

SUBTITLE D — ENERGY SECURITY

Overview of labor and content requirements.

This subtitle modifies several of the clean energy and energy efficiency tax incentives to provide two different credit values: a base rate and an alternative, or bonus rate. The bonus rate equals five times the base rate and applies to projects that meet wage and apprenticeship requirements, described below. A taxpayer must satisfy both requirements to receive the bonus credit rate. Otherwise, they may claim the relevant credit at the base rate.

The wage requirements require that the taxpayer ensure laborers and mechanics are paid prevailing wages during the construction of a qualifying project, and, in some cases, for the alteration and repair of the project for a defined period after the project is placed into service. The prevailing wage rates are the most recently published prevailing wages for the locality in which the project is located.

In the event the taxpayer fails to satisfy these requirements, the taxpayer may cure the discrepancy (and thus still claim credits at the bonus rate) by compensating each worker the difference between actual wages paid and the prevailing wage, plus interest, in addition to paying a \$5,000 penalty to the Treasury for each worker paid below the prevailing wage during the taxable year. If the Secretary determines that the discrepancy is the product of intentional disregard, the taxpayer must compensate each worker three times the difference in wages and the penalty to the Treasury is increased to \$10,000 per worker.

Once the Secretary determines that a discrepancy occurred, the taxpayer must make payments to the employees and the Treasury within 180 days of the determination in order to remain in compliance with the prevailing wage requirements.

The apprenticeship requirements require that the taxpayer ensure that qualified apprentices perform no less than the applicable percentage of total labor hours of the project. The applicable percentage for purposes of this requirement is 10 percent for projects for which construction begins in 2022. This rate is increased to 12.5 percent in 2023, and 15 percent thereafter. The taxpayer and any contractor or subcontractor that employs four or more individuals to perform construction on a qualifying project must employ at least one qualified apprentice to perform such work.

In the event a taxpayer fails to satisfy these requirements, the taxpayer may cure the discrepancy by paying a penalty to the Treasury equal to \$50 multiplied by the total labor hours for which the requirements are not satisfied. This penalty is increased to \$500 per hour in the event the Secretary determines that such discrepancy was the product of intentional disregard.

Taxpayers who have made a good faith effort to hire qualified apprentices with respect to the construction of a project are deemed to satisfy the requirement and are eligible for the bonus rate. A good faith effort is defined as requesting apprentices and receiving a denial or not receiving a response within five business days.

The wage and apprenticeship requirements apply to projects that begin construction 60 days after the Secretary has published relevant guidance with respect to the requirements.

The domestic content requirements require that, with respect to the project for which a tax credit is claimed, the taxpayer must ensure that any steel, iron, or manufactured product that is part of the project at the time of completion was produced in the United States.

For purposes of these requirements, steel and iron must be 100 percent produced in the United States.

Manufactured products are deemed to have been manufactured in the United States if the adjusted percentage of the total cost of the components and subcomponents of the project is attributable to components that are mined, produced, or manufactured in the United States. The adjusted percentage is:

- 40 percent for projects that begin construction before 2025,
- 45 percent for projects that begin construction in 2025,
- 50 percent for projects that begin construction in 2026, and
- 55 percent for projects that begin construction thereafter.

For offshore wind facilities, the adjusted percentage is:

- 20 percent for projects that begin construction before 2025,
- 27.5 percent for projects that begin construction in 2025,
- 35 percent for projects that begin construction in 2026,
- 45 percent for projects that begin construction in 2027, and
- 55 percent for projects that begin construction thereafter.

The domestic content requirements generally apply for purposes of the production and investment tax credits. Projects meeting the requirements can receive higher value credits. Projects not meeting the requirements may be restricted in the amount of the credit that is eligible for the direct pay elections provided for most credits under the subtitle.

Electric Vehicles. The updated version of the subtitle includes a significantly modified credit for electric vehicles, including new content requirements. In general, to qualify for the credit, the final assembly of a vehicle must occur in North America. In addition to this assembly requirement, the bill introduces two new content requirements for vehicle batteries, and restricts eligibility by barring vehicles manufactured by foreign entities of concern.

To meet the critical mineral requirement, the applicable percentage of critical minerals contained in the battery must be extracted or processed in a country with which the United States has a free trade agreement, or have been recycled in North America. The applicable percentage is:

- For calendar years prior to 2024, 40 percent
- For calendar year 2024, 50 percent
- For calendar year 2025, 60 percent
- For calendar year 2026, 70 percent
- For calendar years after 2026, 80 percent

To meet the battery content requirement, the applicable percentage of the components contained in the battery used in the vehicle must be manufactured or assembled in North America. The applicable percentage is:

- For calendar years prior to 2024, 50 percent
- For calendar years 2024 and 2025, 60 percent
- For calendar year 2026, 70 percent
- For calendar year 2027, 80 percent
- For calendar year 2028, 90 percent
- For calendar years after 2028, 100 percent

For calendar years after 2023, a clean vehicle may not contain any battery components which were manufactured by a foreign entity of concern (as defined in 42 U.S.C. 18741(a)(5)), and, after calendar year 2024, a clean vehicle may not contain any critical minerals that were extracted, processed, or recycled by a foreign entity of concern.

PART 1 - CLEAN ELECTRICITY AND REDUCING CARBON EMISSIONS

Section 13101. Extension and modification of credit for electricity produced from certain renewable resources.

The provision extends the current law production tax credit (PTC) under [IRC section 45](#) for five years, for facilities that begin construction before January 1, 2025. The PTC provides a tax credit for each kilowatt of electricity produced from qualifying facilities and sold to an unrelated party. Qualifying resources are generally sources of renewable electricity, including wind, biomass, municipal solid waste (including landfill gas and trash), geothermal, hydropower, and marine and hydrokinetic energy. The provision also revives the PTC for solar energy (previously sunset in 2006) for facilities which commence construction before January 1, 2025.

For wind facilities, the current law credit reduction and phaseout is eliminated for any facility that is placed in service after December 31, 2021 — those facilities are eligible to receive tax credits at full value, rather than the reduced values under current law.

The provision provides taxpayers the option of a base credit rate of 0.5 cents/kilowatt hour, or a bonus credit rate of 2.5 cents/kilowatt hour (inflation adjusted values) for those facilities that meet the prevailing wage and apprenticeship requirements. In order to claim the credit at the bonus credit rate, taxpayers must satisfy the prevailing wage requirements for the duration of the construction of the project and for each year during the 10-year credit period, and apprenticeship requirements during the construction of the project.

If a facility meets the domestic content requirements, the credit rate is increased by 10 percent. For facilities that do not meet the domestic content requirements, the amount of the credit that is eligible for a direct pay election under new section 6417 (added by sec. 13801 of the subtitle) is reduced.

The credit rate may also be increased by 10 percent for any facility placed in service in an energy community, defined as a brownfield site, an area with significant fossil fuel employment, or a census tract or any immediately adjacent census tract in which, after December 31, 1999, a coal mine has closed, or, after December 31, 2009, a coal-fired electric generating unit has been retired.

The provision eliminates the current law half-credit reduction for hydropower and marine and hydrokinetic facilities. It also modifies the current definition of marine and hydrokinetic facilities to allow the inclusion of projects generating power from water distribution systems.

The provision modifies the rules governing projects that use both tax-exempt financing and claim the tax credits. Under current law, the credits would be reduced by the lesser of 50 percent or the fraction of the basis of the facility that is financed with tax-exempt debt. Under the provision, for facilities that begin construction after the date of enactment and are financed with tax-exempt debt, the amount of credit is reduced by the lesser of 15 percent or the

fraction of proceeds of a tax-exempt obligation used to finance the facility over the aggregate amount of additions to the capital account of the facility.

The modification of credit rates, including elevated rates facilities meeting for the wage and apprenticeship requirements, generally apply to facilities placed in service after December 31, 2021. The modifications related to the use of tax-exempt bonds apply to facilities that commence construction after the date of enactment. All other amendments made by this provision generally apply to facilities placed in service after December 31, 2022.

Section 13102. Extension and Modification of Energy Credit.

The provision extends the section 48 energy investment tax credit (ITC), which allows taxpayers to claim a tax credit for the cost of energy property. In most cases, the provision extends the credit for property for which begins construction before January 1, 2025.

The provision provides a base credit rate of 2 or 6 percent of the basis of energy property or a bonus credit rate of 10 or 30 percent of the basis of energy property. These credit rates apply with respect to facilities placed into service after December 31, 2021. In order to claim the ITC at the bonus credit rate, taxpayers must satisfy the prevailing wage requirements for the duration of the construction of the project and for 5 years after the project is placed into service and must meet the apprenticeship requirements during the construction of the project.

The 6 percent base and 30 percent bonus rate is provided for solar energy property, geothermal property, fiber-optic solar property, fuel cell property, microturbine property, small wind property, offshore wind property, combined heat and power property, and waste energy recovery property that begins construction before January 1, 2025.

The ITC is extended with 6 percent base and 30 percent bonus rates for geothermal heat pump property that begins construction before January 1, 2033. The base credit rate phases down to 5.2 percent for property that begins construction in 2033 and 4.4 percent for property that begins construction in 2034. The bonus credit rate phases down to 26 percent in 2033 and 22 percent in 2034. No credit is allowed for property that begins construction after December 31, 2034.

The ITC for microturbine property is extended, providing a base credit rate of 2 percent or a bonus credit rate of 10 percent, for property that begins construction before January 1, 2025.

The ITC is expanded to include energy storage technology, biogas property, microgrid controllers, dynamic glass, and linear generators. These technologies are eligible for a 6 percent base credit rate or a 30 percent bonus credit rate for any property that begins construction before January 1, 2025. These technologies are briefly described as follows:

- Energy storage technology includes batteries and other storage technologies that store energy for conversion to electricity and have a minimum capacity of 5 kWh, or that store energy to heat or cool a structure.
- Linear generators convert fuel into electricity through electromechanical means using a linear generator assembly without the use of rotating parts. The credit for linear generators is limited to systems with a nameplate capacity of at least 1 kW.
- Microgrid controllers control the energy resources of a microgrid capable of operating as a single controllable entity independent from the electrical grid.
- Dynamic glass, or electrochromic glass, uses electricity to change its light transmittance properties to heat or cool a structure.
- Biogas property converts biomass into a gas that consists of, or is concentrated into, not less than 52 percent methane by volume and captures such gas for sale or productive use and not for flaring.

Taxpayers may claim an increased credit with respect to energy property placed into service after December 31, 2022, if such property meets the domestic content requirements described in this subtitle. The increase is 2 percentage points (or 10 percentage points if the taxpayer meets the prevailing wage and apprenticeship requirements).

For any energy property that is placed in service within an energy community, the credit percentage is increased by 2 percentage points (or 10 percentage points if the taxpayer meets the prevailing wage and apprenticeship requirements). An energy community is defined as a brownfield site, an area with significant fossil fuel employment, or a census tract or any immediately adjacent census tract in which, after December 31, 1999, a coal mine has closed, or, after December 31, 2009, a coal-fired electric generating unit has been retired.

In the case of energy property financed using tax-exempt bonds that begins construction after the date of enactment, the basis of such energy property shall be reduced by the proceeds of a tax-exempt obligation in a manner similar to the rule under [section 45\(b\)\(3\)](#) (as modified under sec. 13001).

For purposes of this credit, energy property shall include expenditures paid or incurred for interconnection property in connection with the installation of energy property (excluding microgrid controllers) that has a maximum net output of less than 5 megawatts.

This provision amends [section 7701\(e\)\(3\)](#) to apply special rules for contracts or arrangements to the operation of a storage facility for purposes of determining whether a contract that is purported to be a service contract should be treated as a service contract.

The amendments made by this provision generally apply to property placed in service after December 31, 2022, but only to the extent the basis of such property is attributable to the construction, reconstruction, or erection after December 31, 2022. The extension of credits and modification of credit rates (including the higher rates for projects meeting the wage and apprenticeship requirements) apply to property placed in service after December 31,

2021. The modifications to rules relating to tax-exempt bonds apply to property that begins construction after the date of enactment.

Section 13103. Increase in energy credit for solar and wind facilities placed in service in connection with low-income communities.

This provision provides for an enhanced incentive for solar and wind facilities qualifying for the [section 48](#) ITC with respect to which the Secretary makes an allocation of environmental justice solar and wind capacity limitation. Property eligible for the credit includes energy storage technology related to such solar or wind property.

The amount that may be allocated is limited to an annual capacity limitation of 1.8 gigawatts for each of calendar year 2023 and 2024 (zero for calendar years thereafter). Any unused allocations are carried over, increasing the capacity limit for the following year. Any excess capacity limitation after 2024 is carried over to the annual capacity limitation under section 48D, the clean electricity investment tax credit.

Projects receiving an allocation of environmental justice solar capacity limitation receive an additional 10 percent credit if located in a low-income community (as defined within the New Markets Tax Credit program under [section 45D](#)) or on Indian land. Projects receive an additional 20 percent credit if the project is a qualifying low-income residential building project or a low-income economic benefit project.

A facility may qualify as a low-income residential building project if the facility is installed on a residential building which participates in a covered housing program (as defined in [section 41411\(a\) of the Violence Against Women's Act of 1994](#)), a multifamily housing program under the U.S. Department of Agriculture's Rural Housing Service, a housing program administered by a Tribally designated housing entity (as described in [section 4 of the Native American Housing Assistance and Self-Determination Act of 1996](#)), or other affordable housing programs as the Secretary may provide, and if the financial benefits of the electricity produced by such facility are allocated equitably to the occupants of the dwelling units of the building.

A facility may qualify as part of a low-income economic benefit project if at least 50 percent of the financial benefits of the electricity produced by the facility are provided to households with income of less than 200 percent of the poverty line or at or below 80 percent of area median income (such as through a community solar agreement).

This section shall take effect on January 1, 2023.

Section 13104. Extension and modification of credit for carbon oxide sequestration.

The provision extends the credit for carbon oxide sequestration for facilities that begin construction before the end of 2032.

The provision modifies the minimum capture requirements for qualified facilities. To qualify for the credit, direct air capture facilities must capture no less than 1,000 metric tons of carbon oxide per year. Electricity generating facilities must capture no less than 18,750 metric tons of carbon oxide and 75 percent of the baseline carbon emissions from each generating unit on which carbon capture equipment is installed. Other facilities must capture no less than 12,500 metric tons of carbon oxide.

For purposes of determining the baseline carbon emissions for an electricity generating unit, taxpayers must determine the amount of carbon oxide released from the unit over the six years prior to the installation of carbon capture equipment. In the case of electricity generating units that have either not yet been built, or are built less than a year before carbon capture equipment is installed, the baseline emissions are determined based on the expected carbon oxide emissions, assuming a capacity factor of 60 percent.

The provision provides a base credit rate of \$17 or a bonus credit rate of \$85 per metric ton of carbon oxide captured and sequestered in geological storage and a base credit rate of \$12 or a bonus credit rate of \$60 per metric ton of carbon oxide captured and utilized in an enhanced oil recovery project or for a commercial use that results in permanent sequestration.

The provision provides an enhanced credit for direct air capture facilities at a base rate of \$36 or a bonus rate of \$180 per metric ton of carbon oxide captured for geological storage and a base rate of \$26 or a bonus rate of \$130 per metric ton of carbon captured and utilized for an allowable use by the taxpayer.

In order to claim this credit at the bonus credit rate, taxpayers must satisfy the prevailing wage requirement during the construction of the project and for each year during the 12-year credit period and satisfy the apprenticeship requirement during the construction of the project.

In the case of carbon capture equipment financed using tax-exempt bonds which begins construction after date of enactment, the amount of credit allowed under this section with respect to such equipment shall be reduced by the lesser of 15 percent or the fraction of proceeds of a tax-exempt obligation used to finance such project over the aggregate amount of additions to the capital account of such project.

These amendments generally apply to facilities or equipment placed in service after December 31, 2022. The modifications to the capture requirements for qualified facilities, as well as the modifications to the rules relating to facilities or equipment financed with tax-exempt debt apply to facilities and equipment for which construction begins after the date of enactment.

In the case of any carbon capture equipment placed in service before February 9, 2018 (the date of enactment of the Bipartisan Budget Act of 2018), no credit shall apply with respect to carbon oxide captured after the earlier of December 31, 2022, or the end of the calendar year in which the Secretary certifies that a total of 75,000,000 metric tons of qualified carbon oxide have been taken into account.

In the case of facilities placed into service on or after the enactment of the Bipartisan Budget Act of 2018, the taxpayer may elect to have the 12-year credit period begin on the first day in which a credit under this section is claimed after the date of enactment of the Bipartisan Budget Act of 2018. A taxpayer may only make such an election provided that 1) no taxpayer claimed a credit under this section with respect to such carbon capture equipment for any prior taxable year, 2) the qualified facility at which such carbon capture equipment is placed in service is located in an area affected by a Federally declared disaster, and 3) the Federally declared disaster referred resulted in a cessation of the operations of the qualified facility or carbon capture equipment after the carbon capture equipment was originally placed in service.

Section 13105. Zero-emission nuclear power production credit.

The provision provides a credit for the production of electricity from a qualified nuclear power facility. The provision provides a base credit rate of 0.3 cents/kilowatt hour and a bonus credit rate of 1.5 cents/kilowatt hour for electricity produced by the taxpayer and sold to an unrelated person during the taxable year.

The credit is reduced as the sale price of such electricity increases. Under the credit reduction formula, the credit for any qualified nuclear power facility is reduced (but not below zero) by 80 percent of the excess of the gross receipts (including Federal, State, and local zero-emissions grants) from any electricity produced and sold by such facility over the product of 0.5 cents times the amount of electricity sold during the taxable year.

In order to claim the PTC at the bonus credit rate, taxpayers must satisfy prevailing wage and apprenticeship requirements for the taxable year.

A qualified nuclear power facility is any nuclear facility that is owned by the taxpayer, uses nuclear energy to produce electricity, and is placed in service before the date of enactment.

The provision applies to electricity produced and sold after December 31, 2023, and terminates on December 31, 2032.

PART 2 – CLEAN FUELS

Section 13201. Extension of incentives for biodiesel, renewable diesel and alternative fuels.

The provision extends the income and excise tax credits for biodiesel and biodiesel mixtures at \$1.00 per gallon through December 31, 2024.

The provision extends the \$0.10-per-gallon small agri-biodiesel producer credit through December 31, 2024.

The provision extends the \$0.50 per gallon excise tax credits for alternative fuels and alternative fuel mixtures through December 31, 2024.

This provision applies to fuels sold or used after December 31, 2021, and directs the Treasury Secretary to establish procedures for credit claims for periods after December 31, 2021 and before the date of enactment.

Section 13202. Extension of second generation biofuel incentives.

The provision extends the second generation biofuel income tax credit for fuel produced and sold before January 1, 2025, effective for fuel produced and sold after December 31, 2021.

Section 13203. Sustainable aviation fuel credit

This provision provides a refundable blenders tax credit for each gallon of sustainable aviation fuel sold as part of a qualified fuel mixture. The value of the credit is determined on a sliding scale, equal to \$1.25 plus an additional \$0.01 for each percentage point by which the lifecycle emissions reduction of such fuel exceeds 50 percent (as compared to petroleum-based jet fuel). Taxpayers may elect to claim this credit as an excise tax credit against [section 4041](#) excise tax liability.

To claim the credit, taxpayers must certify to the Secretary that such fuel reduces lifecycle greenhouse gas emissions by at least 50 percent, determined in accordance with the requirements of the most recent [Carbon Offsetting and Reduction Scheme for International Aviation \(CORSIA\) adopted by the International Civil Aviation Organization \(ICAO\) with the support of the United States](#), or under any similar methodology which satisfies the criteria under [section 211\(o\)\(11\) of the Clean Air Act](#). Taxpayers must also register with the Secretary and provide third-party verification that they meet the relevant requirements of the CORSIA scheme (or other similar regime), including reporting and traceability requirements.

This provision terminates the \$1.00 section 40A tax credit for aviation fuel produced from biodiesel beginning after December 31, 2022. Sustainable aviation fuel does not include any fuel that is produced from palm fatty acids or by co-processing lipids with fuels derived from oil, natural gas, or coal.

This provision shall apply for fuel sold or used after December 31, 2022. The credits allowed under this provision expire after December 31, 2026.

Section 13204. Clean Hydrogen.

This provision creates a new tax credit for the production of clean hydrogen produced by a taxpayer at a qualified clean hydrogen facility during the 10-year period beginning on the date such facility is placed in service.

The amount of the credit is equal to the applicable percentage of the base rate of \$0.60 or the bonus rate of \$3.00, indexed to inflation, multiplied by the volume (in kilograms) of clean hydrogen produced by the taxpayer at a qualified facility during the taxable year.

In order to claim the hydrogen production credit at the bonus credit rate, taxpayers must satisfy the prevailing wage requirements for the duration of the construction of the project and for each year during the 10-year credit period and satisfy the apprenticeship requirements during the construction of the project.

The applicable percentage is determined by the lifecycle greenhouse gas emission rate achieved in producing clean hydrogen.

- For hydrogen produced through a process that results in a lifecycle greenhouse gas emissions rate of less than 4 kg of carbon dioxide equivalent per kilogram (CO_{2e} per kg) of hydrogen and not less than 2.5 kg of CO_{2e} per kg of hydrogen, the applicable percentage is 20 percent.
- For hydrogen with a lifecycle greenhouse gas emissions rate of less than 2.5 kg of CO_{2e} per kg of hydrogen and not less than 1.5 kg of CO_{2e} per kg of hydrogen, the applicable percentage is 25 percent.
- For hydrogen with a lifecycle greenhouse gas emissions rate of less than 1.5 kg of CO_{2e} per kg of hydrogen and not less than 0.45 kg of CO_{2e} per kg of hydrogen, the applicable percentage is 33.4 percent.
- For hydrogen with a lifecycle greenhouse gas emissions rate of less than 0.45 kg of CO_{2e} per kg of hydrogen, the applicable percentage is 100 percent.

Taxpayers may claim the section 45 PTC or section 45U zero-emission nuclear PTC for electricity produced by the taxpayer if the electricity is used at a qualified clean hydrogen facility to produce qualified clean hydrogen.

A taxpayer may elect to treat a qualified clean hydrogen facility as energy property for purposes of the section 48 ITC in lieu of the credit for the production of clean hydrogen. For taxpayers making such an election, the credit allowed under section 48 equals the applicable percentage multiplied by the energy percentage. With respect to facilities for which the taxpayer elects to claim the section 48 ITC in lieu of the hydrogen production credit, the provision provides a

base credit rate of 6 percent, or a bonus credit rate of 30 percent, of the basis of qualified energy property.

No credit shall be allowed for clean hydrogen produced at a facility which includes property for which a credit is allowed under section 45Q. Taxpayers may only claim the credit under section 45Q or the clean hydrogen production credit but not both with respect to the same facility.

In the case of a facility financed using tax-exempt bonds which begins construction after date of enactment, the amount of credit allowed under this section with respect to the facility shall be reduced by the lesser of 15 percent or the fraction of proceeds of a tax-exempt obligation used to finance such project over the aggregate amount of additions to the capital account of such project.

Not later than 1 year after the date of enactment of this section, the Secretary shall issue regulations or other guidance to carry out this section, including for determining lifecycle greenhouse gas emissions and the process for requiring verification by unrelated third parties of production and sale of clean hydrogen.

No credit shall be allowed for facilities which begin construction after December 31, 2032.

PART 3 – CLEAN ENERGY AND EFFICIENCY INCENTIVES FOR INDIVIDUALS

Section 13301. Extension, increase, and modifications of nonbusiness energy property credit.

The provision extends the nonbusiness energy property credit to property placed in service before the end of 2032. Beginning in 2022, the provision modifies and expands the credit, including by:

- increasing the percentage of the credit for installing qualified energy efficiency improvements from 10 percent of the cost to 30 percent,
- replacing the lifetime cap on credits with a \$1,200 annual credit limitation, with a higher, \$2,000 limitation for heat pumps and biomass stoves,
- updating various standards and associated limits to reflect advances in energy efficiency and removing eligibility of roofs, advanced main air circulating fans, and certain windows,
- requiring that manufacturers and taxpayers comply with reporting the identification number of certain property placed into service in order to access the credit, and
- expanding the credit to cover the costs of home energy audits, up to a maximum credit of \$150, and electrical panel upgrades necessary for other efficiency improvements, up to a maximum credit of \$600.

Section 13302. Residential clean energy property.

The provision extends the credit for the cost of qualified residential clean energy property expenditures, including solar electric, solar water heating, fuel cell, and small wind energy, and geothermal heat pumps. The provision extends the full 30 percent credit for eligible expenditures through the end of 2032. The credit then phases down to 26 percent in 2033 and 22 percent in 2034. The credit expires after the end of 2034. The provision also expands the definition of eligible property to include battery storage technology.

Section 13303. Energy efficient commercial buildings deduction.

Starting in 2022, the provision updates and expands the energy efficient commercial buildings deduction by increasing the maximum deduction, determined on a sliding scale. It also changes this maximum from a lifetime cap to a 3-year cap. The provision updates the eligibility requirements so that property must reduce associated energy costs by 25 percent or more in comparison to a building that meets the latest [American Society of Heating, Refrigerating, and Air-Conditioning Engineers 90.1 standard](#) affirmed by the Secretary as of 4 years prior to the date such building is placed into service.

The maximum value of the base deduction is \$0.50 per square foot, increased by \$0.02 per square foot for every percentage point by which the designed energy cost savings exceed 25 percent against the reference standard, not to exceed \$1.00 per square foot. The value of the

bonus deduction is \$2.50 per square foot, increased by \$0.10 per square foot for every percentage point by which designed energy cost savings exceed 25 percent against the reference standard, not to exceed \$5.00 per square foot.

This provision allows taxpayers to elect to take an alternative, parallel deduction for energy efficient lighting, HVAC, and building envelope costs placed into service in connection with a qualified retrofit plan. The value of the base deduction is determined by the reduction in a building's energy usage intensity (EUI) upon completion of the retrofit, equal to \$0.50 per square foot, increased by \$0.02 per square foot for every percentage point by which the reduction in EUI exceed 25 percent, not to exceed \$1.00 per square foot. The value of the bonus deduction is \$2.50 per square foot, increased by \$0.10 per square foot for every percentage point by the reduction in EUI exceeding 25 percent against the reference standard, not to exceed \$5.00 per square foot.

In order to claim the bonus deduction amount, taxpayers must satisfy prevailing wage and apprenticeship requirements for the duration of the construction of the project.

In order to qualify for the alternative deduction, a building retrofit project must reduce a building's EUI by no less than 25 percent.

This provision allows tax-exempt entities to allocate the deduction to the designer of the building or qualified retrofit plan.

The amendments made by this provision expire after December 31, 2031.

Section 13304. Extension, increase, and modifications of new energy efficient home credit.

The provision extends the Section 45L new energy efficient home credit through 2032.

Single-family and Manufactured Homes. In the case of new homes acquired after 2022 that are eligible to participate in the ENERGY STAR Residential New Construction Program or Manufactured Homes Program, the provision provides a \$2,500 credit for energy efficient single family and manufactured new homes meeting certain energy star requirements.

- Single-family homes must meet the most recent [Energy Star Single-Family New Homes Program](#) requirements applicable to such dwelling location as in effect on 1) the latter of January 1, 2022, or January 1 of 2 calendar years prior to the date the home is acquired and 2) [National Program Requirement Version 3.1](#) for homes acquired before 2025 and Version 3.2 thereafter.
- Manufactured homes must meet the most recent Energy Star Manufactured Home National Program requirements as in effect on the latter of January 1, 2022, or January 1 of 2 calendar years prior to the date the dwelling is acquired

This provision provides a higher tier credit of \$5,000 credit for eligible single family and manufactured new homes certified as a zero energy ready under the [Department of Energy Zero Energy Ready Home Program](#).

Multifamily Homes. In the case of new homes acquired after 2022 which are eligible to participate in the ENERGY STAR Multifamily New Construction Program, provision provides a base credit of \$500 and a bonus credit of \$2,500 for multifamily units which meet:

- the most recent Energy Star Manufactured Home National Program requirements as in effect on the latter of January 1, 2022, or January 1 of 2 calendar years prior to the date the dwelling is acquired and
- the most recent Energy Star Manufactured Home Regional Program requirements applicable to such unit as in effect on the latter of January 1, 2022, or January 1 of 2 calendar years prior to the date the dwelling is acquired.

This provision provides a higher tier base credit of \$1,000 or a bonus credit of \$5,000 for eligible multifamily units certified as a zero energy ready under the Department of Energy Zero Energy Ready Home Program.

In order to claim the bonus credit amount with respect to a multifamily unit, taxpayers must satisfy prevailing wage requirements for the duration of the construction of such units.

Taxpayers claiming the credit do not have to reduce basis for purposes of calculating the section 42 low income housing tax credit.

PART 4 – CLEAN VEHICLES

Section 13401. Clean Vehicle Credit.

This provision amends the existing 30D tax credit to apply to new clean vehicles placed into service by the taxpayer during the taxable year.

The amount of credit allowed by this provision with respect to a qualified vehicle is equal to a maximum of \$7,500 with respect to a vehicle propelled primarily by electricity, with a battery of at least 7 kilowatt hours, or with respect to a hydrogen fuel cell electric vehicle. Eligible vehicles must meet the critical mineral or battery component requirements. Vehicles which meet one of the requirements, but not both, are eligible for a credit of \$3,750.

To meet the critical mineral requirement, the applicable percentage of critical minerals contained in the battery must be extracted or processed in a country with which the United States has a free trade agreement, or have been recycled in North America. The applicable percentage is:

- For calendar years prior to 2024, 40 percent
- For calendar year 2024, 50 percent
- For calendar year 2025, 60 percent
- For calendar year 2026, 70 percent
- For calendar years after 2026, 80 percent

To meet the battery content requirement, the applicable percentage of the components contained in the battery used in the vehicle must be manufactured or assembled in North America. The applicable percentage is:

- For calendar years prior to 2024, 50 percent
- For calendar years 2024 and 2025, 60 percent
- For calendar year 2026, 70 percent
- For calendar year 2027, 80 percent
- For calendar year 2028, 90 percent
- For calendar years after 2028, 100 percent

Clean vehicles must be assembled in the United States. For calendar years after 2023, a clean vehicle may not contain any battery components which were manufactured by a foreign entity of concern (as defined in 42 U.S.C. 18741(a)(5)), and, after calendar year 2024, a clean vehicle may not contain any critical minerals that were extracted, processed, or recycled by a foreign entity of concern.

Clean vehicles must be sold by a qualified manufacturer. A qualified manufacturer is one which enters into written agreement with the Secretary to ensure each vehicle manufactured meets the requirements of this provision and is labeled with a unique vehicle identification number, and requires the manufacturer to periodically provide such vehicle identification numbers to the Secretary in such a manner as the Secretary may prescribe.

No credit shall be allowed for vehicle by which the manufacturer's suggested retail price exceeds the applicable limitation, which is as follows:

- Vans : \$80,000
- SUVs: \$80,000
- Pick-up Trucks: \$80,000
- For any other vehicle: \$55,000

No credit is allowed to a taxpayer with a modified adjusted gross income in excess of the threshold amount of \$300,000 for married filing jointly, \$225,000 for head of household, and \$150,000 in any other case. For a given taxable year, the taxpayer may use modified adjusted gross income for that year or the immediately preceding year, whichever is lower.

The current per-manufacturer limitation is repealed.

The taxpayer may elect to transfer the credit to the vehicle dealer, provided the dealer is registered as an eligible entity with the Secretary, discloses the MSRP, credit amount, associated fees, and the amount to be paid to the taxpayer in the form of a down payment or otherwise with respect to the transfer of credit. The Secretary shall establish a program to make advance payments to any eligible dealer equal to the cumulative amount of transferred credits.

This provision generally applies to vehicles placed in service after December 31, 2022. The requirement that vehicles be assembled in North America applies to vehicles sold after the date of enactment. The provision allowing transfers of the credit applies to vehicles sold after December 31, 2023. The credit is not allowed for any vehicle placed in service after December 31, 2032.

Section 13402. Credit for previously-owned clean vehicles.

The provision creates a new credit for the purchase of used plug-in and fuel-cell electric cars after the date of enactment through 2032. Buyers can claim a credit of up to the lesser of \$4,000, or 30 percent of the sale price.

To qualify for this credit, used clean vehicles must generally meet the eligibility requirements in the existing [section 30D](#) credit for new clean vehicles, not exceed a sale price of \$25,000, and be a model year that is at least 2 years earlier than the date of sale.

Buyers with up to \$75,000 (\$150,000 for married couples filing jointly and \$112,500 for head of household filers) in adjusted gross income can claim the credit. Buyers must purchase the vehicle from a dealership and cannot claim the credit more than once every 3 years. The credit only applies to the first resale of a used vehicle and includes restrictions on sales between related parties.

The credit may be transferred to the seller of the previously-owned vehicle to allow the purchaser to access the value of the credit at the time of sale. The rules governing transfers of the credit are the same as those established for section 30D.

Section 13403. Qualified commercial clean vehicles.

This provision creates a new credit for qualified commercial electric vehicles placed into service by the taxpayer.

The amount of credit allowed by this provision with respect to a qualified commercial electric vehicle is equal to 30 percent of the cost of the vehicle, up to \$7,500 in the case of a vehicle that weighs less than 14,000 pounds, and up to \$40,000 for all other vehicles.

Tax-exempt entities have the option of electing to receive direct payments.

For purposes of the credit a qualified commercial electric vehicle means any vehicle

- the original use of which commences with the taxpayer,
- which is acquired for use or lease by the taxpayer and not for resale,
- which is made by a qualified manufacturer,
- which is treated as a motor vehicle for purposes of title II of the Clean Air Act or mobile machinery for purposes of section 4053(8),
- which is propelled to a significant extent by an electric motor which draws electricity from a battery which has a capacity of not less than 15 kilowatt hours (7 kilowatt hours for vehicles that weigh less than 14,000 pounds) and is capable of being recharged from an external source of electricity, or is a fuel cell vehicle based upon the requirements of section 30B, and
- is of a character subject to the allowance for depreciation.

Vehicles powered by an internal combustion engine are eligible for a reduced credit of 15 percent.

A qualified manufacturer means any manufacturer that enters into written agreement with the Secretary to ensure each vehicle manufactured meets the requirements of this provision and is labeled with a unique vehicle identification number, and that such manufacturer will periodically provide such vehicle identification numbers to the Secretary in such a manner as the Secretary may prescribe. No credit shall be allowed with respect to any qualified vehicle unless the taxpayer includes the vehicle identification number of such vehicle on their return for that taxable year.

This provision shall take effect after December 31, 2022. No credit shall be allowed under this provision for a vehicle acquired after December 31, 2032.

Section 13404. Alternative fuel refueling property credit.

The provision extends the alternative fuel vehicle refueling property credit through 2032. Beginning in 2022, the provision expands the credit for zero-emissions charging and refueling infrastructure by providing a base credit of 6 percent and a bonus credit level of 30 percent for expenses up to \$100,000 for each charging station or refueling pump installed.

In order to claim the bonus credit amount with respect to eligible property, taxpayers must satisfy prevailing wage requirements for the duration of the construction of such property.

This provision also clarifies that bidirectional charging equipment is eligible property and expands the list of eligible property to include electric charging stations for electric 2- and 3-wheeled motor vehicles manufactured for use on public street, roads, and highways, but only if such stations are intended for use on public roads.

Starting in 2023, charging or refueling property is only eligible if it is placed in service within a low-income or rural census tract.

PART 5 – INVESTMENT IN CLEAN ENERGY MANUFACTURING AND ENERGY SECURITY

Section 13501. Extension of the advanced energy project credit.

The provision revives the Section 48C qualified advanced energy property credit, allowing the Secretary to allocate an additional \$10 billion in tax credits to qualifying projects, starting in 2023. \$4 billion is set aside for qualifying projects in census tracts in which a coal mine or coal power plant has closed and in which no project received a 48C credit allocation in prior years.

Projects receive a base credit rate of 6 percent of qualified investments in qualified advanced energy projects. To receive a bonus rate of 30 percent, taxpayers must satisfy the prevailing wage requirements for the establishment, expansion, or re-equipping of a manufacturing facility and for 5 years after the project is placed into service, and satisfy the apprenticeship requirements during the construction of the project.

Similar requirements to the original credit apply, though eligibility is modified to include projects to establish, expand, or re-equip facilities for the production, manufacturing, or recycling or advanced grid, energy storage, and fuel cell equipment; equipment for the production of low-carbon fuels, chemicals, and related products; renewable energy and energy efficiency equipment; equipment for the capture, removal, use, or storage of carbon dioxide; and advanced light-, medium-, and heavy-duty vehicles and related components and infrastructure.

The credit is also allowed for projects to reduce carbon emissions at existing industrial facilities by at least 20 percent.

The Secretary will determine allocations to projects each year with a requirement that property is placed in service within 4 years of the date of the allocation.

Section 13502. Advanced Manufacturing Production Credit.

The provision provides a production credit for each eligible component that is produced and sold. Eligible components include solar polysilicon, wafers, cells, modules, backsheets, longitudinal purlins, and structural fasteners; wind blades, nacelles, towers, and offshore foundations; inverters; battery electrode active materials, cells, and modules; and critical minerals. The credits are provided based on mass, watt-capacity, sales price, or production cost.

The credits are provided for eligible components produced and sold before January 1, 2030. For components sold after that date, the credit is reduced by 25 percent each year, and is unavailable for components sold in 2033 and beyond. This phaseout does not apply to the credits for critical minerals.

PART 6 – SUPERFUND

Section 13601. Reinstatement of Superfund.

This provision reinstates the Hazardous Substance Superfund Financing Rate on crude oil and imported petroleum products at the rate of 16.4 cents/per gallon, indexed to inflation, and reinstates the tax on taxable chemicals. This provision is made effective after December 31, 2022.

This provision reinstates the authority for advances to be appropriated to the trust fund through December 31, 2032.

PART 7 – INCENTIVES FOR CLEAN ELECTRICITY AND CLEAN TRANSPORTATION

Section 13701 and Section 13702 – Clean electricity production and investment credits.

The provision creates an emissions-based incentive that would be neutral and flexible between clean electricity technologies. Taxpayers are able to choose between a production tax credit (PTC) under section 45Y or an investment tax credit (ITC) under section 48D, which is provided based on the carbon emissions of the electricity generated – measured as grams of carbon dioxide equivalents (CO₂e) emitted per KWh generated. Any power facility of any technology can qualify for the credits, so long as the facility's carbon emissions are at or below zero.

Taxpayers electing the PTC will receive a credit equal to up to 2.5 cents per kilowatt hour (KWh) of electricity produced and sold in the 10-year period after a qualifying facility is placed in service. Taxpayers electing the ITC will receive a credit worth up to 30 percent of the investment in the year the facility is placed in service. All taxpayers are eligible for a PTC or 0.5 cents per kilowatt hour or an ITC of 6 percent. Taxpayers who pay wages at not less than local prevailing rates and utilize registered apprenticeship programs are eligible to receive elevated credits of 2.5 cents per kilowatt hour or 30 percent. The prevailing wage and apprenticeship provisions apply in the same manner as for the section 45 PTC and section 48 ITC.

For combined heat and power systems (CHP), the emissions rate is calculated using both electrical and useful thermal energy. Under the proposal, the British thermal units (BTUs) of useful thermal energy in a CHP system are converted to kilowatt hours using the facility's heat rate (the number of BTUs required to generate 1 KWh). These converted KWhs are also accounted for as production for purposes of the PTC.

Standalone energy storage property is also eligible for the full 30 percent ITC. Energy storage property is defined as under section 48, as modified under section 13102.

Clean electricity projects smaller than 5 megawatts (MW) are allowed to include the costs of interconnection under the clean electricity ITC.

Taxpayers may receive larger credits under certain circumstances, including investments in clean electricity or energy storage property in energy communities. Projects that comply with certain domestic content requirements similarly qualify for elevated credit rates, including using steel, iron, and manufactured products that are mined, produced, or manufactured in the United States. These rules apply in a similar manner to those applied to sections 45 and 48.

The elevated credits are generally equal to a 10 percent increase to the value of the PTC or a 10 percentage point increase to the value of the ITC.

The Treasury Department is directed to publish emission rates for similar technologies each year for taxpayers to use for purposes of determining their eligibility.

The credits are set to phase out the latter of 2032 or when emission targets are achieved: when the electric power sector emits 75 percent less carbon than 2022 levels, the incentives will be phased out over 3 years. Facilities will be able to claim a credit at 100 percent value in the first year, then 75 percent, then 50 percent, and then 0 percent.

Taxpayers are similarly provided the same ability to elect direct pay for the clean electricity PTC and ITC as for current section 45 and 48 PTC and ITC, including limitations with respect to domestic content.

The provision applies to facilities placed in service after December 31, 2024.

Section 13703. Cost recovery for qualified facilities, qualified property, and energy storage technology.

This provision provides that any facility described in the clean electricity production credit and any qualified property or grid improvement property described in the clean electricity investment credit shall be treated as 5-year property under GDS for purposes of [IRC Section 168](#).

This provision shall apply to facilities and property placed in service after December 31, 2024.

Section 13704. Clean fuel production credit.

The provision creates a technology-neutral incentive for the domestic production of clean fuels. The level of the incentive depends on the lifecycle carbon emissions of a given fuel. Lifecycle emissions take into account the “well to wheel” emissions profile, from production of the feedstock for the fuel through to its use in a vehicle. Fuels may qualify for the credit if the fuel’s lifecycle emissions are at least 25 percent less than the current U.S. nationwide average. Zero-emission fuels qualify for a base incentive of \$0.20 per gallon or gallon equivalent. Sustainable aviation fuel that meets certain ASTM standards and is not derived from palm oil qualifies for a base incentive of \$0.35 per gallon or gallon equivalent. Qualifying production is restricted to production in the United States of fuel that is used or sold. No credit shall be allowed at a facility that includes property for which a credit is allowed under section 45Q, 45X, or the section 48 ITC for clean hydrogen production facilities during the taxable year.

The base incentive amounts are increased to the extent a fuel’s lifecycle emissions are below zero and reduced to the extent they are above zero, phasing out ratably between zero and the baseline emissions rate. Between now and 2030, qualifying fuels must become increasingly cleaner in order to qualify for the credit. Fuels produced before 2027 may qualify if the fuel’s lifecycle emissions are less than 50 kilograms of carbon dioxide equivalents per million British thermal units.

Fuels must be at least transportation grade – suitable for use in a highway vehicle or aircraft – but may be used for any business purpose, including as transportation fuel, industrial fuel, or for residential or commercial heat. All taxpayers are eligible for credits of up to \$0.20 per gallon (\$0.35 in the case of aviation fuel). Taxpayers who pay wages at not less than local prevailing rates and utilize registered apprenticeship programs are eligible for elevated credit rates of \$1.00 per gallon (\$1.75 in the case of aviation fuel).

No credit shall be allowed for non-aviation fuel that is derived from coprocessing biomass with a feedstock that is not biomass.

Taxpayers are provided the ability to elect direct payment of the credits, in a similar manner to other provisions.

The Treasury Department is to annually publish emissions rates for fuels that are produced using similar feedstocks and production pathways that taxpayers will use for purposes of determining their credit rates.

The credit is not allowed for fuel produced and sold or used after December 31, 2027.

PART 8 – CREDIT MONETIZATION AND APPROPRIATIONS

Section 13801. Elective Payment for Energy Property and Electricity Produced from Certain Renewable Resources, etc. and Transferability of Applicable Credits

Elective Payment

The provision allows eligible taxpayers to elect to be treated as having made a payment of tax equal to the value of the credit they would otherwise be eligible for under

- [Section 48 ITC](#),
- [Section 45 PTC](#),
- [Section 45Q credit for carbon capture and sequestration](#),
- [Section 30C alternative fuel vehicle refueling property credit](#),
- [Section 48C advanced energy project credit](#),
- Section 45U zero-emission nuclear power production credit,
- Section 45V clean hydrogen production credit,
- Section 45X advanced manufacturing production credit,
- Section 45Y clean electricity production credit,
- Section 48D clean electricity investment credit,
- Section 45Z clean fuel production credit.

Rather than opting to carry forward credits to years when their credits can offset their tax liability, taxpayers can elect to treat the amount of credit as a payment of tax. This allows entities with little or no tax liability to accelerate utilization of these credits, including tax-exempt and Tribal entities.

Eligible taxpayers include tax-exempt entities, state and local governments (and subdivisions thereof), tribal governments, and the Tennessee Valley Authority. This limitation on eligible taxpayers does not apply for purposes of taxpayers claiming credits under section 45Q, 45V, or 45X. For purposes of credits under section 45X, this exception is limited to a single period of five consecutive years.

Any election by a partnership or S corporation must be made at the entity level, not the partner or shareholder level.

Taxpayers electing this treatment with respect to facilities placed into service under sections [45](#), [45Q](#), 45V, and 45Y must make a one-time, irrevocable election to have this section apply during the taxable year the facility is placed into service.

This provision provides that, in the case of a real estate investment trust (REIT), the requirements limiting qualified investment to the REIT's ratable share of such qualified investment does not apply.

In the case of a facility placed in service after December 31, 2022, for which a credit is allowed under the [section 48 ITC](#), [section 45 PTC](#), section 45Y clean electricity PTC, or section 48D clean electricity ITC, the amount of payment allowed under this provision shall be

equal to the amount of credit the taxpayer would otherwise be eligible with respect to such facility multiplied by the applicable percentage, as defined under sections 45 and 45Y. The applicable percentage for facilities which satisfy domestic content requirements and facilities with a maximum net output of less than 1 megawatt shall be 100 percent.

The Secretary shall provide appropriate exceptions to domestic content requirements if such requirements would increase the overall cost of construction of the project by more than 25 percent or if the relevant domestic products are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality.

This provision does not apply to mirror-code jurisdictions.

This provision applies to taxable years beginning after December 31, 2022.

The Secretary is granted authority to request such information or require such information reporting as is necessary to prevent fraud and improper payments. In the case of an excessive payment, an additional 20 percent penalty applies.

Transferability

Taxpayers who are ineligible for the direct pay election may instead opt to transfer any applicable credit to another taxpayer. This transfer may be for all or a portion of a credit, but any credit (or portion thereof) may only be transferred once.

Credits eligible to be transferred include:

- Section 30C alternative fuel refueling property credit
- Section 45 renewable electricity production credit
- Section 45Q credit for carbon oxide sequestration
- Section 45U zero-emission nuclear power credit
- Section 45V clean hydrogen production credit
- Section 45X advanced manufacturing production credit
- Section 45Y clean electricity production credit
- Section 48 energy investment tax credit
- Section 48C advanced energy project credit
- Section 48D clean electricity investment credit

Any amount paid in consideration of a transfer must be paid in cash. This payment is not deductible, nor is it included in income. For the credits under section 45, 45Q, 45V, and 45Y, the transfer must be made separately for each year of the credit's relevant credit period.

Credits claimed for progress expenditures are not eligible to be transferred, nor are credit carryovers.

Any election to transfer credits by a partnership or S corporation must be made at the entity level, not the partner or shareholder level.

The Secretary is granted authority to request such information or require such information reporting as is necessary to prevent fraud and improper payments. In the case of an excessive payment, an additional 20 percent penalty applies.

Carryback Period

The credit carryback period is extended from one to three years for any credit eligible to be transferred.

Section 13802. Appropriations.

This provision appropriates \$500,000,000 to remain available until September 30, 2031 for the IRS to carry out this subtitle.

PART 9 – OTHER PROVISIONS

Section 13901. Permanent extension of tax to fund Black Lung Disability Trust Fund.

This provision permanently extends the \$1.10 per ton and \$0.55 per ton tax rates for underground and surface mined coal, respectively, in addition to the limitation of 4.4 percent of the sales price.

Section 13902. Increase in research credit against payroll tax for small businesses.

Under current law, eligible start-up businesses are allowed to elect to claim up to \$250,000 of the research credit against their payroll taxes. This provision would allow those businesses to claim an additional \$250,000 each year against Medicare payroll taxes.