

A Brief Overview of Major US Clean Energy Tax Policy (2005–2025)

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- General improvements over previous legislation
- Maintaining of current law
- New repeals, restrictions, and/or phasedowns

Tax Credit/ Provision	Pre-IRA (2005-2022)	Inflation Reduction Act (IRA) (2022)	One Big Beautiful Bill Act (OBGBA) (2025)
Electricity			
45U: Existing Nuclear Credit	<ul style="list-style-type: none"> • No prior credit 	<ul style="list-style-type: none"> ● Created PTC (up to \$15/MWh) for existing nuclear fleet, phases out if a reactor earns more than \$25/MWh in market revenue (at a rate of 80 cents per dollar of revenue above \$25/MWh) ● Sunset 2032 ● Increased credit value if new prevailing wage requirements are met 	<ul style="list-style-type: none"> ● Clarifies FEOC does not apply to nuclear fuels ● Maintains credit value and sunset ● Adds new taxpayer FEOC restrictions
45Y/48E: Technology Neutral Clean Electricity Credits	<ul style="list-style-type: none"> • Energy Policy Act of 1992, permanent 10% ITC for solar and geothermal • Long-standing wind, solar, geothermal, hydro, biogas production and investment credits (other than permanent 10% ITC) set to expire end of 2021 	<ul style="list-style-type: none"> ● Created new PTC/ITC for electricity with equal credit value across all zero-emission technologies ● Created domestic content and energy community bonuses, adds apprenticeship and prevailing wage requirements ● Sunset credit beginning latter of 2033, OR the year after the year the US power sector reduces emissions to 75% below 2022 levels 	<ul style="list-style-type: none"> ● Terminates credits for wind and solar that commence construction after July 2026, or are placed in service after 2027; ● Phases down credits for other technologies commence construction after 2033; ● Adds new taxpayer, contracting, and manufactured product/component FEOC restrictions (see below) ● Maintains labor requirements, domestic content and energy community bonuses with minor changes ● Relaxes eligibility requirements for natural gas-fueled fuel cells
Carbon Management			
45Q: Carbon Sequestration Credit	<ul style="list-style-type: none"> • Expanded in 2018 Bipartisan Budget Act • Increased credit value (\$50/ton saline & DAC, \$35/ton EOR) • Extended sunset date to 2033 (CC) 	<ul style="list-style-type: none"> ● Increased the credit value (\$85/ton saline, \$60/ton EOR, and \$180/ton DAC) ● Added direct pay ● Extended sunset date to 2033 (CC) ● Increased credit values if new prevailing wage and apprenticeship requirements are met 	<ul style="list-style-type: none"> ● Aligns credit value for carbon utilization, including EOR ● Maintains IRA credit values, with more favorable inflation adjustment ● No new phasedown ● Applies new taxpayer FEOC rules

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Transportation			
45Z: Biofuels Credit	<ul style="list-style-type: none"> • Legacy 40 PTC provided \$1 per gallon for second-generation biofuels • Legacy 40A PTC provided \$1 per gallon for biodiesel and renewable diesel, set to expire end of 2021 	<ul style="list-style-type: none"> • Replaced prior section 40 and 40A credits with new tech neutral fuels credit, with value based on emissions intensity • Higher credit value for Sustainable Aviation Fuel (SAF) • Extended sunset through 2027 • Increased credit values if new prevailing wage and apprenticeship requirements are met 	<ul style="list-style-type: none"> • Credit extended through 2029 • Restricts use of feedstocks outside North America • Adds new taxpayer FEOC restrictions • Eliminates increased credit value for SAF • Allows stacking with extended 40A biodiesel credit • Relaxes emissions calculations for land use and animal waste
30D: EV Credits	<ul style="list-style-type: none"> • Credit available for EV sales (up to \$7,500 per vehicle), manufacturer cap at 200,000 vehicles 	<ul style="list-style-type: none"> • Maintained credit value (up to \$7,500 per vehicle depending on supply chain) • Extended sunset date to 2032 • Removed manufacturer cap, modified eligibility, and streamlined claiming process • Vehicles purchased after 2023 must not have battery components manufactured or assembled by a FEOC 	<ul style="list-style-type: none"> • Repealed for vehicles acquired after September 30, 2025
25E: Used EV Credit	<ul style="list-style-type: none"> • No prior credit 	<ul style="list-style-type: none"> • Created new credit (lesser of \$4,000 or 40% of sale price) • Sunset end of 2032 	<ul style="list-style-type: none"> • Repealed for vehicles acquired after September 30, 2025
45W: Business Clean Vehicles Credit	<ul style="list-style-type: none"> • No prior credit 	<ul style="list-style-type: none"> • Created new credit for commercial vehicles (up to \$7,500 for light vehicles & \$40,000 for medium/heavy vehicles). • Sunset end of 2032 • Applies to vehicles leased to consumers 	<ul style="list-style-type: none"> • Repealed for vehicles acquired after September 30, 2025
30C: Alternative Fuel Vehicle Refueling Property Credit	<ul style="list-style-type: none"> • Energy Policy Act of 2005 created a 30% ITC for fueling equipment for natural gas, propane, liquefied hydrogen, electricity, E85, or diesel fuel blends containing a minimum of 20% biodiesel • Not to exceed \$30,000. 	<ul style="list-style-type: none"> • Expanded ITC (30%, with caps for personal and business installations) to include EV chargers • Sunset end of 2032 • Extended credit to personal properties in rural or low-income zip codes. • Increased credit values if new prevailing wage and apprenticeship requirements are met 	<ul style="list-style-type: none"> • Repealed after June 30, 2026
45L: Energy Efficient Home Credit	<ul style="list-style-type: none"> • Credit equal to up to \$2,000 per unit but only for low-rise (less than 3 story) residential buildings. 	<ul style="list-style-type: none"> • Increase credit value, \$2500 per single family home; up to \$1500 per unit for multi-family homes • Extends through end of 2032 • Increased credit value if new prevailing wage requirements are met 	<ul style="list-style-type: none"> • Repealed for properties commencing construction after end of June 2025

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Hydrogen			
45V: Clean Hydrogen Credit	<ul style="list-style-type: none"> • No prior credit 	<ul style="list-style-type: none"> ● Created tiered PTC (up to \$3/kg) based on lifecycle emissions ● Added direct pay ● Increased credit values if new prevailing wage and apprenticeship requirements are met 	<ul style="list-style-type: none"> ● Repeals credit for projects that commence construction after 2027
Buildings			
25D: Residential Clean Electricity Credit	<ul style="list-style-type: none"> • Phasedown began after December 31, 2029, equal to 26% from 2020–2021 	<ul style="list-style-type: none"> ● Extends credit value 30% through the end of 2032; 26% in 2033; 22% in 2034. ● Expands credit to include: solar electric systems, solar hot water heating, fuel cells, small wind energy, geothermal heat pumps 	<ul style="list-style-type: none"> ● Repealed at end of 2025
25C: Residential energy efficient home improvement credit	<ul style="list-style-type: none"> • Credit value 10% for qualified expenditures, with \$500 lifetime limit • Expired December 31, 2021." 	<ul style="list-style-type: none"> ● Increases the credit to 30%, or \$1200 per item ● Extends credit through Dec. 31, 2032 	<ul style="list-style-type: none"> ● Repealed at end of 2025
179D: Energy Efficient Commercial Buildings Deduction	<ul style="list-style-type: none"> • Maximum Deduction capped at \$1.80 per square foot for buildings achieving 50% energy savings. 	<ul style="list-style-type: none"> ● Increases credit value to \$5.00/sq ft if the property reduces associated energy costs by 25% or more ● Expires for properties that commence construction after 2032. ● Increased credit values if new prevailing wage and apprenticeship requirements are met 	<ul style="list-style-type: none"> ● Repealed for properties that commence construction after June 30, 2026. ● 100% bonus depreciation, may apply to some capital expenditures
Manufacturing, Recycling, and Critical Materials			
45X: Advanced Manufacturing Credit	<ul style="list-style-type: none"> • No prior credit 	<ul style="list-style-type: none"> ● Created PTC for domestic production of solar, wind, inverter, and battery components, and critical minerals ● Phasedown 2030–2032 (excluding critical minerals) 	<ul style="list-style-type: none"> ● Maintains support for solar and battery components ● Sunsets wind components after 2027 ● Critical minerals phasedown from 2031–2034 ● Adds metallurgical coal production credit through 2029 ● Adds new taxpayer, contracting and material input FEOC restrictions (see below)
48C: Advanced Energy Project Credit	<ul style="list-style-type: none"> • Created in 2009, 30% ITC for projects that build clean energy supply chains, drive investments, and lower costs in energy communities. 	<ul style="list-style-type: none"> ● Expands credit with \$10B, with \$4B set aside for coal communities ● Increased credit values if new prevailing wage and apprenticeship requirements are met 	<ul style="list-style-type: none"> ● Current Law ● Bars IRS from reallocating credits if already selected projects do not claim credit

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Miscellaneous			
Transferability (Sec.6418)	<ul style="list-style-type: none"> • 2018 Bipartisan Budget Act established limited transfer provisions for 45J 	<ul style="list-style-type: none"> ● Enacted widespread transferability provisions for all major energy credits, allowing credits to be traded on an open market 	<ul style="list-style-type: none"> ● Current Law
Direct Pay	<ul style="list-style-type: none"> • Did not exist 	<ul style="list-style-type: none"> ● Enacted widespread direct pay (full refundability) provisions for all major energy credits for non-taxable entities, making credits available to these entities for the first time, and for all entities for certain credits 	<ul style="list-style-type: none"> ● Current Law
Accelerated/ Bonus Depreciation	<ul style="list-style-type: none"> • Long-standing 5-year depreciation for wind, solar, geothermal (MACRS). 	<ul style="list-style-type: none"> ● Expands 5-year MACRS to all 45Y/48E eligible technologies 	<ul style="list-style-type: none"> ● Eliminates 5 year MACRS for wind, solar once 45Y/48E eligibility ends. ● Adds 100% 1-year depreciation for non-utility-owned property with ≤ 20yr amortization ● Retains 5 year MACRS for all non-wind/solar 45Y/48E eligible technologies
FEOC (30D, 45X and 45Y/48E)	<ul style="list-style-type: none"> • Did not exist 	<ul style="list-style-type: none"> ● Limited restrictions applied to vehicle tax credits, see 30D above 	<ul style="list-style-type: none"> ● Restricts access to credits for taxpayers with prohibited foreign entity (PFE) relationships including: ● Specified Foreign Entities (SFE): Chinese (Russian, Iranian, North Korean) incorporated entities/ individuals and entities on certain national security lists ● Foreign Influenced Entities (FIE): owned by, board appointed by, or have debt issued to SFEs, or that have contracts that confer effective control to SFEs (including any IP license) ● Material Assistance: Have more than allowed threshold of material inputs (45X) or manufactured products/ components (45Y/48E) from PFES

Key Terms & Acronyms

ITC: Investment Tax Credit

PTC: Production Tax Credit

FEOC: Foreign Entities of Concern

PFE: Prohibited Foreign Entity

SFE: Specified Foreign Entity

FIE: Foreign Influenced Entity

CC: Commence Construction

PIS: Placed In Service

PWA: Prevailing Wage and Apprenticeship

EO: Executive Order

Color Key

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● Maintaining of current law

● New repeals, restrictions, and/ or phasedowns

Source: Author's analysis