



## Inflation Reduction Act: A Historic Investment in Climate, Communities, and Jobs

On August 16, 2022, President Biden signed the Inflation Reduction Act. This landmark legislation makes a historic commitment to climate action that will drive innovation and deployment of clean energy, industrial and manufacturing technologies, and infrastructure to put our nation on track to meet the President’s ambitious goal of achieving net-zero emissions economy-wide by 2050, while investing in communities and American workers.

The Inflation Reduction Act features a comprehensive package of clean energy and industrial tax credits, including the most ambitious incentives in the world to date for the deployment of carbon management technologies, such as carbon capture, direct air capture, and the conversion of captured carbon emissions into useful products.

Substantial improvements to the federal 45Q tax credit include increased credit values to \$85 per ton of carbon emissions captured and stored from industrial facilities and power plants and \$180 per ton for direct air capture facilities<sup>1</sup>, an extension of the credit for a full ten years (i.e. all projects beginning construction by the end of 2032); the ability to claim the credit for 12 years of operation, directly as a cash payment for the first five years of operation and the ability to transfer the credit to outside investors for the remaining seven years; and expanded eligibility for smaller industrial, power generation and direct air capture facilities.

## Potential for Carbon Management and Emission Reductions for North Dakota

As one of the largest producers of crude oil and coal and home to robust geologic formations to store carbon dioxide, North Dakota has the potential to significantly reduce its carbon dioxide (CO<sub>2</sub>) emissions and provide economic, social, and environmental benefits to communities, workers, and businesses across the state.

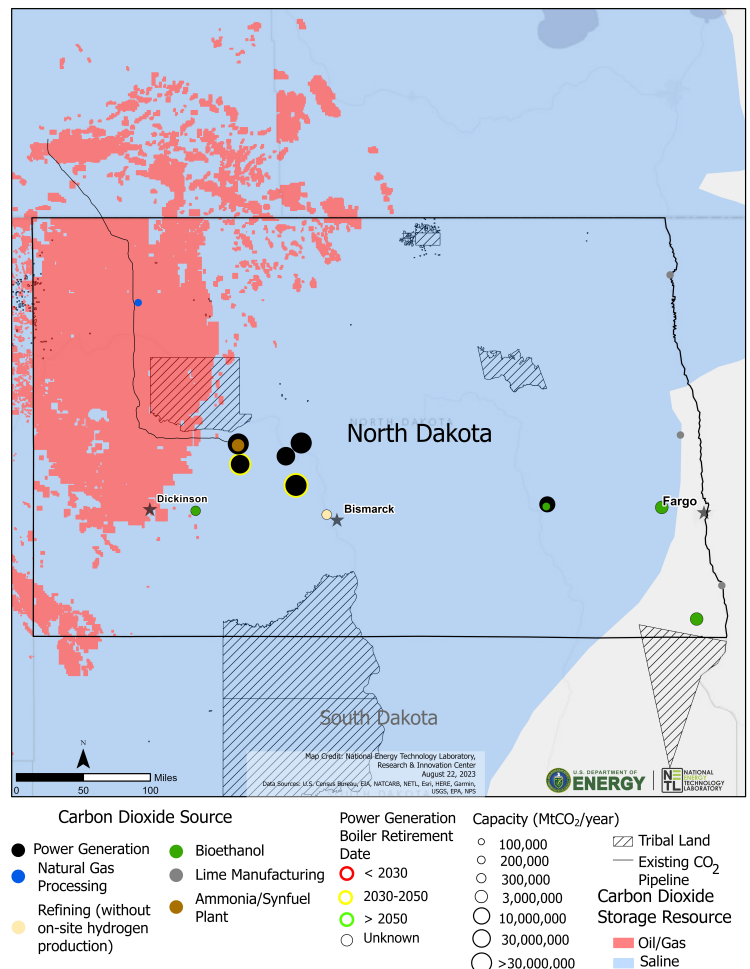
The state’s robust saline, oil, and gas geologic formations offer the potential to store up to a billion tons of carbon dioxide from power plants and industrial facilities, as

well as carbon dioxide removed from the atmosphere via direct air capture. Since the state’s resources to store carbon dioxide is significantly higher than its emissions, North Dakota could also build out infrastructure to help neighboring states achieve net-zero.

These potential benefits are made possible by tax incentives in the Inflation Reduction Act, coupled with funding provided by the Bipartisan Infrastructure Law to the Department of Energy to invest in carbon management technology and infrastructure.

Figure 1 highlights the industries across North Dakota that could potentially qualify for the 45Q tax credit, which can be used for carbon capture, carbon conversion, and direct air capture projects. The map also shows the geologic formations available across North Dakota for permanent storage of carbon dioxide emissions.

Figure 1: The sites outlined here could potentially qualify for the section 45Q tax credit



<sup>1</sup> Increased credit values for storage in saline geologic formations

Table 1 shows the potential capturable carbon dioxide emissions from industrial facilities and power plants in North Dakota that could potentially qualify for the 45Q tax credit.

Table 2 shows the estimates for the potential storage resources of North Dakota’s geologic formations to store carbon dioxide.

**Table 1: Potential 45Q-eligible carbon dioxide emissions sources capturable in North Dakota**

North Dakota		
Emission Source <sup>2</sup>	# Facilities	CO <sub>2</sub> Emissions (million metric tonnes of CO <sub>2</sub> / year)
Power Generation	10	26.74
Ammonia/Synfuel Plant	1	3.40
Bioethanol	4	1.63
Refining (without onsite hydrogen production)	1	0.25
Lime Manufacturing	3	0.10
Natural Gas Processing	1	0.04

**Table 2: Estimates of potential carbon dioxide storage in North Dakota**

North Dakota			
Storage Type	Low Estimate (billion metric tonnes of CO <sub>2</sub> )	Medium Estimate (billion metric tonnes of CO <sub>2</sub> )	High Estimate (billion metric tonnes of CO <sub>2</sub> )
Oil and Gas	0.37	0.91	2.19
Saline	71.94	136.50	234.71

## About the Office of Fossil Energy and Carbon Management

The U.S. Department of Energy’s Office of Fossil Energy and Carbon Management minimizes environmental and climate impacts of fossil fuels and industrial processes while working to achieve net-zero emissions across our economy.

Priority areas of technology work include carbon capture, carbon conversion, carbon dioxide removal, carbon dioxide transport and storage, hydrogen production with carbon management, methane emissions reduction, and critical minerals production.

<sup>2</sup> **Ammonia:** high-purity vent plus combustion carbon dioxide; accounts for facilities that already capture by reducing available carbon dioxide according to industry reported data

**Bioethanol:** fermentation and combustion carbon dioxide (biogenic and fossil); some facilities co-produce ethanol with other food production

**Lime Manufacturing:** process carbon dioxide from calcination reaction and combustion carbon dioxide from kiln

**Natural Gas Processing:** carbon dioxide from acid gas removal units only

**Refinery (without on-site hydrogen):** carbon dioxide from fluid catalytic cracker flue gas

To comply with minimum requirements for 45Q eligibility, facilities with annual carbon dioxide emissions less than 12,500 metric tons for industrial facilities and 18,750 metric tons for power generation facilities were not included

### References:

- Department of Energy
- EPA Greenhouse Gas Reporting Progra; <https://www.epa.gov/ghgreporting>
- NATCARB, Atlas V
- U.S. Energy Information Administration; <https://www.eia.gov/state/?sid=ND>

