IRA AND CARBON MANAGEMENT OPPORTUNITIES IN WYOMING

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 greenhouse gas 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[1]; 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 Wyoming

As the second biggest energy producing state and home to large coal, oil, and natural gas reserves, Wyoming has the potential to significantly reduce its carbon dioxide (CO_2) emissions and provide economic, social, and environmental benefits to communities, workers, and businesses across the state.

For example, Wyoming's Powder River Basin supplies low-cost, low-sulfur content coal, which has the lowest greenhouse gas emissions footprint of any fossil energy resource used for power generation. By deploying carbon management technologies, such as carbon capture and storage and biomass co-firing, Wyoming could be the first carbon-neutral state to generate clean reliable power.

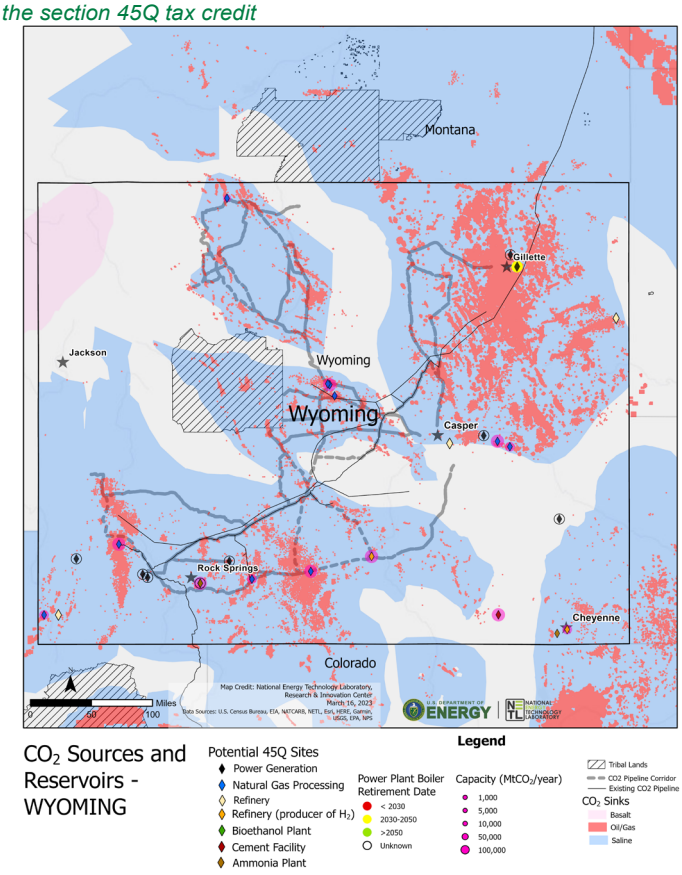
The state's robust saline, basalt, oil, and gas geologic formations offer the potential to store up to a trillion tons of carbon dioxide from industrial and biomass facilities, as well as carbon dioxide removed from the atmosphere via direct air capture.

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 Wyoming 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 Wyoming for safe and permanent storage of carbon dioxide emissions.

Table 1 shows the potential capturable carbon dioxide emissions from industrial facilities and power plants in Wyoming that could potentially qualify for the 45Q tax credit. Table 2 shows the estimates for the potential storage resources of Wyoming's geologic formations to store carbon dioxide.

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



[1] *Increased credit values for storage in saline geologic formations*

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

Wyoming		
Emission Source	# Facilities	CO_2 emissions (million metric tons of CO_2 per year)
Power Generation	20	36.4
Natural Gas Processing	10	2.19
Refining (with onsite hydrogen production)	2	0.67
Cement	1	0.55
Ammonia	1	0.45
Refining (without onsite hydrogen production)	3	0.46

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

Wyoming			
Storage Type	Low Estimate (billion metric tons of CO_2)	Medium Estimate (billion metric tons of CO_2)	High Estimate (billion metric tons of CO_2)
Oil and Gas	0.23	0.59	1.41
Saline	146.34	570.92	1539.56

**Note storage estimates for basalt are not currently available*

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.

To learn more, visit energy.gov/FECM. For press inquiries, email FECMCommunications@hq.doe.gov.

References

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