



EXPLAINER

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Analysis of Climate and Energy Provisions in the “Inflation Reduction Act of 2022”

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Introduction

On July 27, 2022, Senate Majority Leader Chuck Schumer (D-NY) and Senator Joe Manchin (D-WV) announced a deal to significantly expand the scope of Senate Democrats’ planned reconciliation bill. The agreement, titled the [Inflation Reduction Act of 2022](#) (H.R. 5376), would raise an estimated [\\$739 billion in revenue over 10 years](#) and spend \$433 billion, reducing the deficit by approximately \$306 billion over a decade.

The expanded legislation now contains [\\$369 billion](#) in climate and energy provisions, including nearly [\\$280 billion](#) in clean energy tax incentives. This would constitute the largest-ever U.S. investment in climate action and is designed to accelerate the buildout of renewable energy, speed up the adoption of electric vehicles (EVs), and aid in the deployment of energy efficiency technologies in low-income and minority communities. Together, these long-term investments in clean energy would reduce inflation, lower household energy bills, and help reduce U.S. dependence on fossil fuels, particularly foreign oil. According to multiple analyses by [Rhodium Group](#) and [Energy Innovation](#), its passage would put the U.S. on a credible path to achieving a roughly 40% reduction in greenhouse gas emissions by 2030.

The Senate is expected to vote on the budget reconciliation agreement as soon as next week. Majority Leader Schumer released the following [statement](#) on Wednesday, July 27: “I expect that the remaining work with the parliamentarian will be completed in the coming days and the Senate will vote on this transformative legislation next week.” Because Senate Democrats plan to advance this bill via reconciliation to avoid the filibuster, the Senate’s parliamentarian must advise on whether the bill adheres to [reconciliation’s strict rules](#) before it moves to the Senate floor.

Clean Electricity and Energy Transmission

The Inflation Reduction Act includes \$121 billion in clean electricity tax incentives to supercharge the installation of renewable energy to the grid and reduce household energy bills. While gas prices are a major driver of inflation — accounting for almost [one-third](#) of price increases since the pandemic began — clean energy sources such as wind and solar actually have a [deflationary effect](#) on

the economy. Specifically, the legislation includes enhanced Investment and Production Tax Credits, an enhanced credit for renewable energy projects built in low-income communities, and a series of federal grant and loan programs to build energy transmission projects around the country.

The clean energy tax incentives found throughout the legislation also include prevailing wage requirements and still provide [direct pay](#) eligibility for rural electric co-ops, government agencies, and other non-tax entities. However, the [refundability](#) of these tax incentives has mostly been eliminated, which will limit their overall effectiveness and accessibility. Without the refundability mechanisms, low- and middle-income households that do not owe enough in federal income taxes cannot receive the full value of the credits.

CLEAN ELECTRICITY AND TRANSMISSION			
Program	Section	Description/Analysis	Amount
Renewable Energy Production Tax Credit	13101	Extension and modification of the Production Tax Credit (PTC) for electricity produced from renewable resources including solar, wind, and geothermal projects.	\$51.062 billion
Investment Tax Credit	13102	Extension and modification of the Investment Tax Credit (ITC) to expand clean energy manufacturing for electric vehicles, wind turbines, and solar panels. The expanded tax credit also applies to energy storage technology, qualified biogas properties, and microgrid controllers.	\$13.962 billion
Low-Income Solar and Wind Investment Tax Credit	13103	Enhanced tax incentive for wind and solar projects built in or connected to low-income communities.	N/A (Included in Sec. 13101-13102 tax credits)
Carbon Capture Tax Credit	13104	Extension and modification of tax credit for carbon capture, storage, and sequestration (CCS). To qualify, the technology must have a capture design capacity of at least 75%.	\$3.229 billion
Nuclear Production Tax Credit	13105	Tax credit for zero-emission nuclear power production, including TVA reactors which would qualify for direct payments as non-tax entities.	\$30.001 billion

Clean Electricity Production Credit	13701	New technology-neutral PTC for net-zero electric generating or storage facilities.	\$11.204 billion
Clean Electricity Investment Credit	13702	New technology-neutral IT for qualified investments in electric generating facilities or energy storage properties.	\$50.858 billion
Cost recovery for qualified facilities, qualified property, and energy storage technology	13703	Clean energy cost recovery tax credit.	\$624 million
Rural Electric Cooperative Loans	22004	USDA loan assistance for rural electric cooperatives.	\$9.7 billion
DOE Clean Energy Loan Guarantee Program	50141	Expands DOE's clean energy loan authority which was originally authorized in 2005 to lend nearly \$70 billion to innovative clean energy projects.	\$3.6 billion (plus \$40 billion in loan guarantee authority)
Transmission Facility Loans	50151	Direct loan authority for transmission facility financing.	\$2 billion
Interstate Transmission Line Grants	50152	Grants to facilitate the siting of interstate electricity transmission lines.	\$760 million
Rural Renewable Energy Loans	22001	Additional loan authority for rural renewable energy.	\$1 billion
Interregional Transmission Planning Investments	50153	Funding for interregional and offshore wind electricity transmission planning, modeling, and analysis.	\$100 million

Tribal Energy Loan Guarantee Program	50145	Loan guarantee program to support economic opportunities for federally recognized tribes and Alaska Native Corporations through energy development projects and activities.	\$75 million
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Clean Transportation

The Inflation Reduction Act contains [historic investments](#) to decarbonize the transportation sector, including \$22.6 billion in tax incentives and \$3 billion to electrify the U.S. Postal Service’s (USPS) delivery fleet.

Specifically, the Inflation Reduction Act extends the \$7,500 tax credit for the purchase of a new EV and \$4,000 for the purchase of a used EV. Currently, the EV tax credit includes a [cap of 200,000 vehicles](#) sold per manufacturer, meaning companies like Tesla and GM no longer qualify for the federal tax credit. The legislation eliminates this cap. To qualify for the tax credit, however, automakers are required to manufacture EVs using minerals that are extracted or processed in countries with U.S. free trade agreements and utilize batteries that include a large percentage of components manufactured or assembled in North America. Finally, eligibility for the EV tax credits would be capped to an income level of \$150,000 for a single filing taxpayer and \$300,000 for joint filers for new vehicles at \$75,000 and \$150,000 for used cars. Despite the importance of the bill's investments in clean transportation, the Inflation Reduction Act prioritizes automobile transportation with no meaningful investments for electric bikes or public transit.

CLEAN TRANSPORTATION			
Program	Section	Description/Analysis	Amount
EV Tax Credit	13401	\$7,500 consumer tax credit for the purchase of new EVs.	\$7.541 billion
Used EV Tax Credit	13402	\$4,000 consumer tax credit for the purchase of used EVs.	\$1.347 billion
Commercial EV Tax Credit	13403	New commercial tax credit for qualified commercial clean vehicles.	\$3.583 billion
EV Charging/ Alternative Fuels Tax Credit	13404	Alternative refueling property credit.	\$1.738 billion

Biodiesel Tax Credit	13201	Extension of incentives for biodiesel, renewable diesel, and alternative fuels.	\$5.625 billion
Aviation Fuel Tax Credit	13203	Sustainable Aviation Fuel Credit	\$49 million
Alternative and Clean Fuels Production Tax Credit	13704	Extends a \$1/gallon tax credit for biodiesel and renewable diesel through 2024, extends the alternative fuel credit, the alternative fuel mixing credit, and payments for alternative fuels through 2024.	\$2.946 billion
USPS Electric Vehicles	70002	Funding for USPS to purchase zero-emission electric delivery vehicles and install charging infrastructure.	\$3 billion
Clean Ports	60102	Supports the purchase and installation of zero-emission equipment and technology at ports.	\$3 billion
Zero-emissions trucks and buses	60101	Funding for clean heavy-duty vehicles like school, transit buses, and garbage trucks.	\$1 billion
Neighborhood Access and Equity Grants Program	60501	Supports neighborhood equity, safety, and affordable transportation access, including reconnecting communities divided by existing highways and other legacy infrastructure.	\$3 billion
National Laboratory System	50172	Office of Science: \$1.55 billion; Office of Fossil Energy and Carbon Management: \$150 million; Office of Nuclear Energy: \$150 million Office of Energy Efficiency and Renewable Energy: \$150 million	\$2 billion

Rural Energy for America Program	22002	Hydrogen/fuel cell technologies: \$1 billion Underutilized renewable energy technologies: \$177 million	\$1.177 billion
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Buildings and Energy Efficiency

Currently, buildings are [responsible for 40%](#) of global energy consumption and 33% of greenhouse gas emissions. Reducing energy consumption and improving energy efficiency in homes, offices, factories, and schools is one of the fastest and most effective ways to achieve significant greenhouse gas emissions reductions. The Inflation Reduction Act makes wide-ranging investments in efficiency across buildings, industry, and transportation, that will create new jobs, reduce carbon emissions, and save consumers and businesses money.

BUILDINGS AND ENERGY EFFICIENCY			
Program	Section	Description/Analysis	Amount
Residential Energy Efficiency Tax Credit:	13301	Extension, increase, and modification of nonbusiness energy property credit.	\$12.541 billion
Residential Clean Electricity Tax Credit:	13302	Residential clean energy credit.	\$22.022 billion
Commercial Energy Efficiency Tax Deduction:	13303	Energy efficient commercial buildings deduction.	\$362 million
New Energy Efficient Home Tax Credit:	13304	Extension, modification, and increase of new energy efficient home credit.	\$2.043 billion
Home Electrification and Energy Efficiency Rebates:	50121	Home energy performance-based, whole house rebates. Rebates for energy efficiency retrofits range from \$2,000-\$4,000 for individual households and up to \$400,000 for multifamily buildings.	\$9 billion
GSA Federal Building Investments:	60502	Funding for GSA's Federal Buildings Fund to convert GSA-owned or managed buildings to high-performance green buildings.	\$250 million

High-efficiency electric home rebate program:	50122	Funding for states to develop a high-efficiency electric home rebate program and \$225 million for Indian tribes to do the same.	\$4.3 billion
State-based home energy efficiency contractor training grants:	50123	Funding to establish state programs providing training and education to contractors who install home energy efficiency and electrification improvements.	\$200 million
Affordable Housing Resilience and Efficiency Investments	30002	Funding to improve energy efficiency or water efficiency or climate resilience of affordable housing.	\$1 billion
Efficient Building Code Adoption Grants:	50131	Assistance for latest and zero building energy code adoption.	\$1 billion

Manufacturing

The Inflation Reduction Act provides \$50 billion in tax incentives to boost domestic clean energy manufacturing of solar panels, wind turbines, batteries, and the processing of critical minerals mineral processing, as well as an additional \$11.5 billion for industrial emissions reduction programs. The legislation also provides \$500 million for the Defense Production Act to boost the manufacturing of energy-efficient technologies such as heat pumps. In June, President Biden [invoked the Defense Production Act](#) to accelerate domestic manufacturing in the renewable energy sector. Together, these provisions would create good-paying union jobs, reduce energy prices, and help relieve supply chain bottlenecks.

MANUFACTURING			
Program	Section	Description/Analysis	Amount
Clean Manufacturing Investment Tax Credit	13501	Extension of the Advanced Energy Project Credit.	\$6.225 billion
Wind, Solar, and Battery Manufacturing Production Tax Credit	13502	Advanced manufacturing production credit.	\$30.622 billion
Clean Hydrogen Tax Credit	13204	Hydrogen Production Tax Credit	\$13.166 billion

Industrial Emissions Reduction Investments	50161	Funding for the Advanced Industrial Facilities Deployment Program.	\$5.8 billion
Defense Production Act	30001	Additional funding for the Defense Production Act to be used for the expanded production of heat pumps and the processing of critical minerals.	\$500 million
Low-Carbon Materials Investments	60116; 60503; 60504; 60505; 60506; 70006.	Federal Buildings Fund: \$2.15 billion Federal Highway Administration: \$2 billion General Services Fund: \$975 million Environmental Product Declarations: \$250 million Low-embodied carbon labeling: \$100 million	\$5.7 billion
EV Manufacturing Loans:	50142	Advanced Technology Vehicle Manufacturing.	\$3 billion
EV Manufacturing Grants:	50143	Domestic manufacturing conversion grants.	\$2 billion

Environmental Justice

Low-income communities and communities of color are [disproportionately exposed](#) to toxic pollution from toxic dumps, power plants, and other industrial facilities concentrated in their neighborhoods. The Inflation Reduction Act makes investments in a wide range of program areas including clean air, clean transportation, and the cleanup of toxic pollution. Moreover, the legislation would allocate \$27 billion for the establishment of a Greenhouse Gas Reduction Fund. Modeled after the success of state and local [green banks](#), the Greenhouse Gas Reduction Fund is designed to provide low-cost financing for clean energy infrastructure projects around the country. There is still room for improvement, however. For example, many agencies have yet to finalize guidance to ensure compliance with President Biden’s Justice40 Initiative.

ENVIRONMENTAL JUSTICE			
Program	Section	Description/Analysis	Amount
Clean Energy Fund	60103	Establishes a new Greenhouse Gas Reduction Fund to accelerate the deployment of low-carbon technologies. The fund also requires that at least 40% of the benefits of these investments will flow to disadvantaged communities.	\$27 billion
Reinstatement of Superfund Pollution Tax	13601	Raises the reinstated Superfund excise tax rate on petrochemicals from 9.4 cents to 16.4 cents to adjust for inflation.	Revenue of \$11.719 billion
Black Lung Disability Trust Fund Extension	13901	Permanent extension of tax to fund the black lung disability trust fund. The Black Lung Benefits Program provides monthly payments and medical treatment benefits to coal miners disabled from black lung arising from their employment in or around the nation's coal mines. It also provides monthly payments to eligible surviving dependents.	Revenue of \$1.159 billion
Climate Pollution Reduction Grants	60114	EPA funding for states, municipalities, and Indian Tribes to develop and implement plans to reduce climate pollution. The legislation provides \$250 million to develop plans and directs EPA to make planning grants to at least one recipient in each state. EPA will then competitively award \$4.75 billion to implement the plans to reduce climate pollution.	\$5 billion
Environmental and Climate Justice Block Grants	60201	Establishes an EPA grant program to reduce pollution and climate threats in low-income communities and communities of color. These grants would provide support for community-led priorities to reduce pollution and improve public health and climate readiness.	\$3 billion

Tribal and Native Hawaiian Climate Resilience Investments:	80001; 80002; 80003; 80004	Funding for tribal climate resilience, Native Hawaiian climate resilience, tribal electrification, and emergency drought relief.	\$412 million
Air Pollution Reduction Investments	60104; 60105; 60106; 60108	Funding to reduce diesel emissions, address air pollution at large and at schools, and fund Section 211(O) of the Clean Air Act. This provision provides funding for the EPA to determine a renewable fuel standard (RFS) applicable to refiners, importers, and certain blenders of gasoline.	\$406 million
Environmental Data and Enforcement	60109; 60110; 60111; 60401	\$102 million for programs to reduce air pollution, boost air quality monitoring and data collection, and strengthen enforcement technology.	\$102 million

Conservation and Agriculture

Last year alone, the United States faced 22 [extreme weather](#) and climate-related disaster events with losses exceeding \$1 billion each — a cumulative price tag of nearly \$100 billion. The Inflation Reduction Act makes historic investments in climate resilience programs that conserve our natural resources, promote biodiversity, harden critical infrastructure, and prepare communities for extreme weather events including wildfires, droughts, and hurricanes. Together, both bills would bring us closer to achieving the [America the Beautiful Initiative](#), a national goal of conserving at least 30 percent of U.S. lands and oceans by 2030 commonly referred to as “30 by 30.”

The legislation also invests nearly \$20 billion in conservation programs at the U.S. Department of Agriculture (USDA), including \$8.45 billion for the Environmental Quality Incentives Program (EQIP) and \$6.75 billion for the Conservation Stewardship Program (CSP). These programs are included in the Farm Bill, which Congress must reauthorize in 2023. Given this increase in funding, it is essential that these programs are reshaped to eliminate wasteful spending and ensure maximum impact. Currently, it is estimated that [less than 20%](#) of EQIP spending goes to climate-smart conservation practices that actually reduce greenhouse gas emissions.

CONSERVATION AND AGRICULTURE			
Program	Section	Description/Analysis	Amount
Environmental Quality Incentives Program (EQIP)	21001(a)(1)	Increased funding for EQIP, a voluntary conservation program that provides farmers and ranchers with grants to implement environmentally-beneficial conservation practices.	\$8.5 billion
Conservation Stewardship Program (CSP)	21001(a)(2)	Increased funding for CSP, a conservation program designed to help farmers and ranchers protect and improve natural resources on privately owned lands.	\$3.3 billion
Regional Conservation Partnership Program (RCPP)	22001(a)(4)	Increased funding for RCPP, a USDA program promoting conservation and cooperation between landowners and producers to restore soil, water, and wildlife on a regional or watershed scale.	\$6.8 billion
Agriculture Conservation Easement Program	21001(a)(3)	Increased funding for ACEP, a program to conserve land and protect its agricultural viability by limiting negative nonagricultural uses.	\$1.4 billion
Coastal Climate Resilience	40001	Funding to restore coastal ecosystems, mitigate climate change, protect coastal communities, and improve fish and wildlife habitat.	\$2.6 billion
Non-Federal Forest Conservation Grants	23003	Funding for state and private forestry conservation programs. These include: urban and community forestry (\$1.5 billion); competitive grants for non-federal forest landowners (\$550 million); and, \$700 million for the Forest Legacy Program.	\$2.2 billion

Federal Forest Restoration Investments	23001	Funding for programs to restore national forest system land, including reforestation, the protection of old-growth and watersheds, and conserving habitats for threatened species.	\$225 million
Hazardous Fuels Reduction Projects	23001(a)(1)	Funding to conduct hazardous fuels reduction projects (e.g., prescribed burns and thinning) to reduce wildfire risks.	\$1.8 billion
Public Lands Conservation	50221; 50222; 50223	Broad investments in national parks and public lands conservation.	\$1 billion
Agricultural Conservation Technical Assistance	21002	USDA conservation technical assistance.	\$1.3 billion
Biofuel Production Grants	22003	Funding for biofuel infrastructure and agriculture market expansion.	\$500 million
Drought Response	50231; 50232	Funding for Bureau of Reclamation domestic water supply projects and canal improvement projects.	\$575 million
Fish and Wildlife Service	60301; 60302	Funding for FWS Endangered Species Act Recovery Plans and to address climate-induced weather events.	\$246 million
National Oceanic and Atmospheric Administration (NOAA)	40002; 40003; 40004; 40005; 40006	NOAA funding for equipment, facilities and research.	\$71 million

Fossil Fuels

Below-market leasing rates and outdated royalty rates encourage further exploitation of our public lands by fossil fuel companies, leaving taxpayers and future generations on the hook for the environmental damage. The Inflation Reduction Act includes numerous commonsense oil and gas reforms such as increasing royalty and rental rates, eliminating noncompetitive leasing, and establishing minimum bids on federal parcels. The current onshore royalty rate of 12.5% has not been updated since the Mineral Leasing Act was signed into law by President Woodrow Wilson in 1920 and is dramatically lower than the rates charged by states and private landowners — in some cases by up to 25%. The

legislation addresses methane emissions, a powerful greenhouse gas that is 25 times as potent as carbon dioxide at trapping heat in the atmosphere. Methane represents 10 percent of all U.S. greenhouse gas emissions, primarily from natural gas extraction and livestock agriculture.

Unfortunately, the legislation would also require oil and gas leasing in the Gulf of Mexico and Alaska, reinstate an illegal 2021 Gulf lease sale, and [lock in oil and gas lease sales](#) as a precondition for the approval of federal renewable energy projects. The greenhouse gas emissions associated with continued fossil fuel leasing will offset some of the emissions reductions found elsewhere in the legislation.

FOSSIL FUELS			
Program	Section	Description/Analysis	Amount
Methane Emissions Reduction Program	60113(c)	Establishes fee on excess methane emissions beginning and offers up to \$850 million in grants to industry to monitor and reduce methane. The charge for excess methane emissions begins at \$900/ton in 2024, increases to \$1,200/ton in 2024, and \$1,500/ton in 2026.	\$1.6 billion
Royalty Reform	50261; 50262	Increases the royalty rate for all new onshore and offshore fossil fuel leases from 12.5% to a minimum of 16.6%. The current onshore royalty rate of 12.5% has not been updated since the Mineral Leasing Act was signed into law by President Woodrow Wilson in 1920 and is dramatically lower than the rates charged by states and private landowners — in some cases by up to 25%. The legislation also eliminates noncompetitive leasing and establishes a minimum bid on federal parcels.	N/A
Fossil Fuel Leasing	50264	Requires the Department of the Interior to conduct oil and gas lease sales each year for a decade as a prerequisite to installing any new solar or wind energy. Without offering minimum parcels for fossil fuel leasing, the federal government would not have the authority to	N/A

		approve utility-scale renewable energy projects on public lands or waters.	
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Permitting Reform

According to a [summary](#) released by Senate Democrats, the terms of the budget reconciliation agreement also included a commitment to pass “comprehensive permitting reform” for major infrastructure projects before the end of the fiscal year. Senate Majority Leader Chuck Schumer subsequently indicated that lawmakers plan to attach these permitting reforms to a stopgap bill to keep the government running past September 30, 2022. This part of the deal, which was reportedly essential to securing Senator Manchin’s support for IRA, must move separately because it would run afoul of the [strict budget rules](#) for reconciliation. To pass the Senate, it must be voted on separately and will require 60 votes.

According to a framework obtained by the [Washington Post](#), the reforms would impose hard deadlines for the permitting of major infrastructure projects, limit legal challenges to future projects, and speed the approval of the [Mountain Valley Pipeline](#) (MVP). The pipeline’s construction is ongoing but has been delayed by litigation. A 2017 analysis from [Oil Change International](#) estimated that approval of the MVP would result in 90 million metric tons of greenhouse gas emissions annually — equivalent to 26 coal plants or 19 million cars. The following reforms were also included in the outline.

(1) Presidential designation and prioritization of permitting for at least 25 high-priority energy infrastructure projects.

- Require that the list be balanced by project type: critical minerals, nuclear, hydrogen, fossil fuels, electric transmissions, renewables, and CCS.
- The criteria for selecting designation projects would include: reducing consumer energy costs, decarbonization potential, and promoting energy trade with our allies.

(2) Expand eligibility for the Federal Permitting Improvement Steering Council (FPISC) to ensure that smaller energy projects, critical minerals and mining, and other key programs can benefit from FPISC.

- Improve the process for developing categorical exclusions under the [National Environmental Policy Act](#) (NEPA) and would require a single interagency environmental review document and concurrent agency review processes.

(3) Modify Section 401 of the Clean Water Act.

- Require one of four final actions within one year of certification requests; grant, grant with conditions, deny, or waive certification.

- Clarify that the basis of review is water quality impacts from the permitted activity, based on federal, state, and tribal standards.
- Prohibit state or tribal agencies from requesting project applications to withdraw applications to stop/pause/restart the certification clock.
- Require states and tribes to publish clear requirements for water quality certification requests, or else default to federal requirements.

(4) Restrict access to the courts

- Set statute of limitations for court challenges.
- Require that if a federal court remands or vacates a permit for energy infrastructure, the court must set and enforce a reasonable schedule and deadline, not to exceed 190 days, for the agency to act on and remand.

(5) Clarify Federal Energy Regulatory Authority (FERC) jurisdiction regarding the regulation of interstate hydrogen pipeline, storage, import, and export facilities.

(6) Enhance federal government permitting authority for interstate electric transmission facilities that have been determined by the Department of Energy (DOE) to be in the national interest:

- Replace DOE's national interest electric transmission corridor process with a national interest determination that allows FERC to issue a construction permit.
- Require FERC to ensure costs for transmission projects are allocated to customers that benefit.
- Allow FERC to approve payments from utilities to jurisdictions impacted by a transmission project.

(7) Complete the Mountain Valley Pipeline: Require relevant agencies to take all necessary actions to permit the construction of the Mountain Valley Pipeline and give the DC Circuit jurisdiction over any further litigation.

Additional Resources

- [Bill Text](#)
- [Where Things Stand on the Inflation Reduction Act](#)
- [Breaking Down the Schumer-Manchin Deal and Next Steps](#)
- [Tax summary](#)
- [Drug pricing summary](#)