to provide safe, cost-competitive low-carbon solutions that support the achievement of climate goals, create jobs and economic activity, and ensure the long-term sustainability and competitiveness of North America's industrial and energy sectors.



> Central Alberta is a focus for Enbridge for carbon capture and storage in Canada.

### Measurement, Monitoring and Verification and safe CO<sub>2</sub> storage

Safety is paramount at Enbridge. As a company, we are committed to ensuring all our assets are operated in a safe manner. That includes the Wabamun Hub's new CO<sub>2</sub> transportation and storage infrastructure.

As part of our commitment to safety, and as required by law, Enbridge will develop and execute robust Measurement, Monitoring and Verification (MMV) plans for the life of any of our CO<sub>2</sub> sequestration projects, including those developed in connection with the Wabamun Hub. Enbridge's MMV plans

for the Wabamun Hub are being developed and reviewed by world-leading CO<sub>2</sub> storage experts. These MMV plans will be continuously enhanced with updated information.

In due course, Enbridge will be installing a comprehensive suite of sophisticated monitoring equipment throughout the Wabamun area, north and west of Edmonton, Alberta. This state-of-the-art technology will confirm, over the entire life of the Wabamun Hub, that injected CO<sub>2</sub> remains safely contained deep underground. To ensure safety and earn and maintain public trust, Enbridge will conduct extensive underground monitoring, including at its injection wells, in the storage formations, and with deep monitoring wells and shallow groundwater wells.