



### 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 metric ton of carbon emissions captured and stored from industrial facilities and power plants and \$180 per metric 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 Texas

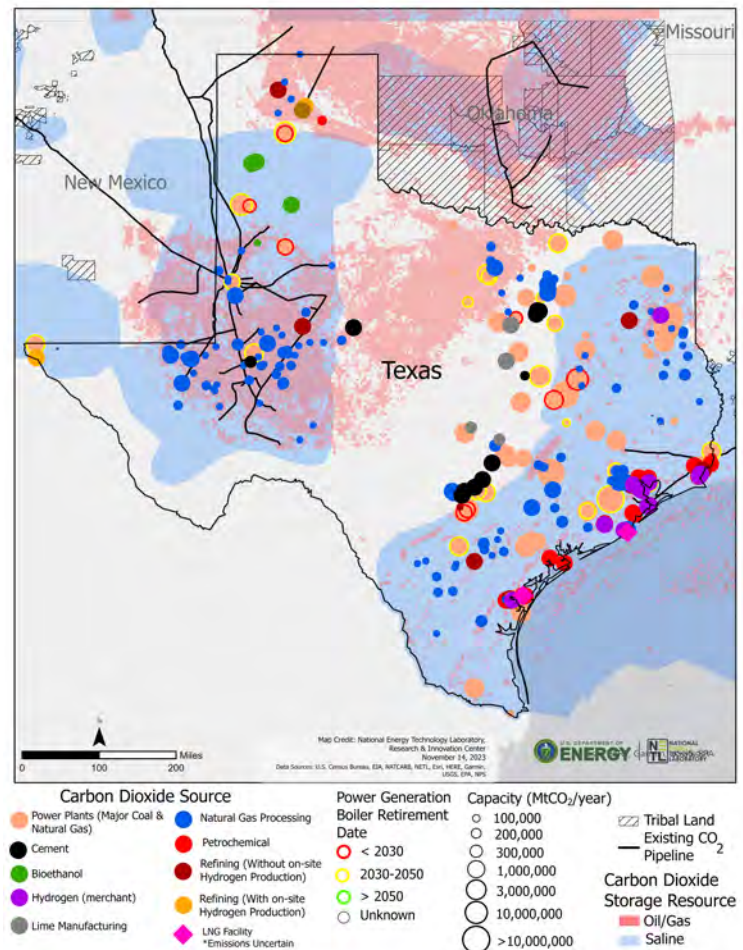
Texas leads the nation in energy consumption across all sectors and is the largest energy-consuming state in the nation. The industrial sector, including the state's refineries and petrochemical plants, accounts for more than half of the state's energy consumption and for 23% of the nation's total industrial sector energy use. Texas has the potential to significantly reduce its and the nation’s carbon dioxide (CO2) emissions and provide wide-spread economic, social, and environmental benefits to communities, workers, and businesses across the state and the country.

The state’s robust saline, oil, and gas geologic formations offer the potential to store billions of tons of carbon dioxide from power plants and industrial facilities, as well as carbon dioxide removed from the atmosphere via direct air capture.

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 Texas that could potentially qualify for the 45Q tax credit, which can be used for carbon capture, carbon conversion, and direct air capture projects. Individual sites shown on the map have not been evaluated for viability of capture. The map also shows the geologic formations available across Texas 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 Texas that could potentially qualify for the 45Q tax credit.

Table 2 shows the estimates for the potential storage resources of Texas' geologic formations to store carbon dioxide.

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

Texas		
Emission Source <sup>2</sup>	# Facilities	CO <sub>2</sub> Emissions (million metric tons of CO <sub>2</sub> / year)
Power Generation	82 (323 units)	153.48
Refining (without onsite hydrogen production)	24	53.01
Petrochemicals	33	36.76
Natural Gas Processing	175	28.53
Hydrogen	17	13.62
Cement	11	9.21
Refining (with onsite hydrogen production)	4	6.23
Lime Manufacturing	5	1.93
Bioethanol	4	1.14
Ammonia	1	0.73

**Table 2: Estimates of potential carbon dioxide storage in Texas**

Texas			
Storage Type	Low Estimate (billion metric ton of CO <sub>2</sub> )	Medium Estimate (billion metric ton of CO <sub>2</sub> )	High Estimate (billion metric ton of CO <sub>2</sub> )
Oil and Gas	133.72	137.60	141.48
Saline	331.62	1,505.79	4,199.74

## 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.

### References:

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

<sup>2</sup> **Bioethanol:** fermentation and combustion carbon dioxide (biogenic and fossil); some facilities co-produce ethanol with other food production

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

