



Investment tax credit for energy property under section 48

KPMG analysis and observations

January 9, 2025

kpmg.com/us

Contents

- Background 2
- Overview 2
- 1.48-9: Definition of energy property 2
- 1.48-13 and 1.6418-5: Rules relating to the increased credit amount for PWA 5
 - Energy project 5
 - Recapture 6
- 1.48-14: Rules applicable to energy property 7
 - Interconnection property 7
 - Dual use property 8
 - Applicability dates 9
- Contact us 10

Background

The U.S. Treasury Department and IRS on December 4, 2024, released [final regulations](#) (T.D. 10015) relating to the investment tax credit (ITC) for energy property under section 48, including rules for determining whether investments in energy property are eligible for the energy credit and for defining an energy project, reflecting certain amendments under H.R. 5376 (commonly called the “Inflation Reduction Act of 2022” (IRA)).

The final regulations adopt [proposed regulations](#) issued in November 2023, with modifications in response to the 350 written comments received on the proposed regulations, as described in the preamble to the final regulations.

The final regulations are generally effective December 12, 2024. Special applicability dates for each section of the regulations are listed in the respective sections throughout this report.

Overview

The ITC available for a taxpayer in a tax year is the ITC credit rate multiplied by the eligible basis of energy property placed in service during the tax year.

The general applicable credit rate (“base rate”) is 6%, but increases to 30% (“bonus rate”) for energy property that is part of an energy project that:

- Has a capacity or net output of less than 1 MW;
- Began construction prior to January 29, 2023; or
- Satisfies certain prevailing wage and apprenticeship requirements (“PWA requirements”).

An additional 10% credit rate is available (2% if the base rate applies) for projects that satisfy certain domestic content requirements (“domestic content adder”).

An additional 10% credit rate is available (2% if the base rate applies) for projects that are built in energy communities (“energy community adder”).

Additionally, a further 10% or 20% increase may be available by application for projects located in low-income communities or on “Indian land” under a “Low-Income Communities Bonus Credit Amount Program.”

1.48-9: Definition of energy property

There are eleven categories of energy property

- Solar energy property,
- Fiber-optic solar energy property and electrochromic glass property
- Geothermal energy property
- Qualified fuel cell property or Qualified microturbine property
- Combined heat and power system property
- Qualified small wind energy property
- Geothermal heat pump property

- Waste energy recovery property
- Energy storage property (including electrical energy storage property, thermal energy storage property, and hydrogen energy storage property)
- Qualified biogas property
- Microgrid controllers

Under both the final and proposed regulations, ITC-eligible energy property includes a “unit of energy property” as well as property that is “integral” to it. A unit of energy property includes all components of an asset that are “functionally interdependent,” meaning the placing in service of each component is dependent upon the placing in service of each of the other components. To qualify as integral-part property, property must be (1) owned by the same taxpayer that owns the energy property with which it is used; (2) used directly in the intended function of the energy property; and (3) be essential to the completeness of the intended function of the energy property.

The final regulations mostly adopt the definitions of energy property included in the proposed regulations with some clarifications and changes, notably to qualified biogas property, hydrogen energy storage property, and thermal energy storage property.

Read a [KPMG report](#) (December 4, 2023) on the proposed regulations.

Qualified biogas property

Qualified biogas property is property comprising a system that converts biomass into a gas that consists of not less than 52% methane by volume or is concentrated by such system into a gas that consists of not less than 52% methane and captures such gas for sale or productive use and not for disposal via combustion. Qualified biogas property also includes any property that is part of such system that cleans and conditions such gas. The methane content is measured at the point the biogas leaves the qualified biogas property.

The proposed regulations would have defined the unit of energy property with respect to qualified biogas property as including a waste feedstock collection system, a landfill gas collection system, mixing or pumping equipment, and an anaerobic digester. The proposed regulations initially excluded gas upgrading equipment from ITC eligibility altogether. However, a later-issued correction to the proposed regulations included the upgrading equipment as property integral to a qualified biogas system and therefore potentially ITC-eligible.

The final regulations provide that upgrading equipment to make the gas suitable for sale or productive use is part of the unit of energy property. The final regulations further provide that the following items are integral parts of the qualified biogas property rather than part of the unit of energy property: a waste feedstock collection system, a landfill gas collection system, and mixing or pumping equipment.

KPMG observation

The result of classifying collection systems as integral, rather than functionally interdependent, is that a taxpayer’s biogas project can still be ITC eligible even if the collection system is owned by a third party and/or was previously placed in service.

Finally, the final regulations provide that flaring does not disqualify property from being treated as qualified biogas property, so long as the primary purpose of the qualified biogas property is the production of gas for sale or productive use and the flaring complies with all relevant laws and regulations

Hydrogen storage technology

Hydrogen energy storage property includes property (other than property primarily used in the transportation of goods or individuals or for the production of electricity) that stores hydrogen and has a nameplate capacity of not less than 5 kWh, equivalent to 0.127 kg of hydrogen or 52.7 standard cubic feet (scf) of hydrogen. As clarified by the final regulations, the unit of energy property for hydrogen energy storage property includes above-ground storage tanks, underground storage facilities and associated compressors. The final regulations state that property that is an integral part of hydrogen energy storage property includes: hydrogen liquefaction equipment and gathering and distribution lines within a hydrogen energy storage property.

The proposed regulations would have required hydrogen energy storage property to store hydrogen solely used for the production of energy and not for other purposes such as for the production of end products such as fertilizer. The final regulations eliminate this requirement so that all hydrogen energy storage property meeting the primary use and nameplate capacity requirements is qualified property, regardless of the end use of the stored hydrogen.

Thermal energy storage property

Thermal energy storage property is property comprising a system that:

- Is directly connected to a heating, ventilation, or air conditioning (HVAC) system;
- Removes heat from, or adds heat to, a storage medium for subsequent use; and
- Provides energy for the heating or cooling of the interior of a residential or commercial building.

Thermal energy storage property does not include a swimming pool, combined heat and power system property, a building, or building structural components.

The final regulations clarify that property that “removes heat from, or adds heat to, a storage medium for subsequent use” is property that is designed with the particular purpose of substantially altering the time profile for when heat is added to, or removed from, the thermal storage medium. The final regulations provide a safe harbor under which thermal energy storage property will be deemed to meet this particular purpose. It provides that thermal energy storage property meets this standard if it is capable of storing energy sufficient to provide heating or cooling of the building for at least one hour.

The final regulations add a restriction that “thermal energy storage property” does not include “property that transforms other forms of energy into heat in the first instance.” The final regulations provide an example whereby heated bricks and equipment that adds heat generated by the furnace to those bricks, or removes heat from the bricks, is eligible thermal energy storage property, whereas the electric furnace equipment that transforms energy into the thermal energy in the first instance is not ITC eligible.

The final regulations further provide that a “taxpayer’s basis in the thermal energy storage property includes the total cost of the thermal energy storage property and HVAC system less the cost of an HVAC system without thermal storage capacity that would meet the same functional heating or cooling needs.”

KPMG observation

The updated definition of “thermal energy storage property” is more restrictive than the definition within the proposed regulations, which did not include this methodology. Additionally, the new methodology for determining incremental basis may be difficult to apply in practice. Taxpayers should carefully evaluate the application of these changes to their thermal energy storage system projects.

Applicability dates

The rules outlined in this section apply to property placed in service in tax years starting after December 12, 2024. However, taxpayers have the option to apply the rules contained in Treas. Reg. Sec. 1.48-9 to property placed in service after December 31, 2022, and during a tax year beginning on or before December 12, 2024, as long as they apply Treas. Reg. Secs. 1.48-9 (discussed in this section), 1.48-14 (discussed later), and 1.6418-5(f) (discussed later) in their entirety and in a consistent manner.

1.48-13 and 1.6418-5: Rules relating to the increased credit amount for PWA

Energy property is eligible for the 30% bonus rate, and increased amounts under the domestic content and energy community adders, if it is part of an “energy project” and the energy project otherwise satisfies the requirements for the bonus rate or the adders.

Reg. Sec. 1.48-13 defines an energy project for this purpose.

It also establishes a special recapture rule applicable to the PWA requirements for energy property, and provides rules for determining whether the One Megawatt Exception is met. The general rules for determining whether PWA requirements are met and meeting recordkeeping and reporting requirements are provided in Treas. Reg. Secs. 1.45-7, 1.45-8 and 1.45-12. Read a [KPMG report](#) (July 26, 2024).

Energy project

An energy project is defined as a project consisting of one or more energy properties that are part of a single project.

Under the proposed regulations, multiple energy properties were considered to comprise a single energy project if they were owned by a single taxpayer or related taxpayers and met *two* of seven factors at any point during their construction. Under the final regulations, multiple energy properties are considered as one energy project when they are owned by a single taxpayer or related taxpayers and satisfy *at least four* of the following seven factors:

- The energy properties are constructed on contiguous pieces of land;
- The energy properties are described in a common power purchase, thermal energy, or other off-take agreement or agreements;
- The energy properties have a common intertie;
- The energy properties share a common substation or thermal energy offtake point;
- The energy properties are described in one or more common environmental or other regulatory permits;
- The energy properties are constructed pursuant to a single master construction contract; or
- The construction of the energy properties is financed pursuant to the same loan agreement.

Taxpayers may make this determination at any point during the construction of the multiple energy properties or in the tax year during which the last energy property is placed in service.

KPMG observation

It is important to note that while multiple energy properties may be treated as a single energy project

for specified purposes as described above, taxpayers must file a separate Form 3468 for each energy property. This disconnect may be confusing for taxpayers.

Recapture

The increased credit amount available for meeting the PWA requirements is subject to recapture if prevailing wages are not paid to laborers and mechanics engaged in the alteration or repair of energy property during the five-year period beginning on the date the project is placed in service. Apprenticeship requirements do not need to be met during this period.

A taxpayer can avoid recapture by taking particular steps to “cure” the failure to pay prevailing wages by making a payment to the laborer or mechanic to correct the underpayment and paying a penalty to the US government. In such case, the correction and penalty payments must be made on or before the date that is 180 days after the date of a final determination by the IRS that there has been an underpayment, otherwise the increased credit amount is subject to recapture.

Final regulations under section 6418 issued in April 2024 provide that, in addition to general reporting requirements, a taxpayer transferring an ITC under section 6418 is required to provide information to the transferee regarding the payment of prevailing wages to laborers or mechanics engaged in the alteration or repair of the project during the five-year recapture period. This information must be provided at the time and in the form and manner prescribed in IRS forms or instructions or as provided in IRS publications or guidance. These regulations also offer clarification regarding key terminology and describe documentation requirements. In the case of a transfer of an ITC to which recapture applies due to failure to comply with the prevailing wage requirements, the transferor is required to notify the transferee taxpayer of the recapture event and the transferee taxpayer is responsible for any amount of increase in tax due to the recapture.

KPMG observation

While there is no change from the proposed to the final regulations, it is important to emphasize the importance of complying with the prevailing wage requirements throughout the recapture period. During the recapture period, prevailing wage requirements will necessitate that tax teams remain involved with project managers to help identify what work will constitute alterations and repairs and to ensure compliance and proper documentation.

One megawatt exception

An energy project with a maximum net output of less than one megawatt of electrical or thermal energy is excepted from the PWA requirements.

The final regulations clarify that, if an energy project is comprised of more than one energy property, qualification for this exception is determined at the energy project level, and the energy project's maximum net output is the sum of the nameplate capacity of each energy property included in the energy project. The final regulations provide additional rules for determining the maximum thermal output of an energy project.

Applicability dates

This section applies to energy projects that are placed in service in tax years ending on or after December 12, 2024, and for which construction begins after that date. Taxpayers may choose to apply Reg. Sec. 1.48-13 to energy projects placed in service in tax years ending on or before December 12, 2024, and to energy projects placed in service in tax years ending after December 12, 2024, the construction of which began before December 12, 2024, provided that Reg. Sec. 1.48-13 is applied in its entirety and in a consistent manner.

1.48-14: Rules applicable to energy property

Reg. Sec. 1.48-14 provides rules applicable to retrofitted energy property; rules related to dual use property; rules for treatment of certain incremental costs; special rules concerning ownership; rules related to the election to treat qualified facilities as energy property; and rules specific to qualified interconnection costs.

While the final regulations largely adopt the proposed regulations without significant modification, the final regulations do provide a number of examples and clarifications to illustrate the application of these rules.

Retrofits

The final regulations adopt the so-called “80/20 Rule” provided in the proposed regulations. Under this rule, a retrofitted energy property may be treated as originally placed in service even though it contains some used components, provided the fair market value of the used components is not more than 20% of the energy property’s total value (defined as the value of the old property plus the cost of the new property).

The test is applied to each unit of energy property comprising an energy project. Only the cost of the new components is eligible for the ITC. Integral-part property is not considered in the 80/20 determination, although costs incurred for new integral-part property are ITC eligible if the unit of energy property meets the 80/20 Rule.

KPMG observation

Regulations issued prior to the enactment of the IRA suggested that any capital improvement to an existing eligible asset was ITC eligible. The 80/20 rule presents a significant change in the application of the law. In issuing the final regulations, Treasury and the IRS stated that they considered but were unmoved by a significant volume of concerns raised by commentors related to the implications of the rule. Many practical and administrative burdens arise from this requirement for retrofitted property. For example, certain eligible technologies, such as combined heat and power and thermal energy storage equipment, tend to operate as part of larger systems and are often upgraded in phases. In practice, the 80/20 rule may frequently render such upgrades ineligible. Additionally, the 80/20 analysis depends on the “fair market value” of used equipment, which may be complicated to assess and require consultation with tax valuation specialists.

Interconnection property

Under section 48, as amended by the IRA, energy property includes amounts paid or incurred by the taxpayer for qualified interconnection property in connection with the installation of energy property so long as the underlying energy property has a maximum net output of not greater than 5 MW (as measured in alternating current), the interconnection property provides for the transmission or distribution of the electricity, and the interconnection property has costs that are properly capitalized by the taxpayer.

Qualified interconnection property is defined as any tangible asset, excluding a microgrid controller, that is part of an addition, modification or upgrade to a transmission or distribution system that is required at or beyond the point at which the energy project interconnects to such system to accommodate the interconnection. Further, the qualified interconnection property must be constructed, reconstructed or erected by the taxpayer or be property for which the costs are incurred by the taxpayer, and it must also be property of which a utility is the original user.

The final regulations clarify, through examples, that tangible assets needed to modify and upgrade transmission or distribution systems beyond the interconnection point are considered qualified interconnection property and can be included in the basis for the ITC.

The final regulations also confirm that the assessment of whether an energy property has a maximum net output of no more than five megawatts is measured at the unit of energy property—rather than at the energy project level.

The final regulations clarify that where interconnection costs are reimbursed to the taxpayer (for instance, through an arrangement with a public utility), general federal income tax principles may require the taxpayer to reduce the amount of its ITC-eligible expenditures.

Lastly, the final regulations confirm that interconnection property is not subject to the prevailing wage and apprenticeship requirements and is not taken into account in determining eligibility for energy community or domestic content credit rate adders.

Multiple owners

The final regulations adopt the provisions of the proposed regulations requiring a taxpayer to own a complete or fractional interest in an entire energy property.

In other words, if a taxpayer has no ownership interest (directly or indirectly) in an entire energy property that conducts the eligible activity, and, instead, only owns property that is integral to the energy property, the taxpayer is not eligible to claim the ITC on the integral-part property it owns.

For example, power conditioning equipment is considered an integral party of energy property but not energy property. If a taxpayer owns power conditioning equipment that is part of an offshore wind farm but has no interest (directly or indirectly) in the wind turbines, that taxpayer is not eligible to claim an ITC.

Treasury and the IRS received numerous comments on the topic of multiple ownership. While the provisions with respect to ownership were not altered, the final regulations provide an additional example, specifically related to geothermal heat pump (GHP) property to help clarify how the multiple ownership rules should be applied in practice. Under the example, the GHP property consists of in-ground coils and multiple heat pumps; one taxpayer owns all of the coils and one heat pump; and a second taxpayer owns the remainder of the heat pumps. The example provides that the ITC is allowable to the first taxpayer owning the coils and a single heat pump as that constitutes an “entire unit of energy property.” No ITC is available to the taxpayer that owns only heat pumps.

Dual use property

The proposed regulations addressed how to pro-rate ITC-eligible basis when property uses energy from both a qualifying source and a nonqualifying source. Property of this type is called “dual use property.”

The final regulations adopt the provisions of the proposed regulations permitting dual use property to be treated as energy property, and thus ITC-eligible, if at least 50% of its energy use is from qualifying sources. If the energy use from qualifying sources is between 50% and 100%, the ITC is only allowed to the extent the property’s basis or cost is allocable to the annual use of energy from a qualified source (“Dual Use Rule.”).

If less than 50% of the energy used is from qualifying sources, then the eligible basis is zero, and the dual use property is not eligible for the credit.

Notably, final regulations affirm the proposed regulations’ modification of the Dual Use Rule to allow an energy property to aggregate energy from a combination of qualifying sources. The regulations permit

taxpayers to use any method that “accurately establishes” the qualifying sources and energy inputs to an energy property, offering a certain amount of flexibility to taxpayers.

Recapture of the ITC is required if the dual use property’s use of energy from all qualifying sources is reduced below 50% during the five-year recapture period.

Treasury and the IRS confirmed in the preambles to the proposed and final regulations that the Dual Use Rule is not relevant to energy storage property because the IRA added energy storage property as a property type eligible for the ITC for property placed in service after 2022.

Applicability dates

The rules outlined in this section apply to property placed in service in tax years starting after December 12, 2024. However, taxpayers have the option to apply these rules, contained in Treas. Reg. Sec. 1.48-14, to property placed in service after December 31, 2022, and during a tax year beginning on or before December 12, 2024, as long as they apply Treas. Reg. Secs. 1.48-9, 1.48-14, and 1.6418-5(f) in their entirety and in a consistent manner.

Contact us

For more information, contact a KPMG professional in Washington National Tax:

Hannah Hawkins

T: +1 202 533 3800

E: hhawkins@kpmg.com

Katherine Breaks

T: +1 202 533 4578

E: kbreaks@kpmg.com

Lynn Afeman

T: +1 202 533 3839

E: lafeman@kpmg.com

Julie Chapel

T: +1 405 552 2544

E: jchapel@kpmg.com

Kelsey Latham

T: +1 713 319 2436

E: kcurcio@kpmg.com

Pinky Shodhan

T: +1 202 533 3800

E: pshodhan@kpmg.com

Simon Belokowsky

T: +1 704 335 5300

E: sbelokowsky@KPMG.com

Learn about us:



[kpmg.com](https://www.kpmg.com)

The information contained herein is not intended to be "written advice concerning one or more Federal tax matters" subject to the requirements of section 10.37(a)(2) of Treasury Department Circular 230.

The information contained herein is of a general nature and based on authorities that are subject to change. Applicability of the information to specific situations should be determined through consultation with your tax adviser.

KPMG LLP is the U.S. firm of the KPMG global organization of independent professional services firms providing Audit, Tax and Advisory services. The KPMG global organization operates in 146 countries and territories and in FY20 had close to 227,000 people working in member firms around the world. Each KPMG firm is a legally distinct and separate entity and describes itself as such. KPMG International Limited is a private English company limited by guarantee. KPMG International Limited and its related entities do not provide services to clients.

© 2025 KPMG LLP, a Delaware limited liability partnership and a member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee. All rights reserved. USCS013083-1A

The KPMG name and logo are trademarks used under license by the independent member firms of the KPMG global organization.