INFLATION REDUCTION ACT 2022 - §179D TAX DEDUCTION & §45L TAX CREDIT

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ABSTRACT

This document explores the transformative impact of sections §179D and §45L within the United States Internal Revenue Code (IRC) on promoting energy-efficient practices in the realm of building construction. Enacted under the Energy Policy Act of 2005, these provisions offer tax incentives to encourage the adoption of sustainable building technologies and practices. Over time, these provisions have evolved and undergone enhancements, resulting in the Inflation Reduction Act (IRA) of 2022. This act introduces significant changes aimed at fostering sustainable building practices, encouraging broader participation, and elevating energy efficiency standards. This document delves into the historical origins of §179D and §45L, the amendments introduced by the IRA, and their combined influence on driving environmentally responsible building advancements. It underscores the substantial impact of these provisions on incentivizing innovation, promoting workforce development, and catalyzing the adoption of energy-efficient solutions within the construction sector.

INTRODUCTION

In an era marked by growing environmental consciousness and a pressing need for energy conservation, the role of energy-efficient practices in building construction has taken center stage. §179D and §45L have emerged as potent tools in driving sustainable building advancements. Enacted as part of the Energy Policy Act of 2005 under Public Law 109-58, these provisions offer targeted tax incentives to businesses, property owners, and developers, serving as catalysts for the adoption of energy-efficient technologies and practices. Designed to reward those who invest in environmentally responsible building enhancements, §179D and §45L encourage innovation in the construction sector by providing tangible financial benefits. Over time, these provisions have undergone evolution and enhancements, reflecting the dynamic nature of the industry and the imperative to address evolving energy challenges.

As we delve into the intricacies of §179D and §45L, we'll explore their historical origins, the transformative amendments introduced by the IRA, and the impact these changes have on fostering sustainable building practices, driving workforce development, and aligning the industry with elevated energy-efficiency standards. These provisions offer building owners, designers, and stakeholders the means to create a more energy-efficient and environmentally-consciously built environment.

BACKGROUND

Both §179D and §45L refer to sections of the United States IRC that provide tax incentives for energy-efficient improvements to buildings. These incentives are designed to encourage businesses and property owners to invest in energy-efficient technologies and sustainable building practices. The original bill enacting §179D and §45L took effect on Aug. 8, 2005, under **Public Law 109-58: ENERGY POLICY ACT OF 2005**.

The initial IRS guidance outlined the procedure through which building owners could claim the §179D deduction. **2006-26 IRB (Internal Revenue Bulletin) and Notice 2006-52** guidance included detailed instructions regarding certification prerequisites, inspection procedures, and guidelines for energy modeling.

In 2008, the IRS provided new guidelines under **20014 IRB; Notice 2008-40.** The significant changes brought about by these amendments are as follows:

Designer Allocation for Government Buildings: Government agencies can now allocate the benefits of the §179D deduction to the designers responsible for creating and implementing energy-efficient systems and improvements in government-owned buildings. This incentivizes architects, engineers, and other designers to play a pivotal role in devising and executing sustainable building solutions.

DOE Approval of Specific Technologies: The DOE has been granted the authority to delineate the specific technologies that are deemed eligible for the §179D deduction. This ensures that only established and recognized energy-efficient technologies receive the tax incentive, thereby maintaining the program's integrity and promoting the adoption of proven energy-saving measures.

Adjusted Partially Qualifying Percentages: The percentage of energy savings required for partial qualification under the deduction has been restructured. Notably, the threshold for the building envelope category has been elevated to 10%, enabling a broader array of eligible energy-efficient building envelope improvements.

Extension of Deduction Availability: To encourage continued investment in energy efficiency, the availability of the §179D deduction has been extended to the end of 2008. This extension allows building owners, designers, and stakeholders additional time to take advantage of the tax incentives while fostering the adoption of sustainable building practices.

Section 179D of the Internal Revenue Code (IRC) is an engineered-based tax incentive available for the reduction of energy and power costs in commercial buildings. The tax

provision allows for a tax deduction of up to $1.88 per square foot. (Including inflation adjustment).

The Section 45L Tax Credit is equal to $2,000 per unit for qualified owner-occupied or rental dwelling units that meet certain energy-saving standards.

Construction or rehabilitation of a unit must be substantially completed after August 8, 2005, and sold or leased before the end of 2022. The tax credit is claimed by the developer (known as the Eligible Contractor) in the year in which the unit is occupied.

Public Law No: 117-169: The Inflation Reduction Act of 2022 brings about significant enhancements to Sections 179D and 45L of the U.S. IRC, amplifying the benefits of these energy-efficient tax provisions. The amendments introduce substantial changes aimed at fostering sustainable building practices, encouraging non-profit and tribal government participation, and raising the bar for energy-efficiency standards.

§179D CHANGES

Increased Tax Deduction Amount: The tax deduction amount under §179D is substantially elevated, now allowing building owners, designers, and other eligible stakeholders to claim up to $5.00 per square foot for energy-efficient improvements. This higher deduction incentivizes more comprehensive investment in energy-efficient technologies and practices.

In order to qualify for §179D, buildings need to meet a minimum of 25% Energy Cost Savings (ECS) compared to a baseline building. An additional benefit occurs per every percentage point improvement against ASHRAE 90.1 standard in place four (4) years prior to the date on which the building was placed in service.

TABLE 1: DEDUCTION BENEFIT

Prevailing Wage will determine the starting point of the §179D tax deduction benefit		Key Relevant Changes- for EECBP Placed in service 1/1/2023		
		25% Reduction	Each additional % Point	50% or Higher
Prevailing wage & apprenticeship requirements	Meets	$2.50/SF	$0.10/SF	$5.00/SF
	Does not meet	$0.50/SF	$0.02/SF	$1.00/SF

New Certification Methodology: The amendments introduce a new methodology for certifying the eligibility of the deduction. This methodology is designed to streamline the certification process, ensuring that energy efficiency improvements are accurately assessed and aligned with the updated standards.

Inclusion of Non-Profits and Tribal Governments: The scope of eligibility is expanded to encompass non-profit organizations and tribal governments. This expansion extends the benefits of the §179D deduction to a broader range of entities.

Elevated ASHRAE Standards: The ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) standards for energy efficiency are heightened, reflecting the industry's advancing benchmarks for sustainable buildings. This ensures that only the most impactful energy-efficient improvements qualify for the deduction. On December 23, 2022, the **Internal Revenue Service Issued Announcement 2023-01**, affirming the applicable standards to be used for §179D Energy Efficient Commercial Building Tax Deduction, starting January 1, 2023.

The announcement clarifies that the reference standard to be used for projects being placed in service until January 1, 2027, will be ASHRAE 90.1-2007. See the table below for the applicability of the reference standards in the past and moving forward.

TABLE 2: ASHRAE STANDARD 90.1 REQUIREMENTS

Date Placed In Service	Applicable Reference Standard 90.1
Before 01/01/2015	Standard 90.1-2001
After 12/31/2014 and before 1/1/2027*	Standard 90.1-2007
After 12/31/2026*	Standard 90.1-2019

*Taxpayers who begin construction before January 1, 2023, may apply Reference Standard 90.1-2007 regardless of when the building is placed in service.

Introduction of Prevailing Wage and Apprenticeship Requirements: The amendments introduce a requirement for prevailing wages and apprenticeships for projects seeking the §179D deduction. This provision promotes fair labor practices and workforce development while aligning energy-efficient building initiatives with ethical employment standards.

Recertification: The same buildings will have the opportunity for recertification, provided that supplementary energy improvements are undertaken every three (3) years for privately owned properties and every four (4) years for government or tax-exempt owned properties.

Real Estate Investment Trusts (REITs) will now have the opportunity to take advantage of the §179D tax deduction in the same year when the Energy Efficient Commercial Building Property (EECBP) is placed into service.

§45L CHANGES

The Inflation Reduction Act extends its transformative impact to Section 45L as well:

Increased Tax Credit Amount: Under §45L, the tax credit amount for constructing energy-efficient homes is substantially raised. This amplification incentivizes homebuilders and developers to prioritize sustainable building practices, thereby contributing to a greener housing landscape.

Alignment with New Energy-Efficiency Standards: The amendments ensure that the energy-efficiency criteria for qualifying homes are updated to align with the latest industry

standards. This ensures that the tax credit rewards the most impactful energy-efficient residential construction.

New Homes & Multi-Family: Homes eligible to participate under the ENERGY STAR residential new construction or the ENERGY STAR manufactured new homes programs that are sold or rented after December 31, 2022, will be eligible for a $2,500.00 tax credit. Additionally, new homes that are eligible to participate in the Zero Energy Ready Homes program (ZER) can achieve a tax credit of $5,000.00 per unit. It's important to note that for multi-family projects, the construction needs to be completed using prevailing wages. Prevailing wages are the hourly wages, benefits, and overtime paid to the majority of workers in a particular area for a specific type of work. On the other hand, single-family homes do not need to meet prevailing wage requirements.

For multifamily projects that do not meet the prevailing wage criteria, the eligible tax credit amount will be adjusted to $500 per unit for homes eligible to participate in the ENERGY STAR-certified homes and $1,000 per unit for homes eligible to participate in the ZER program.

PREVAILING WAGES AND APPRENTICESHIP

On November 30, 2022, the IRS issued **Notice 2022-61, Prevailing Wage and Apprenticeship Initial Guidance under Section 45(b)(6)(B)(ii) and Other Substantially Similar Provisions.** This Notice is the first step in clarification of the major changes that came as part of the Inflation Reduction Act (IRA) of 2022 to §179D Tax Deduction and §45L Tax Credit. It is of significance to highlight that §179D Tax Deduction projects initiated before January 29, 2023 are not obligated to adhere to the prevailing wage prerequisites for the "Increased deduction amount" of up to $5.00 per square foot. Any laborer or mechanic engaged in the construction, modification, or restoration of a facility, property, project, or equipment by the taxpayer or any contractor/subcontractor thereof must adhere to prevailing wage prerequisites. The taxpayer is required to maintain thorough records that substantiate payment of prevailing wages to the laborers and mechanics of contractors and subcontractors, in alignment with rates published by the Secretary of Labor. The Secretary of Labor has released prevailing wage determinations for specific geographic areas and construction types on **www.sam.gov**, encompassing all labor classifications pertaining to construction, modification, or restoration work performed on the facility by laborers or mechanics. In cases where wage rates for certain counties and labor classifications are yet to be established, it is incumbent upon the taxpayer to engage with the Department of Labor to ascertain the applicable wage rates. Apprentices are mandated to account for a cumulative 12.5% of the total hours worked on the facility if the project begins in 2023 and 15% of the total hours worked on the facility if the project begins in 2024.

BENEFIT TO BUILDING OWNERS

The cash value that building owners can receive by utilizing the §179D tax deduction depends on several factors, including the size of the building, the extent of the energy-efficient improvements made, the energy savings achieved, and the applicable tax rates. The deduction itself allows building owners to reduce their taxable income, which can lead to a reduction in their overall tax liability. This reduction in tax liability can translate into cash savings.

Deduction Amount: As mentioned earlier, the §179D deduction allows building owners to deduct up to $5.00 per square foot of the property's floor area for energy-efficient improvements.

Calculation Example: A commercial building with 350,000 square feet and the requirements for the maximum deduction of $5.00 per square foot are met.

$5.00 (deduction per sq. ft.) × 350,000 (sq. ft.) = $1,750,000.00

TABLE 3: §179D Net Present Value (NPV)

EPAct 2005 - 2023 and Beyond §179D Net Present Value	
Total Building Square Footage	350,000
Tax Bracket	30%
§179D Qualifying Rate ($/SF)	$5.00
Total Deduction	**$1,750,000**
EPAct Cash Value	$525,000.00
Net Present Value Rate of Return	6%
Total Net Present Value	**$294,045.48**

BENEFITS TO DESIGNERS OF EECBP GOVERNMENT, TAX EXEMPT, AND TRIBAL-OWNED BUILDINGS

Government agencies and tax-exempt tribes can now allocate the benefits of the §179D deduction to the designers responsible for creating and implementing energy-efficient systems and improvements in government, tax-exempt, and tribal-owned buildings. This provision serves to motivate designers committed to energy efficiency, thereby enhancing the operational efficacy of non-private edifices. The ensuing parties stand to potentially benefit from the §179D tax deduction. **Architects, engineers, design-build firms, energy service companies, and other related entities** can potentially benefit from the §179D tax deduction. This deduction allows these professionals and organizations to be recognized and incentivized for their contributions to designing and implementing energy-efficient solutions in both government-owned and non-private buildings.

Calculation Example: A commercial building with 100,000 square feet and the requirements for the maximum deduction of $5.00 per square foot are met:

$5.00 (deduction per sq. ft.) × 100,000 (sq. ft.) = $500,000

Tax Savings: The actual cash value received will depend on the applicable tax rate. If the tax rate is 35%, the tax savings would be: $500,000 (deduction) × 0.35 (tax rate) = $175,000

The actual cash value will depend on the specifics of the situation, including the tax rates in effect for the applicable year, and any potential limitations or restrictions on the deduction. Additionally, if building owners don't have enough taxable income to fully utilize the deduction in a given year, the unused deduction may be carried forward to future years.

In this case, the tax liability could potentially be reduced by $175,000.

WHO IS THE "DESIGNER" OF EECBP?

From **IRS Memorandum AM 2018-005** Pg 4

"Section 3.02 of the Notice defines the 'Designer' of a government-owned building as follows:

A designer is a person that creates the technical specifications for installation of energy efficient commercial building property (or partially qualifying commercial building property for which deduction is allowed under §179D). **A designer may include, an architect, engineer, contractor, environmental consultant or energy services provider who creates the technical specifications for a new building or an addition to an existing building that incorporates energy-efficient commercial building property (or partially qualifying commercial building property for which a deduction is allowed under § 179D)**. A person that merely installs, repairs, or maintains the property is not a designer."

ALLOCATION BASED ON THE ECM PERFORMED

Within IRS publications, guidelines, and established case law, there exist references that underscore the appropriate approach for certifying §179D involves utilizing the Whole Building Methodology. This remains true even in cases where a singular Energy Conservation Measure (ECM) has been executed.

IRS Memorandum AM 2018-005 Pg 10 Scenario 7 Analysis states the following:

"**Facts:** A government building owner hired a specialty Lighting Firm to design and install a unique interior lighting system for a government building that was not included in the general construction contract. The lighting system was built to general parameters specified by the Architect, such as maximum power usage per square foot. The specialty Lighting Firm's design for the interior lighting system incorporated low-power lighting sources along with solar panels. The general construction contract included the building envelope and HVAC/HW systems. The Lighting Firm created design specifications for the building's lighting system but did not design the building envelope or HVAC/HW systems. Either of the following sub-scenarios occurred:

(1) At the completion of construction, the Lighting Firm requested the government building owner allocate the full §179D deduction of $1.80 per square foot to the Lighting Firm. The building owner made this allocation and the Lighting Firm claimed the full §179D deduction. POSTS-133456-17 10

(2) At the completion of construction, the Lighting Firm requested the government building owner allocate a partial §179D deduction for the lighting system of $.60 per square foot. The building owner made this allocation and the Lighting Firm claimed the partial §179D deduction of $.60 per square foot. The building's design team also requested, received, and claimed partial §179D deductions for the HVAC/HW systems and building envelope, totaling $1.20 per square foot.

Analysis: The Lighting Firm was a Designer of the interior lighting system, which was one of the building systems which qualified as EECBP. **While it seems more appropriate for the Lighting Firm to receive a partial § 179D deduction so that Designers of the other EECBP systems can also receive partial § 179D deductions, section 3.03 of the Notice gives the government building owner discretion to allocate either the full deduction to the primary Designer or to allocate portions of the deduction among several Designers**. Unless the Service has evidence that a government building owner's allocation of the §179D deduction was improper, such as when the person to whom the deduction was allocated was not a Designer or when the government building owner allocated more than the maximum amount of the §179D deduction among one or more Designers, the Service should respect the owner's allocation.

QUALIFYING TECHNOLOGIES

The §179D deduction applies to a range of qualifying energy-efficient technologies and improvements made to commercial buildings. These technologies contribute to reduced energy consumption and increased efficiency. These are some of examples of qualifying technologies for §179D:

Lighting Systems: Upgrades to lighting systems, including high-efficiency fixtures, LED lighting, occupancy sensors, and daylight harvesting systems.

FIGURE 1: ENERGY-EFFICIENT LIGHTING FIXTURES

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HVAC Systems: Energy-efficient heating, ventilation, and air conditioning (HVAC) systems that optimize climate control while minimizing energy consumption.

FIGURE 2: DAIKIN WATER-COOLED CHILLER

Building Envelope Improvements: Enhancements to insulation, Low-E windows, and roofing materials that minimize heat transfer and maintain consistent indoor temperatures.

FIGURE 3: ENERGY-EFFICIENT WHITE TPO ROOFING

Renewable Energy Systems: Installation of solar panels, wind turbines, or other renewable energy sources that generate on-site power.

FIGURE 4: ON-SITE POWER GENERATION

Building Automation: Advanced building management systems that monitor and control energy-consuming systems for optimal performance and efficiency.

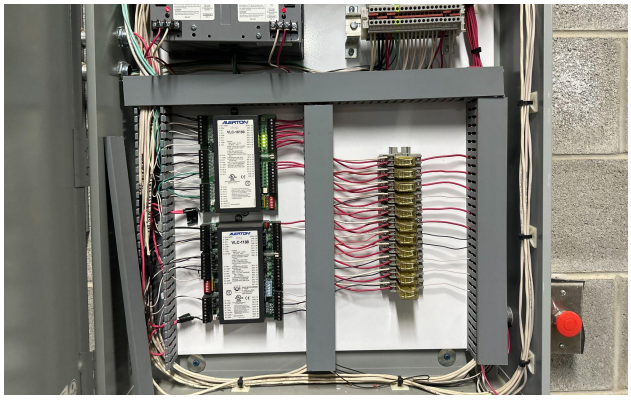

FIGURE 5: ALERTON CONTROLS

Energy Management Systems: Implementation of energy monitoring and control systems that track energy usage patterns and allow for responsive adjustments.

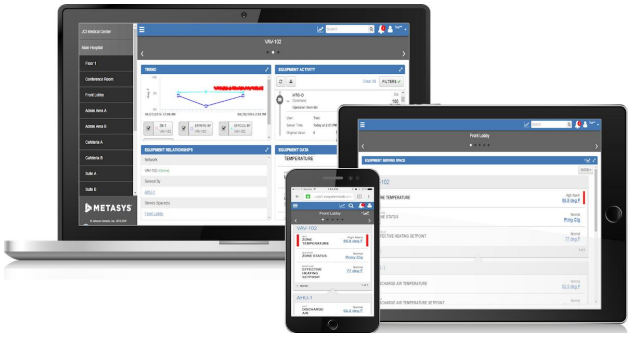

FIGURE 6: METASYS BAS BY JOHNSON CONTROLS

Insulation Upgrades: Installation of high-quality insulation materials to reduce heat transfer and improve energy retention.

FIGURE 7: BLOWN-IN INSULATION

Advanced Glazing: Energy-efficient windows and glazing systems that reduce heat gain and loss.

FIGURE 8: DOUBLE PANE LOW-E WINDOW

Cogeneration and Combined Heat and Power (CHP) Systems: Integration of systems that simultaneously produce electricity and useful heat from a single energy source.

FIGURE 9: CURTIS POWER SOLUTIONS: CHP

CONCLUSIONS

In conclusion, the tax incentives provided by both §179D and §45L within the United States IRC serve as critical catalysts for promoting energy-efficient advancements in building construction. These provisions, originating from the Energy Policy Act of 2005 under Public Law 109-58, aim to incentivize investments in sustainable building practices and energy-efficient technologies. Over time, these provisions have evolved, adapting to changing industry standards and the growing importance of environmental sustainability. Recent enhancements brought about by the Inflation Reduction Act of 2022 have significantly enhanced the impact of both §179D and §45L. These changes reflect a concerted effort to drive more widespread adoption of energy-efficient solutions and stimulate sustainable building practices.

BIOGRAPHY

Ruben Abreu serves as Principal Engineer at Walker Reid Strategies, a leading engineering firm that specializes in Energy Tax Incentives. With years of industry experience, Mr. Abreu expertly leads an elite team of engineers, energy auditors, and home energy raters. His team is responsible for managing the entire process of data acquisition, feasibility, energy audit, modeling, and certification of commercial and residential properties. In addition to his managerial duties, he also provides tools and guidance to support his team's professional and personal growth.

Before assuming his current position in 2019, he played a key role in the growth of the engineering department. He joined the company in 2012 as a project engineer, responsible for gathering data and conducting feasibility analyses. As he progressed in his career, he took on additional responsibilities. He successfully coordinated more than 50,000 energy-efficient technology audits in various facilities, including school districts, state houses, libraries, prisons, military bases, Veterans Affairs facilities, and federal buildings across the lower 48 states and the District of Columbia. Moreover, he performed more than 25,000 energy performance analyses to verify the annual energy usage and operational cost of commercial buildings. Through the implementation of quality assurance processes that utilize KAIZEN principles, Mr. Abreu and his team were able to achieve a 97% reduction in human error within their organization.

Mr. Abreu is a highly accomplished professional with a Bachelor of Science degree in Mechanical Engineering from Florida Atlantic University (Go Owls). He is recognized as a certified Professional Engineer in 40 states. Furthermore, he has obtained two certifications from the Association of Energy Engineers, namely the Certified Energy Manager and Green Building Engineer designations.

In addition to his engineering expertise, he holds several notable certifications. He possesses a Lean Six Sigma Belt Certification, showcasing his proficiency in process improvement methodologies. Moreover, he has earned an Executive Certificate in Project Management, highlighting his aptitude for effective project planning and execution. Additionally, he is an FAA Professional Private Pilot, Instrument Rating, and UAS Remote Pilot, demonstrating his comprehensive skill set in aviation and unmanned aerial systems.

Mr. Abreu's diverse qualifications and certifications solidify his reputation as a highly knowledgeable and versatile professional. With his extensive expertise and dedication to excellence, he consistently delivers exceptional results in various domains.

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