



Inflation Reduction Act of 2022

Industrial Decarbonization Provisions

Snapshot of IRA Industrial Investments

The Inflation Reduction Act of 2022 (H.R. 5376), which was signed by President Biden on August 16, 2022, marks a monumental investment in the solutions necessary to achieve U.S. climate goals. This package will set the stage for private investment, protect energy communities, support family-sustaining jobs, and spur emissions reductions from the vital, yet challenging, industrial sector.

U.S. industry is essential to jobs and prosperity, producing the materials necessary for our everyday lives, from transportation infrastructure to the buildings in which we live and work. Policies and incentives within the Inflation Reduction Act of 2022 will help mitigate both industry’s climate warming emissions and the pollutants which adversely impact communities.

Enhancements to 48C Tax Credit	Extension with direct pay of the credit to include other technologies designed to reduce greenhouse gas emissions
Enhancements to 45Q Tax Credit	Expanded eligibility, direct pay, enhanced credit values, and lower capture thresholds
Clean Hydrogen Production Tax Credit	Direct pay credit for hydrogen produced with a carbon intensity less than 4kg CO ₂ e/1kg H ₂
Low-Embodied Carbon Materials Investments	Funding for Environmental Product Declarations and labeling of low-carbon construction materials
Funding for the Advanced Industrial Facilities Deployment Program	Financing for advanced technologies to reduce greenhouse gas emissions at industrial facilities

Overview of IRA Industrial Investments

Expanded eligibility for the 48C Advanced Manufacturing Tax Credit:

The bill provides \$10 billion in additional 48C credit allocations, including an extension of the Advanced Energy Project Credit to include industrial applications beyond clean energy system production. The new definition includes applications which re-equip industrial or manufacturing facilities with low- or zero- carbon process heat systems; carbon capture, utilization and storage; energy efficiency and waste reduction; energy storage systems; and any other technology designed to reduce greenhouse gas emissions.



Critical enhancements to the 45Q Carbon Oxide Sequestration Tax Credit:

Multiyear Extension of the Commence Construction Window:

Moving forward, any carbon capture, Direct Air Capture, or carbon utilization projects that commence construction before January 1, 2033, will qualify for 45Q.

Enhanced Credit Values for Industry and Power:

The bill increases 45Q credit values for any capture equipment placed in service after December 31, 2022, to \$85 per metric ton for industrial and power facilities that store capture CO₂ in saline geologic formations, \$60 for utilization of captured CO₂ and its precursor carbon monoxide to produce low and zero-carbon fuels, chemicals, building materials and other products, and \$60 for enhanced oil recovery. As with the Hydrogen PTC, 45Q is under a 5x multiplier for prevailing wage.

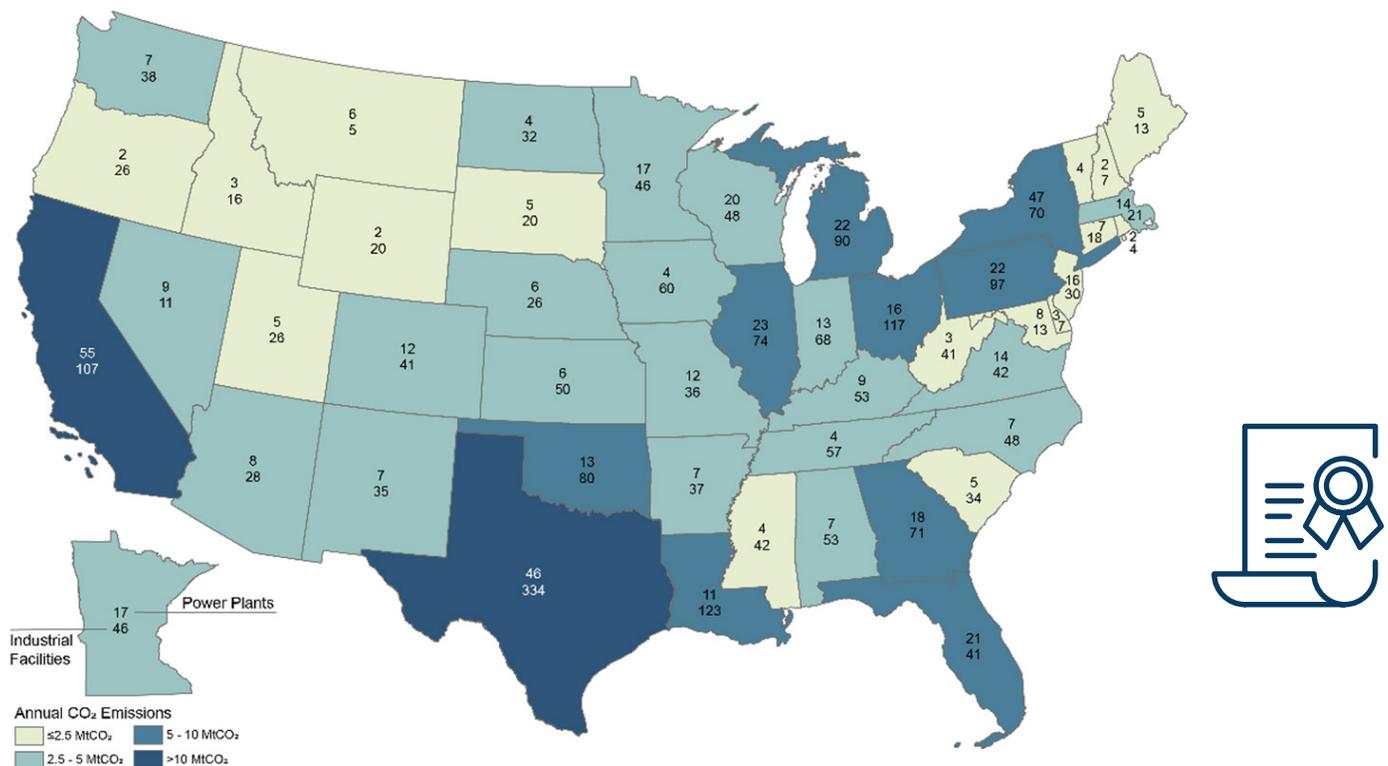
Direct Pay:

Domestic manufacturing projects will receive direct pay for the first 5 years after the carbon capture equipment is placed in service (with no direct payment for the final 7 years of the credit).

Significantly Lower Capture Thresholds:

Lower thresholds allow for greater participation across facilities. The new thresholds are as follows: Direct Air Capture: 1,000 metric tons/taxable year; Electric Generating Facility: 18,750 metric tons/taxable year, paired with the design capacity requirement; Any other facility: 12,500 metric tons/taxable year.

The figure below details the number of newly eligible power and industrial facilities thanks to these enhancements.



Facility Type	Total Facilities	Total Annual Emissions (MtCO ₂)	Average Annual Emissions per Facility (tCO ₂)
Power Plants	597	90.5	151,664
Industry	2,453	110.3	44,980

*Table values include Alaska and Hawaii. Alaska contains 14 power plants and 23 industrial facilities totaling annual emissions of 2.3 MtCO₂ and 1.03 MtCO₂, respectively. Hawaii contains 10 power plants and 2 industrial facilities totaling 1.4 MtCO₂ and .11 MtCO₂, respectively. Data from U.S. Environmental Protection Agency Office of Atmospheric Programs, Greenhouse Gas Reporting Program (GRGHP), 2021. Data accessed August, 2022.

The Clean Hydrogen Production Tax Credit:

To incentivize clean hydrogen production, this credit is scaled such that the lower the carbon intensity of the hydrogen produced, the higher the credit value. The valuation is technology and production method agnostic, awarding credit based on greenhouse gas lifecycle assessments. This “all of the above” approach will help spur clean hydrogen production and provide a critical boost to this nascent economy.

The Hydrogen PTC (Production Tax Credit) is equal to the number of kilograms of clean hydrogen produced, multiplied by the applicable amount* of \$0.60, and again by the applicable percentage rate as outlined in the table to the right.

Table 1. Applicable percentage as determined by lifecycle greenhouse gas rates

Carbon Intensity (kgCO ₂ e/kg H ₂)	Max Hydrogen PTC Credit (\$/kg H ₂)
4kg – 2.5	20%
2.5kg – 1.5	25%
1.5kg – 0.45	33.4%
<0.45kg	100%

*The applicable amount is subject to a 5x multiplier should prevailing wage provisions be met, making the amount for such facilities effectively \$3.00.



Low-Embodied Carbon Materials Investments:

The bill also allocates \$5.475 billion across the following programs in support of low-embodied carbon materials development. Reporting measures like Environmental Product Declarations can be prohibitively costly, making it difficult to acquire a clear and comparable dataset for emissions intensity benchmarking and low-carbon materials procurement. Investments such as these are critical to meaningfully reducing the carbon intensity of the built environment.

\$2.15 billion

for the Federal Buildings Fund

\$2 billion

for Federal Highway Administration

\$975 million

for the General Services Fund

\$250 million

for Environmental Product Declarations

\$100 million

for Low-embodied carbon labeling for construction materials



The Advanced Industrial Facilities Deployment Program:

\$5.812 billion is allocated to the Office of Clean Energy Demonstrations, covering financial assistance for projects to purchase, install, or implement advanced technology designed to accelerate greenhouse gas emissions reductions at an eligible facility; retrofit, upgrade, or make operational improvements; and conduct engineering studies and other work needed to prepare for such advancements to net-zero emissions. This financing (with a 50% cost share) will help lower the financial hurdle to decarbonizing industrial processes.

Conclusion:

The Inflation Reduction Act marks a historic moment in both U.S. climate policy and industrial policy. By enacting groundbreaking policies that will unlock action to decarbonize industry, it places the U.S. on a new path for an innovative, cleaner economy, generating jobs and enhancing competitiveness. This investment in the environment and the economy is a transformative step to achieving our goals.