

NORTH DAKOTA Carbon Neutrality Opportunity

Carbon dioxide (CO₂) capture and storage technologies have become increasingly important as global markets focus on reducing the amount of CO₂ that is emitted into the atmosphere. As the state with the nation's largest dependence on out-of-state trade, a new focus on \$52 trillion in private equity using environmental, social and governance (ESG) standards, new federal regulations and shifting consumer demand, North Dakota is committed to innovation in order to provide our companies optimal access to capital and natural resources. That commitment was solidified in May 2021, when Gov. Doug Burgum announced that the state will strive to become carbon-neutral by 2030. This goal will only be reached through innovation, not regulation. The recent Inflation Reduction Act increased federal incentives to \$60-\$85 per ton of CO₂ for utilization or storage. Capturing CO₂ from existing in-state and out-of-state facilities can bring a substantial financial benefit while sustaining North Dakota agriculture and energy production. **Carbon neutrality is not only good for the environment, it is also good for business. And our state has a great story to tell.**

NORTH DAKOTA'S GEOLOGY IS IDEAL

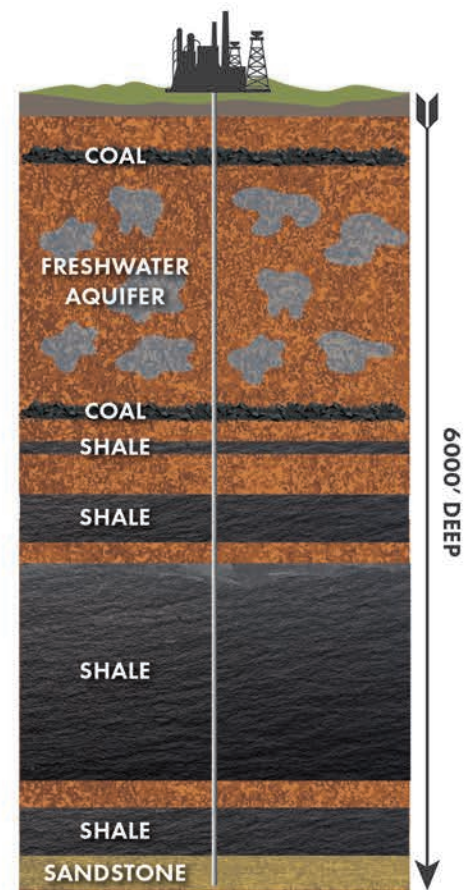
Proactive actions are already underway to fulfill this commitment. For example, Project Tundra in Oliver County, North Dakota, aims to build the largest carbon capture, utilization and storage (CCUS) facility in the world. Red Trail Energy and Blue Flint Ethanol are currently capturing and sequestering CO₂ in ND. The Energy and Environmental Research Center (EERC) was instrumental in bringing these projects to reality.

North Dakota is uniquely positioned for this innovation given our geology is ideal for safe and permanent geologic storage of CO₂. A deep porous rock layer will hold the CO₂ more than a mile underground and overlying cap rock layers will seal the CO₂ in the storage zone. EERC estimates that North Dakota has capacity to sequester up to 25 billion tons of CO₂, over 4,400 years' worth of North Dakota's annual production!

DEVELOPING MARKETS FOR CO₂

North Dakota's older (conventional) oil fields: When the market is ready, CO₂ enhanced oil recovery (EOR) will revitalize older fields that are in declining stages of production, producing up to 1 billion additional barrels!

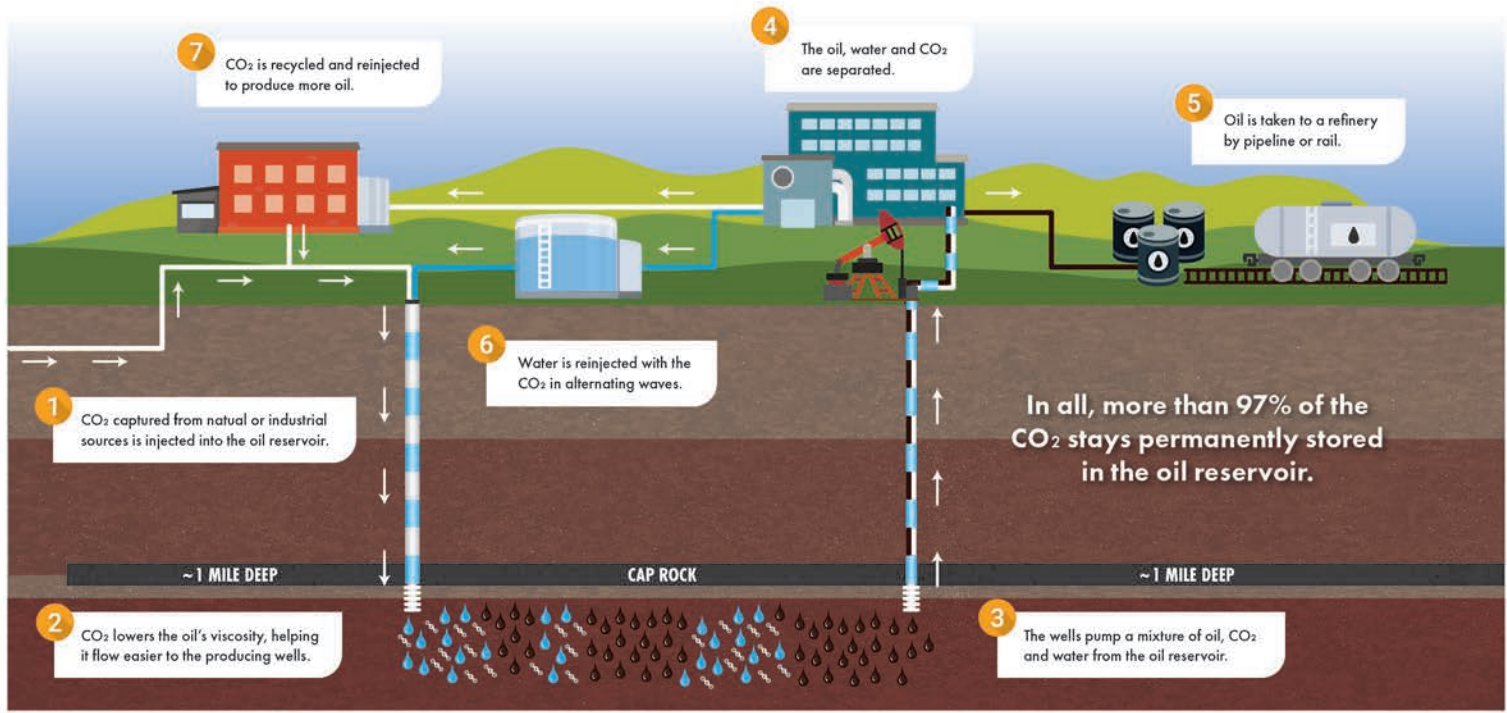
North Dakota's Bakken (unconventional) oil fields: When the technology is ready, CO₂ EOR can be applied to declining Bakken oil wells to improve production, unlocking up to 7 billion additional barrels from the Bakken and Three Forks shale!



TERTIARY RECOVERY

(CO₂ Enhanced Oil Recovery)

In addition to carbon capture and storage, North Dakota is working on other ESG initiatives regarding reduction of CO₂ emissions such as using CO₂ for EOR, water recycling in oil fields, plastics manufacturing using excess and flared natural gas, geothermal energy production, and a recently announced partnership with Bakken Energy and Mitsubishi Power to create a blue hydrogen hub, composed of facilities that produce, store, transport and consume clean hydrogen.



CO₂ CAPTURE AND UTILIZATION IN ND TODAY

1. Dakota Gasification Company began collecting over 2M tons per year of CO₂ in 2000 and transporting via pipeline Enhanced Oil Recovery (EOR) in Canada 25 years ago.
2. Red Trail Energy began capturing CO₂ from their ethanol production near Richardton ND and sequestering in 2022.
3. Harvestone's Blue Flint Ethanol facility near Underwood ND began capturing CO₂ off their ethanol production and sequestering in fall of 2023.
4. Additional EOR began in 2022 by Denbury in southwestern ND oilfields from CO₂ captured in Wyoming and transported via pipeline.
5. The ND Industrial Commission has multiple investments through the Clean and Sustainable Energy Authority in carbon capture technology for our coal-fired power plants. Those projects are ongoing.

Benefits

Produces greener oil with a smaller carbon footprint because CO₂ is permanently stored in the process.

Provides economic incentive to capture the industrial CO₂ as it is sold to offset the cost of capture.

Enhances energy security with homegrown oil production.

Generates and maintains well-paying jobs, tax base and viable communities.

Reduces industrial CO₂ emissions into the atmosphere.

Safety

Oil reservoirs can hold CO₂ the same way they've been holding other fossil fuels for millions of years.

North Dakota's stable geology is ideal for CO₂ EOR.

The oil industry has 40+ years of CO₂ EOR experience.

Millions of additional barrels of oil have been safely produced (Texas, Montana, Mississippi and Saskatchewan).

4,000 miles of CO₂ pipelines in North America move CO₂ every day without incident.

For more information, please contact Tom Oakland at 701-328-5300

Sources for most of this information and additional research materials can be found on the EERC website at: pcor.undeerc.org/Resources.aspx