

Inflation Reduction Act of 2022

Clean Energy Tax Credits

May 25, 2023



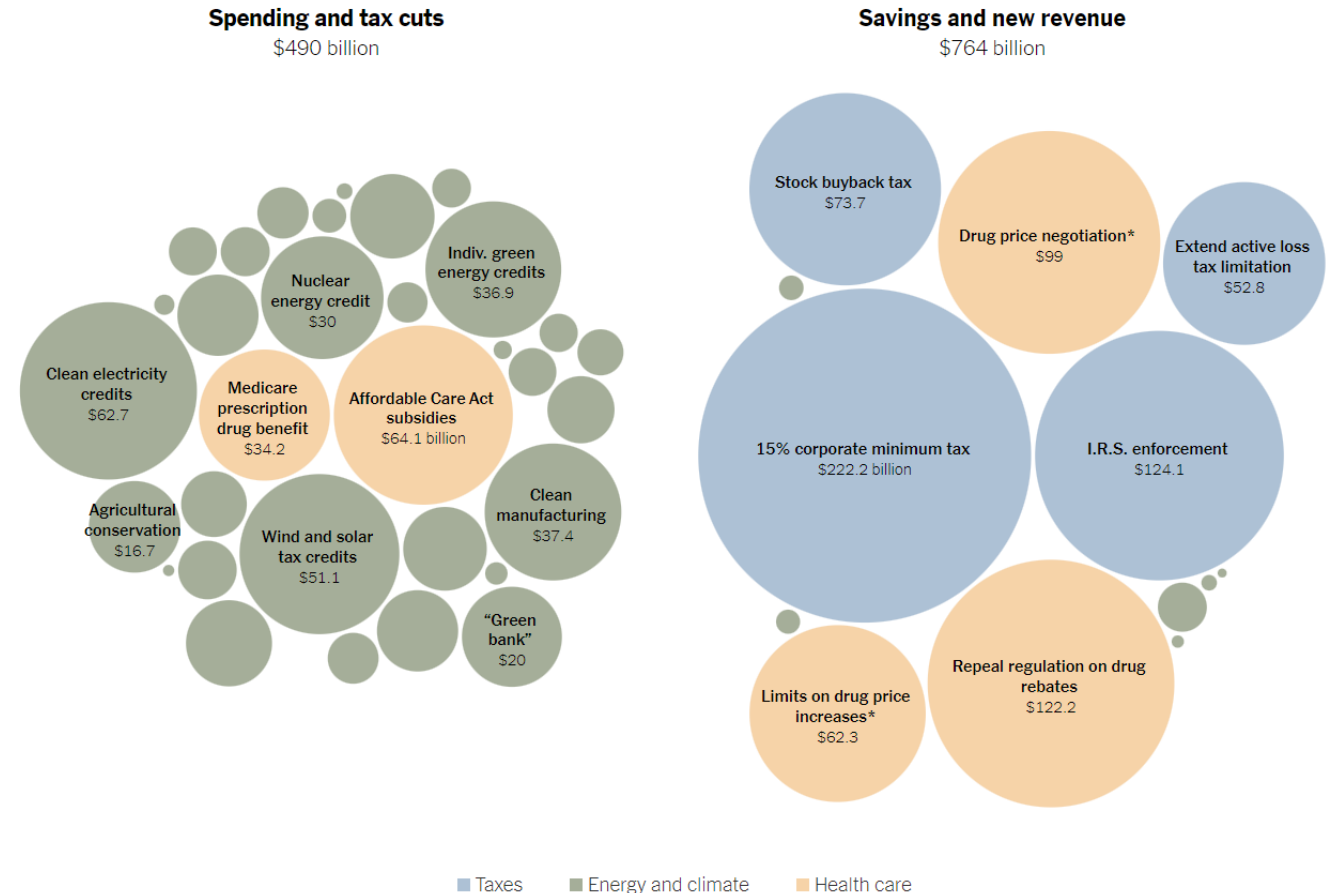
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Inflation Reduction Act of 2022

- Signed into law August 16, 2022
- \$369 billion for energy and climate
- Majority of climate impact in clean energy tax credits and transportation
- Continued emphasis on equity and growing US economy



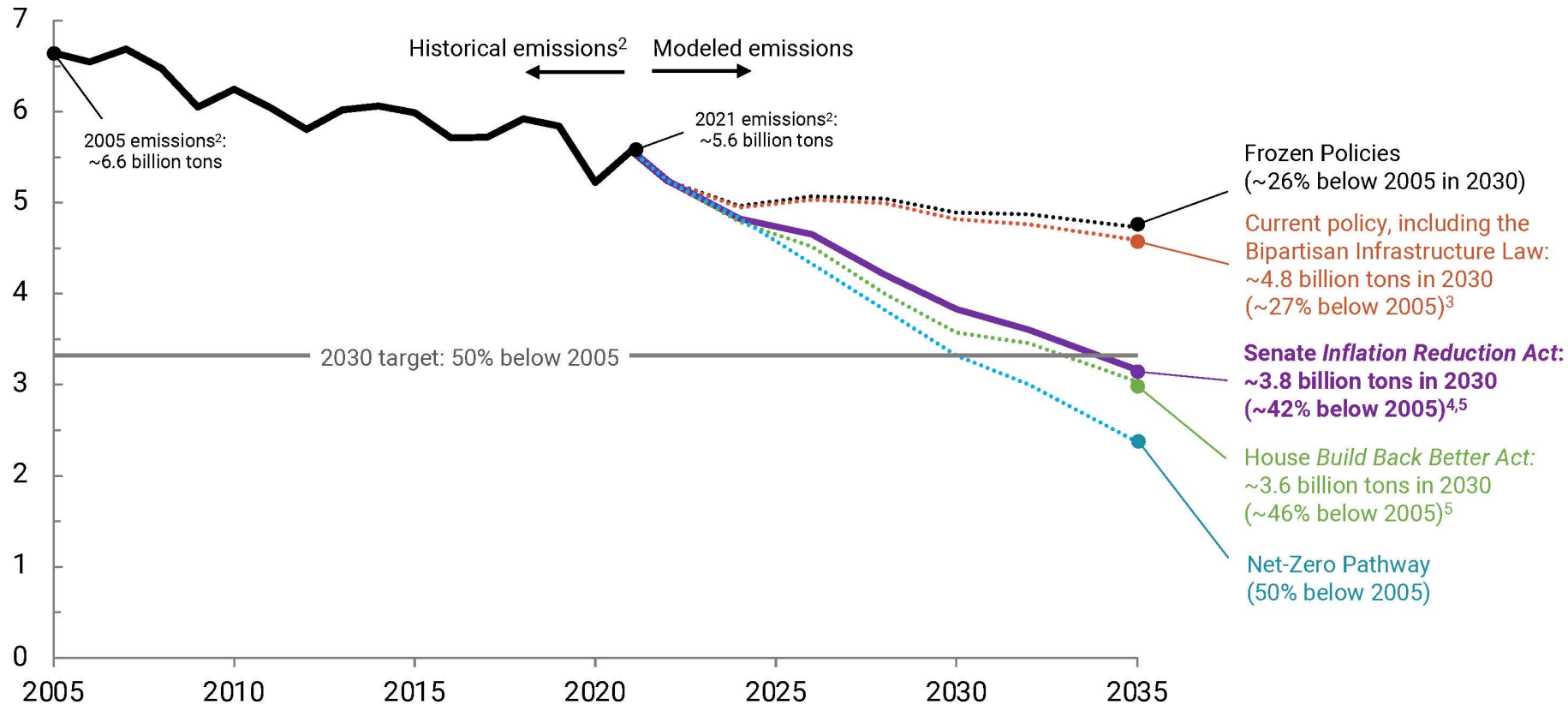
Source: [New York Times](#)

Climate Impact of Inflation Reduction Act


IRA could reduce U.S. GHG emissions by 32% to 40% by 2030 compared to 2005 levels

Historical and Modeled Net U.S. Greenhouse Gas Emissions (Including Land Carbon Sinks)

billion metric tons CO₂-equivalent (Gt CO₂-e)¹



Source: [Repeat Project](#)

A black and white photograph of a wind turbine's nacelle and blades against a cloudy sky. The image is partially obscured by a large orange geometric shape on the left side of the slide.

Clean Energy Tax Incentives

Available Tax Credits

- Alternative Fuel Refueling Property Credit (30C)
- **Production Tax Credit (45)**
- Credit for Carbon Oxide Sequestration (45Q)
- Credit for Production of Clean Hydrogen (45V)
- Clean Fuel Production Credit (45Z)
- **Investment Tax Credit (48)**
- Advanced Energy Project Credit (48C)
- **Energy Efficiency Commercial Buildings Deduction (179D)**
- **Clean Electricity Production Credit (45Y)**
(After 2024)
- **Clean Electricity Investment Credit (48E)**
(After 2024)
- New Energy Efficient Home Credit
- Zero-Emission Nuclear Power Production Credit

Clean Energy Tax Credits – Non-Residential

- **New tax credits, grants, and other incentives** to support clean energy deployment
- **10+ years of tax credit certainty** (through 2032 or later)
- **Investment Tax Credit (ITC) and Production Tax Credit (PTC)**
 - ITC = 30% of system cost. Good for capital intensive projects
 - PTC = Credit per kwh of electricity for 10 years. Good for efficient tech. Now an option for solar.
- **Transition to a tech-neutral tax credit system starts 1/1/25.**
 - Can choose either PTC or ITC. Any zero-emission electricity source is eligible.



Enhancements to ITC/PTC

- Solar now eligible for ITC or PTC
- New technologies eligible for ITC if placed in service after Dec 31, 2022
 - Solar energy
 - Geothermal
 - Fiber-optic Solar
 - Fuel cell
 - Microturbine
 - Small wind
 - Offshore wind
 - Combined heat and power
 - Waste energy recovery
 - Energy & thermal storage technology
 - Biogas property
 - Microgrid controllers
 - Dynamic glass
 - Fuel cells using electromechanical processes
 - Linear generators
- Interconnection property eligible for ITC if project < 5 MW
- Storage systems > 5 kwh
- Microgrid controls between 4 kw and 20 MW

Long Term Impact on ITC and PTC



- Transition to technology neutral credits after December 31, 2024
- Clean Electricity Production Tax Credit (45Y) or Clean Electricity Investment Tax Credit (48E)
- Credit available until the later of 2032 or when US GHG emissions drop to 25% of current levels.
- Similar values
 - ITC = 30%
 - PTC = 2.6 cents/kwh (*inflation adjusted*)

Direct Pay

- All technologies eligible for the following entities:
 - Tax exempt entities
 - State/local government
 - Tennessee Valley Authority
 - Tribes and Alaska Native Corps
 - Rural electric cooperatives
- Direct Pay also available for hydrogen, carbon capture for taxed entities
- Direct pay only available for projects PIS after Dec 31, 2022
- Must use domestic content to get full value of direct pay over time

Tax-Exempt Bonds: For facilities financed with tax-exempt bonds, the credit amount would be reduced by the lesser of (1) 15%; or (2) the fraction of the proceeds of a tax-exempt obligation used to finance the project over the aggregate amount of the project's financing costs.

Direct Pay Percentages

	2023	2024	2025	2026	2027
Steel/Iron Requirement	100% Steel/Iron	100% Steel/Iron	100% Steel/Iron	100% Steel/Iron	100% Steel/Iron
Manufactured Goods Required	40%	40%	45%	50%	55%
% of Direct Pay if Domestic Content Not Met	100%	90%	85%	0%	0%
% of Direct Pay if Domestic Content Met	100%	100%	100%	100%	100%

The domestic content requirements are 1) 100% steel/iron, and 2) For manufactured products, a 40% requirement for projects starting through 2024 followed by 45% in 2025, 50% in 2026, and 55% in 2027 and beyond.

Labor Provisions in IRA

Basic Structure v. Bonus Credit: the ITC and PTC are set at 20% of their bonus credit value, unless a project:

- Meets wage/apprenticeship requirements
- Is under 1 MWac net output, or
- Began construction before January 28, 2023 deadline

If a project meets one of these three criteria, it will receive a bonus credit, bring the ITC from 6% to 30% (extra 24%) and the PTC from 20% of the PTC value to 100% of the PTC value.



Labor Provisions in IRA



Meeting new labor standards enables a project to claim full value of ITC/PTC AND full bonus credits

- Projects < 1 MW-ac and those that started construction before January 29, 2023

Prevailing Wage

- Prevailing wages for laborers and mechanics employed by contractor and subcontractors
- For alteration and repair during 5 year recapture for ITC and 10 year payment period for PTC
- Cure and noncompliance provisions exist

Registered Apprenticeship

- An increasing percent of total hours worked must be met with apprentice labor (chart below)
- Apprentice to journeyman ratio
- Applies to contractors with 4+ employees
- Exemptions for good faith effort and lack of qualified apprentices
- Only required until facility is placed in service

Started before 2023	Started during 2023	After 1/1/2024
10%	12.5%	15%

Bonus Credits

Domestic Content = 10% bonus

- Requires 100% steel and iron, and
- Manufactured products = 40% of the total cost of the components of such product are mined, produced, or manufactured in the U.S. until 2025. Ramps to 55% by 2027.
- Required for full direct pay starting in 2024

Energy Communities = 10% bonus

- Energy communities = brownfield; a coal mine closed after December 31, 1999; coal-fired generated retired after December 31, 2009; or an area with significant employment related to the extraction, processing, transport, or storage of coal, oil, or natural gas.

Allocated Environmental Justice Solar and Wind Capacity = 10% or 20% *allocated* bonus

- Only available for ITC. Apply through Treasury
- 1.8 GW per year competitive capacity cap split into 4 categories
- Wind, solar, or solar+storage projects under 5 MW eligible
- Awarded to projects with greatest economic, health, and justice benefits
- 10% bonus if located in low income community
- 20% bonus for low income residential building of LMI economic benefit project (community solar)
- Eligible locations aligns with New Market Tax Credits

To get full value of bonus credits, project >1 MW must meet labor provisions.

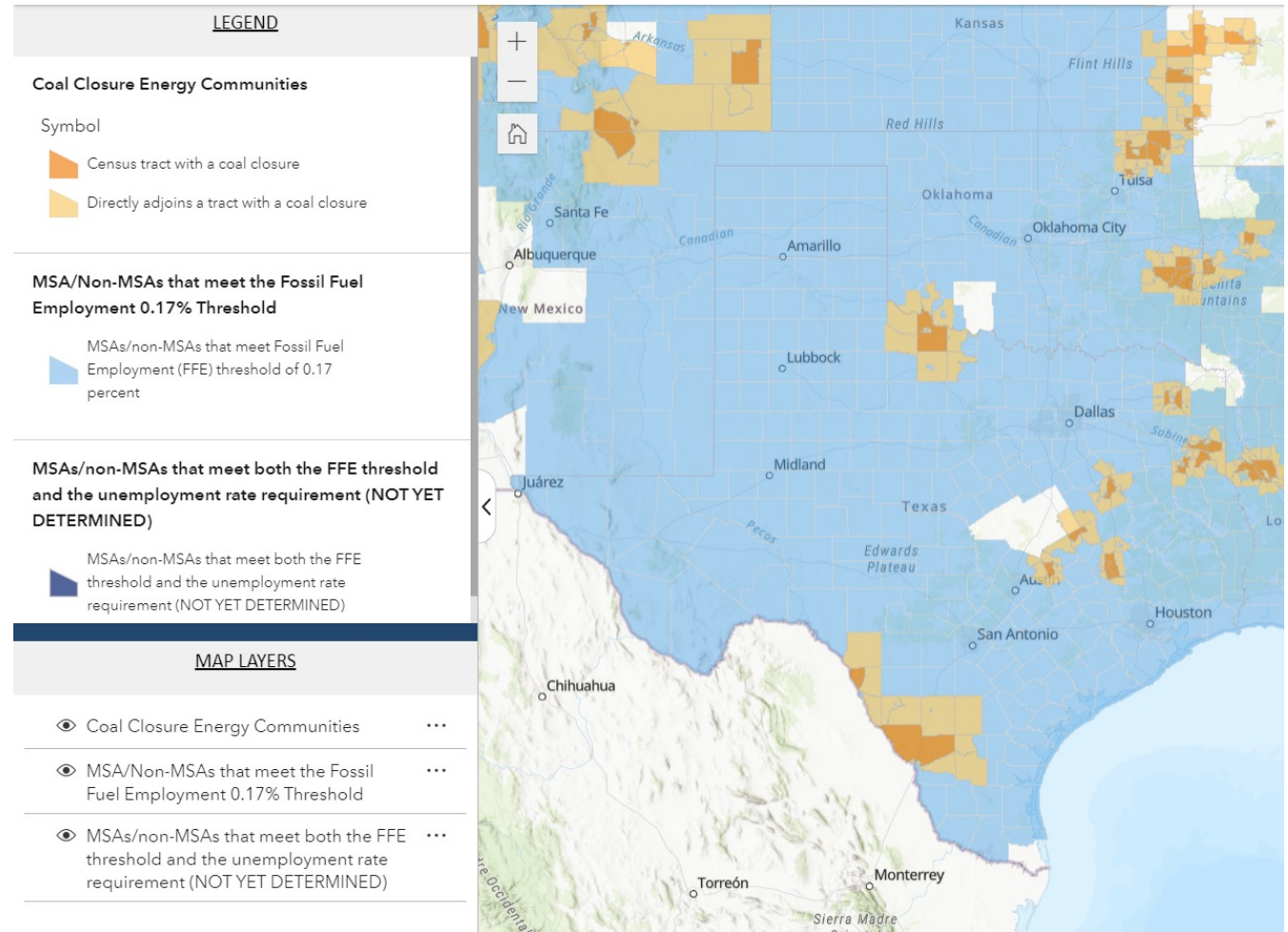
Domestic Content – 10%

- Structural steel and iron components – 100% Domestic
- Manufactured Products
 - 40% of the cost of manufactured products (55% after 2026)
 - Components also have to be US made to get full value of product
 - Partial credit if components are US made, regardless of final manufacturing location

Applicable Project Component	Categorization
Steel photovoltaic module racking	Steel/Iron
Pile or ground screw	Steel/Iron
Steel or iron rebar in foundation (e.g., concrete pad)	Steel/Iron
Photovoltaic tracker	Manufactured Product
Photovoltaic module (which includes the following Manufactured Product Components, if applicable: photovoltaic cells, mounting frame or backrail, glass, encapsulant, backsheet, junction box (including pigtails and connectors), edge seals, pottants, adhesives, bus ribbons, and bypass diodes)	Manufactured Product
Inverter	Manufactured Product

Texas Energy Communities – 10%

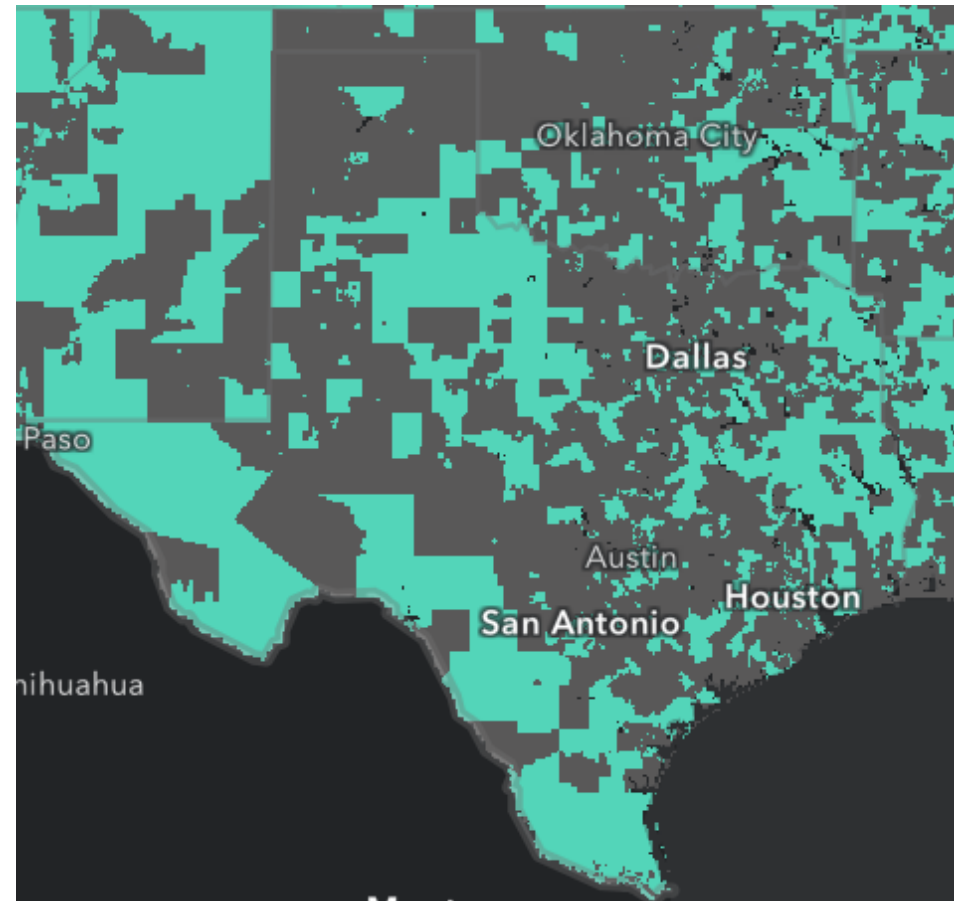
- 10% ITC bonus available for locations identified as “energy communities”
- Brownfields
 - Case by case, not on map
- Fossil Fuel Communities
 - FF employment on map
 - Unemployment data available from Bureau of Labor Statistics
- Coal Communities
 - On the map



Allocated Environmental Justice Solar and Wind Capacity- 10-20%

- Applications for Categories 3&4 will be open for 60 days starting Q3 of 2023, Categories 1&2 will follow thereafter.
- Additional evaluation criteria will be developed in forthcoming guidance but anticipated to center around projects that further programs goals to increase access for historically disadvantaged communities including projects that:
 - (i) owned or developed by community-based organizations and mission-driven entities
 - (ii) have an impact on encouraging new market participants
 - (iii) provide substantial benefits to low-income communities and individuals marginalized from economic opportunities, and
 - (iv) have a higher degree of commercial readiness.

Category 1: Located in a Low-Income Community	700 MW	10%
Category 2: Located on Indian Land	200 MW	10%
Category 3: Qualified Low-Income Residential Building Project	200 MW	20%
Category 4: Qualified Low-Income Economic Benefit Project	700 MW	20%



Clean Energy Tax Credits - Residential



Energy Efficient Home Improvement Credit (25C)

- 30% credit, \$1,200 annual limit
- Home energy audits (\$150); exterior doors (\$500); exterior windows and skylights, efficient central air conditioners, electric panel upgrades, natural gas, propane, or oil water heaters or boilers (\$600); and electric or natural gas heat pump water heaters, electric or natural gas heat pumps, and biomass stoves and boilers (\$2,000, annual limit does not apply)

Residential Clean Energy Tax Credit (25D)

- 30% credit for solar, wind, geothermal heat pumps, fuel cells, biomass, and storage >3 kWh

Energy Efficient New Homes Tax Credit (45L)

- \$500 - \$5,000 credit for new energy efficient single family, manufactured, and multifamily homes

Transportation Tax Credits

EV Tax Credit (30D)

- Tax credit or direct rebate for EV vehicle purchase: \$7,500 new / \$4,000 or 30% used
- Income, price, and domestic content limits apply

Qualified Commercial Clean Vehicles (45W)

- 30% of incremental cost between EV and ICE vehicle / 15% for hybrid with >15 kWh battery
- <14,000 lbs, \$7,500 max / > 14,000, \$40,000 max

Alternative Fuel Refueling Property (30C)

- Placed in service before 2033
- 30% tax credit on alternative fuel refueling property up to \$100,000 and a 20% tax credit on amounts over \$100,000.
- 6% without prevailing wage and apprenticeship
- Non-urban or low-income areas only

Renewable Fuel Credits (40, 40B, 45Z)

- Extension of income and excise tax credits for biodiesel, second generation biofuel, sustainable aviation fuel and other alternative fuels.
- Transition to Clean Fuel Production Credit (45Z) in 2025



179(d) - Energy Efficient Commercial Buildings Deduction



Sliding scale tax deduction for energy cost reduction over ASHRAE 90.1 or an EUI baseline for retrofits.
Retrofits require “qualified retrofit plan”



Minimum base deduction - \$0.50/SF @ 25% improvement
Maximum base deduction - \$1.00/SF @50% improvement



Minimum bonus deduction – \$2.50/SF @ 25%
Maximum bonus deduction - \$5.00/SF @50%
 Prevailing wage and apprenticeship



Up from a previous maximum of \$1.80/SF



Deduction can be assigned to “designer”

Date Placed in Service	Applicable Reference Standard 90.1
Before 1/1/2015	Reference Standard 90.1-2001
After 12/31/2014 and before 1/1/2027*	Reference Standard 90.1-2007
After 12/31/2026*	Reference Standard 90.1-2019

Thank You

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