Final regulations on clean electricity production and investment credits under sections 45Y and 48E

Analysis and observations of the final regulations

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Introduction

The U.S. Treasury Department and IRS on January 7, 2025, issued final regulations (T.D. 10024) related to the section 45Y clean electricity production credit and section 48E clean electricity investment credit for qualified facilities and energy storage technology (EST). In general, the provisions are effective for property placed in service after 2024 in tax years ending on or after the date the final regulations were published in the Federal Register, which is January 15, 2025.

A qualified facility for purposes of section 45Y and 48E is a facility that produces electricity for which the greenhouse gas emissions rate is not greater than zero ("zero emissions facility"). Generally, a taxpayer may claim either section 45Y or 48E but not both with respect to the same facility.

EST is eligible only for the section 48E credit and is generally defined as: (1) property which receives, stores, and delivers energy for conversion to electricity (or, in the case of hydrogen, which stores energy) and has a nameplate capacity of not less than 5 kilowatts, (2) thermal energy storage property or (3) hydrogen energy storage property.

The proposed regulations (REG-119283-23) outlined specific types or categories of facilities that will be eligible under section 45Y and 48E. These technologies include:

- Wind facilities, including small wind properties
- Hydropower facilities, encompassing retrofits adding power production to non-powered dams, conduit hydropower, hydropower using new impoundments, and hydropower using diversions like penstocks or channels
- Marine and hydrokinetic facilities
- Solar facilities, covering photovoltaic and concentrating solar power
- Geothermal facilities, including flash and binary plants
- Nuclear fission facilities
- Nuclear fusion facilities
- Waste energy recovery property (WERP) deriving energy from any of the energy sources listed above, such as geothermal or solar waste heat recovery from a district geothermal heating system, and waste heat recovery from a nuclear reactor dedicated to heat production for an industrial facility

The proposed regulations further provided that Treasury would issue an Annual Table that would list other technology types that would be eligible for these credits.

The final regulations did not add any additional technology categories. The Annual Table was issued January 15 and did not add any additional categories either. Read *TaxNewsFlash*

For facilities that are not listed in the final regulations (or the Annual Table), a taxpayer can: (1) prepare a lifecycle analysis (LCA) and append a provisional emissions rate petition to its annual tax return for the first tax year in which the taxpayer claims a section 45Y or 48E credit and that contains an emissions value, or (2) attach a DOE letter with its annual tax return substantiating the emissions level (the emissions value obtained from DOE will be based on an analytical assessment of the emissions rate associated with the facility performed by one or more National Laboratories, in consultation with federal agencies and other experts as appropriate). The DOE process is only available to the extent that the IRS has not released an approved LCA model for the applicable technology type.

In the final regulations, the IRS states that there is not a clear or obvious single model or models that would be appropriate for all situations, and that it will coordinate with federal agency scientific and technical experts on the selection and development of a model or models to assess net GHG emissions for purposes of section 48E and 45Y. Further, DOE has not issued guidance on how to request an emission level determination. Therefore, these pathways could be expensive, time consuming and lengthy. Any determination would apply only to the taxpayer that requested it.

Coordination with other credits

Sections 45Y and 48E of the Internal Revenue Code (Code) were added to the Code with the 2022 enactment of the Inflation Reduction Act (IRA) and generally replace sections 45 and 48 with respect to qualified facilities (and energy storage technologies with respect to section 48). Sections 45 and 48 remain available for projects that begin construction prior to 2025, and section 48 remains available for geothermal heat pump property that begins construction prior to 2035. As outlined above, the new sections apply to qualified facilities and ESTs placed in service after December 31, 2024. A taxpayer may not claim either a section 45Y or section 48E credit on a facility that is claiming either the section 45 or 48 credit. Some facilities that are eligible under section 45 or 48 will not be eligible under section 45Y or 48E (e.g., facilities that produce GHG emissions and facilities that do not generate electricity).

Commentators requested clarification that, in the case of a project that began construction prior to January 1, 2025, but did not satisfy the continuity requirements found in applicable guidance, such a project could qualify under section 45Y or section 48E. Treasury agreed with these comments.

KPMG observation

Under current law, projects are treated as "beginning construction" under applicable guidance if a taxpayer either pays or incurs 5% of eligible costs or engages in physical work of a significant nature AND the taxpayer meets a continuity requirement. In general, a taxpayer (or its successor) will be treated as meeting the continuity requirement if the project is placed in service by the end of the 4th calendar year after the project begins construction ("continuity safe harbor"). Under COVID relief, a longer continuity safe harbor is available for projects that began construction in 2016 through 2020. Taxpayers that fail to satisfy the continuity safe harbor can demonstrate, through facts and circumstances, that they pursued "continuous efforts" toward completion of construction. Due to a variety of factors, there are projects that began construction that did not, or will not, satisfy the continuity safe harbor. The final regulations clarify that as long as the project is a qualified facility (or a qualifying EST) under section 45Y and 48E, it will be eligible for tax credits.

Section 45Y

The credit under section 45Y is a production tax credit. It is calculated by multiplying the kilowatt hours (kWh) of eligible electricity produced at a qualified facility by an applicable amount -- a base rate of 0.3 cents per kilowatt hour or an alternative rate of 1.5 cents per kilowatt hour (provided the taxpayer meets certain wage and workforce requirements, the qualified facility is less than 1 MW or the qualified facility began construction prior to January 29, 2023). The credit rate is adjusted for inflation each year using 1992 as the base year. If the credit were available in 2024, the credit rates would be 0.55 or 2.75 cents per kilowatt hour, respectively. The 2025 rates are not yet known.

Under each of two additional credit "adders", the applicable percentage is increased, by either two or 10%, for any qualified facility placed in service in an energy community or meeting certain domestic content requirements.

The credit is available for a 10-year period beginning with the date that the qualified facility is placed in service.

Electricity produced at a qualified facility must either:

- Be sold to an unrelated person during the tax year; or,
- For facilities with a metering device owned and operated by an unrelated person, be sold, consumed, or stored by the taxpayer during the tax year.

> **KPMG observation**
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> Note that a taxpayer may claim a production tax credit under section 45Y even if it is using the electricity for its own purposes. Under the existing section 45 credit, electricity is generally only credit-eligible if it is sold to an unrelated party.

Commentators requested that Treasury provide that a qualified facility that did not initially meet the emissions standard but that was later reconfigured to meet it could qualify for a full 10-year credit period. Treasury declined to incorporate that request, finding, for instance, that if a facility was reconfigured four years after it was placed in service to meet the emissions standard, it would be eligible for section 45Y credits for only six years.

Section 48E

The section 48E credit is an investment tax credit.

The amount of the section 48E credit is equal to the applicable percentage of the taxpayer's qualified investment in a qualified facility or an EST. The applicable percentage is a two-tier structure of a base rate of 6%, and an alternative rate of 30% (provided the taxpayer meets the wage and workforce requirements, the project is less than 1 MW or the project began construction prior to January 29, 2023). Under each of two additional credit "adders", the applicable percentage is increased, by either two or 10%, for any qualified facility or EST placed in service in an energy community or meeting certain domestic content requirements.

Qualified investment in a qualified facility or EST

The qualified investment in a qualified facility is the basis of qualified property placed in service in a tax year that is part of the qualified facility and the costs of qualified interconnection property that are paid or incurred in connection with the qualified facility. The qualified investment in an EST is the basis of any EST placed in service in the tax year.

Qualified property is defined as tangible personal property or other tangible property (excluding buildings or their structural components) that is an integral part of a qualified facility or EST. This property must be depreciable and must either be property constructed, reconstructed, or erected by the taxpayer, or acquired property. Acquired property is only qualified property if the acquiring taxpayer is the original user of the property, and such original use starts after the taxpayer's acquisition.

Under the proposed regulations, a qualified facility would have included a unit of a qualified facility and components of property owned by the taxpayer that are an integral part of the qualified facility. A unit of a qualified facility is integral part of a qualified facility if it is used directly in the intended function of the qualified facility and was essential to the completeness of such intended function.

The proposed regulations further clarified that an integral part of a qualified facility includes power conditioning equipment and transfer equipment. Power conditioning equipment includes equipment that modifies the characteristics of electricity into a form suitable for use or transmission or distribution. Also, parts related to the functioning or protection of power conditioning equipment are treated as power conditioning equipment.

The proposed regulations state that multiple qualified facilities, whether owned by one or more taxpayers, can share property that is considered an integral part of each facility. Shared property components that are essential to both types of qualified facilities will not affect their eligibility to claim their respective credits. The proposed regulations provide examples to illustrate this point such as a shared transformer.

All these rules are finalized without significant change.

The final regulations further confirm that an EST is eligible for the section 48E credit if it satisfies the requirements therein, even if the EST is co-located with a qualified facility that has claimed the section 45 or 45Y credit.

Qualified interconnection property

Qualified interconnection property associated with a qualified facility constitutes a qualified investment under section 48E for qualified facilities. Such property must have a maximum net output of no more than 5 megawatts (measured in alternating current).

The proposed regulations defined qualified interconnection property, described how to measure the 5 MW limitation and included rules setting forth additional conditions and restrictions. They also provided that, if the taxpayer receives reimbursements for interconnection property costs, the amount of the ITC will be reduced.

The rules associated with qualified interconnection property were largely finalized without significant change. The final regulations do provide a rule that allows certain qualified facilities, such as solar facilities, that produce electricity in direct current to measure the 5 MW limitation based on direct current rather than alternating current. Commentators asked that Treasury expand the definition of ITC eligible costs for stand-alone EST to include qualified interconnection property. Treasury rejected that suggestion as inconsistent with the statute.

EST projects that are not co-located with a qualified facility cannot claim an ITC for qualified interconnection property.

Credit recapture

The proposed regulations further provided that the section 48E credit calculated is subject to recapture for any qualified facility that has a GHG emissions rate that exceeds 10 grams of CO_2e per kWh during the five-year period beginning on the date such qualified facility is originally placed in service (five-year recapture period). The IRS and Treasury clarified that a change to the GHG emissions rate for a type or category of facility that is published in the Annual Table after the facility is placed in service does not result in a recapture event.

Further, the proposed regulations provided that the recapture rules that currently apply under section 48 (found in section 50) also apply to the section 48E credit.

These rules were finalized without change.

Rules of general application

80/20 rule

The proposed regulations provided that a qualified facility could be considered new, and, therefore, qualify for a new ITC or a new 10-year PTC period even if it contained some used property, as long as no more than 20% of the value of the new facility was attributable to used property (“80/20 rule”). For this purpose, the value of the new facility is the value of the used property plus the cost of the new property. The test is performed on a facility-by-facility basis. A facility generally consists of functionally interdependent components of property.

Components of property are functionally interdependent if the placing in service of each of the components is dependent upon the placing in service of each of the other components to produce electricity. In measuring the 80/20 test, a taxpayer includes functionally interdependent components but not property that is “integral to” the facility (e.g., certain on-site roads).

The final regulations clarify that facilities will qualify under section 45Y (or 48E) under the 80/20 rule even if the facility previously claimed the section 45 or section 48 credit. The final regulations also provide that the 80/20 rule applies to EST.

For taxpayers claiming the 48E credit, if the 80/20 test is satisfied, the taxpayer can claim the investment tax credit on costs incurred for new components of the qualified facility or EST – “functionally interdependent” property – and for new components of property that are “integral to” the project, such as power conditioning equipment.

New unit or increase in capacity

The term “qualified facility” includes either a new unit or an addition of capacity placed in service after December 31, 2024, in connection with a facility which was placed in service before January 1, 2025. The amount of the credit is limited to the increased amount of electricity produced at the facility by reason of such new unit or addition of capacity and requires an addition or replacements of components of property including any new or replaced integral property, added to a facility necessary to increase capacity.

The proposed regulations provided that this is measured based on the nameplate capacity of the facility after the addition of the new unit or addition of capacity.

They further provided that the taxpayer must use modified or amended facility operating licenses or International Standard Organization (ISO) conditions to measure the maximum electrical generating output of a facility to determine its nameplate capacity.

These rules were finalized without substantial changes except to clarify that, if a modified or amended facility operating license is available from Federal Energy Regulatory Commission (FERC) or Nuclear Regulatory Commission (NRC), then ISO conditions cannot be used.

In the case of the section 45Y credit, the production tax credit amount is multiplied by the percentage of the increase in capacity.

In the case of the section 48E credit, the rules operate somewhat differently. Under the proposed regulations, the qualified investment was 100% of the cost of a new unit, but subject to the same haircut for additions to capacity – namely, the cost times the percentage of increase in capacity.

Under the final regulations, the IRS has modified the rule to provide that, in the case of an addition to capacity, the qualified investment is 100% of the cost of the addition of capacity.

The proposed regulations provided that a facility that is decommissioned or in the process of decommissioning and restarts could be considered to have increased capacity if certain conditions listed in the proposed regulations are met, including the fact that the facility had been shutdown for at least a year. The final regulations clarify these rules in three respects: (i) not only must the facility be shutdown for a period of at least one calendar year but it must not be authorized to operate by its respective federal regulatory authority (e.g., FERC or NRC), (ii) the restarted facility must be eligible to restart based on an operating license issued by either FERC or NRC, (iii) and the addition of capacity in the case of a restarted facility is the total capacity of the facility after it is restarted. The final regulations also include a new anti-abuse rule for situations in which taxpayers are shutting down facilities with the explicit purpose of meeting the rule.

KPMG observation

The “new unit or addition of capacity” language is fairly new. Under section 45, additional PTCs were available for new units but only for trash combustion and biomass facilities. Section 45Y opens up this option to all technologies that are otherwise eligible under the new regime.

One megawatt exception

Qualified facilities and EST qualify for the bonus rate, regardless of whether prevailing wage or apprenticeship requirements are met, if the output of the qualified facility or EST is less than one megawatt (measured in alternating current). In the proposed regulations, the IRS requested comments on what type of aggregation rules should apply in making this determination.

Under the final regulations, qualified facilities are aggregated if the facilities are of the same technology type and are: (i) owned by the same or related taxpayers, (ii) placed in service in the same tax year, and (iii) transmit electricity generated by the facilities through the same point of interconnection or, if the facilities are not grid connected or delivering electricity directly to an end user behind a utility meter, are able to suppler the same end user. A similar rule applies to EST property (but tested separately from qualified facilities).

> **KPMG observation**
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> This aggregation rule departs significantly from the One Megawatt Exception aggregation rule under sections 45 and 48. Perhaps for this reason, the rule for integrated operations has a delayed applicability date; it applies to facilities that begin construction 60 days after the publication of the final regulations (January 15, 2025).
>
> It does not appear that EST's co-located with a qualified facility are aggregated for purposes of the rule.

Further, the final regulations provide that the capacity of the aggregated facility is measured based on nameplate capacity, which is defined as the maximum electrical generating output in megawatts that a qualified facility is capable of producing on a steady state basis and during continuous operation under standard conditions, as measured by the manufacturer and consistent with the definition of nameplate capacity provided in 40 CFR 96.202. If applicable, taxpayers must use the ISO conditions to measure the maximum electrical generating output of the facility.

For qualified facilities and EST's that generate electrical output in direct current, the final regulations provide a new alternative nameplate capacity measurement. Only for qualified facilities that generate electricity in direct current, the taxpayer may choose to determine the maximum net output (in alternative current) of each qualified facility by using the lesser of: (i) the sum of the nameplate generating capacities within the unit of qualified facility in direct current, which is deemed the nameplate generating capacity the unit of qualified facility in alternating current; or (ii) the nameplate capacity of the first component of property that inverts the direct current electricity into alternating current.

Multiple owners

Under the proposed regulations, in the case of a facility that has more than one owner, production from the facility would be allocated among the owners in proportion to their respective ownership share in the *gross sales* from such qualified facility.

If a qualified facility is owned through an unincorporated organization that has made a valid election out of subchapter K under section 761(a), each member's undivided ownership share in the qualified facility would be treated as a separate qualified facility owned by the respective member.

These rules were finalized without significant change.

Adders

PWA

The bonus rate is available for projects that : (i) meet the One Megawatt Exception above, (ii) begin construction prior to January 29, 2023, or (iii) meet the prevailing wage and apprenticeship requirements ("PWA rules").

In determining whether a project has begun construction, and, in determining whether a qualified facility or EST has met the PWA rules, the final regulations incorporate the rules found in the section 48 regulations. This means that, if a project is owned by a taxpayer (or related taxpayers), and meets four of the following factors, the qualified facilities or EST properties will be aggregated:

- The qualified facilities or EST properties are constructed on contiguous pieces of land.
- The qualified facilities or EST properties are described in a common power purchase, thermal energy, or other off-take agreement or agreements.

- The qualified facilities or EST properties have a common intertie.
- The qualified facilities or EST properties share a common substation, or thermal energy offtake point.
- The qualified facilities or EST properties are described in one or more common environmental or other regulatory permits.
- The qualified facilities or EST properties are constructed pursuant to a single master construction contract.
- The construction of the qualified facilities or EST properties is financed pursuant to the same loan agreement.

Domestic content

An additional credit percentage is available for qualified facilities and EST's that are: (i) located in energy communities ("energy community adder") or (ii) are constructed with domestically sourced manufactured products and structured steel and iron ("domestic content adder").

Commentators asked that Treasury clarify that, in determining whether the domestic content adder was satisfied, an investment that qualified under section 45Y or section 48E be measured on a "project" basis – as allowed under section 48 -- rather than a "qualified facilities" basis. Treasury rejected this request as it was inconsistent with the statute.

KPMG observation

If a taxpayer is claiming the section 48E credit, the domestic content adder is measured separately for a battery and any co-located qualified facilities.

Further, in the case of qualified facility, qualification may be measured on a "facility by facility" basis rather than on a project basis. How this is determined is a facts and circumstances analysis. It may mean that section 48E projects may qualify for only a partial domestic content adder based on the portion of the project that meets those targets.

There is no change under the production tax credit because the domestic content adder was measure on a facility basis for both section 45 and 45Y.

Energy community

Similar to the rules above, whether a project is eligible for the energy community adder depends on whether the qualified facility or EST is located in an energy community.

Where energy projects are located partially in an energy community and partially outside an energy community, taxpayers will need to evaluate which qualified facilities and/or which EST's are located in eligible census tract or metropolitan statistical area or non-metropolitan statistical area.

Phase out

The credit begins to phase out as of the later of: (i) the year the Secretary determines that the annual GHG from U.S. electricity production are 25% or less of the 2022 levels, or (ii) the year 2032 (the "Applicable Year").

In the proposed regulations, the IRS listed certain data sets they would rely upon in measuring the phaseout. It incorporated those datasets without change in the final regulations.

Contact us

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

Lynn Afeman
T: +1 (202) 533-3839
E: lafeman@kpmg.com

Katherine Breaks
T: +1 (202) 533-4578
E: kbreaks@kpmg.com

Pinky Shodhan
T: +1 (202) 533-3800
E: pshodhan@kpmg.com

Kelsey Latham
T: +1 (713) 319-2436
E: kcurcio@kpmg.com

Julie Chapel
T: +1 (405) 552-2544
E: jchapel@kpmg.com

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