

INFLATION REDUCTION ACT Overview

EPA & DOE Climate / Clean Energy Elements

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INFLATION REDUCTION ACT SUMMARY

Energy and Climate	-\$386 billion
Clean Electricity Tax Credits	-\$161 billion
Air Pollution, Hazardous Materials, Transportation and Infrastructure	-\$40 billion
Individual Clean Energy Incentives	-\$37 billion
Clean Manufacturing Tax Credits	-\$37 billion
Clean Fuel and Vehicle Tax Credits	-\$36 billion
Conservation, Rural Development, Forestry	-\$35 billion
Building Efficiency, Electrification, Transmission, Industrial, DOE Grants and Loans	-\$27 billion
Other Energy and Climate Spending	-\$14 billion

www.crfb.org/blogs/cbo-scores-ira-238-billion-deficit-reduction

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IRA - DOE INNOVATIVE CLEAN ENERGY

Title 17 Innovative Clean Energy Loan Guarantee Program	\$3.6 billion credit subsidy up to \$40 billion in loan authority	open to all currently eligible Title 17 Innovative Clean Energy technology categories, including fossil energy and nuclear energy
Loan Programs Office	for projects eligible for loan guarantees under Section 1703	expanded activities support projects involving critical minerals processing, manufacturing, and recycling, and removing the innovation requirement for State Energy Financing Institution-backed projects

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IRA - DOE ADVANCED INDUSTRIAL TECHNOLOGY

Advanced Industrial Facilities Deployment Program	<p>\$5.8 billion</p> <p>financial assistance – grants, rebates, direct loans, cooperative agreements -- on a competitive basis</p> <p>Competitive criteria: amount of ghg reduction, benefit to people in area of facility</p> <p>50/50 maximum federal cost share</p>	<p>to install new or retrofit industrial technologies that reduce greenhouse gas emissions.</p> <p>For non-power industrial or manufacturing facilities engaged in energy-intensive processes</p>

DOE GHG REDUCTION GRANTS

DOE administers \$62 billion in grants to reduce ghgs under Bipartisan Infrastructure Law, support demonstration and deployment of decarbonizing technology by industrial sector.

August 31, 2022:

\$46 Million to Explore New Technologies That Convert Carbon and Waste Into Clean Energy:

\$46 million for 22 projects that will create biofuel energy to help decarbonize the transportation and power generation sectors. These innovative projects, led by universities, private companies, municipal resource management entities, and local governments, will develop waste conversion and carbon capture technologies to produce fuels from biomass and waste streams, and enable algal systems to capture carbon and turn it into alternative clean energy sources. Advancing renewable and sustainable energy sources through research and innovation will play a critical role in achieving President Biden's goal of net-zero emissions by 2050.

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DOE Industrial Efficiency and Decarbonization

Energy Efficiency & Renewable Energy (EERE) **Advanced Manufacturing Office**
Industrial Emissions Reduction Technology Development Program

Two-part mission 1. industrial decarbonization, as well as
 2. manufacturing linked to clean energy, eg wind turbines or semiconductor manufacturing.

AMO split 1. Industrial Efficiency and Decarbonization Office
 2. Advanced Materials and Manufacturing Technologies Office

New Industrial Technology Innovation Advisory Committee ITIAC ITIAC@ee.doe.gov

- established April 20, 2022 under Energy Independence and Security Act (EISA)
- Focus areas: EISA section 454(c) industrial production process, alternative materials, net zero fuels, etc
- advise DOE Secretary on the Industrial Emissions Reductions Technology Development Program
 - Identify and evaluate technologies being developed by the private sector
 - Identify technology gaps
 - analyze factors that prevent adoption of emissions reduction technologies by private sector
 - Strategic plan

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DOE Industrial Efficiency and Decarbonization FOA

September 7, 2022

“Industrial Efficiency and Decarbonization FOA”— that will support DOE’s efforts to decarbonize the U.S. industrial sector and move the U.S. towards a net-zero economy by 2050.

This \$104 million funding opportunity advances decarbonization technologies that will reduce the carbon footprint of the industrial sector. Projects funded under the FOA will drive the transformational technology and innovation necessary to reduce industrial greenhouse gas emissions.

June 2022

Funding opportunity announcement (FOA): \$70 million for decarbonizing industrial process heating

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DOE Industrial Decarbonization Roadmap September 2022

EXECUTIVE SUMMARY

The U.S. industrial sector is considered a “difficult-to-decarbonize” sector of the energy economy, in part because of the diversity of energy inputs that feed into a heterogenous array of industrial processes and operations. In 2020, the industrial sector accounted for 33% of the nation’s primary energy use and 30% of energy-related carbon dioxide (CO₂) emissions.

*Decarbonization Pathways to Net-Zero Emissions by 2050 for the Five Energy-Intensive Industrial Subsectors Studied : **iron and steel, chemicals, food and beverage, petroleum refining, and cement.***

The roadmap identifies four key “pillars” of industrial decarbonization: energy efficiency; industrial electrification; low-carbon fuels, feedstocks, and energy sources (LCFFES); and carbon capture, utilization, and storage (CCUS).

For each pillar, this roadmap identifies the primary barriers and opportunities, as well as the key RD&D needs. The result is an integrated RD&D action plan for the five energy-intensive focus industries to reach net-zero emissions by 2050 (Figure ES 1). Specifically, this roadmap highlights technology pathways to reduce emissions by 87%, or almost 400 million metric tons of CO₂ per year, by 2050 for the five subsectors studied.

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IRA – EPA

EPA and the Inflation Reduction Act*

\$41.5 billion in appropriated funds, supporting 24 new and existing programs, including:

- ▶ \$27 billion to capitalize existing and new green banks and fund state and local government investment in distributed energy and other clean technologies
- ▶ \$5 billion for Climate Pollution Reduction Grants at the state, local, and Tribal level to develop and implement plans to reduce greenhouse gas emissions
- ▶ \$3 billion in Environmental and Climate Justice Block Grants to fund community-based nonprofit organizations
- ▶ \$3 billion in Grants to Reduce Air Pollution at Ports to purchase & install zero-emission technology and develop climate action plans
- ▶ \$1.55 billion for the Methane Emissions Reduction Program to Fund grants and technical assistance to accelerate emissions reduction from petroleum and natural gas systems
- ▶ \$1 billion for Clean Heavy-Duty Vehicles to provide grants, rebates, and contract support to replace heavy duty vehicles with zero emission alternatives

* EPA AA OAR Joe Goffman presentation to CAAAC

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IRA - EPA

Early Program Planning in OAR *

- ▶ Identifying existing program structures and interconnections to move quickly where we can
- ▶ Thoughtfully developing new programs informed by analysis and stakeholder engagement
- ▶ Considering innovative implementation strategies for increased efficiency and maximum effect
- ▶ Prioritizing early and significant pollution reductions

* EPA AA OAR Joe Goffman presentation to CAAAC

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IRA - EPA

Key IRA Provisions – Climate Pollution Grants and Methane *

- ▶ Climate Pollution Reduction Grants – \$5 billion to assist states, air pollution control agencies, tribes, and local governments in developing (\$250 million) and implementing (\$4.75 billion) strong, local climate pollution reduction strategies.
- ▶ Methane Emissions & Waste Reduction Incentive Program
 - ▶ \$1.55 billion to reduce methane emissions through financial assistance (grants, rebates, contracts, loans, and other activities) and technical assistance.
 - ▶ Use of funds can include:
 - Preparing and submitting greenhouse gas reports
 - Methane emissions monitoring under CAA 103
 - Reducing methane and other greenhouse gas emissions
 - Implementing the waste emissions charge for methane from applicable facilities that report more than 25,000 metric tons of CO2 equivalent per year to the GHG Reporting Program and that exceed statutorily specified waste emissions thresholds.

* EPA AA OAR Joe Goffman presentation to CAAAC

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Key IRA Provisions – Transportation & Monitoring*

► Transportation

- Clean Heavy-Duty Vehicles – \$1 billion to replace fossil-fuel models with zero-emission school buses, refuse haulers, delivery vehicles, etc
- Clean Ports -- \$3 billion for the purchase or installation of zero-emission port equipment/technology
- Diesel Emissions Reduction Act – \$60 million to replace legacy diesel equipment with cleaner versions in low-income, disadvantaged communities
- Mobile Source grants – \$5 million in grants for states to adopt California standards

* EPA OAR Asst Administrator Joe Goffman presentation to CAAAC

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Key IRA Provisions – Transportation & Monitoring*

► Monitoring – Air Quality

- Fenceline – \$117.5 million to deploy, upgrade and support fenceline air monitoring and supporting community monitoring
- Multi-pollutant – \$50 million for new multi-pollutant monitoring stations and to replace, repair, operate, and maintain existing monitors.
- Air Quality Sensors – \$3 million to deploy, integrate, and operate air quality sensors in low-income and disadvantaged communities
- Wood Heaters – \$15 million for grants and other activities for testing and other agency activities to address emissions from wood heaters
- Methane Monitoring – \$20 million to measure emissions

* EPA OAR Asst Administrator Joe Goffman presentation to CAAAC

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IRA Key IRA Provisions – Greenhouse Gases*

- ▶ HFCs – AIM Act – additional implementation funding
- ▶ Low Emissions Electricity Program – new funds under a new section of the Clean Air Act to reduce emissions from domestic electricity generation and use.
 - \$68 million for education, partnerships, technical assistance, and outreach focused on consumers; low-income and disadvantaged communities; Industry, and State, Tribal, and Local Governments
- ▶ Corporate Reporting – \$5 million to develop standards and methodologies to promote transparency of corporate climate commitments and related plans to reduce GHGs
 - Support EPA in transparently tracking corporate progress in meeting their commitments and implementing their plans

* EPA OAR Asst Administrator Joe Goffman presentation to CAAAC

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IRA - EPA

IRA Key IRA Provisions – Greenhouse Gases*

School Air Quality Grants and Technical Assistance

- ▶ \$50 million to support improved air quality in schools
 - \$37.5 million for grants and other activities to monitor and reduce air pollution and greenhouse gas emissions at schools in low-income and disadvantaged communities.
 - \$12.5 million for technical assistance to schools in low-income and disadvantaged communities to address environmental issues, develop school environmental quality plans that include standards for school building, design, construction, and renovation, and to identify and mitigate ongoing air pollution hazards.

* EPA OAR Asst Administrator Joe Goffman presentation to CAAAC

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Bipartisan Infrastructure Law - EPA

Environmental Justice (EJ)

- The U.S. Environmental Protection Agency (EPA) announced two listening sessions to collect input on the development of a new grant opportunity made possible by the **\$100 million** investment in the agency's Pollution Prevention (P2) program from President Biden's **Bipartisan Infrastructure Law (BIL)**. The new grant opportunity will encourage businesses that are working in, or working with, underserved or overburdened communities to adopt P2 practices in a way that advances the Biden-Harris Administration's bold environmental agenda.
- A listening session on Sept. 21 will seek input from Tribes on this new grant opportunity. Another session on Sept. 29 is for all potential applicants and stakeholders. For both listening sessions, EPA is interested in understanding how these grants can be most accessible and useful to applicants. *EPA will also seek additional insight into how funded projects can help businesses adopt P2 approaches to address environmental problems in underserved/overburdened communities.* Additionally, the agency is also interested in feedback on which projects would best support the grant's goals and which barriers exist to potential applicants and what can be done to minimize those barriers. Source: EPA, 9/1/2022.

EPA CAA Authority to regulate ghgs

IRA Title VI TITLE VI—COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
 Subtitle A—Air Pollution

SEC. 60101. CLEAN HEAVY-DUTY VEHICLES

The Clean Air Act is amended by inserting after section 131 of such Act (42 U.S.C. 7431) the following:

(d) DEFINITIONS.—For purposes of this section: . . .

(4) GREENHOUSE GAS.—The term ‘greenhouse gas’ means *the air pollutants* carbon dioxide, hydrofluorocarbons, methane, nitrous oxide, perfluorocarbons, and sulfur hexafluoride.

(5) ZERO-EMISSION VEHICLE.—The term ‘zero-emission vehicle’ means a vehicle that has a drivetrain that produces, under any possible operational mode or condition, zero exhaust emissions of— (A) any air pollutant that is listed pursuant to section 108(a) (or any precursor to such an air pollutant); and “(B) any greenhouse gas.”

EPA CAA Authority to regulate ghgs

Massachusetts v. EPA (US Supreme Court, April 2, 2007)

- Petition for EPA to regulate ghg emissions from cars
- EPA position: carbon dioxide is not an “air pollutant” under CAA §7602
- SUPREME COURT :
- “[T]he first question is whether . . . the Clean Air Act authorizes EPA to regulate greenhouse gas emissions from new motor vehicles.”
- “While the Congresses that drafted §202(a)(1) might not have appreciated the possibility that burning fossil fuels could lead to global warming, they did understand that without regulatory flexibility, changing circumstances and scientific developments would soon render the Clean Air Act obsolete. The broad language of §202(a)(1) reflects an intentional effort to confer the flexibility necessary to forestall such obsolescence.”
- “Because greenhouse gases fit well within the Clean Air Act’s capacious definition of “air pollutant,” we hold that EPA has the statutory authority to regulate the emission of such gases from new motor vehicles.”

EPA CAA Authority to regulate ghgs

WV v. EPA (US Supreme Court 2022)

ISSUE: EPA's "authority to establish emissions caps at a level reflecting "the application of the best system of emission reduction . . . adequately demonstrated." 42 U. S. C. §7411(a)(1). Is that broad enough to infer authority to establish the Clean Power Plan?

SUPREME COURT:

"Agencies have only those powers given to them by Congress, and "enabling legislation" is generally not an "open book to which the agency [may] add pages and change the plot line."

"On EPA's view of Section 111(d), Congress implicitly tasked it, and it alone, with balancing the many vital considerations of national policy implicated in deciding how Americans will get their energy. EPA decides, for instance, how much of a switch from coal to natural gas is practically feasible by 2020, 2025, and 2030 before the grid collapses, and how high energy prices can go as a result before they become unreasonably "exorbitant."

" the Government must—under the major questions doctrine—point to "clear congressional authorization" to regulate in that manner."

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EPA CAA Authority to regulate ghgs

Whitman v. American Trucking Ass'ns (US Supreme Court 2001).

In requiring an agency to point to a clear “textual commitment of authority” “Congress . . . does not alter the fundamental details of a regulatory scheme in vague terms or ancillary provisions— it does not, one might say, hide elephants in mouseholes.”

CAA

42 U.S. Code § 7602 - Definitions

(g) The term “air pollutant” means *any air pollution agent* or combination of such agents, including any physical, chemical, biological, radioactive (including source material, special nuclear material, and byproduct material) substance or matter *which is emitted into or otherwise enters the ambient air*. Such term includes any precursors to the formation of any air pollutant, to the extent the Administrator has identified such precursor or precursors for the particular purpose for which the term “air pollutant” is used.