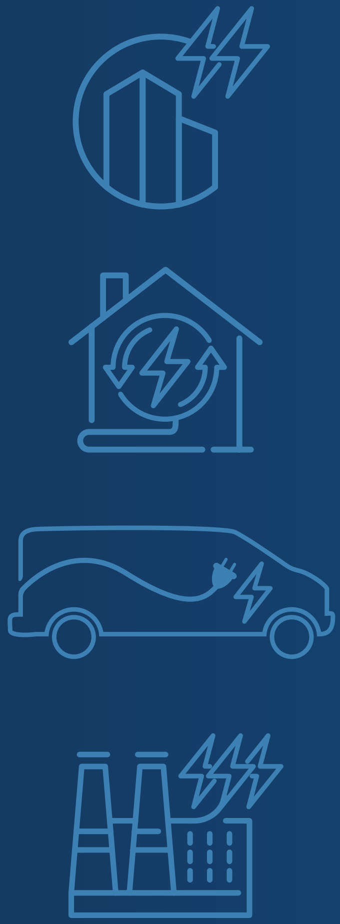
TAX INCENTIVES

ENHANCED FEDERAL ENERGY TAX INCENTIVES for Buildings, Transportation, and Energy Production

OVERVIEW AND USE CASES

NASEO
National Association of State Energy Officials



National Association of State Energy Officials

Contents

National Association of State Energy Officials
1300 North 17th Street, Suite 1275, Arlington, Virginia 22209 | https://www.naseo.org

INTRODUCTION

This document provides information for State and Territory Energy Offices and key stakeholders on several federal energy tax incentives created or enhanced by the Inflation Reduction Act (IRA) that affect state and local government and commercial buildings (Section 179D); residential buildings (Section 25C); alternative fuel vehicle infrastructure (Section 30C) and vehicle purchases (Section 45W); and clean energy production (Section 45/45Y) and investment (Section 48/48E).

These tax incentives enable a wider variety of building owners, including state and local governments, to leverage them for clean energy improvements. While the economic and emissions reduction potential from such investments is enormous, many stakeholders that may be eligible for one or more of these tax incentives may need help understanding the basic tenets of how the incentives work, whether their existing or upcoming projects may qualify for one or more incentives, and how to apply and claim incentives for their projects.

The National Association of State Energy Officials has prepared a series of short briefs with information on how various tax incentives enhanced by the IRA work, as well as use cases to highlight each incentive and provide considerations and examples that State and Territory Energy Offices can use to better inform their decisions or share with key stakeholders.

The following section provides introductory information about tax incentives and the changes the IRA made to existing tax law. **Please note that the information contained in this document is not tax advice, and please consult a tax advisor before deciding on whether or how to use this information and these incentives for clean energy projects.**

How did the IRA Enhance Energy Tax Incentives?

A tax incentive is a government measure that is designed to encourage decisions that benefit the public good by lowering tax burdens as a result of investing in certain technologies, businesses, or sectors of the economy. Income tax incentives fall into two categories: tax deductions and tax credits. An **income tax deduction** reduces the amount of a person's or an organization's income that is subject to taxation. The Energy Efficient Commercial Buildings Deduction (179D) is an example of a tax deduction. An **income tax credit** directly reduces a person's or organization's tax liability. The Investment Tax Credit (ITC) (48/48E) is an example of a tax credit.

The passage of the IRA enhanced existing energy tax incentives in several ways. This includes:

Allowing tax-exempt state and local government and nonprofit entities to claim certain credits through Elective Pay.[1] The development of Elective Pay represents a major change in access to tax credits to support energy project implementation. Elective Pay is a system that enables state agencies, local governments, tax-exempt municipal, university, schools, and hospitals (MUSH) market properties, and not-for-profit building owners to claim tax credits for qualifying energy projects. Building owners who are eligible for Elective Pay and wish to use it need to follow several steps:[2]

1. **Place a qualifying project into service** – The organization must complete an eligible clean energy project and place it into service before applying for the relevant tax credits.
2. **Determine the tax year of the project** – The organization must determine their tax year (e.g., calendar or fiscal), which will impact their filing deadlines.
3. **Pre-register with the IRS** – The organization must register with the IRS to apply to receive the credit through Elective Pay.[3] Once the registration process is complete, the IRS will issue a separate registration number for each eligible property in the owner's application.
4. **File for the credit before the tax filing deadline** – The organization must file for the credit before their filing deadline as determined by their tax year. According to the IRS, the organization must file forms including source credit forms and Form 3800, which should include the registration number or numbers, and the required attachments.
5. **Receive the value of the credit** – The IRS sends the organization the amount of the credit.[4]

What tax credits does Elective Pay cover?[5]

- Investment Tax Credit for Energy Property (48, pre-2025)
- Clean Electricity Investment Tax Credit (48E, 2025 onwards)
- Production Tax Credit for Electricity from Renewables (45, pre-2025)
- Clean Electricity Production Tax Credit (45Y, 2025 onwards)
- Low-income Communities Bonus Credit (48(e), 48E(h) *application required*)
- Credit for Qualified Commercial Clean Vehicles (45W)
- Zero-Emission Nuclear Power Production Credit (45U)
- Advanced Manufacturing Production Credit (45X)
- Clean Hydrogen Production Tax Credit (45V)
- Clean Fuel Production Credit (45Z, 2025 onwards)
- Credit for Carbon Oxide Sequestration (45Q)
- Alternative Fuel Vehicle Refueling Property Credit (30C)
- Advanced Energy Project Credit (48C)

1 "Elective Pay Overview," Internal Revenue Service, https://www.irs.gov/pub/irs-pdf/p5817.pdf.
2 "Elective pay and transferability frequently asked questions: Elective pay," Internal Revenue Service, https://www.irs.gov/credits-deductions/elective-pay-and-transferability-frequently-asked-questions-elective-pay.
3 To register with the IRS, please see "Register for elective payment or transfer of credits," Internal Revenue Service, https://www.irs.gov/credits-deductions/register-for-elective-payment-or-transfer-of-credits.
4 Note that receipt of the refundable tax credit payment occurs after a project is complete and after a building owner files its required form with the IRS and receives payment. This may create a timing funding gap for a building owner. Project financing agreements with third-party lenders may allow for the financing of the entire project cost and allow a building owner to apply its refundable tax credit payment to pay down the financing upon receipt. Some State Energy Offices or state green banks are exploring creating bridge loan financing products to address this barrier.
5 "Clean Energy Tax Incentives: Elective Pay Eligible Tax Credits," Internal Revenue Service, https://www.irs.gov/pub/irs-pdf/p5817g.pdf.

Extending the sunset date of energy tax incentives. The IRA extended the sunset date of many credits. For example, the Production Tax Credit (PTC) and ITC end and 45Y/48E go into effect in 2025 and remain available until the four-year phase out is triggered in the later of either 2032 or when power sector emissions are 25 percent of 2022 levels. Extending these dates encourages the development of more and larger projects with longer payback periods.

Creating bonus credits for projects meeting specific requirements. The IRA created bonus credits for projects that meet additional criteria to support the development of good jobs and investment in underserved communities. The additional criteria for bonus credits created through the IRA include:

- **Prevailing wage and apprenticeship bonus** – Projects can claim this bonus if they pay laborers applicable prevailing wage rates and employ apprentices from registered apprenticeship programs.[6] If a project meets IRS criteria for this credit, the size of the credit increases by five times the base amount. (That's the bonus.)

The following additional bonuses apply to 45/45Y and 48/48E:

- **Domestic content bonus –** Projects can claim this bonus if they use specific percentages of U.S.-manufactured, mined, or produced steel, iron, or manufactured products.[7] This bonus increases the amount of 45/45Y and 48/48E by 10 percent.
- **Energy communities bonus –** Projects can claim this bonus if they are located in so-called "energy communities," which are areas with high unemployment and high rates of employment in fossil fuel-related jobs, have high levels of pollution (brownfield sites), or are in a census tract where a coal mine or plant has recently closed.[8,9] This bonus increases the total amount of 45/45Y and 48/48E by 10 percent.
- **Low-income communities bonus** – Projects can claim this bonus **only for the ITC** if they are located in low-income communities, on Indian land, or if they are part of a qualified low-income residential building, or a qualified low-income economic benefit project.[10] This bonus increases the amount of the credit by 10 or 20 percent depending on the project and is limited based on an annual capacity allocation of which project owners must apply to receive a portion.

6 For the list of credits that this bonus applies to, see "Prevailing Wage and Apprenticeship Requirements," Internal Revenue Service, https://www.irs.gov/credits-deductions/prevailing-wage-and-apprenticeship-requirements.

7 "Domestic Content Bonus Credit," Internal Revenue Service, https://www.irs.gov/credits-deductions/domestic-content-bonus-credit.

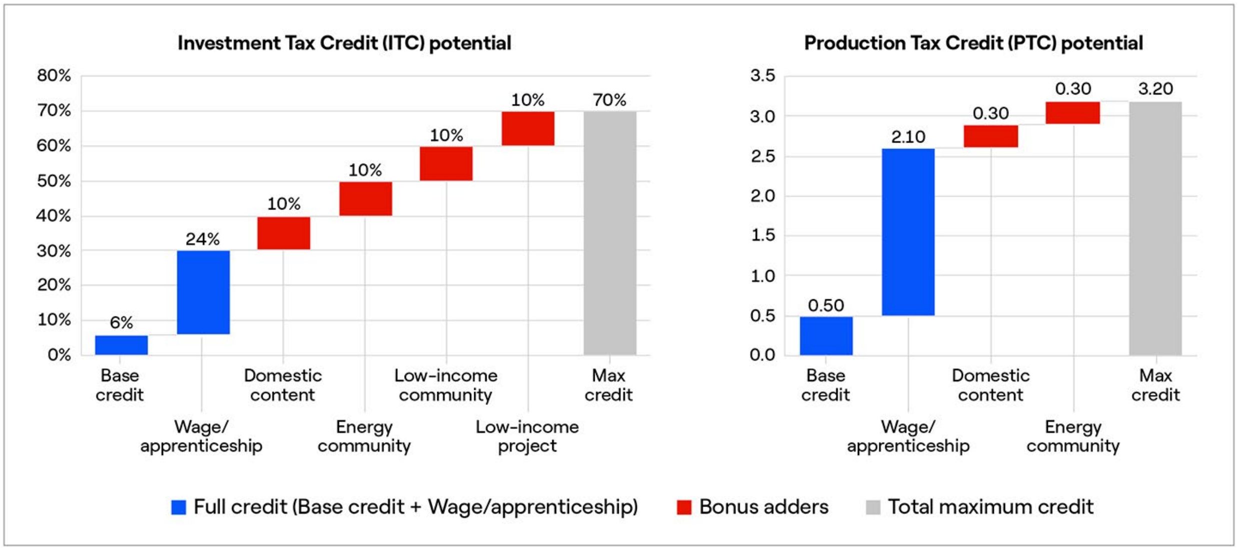
8 "Energy Community Bonus Credit Amounts Under the Inflation Reduction Act of 2022," Internal Revenue Service, https://www.irs.gov/pub/irs-drop/n-23-29.pdf.

9 To view a map of energy communities, see "IRA Energy Community tax Credit Bonus," U.S. Department of Energy, https://arcgis.netl.doe.gov/portal/apps/experiencebuilder/experience/?id=a2ce47d4721a477a8701bd0e08495e1d.

10 "Low-Income Communities Bonus Credit," Internal Revenue Service, https://www.irs.gov/credits-deductions/low-income-communities-bonus-credit.

The bar chart below shows how these bonus credits could be added on to the base credit to enable 45/45Y to cover up to 70 percent of a fully eligible project's qualifying costs and vastly increase the amount of the 48/48E credit.

Chart 1: 45/45Y and 48/48E Potential of IRA Bonus Tax Credits[11]



How State Energy Offices Can Get Involved

State and Territory Energy Offices can play important roles in supporting building owners who wish to take advantage of these tax incentives. Actions State and Territory Energy Offices can take include:

- **Providing education and outreach to eligible building owners, including local governments and nonprofits.** Many building owners eligible for these enhanced tax incentives and/or Elective Pay may not realize that they are able to take advantage of the credits to support clean energy investments. State and Territory Energy Offices can help fill this gap by providing education and outreach to building owners, including overviews of tax incentives and how to apply for Elective Pay. To achieve this goal, State and Territory Energy Officess could use mailings, webinars, and person-to-person communication, among other tactics deemed appropriate to reach stakeholders.

- **Offering support for performance contracting.** State and Territory Energy Offices that offer Energy Savings Performance Contract (ESPC) technical assistance may wish to consider providing support and assistance for those building owners who are looking to leverage an ESPC for retrofit projects, integrating information about applicable tax incentives and Elective Pay into their technical assistance processes.

- **Leading by example for their own facilities.** State and Territory Energy Offices can work with the owners of the buildings they occupy to make upgrades that use IRA tax incentives to help fund the improvements. In this way State and Territory Energy Offices s are modeling behavior that can guide other agencies, especially through the use of Elective Pay.

11 Chart from Maddie Lee, "Maximizing Inflation Reduction Act of 2022 bonus tax credits," Enel North America, https://www.enelnorthamerica.com/insights/blogs/maximizing-inflation-reduction-act-of-2022-bonus-tax-credits.

179D: Energy Efficient Commercial Buildings Deduction

**Note: The information in this brief does not represent tax advice. Please consult a tax advisor before applying for this incentive as part of your building construction or retrofit plan.*

Overview

Section 179D of the Internal Revenue Code enables property owners of commercial buildings to claim deductions for installing qualifying energy-efficiency equipment in their buildings.[12] This tax deduction was established as part of the Energy Policy Act of 2005 and was updated in 2022 by the Inflation Reduction Act. To qualify for the minimum deduction of $0.50/sq. ft., a building must achieve at least a 25 percent reduction in energy usage compared to a reference building based on ASHRAE Standard 90.1. The deduction then increases on a sliding scale with increased building efficiency until a building achieves a 50 percent reduction in energy cost savings. The maximum baseline credit available for a building meeting these standards is $1.00/sq. ft. Prevailing wage and apprenticeship bonuses apply to this incentive, increasing the amount of the credit by five times. 179D is not eligible for Elective Pay.

With the Inflation Reduction Act, Congress expanded 179D's transferability to include additional types of public and nonprofit entities.[13] They include owners of Tribal government buildings; Alaska Native Corporations; and tax-exempt MUSH market building owners, tenants, or any other tax-exempt entities that make retrofits to existing properties. (This is in addition to privately-owned commercial building owners.) Owners of public buildings are allowed to allocate the benefits of the deduction to the designers of their retrofit projects, which can include architects, engineers, Energy Service Companies (ESCOs), or other contractors. A designer must prove that they are responsible for the installation of the energy-efficient improvements and have the improvements certified for their energy savings through a qualified third-party. Designers also need an allocation letter that clarifies that the building owner is passing on the deduction to them. Once those steps are completed, a designer can leverage the deduction for themselves.

Table 1: Summary of 179D Tax Deductions[14]

Deduction Without Prevailing Wage and Apprenticeship Requirements		Deduction With Prevailing Wage and Apprenticeship Requirements Satisfied)	
Minimum (for 25% energy cost savings)	**Maximum (for 50% energy cost savings)**	**Minimum (for 25% energy cost savings)**	**Maximum (for 50% energy cost savings)**
$.50/sq. ft.	**$1.00/sq. ft.**	**$2.50/sq. ft.**	**$5.00/sq. ft.**

12 "Energy Efficient Commercial Buildings Deduction," Internal Revenue Service, https://www.irs.gov/credits-deductions/energy-efficient-commercial-buildings-deduction.

13 Transferability allows entities that cannot use Elective Pay but do qualify for eligible tax credits to transfer all or a portion of the credits to third-party buyers in exchange for cash. A buyer and seller will agree to the terms and pricing. Several third-party online sites provide services to match tax credit sellers with buyers. For public buildings, a building owner will transfer the incentive to the designer of the retrofit project (typically an ESCO or similar entity) as part of the payment.

14 These numbers are for taxable year 2023 only, and rates will change annually based on inflation. Chart reprinted from "179D Commercial Buildings Energy-Efficiency Tax Deduction," U.S. Department of Energy, https://www.energy.gov/eere/buildings/179d-commercial-buildings-energy-efficiency-tax-deduction.

How to Leverage this Tax Incentive

Example 1: A local university leverages 179D as part of an Energy Savings Performance Contract

A local university outside a major metropolitan area wishes to leverage 179D as part of an Energy Savings Performance Contract (ESPC) agreement to make deeper retrofits to its facilities through the monetization of this tax deduction. During the Investment Grade Audit step of the ESPC process, the university indicates to the ESCO that it wishes to monetize 179D as part of the financing for the project. The ESCO and the university could then negotiate how to monetize and share the tax deduction as part of the repayment process for installing qualifying measures, such as lighting or heating, ventilation, and air-conditioning (HVAC) upgrades, in addition to leveraging the energy savings provided by those upgrades. Once the upgrades are installed, the ESCO must get certifications for the improvements it installs to ensure they meet the standards required by the deduction. The ESCO also needs an allocation letter that clarifies that the building owner consents to pass the deduction to the ESCO. After that, the university transfers the deduction to the ESCO to leverage as needed.

Example 2: A private company elects to leverage 179D as part of a comprehensive retrofit of its buildings

A private company wishes to modernize its building portfolio and optimize its energy savings. The company would identify how and where it could leverage the deduction, and then apply for the deduction once the improvements are completed. The process for claiming the 179D deduction can be found here.

Considerations for State Energy Offices

- **Which decision-makers need to know about this deduction?**
  - Officials for state agencies, school districts, and the MUSH market sector, including agencies/authorities that own or operate buildings/facilities, general services and landlord agencies, as well as building/facility managers and operators
  - State-run ESPC program managers
  - Licensed design, engineering, and contractor professionals who can act as qualified individuals to certify an installation's energy savings and eligibility for the deduction
  - Potential designers, ESCOs, and other companies that can take advantage of this deduction in the private sector, including small-to-medium sized commercial enterprises
- **What are avenues to reach those decision-makers?**
  - Communications through dedicated listservs
  - Help-line/answer-line e-mail addresses and phone numbers for inquiries
  - Webinars for specific types of entities
  - Participation at in-state conferences, roadshows, etc.
  - Presentations to state organizations such as associations of state school business officers, groups of local government officials that authorize or enforce existing building policies, etc.

- **What other sources of Infrastructure Investment and Jobs Act (IIJA) and/or IRA funds can organizations potentially leverage alongside this credit?**
  - **IIJA Section 40502** - Energy Efficiency Revolving Loan Fund Capitalization Grant Program funds could be leveraged as low-cost financing for projects.
  - **IIJA Section 40541** – Renew America's Schools Program grants to school districts could be leveraged to make improvements alongside ESPC and 179D. This program is administered by the U.S. Department of Energy (DOE).
  - **IIJA Section 40542** - Grants to nonprofits could potentially be leveraged if there is an energy-as-a-service agreement utilized as part of the retrofit financing structure.
  - **IIJA Section 40552** - Energy Efficiency and Conservation Block Grant funds could be leveraged to make improvements to buildings.
  - **IRA Section 50121** – Home Energy Performance-Based, Whole House (HOMES) Rebates could be leveraged alongside 25C to cover additional costs of home energy retrofits in multifamily properties.
  - **IRA Section 50122** – High-Efficiency Electric Home Rebate Program (HEEHR) Rebates could be leveraged to cover additional costs of upgrades for LMI homeowners in multifamily properties.

Resources

Internal Revenue Service Summary of 179D Provisions

This webpage provides information on 179D, including eligibility for the incentive, the incentive amounts available to qualifying buildings, and the building code standards to exceed to qualify for the incentive.
Link: https://www.irs.gov/credits-deductions/energy-efficient-commercial-buildings-deduction

Frequently Asked Questions About Prevailing Wage and Apprenticeship Requirements Under the Inflation Reduction Act

This webpage provides information about Davis-Bacon's prevailing wage and apprenticeship requirements and how the 179D incentive increases if those requirements are met by a building owner.
Link: https://www.irs.gov/credits-deductions/frequently-asked-questions-about-the-prevailing-wage-and-apprenticeship-under-the-inflation-reduction-act#:~:text=In%20general%2C%20a%20taxpayer%-20that,credit%20or%20deduction)%20by%20five

IRC 179D Energy Efficient Commercial Buildings Process Overview

This webpage provides information on the process that qualifying building owners must complete to obtain the 179D tax incentive. It also indicates the forms a building owner must complete as part of this process.
Link: https://www.irs.gov/pub/fatca/int_practice_units/irc-179d-energy-efficient.pdf

Energy Savings Modeling and Inspection Guidelines for Commercial Building Federal Tax Deductions for Buildings [Placed in Service?] in 2016 and Later

This document provides guidance on the modeling and inspection of buildings looking to qualify for the 179D tax incentive. It includes information on software requirements, model parameters, building [energy?] loads and schedules, and guidelines for inspection of building envelopes, interior lighting, and HVAC and service hot water systems.
Link: https://www.energy.gov/eere/buildings/downloads/energy-savings-modeling-and-inspection-guidelines-commercial-building

25C: Energy Efficient Home Improvement Credit

*Note: The information in this brief does not represent tax advice. Please consult a tax advisor before applying for this incentive as part of your building construction or retrofit plan.

Overview

Section 25C of the Internal Revenue Code enables residential property owners to claim a tax credit for installing qualifying energy efficiency improvements in their homes. This credit was expanded by the Inflation Reduction Act so that homeowners can claim the credit for up to 30 percent of qualifying energy efficiency improvement costs and energy property expenses, compared to 10 percent under prior law. The maximum credit a homeowner can claim each year is $1,200 for improvements and energy property costs, and $2,000 for heat pumps, heat pump water heaters, biomass stoves, or biomass boilers, for a total of $3,200 in annual credits. For the first time, home energy audits now can qualify for a credit of up to $150 as part of the $1,200 that residents can claim annually. Eligible homeowners can claim this credit annually until 2033, and there is no lifetime dollar limit to this credit. Because the credit is nonrefundable, homeowners cannot receive more in the credit than they owe in taxes.

Homes eligible for this credit cannot be new construction and must be located in the United States. Building envelope components must have an expected lifespan of at least five years and must meet specific energy efficiency standards set forth in the IRS guidance. A resident [homeowner?] must subtract public utility subsidies from the credit and subtract rebates if they meet certain qualifications.[15] State energy efficiency incentives are not subtracted from the total unless they qualify as rebates.[16]

15 Rebates must be subtracted from the total credit if they are based on the cost of the property; coming from someone connected to the sale, such as a manufacturer, distributor, seller, or installer; and not given as payment for services provided.

16 For more information on coordinating tax incentives with residential rebates, see "Coordinating DOE Home Energy Rebates with Energy-Efficient Home Improvement Tax Credits: An Explainer," U.S. Department of the Treasury, https://home.treasury.gov/news/featured-stories/coordinating-doe-home-energy-rebates-with-energy-efficient-home-improvement-tax-credits-an-explainer; and "Frequently asked questions about energy efficient home improvements and residential clean energy property credits," Internal Revenue Service, https://www.irs.gov/pub/taxpros/fs-2022-40.pdf.

Eligible Upgrades and Incentive Amounts[17]

Equipment Type	Tax Credit Available for 2023-2032 Tax Years
Home Clean Energy Products	
Solar (electricity)	30% of cost
Fuel Cells	
Wind Turbine	
Battery Storage	
Heating, Cooling, and Water Heating	
Heat pumps	30% of cost up to $2,000 per year. Installations must have a thermal efficiency rating of at least 75 percent. Costs may include labor for installation.
Heat pump water heaters	
Biomass stoves	
Geothermal heat pumps	30% of cost. Upgrades must meet Consortium for Energy Efficiency highest efficiency tier. Costs may include labor for installation.
Solar (water heating)	
Efficient air conditioners*	30% of cost up to $600. Upgrades must meet Consortium for Energy Efficiency highest efficiency tier. Costs may include labor for installation.
Efficient heating equipment*	
Efficient water heating equipment*	30% of cost up to $600. Upgrades must meet Consortium for Energy Efficiency highest efficiency tier. Costs may include labor for installation.
Other Energy Efficiency Upgrades	
Electric panel of circuit upgrades for new electric equipment	30% of cost, up to $600
Insulation materials*	30% of cost. House wraps, sealants, and spray foams are covered under this tax credit. Materials must meet IECC standards in effect at the start of the year two years before installation.
Windows, including skylights*	30% of cost up to $600. Windows must meet Energy Star Most Efficient certification requirements.
Exterior doors*	30% of cost up to $500 for doors (up to $250 each). Doors must meet applicable Energy Star requirements.
Home Energy Audits*	30% of cost up to $150. Audits must be prepared by a certified home energy auditor and include a written report that identifies cost-effective energy efficiency improvements and provides an estimate of energy and cost savings for those improvements.
Home Electric Vehicle Chargers	30% of cost up to $1,000
**Subject to cap of $1,200/year*	

17 Chart adapted from "Making Our Homes More Efficient: Clean Energy Tax Credits for Consumers," U.S. Department of Energy, https://www.energy.gov/policy/articles/making-our-homes-more-efficient-clean-energy-tax-credits-consumers.

How to Leverage this Tax Incentive

Example: A single-family homeowner leverages this credit to make improvements to their home.

A homeowner faced with an aging boiler and a drafty home decides to reach out to a local contractor to get an estimate of the cost to make upgrades. The contractor recognizes that there is an opportunity for the homeowner to leverage 25C if they choose to make energy-efficient upgrades and suggests this to the homeowner. The homeowner is amenable to the idea, so the contractor facilitates an audit of the home by an auditor with a certification recognized by the IRS to receive the $150 credit and identify potential additional improvements. The auditor provides the homeowner with an assessment of the home's current energy use and identifies the most significant, cost-effective recommendations to improve energy efficiency. The audit identifies that the homeowner could improve the insulation and air conditioning unit as well as validates the benefits of the original proposed improvements. The homeowner decides to upgrade the windows, insulation, and air conditioner based on the audit's findings.

The contractor discusses the potential financing options for the improvements and notes that there are state rebate programs available for the homeowner that could reduce the up-front cost of the boiler. The homeowner agrees to leverage the rebate program and the contractor installs the energy efficiency upgrades agreed to by the homeowner. The contractor and auditor provide the homeowner with the necessary paperwork to file for the credit. At tax time, the homeowner applies for the credit by completing Form 5695 and receives the credit minus the amount of the cost covered by the rebate program.

Considerations for State Energy Offices

Which decision-makers need to know about this incentive?

- Single-family homeowners
- Contractors who serve single-family homes
- Auditors who need to be certified by one of the qualified programs on the list maintained by DOE[18]

What are avenues to reach those decision-makers?

- Communications through mailers, webinars, and websites with key information
- Outreach to contractor networks through training webinars, mailers, etc.
- Information sharing via workforce training programs that currently or prospectively provide home energy auditor training and certification
- Coordination with community networks and other local organizations to provide educational resources and tax-related services
- Participation at in-state conferences and roadshows

18 For a list of qualified programs, see "U.S. Department of Energy Recognized Home Energy Auditor Qualified Certification Programs for the Energy Efficient Home Improvement Credit (Section 25C)," U.S. Department of Energy, https://www.energy.gov/eere/buildings/us-department-energy-recognized-home-energy-auditor-qualified-certification-programs.

What other sources of IIJA and/or IRA funds can homeowners and contractors potentially leverage alongside this credit?

- **IRA Section 50121** – Home Energy Performance-Based, Whole House rebates can be leveraged to cover additional costs of home energy retrofits.
- **IRA Section 50122** – High-Efficiency Electric Home Rebate Program rebates can be leveraged to cover additional costs of upgrades for LMI homeowners.
- **IIJA Section 40502** – Energy Efficiency Revolving Loan Fund capital is available to help finance the cost of home retrofits, and Home Energy Score audits are available in states that have authorized their use for that purpose.
- **IRA Section 60103** – Greenhouse Gas Reduction Fund capital is available to help finance the cost of these improvements for homeowners.

Resources

Internal Revenue Service Summary of 25C

This webpage provides information on 25C, including eligibility for the incentive, the incentive amounts available to qualifying homeowners, and the efficiency standards required for upgrades to qualify for the incentive. This website also has links to the forms needed for homeowners to apply for the credit, as well as information on the application process involved.

Link: https://www.irs.gov/credits-deductions/energy-efficient-home-improvement-credit

Frequently Asked Questions About Energy Efficient Home Improvements and Residential Clean Energy Property Credits

This fact sheet from the IRS provides answers to frequently asked questions about the use of 25C. It provides a general overview of the credit and clarifies qualifying expenditures and the amount of the credit for each improvement. It also clarifies the length of time a homeowner can claim the credit for an investment and provides additional information that homeowners may find useful.

Link: https://www.irs.gov/pub/taxpros/fs-2022-40.pdf

Coordinating DOE Home Energy Rebates with Energy Efficient Home Improvement Tax Credits: An Explainer

This fact sheet from the U.S. Treasury provides an overview of how homeowners can leverage 25C alongside DOE's Home Energy Rebate programs (HOMES and HEEHR) to make deeper retrofits to their properties. It provides examples of uses and restrictions of the rebate programs and the tax credit.

Link: https://home.treasury.gov/news/featured-stories/coordinating-doe-home-energy-rebates-with-energy-efficient-home-improvement-tax-credits-an-explainer

U.S. Department of Energy Recognized Home Energy Auditor Qualified Certification Programs for the Energy Efficient Home Improvement Credit (Section 25C)

This resource from DOE provides a list of approved certification programs for home energy auditors that taxpayers can use to claim 25C for home energy audits. DOE will amend and update this list as needed over time.

Link: https://www.energy.gov/eere/buildings/us-department-energy-recognized-home-energy-auditor-qualified-certification-programs

Forms Needed to Claim This Credit and Guides to the Process

Form 5695 - Residential Energy Credits
Process Guide for Claiming 25C - Exterior Doors, Windows, Skylights, and Insulation Materials
Process Guide for Claiming 25C – Home Energy Audits
Process Guide for Claiming 25C – Residential Energy Property

45/48: Production Tax Credit/Investment Tax Credit for Energy Property

*Note: The information in this brief does not represent tax advice. Please consult a tax advisor before applying for this incentive as part of your building construction or retrofit plan.

Overview

Sections 45 and 48 of the Internal Revenue Code create tax credits aimed at supporting the installation and operation of renewable energy generation sources by taxable business entities, certain tax-exempt entities, and local and Tribal governments. The Production Tax Credit supports the production of renewable electricity, while the Investment Tax Credit supports the installation of renewable energy generators. While the ITC is applied to the up-front costs of a project, the PTC is gradually earned over time as a project produces energy. Because a renewable energy project can only leverage one of the two credits, developers should carefully consider each project's characteristics before choosing to apply for one versus the other.

The PTC and ITC are generally used for different types and sizes of renewable energy generation projects because of the difference in how the two credits are calculated. Some technologies are only eligible for one of the two credits or may receive a reduced value for one of the credits compared to the other. Developers should consult a tax advisor to determine which credit would be more advantageous to apply for when developing a financing plan for a project.

Qualifying Technologies for the PTC and ITC[19]

Eligible for PTC	Eligible for PTC or ITC	Eligible for ITC
Biomass, landfill gas, hydroelectric, marine, and hydrokinetic	Multiple solar and wind technologies, municipal solid waste, geothermal (electric), and tidal	Energy storage technologies, microgrid controllers, fuel cells, geothermal (heat pump and direct use), combined heat and power, microturbines, and interconnection costs

Congress modified these credits in the IRA to transition them to become technology-neutral in 2025, and to extend their sunset dates. The technology neutral credits, 45Y and 48E, will apply to any facility whose greenhouse gas emissions rate is less than zero until the later of 2032 or when power sector emissions are 25 percent of 2022 levels. The changes the IRA made will enable a wider range of renewable energy sources, such as energy storage and batteries, to qualify for the credits. The IRA also enhanced both the PTC and ITC by providing bonus credits if projects meet certain standards related to wage and apprenticeship requirements; domestic content minimums; siting in energy communities, low-income communities, or Indian land; or being part of a qualified low-income residential building project. For example, if a project utilizing the ITC meets all these requirements, the ITC can cover up to 70 percent of the eligible costs of the project. The bonus credit adjustments are summarized in the following chart.

19 Chart adapted from "Summary of Inflation Reduction Act provisions related to renewable energy," U.S. Environmental Protection Agency, https://www.epa.gov/green-power-markets/summary-inflation-reduction-act-provisions-related-renewable-energy.

Overview of Production and Investment Tax Credits[20]

Category	Amount for Projects <1MW AC (Cumulative)		Amount for Projects >1MW AC (Cumulative)	
	Production Tax Credit	Investment Tax Credit	Production Tax Credit	Investment Tax Credit
Base Tax Credit	$.0275/kWh	30%	$.005/kWh	6%
Wage and Apprenticeship Requirements	N/A	N/A	+$.0225/kWh	+24%
Domestic Content Minimums	+$.003/kWh	+10%	+$.003/kWh	+10%
Siting in Energy Community	+$.003/kWh	+10%	+$.003/kWh	+10%
Siting in Low-Income Community or on Indian Land (<5 MW AC)	N/A	+10%	N/A	+10%
Qualified Low-Income Residential Building Project or Economic Benefit Project	N/A	+20%	N/A	+20%

How to Leverage this Tax Incentive

Example: A state agency wishes to leverage the ITC to cover the costs of a solar installation and geothermal heat pumps on its property located in an energy community.

A state agency is under an obligation to procure a specific percentage of its energy from clean energy sources to meet a state's lead-by-example goal. The agency determines that leveraging one of the IRA tax credits through Elective Pay will be a cost-effective way to pay for some of the costs of the system as part of an overall financing plan and determines that the amount of the tax credit will flow directly to the agency itself so it can repay third parties for costs incurred. The agency then contracts with an ESCO to complete a performance contract for the work in addition to other retrofits and arranges to take out a bridge loan from its state's Energy Efficiency Revolving Loan Fund to cover the costs between the time the solar system and heat pumps are installed and the time the agency expects to receive the credit.

Once the solar system is in place and operational, the agency determines its tax year for the project and completes its pre-filing registration with the IRS. The agency then files the paperwork for the credit, along with any supplemental documentation, to show that it is meeting the requirements to claim the energy community, domestic content minimum, and wage and apprenticeship bonus credits. Once the agency receives the value of the credit, it uses the funding to pay back the ESCO that it contracted with to install the system.

20 Chart adapted from "Overview of Inflation Reduction Act Incentives for Federal Decarbonization," U.S. Department of Energy, https://www.energy.gov/femp/overview-inflation-reduction-act-incentives-federal-decarbonization.

Considerations for State Energy Offices

Which decision-makers need to know about this incentive?

- State agency administrators
- Renewable energy developers
- MUSH market decisionmakers
- Commercial and multifamily building owners

What are avenues to reach those decision-makers?

- Communications through mailers, webinars, and websites with key information
- Outreach to contractor networks and ESCOs through training webinars, mailers, etc.
- Participation at in-state conferences and roadshows

What other sources of IIJA and/or IRA funds can building owners and contractors potentially leverage alongside this credit?

- **IIJA Section 40502** - Energy Efficiency Revolving Loan Fund Capitalization Grant Program funds could be leveraged as low-cost financing for the project.
- **IRA Section 60103** – Greenhouse Gas Reduction Fund capital could be leveraged to support investments in public sector buildings.
- **IRA Section 60114** – Climate Pollution Reduction Grants could be used to support financing for Direct Pay [or Elective Pay?] if the state chooses to use them for that purpose.

Resources

U.S. Department of Energy Summary of 45/48

This webpage provides information on 45/48, including on eligibility for the incentives, the incentive amounts available to qualifying projects, and project requirements to receive the bonus credits for the PTC and ITC.
Link: https://www.energy.gov/eere/solar/federal-solar-tax-credits-businesses

Frequently Asked Questions for Elective Pay

This webpage provides answers to common questions building owners may have about Elective Pay, including the process and rules.
Link: https://www.irs.gov/credits-deductions/elective-pay-and-transferability-frequently-asked-questions-elective-pay

Forms Needed to Claim This Credit and Guides to the Process

Pre-Filing Registration Page – Elective Pay
Pre-Filing Registration Tool User Guide
Filing Tips for Tax-Exempt Organization Returns – Tax Years After 2007
Clean Energy Authorization Permission Management User Guide

30C/45W: Alternative Fuel Vehicle Refueling Property Credit/Credit for Qualified Commercial Clean Vehicles

*Note: The information in this brief does not represent tax advice. Please consult a tax advisor before applying for this incentive as part of your building construction or retrofit plan.

Overview

Sections 30C and 45W of the Internal Revenue Code support the purchase and installation of clean vehicle infrastructure and clean fleet procurement.

Section 30C provides a tax credit to building owners who install alternative fuel vehicle fueling stations on their properties after January 1, 2023. Eligible fuels include natural gas, propane, hydrogen, electricity, E85, or biodiesel blends of at least 20 percent.[21] Businesses can receive a credit of six percent of the depreciable costs, up to $100,000 per station. This credit can increase to 30 percent if a project meets prevailing wage and apprenticeship requirements. Projects must also be in census tracts that are either in low-income communities or non-urban areas. This credit is also available to public and nonprofit building owners through Elective Pay, as well as residential homeowners and commercial building owners.

Section 45W enables businesses to claim a credit for purchasing commercial clean vehicles. The size of the credit varies depending on the gross vehicle weight rating (GVWR), the amount of an owner's basis in the vehicle based on the type of engine, and the incremental cost of the vehicle compared to an internal combustion engine (ICE) powered vehicle.[22] The credit value is defined by the incremental cost between the clean vehicle and the ICE vehicle, up to $7,500 or $40,000 depending on the weight of the vehicle. This credit is eligible for Elective Pay and both tax-exempt organizations as well as private businesses qualify for the credit.

Overview of 30C/45W Tax Credits[23]

Category	30C Alternative Fuel Vehicle Refueling Property Credit	45W Credit for Qualified Commercial Clean Vehicles	
		GVWR < 14,000 lbs	GVWR > 14,000 lbs
Maximum Credit	$100,000 for commercial, $1,000 for residential	$7,500	$40,000
Wage and Apprenticeship Requirements	Applicable increases credit amount by 5x compared to the base credit	Not Applicable	
Eligible Vehicle or Infrastructure Categories	Fueling infrastructure that dispenses natural gas, hydrogen, propane, electricity, E85, biodiesel blends of at least 20%	PHEVs, EVs, fuel cells	
Base credit	6%	30% for EVs 15% for any ICE-powered vehicle (including PHEVs)	

21 "Alternative Fuel Infrastructure Tax Credit," U.S. Department of Energy, Alternative Fuels Data Center, https://afdc.energy.gov/laws/10513.

22 The incremental cost of a vehicle is the amount of its purchase price in excess of a similar gas or diesel internal combustion engine model.

23 Chart developed from "Commercial Clean Vehicle Credit," Internal Revenue Service, https://www.irs.gov/credits-deductions/commercial-clean-vehicle-credit, and "Alternative Fuel Vehicle Refueling Property Credit," Internal Revenue Service, https://www.irs.gov/credits-deductions/alternative-fuel-vehicle-refueling-property-credit.

How to Leverage this Tax Incentive

Example: A state Department of Transportation wishes to invest in new electric vehicles and charging equipment for its branch office in the rural part of a state.

A state Department of Transportation is looking to upgrade its vehicle fleet to electric vehicles to meet state lead-by-example clean energy goals. The department decides to purchase the new fleet directly and install charging stations on-site to allow for easy refueling of the vehicles. As part of its plan to finance the cost of the upgrades, the department decides to leverage the tax incentives offered by the IRA by using Elective Pay. The department works with a state-approved contractor to develop a plan to site and install the charging stations, and contracts with an electric vehicle supplier to place an order for the new fleet for use later that year.

After the installations and purchases are complete, the department completes its pre-filing registration with the IRS and determines its tax year for the projects. It then files Form 990-T to submit its annual tax return before May 15, since the agency operates on a calendar year basis, and makes a valid elective payment election. The department uses its state's Energy Efficiency Revolving Loan Fund to acquire gap financing to cover the costs of the repayment before it receives the value of the tax credits from the IRS. Finally, the department receives the value of the credits from the IRS and uses that value to pay for a portion of the financing for the fleet and charging stations.

Considerations for State Energy Offices

Which decision-makers need to know about this incentive?

- State agency administrators
- MUSH market decisionmakers
- Commercial and multifamily building owners
- Single-family homeowners

What are avenues to reach those decision-makers?

- Communications through mailers, webinars, and websites with key information
- Outreach to contractor networks and ESCOs through training webinars, mailers, etc.
- Participation at in-state conferences and roadshows

What other sources of IIJA and/or IRA funds can building or facility owners potentially leverage alongside this credit?

- **IIJA Section 40502** - Energy Efficiency Revolving Loan Fund Capitalization Grant Program funds could be leveraged as low-cost financing for a project if the state has made charging stations an eligible upgrade.
- **IRA Section 60103** – Greenhouse Gas Reduction Fund capital can be leveraged to support investments in public sector buildings.
- **IRA Section 60114** – Climate Pollution Reduction Grants can be used to support financing for Elective Pay if the state chooses to use them for that purpose.

Resources

Internal Revenue Service Summaries of 30C and 45W

The following webpages provide information on key aspects of 30C and 45W, including eligibility for the incentives, the incentive amounts available to qualifying vehicles and fueling infrastructure, and the process by which customers can claim these credits.

30C Credit Link: https://www.irs.gov/credits-deductions/alternative-fuel-vehicle-refueling-property-credit

45W Credit Link: https://www.irs.gov/credits-deductions/commercial-clean-vehicle-credit

Frequently Asked Questions for Elective Pay

This webpage provides answers to common questions building owners may have about Elective Pay and the Elective Pay process and rules.

Link: https://www.irs.gov/credits-deductions/elective-pay-and-transferability-frequently-asked-questions-elective-pay

Forms Needed to Claim This Credit and Guides to the Process

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NASEO
National Association of
State Energy Officials

1300 North 17th Street, Suite 1275, Arlington, Virginia 22209 | 703.299.8800 | https://www.naseo.org