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Year in Review: CO2 capture highlights ND energy in 2022; oil production flat, cryptocurrency arrives

JACKIE JAHFETSON

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A pumpjack extracts crude from the Bakken oil field in western North Dakota.

Forum News Service

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energy-related projects from carbon capture to wind power dominated the drawing l

E Frosty relations between coal and wind supporters appeared to ease somewhat with the sale of the threatened Coal Creek Station, oil production remained flat over the year, and a new wrinkle emerged impacting the state's energy industry -- cryptocurrency.

Meanwhile, workforce availability was a big concern in the Bakken oil patch.

Carbon capture

The ethanol facility Red Trail Energy in Richardton began capturing climate-warming carbon emissions in mid-June, setting the stage as the first carbon capture and storage project approved under state primacy in the United States. Primacy refers to the state having primary enforcement authority. The plant plans to sell ethanol to the West Coast market, where states such as California have policies favoring fuels with a low carbon intensity.

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An agricultural carbon capture project developed out of 2021 discussions among state leaders. The \$1.1 million project underway in western North Dakota seeks to determine whether grazing land can be used to store



climate-warming carbon dioxide as a way to mitigate emissions from energy companies. It will be the first atmosphere study to be completed over managed grazing systems in the state, and will enable energy companies to determine the amount of carbon captured on rotationally grazed grasslands. It's being done by the North Dakota Natural Resources Trust and project scientist Rebecca Phillips and funded by the Oil and Gas Research Fund, with other local, state and national funding partners.



Red Trail Energy CEO Gerald Bachmeier, left, and Plant Manager Kent Glasser talk about the carbon capture and storage project at the ethanol facility in Richardton in August.

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Another research project underway seeks to analyze soil samples from several parcels of state land scattered around western North Dakota to better understand the potential for carbon storage in grasslands. The project also will involve taking samples from prairies in Texas and New Mexico. The effort led by a Texas-based organization called BCarbon will allow for comparisons between northern and southern climates, particularly in dry regions where there is less data. North Dakota officials are eyeing grasslands used for grazing in Burleigh, Emmons, McLean and Williams counties for the project.

Gov. Doug Burgum endorsed the work at a meeting of the state Land Board, saying the board “has to be a leader” given the amount of land it manages. He set a goal last year of making the state carbon-neutral by 2030 and has looked to carbon dioxide storage as a way to achieve it.

North Dakota Petroleum Council President Ron Ness said the agricultural carbon capture projects are different than underground carbon capture processes being developed at coal and ethanol plants because it's happening above ground.

North Dakota regulators approved underground storage plans in 2022 for the Project Tundra carbon capture effort in Oliver County northwest of Bismarck. Minnkota Power Cooperative proposes to capture and store up to 4 million metric tons of carbon dioxide per year from the Milton R. Young Station coal-fired power plant operated by the co-op. The project involves injecting CO₂ from the plant into rocks deep underground for permanent storage. If the \$1 billion Project Tundra moves forward, construction would wrap up by 2026.



A map provided by Summit Carbon Solutions shows the route of its proposed carbon dioxide pipeline system.

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northwest of Bismarck, where the emissions would be injected and stored underground.

Summit says it hopes to come to agreeable terms with landowners on easements before considering eminent domain. Some landowners haven't been happy with the process. Construction is planned for next summer, and operations are to begin in late 2024.

Rainbow Energy Marketing Corp. in May completed its purchase of the coal-fired Coal Creek Station power plant in McLean County from the Minnesota-based Great River Energy power cooperative, which had planned to shut it down.

Rainbow intends to install a system at Coal Creek to capture the plant's carbon emissions. Operating the technology would eat up a significant amount of electricity the plant produces, freeing up space for wind power on the transmission

Summit Carbon Solutions filed a permit request in October with the North Dakota Public Service Commission for a pipeline that would pick up carbon dioxide emissions from more than 30 ethanol plants and other facilities in the Midwest, crossing 2,000 miles through five states to Oliver and Mercer counties

line that runs from Coal Creek to Minnesota.



North Dakota's largest coal-fired power plant, Coal Creek Station, near Underwood.

Tom Stromme

Coal and wind

Great River Energy plans to receive power from what's expected to become the largest standalone wind farm in North Dakota, slated for southern McLean County near Coal Creek. GRE and wind developer Apex Clean Energy announced the 400-megawatt Discovery Wind project at the start of the year. The co-op

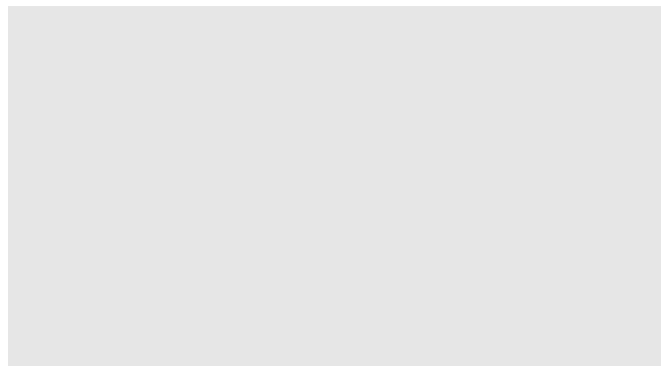
estimates it will reduce its carbon emissions more than 80% by 2025, when Discovery Wind is expected to begin operating.

North Dakota's oldest coal-fired power plant -- Heskett Station north of Mandan -- stopped burning lignite in February, marking the end of an era that began in 1954. The plant will continue to produce power using natural gas.

Montana-Dakota Utilities announced in 2019 that it planned to stop operating Heskett's two coal-fired units, as well as another coal-fired power plant near Sidney, Montana. One of the two tall stacks at Heskett was taken down this month; the decommissioning process will continue into next summer.

A potentially massive power demand looms in the form of data centers that are eyeing North Dakota.

Atlas Power Data Center in partnership with FX Solutions -- both of which are based in Montana -- announced plans to begin mining cryptocurrency, or digital currency, at



a 77-acre site west of Williston. The facility is expected to use as much electricity as the output of a typical coal-fired power plant once it's fully operational.

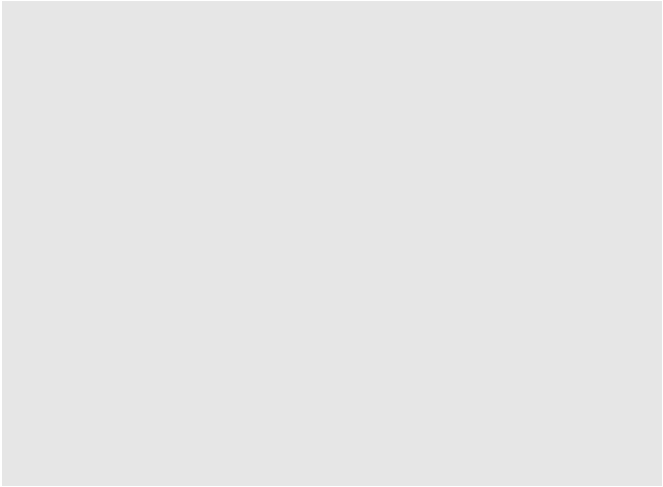
The cryptocurrency mining company Bitzero Blockchain Inc. leased space in Bismarck and Fargo for administrative operations as it begins transforming a northeastern North Dakota anti-ballistic missile site abandoned in the 1970s into its main data center.

Oil industry

North Dakota's oil production remained around 1.1 million barrels per day all year in 2022.

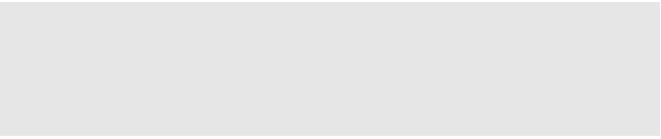
State Mineral Resources Director Lynn Helms earlier in the year described the western North Dakota oil patch as "mature." While North Dakota could still see small annual production increases, drilling is expected to taper off in about a decade, he said.

"So summing 2022 was very slow recovery from the pandemic. A little bit of recovery, but really flat production," Helms said at his monthly press briefing in mid-December.



Helms and other state officials met with oil and gas companies in Houston earlier this year, and came back to North Dakota hoping that the state would reach 1.2 million barrels per day by the end of this year.

"We didn't get there," Helms said.



Gov. Doug Burgum, left, speaks with Rick Tabish, center, and Kevin Washington at the Mountrail-Williams Electric Cooperative headquarters in January after an announcement about a data center planned for the Williston area. Tabish leads FX Solutions and Washington leads Atlas Power. The companies are partnering to build the \$1.9 billion facility.

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North Dakota Mineral Resources Director Lynn Helms
Tom Stromme

"Going forward, they're talking the same story, but there are so many headwinds."

He noted sanctions against Russia, COVID-19 lockdowns in China, and recessions or looming recessions in some countries as factors impacting markets.

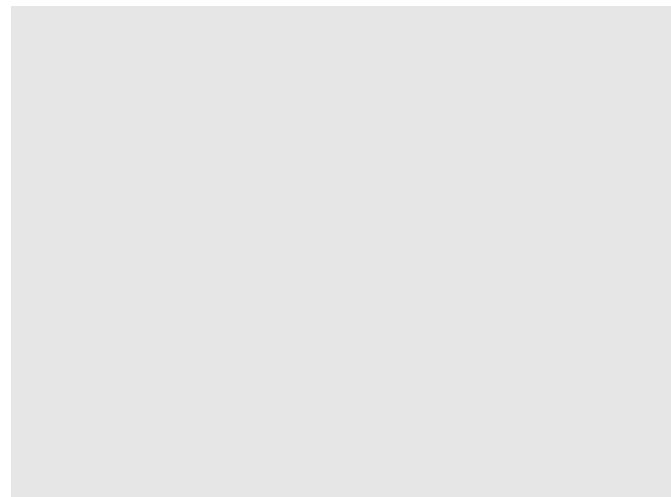
New federal emissions regulations coming into play in 2023 could also stall oil production growth, Helms said, adding that the "significant players" in North Dakota's oil industry are expecting a 1-2% growth next year.

North Dakotans saw a new high for gas prices at the pump, reaching a statewide average of \$4.24 per gallon in May. Russia's invasion of Ukraine earlier this year sent prices skyrocketing.

Historic April blizzards caused steep production drops in North Dakota -- as low as 300,000 barrels per day. Prior to April, the state's oil production had been slowly climbing.

One April storm also resulted in at least one significant spill and fire in the oil fields. Another left about 18,000 customers in western North Dakota and eastern Montana without power at one point -- one of the worst such incidents on record, according to MDU.

A shortage of trained workers is the "No. 1 issue" in the Bakken oil patch, according to Helms. The issue prompted industry leaders at September's North Dakota Petroleum Council annual meeting to look for solutions. The Bakken Area Skills Center in Watford City is



Power line damage in the Crosby area from an April blizzard in western North Dakota.

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projected to help meet the workforce needs. The center is set to be completed next November, with classes beginning by the end of 2023.

In August the North Dakota Supreme Court struck down key portions of the state's "pore space" law, which legislators had adopted in 2019. Supporters said the bill clarified the law on the use of voids or cavities in underground rock formations. The issue is key to the oil and gas industry because pore space is used for enhanced oil recovery and saltwater injection wells. Justices ruled the law unconstitutional because it took away the right of landowners to be compensated for use of pore space.

2022 marked the seventh year that the fight over the Dakota Access Pipeline made front-page headlines in North Dakota. The U.S. Supreme Court in February refused to consider an appeal of the yearslong tribal lawsuit over the pipeline, which means that an ongoing environmental review of the project will continue.

The state of North Dakota continues to pursue \$38 million from the federal government to cover the costs of policing pipeline protests in 2016-17. And the North Dakota Supreme Court determined that more than 16,000 documents linked to construction security for the pipeline are public records.



The US Energy Information Administration says this will be one of the worst years in recent memory. Veuer's Tony Spitz has the details.

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Editor's note

North Dakotans in 2022 witnessed dramatic turnover in the Legislature, the death of a widely respected state officeholder, a focus on capturing global-warming emissions, a high-profile murder trial, multiple blizzards and the celebration of the capital city's 150th anniversary. The Tribune is running a five-part series looking back on the year and the major happenings in energy, politics, weather, crime and the Bismarck-Mandan area.

By JACKIE JAHFETSON

Energy and Environment Reporter
