DEPARTMENT OF THE TREASURY

Internal Revenue Service

26 CFR Part 1

[REG–119283–23]

RIN 1545–BR17

Section 45Y Clean Electricity Production Credit and Section 48E Clean Electricity Investment Credit

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Notice of proposed rulemaking and notice of public hearing.

SUMMARY: This document contains proposed regulations relating to the clean electricity production credit and the clean electricity investment credit established by the Inflation Reduction Act of 2022. The proposed regulations would provide rules for: determining greenhouse gas emissions rates resulting from the production of electricity; petitioning for provisional emissions rates; and determining eligibility for these credits in various circumstances. The proposed regulations would affect all taxpayers who produce clean electricity and claim the clean electricity production credit with respect to a facility or the clean electricity investment credit with respect to a facility or energy storage technology, as applicable, that is placed in service after 2024. This document also provides notice of a public hearing on the proposed regulations.

DATES: Written or electronic comments must be received by August 2, 2024. The public hearing on these proposed regulations is scheduled to be held on August 12, 2024, at 10 a.m. (ET) and August 13, 2024, at 10 a.m. (ET). On August 13, 2024, the public hearing will be held by telephone only. Requests to speak and outlines of topics to be discussed at the public hearing must be received by August 2, 2024. If no outlines are received by August 2, 2024, the public hearing will be cancelled.

ADDRESSES: Commenters are strongly encouraged to submit public comments electronically via the Federal eRulemaking Portal at *https://www.regulations.gov* (indicate IRS and REG–119283–23) by following the online instructions for submitting comments. Once submitted to the Federal eRulemaking Portal, comments cannot be edited or withdrawn. The Department of the Treasury (Treasury Department) and the IRS will publish for public availability any comments submitted to the IRS's public docket. Send paper submissions to: CC:PA:01:PR (REG–119283–23), Room 5203, Internal Revenue Service, P.O. Box 7604, Ben Franklin Station, Washington, DC 20044.

FOR FURTHER INFORMATION CONTACT: Concerning these proposed regulations, the Office of Chief Counsel (Passthroughs and Special Industries) at (202) 317–6853 (not a toll-free number); concerning submissions of comments or the public hearing, Vivian Hayes at (202) 317–6901 (not a toll-free number) or by email to *publichearings@irs.gov* (preferred).

SUPPLEMENTARY INFORMATION:

Background

This notice of proposed rulemaking contains proposed amendments to the Income Tax Regulations (26 CFR part 1) to implement sections 45Y and 48E of the Internal Revenue Code (Code), which generally replace sections 45 and 48 of the Code with respect to qualified facilities, and for section 48E, with respect to energy storage technology, that is placed in service after December 31, 2024.

The renewable electricity production credit determined under section 45 of the Code (section 45 credit) is generally available for qualified facilities described in section 45(d), which provides that the construction of the qualified facilities must begin before January 1, 2025. Similarly, other than for geothermal heat pump equipment (described in section 48(a)(3)(vii) [1]), the energy credit determined under section 48 of the Code (section 48 credit), which is an investment credit under section 46 of the Code, is generally available for energy property the construction of which begins before January 1, 2025. Therefore, as long as construction begins on the relevant qualified facility or energy property before January 1, 2025, a taxpayer may be able to claim a section 45 credit or section 48 credit, respectively, even if the taxpayer places the qualified facility or energy property in service after December 31, 2024.

Sections 45Y and 48E were added to the Code, respectively, by sections 13701(a) and 13702(a) of Public Law 117–169, 136 Stat. 1818, 1982 (August 16, 2022), commonly referred to as the Inflation Reduction Act of 2022 (IRA). Section 13701(c) of the IRA provides that the clean electricity production credit determined under section 45Y (section 45Y credit) applies to facilities placed in service after December 31, 2024. Similarly, section 13702(c) of the IRA provides that the clean electricity investment credit determined under section 48E (section 48E credit) applies to property placed in service after December 31, 2024.

Thus, in some cases, if a taxpayer places in service a qualified facility or energy property after 2024, the construction of which begins before 2025, the qualified facility or energy property may be eligible for more than one of the credits determined under section 45, 45Y, 48, or 48E, although a taxpayer can only claim one of these credits with respect to such qualified facility or energy property. Accordingly, a taxpayer must choose which one of these credits to claim with respect to such qualified facility or energy property. Once the taxpayer has claimed one of these credits with respect to a qualified facility or an energy property, the taxpayer cannot claim any other of these credits with respect to the same qualified facility or energy property.

I. Overview of Section 45Y

Section 45Y(a)(1) provides that for purposes of the general business credit under section 38 of the Code, the section 45Y credit for any taxable year is an amount equal to the product of the kilowatt hours (kWh) of eligible electricity produced by the taxpayer at a qualified facility, multiplied by the applicable amount with respect to such qualified facility. For this purpose, eligible electricity is electricity that is either (1) sold by the taxpayer to an unrelated person during the taxable year or (2) in the case of a qualified facility that is equipped with a metering device that is owned and operated by an unrelated person, sold, consumed, or stored by the taxpayer during the taxable year.

A. Amount of Credit

For purposes of the applicable amount used in calculating the section 45Y credit, section 45Y(a)(2) provides a base amount and a higher alternative amount. Section 45Y(a)(2)(A) provides that the applicable amount will be the base amount of 0.3 cents in the case of a qualified facility that does not satisfy the requirements for the higher alternative amount. Section 45Y(a)(2)(B) provides that the alternative amount of 1.5 cents applies in the case of any qualified facility (1) with a maximum net output of less than 1 megawatt (as measured in alternating current), (2) the construction of which begins prior to the date that is 60 days after the Secretary of the Treasury or her delegate

[1] Section 48(a)(3)(vii) includes as energy property equipment that uses the ground or ground water as a thermal energy source to heat a structure or as a thermal energy sink to cool a structure (geothermal heat pump property), but only with respect to property the construction of which begins before January 1, 2035.

(Secretary) publishes guidance on the requirements of section 45Y(g)(9) (wage requirements) and section 45Y(g)(10) (apprenticeship requirements),[2] or (3) that satisfies section 45Y(g)(9) and, with respect to the construction of such facility, satisfies section 45Y(g)(10).

Section 45Y(c)(1) provides for an inflation adjustment for both the base and alternative amounts. Section 45Y(c)(1) provides that in the case of a calendar year beginning after 2024, the 0.3 cent amount in section 45Y(a)(2)(A) and the 1.5 cent amount in section 45Y(a)(2)(B) will each be adjusted by multiplying such amount by the inflation adjustment factor for the calendar year in which the sale, consumption, or storage of the electricity occurs. Section 45Y(c)(1) also addresses the rounding rules to be applied to this computation. Section 45Y(c)(2) provides that the Secretary will, not later than April 1 of each calendar year, determine and publish in the **Federal Register** the inflation adjustment factor for such calendar year in accordance with section 45Y(c).

Section 45Y(g)(7) provides for an increase in the section 45Y credit amount for any qualified facility located in an energy community, and section 45Y(g)(11) provides for an increase in the section 45Y credit amount if the domestic content bonus requirement is satisfied.

Section 45Y(g)(7) provides that in the case of any qualified facility that is located in an energy community (as defined in section 45(b)(11)(B)), for purposes of determining the amount of the credit under section 45Y(a) with respect to any electricity produced by the taxpayer at such facility during the taxable year, the applicable amount under section 45Y(a)(2) will be increased by an amount equal to 10 percent of the amount otherwise in effect under such paragraph.

Section 45Y(g)(11) provides that in the case of any qualified facility that satisfies the domestic content bonus requirement under section 45Y(g)(11)(B)(i), the amount of the credit determined under section 45Y(a) will be increased by an amount equal to 10 percent of the amount so determined (as determined without application of section 45Y(g)(7)). Section 45Y(g)(11)(B)(i) generally provides that the domestic content bonus requirement is satisfied with respect to any qualified facility if the taxpayer certifies to the Secretary (at such time, and in such form and manner, as the Secretary may prescribe) that any steel, iron, or manufactured product that is a component of such facility (upon completion of construction) was produced in the United States (as determined under section 661 of title 49, Code of Federal Regulations). Section 45Y(g)(11)(B)(iii) provides that for purposes of the domestic content bonus requirement, the manufactured products that are components of a qualified facility upon completion of construction will be deemed to have been produced in the United States if not less than the adjusted percentage (as determined under section 45Y(g)(11)(C)) of the total cost of all such manufactured products of such facility are attributable to manufactured products (including components) that are mined, produced, or manufactured in the United States.

B. Qualified Facility

Section 45Y(b) provides guidance on the meaning of a qualified facility for purposes of section 45Y. Subject to section 45Y(b)(1)(B) through (D), section 45Y(b)(1)(A) defines a qualified facility to mean a facility owned by the taxpayer that is used for the generation of electricity, that is placed in service after December 31, 2024, and for which the greenhouse gas emissions rate (as determined under section 45Y(b)(2)) is not greater than zero.

Section 45Y(b)(1)(B) provides that for purposes of section 45Y, a facility will only be treated as a qualified facility during the 10-year period beginning on the date the facility was originally placed in service.

Section 45Y(b)(1)(C) provides that a qualified facility will include a new unit or any additions of capacity that are placed in service after December 31, 2024, if in connection with a facility described in section 45Y(b)(1)(A) (without regard to section 45Y(b)(1)(A)(ii) describing the requirement that the facility be placed in service after December 31, 2024) that was placed in service before January 1, 2025, but only to the extent of the increased amount of electricity produced at the facility due to the new unit or addition of capacity.

Section 45Y(b)(1)(D) provides that a qualified facility will not include any facility for which a credit determined under section 45, 45J, 45Q, 45U, 48, 48A, or 48E of the Code is allowed under section 38 for the taxable year or any prior taxable year.

Section 45Y(b)(2) describes the greenhouse gas emissions rate referenced in section 45Y(b)(1)(A)(iii). Section 45Y(b)(2)(A) defines greenhouse gas emissions rate for purposes of section 45Y to mean the amount of greenhouse gases emitted into the atmosphere by a facility in the production of electricity, expressed as grams of CO_2e per kWh. Section 45Y(e)(1) defines CO_2e per kWh for purposes of section 45Y to mean, with respect to any greenhouse gas, the equivalent carbon dioxide (as determined based on global warming potential) per kWh of electricity produced. Section 45Y(e)(2) defines greenhouse gas for purposes of section 45Y to have the same meaning given such term under section 211(o)(1)(G) of the Clean Air Act (CAA) (42 U.S.C. 7545(o)(1)(G)) as in effect on August 16, 2022.

Section 45Y(b)(2)(B) provides that in the case of a facility that produces electricity through combustion or gasification, the greenhouse gas emissions rate (GHG emissions rate) for such facility is equal to the net rate of greenhouse gases emitted into the atmosphere by such facility (taking into account lifecycle greenhouse gas emissions, as described in section 211(o)(1)(H) of the CAA (42 U.S.C. 7545(o)(1)(H))) in the production of electricity, expressed as grams of CO_2e per kWh.

Section 45Y(b)(2)(C) provides for the establishment of GHG emissions rates for facilities either through the publication of emissions rates described in section 45Y(b)(2)(C)(i) or a provisional emissions rate as described in section 45Y(b)(2)(C)(ii). Section 45Y(b)(2)(C)(i) states that the Secretary will annually publish a table that sets forth the GHG emissions rates for types or categories of facilities, that a taxpayer will use for purposes of section 45Y. Section 45Y(b)(2)(C)(ii) provides that in the case of any facility for which a GHG emissions rate has not been established by the Secretary, a taxpayer that owns such facility may file a petition with the Secretary for determination of the GHG emissions rate with respect to such facility.

Section 45Y(b)(2)(D) provides that for purposes of section 45Y(b) the amount of greenhouse gases emitted into the atmosphere by a facility in the production of electricity cannot include any qualified carbon dioxide that is captured by the taxpayer and either (1) disposed of by the taxpayer in secure geological storage pursuant to any regulations established under section 45Q(f)(2), or (2) utilized by the taxpayer in a manner described in section 45Q(f)(5). Section 45Y(e)(3) defines qualified carbon dioxide for purposes of

[2] To meet this requirement, the construction of the qualified facility must begin prior to January 29, 2023. See proposed § 1.45Y–3 as proposed in the notice of proposed rulemaking (REG–100908–23) published in the **Federal Register** (88 FR 60018) on August 30, 2023, and corrected at 88 FR 73807 on October 27, 2023.

section 45Y to mean carbon dioxide captured from an industrial source that would otherwise be released into the atmosphere as industrial emission of greenhouse gas, is measured at the source of capture and verified at the point of disposal or utilization, and is captured and disposed or utilized within the United States (within the meaning of section 638(1) of the Code) or a United States territory, which for purposes of section 45Y and the section 45Y regulations has the meaning of the term ''possession'' of the United States (within the meaning of section 638(2)).

C. Credit Phase-Out

Section 45Y(d) describes the credit phase-out. Section 45Y(d)(1) provides generally that the amount of the clean electricity production credit under section 45Y(a) for any qualified facility the construction of which begins during a calendar year described in section 45Y(d)(2) is equal to the product of the amount of the credit determined under section 45Y(a) without regard to section 45Y(d), multiplied by the phase-out percentage under section 45Y(d)(2). Section 45Y(d)(2) provides that the phase-out percentage is 100 percent for a facility the construction of which begins during the first calendar year following the applicable year; 75 percent for a facility the construction of which begins during the second calendar year following the applicable year; 50 percent for a facility the construction of which begins during the third calendar year following the applicable year; and 0 percent for a facility the construction of which begins during any calendar year subsequent to the calendar year described in section 45Y(d)(2)(C). Section 45Y(d)(3) defines the ''applicable year'' for purposes of section 45Y(d) to mean the later of the calendar year in which the Secretary determines that the annual greenhouse gas emissions from the production of electricity in the United States are equal to or less than 25 percent of the annual greenhouse gas emissions from the production of electricity in the United States for calendar year 2022, or 2032.

D. Special Rules

Section 45Y(g) provides special rules for section 45Y. Section 45Y(g)(1) provides that consumption, sales, or storage is taken into account under section 45Y only with respect to electricity the production of which is within the United States (within the meaning of section 638(1)), or a United States territory, which for purposes of section 45Y and the section 45Y regulations has the meaning of the term ''possession'' of the United States (within the meaning of section 638(2)).

Section 45Y(g)(2) provides a rule for combined heat and power system (CHP) property. For purposes of section 45Y(a), section 45Y(g)(2)(A) generally provides that the kWh of electricity produced by a taxpayer at a qualified facility will include any production in the form of useful thermal energy by any CHP property within such facility, and the amount of greenhouse gases emitted into the atmosphere by such facility in the production of such useful thermal energy will be included for purposes of determining the GHG emissions rate for such facility. Section 45Y(g)(2)(B) defines CHP property for purposes of section 45Y(g)(2) to have the same meaning given such term by section 48(c)(3) (without regard to section 48(c)(3)(A)(iv), (B), and (D) thereof). Section 45Y(g)(2)(C) provides the necessary conversion from BTU to kWh for a taxpayer to calculate a section 45Y credit for useful thermal energy produced by a CHP property.

Section 45Y(g)(3) provides that in the case of a qualified facility in which more than one person has an ownership interest, except to the extent provided in regulations prescribed by the Secretary, production from the facility will be allocated among such persons in proportion to their respective ownership interests in the gross sales from such facility.

Section 45Y(g)(4) provides that persons will be treated as related to each other if such persons would be treated as a single employer under the regulations prescribed under section 52(b). In the case of a corporation that is a member of an affiliated group of corporations filing a consolidated return, such corporation will be treated as selling electricity to an unrelated person if such electricity is sold to such a person by another member of such group.

Section 45Y(g)(5) provides that under regulations prescribed by the Secretary, rules similar to the rules of section 52(d) will apply to a pass-thru in the case of estates and trusts.

Section 45Y(g)(6) provides for the allocation of the credit to patrons of an agricultural cooperative.

Section 45Y(g)(8) provides that rules similar to the rules of section 45(b)(3) will apply to a credit reduced for tax-exempt bonds.

Section 45Y(g)(9) provides that rules similar to the rules of section 45(b)(7) apply with respect to wage requirements. Section 45Y(g)(10) provides rules similar to the rules of section 45(b)(8) apply with respect to apprenticeship requirements.

II. Overview of Section 48E

For purposes of the general business credit under section 38, which includes the investment credit under section 46, section 48E(a)(1) provides a credit for any taxable year in which a qualified investment is made with respect to any qualified facility and any energy storage technology (EST).

A. Amount of Credit

The amount of the section 48E credit is equal to the applicable percentage of the qualified investment in any qualified facility and any EST. Section 48(E)(a)(2) provides a base rate and a higher alternative rate for the applicable percentage. Section 48E(a)(2)(A)(i) provides that in the case of a qualified facility that does not satisfy the requirements for the higher alternative rate, the base rate will be 6 percent. Section 48E(a)(2)(A)(ii) provides that the alternative rate of 30 percent applies in the case of any qualified facility (1) with a maximum net output of less than 1 megawatt (as measured in alternating current), (2) the construction of which begins prior to the date that is 60 days after the Secretary publishes guidance on the prevailing wage requirements of section 48E(d)(3) and the apprenticeship requirements of section 48E(d)(4),[3] or (3) that satisfies the prevailing wage requirements of section 48E(d)(3) and, with respect to the construction of such facility, satisfies the apprenticeship requirements of section 48E(d)(4).

Similarly, section 48E(a)(2)(B)(ii) provides that the alternative rate of 30 percent applies in the case of an EST (1) with a capacity of less than 1 megawatt, (2) the construction of which begins prior to the date that is 60 days after the Secretary publishes guidance on the requirements of section 48E(d)(3) and (4)[4] (prevailing wage and apprenticeship requirements, respectively), or (3) that satisfies section 48E(d)(3) and with respect to the construction of such EST, satisfies section 48E(d)(4). Section 48E(a)(2)(B)(i) provides that in the case of an EST that does not satisfy the requirements for the

[3] To meet this requirement, the construction of the qualified facility must begin prior to January 29, 2023. *See* proposed § 1.48E–3 as proposed in the notice of proposed rulemaking (REG–100908–23) published in the **Federal Register** (88 FR 60018) on August 30, 2023, and corrected at 88 FR 73807 on October 27, 2023.

[4] To meet this requirement, the construction of the EST must begin prior to January 29, 2023. *See* proposed § 1.48E–3 as proposed in the notice of proposed rulemaking (REG–100908–23) published in the **Federal Register** at 88 FR 60018 on August 30, 2023, and corrected at 88 FR 73807 on October 27, 2023.

alternative rate, the base rate will be 6 percent.

Section 48E(a)(3)(A) provides for an increase in credit rate for a qualified facility or EST located in an energy community (as defined in section 45(b)(11)(B)) and section 48E(a)(3)(B) similarly provides for an increase in credit rate for a qualified facility or EST that meets the domestic content bonus requirements.

B. Qualified Investment With Respect to a Qualified Facility

Section 48E(b) describes a qualified investment with respect to a qualified facility. Generally, for purposes of section 48E(a), section 48E(b)(1)(A) and (B)(i) provide that the qualified investment with respect to a qualified facility for any taxable year is the sum of the basis of any qualified property placed in service by the taxpayer during such taxable year that is part of a qualified facility, plus the amount of expenditures that are paid or incurred by the taxpayer for qualified interconnection property that is properly chargeable to capital account of the taxpayer.

Section 48E(b)(2) provides that for purposes of section 48E, qualified property means property that is tangible personal property, or other tangible property (not including a building or its structural components), but only if such property is used as an integral part of the qualified facility; with respect to which depreciation (or amortization in lieu of depreciation) is allowable; and the construction, reconstruction, or erection of which is completed by the taxpayer, or that is acquired by the taxpayer provided the original use of such property commences with the taxpayer.

Section 48E(b)(1)(B)(i)(I) and (II) provide that qualified interconnection property must be in connection with a qualified facility that has a maximum net output of not greater than 5 megawatts (as measured in alternating current) and be placed in service during the taxable year of the taxpayer. Section 48E(b)(4) provides that the term ''qualified interconnection property'' has the meaning given such term in section 48(a)(8)(B).

Section 48E(b)(3)(A) provides that for purposes of section 48E, the term ''qualified facility'' means a facility that is used for the generation of electricity, which is placed in service after December 31, 2024, and for which the anticipated GHG emissions rate (as determined under section 48E(b)(3)(B)(ii)) is not greater than zero.

Section 48E(b)(3)(B) provides additional rules for a qualified facility. Section 48E(b)(3)(B)(i) provides rules on an expansion of facility and incremental production stating that rules similar to the rules of section 45Y(b)(1)(C) apply for purposes of section 48E(b)(3). Section 48E(b)(3)(B)(ii) provides rules to determine the GHG emissions rate of a qualified facility by stating that rules similar to the rules of section 45Y(b)(2) apply for purposes of section 48E(b)(3).

Section 48E(b)(3)(C) provides that a qualified facility will not include any facility for which a renewable electricity production credit determined under section 45, an advanced nuclear power facility production credit determined under section 45J, a carbon oxide sequestration credit determined under section 45Q, a zero-emission nuclear power production credit determined under section 45U, a clean electricity production credit determined under section 45Y, an energy credit determined under section 48, or a qualifying advanced coal project credit under section 48A, is allowed under section 38 for the taxable year or any prior taxable year. Section 48E(b)(5) provides a rule for coordination with the rehabilitation credit stating that the qualified investment with respect to any qualified facility for any taxable year will not include that portion of the basis of any property that is attributable to qualified rehabilitation expenditures (as defined in section 47(c)(2) of the Code).

Section 48E(b)(6) provides that for purposes of section 48E(b), the terms ''CO_2e per kWh'' and ''greenhouse gas emissions rate'' have the same meaning given such terms under section 45Y. Section 48E(f) provides that, in section 48E, the term ''greenhouse gas'' has the same meaning given such term under section 45Y(e)(2).

C. Qualified Investment With Respect to an Energy Storage Technology

Section 48E(c) describes a qualified investment with respect to EST. For purposes of section 48E(a), section 48E(c)(1) provides that the qualified investment with respect to EST for any taxable year is the basis of any EST placed in service by the taxpayer during such taxable year. Section 48E(c)(2) provides that for purposes of section 48E, the term ''energy storage technology'' has the meaning given such term in section 48(c)(6) (except that section 48(c)(6)(D) will not apply). Section 48(c)(6)(A)(i) defines ''energy storage technology'' to mean property (other than property primarily used in the transportation of goods or individuals and not for the production of electricity) that 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 kWh. Section 48(c)(6)(A)(ii) provides that the term ''energy storage technology'' also includes thermal energy storage property. Section 48(c)(6)(B) describes a rule for modifications of certain property.

Section 48(c)(6)(C)(i) defines ''thermal energy storage property'' to mean for purposes of section 48(c)(6), subject to section 48(c)(6)(C)(ii), property comprising a system that is directly connected to a heating, ventilation, or air conditioning 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. Section 48(c)(6)(C)(ii) describes the exclusion that thermal energy storage property will not include a swimming pool, combined heat and power system property, or a building or its structural components.

Section 48E(d) provides special rules for section 48E, all of which refer to other provisions. Section 48E(d)(1) provides a rule for qualified progress expenditures, stating that rules similar to the rules of former section 46(c)(4) and (d) (as in effect on the day before the date of the enactment of the Revenue Reconciliation Act of 1990) apply for purposes of section 48E(a).[5] Section 48E(d)(2) provides a special rule for property financed by subsidized energy financing or private activity bonds, stating that rules similar to the rules of section 45(b)(3) apply. Section 48E(d)(3) provides a rule for prevailing wage requirements, stating that rules similar to the rules of section 48(a)(10) apply. Likewise, section 48E(d)(4) provides a rule for apprenticeship requirements stating that rules similar to the rules of section 45(b)(8) apply. Lastly, section 48E(d)(5) provides a rule for the domestic content requirement for elective payment stating that in the case of a taxpayer making an election under section 6417 with respect to a credit under section 48E, rules similar to the rules of section 45Y(g)(12) apply.

D. Credit Phase-Out

Section 48E(e) describes the credit phase-out. Section 48E(e)(1) provides generally that the amount of the clean electricity investment credit under section 48E(a) for any qualified investment with respect to any qualified facility or EST the construction of which begins during a calendar year described in section 48E(e)(2) is equal to

[5] The rules provided by § 1.46–5 related to qualified progress expenditures apply for purposes of section 48E(a).

the product of the amount of the credit determined under section 48E(a) without regard to section 48E(e), multiplied by the phase-out percentage under section 48E(e)(2). Section 48E(e)(2) provides that the phase-out percentage is 100 percent for any qualified investment with respect to any qualified facility or EST the construction of which begins during the first calendar year following the applicable year; 75 percent for any qualified investment with respect to any qualified facility or EST the construction of which begins during the second calendar year following the applicable year; 50 percent for any qualified investment with respect to any qualified facility or EST the construction of which begins during the third calendar year following the applicable year; and 0 percent for any qualified investment with respect to any qualified facility or EST the construction of which begins during any calendar year subsequent to the calendar year described in section 48E(e)(2)(C). Section 48E(e)(3) defines the ''applicable year'' for purposes of section 48E(e) to have the same meaning given such term in section 45Y(d)(3).

E. Recapture Rules

For purposes of the recapture rules under section 50(a), section 48E(g) provides a special recapture rule applicable to qualified facilities. Specifically, section 48E(g) provides that, for purposes of section 50, if the Secretary determines that the GHG emissions rate for a qualified facility is greater than 10 grams of CO_2e per kWh, any property for which a credit was allowed under section 48E with respect to such facility ceases to be investment credit property in the taxable year in which the determination is made.

III. Notice 2022–49

On October 24, 2022, the Treasury Department and the IRS published Notice 2022–49, 2022–43 I.R.B. 321. The notice requested general comments on issues arising under sections 45Y and 48E, as well as on issues relating to three other credits. For section 45Y, the notice specifically requested comments concerning (1) industry standards for taxpayer eligibility for the credit, (2) what the Treasury Department and the IRS should consider, including around the scope and factors, for the annual GHG emissions rate table, (3) whether guidance is needed to clarify cases in which a metering device is owned and operated by an unrelated person or in which electricity produced at such a qualified facility with such a device is sold, consumed or stored by the taxpayer, and (4) what procedures the Treasury Department and the IRS should provide for a taxpayer whose facility does not have an emissions rate established by the annual rate table, and what should the Secretary consider in making such a determination. For section 48E, the notice specifically requested comments concerning what industry mechanisms currently exist for a taxpayer to demonstrate eligibility for the credit.

The Treasury Department and the IRS received over 100 comments specifically addressing sections 45Y and 48E from industry participants and other stakeholders. The Treasury Department and the IRS appreciate the commentors' interest and engagement on these issues. These comments have been carefully considered in the preparation of these proposed regulations.

IV. Prior Guidance

On August 30, 2023, the Treasury Department and the IRS published a notice of proposed rulemaking and a notice of public hearing (REG–100908–23) in the **Federal Register** (88 FR 60018), providing guidance on the prevailing wage and registered apprenticeship (PWA) requirements under sections 45, 45Y, 48, 48E and several other sections of the Code (August Proposed Regulations). The August Proposed Regulations also proposed guidance on the one-megawatt exception under sections 45, 45Y, 48, and 48E (One-Megawatt Exception). Under this exception, with respect to certain facilities with a maximum net output (or capacity for energy storage technology under section 48E) of less than one megawatt, increased credit amounts are available.

On November 22, 2023, the Treasury Department and the IRS published a notice of proposed rulemaking and a notice of public hearing (REG–132569–17) in the **Federal Register** (88 FR 82188), providing guidance under section 48 of the Code. Among other matters, the proposed regulations under section 48 (Section 48 Proposed Regulations) withdrew and reproposed the regulations in § 1.48–13 from the August Proposed Regulations regarding the PWA requirements under section 48, the One-Megawatt Exception under section 48(a)(9)(B)(i), and the recapture rules under section 48(a)(10)(C).

Explanation of Provisions

I. Rules Applicable to the Clean Electricity Production Tax Credit

The proposed regulations under section 45Y are organized in five sections, proposed §§ 1.45Y–1 through 1.45Y–5 (section 45Y regulations). Proposed § 1.45Y–1 would provide an overview of the section 45Y regulations, generally applicable definitions, and general rules applicable to section 45Y, including a rule for calculating the credit for a CHP property. Proposed § 1.45Y–2 would provide rules relating to qualified facilities for purposes of the section 45Y credit. Section 1.45Y–3 is reserved for rules relating to the increased credit amount for meeting the prevailing wage and apprenticeship requirements. A cross reference will be added to § 1.45Y–3 in the final regulations after § 1.45Y–3 is finalized. Proposed § 1.45Y–4 would provide the rules of general application under section 45Y, including rules that attribute production to the taxpayer, rules for the expansion of a facility and incremental production, and rules for retrofits of an existing facility. Proposed § 1.45Y–5 would provide rules pertaining to the determination of a GHG emissions rate for a facility under section 45Y.

A. Amount of Credit

Proposed § 1.45Y–1 would provide an overview of the section 45Y regulations and definitions of terms for purposes of the section 45Y regulations, including the terms ''combined heat and power system (CHP) property,'' ''metering device,'' ''related person,'' ''unrelated person,'' and ''qualified facility.''

Proposed § 1.45Y–1(a)(5)(i) would define, for purposes of section 45Y(a)(1)(A)(ii)(II), the term ''metering device'' as equipment that is owned and operated by an unrelated person (as defined in paragraph (a)(11) of this section) for energy revenue metering to measure and register the continuous summation of an electricity quantity with respect to time. Further, proposed § 1.45Y–1(a)(5)(ii) would provide standards for maintaining and operating a metering device for purposes of section 45Y(a)(1)(A)(ii)(II) and proposed § 1.45Y–1(a)(5) by requiring a metering device to be maintained in proper working order according to the instructions of its manufacturer. Proposed § 1.45Y–1(a)(5)(ii) would also provide that a metering device should meet the requirements of the American National Standards Institute C12.1–2022 standard, or subsequent revisions, be revenue grade with a $+/-0.5\%$ accuracy, and be properly calibrated. Proposed § 1.45Y–1(a)(5)(iii) would provide that for purposes of monitoring the metering device, the unrelated person may share network equipment, such as spare fiber optic cable owned by the taxpayer that produces the electricity, and may co-locate network

equipment in the taxpayer's facilities. Proposed § 1.45Y–1(a)(5)(iv) would provide examples illustrating the proposed rules provided by proposed § 1.45Y–1(a)(5).

Proposed § 1.45Y–1(a)(7)(i) would provide that for purposes of section 45Y(a), the term ''related person'' means a person who is related to another person if such person would be treated as a single employer under the regulations in 26 CFR chapter 1 under section 52(b) of the Code. Proposed § 1.45Y–1(a)(7)(ii) would provide that in the case of a corporation that is a member of a consolidated group (as defined in § 1.1502–1(h)), such corporation will be treated as selling electricity to an unrelated person if such electricity is sold to an unrelated person by another member of such group.

Proposed § 1.45Y–1(a)(11) would provide that for purposes of section 45Y(a), the term ''unrelated person'' means a person who is not a related person as defined in section 45Y(g)(4) and proposed § 1.45Y–1(a)(7). In the case of sales of electricity to an individual consumer, such sales will be treated as sales to an unrelated party for purposes of the section 45Y credit. Proposed § 1.45Y–1(a)(11) provides an example illustrating the application of these rules.

Proposed § 1.45Y–1(b)(1) would describe the calculation of the section 45Y credit, providing that the credit is an amount equal to the product of the kWh of electricity that is produced by the taxpayer at a qualified facility (as defined in proposed § 1.45Y–2(a)) and sold by the taxpayer to an unrelated person during the taxable year, multiplied by the applicable amount (as described in proposed § 1.45Y–1(b)) with respect to such qualified facility. Proposed § 1.45Y–1(b)(1) would further provide that in the case of a qualified facility that is equipped with a metering device that is owned and operated by an unrelated person, the section 45Y credit for any taxable year is an amount equal to the product of the kWh of electricity that is both produced at the qualified facility (as defined in proposed § 1.45Y–2(a)) and sold, consumed, or stored by the taxpayer during the taxable year, multiplied by the applicable amount with respect to such qualified facility. Proposed § 1.45Y–1(b)(1) would also provide that only one section 45Y credit may be claimed for each kWh of electricity produced by the taxpayer at a qualified facility.

Proposed § 1.45Y–1(b)(2)(i) would define the applicable amount as the base amount described in § 1.45Y–1(b)(2)(ii) or the alternative amount described in § 1.45Y–1(b)(2)(iii). Proposed § 1.45Y–1(b)(2)(i) would further provide that the applicable amount is subject to the inflation adjustment as provided in section 45Y(c)(1) and proposed § 1.45Y–1(b)(3), and that the applicable amount may also be increased as provided in section 45Y(g)(7)) and proposed § 1.45Y–1(b)(4), in the case of a qualified facility that is located in an energy community. Proposed § 1.45Y–1(b)(2)(ii) would describe the base amount as 0.3 cents in the case of any qualified facility that does not satisfy the requirements provided in section 45Y(a)(2)(B). Proposed § 1.45Y–1(b)(2)(iii) would describe the alternative amount as 1.5 cents if prevailing wage and apprenticeship requirements are satisfied as provided in section 45Y(a)(2)(B).

Proposed § 1.45Y–1(b)(3) would provide the rules related to the inflation adjustment factor applicable to the section 45Y credit. Proposed § 1.45Y–1(b)(4) would provide the rules applicable to the energy communities increase in credit. Proposed § 1.45Y–1(b)(5) would provide the domestic content bonus credit amount.

Proposed § 1.45Y–1(c) would provide the credit phase-out rules. Generally, proposed § 1.45Y–1(c)(1) would provide that the amount of the clean electricity production credit under section 45Y(a) for any qualified facility the construction of which begins during a calendar year described in section 45Y(d)(2) is equal to the product of the amount of the credit determined under section 45Y(a) without regard to the credit phaseout rules of section 45Y(d) (credit phase-out), multiplied by the phase-out percentage provided in section 45Y(d)(2). Proposed § 1.45Y–1(c)(2) would provide that the phase-out percentage is 100 percent for a facility the construction of which begins during the first calendar year following the applicable year; 75 percent for a facility the construction of which begins during the second calendar year following the applicable year; 50 percent for a facility the construction of which begins during the third calendar year following the applicable year; and 0 percent for a facility the construction of which begins during any calendar year subsequent to the calendar year described in section 45Y(d)(2)(C).

Proposed § 1.45Y–1(c)(3) would define the ''applicable year'' for purposes of proposed § 1.45Y–1(c) to mean the later of the calendar year in which the Secretary makes the determination that the annual greenhouse gas emissions from the production of electricity in the United States are equal to or less than 25 percent of the annual greenhouse gas emissions from the production of electricity in the United States for calendar year 2022, or 2032. Proposed § 1.45Y–1(c)(4) would provide that, for the purposes of determining the applicable year, the annual greenhouse gas emissions from the production of electricity in the United States for any year must be assessed separately using both the Energy Information Administration's (EIA) Electric Power Annual, using the sum of the annual carbon dioxide emissions data from conventional power plants and combined heat and power plants as currently listed in Table 9.1 and the Monthly Energy Review annual carbon dioxide emissions from the combustion of biomass to produce electricity in the electric power sector as currently listed in Table 11.7, and the U.S. Environmental Protection Agency (EPA) Inventory of U.S. Greenhouse Gas Emissions and Sinks (GHGI) annual electric power-related carbon dioxide, methane, and nitrous oxide emissions data including carbon dioxide emissions from the combustion of biomass to produce electricity. In the most current version of the GHGI, annual fossil and biogenic CO_2 from electricity production in the electric power sector is available in Table 2–11 and Tables 3–120 and 3–122, respectively; and CH_4 and N_2O from electricity production in the electric power sector is available in Table 3–8 and Table 3–9, respectively. Based on current and publicly available data in the 2024 GHGI, the estimate for 2022 GHG emissions associated with the production of electricity is 1,613 million metric tons (MMT) CO_2e. Currently, explicit data on industrial and commercial sector GHG emissions from the production of electricity is not disaggregated from overall sectoral totals. See GHGI, *https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks.*

For 2022, the EIA Electric Power Annual states that the annual carbon dioxide emissions from conventional power plants and combined heat and power plants are 1,650 MMT, and the Monthly Energy Review annual carbon dioxide emissions from the combustion of biomass to produce electricity in the electric power sector are 35 MMT. Thus, the EIA's data reflects a total of 1,685 MMT in 2022. See EIA Electric Power Annual (*https://www.eia.gov/electricity/annual*); MER (*https://eia.gov/totalenergy/monthly/*).

Proposed § 1.45Y–1(c)(5) would provide that, for the purposes of determining the applicable year, the Secretary will make such determination only if the annual greenhouse gas emissions from the production of

electricity in the United States, as determined separately under both of the data sources described in proposed § 1.45Y–1(c)(4), for the year is equal to or less than 25 percent of the annual greenhouse gas emissions from the production of electricity in the United States for calendar year 2022. Proposed § 1.45Y–1(c)(5) would provide that if a data source described in proposed § 1.45Y–1(c)(4) becomes unavailable (for example, it is no longer published or it does not provide the specified data), the Secretary must designate a similar data source to replace the unavailable data source. Requiring the applicable year to be determined using data from the EIA's Electric Power Annual and Monthly Energy Review and the EPA's GHGI ensures that this important determination is made transparently and based on reliable information. Both well-established data sources are representative of the annual greenhouse gas emissions from the production of electricity in the United States, but there are slight differences in the greenhouse gases and the emissions sources covered by each data source.

There are other United States Government greenhouse gas datasets that could serve as the basis for the Secretary's determination as to whether the annual greenhouse gas emissions from the production of electricity in the United States are equal to or less than 25 percent compared to 2022. Two such datasets are the EPA Greenhouse Gas Reporting Program (GHGRP) and Emissions & Generation Resource Integrated Database (eGRID). The Treasury Department and the IRS request comment on which datasets are most appropriate to determine the applicable year and why.

Proposed § 1.45Y–1(d) would provide requirements for CHP property and special rules for calculating the section 45Y credit for CHP property. Proposed § 1.45Y–1(d)(1) would provide that CHP property must produce at least 20 percent of its total useful energy in the form of thermal energy that is not used to produce electrical or mechanical power (or combination thereof), and at least 20 percent of its total useful energy in the form of electrical or mechanical power (or combination thereof). Proposed § 1.45Y–1(d)(1) would further provide that the energy efficiency percentage of CHP property must exceed 60 percent, and that these percentages are determined on a British thermal unit (Btu) basis. Section 45Y(g)(2)(B) incorporates these requirements by providing that the term ''combined heat and power system property'' has the same meaning given such term by section 48(c)(3) (without regard to section 48(c)(3)(A)(iv), (B), and (D)).

Proposed § 1.45Y–1(d)(2) would describe the energy efficiency percentage of a CHP property stating that it is the fraction the numerator of which is the total useful electrical, thermal, and mechanical power produced by the system at normal operating rates, and expected to be consumed in its normal application, and the denominator of which is the lower heating value of the fuel sources for the system, which is a measure of heat content based on the net energy content of a combustible fuel.

Proposed § 1.45Y–1(d)(3) would provide a special rule for calculating electricity produced by CHP property. For purposes of section 45Y(a) and proposed § 1.45Y–1(b), the kWh of electricity produced by a taxpayer at a qualified facility will include any production in the form of useful thermal energy by any CHP property within such facility, and the amount of greenhouse gases emitted into the atmosphere by such facility in the production of such useful thermal energy will be included for purposes of determining the GHG emissions rate for such facility.

Proposed § 1.45Y–1(d)(3)(ii)(A) would provide a conversion from Btu to kWh. Proposed § 1.45Y–1(d)(3)(ii))(A) would provide that for purposes of section 45Y(g)(2)(A)(i) and § 1.45Y–1(d)(3), the amount of kWh of electricity produced in the form of useful thermal energy is equal to the quotient of the total useful thermal energy produced by the CHP property within the qualified facility, divided by the heat rate for such facility.

Proposed § 1.45Y–1(d)(3)(ii)(B) would define the term ''heat rate'' to mean the amount of energy used by the qualified facility to generate 1 kWh of electricity, expressed as Btus per net kWh generated. In calculating the heat rate of a qualified facility that includes CHP property that uses combustion, a taxpayer must use the annual average heat rate, defined as the total annual fuel consumption of the CHP property (in Btus, using the lower heating value of the fuel) during the taxable year for which the section 45Y credit is claimed, divided by the annual net electricity generation (in kWh) of the CHP property during such taxable year.

Section 45Y(g)(2), by cross reference to section 48(c)(3), requires that the energy efficiency percentage of the CHP property must exceed 60 percent, calculated as (1) the total useful electrical, thermal, and mechanical power produced by the system at normal operating rates, and expected to be consumed in its normal application, divided by (2) the lower heating value (LHV) of the fuel sources for the system. The LHV is calculated based on combustion. Some CHP property may not involve combustion, such as nuclear cogeneration. In these scenarios, because there is no calculable LHV, the energy efficiency percentage of the CHP property cannot be determined using the calculation provided in the statute.

The Treasury Department and the IRS request comments regarding the application of the energy efficiency percentage requirements to CHP property for which there is no combustion. Relatedly, comment is requested on whether the existing definition of heat rate provided in section 45Y(g)(2)(C)(ii) for purposes of calculating the section 45Y credit for CHP property that does not use combustion should be clarified.

B. Qualified Facility

Proposed § 1.45Y–2(a) would define a ''qualified facility'' to mean a facility owned by the taxpayer and used for the generation of electricity, that is placed in service after December 31, 2024, and has a GHG emissions rate of not greater than zero (as determined under rules provided in proposed § 1.45Y–5).

1. Property Included in Qualified Facility

Proposed § 1.45Y–2(b) would provide a description of the property included in a qualified facility. Proposed § 1.45Y–2(b)(1) would provide that a qualified facility includes a unit of qualified facility (as defined in proposed § 1.45Y–2(b)(2)(i)) that meets the requirements of proposed § 1.45Y–2(b)(2)(ii). Proposed § 1.45Y–2(b)(1) would provide that a qualified facility also includes qualified property owned by the taxpayer that is an integral part of a qualified facility (as defined in proposed § 1.45Y–2(b)(3)). Section 45Y is silent regarding the credit eligibility of components that are part of a qualified facility but located in different locations. Proposed § 1.45Y–2(b)(1) would clarify that any property that meets the requirements of a qualified facility described in proposed § 1.45Y–2(b) is part of a qualified facility, regardless of where such property is located. Proposed § 1.45Y–2(b)(1) would provide that a qualified facility also generally does not include equipment that is an addition or modification to an existing qualified facility, however, proposed § 1.45Y–2(b)(1) would reference proposed § 1.45Y–4(c) for rules regarding the expansion of a facility or incremental production and proposed § 1.45Y–4(d) for rules regarding a retrofitted qualified facility (80/20 Rule).

2. Unit of Qualified Facility

Proposed § 1.45Y–2(b)(2)(i) would provide that for purposes of the section 45Y credit, the unit of qualified facility includes all functionally interdependent components of property (as defined in proposed § 1.45Y–2(b)(2)(ii)) owned by the taxpayer that are operated together and that can operate apart from other property to produce electricity. Proposed § 1.45Y–2(b)(2)(i) would clarify that no provision of proposed § 1.45Y–1, or proposed § 1.45Y–4 through § 1.45Y–5 uses the term ''unit'' in respect of a qualified facility with any meaning other than that provided in proposed § 1.45Y–2(b)(2)(i). A reference to § 1.45Y–3 will also be added to the previous sentence in proposed § 1.45Y–2(b)(2)(i) when proposed § 1.45Y–2(b)(2)(i) is finalized, but it cannot be added until § 1.45Y–3 is finalized.

Proposed § 1.45Y–2(b)(2)(ii) would provide that components are functionally interdependent if placing in service each component is dependent upon placing in service other components to produce electricity. See the discussion in section I.A. of the Explanation of Provisions regarding the special rule for CHP property.

3. Integral Part

Proposed § 1.45Y–2(b)(3)(i) would provide that for purposes of thesection 45Ycredit, a component of property owned by a taxpayer is an integral part of a facility if it is used directly in the intended function of the qualified facility and is essential to the completeness of such function.

Proposed § 1.45Y–2(b)(3)(ii) would provide that components of property that are an integral part of a qualified facility include power conditioning equipment and transfer equipment. Proposed § 1.45Y–2(b)(3)(ii) would provide that power conditioning equipment includes equipment that modifies the characteristics of electricity into a form suitable for use or transmission or distribution. Proposed § 1.45Y–2(b)(3)(ii) would provide that parts related to the functioning or protection of power conditioning equipment are also treated as power conditioning equipment and includes examples.

Proposed § 1.45Y–2(b)(3)(ii) would provide that transfer equipment includes components that permit the aggregation of electricity generated by components of qualified facilities and components that alter voltage in order to permit transfer to a transmission or distribution line. Proposed § 1.45Y–2(b)(3)(ii) would also clarify that transfer equipment does not include transmission or distribution lines. Proposed § 1.45Y–2(b)(3)(ii) would provide that examples of transfer equipment include, but are not limited to, wires, cables, and combiner boxes that conduct electricity. Proposed § 1.45Y–2(b)(3)(ii) would provide that parts related to the functioning or protection of transfer equipment are also treated as transfer equipment and include examples.

Proposed § 1.45Y–2(b)(3)(iii) would provide that roads that are an integral part of a qualified facility are those roads integral to the intended function of the qualified facility, such as onsite roads that are used to operate and maintain the qualified facility. Proposed § 1.45Y–2(b)(3)(iii) would also clarify that roads used primarily for access to the site, or roads used primarily for employee or visitor vehicles, are not integral to the intended function of the qualified facility and thus are not an integral part of a qualified facility.

Proposed § 1.45Y–2(b)(3)(iv) and (v) would also provide that fences and buildings (also referred to as structures) are generally not integral parts of a qualified facility because they are not integral to the intended function of the qualified facility. However, a building (or structure) may be an integral part of a qualified facility if it is essentially an item of machinery or equipment and a structure that houses components of property that are integral to the intended function of the qualified facility if the use of the structure is so closely related to the use of the housed components of property therein that the structure clearly can be expected to be replaced if the components of property it initially houses are replaced.

Proposed § 1.45Y–2(b)(3)(vi) would provide a rule for shared integral property by stating that multiple qualified facilities (whether owned directly by one or more taxpayers), including qualified facilities with respect to which a taxpayer has claimed a credit under section 45Y or section 48E, may include shared property that can be considered an integral part of each qualified facility. Proposed § 1.45Y–2(b)(3)(vi) would also provide that a component of property that is shared by a qualified facility (as defined in section 45Y(b)) (45Y Qualified Facility) and a qualified facility (as defined in section 48E(b)(3)) (48E Qualified Facility) that is an integral part of both qualified facilities will not affect the eligibility of the section 45Y Qualified Facility to claim the section 45Y credit or the section 48E Qualified Facility to claim a section 48E credit. Proposed § 1.45Y–2(b)(3)(vii) would provide examples illustrating proposed § 1.45Y–2(b)(3).

4. Coordination With Other Credits

Proposed § 1.45Y–2(c)(1) would provide that the term ''qualified facility'' (as defined in section 45Y(b)) will not include any facility for which a credit determined under section 45, 45J, 45Q, 45U, 48, 48A, or 48E is allowed under section 38 of the Code for the taxable year or any prior taxable year. Proposed § 1.45Y–2(c)(1) would further clarify that a taxpayer that directly owns a qualified facility (as defined in section 45Y(b)) that is eligible for both a section 45Y credit and another Federal income tax credit is eligible for the section 45Y credit only if the other Federal income tax credit was not allowed with respect to the qualified facility. Proposed § 1.45Y–2(c)(1) would also add that nothing in § 1.45Y–2(c) precludes a taxpayer from claiming a section 45Y credit with respect to a qualified facility (as defined in section 45Y(b)) that is co-located with another facility for which a credit determined under section 45, 45J, 45Q, 45U, 48, 48A, or 48E is allowed under section 38 for the taxable year or any prior taxable year. Proposed § 1.45Y–2(c)(2) would clarify that for purposes of proposed § 1.45Y–2(c)(1), the term ''allowed'' only includes credits that taxpayers have claimed on a Federal income tax return or Federal return, as appropriate, and that the IRS has not challenged in terms of the taxpayer's eligibility. Proposed § 1.45Y–2(c)(3) includes several examples illustrating the rules of § 1.45Y–2(c).

C. Rules of General Application to Section 45Y

1. Only Production in the United States Taken Into Account

Proposed § 1.45Y–4(a) would provide that consumption, sales, or storage of electricity are taken into account for purposes of the section 45Y credit only with respect to electricity produced within the United States (as defined in section 638(1)), or a United States territory, which for purposes of section 45Y and the section 45Y regulations has the meaning of the term ''possession'' of the United States (as defined in section 638(2)).

2. Production Attributable to the Taxpayer and Section 761(a) Elections

Proposed § 1.45Y–4(b)(1) would provide that in the case of a qualified facility in which more than one person has an ownership share (and such arrangement is not treated as a partnership for Federal tax purposes), production from the qualified facility is

allocated among such persons in proportion to their respective ownership share in the gross sales from such qualified facility during the taxable year. The respective owners each determine their respective section 45Y credit under section 45Y(a) based on their respective ownership shares in the gross sales from such qualified facility. Proposed § 1.45Y–4(b)(2) would provide an example demonstrating the application of this rule.

Proposed § 1.45Y–4(b)(3) would provide that if a qualified facility is owned through an unincorporated organization that has made a valid election under section 761(a) of the Code, each member's undivided ownership share in the qualified facility will be treated as a separate qualified facility owned by such member.

3. Expansion of Facility; Incremental Production

Proposed § 1.45Y–4(c)(1) would provide, solely for purposes of proposed § 1.45Y–4(c), that 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 described in section 45Y(b)(1)(A) (without regard to clause (ii) of such paragraph), which was placed in service before January 1, 2025, but only to the extent of the increased amount of electricity produced at the facility by reason of such new unit or addition of capacity. Proposed § 1.45Y–4(c)(1) would also provide that a new unit or an addition of capacity will be treated as a separate qualified facility. Proposed § 1.45Y–4(c)(1) would provide for purposes of proposed § 1.45Y–4(c), that a new unit or an addition of capacity require the addition or replacement of components of property, including any new or replacement integral property, added to a facility necessary to increase capacity. If applicable for purposes of proposed § 1.45Y–4(c), taxpayers must use modified or amended facility operating licenses or the International Standard Organization (ISO) conditions to measure the maximum electrical generating output of a facility to determine its nameplate capacity. Additionally, proposed § 1.45Y–4(c)(1) would provide that for purposes of section 45Y(a)(2)(B)(i) (that is, the One-Megawatt Exception), the capacity for a new unit or an addition of capacity is the sum of the nameplate capacity of the added qualified facility and the nameplate capacity of the facility to which the qualified facility was added.

Proposed § 1.45Y–4(c)(2) would provide that solely for purposes of § 1.45Y–4(c), a facility that is decommissioned or in the process of decommissioning and restarts can be considered to have increased capacity if the following conditions are met: (1) the existing facility must have ceased operations; (2) the existing facility must have a shutdown period of at least one calendar year during which it is without a valid operating license from its respective Federal regulatory authority (that is, the Federal Energy Regulatory Commission (FERC) or the Nuclear Regulatory Commission (NRC)); and (3) the increased capacity of the restarted facility must have a new, reinstated, or renewed operating license issued by either FERC or NRC.

Proposed § 1.45Y–4(c)(3) would describe how to compute the increased amount of electricity produced as a result of a new unit or an addition of capacity. Proposed § 1.45Y–4(c)(3) would provide that to determine the increased amount of electricity produced by a facility by reason of a new unit or an addition of capacity, a taxpayer must multiply the amount of electricity that the facility produces during a taxable year after the new unit or addition of capacity is placed in service by a fraction, the numerator of which is the added nameplate capacity that results from the new unit or addition of capacity, and the denominator of which is the total nameplate capacity of the facility with the new unit or addition of capacity added.

Proposed § 1.45Y–4(c)(4) would illustrate the application of these rules to determine the increased amount of electricity attributable to a new unit or an addition of capacity described in § 1.45Y–4(c).

4. Retrofit of an Existing Facility (80/20 Rule)

Proposed § 1.45Y–4(d)(1) would provide that for purposes of section 45Y(b)(1)(B), a facility may qualify as originally placed in service even if it contains some used components of property within the unit of qualified facility, provided the fair market value of the used components of the unit of qualified facility is not more than 20 percent of the total value of the unit of qualified facility (that is, the cost of the new components of property plus the fair market value of the used components of property within the unit of qualified facility) (80/20 Rule). Proposed § 1.45Y–4(d)(1) would further provide that if a facility satisfies the requirements of the 80/20 Rule, then the date on which such qualified facility is considered originally placed in service for purposes of section 45Y(B)(1)(b) is the date on which the new components of property of the unit of qualified facility are placed in service. Proposed § 1.45Y–4(d)(2) would provide that, for purposes of this 80/20 Rule, the cost of new components of the unit of qualified facility includes all costs properly included in the depreciable basis of the new components of property. Lastly, proposed § 1.45Y–4(d)(3) would provide examples demonstrating the 80/20 Rule.

D. Greenhouse Gas Emissions Rates

Section 45Y(b)(2) provides rules for determining GHG emissions rates. Proposed § 1.45Y–5(a) would provide an overview of the rules pertaining to GHG emissions rates for facilities under section 45Y.

1. Definitions Related to Greenhouse Gas Emissions Rates

Proposed § 1.45Y–5(b) would provide definitions of terms relevant to determining GHG emissions rates. Section 45Y(e)(1) defines the term ''CO_2e per kWh'' as, with respect to any greenhouse gas, the equivalent carbon dioxide (as determined based on global warming potential) per kWh of electricity produced. Proposed § 1.45Y–5(b)(1) would clarify that the term ''CO_2e per kWh'' means with respect to any greenhouse gas, the equivalent carbon dioxide (as determined based on the 100-year time horizon global warming potential (GWP–100)) per kWh of electricity produced. Proposed § 1.45Y–5(b)(1) would also provide global warming potentials for certain greenhouse gases from the Intergovernmental Panel on Climate Change's Fifth Assessment Report (AR5).

Proposed § 1.45Y–5(b)(8) would provide that the term ''fuel'' means material directly used to produce electricity or energy inputs that are used to produce electricity. Proposed § 1.45Y–5(b)(9) would provide that the term ''feedstock'' means any raw material used in a process for electricity generation or to produce an intermediate product or finished fuel used for electricity generation.

Section 45Y(b)(2)(B) provides rules for determining a GHG emissions rate for a facility that produces electricity through combustion or gasification. Proposed § 1.45Y–5(b)(2) would provide that the term ''combustion'' means a rapid exothermic chemical reaction, specifically the oxidation of a fuel, which liberates energy including heat and light. This proposed definition of ''combustion'' would include, for example, burning fossil fuels, but it would not include the reaction that produces electricity inside a fuel cell.

Gasification produces fuel but not electricity. Proposed § 1.45Y–5(b)(3) would provide that the term ''gasification'' means a thermochemical process that converts carbon-containing materials into syngas, a gaseous mixture that is composed primarily of carbon monoxide, carbon dioxide, and hydrogen. Because gasification does not produce electricity, the inclusion of the term ''gasification'' as a category separate from ''combustion'' in section 45Y(b)(2)(B) would have no independent significance unless it is interpreted as applying to the production of an energy source that is ultimately used by the facility to generate electricity (for example, syngas used to make electricity). Thus, proposed § 1.45Y–5(b)(4) would interpret the phrase ''facility which produces electricity through combustion or gasification'' in section 45Y(b)(2)(B) as applying to facilities that produce electricity through combustion or use an input energy source to produce electricity, which energy source was produced through a fundamental transformation, or multiple transformations, of one energy source into another using combustion or gasification. The Treasury Department and the IRS request comment on this proposed interpretation, including whether the application of this proposed interpretation should be clarified with respect to any type of fundamental transformation of an energy source and any related activities or operations. Comment is also requested on supply chain tracing requirements that the Treasury Department and the IRS may apply to verify whether or not a feedstock or fuel (including energy inputs) used by a facility to produce electricity was produced using combustion or gasification.

Section 45Y(b)(2)(B) provides that in the case of electricity produced through combustion or gasification, the GHG emissions rate for such facility is equal to the net rate of greenhouse gases emitted into the atmosphere by such facility (taking into account lifecycle greenhouse gas emissions, as described in section 211(o)(1)(H) of the CAA (42 U.S.C. 7545(o)(1)(H)) in the production of electricity. Proposed § 1.45Y–5(b)(4) would provide that a ''facility that produces electricity through combustion or gasification'' (C&G Facility) means a facility that produces electricity through combustion or uses an input energy source to produce electricity, if the input energy source was produced through a fundamental transformation, or multiple transformations, of one energy source into another using combustion or gasification. Under proposed § 1.45Y–5(b)(4), a facility that produces electricity using any fuel that was produced using electricity that had been produced, in whole or in part, from the combustion of fossil fuels would be considered a C&G Facility. For example, a hydrogen fuel cell would be considered a C&G Facility if it produced electricity using hydrogen that was produced by an electrolyzer powered, in whole or in part, by electricity from the grid because some of the electricity from the grid was produced through combustion or gasification. A fuel cell facility such as a solid oxide fuel cell, which uses methane as fuel, would be considered a C&G Facility, because the methane reforming reaction that produces syngas within the fuel cell prior to the production of electricity would be considered a gasification reaction. In contrast, a hydrogen fuel cell facility using hydrogen produced exclusively using electricity from a new solar array or wind farm co-located with the hydrogen fuel cell facility would not be considered a C&G Facility, because the input energy source was not produced through a transformation of one energy source into another using combustion or gasification.

The Treasury Department and the IRS request comment on whether the proposed definitions of gasification, combustion, and C&G Facility would result in certain types of fuel cells that use fossil or biogenic fuel inputs (via combustion or gasification) to produce electricity being unable to demonstrate a net rate of greenhouse gas emissions that is not greater than zero with a lifecycle analysis because they are not classified as a C&G Facility as defined in proposed § 1.45Y–5(b)(4). Because the energy transformation that produces electricity in a fuel cell would not be considered combustion under the definition in proposed § 1.45Y–5(b)(2), a fuel cell facility would only qualify as a C&G Facility if the fuel it used to produce electricity was produced through combustion or gasification under these proposed regulations.

Proposed § 1.45Y–5(b)(7) would provide that a ''Non-C&G Facility'' means a facility that produces electricity and is not described in proposed § 1.45Y–5(b)(4).

Proposed § 1.45Y–5(b)(5) would provide that, consistent with section 45Y(b)(2)(A), the term ''greenhouse gas emissions rate'' means the amount of greenhouse gases emitted into the atmosphere by a facility in the production of electricity, expressed as grams of CO_2e per kWh.

Proposed § 1.45Y–5(b)(6) would provide that, for the purposes of section 45Y(b)(2)(A), for both C&G Facilities and Non-C&G Facilities, the term ''greenhouse gases emitted into the atmosphere by a facility in the production of electricity'' means emissions from a facility that directly occur from the process that transforms the input energy source into electricity. Proposed § 1.45Y–5(b)(6)(i) through § 1.45Y–5(b)(6)(vi) would exclude emissions that may relate to a facility but do not occur ''in the production of electricity'' as specified in section 45Y(b)(2)(A). Proposed § 1.45Y–5(c)(1) would provide, for Non-C&G Facilities only, additional types of excluded emissions under section 45Y(b)(2)(A). Proposed § 1.45Y–5(d)(2) would provide, for C&G Facilities only, that additional rules on included and excluded emissions apply in order to conduct a lifecycle analysis as required by section 45Y(b)(2)(B).

Proposed § 1.45Y–5(b)(6)(i) through § 1.45Y–5(b)(6)(vi) would clarify that for the purposes of both Non-C&G and C&G Facilities this definition excludes: (1) emissions from back-up generators that are primarily used in maintaining critical systems in case of a power system outage or for supporting restart of a generator after an outage; (2) emissions from routine operational and maintenance activities that are integral to the production of electricity, including, but not limited to, emissions from internal combustion vehicles used to access and perform maintenance on remote electricity generating facilities or emissions occurring from heating and cooling control rooms or dispatch centers; (3) emissions from a step-up transformer that conditions the electricity into a form suitable for productive use or sale; (4) emissions that occur before commercial operations commence or after commercial operations terminate, including, but not limited to, on-site emissions occurring from construction or manufacturing of the facility itself, emissions from the off-site manufacturing of facility components, or emissions occurring due to siting or decommissioning; (5) emissions from infrastructure associated with the facility, including, but not limited to, emissions from road construction for feedstock production; and (6) emissions from the distribution of electricity to consumers.

2. Greenhouse Gas Emissions Rates for Non-C&G Facilities

Proposed § 1.45Y–5(c) would provide the rules for determining a GHG emissions rate for Non-C&G Facilities, including by the Secretary when

publishing a table described in section 45Y(b)(2)(C)(i) or determining an emissions rate as provided in section 45Y(b)(2)(C)(ii). Proposed § 1.45Y–5(c)(1) would provide that GHG emissions rates for Non-C&G Facilities must be determined under proposed § 1.45Y–5(c) and (e). In addition, proposed § 1.45Y–5(c)(1)(i) would provide that, with respect to Non-C&G Facilities only, greenhouse gases emitted into the atmosphere by a facility in the production of electricity excludes emissions of greenhouse gases that are not directly produced by the fundamental transformation of the input energy source into electricity, including, but not limited to, the following: (1) emissions from hydropower reservoirs due to anoxic conditions; (2) ebullitive, diffuse, and degassing emissions from hydropower operations; (3) emissions of non-condensable gases from underground reservoirs during geothermal operations; (4) emissions from a step-up transformer that conditions the electricity into a form suitable for productive use or sale; and (5) emissions occurring due to activities and operations occurring off-site, including but not limited to, the production and transportation of fuels used by the facility, or land use change from siting or changes in demand. Proposed § 1.45Y–5(c)(1)(i) would thus exclude emissions that may relate to a Non-C&G Facility but do not occur ''in the production of electricity'' as specified in section 45Y(b)(2)(A) because such emissions do not arise directly from the transformation of the input energy source into electricity. For example, emissions from land use change from siting or changes in demand would be excluded because such emissions do not occur ''in the production of electricity'' for Non-C&G Facilities under section 45Y(b)(2)(A), but this exclusion does not apply to C&G Facilities because section 45Y(b)(2)(B) requires a broader standard for assessing GHG emissions than section 45Y(b)(2)(A).

Proposed § 1.45Y–5(c)(1)(ii) would provide that, subject to proposed § 1.45Y–5(b)(6) and (c)(1), a GHG emissions rate for a Non-C&G Facility must be determined through a technical and engineering assessment of the fundamental energy transformation into electricity, and that such assessment must consider all input and output energy carriers and chemical reactions or mechanical processes taking place at the facility in the production of electricity. Proposed § 1.45Y–5(c)(1)(iii) would provide an example of a GHG emissions rate determination for a Non-C&G Facility.

Proposed § 1.45Y–5(c)(2) would identify certain types or categories of facilities that are categorically Non-C&G Facilities with a GHG emissions rate that is not greater than zero. Proposed § 1.45Y–5(c)(2)(i) through (viii) would provide that these include wind facilities (including small wind properties), hydropower facilities (including retrofits adding power production to non-powered dams, conduit hydropower, hydropower using new impoundments, and hydropower using diversions such as a penstock or channel), marine and hydrokinetic facilities, solar facilities (including photovoltaic and concentrating solar power), geothermal facilities (including flash and binary plants), nuclear fission facilities, nuclear fusion facilities, and waste energy recovery property (WERP) that derives energy from any of the energy sources described in proposed § 1.45Y–5(c)(2)(i) through (vii) (including geothermal or solar waste heat recovery such as from a district geothermal heating system, and waste heat recovery such as from a nuclear reactor dedicated to heat production for an industrial facility).

WERP is property that generates electricity solely from heat from buildings or equipment if the primary purpose of such building or equipment is not the generation of electricity. Examples of buildings or equipment the primary purpose of which is not the generation of electricity include, but are not limited to, manufacturing plants, medical care facilities, facilities on school campuses, pipeline compressor stations, and associated equipment. The Treasury Department and the IRS request comment on whether this definition of WERP is appropriate. Comment is further requested on whether and why it would be appropriate to revise proposed § 1.45Y–5(c)(2)(viii) to include additional energy sources (such as energy from exothermic chemical reactions or pressure drop technologies) that do not rely on combustion or gasification but could include equipment related to the transport of fossil fuels (for example, natural gas).

For purposes of proposed § 1.45Y–5(c)(2)(ii), hydropower includes retrofits that add electricity production to non-powered dams, conduit hydropower, hydropower using new impoundments, and hydropower using diversions such as a penstock or channel. Greenhouse gas emissions are not created by the fundamental transformation of electricity needed to produce electricity in a hydropower facility. A hydropower facility converts the potential energy of flowing water into electricity. The potential energy results from changes in gravitational potential energy from the flowing water, which the hydropower facility captures with a turbine which spins a rotor within a generator to produce electricity. Hydropower facilities may release greenhouse gas emissions from the hydropower reservoir due to diffusion at the water surface or due to ebullition, and from degassing when water passes through a pump house or turbine. Such emissions from hydropower facilities would not be considered greenhouse gases emitted into the atmosphere by a Non-C&G Facility in the production of electricity under proposed § 1.45Y–5(b)(6)(C), because emissions of greenhouse gasses are not created by the fundamental transformation of potential energy in flowing water into electricity, but rather from processes that are not fundamental to the transformation of potential energy into electricity.

Similarly, greenhouse gas emissions are not created by the fundamental transformation of energy from high-pressure hot water into electricity in a flash geothermal facility, which is included in proposed § 1.45Y–5(c)(2)(v). A flash geothermal facility uses high-pressure hot water from deep inside the earth and converts it directly to steam that drives a turbine and generator. After the steam passes through the turbine, it is released into the atmosphere and any non-condensable gases including greenhouse gases dissolved in the steam are also released. Such emissions from flash geothermal facilities would not be considered greenhouse gases emitted into the atmosphere by a facility in the production of electricity under proposed § 1.45Y–5(c)(1)(i)(C), because the greenhouse gases are already present in the underground water and are not created by the fundamental transformation of the thermal energy in the water into electricity, but rather by processes that are not fundamental to the transformation of the thermal energy into electricity. This proposed treatment of flash geothermal facilities is supported by surveys indicating that underground carbon dioxide in certain geothermal reservoirs is emitted passively into the atmosphere even in the absence of geothermal electricity generation. The Treasury Department and the IRS request comment on whether the identification of flash geothermal facilities as Non-C&G Facilities with a GHG emissions rate that is not greater than zero in proposed § 1.45Y–5(c)(2)(v) is appropriate.

For purposes of proposed § 1.45Y–5(c)(2)(iv), solar includes concentrated solar power. Concentrated solar power facilities may have auxiliary burners that in some cases use combustion exclusively for the purposes of cold starts or freeze protection of thermal working fluids, but in other cases, may also be used to generate electricity in hybrid configurations. The Treasury Department and the IRS request comment on whether the existing definitions of C&G Facilities and Non-C&G Facilities is sufficient to distinguish between these two categories of facilities, or whether additional clarification is needed.

3. Greenhouse Gas Emissions Rates for C&G Facilities

Section 45Y(b)(2)(B) provides that in the case of electricity produced through combustion or gasification, the GHG emissions rate for such facility is equal to the net rate of greenhouse gases emitted into the atmosphere by such facility (taking into account lifecycle greenhouse gas emissions, as described in section 211(o)(1)(H) of the CAA) in the production of electricity.

Section 211(o)(1)(H) of the CAA provides that ''lifecycle greenhouse gas emissions'' means the aggregate quantity of greenhouse gas emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes) related to the full fuel lifecycle, including all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and use of the finished fuel to the ultimate consumer, if the mass values for all greenhouse gases are adjusted to account for their relative global warming potential.

The EPA promulgated its interpretation of section 211(o)(1)(H) of the CAA in a 2010 notice-and-comment rulemaking establishing the regulatory framework for the updated renewable fuel standard (RFS2) program. The EPA interpreted section 211(o)(1)(H) of the CAA in the context of the facts and policy framework of the RFS program and based on information available at that time; however, the EPA's analysis and implementation of the RFS2 rule offer relevant precedent for the Treasury Department's and the IRS's interpretation of section 45Y(b)(2)(B). In the RFS2 rulemaking, the EPA interpreted 211(o)(1)(H) of the CAA as requiring the agency to account for the real-world emissions consequences of increased production of biofuels. Thus, the EPA determined in the RFS2 context that the inclusion of direct emissions and significant indirect emissions such as significant emissions from land-use changes in section 211(o)(1)(H) of the CAA requires a consequential approach to considering the real-world emissions associated with biofuel production. A ''consequential'' approach considers the real-world greenhouse gas emissions associated with biofuel production, including secondary or indirect emissions resulting from market interactions induced by expanded biofuel production and use. Such an approach includes consideration of market interactions induced by expanded biofuel production and use that may result in secondary or indirect greenhouse gas emissions, domestically and globally.

Proposed § 1.45Y–5(d) would provide the rules applicable to determining a net rate of GHG emissions for C&G Facilities, including by the Secretary when publishing a table described in section 45Y(b)(2)(C)(i) or determining an emissions rate as provided in section 45Y(b)(2)(C)(ii). Proposed § 1.45Y–5(d)(1) would provide that GHG emissions rates for C&G Facilities must be determined by a lifecycle analysis (LCA) that complies with proposed § 1.45Y–5(d) and (e), and that such rate equals the net rate of greenhouse gases emitted into the atmosphere by such facility (taking into account lifecycle greenhouse gas emissions, as described in section 211(o)(1)(H) of the CAA) in the production of electricity, expressed as grams of CO_2e per kWh.

Proposed § 1.45Y–5(d)(2) would provide that an LCA used for determining the net rate of greenhouse gases emitted into the atmosphere by a facility must comply with the requirements provided in proposed § 1.45Y–5(d)(2)(i) through (vii). Proposed § 1.45Y–5(d)(2)(i) would provide that the starting boundary of the LCA for an LCA involving generation-derived feedstocks (such as biogenic feedstocks) is feedstock generation, and the starting boundary of the LCA for an LCA involving extraction-derived feedstocks (such as fossil fuel feedstocks) is feedstock extraction. Under proposed § 1.45Y–5(d)(2)(i), the starting boundaries would include the processes necessary to produce and collect or extract the raw materials used to produce electricity from combustion or gasification technologies, including those used as energy inputs to electricity production. This includes the emissions effects of relevant land management activities or changes related to or associated with feedstock production. The starting conditions are the material and energy flows, including associated direct and indirect greenhouse gas emissions, of the processes associated with the extraction or production of raw feedstock materials or fuel.

Proposed § 1.45Y–5(d)(2)(ii) would provide that the ending boundary of an LCA for electricity that is transmitted to the grid or electricity that is used on-site is the meter at the point of production of the C&G Facility. The distribution, transmission, and use of such electricity generated by a C&G Facility (and other types of energy sources it may displace while in use) are outside of the LCA boundary; therefore, such emissions would not be taken into account because they do not occur in the ''production of electricity'' as described in section 45Y(b)(2)(B). Given the particular context of section 45Y(b)(2)(B) (that is, a tax credit for the production of clean electricity), proposed § 1.45Y–5(d)(2)(ii) is consistent with section 45Y(b)(2)(B) of the Code (and the term ''ultimate consumer'' in section 211(o)(1)(H) of the CAA referenced therein) because it would treat the C&G Facility as the ultimate consumer of the fuel used to produce electricity.

Proposed § 1.45Y–5(d)(2)(iii) would provide that an LCA must be based on a future anticipated baseline, which projects future status quo in the absence of the availability of the sections 45Y and 48E credits (taking into account anticipated changes in technology, policies, practices, and environmental and other socioeconomic conditions).

Proposed § 1.45Y–5(d)(2)(iv) would provide that offsets and offsetting activities that are unrelated to the production of electricity by a C&G Facility, including the production and distribution of any input fuel, may not be taken into account in an LCA.

Proposed § 1.45Y–5(d)(2)(v) would interpret the reference to section 211(o)(1)(H) of the CAA as requiring that an LCA must take into account direct emissions, significant indirect emissions in the United States or other countries, emissions associated with market-mediated changes in related commodity markets, emissions associated with feedstock generation or extraction, emissions consequences of increased production of feedstocks, emissions at all stages of fuel and feedstock production and distribution, and emissions associated with distribution, delivery, and use of feedstocks to and by a C&G Facility. Proposed § 1.45Y–5(d)(2)(v) would interpret section 45Y(b)(2)(B) of the Code (and the term ''ultimate consumer'' in section 211(o)(1)(H) of the CAA referenced therein) as applying to the C&G Facility because it is the

ultimate consumer of the fuel used to produce electricity.

Proposed § 1.45Y–5(d)(2)(v)(A) would provide that direct emissions include, but are not limited to: (1) emissions from feedstock generation, production, and extraction (including emissions from feedstock and fuel harvesting and extraction and direct land use change and management, including emissions from fertilizers, and changes in carbon stocks); (2) emissions from feedstock and fuel transport (including emissions from transporting the raw or processed feedstock to the fuel processing facility); (3) emissions from transporting and distributing fuels to the electricity production facility; (4) emissions from handling, processing, upgrading, and/or storing feedstocks, fuels and intermediate products (including emissions from on/offsite storage and preparation/pre-treatment for use (for example, torrefaction or pelletization) and emissions from process additives); and (5) emissions from combustion and gasification at the electricity generating facility (including emissions from the combustion and/or gasification process and emissions from gasification or combustion additives). Proposed § 1.45Y–5(d)(2)(v)(B) would provide examples of significant indirect emissions including, but not limited to, emissions from indirect land use and land use change and other induced emissions associated with the increased use of the feedstock for electricity production. Significant indirect emissions may include positive or negative emissions. For biogenic resources, significant indirect emissions may include emissions from growth and regrowth.

Proposed § 1.45Y–5(d)(2)(vi) would provide principles for excluded emissions by listing types of emissions that the LCA must not take into account.

Proposed § 1.45Y–5(d)(2)(vii) would provide that an LCA may consider alternative fates and may account for avoided emissions. Alternative fate means a set of informed assumptions (for example, production processes, material outcomes, market-mediated effects) used to estimate the emissions from the use of each feedstock were it not for the feedstock's new use due to the implementation of policy (that is, to produce electricity). Avoided emissions means the estimated emissions associated with the feedstock, including the feedstock's production and use, that would have occurred in the alternative fate (if such feedstock had not been diverted for electricity production) but are instead avoided with the feedstock's use for electricity production. It is important to note that, while, in some circumstances, emissions may be avoided if compared to the alternative fate, in others the new use of the material (for example, for electricity production) may involve additional emissions that were not emitted in the alternative fate estimation. Relatedly, in some circumstances, emissions may be avoided in one part of the supply chain only to occur elsewhere along the supply chain due to the new use.

4. Additional Issues Regarding Greenhouse Gas Emissions Rates for C&G Facilities

The determination of net GHG emissions rates for C&G Facilities raises a range of complex technical questions that are relevant to determining eligibility for the section 45Y and section 48E credits. The Treasury Department and the IRS request comment on the following topics: (1) the treatment of renewable natural gas (RNG) and fugitive sources of methane; (2) analytical LCA parameters, including spatial scales and time horizons; (3) whether and how to distinguish between co-products, byproducts, and waste products and how emissions should be allocated to each in LCAs; (4) how to attribute emissions to the heat produced by facilities using combined heat and power systems; (5) how to create and maintain LCA baselines; and (6) certain issues related to LCA modeling.

a. Treatment of Biogas, Renewable Natural Gas (RNG), or Fugitive Sources of Methane

The Treasury Department and the IRS intend to provide rules addressing facilities that produce electricity using biogas, renewable natural gas (RNG), or fugitive sources of methane (for example, from coal mine operations) for purposes of the section 45Y credit or the section 48E credit, collectively referred to as the ''Clean Electricity Tax Credits.'' In the context of this guidance, the term ''RNG'' refers to biogas that has been upgraded to be equivalent in nature to fossil natural gas. Fugitive methane refers to the release of methane through, for example, equipment leaks during the extraction, processing, transformation, and delivery of fossil fuels to the point of final use, such as coal mine methane. Such rules would apply to all biogas, RNG, or fugitive methane used for the purposes of the Clean Electricity Tax Credits and would provide requirements that must be met to account for any greenhouse gas emissions benefits from biogas, RNG, or fugitive methane in determining GHG emissions rates for purposes of the Clean Electricity Tax Credits. Such requirements would be designed to reflect the ways in which additional demand for biogas, RNG or fugitive methane can impact greenhouse gas emissions outcomes.

The Treasury Department and the IRS anticipate requiring that for purposes of the Clean Electricity Tax Credits, in order for biogas, biogas-based RNG, or fugitive methane to receive an emissions value consistent with such gases (and not standard natural gas), the biogas or RNG used to produce electricity or to produce a feedstock or fuel that is used to produce electricity must originate from the first productive use of the relevant methane. For any specific source of biogas, RNG, or fugitive methane, productive use is generally defined as any valuable application of the relevant methane (including to provide heat or cooling, generate electricity, or upgraded to RNG in the case of biogas or fugitive methane), and specifically excludes venting to the atmosphere or capture and flaring. The Treasury Department and the IRS further propose to define first productive use of the relevant methane as the time when a producer of that gas first begins using or selling it for productive use in the same taxable year as (or after) the electricity production facility was placed in service. The implication of this proposal is that biogas, for example, from any source that had been productively used in a taxable year prior to the taxable year in which the relevant electricity production facility was placed in service would not include GHG emissions benefits that might otherwise be attributable to biogas-based RNG, but would instead receive a value consistent with natural gas. This proposal would limit emissions associated with the diversion of biogas, RNG, or fugitive methane from other pre-existing productive uses.

For existing biogas sources that typically productively use or sell a portion of the biogas and flare or vent the remaining excess, the flared or vented portion may be eligible for first productive use as defined above if the flaring or venting volume can be adequately demonstrated and verified. In such circumstances, the flared or vented volume may be determined based on the previous taxable year's flared or vented volume as demonstrated via reported data to programs such as the Greenhouse Gas Reporting Program. Requirements would be established to reduce the risk that entities will deliberately generate additional biogas for purposes of the Clean Electricity Tax Credits, above historic and expected future levels or an equivalent metric, for example by

generating biogas through the intentional generation of waste, and to ensure that other factors affecting the emissions rate of electricity produced with biogas, biogas-based RNG or RNG procurement via RNG certificates are taken into account. The Treasury Department and the IRS request comment on these and other potential conditions. Any fugitive sources of methane would be treated in the same fashion as biogas or RNG with respect to these requirements, albeit with different considerations in development of the counterfactual.

The Treasury Department and the IRS also recognize that different sources of methane may have significantly different characteristics (for example, counterfactuals, alternative fates, baseline characteristics, upstream leakage rates, etc.) and therefore significantly different lifecycle emissions. For this reason, the Treasury Department and the IRS are considering requiring an LCA to be conducted for electricity produced by each category of feedstock, rather than across all feedstocks used for the production of electricity by a facility. The Treasury Department and the IRS request comment on whether LCAs should be conducted on a feedstock-by-feedstock basis or averaged across feedstocks, and how to determine the appropriate categories of feedstock.

For purposes of the Clean Electricity Tax Credits, producers using biogas, RNG, or fugitive methane would be required to acquire and retire corresponding energy attribute certificates (EACs) through a book-and-claim system that can verify in an electronic tracking system that all applicable requirements are met.

Electricity producers would also be required to have a pipeline interconnection and measurement capability using a revenue grade meter. These rules would apply to the use of EACs with both direct and non-direct claims of biogas, RNG, or fugitive methane use. Direct use would involve a direct exclusive pipeline connection to a facility that generates biogas or RNG or from which fugitive methane is being sourced, while non-direct use would involve production using biogas, RNG, or fugitive methane sourced from a commercial or common-carrier natural gas or other specified pipeline. In all cases, EACs would need to document the biogas, RNG, or fugitive methane procurement use claims and that the energy attributes of the RNG or fugitive methane being used are not sold to other parties or used for compliance with other policies or programs.

The Treasury Department and the IRS request comments on these and other approaches related to biogas, RNG and fugitive methane. Regarding these sources of methane, the Treasury Department and the IRS request comment on the appropriate LCA considerations associated with them, such as counterfactual scenarios (that is, appropriate baselines), to account for direct and significant indirect emissions, and also the manner in which to assess methane from these sources if the current practice is flaring. In particular, the Treasury Department and the IRS request comments on the following questions:

(1) What data sources and peer reviewed studies provide information on fugitive methane, biogas, and RNG production systems (including biogas production and reforming systems), markets, monitoring, reporting, and verification processes, and greenhouse gas emissions associated with these production systems and markets?

(2) What conditions for the use of biogas, RNG, and fugitive methane would ensure that emissions accounting for purposes of the Clean Electricity Tax Credits reflect and reduce the risk of indirect emissions effects from electricity production using biogas and RNG? How can taxpayers verify that they have met these requirements?

(3) How broadly available and reliable are existing electronic tracking systems and verification protocols and practices for biogas, RNG, or fugitive methane certificates in book and claim systems? What developments may be required, if any, before such systems are appropriate for use with biogas or RNG certificates used to claim the Clean Electricity Tax Credits?

(4) How should biogas, RNG or fugitive methane resulting from the first productive use of methane be defined, documented, and verified? What industry best practices or alternative methods would enable such verification to be reflected in a biogas, RNG or methane certificate or other documentation? What additional information should be included in such EACs to help certify compliance?

(5) What are the emissions associated with different methods of transporting biogas, RNG or fugitive methane to electricity producers (for example, vehicular transport, pipeline)?

(6) How can the final regulations reflect and mitigate indirect emissions effects from the diversion of biogas, RNG, or fugitive methane from potential future productive uses? What other new uses of biogas, RNG, or fugitive methane could be affected in the future if more gas from new capture and productive use of methane from these sources is used in the electricity production process?

(7) How can the potential for the generation of additional emissions from the production of additional waste, waste diversion from lower-emitting disposal methods, and changes in waste management practices be limited through emissions accounting or rules for biogas and RNG use established for purposes of the Clean Electricity Tax Credits?

(8) To limit the additional production of waste, should the final regulations limit eligibility to methane sources that existed as of a certain date or waste or waste streams that were produced before a certain date, such as the date that the IRA was enacted? If so, how can that be documented or verified? How should any changes in volumes of waste and waste capacity at existing methane sources be documented and treated for purposes of the Clean Electricity Tax Credits? How should additional capture of existing waste or waste streams be documented and treated?

(9) Are geographic or temporal deliverability requirements needed to reflect and reduce the risk of indirect emissions effects from biogas, RNG, or fugitive methane use in the electricity production process? If so, what should these requirements be and are electronic tracking systems able to capture these details?

(10) How should variation in methane leakage across the existing natural gas pipeline system be taken into account in estimating the emissions from the transportation of RNG or fugitive methane or establishing rules for RNG or fugitive methane use? How should methane leakage rates be estimated based on factors such as the location where RNG or fugitive methane is injected and withdrawn, the distance between the locations where RNG or fugitive methane is injected and withdrawn, season of year, age of pipelines, or other factors? Are data or analysis available to support this?

(11) What counterfactual assumptions and data should be used to assess the net greenhouse gas emissions of facilities that rely on biogas, RNG, or fugitive methane (for example, venting, flaring, or other practice)? Is venting an appropriate counterfactual assumption in some cases? If not, what other factors should be considered?

(12) What criteria should be used in assessing biogas, fugitive methane, or RNG-based provisional emissions rates? What practices should be put in place to reduce the risk of unintended consequences (for example, gaming)? Should conservative default parameters

and counterfactuals be used unless proven otherwise by a third party?

(13) What are the effects on greenhouse gas emissions of capturing methane emissions for use as biogas or RNG, such as on livestock farms?

The Treasury Department and the IRS recognize that sufficient tracking and verification mechanisms for biogas, RNG, or fugitive methane are not yet available, and existing systems have limited capabilities for tracking and verifying RNG pathways, especially in the part of the production process before the methane has been reformed to RNG. Existing tracking and verification systems do not clearly distinguish between inputs, verify or require verification of underlying practices claimed by biogas or RNG production sources, require proof of generator interconnection or revenue-quality metering, provide validation of generation methodology, include exclusively United States based-generation, verify generator registration, and track the vintage of generator interconnection. The Treasury Department and the IRS are considering providing rules to address whether or how book-and-claim systems with sufficient tracking and verification mechanisms may be used to attribute the environmental benefits of biogas, RNG, or fugitive methane in the final regulations.

The treatment of biogas, RNG, and fugitive methane presents a range of complex issues that the Treasury Department and the IRS will consider in the development of the final regulations.

b. Analytical LCA Parameters, Including Spatial Scales and Time Horizons

An LCA may require decisions on a wide range of analytical parameters that may have a meaningful impact on the accuracy and utility of its results. The Treasury Department and the IRS request comment on the analytical LCA parameters that are most relevant to particular types of categories of facilities that may be eligible for the Clean Electricity Tax Credits.

The Treasury Department and the IRS specifically request comment regarding spatial and temporal scales, including the factors that should be considered in setting the spatial and temporal scales for LCAs conducted for the Clean Electricity Tax Credits. Spatial scale involves defining the area over which emissions impacts will be evaluated. Temporal scale involves defining the time period over which emissions impacts will be evaluated. The decision of setting the spatial scale should be considered in conjunction with decisions on temporal scale, as the two can interact in ways that affect greenhouse gas assessment outcomes.

In conducting a greenhouse gas assessment for biomass feedstocks, for example, carbon stocks or flows that have high variability at fine spatial or temporal scales may have much less variability if averaged over larger areas or longer temporal scales. Averaging over long temporal scales may reduce the variability observed at small spatial scales, and averaging over large areas may reduce the variability observed over small temporal scales. However, it is not safe to assume that integrating over large areas and long timeframes is always preferable. Large spatial scales and long temporal scales are not necessarily the most accurate way to conduct specific policy or program assessments because the combination of the two may obscure important information (for example, biophysical differences in species or landscapes, or shorter time frames or subregional analysis needed for policy analysis) or may mask important smaller-scale impacts. It is important to note that utilizing a large spatial scale and a short temporal scale could yield the same result as a small spatial scale combined with a longer temporal scale.

The Treasury Department and the IRS acknowledge that it may be appropriate to utilize different spatial and temporals scales for different feedstocks given their heterogeneity. The Treasury Department and the IRS request comment on the following questions regarding spatial and temporal scale:

(1) What factors should be considered in establishing the timeframe for the LCA analysis? What timeframe would provide confidence that significant emissions have been accounted for?

(2) Should the LCA distinguish between an ''emissions horizon'' (the timeframe over which emissions effects from the feedstock use persist into the future) and an ''assessment horizon'' (the timeframe over which the emissions effects are included in the analysis), and how would that be reflected in the choice of temporal scale? What assessment horizon will provide reasonable confidence that significant LCA emissions have been incorporated? Should the modeled future anticipated baseline include estimated emissions from electricity production to reflect the effects of the anticipated phase out of the Clean Electricity Tax Credits?

(3) If the assessment horizon is shorter than the emissions horizon, should an estimate of the emissions beyond the assessment horizon be included in the LCA?

(4) What considerations should be reflected in the choice(s) of spatial scale? For example, the increased use of some fuels/feedstocks may have global effects (for example, changes in commodity production and ensuing land use and greenhouse gas changes), though this may not be the case for all feedstocks or fuels. What factors should be considered to assess whether a global scale is necessary for certain feedstocks to ensure that significant emissions are captured? Should all feedstock/fuels assessments be conducted with the same spatial scale to determine the extent to which increased use has estimated global ramifications?

(5) The choice of spatial scale can be greatly influenced by the availability and accuracy of data and the precision with which one can measure and model feedstock production as well as market dynamics. What sources of data would be most important to consider for modeling? What strengths or weaknesses do these sources have?

c. Distinguish Between Co-Products, Byproducts, and Waste Products and How Emissions Should Be Allocated to Each in LCAs

The categorization and assessment of products as co-products, byproducts, or waste products in an LCA may affect the LCA's results. Products, co-products, byproducts, and wastes may all be produced in the full fuel cycle or used as inputs to the same. A co-product is a product produced together with another product, both of which are economic drivers of the process. A byproduct is a product that is produced together with another product, and which has a productive use but is not the primary economic driver of the process from which it is produced. It is not solely or separately produced. A waste product is a substance or object that the holder intends or is required to dispose of. See ISO:14040, ''Environmental management—Life cycle assessment—Principles and framework. For biogenic sources, scientific literature often classifies byproducts, wastes, and residues together in one category.

The categorization of products as co-products, byproducts, and waste products may be relevant to an LCA's assessment of the greenhouse gas emissions related to the production of inputs to electricity generation or in the generation of electricity itself if the LCA modeling approach or approaches used for purposes of the Clean Electricity Tax Credits have the ability to distinguish between such categories. For example, in certain circumstances, the use of a waste product as a feedstock or fuel for

electricity production may generate more, less, or the same greenhouse gas emissions than relevant disposal practices for that waste material. The emissions released in the production process during which a waste product is created could be fully allocated to the main product, co-products, and byproducts of that process meaning that the emissions associated with the production of the waste could be considered zero in the LCA assessment pending further analysis, potentially reducing the overall LCA GHG emissions rates for the electricity production. Alternatively, if the waste product were considered to have a productive use and therefore instead categorized as a co-product it would be considered as a driver of the production process and could have a positive emissions value. A material may initially have no economic value or useful purpose, but if that material later gains an economic value, its categorization may shift to a byproduct or co-product.

The Treasury Department and the IRS intend to clarify the principles for categorizing products as co-products, byproducts, or waste input materials and products and assessing the emissions impacts for such products in an LCA for C&G Facilities in the final regulations for the Clean Electricity Tax Credits if such categorization is relevant to the LCA model or models used. Under such principles, if byproducts are produced concurrently with electricity production, then a portion of the process emissions may be allocated to those byproducts. If applying an analytical approach that considers the consequences of the material being used for electricity production and byproducts are produced concurrent with electricity production, the LCA may consider the market impacts associated with the byproducts. In addition, if wastes are produced concurrently with electricity production, then no process emissions may be allocated to those wastes; all emissions must be associated with the electricity produced. Whether alternative productive uses of a byproduct-derived feedstock exist would be determined by expert analysis of the likely alternative uses of the byproduct, taking into account technological and economic capabilities and common practice. The alternative fate of waste-derived feedstocks would be determined by expert analysis, literature review, and historical practice.

To inform the development of these categorization principles for the final regulations, the Treasury Department and the IRS request comment on the following:

(1) What principles should be used to distinguish between co-products, byproducts, and waste products for the purposes of the Clean Electricity Tax Credits? Are there common scientific or industry definitions that can be relied upon to distinguish between co-products, byproducts, and waste products?

(2) What principles should be used to determine whether a product has sufficient value to be considered a co-product or byproduct?

(3) The Clean Electricity Tax Credits may provide additional economic incentive for the consumption of a product categorized as waste prior to the availability of the incentive provided by the Clean Electricity Tax Credits. How should this additional economic incentive be considered to determine if a product is a waste product, byproduct, or co-product? Should this categorization be reevaluated and, if so, how often?

(4) To limit the additional production of waste, should the final regulations limit eligible waste sources that existed as of a certain date, or waste or waste streams that were produced before a certain date, such as the date that the IRA was enacted? If so, how could that be documented or verified? How should any changes in volumes of waste and waste capacity at existing sources be documented and treated for purposes of the Clean Electricity Tax Credits? How should additional capture of existing waste or waste streams be documented and treated?

(5) More generally, how could the potential for the intentional generation of waste or co-products for the purposes of lowering the allocated process emissions to electricity be addressed?

(6) Would the classification of feedstocks as products, co-products, byproducts, or waste change depending on the technology? For example, would products, co-products, byproducts, and waste be described and accounted for differently if derived from biogenic sources, such as biogenic biomass?

d. Attributing Emissions to the Heat Produced by Facilities Using CHP Property

Section 45Y(g)(2)(A) provides that the kWh of electricity produced by a taxpayer at a qualified facility includes any production in the form of useful thermal energy by any CHP property within such facility, and the amount of greenhouse gases emitted into the atmosphere by such facility in the production of such useful thermal energy will be included for purposes of determining the GHG emissions rate for such facility. See Explanation of Provisions section I.A. for the definition of CHP property. The inclusion of thermal energy production-related emissions in an LCA for a CHP facility introduces additional considerations, such as how to set an appropriate baseline for useful energy production-related emissions and what rules should govern the attribution of emissions for thermal energy production. The Treasury Department and the IRS intend to clarify the principles for assessing the emissions related to the generation of useful thermal energy by a CHP facility in an LCA in the final regulations for the Clean Electricity Tax Credits. Accordingly, the Treasury Department and the IRS request comment on the following:

(1) To determine the amount of greenhouse gases emitted by a CHP facility, the LCA must include the greenhouse gas emissions emitted by that facility in the production of useful thermal energy. For purposes of the LCA of a CHP facility, what principles should govern how emissions from the production of useful thermal energy are calculated?

(2) What principles should be used to determine the baseline for useful thermal energy production by a CHP facility? For example, should the baseline for the heat production for a CHP facility be an alternative form of thermal energy production such as natural gas boilers, such that emissions from the production of thermal energy from the boilers would be subtracted from the facility's emissions? Alternatively, is it more appropriate if the baseline for a CHP facility is no thermal energy production by the facility?

(3) There may be scenarios in which a facility generates electricity that is used (a) by the electricity generation facility in the production of electricity or (b) in the production of fuel ultimately consumed by that facility to generate electricity. For example, a wastewater treatment plant's post-processing materials are digested to produce biogas; this biogas is then used in a CHP facility that produces electricity; this electricity is consumed by the wastewater treatment facility. In such scenarios, what principles should be used to determine how emissions from the consumption of electricity in the production of electricity or in the production of the fuel consumed by the facility are calculated? Similarly, there may be scenarios in which a facility self-consumes thermal energy that it produces, for example, if a facility generates steam as a byproduct that is

used (a) by the facility to turn a turbine that generates electricity or (b) to clean or compress fuel ultimately consumed by that facility to generate electricity. What principles should be used be used to determine emissions from the self-consumption of thermal energy by the CHP facility?

e. Certain Issues Related to LCA Baselines and Modeling

The Treasury Department and the IRS intend to provide additional rules and principles addressing what factors must be considered to assess the emissions associated with feedstocks used by C&G Facilities to produce electricity for purposes of the Clean Electricity Tax Credits.

Such rules would apply to all feedstocks used for the purposes of the Clean Electricity Tax Credits and would provide conditions that must be met in determining GHG emissions rates for purposes of the Clean Electricity Tax Credits. The CAA explicitly defines the term ''lifecycle greenhouse gas emissions'' to include ''the aggregate quantity of greenhouse gas emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes).'' Given the highly interconnected economic, energy, and agricultural and other lands-based systems involved in electricity production, the Treasury Department and the IRS recognize that electricity production may have effects, including emissions effects, beyond the direct supply chain. The Treasury Department and the IRS think that the provision ''including direct emissions and significant indirect emissions'' requires any LCA for the Clean Electricity Tax Credits to adopt an approach that considers the consequential, or market-mediated, impacts of increased demand for the input feedstocks or fuels used in electricity production.

The EPA interpreted CAA 211(o)(1)(H) as requiring the agency in the RFS context to account for the real-world emissions consequences of increased production of biofuels. Thus, the EPA determined that CAA section 211(o)(1)(H)'s inclusion of ''direct emissions and significant indirect emissions such as significant emissions from land-use changes'' requires a ''consequential'' approach to considering the real-world emissions associated with biofuel production. Such an approach includes consideration of market interactions induced by expanded biofuel production and use that may result in secondary or indirect greenhouse gas emissions.

The Treasury Department and the IRS propose to use a future anticipated baseline approach for analyzing the greenhouse gas emissions associated with the production of electricity by C&G Facilities and feedstocks used by such facilities. This approach would require generating a baseline projection of the future, which reflects estimated future conditions under a business-as-usual (BAU) trajectory that incorporates key drivers and trends informed by historical data and other considerations. This baseline would then serve as the ''reference'' against which another scenario in which specific conditions or changes, such as implementation of the policy embodied by the Clean Electricity Tax Credits, can be projected. This construct would allow for the evaluation of the projected estimated change or difference of emissions outcomes between the two scenarios. These scenarios would include (1) the baseline scenario (that is, without the Clean Electricity Tax Credits) and (2) a policy scenario (that is, with the Clean Electricity Tax Credits).

These scenarios would require, to the extent possible, data on: (1) feedstock or fuel production systems (including fuel/feedstock generation or extraction, etc.); (2) associated greenhouse gas emissions and, if applicable, carbon pool fluxes; (3) the feedstock or fuel's sector details; (4) feedstock or fuel demand and prices; (5) energy market projections, including electricity demand and supply and prices, if applicable; (6) future macroeconomic factors (for example, EIA Annual Energy Outlook-derived population growth, gross domestic product projections, demand functions tied to population or income); (7) technological progress assumptions, especially if applicable to stationary sources for which efficiency improvements are possible and anticipated; and (8) other parameters (for example, representation of current and anticipated, energy, environmental, or other policies including expected outcomes from other parts of the IRA or other policies, if relevant, that can inform or constrain BAU trajectories).

For example, the list that follows identifies proposed key modeling approach elements and considerations for simulation of a future anticipated baseline and policy scenarios specific to biomass-based feedstocks: (1) model function types and model dynamics (for example, economic optimization, intertemporal and/or recursive dynamic); (2) anticipated future conditions (for example, macroeconomic, biophysical, chemical); (3) greenhouse gas emissions representation, by including the different greenhouse gases and the relevant greenhouse gas emissions and sequestration sources (for example, how greenhouse gases and their effects on the environment are incorporated and represented, such as what emissions sources and factors are reflected in the model or models); (4) forest sector representation (for example, how are forestry and forest industries reflected in the model and how are they tied to the rest of the economy); (5) agricultural sector representation; (6) land use competition; (7) energy sector representation; and (8) the appropriate spatial scale (for example, international representation) for all of these considerations.

There may be different ways to model or estimate greenhouse gas emissions associated with the production of electricity by a C&G Facility. Consistent with the parameters in proposed § 1.45Y–5(d), the Treasury Department and the IRS seek comment on general principles and factors to be considered to estimate net greenhouse gas emissions associated with electricity production by C&G Facilities, including the selection or creation of an assessment or modeling approach for the purposes of Clean Electricity Tax Credits. Comment is specifically requested on the following topics:

(1) What factors should be considered in deciding how to create and maintain LCA baseline scenarios?

(2) What factors should be considered in deciding how to create and maintain LCA scenarios other than the baseline?

(3) What existing model or suite of models are capable of completing an LCA consistent with the section 45Y(b)(2)(B) and proposed § 1.45Y–5(d) and (e)? Please explain whether any such model or models are open source or proprietary including what type of documentation is publicly available detailing the model design, data, inputs, and assumptions, as well as whether such models are able to link with external data sources or models. Please also explain which entities own, manage, or update such models. Furthermore, because some LCA models may be used for only a certain aspect of the total required analysis (for example, a model may solely assess the agriculture sector) or only include certain feedstocks or technologies, please specify what technologies, feedstocks, or type of impacts are included or are not included in the recommended model or models. Please also explain how widely and for what purposes the recommended model or models are used, including whether the model has previously been used by a Federal or State agency or national

laboratory. Please explain whether and how the model has been peer-reviewed. Finally, please explain whether the recommended model or models would need to be updated or combined with another model in order to be fully consistent with section 45Y(b)(2)(B) and proposed § 1.45Y–5(d) and (e).

(4) What data sources and peer-reviewed studies provide information on different feedstock production systems that would be most important to consider for gathering data for LCA modeling? These sources and studies should provide information on the feedstock production process (ideally, beginning with the extraction or generation of the feedstock and ending at the electrical meter) and on markets related to the feedstock production process. Appropriate sources and studies should also describe the greenhouse gas emissions associated with these production systems and markets, as well as any monitoring, reporting, and verification processes used in the creation of the source or study. If recommending data sources or peer-reviewed studies, please specify whether they are open source or proprietary; their temporal and spatial scale (for example, regional versus national studies); whether they are regularly updated and with what frequency; whether they are collected by a Federal or State agency or statistical agency or national laboratory; and whether they employ direct measurements or modeling or use remote sensing data. Finally, please assess overall the strengths and weaknesses of the recommended sources or studies with respect to their usefulness as modeling data inputs.

(5) The availability of the Clean Electricity Tax Credits may create an incentive to use a given material differently than in the past (for example, a material that was not typically used for electricity production is initially used or used more broadly after the credits are available). How could an LCA or LCAs establish and account for whether the incentives created by the Clean Electricity Tax Credits have resulted in a reduction, removal of, or increase in greenhouse gas emissions beyond the emissions that would have occurred in the absence of the Clean Electricity Tax Credits? For example, consider a scenario in which, in the absence of the incentive provided by the Clean Electricity Tax Credits, an amount of woody biomass would be either left standing or laying in a forest, pile burned, or used to create timber products, such as charcoal or mulch, each an ''alternative fate.'' In the presence of the Clean Electricity Tax Credits, that amount of woody biomass is now being used to generate electricity. How should the possible fates of the feedstock in the absence of the Clean Electricity Tax Credits (for example, left in standing or laying in a forest, pile burned, or used to create a timber product, such as charcoal or mulch) be represented in an LCA, including the different potential direct and indirect greenhouse gas effects of those fates?

(6) How could an LCA account for alternative fates stemming from events such as potential future greenhouse gas emissions from wildfires that could be associated with woody biomass feedstocks that may be left on the landscape in the absence of the incentive created by the Clean Electricity Tax Credits? How would these considerations be affected if, in the absence of the incentive provided by the Clean Electricity Tax Credits, a feedstock is used productively but not in electricity production?

(7) Which feedstock classification categories should be established for purposes of LCA analyses, if any? To what extent should the LCA or LCAs differentiate between the sources and subtypes of a given feedstock for electricity production or not (for example, all forest-derived materials as one category, or subcategories such as logging residues)? If applied, should subcategories of feedstocks be aggregated in modeling, or should they be should they be separately modeled? How could the LCA or LCAs account for the emissions attributed to feedstocks that include a mixture of sub-types of feedstocks, such as products, coproducts, byproducts and residues? Should LCAs be standardized or provide average estimates for feedstocks and how could such standardization best be done?

(8) What factors should be considered to determine the appropriate scale(s) of feedstock demand changes or other shocks to evaluate the extent to which the production, processing, and use of the feedstocks used for electricity production results in net greenhouse gas emissions?

(9) Should the shock reflect a small incremental increase in use of the feedstock to reflect the marginal impact, or a large increase to reflect the average effect of all potential users?

(10) What could the general increment of the shock be? Should it be specified as an absolute or relative increase?

(11) What factors should be considered to determine whether shocks for different feedstocks should be implemented in isolation (separate model runs), in aggregate (for example, as an across-the-board increase in biomass usage endogenously allocated by the model across feedstocks), or something in between (for example, separately model agriculture-derived and forest-derived feedstocks, but endogenously allocate within each category)?

(12) How should variation and uncertainty be considered in evaluating model estimates of the GHG emissions associated with an increase in the use of a feedstock for electricity generation? Feedstock modeling will likely involve uncertainties and variabilities associated with data, parameterization, scenario, and model choices. For example, if the modeling reports a range of GHG emissions changes that are greater and less than zero, how should such a range of outcomes be evaluated under section 45Y(b)(2)(B)?

f. Book and Claim Accounting

The Treasury Department and the IRS are considering whether to allow and provide rules governing the use of book and claim accounting in the final regulations for the Clean Electricity Tax Credits. Under these proposed regulations, the methods used, and emissions associated with the production of fuels and feedstocks used in the generation of electricity are essential to determining whether a facility is a C&G Facility and assessing its GHG emissions rate. See Explanation of Provisions sections I.D.1 and I.D.3 for discussion of tracking fuel or feedstock production to determine whether a facility is a C&G Facility or Non-C&G Facility. EACs are a form of book-and-claim accounting that conveys information about the attributes associated with a unit of energy, including the fuel or feedstock used to create the energy. EACs may also include information about the location of the facility that generated the unit of energy, when that facility began operations, and when the unit of energy was produced. Because EACs can serve as a system for tracking the attributes associated with the production of a unit of energy and as a means to avoid double-counting, the Treasury Department and the IRS are considering whether to provide rules that address the use of book-and-claim systems as a means of verifying the emissions profile of a facility's use of fuel and electricity production. The Treasury Department and the IRS request comment on whether and how it may be appropriate for such systems to be used in determining GHG emissions rates in the final regulations for the Clean Electricity Tax Credits. In particular, comment is requested regarding what types of

energy inputs, including fuels and feedstocks, have or may develop sufficiently robust book-and-claim systems that may be suitable for use in substantiating and verifying claims of use of such energy inputs for purposes of the Clean Electricity Tax Credits. The Treasury Department and the IRS are considering providing rules that may permit the use of book and claim accounting in the final regulations if there are sufficient assurances that the energy attributes claimed under such system are verifiable and not susceptible to double counting.

5. Carbon Capture and Sequestration

Proposed § 1.45Y–5(e) would provide that, for purposes of proposed § 1.45Y–5(c) and (d), the GHG emissions rate for a Non-C&G Facility or C&G Facility must exclude any qualified carbon dioxide in such facility's production of electricity that is captured by the taxpayer, and, pursuant to any regulations established under section 45Q(f)(2), disposed of by the taxpayer in secure geological storage, or utilized by the taxpayer in a manner described in section 45Q(f)(5) and any regulations established under such section. The Treasury Department and the IRS request comment on the following:

(1) What requirements should apply to substantiate and verify that carbon dioxide that is captured by the taxpayer is (a) disposed of by the taxpayer in secure geological storage pursuant to any regulations established under section 45Q(f)(2), disposed of by the taxpayer in secure geological storage, or (b) utilized by the taxpayer in a manner described in section 45Q(f)(5)? For example, would it be appropriate to limit the carbon dioxide that may be considered to be qualified carbon dioxide under section 45Y(e)(3), and thus excluded under section 45Y(b)(2)(D), to carbon dioxide that has been reported to the U.S. Greenhouse Gas Reporting Program (GHGRP)? If so, which GHGRP subpart or subparts should be used?

(2) In the event that carbon dioxide that was captured and sequestered as required by section 45Y(e)(3) subsequently escapes into the atmosphere after such carbon dioxide was taken into account by a taxpayer that claimed a Clean Electricity Tax Credit, what enforcement mechanisms or regulatory regimes should be used to identify when such emissions leakages have occurred? How should such emissions leakages be taken into account in determining compliance with the GHG emissions rate requirements under sections 45Y and 48E? Are the existing recapture provisions under section 45Q sufficient for this purpose?

(3) Should carbon capture and sequestration that occurs in the production of fuel that is used by a facility to produce electricity be taken into account under proposed § 1.45Y–5(e) and section 45Y(e)(3)? If so, how should such use of carbon capture and sequestration (for example, emissions from CO_2 capture, purification and compression, transportation, and CO_2 site injection) be assessed in an LCA? Should emissions that occur from carbon capture and sequestration be taken into account in determining the net rate of greenhouse gases emitted into the atmosphere by a C&G Facility in the production of electricity? What verification and substantiation requirements would be appropriate to establish that carbon capture and sequestration that met the requirements of proposed § 1.45Y–5(e) and section 45Y(e)(3) were met in the production of a fuel or feedstock? Are the existing recapture provisions under section 45Q sufficient for this purpose?

6. Annual Table

Proposed § 1.45Y–5(f)(1) would provide that, as required by section 45Y(b)(2)(C)(i), the Secretary will annually publish a table that sets forth the GHG emissions rates for types or categories of facilities (Annual Table), which a taxpayer must use for purposes of section 45Y. Proposed § 1.45Y–5(f)(1) would further provide that, except as provided in proposed § 1.45Y–5(h), a taxpayer that owns a facility that is described in the Annual Table on the first day of the taxpayer's taxable year in which the section 45Y or section 48E credit is determined with respect to such facility must use the Annual Table as of such date to determine an emissions rate for such facility for such taxable year. Types or categories of facilities must be added or removed from the Annual Table consistent with, for Non-C&G Facilities, a technical assessment of the fundamental energy transformation into electricity as provided in proposed § 1.45Y–5(c)(1)(ii), and, for C&G Facilities, an LCA that complies with proposed § 1.45Y–5(d) and (e). Proposed § 1.45Y–5(f)(2) would also provide that in connection with the publication of the Annual Table, the Secretary must publish an accompanying expert analysis that addresses any types or categories of facilities added or removed from the Annual Table since its last publication. Such analysis must be prepared by one or more of the National Laboratories, in consultation with other agency experts, such as experts from DOE, the Treasury Department, the United States Department of Agriculture (USDA), and the EPA, as appropriate, and must address whether the addition or removal of types or categories of facilities from the Annual Table complies with section 45Y(b)(2)(A) and 45Y(b)(2)(B) (which refers to the definition of lifecycle greenhouse gas emissions in section 211(o)(1)(H) of the CAA) of the Code and proposed § 1.45Y–5. The Treasury Department and the IRS view the requirement to publish an expert analysis prepared by the National Laboratories of changes to the Annual Table as essential to ensuring public accountability and adherence to sound scientific principles. This requirement would also ensure that the Secretary has a robust record to inform any changes to the Annual Table.

The Treasury Department and the IRS intend to include in the Annual Table the types or categories of facilities that are described in the final regulations as having a GHG emissions rate that is not greater than zero. The Treasury Department and the IRS intend to publish the first Annual Table after the publication of the final regulations. Until the first publication of the Annual Table, taxpayers may treat the types or categories of facilities that are listed in proposed § 1.45Y–5(c)(2)(i) through (viii) as being described in an Annual Table as having a GHG emissions rate that is not greater than zero. Further, any types or categories of facilities that are added or removed from this list in the first publication of the Annual Table must be accompanied by the publication of an expert analysis of such change as provided in proposed § 1.45Y–5(f)(2).

7. Provisional Emissions Rates

Proposed § 1.45Y–5(g) would provide the rules applicable to provisional emissions rates. Proposed § 1.45Y–5(g)(1) would provide that, in the case of any facility that is of a type or category for which an emissions rate has not been established by the Secretary under proposed § 1.45Y–5(g), a taxpayer that owns such facility may file a petition with the Secretary for the determination of the emissions rate with respect to such facility (Provisional Emissions Rate or PER).

Proposed § 1.45Y–5(g)(2) would provide that an emissions rate has not been established by the Secretary for a facility for purposes of section 45Y(b)(2)(C)(ii) if such facility is not described in the Annual Table. Proposed § 1.45Y–5(g)(2) would further provide that if a taxpayer's request for an emissions value pursuant to proposed § 1.45Y–5(g)(5) is pending at

the time such facility is or becomes described in the Annual Table, the taxpayer's request for an emissions value will be automatically denied.

Proposed § 1.45Y–5(g)(3) would provide the process for filing a PER petition. Proposed § 1.45Y–5(g)(3) would provide that to file a PER petition with the Secretary, a taxpayer must submit a PER petition by attaching it to the taxpayer's Federal income tax return or Federal return, as appropriate, for the first taxable year in which the taxpayer claims the section 45Y credit with respect to the facility to which the PER petition applies. Proposed § 1.45Y–5(g)(3) would further provide that a PER petition must contain an emissions value and, if applicable, the associated DOE letter. An emissions value may be obtained from DOE or by using the LCA model designated in proposed § 1.45Y–5(g)(6). An emission 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 other agency experts as appropriate, consistent with proposed § 1.45Y–5. A taxpayer would be required to retain in its books and records the request to DOE for an emissions value, including any information provided by the taxpayer to DOE pursuant to the emissions value request process provided in proposed § 1.45Y–5(g)(5). Alternatively, an emissions value can be determined by the taxpayer for a facility using the most recent version of an LCA model or models, as of the time the PER petition is filed, that have been designated by the Secretary for such use under proposed § 1.45Y–5(g)(6). If an emissions value is determined using the designated model, a taxpayer is required to provide to the IRS information to support its determination of the emissions value in the form and manner prescribed in IRS forms or instructions or in publications or guidance published in the Internal Revenue Bulletin. A taxpayer may not request an emissions value from DOE for a facility for which an emissions value can be determined by using the most recent version of an LCA model or models that have been designated by the Secretary for such use under proposed § 1.45Y–5(g)(6).

Proposed § 1.45Y–5(g)(4) would provide that, upon the IRS's acceptance of the taxpayer's Federal income tax return or Federal return, as appropriate, containing a PER petition, the emissions value of the facility specified on such petition will be deemed accepted. Proposed § 1.45Y–5(g)(4) would further provide that a taxpayer would be able to rely upon an emissions value provided by DOE for purposes of calculating and claiming a section 45Y credit, provided that any information, representations, or other data provided to DOE in support of the request for an emissions value are accurate. If applicable, a taxpayer may rely upon an emissions value determined for a facility using the most recent version of the LCA model or models that, as of the time the PER petition is filed, have been designated by the Secretary for such use under proposed § 1.45Y–5(g)(6), provided that any information, representations, or other data used to obtain such emissions value are accurate. The IRS's deemed acceptance of an emissions value is the Secretary's determination of the PER. Finally, proposed § 1.45Y–5(g)(4) would provide that the taxpayer must still comply with all applicable requirements for the section 45Y credit and any information, representations, or other data supporting an emissions value are subject to later examination by the IRS.

Proposed § 1.45Y–5(g)(5) would provide the rules applicable to the emissions value request process. Proposed § 1.45Y–5(g)(5) would provide that an applicant that submits a request for an emissions value must follow the procedures specified by DOE to request and obtain such emissions value, and that emissions values will be determined consistent with the rules provided in proposed § 1.45Y–5. Proposed § 1.45Y–5(g)(5) would further provide that an applicant may request an emissions value from DOE only after a front-end engineering and design (FEED) study or similar indication of project maturity, as determined by DOE, such as the completion of a project specification and cost estimation sufficient to inform a final investment decision for the facility. Proposed § 1.45Y–5(g)(5) would provide that DOE may decline to review applications that are non-responsive and those applications that relate to a facility that is described in the Annual Table (consistent with proposed § 1.45Y–5(g)(2)) or a facility that can determine an emissions value using a designated LCA model under proposed § 1.45Y–5(g)(6) (consistent with proposed § 1.45Y–5(g)(3)), or applications that are incomplete. Proposed § 1.45Y–5(g)(5) would also provide that applicants must follow DOE's guidance and procedures for requesting and obtaining an emissions value from DOE. DOE will publish guidance and procedures that applicants must follow to request and obtain an emissions value from DOE. DOE's guidance and procedure will include a process, under limited circumstances, for a taxpayer to request a revision to DOE's initial assessment of an emissions value on the basis of revised technical information or facility design and operation. The Treasury Department and the IRS anticipate that the emissions value request process will open after the publication of the final regulations.

Proposed § 1.45Y–5(g)(6) would provide that the Secretary may designate one or more LCA models for a taxpayer to determine an emissions value for C&G Facilities that are not described in the Annual Table. Proposed § 1.45Y–5(g)(6) would further provide that a model may only be designated if it complies with section 45Y(b)(2)(B) and proposed § 1.45Y–5(d) and (e). The Secretary may revoke the designation of an LCA model or models. In connection with the designation or revocation of a designation of an LCA model or models, the Secretary would be required to publish an accompanying expert analysis of the model prepared by one or more of the National Laboratories, in consultation with other agency experts as appropriate, and such analysis must address the model's compliance with section 45Y(b)(2)(B) of the Code and proposed § 1.45Y–5(d) and (e). The Treasury Department and the IRS view the requirement to publish an expert analysis prepared by the National Laboratories of the designation or revocation of designation of an LCA model or models as essential to ensuring public accountability and adherence to sound scientific principles. This requirement would also ensure that the Secretary has a robust record to inform any designations or revocations of an LCA model or models.

Proposed § 1.45Y–5(g)(7) would provide the rules governing the effect of a PER. Proposed § 1.45Y–5(g)(7) would provide that a taxpayer may use a PER determined by the Secretary to determine the section 45Y credit for the facility to which the PER applies, provided all other requirements of section 45Y are met. Proposed § 1.45Y–5(g)(7) would further provide that the Secretary's PER determination is not an examination or inspection of books of account for purposes of section 7605(b) of the Code and does not preclude or impede the IRS (under section 7605(b) or any administrative provisions adopted by the IRS) from later examining a return or inspecting books or records with respect to any taxable year for which the section 45Y credit is claimed. Finally, proposed § 1.45Y–5(g)(7) would provide that a PER determination does not signify that the IRS has determined that the

requirements of section 45Y have been satisfied for any taxable year.

8. Reliance on Annual Table or Provisional Emissions Rate

Proposed § 1.45Y–5(h) would provide that taxpayers may rely on the Annual Table in effect as of the date a facility began construction or the provisional emissions rate that has been determined by the Secretary for the taxpayer's facility under proposed § 1.45Y–5(g)(4) to determine the facility's GHG emissions rate for that facility for any taxable year that is within the 10-year period described in section 45Y(b)(1)(B), provided that the facility continues to operate as a type of facility that is described in the Annual Table or the facility's emissions value request, as applicable, for the entire taxable year.

9. Substantiation

Taxpayers have a general obligation to substantiate and verify that they have met the requirements of any tax credits claimed on their tax returns. Section 6001 of the Code provides that every person liable for any tax imposed by the Code, or for the collection thereof, must keep such records as the Secretary may from time to time prescribe. Section 1.6001–1(a) provides that any person subject to income tax must keep such permanent books of account or records as are sufficient to establish the amount of gross income, deductions, credits, or other matters required to be shown by such person in any return of such tax. Section 1.6001–1(e) provides that the books and records required by § 1.6001–1 must be retained so long as the contents thereof may become material in the administration of any internal revenue law.

In addition to this general obligation to substantiate eligibility for a claimed tax credit, taxpayers may also be required to keep specific records as prescribed by the Secretary. This may be appropriate for purposes of the section 45Y credit because certain types of facilities may depend on operational choices, such as the use of certain types of feedstocks or fuels or engaging in carbon capture and sequestration, to achieve a net GHG emissions rate that is not greater than zero for a taxable year, and these operational choices may vary by year. Proposed § 1.45Y–5(i)(1) would provide that a taxpayer must maintain in its books and records documentation regarding the design, operation, and if applicable, feedstock or fuel source used by the facility that establishes that such facility had a GHG emissions rate, as determined under § 1.45Y–5, that is not greater than zero for the taxable year. The Treasury Department and the IRS intend to require in the final regulations that taxpayers maintain specific types of documentation to substantiate that a facility for which a section 45Y credit is claimed has a net GHG emissions rate that is not greater than zero. The Treasury Department and the IRS request comment on the types of documentation taxpayers should be required to maintain to substantiate eligibility for the section 45Y credit.

Proposed § 1.45Y–5(i)(2) would further provide that documentation that is sufficient to substantiate that a facility had a GHG emissions rate of not greater than zero includes documentation or a report prepared by an unrelated party that verifies that a facility had such an emissions rate. Proposed § 1.45Y–5(i)(2) would also provide that facilities described in § 1.45Y–5(c)(2) can maintain sufficient documentation to demonstrate a GHG emissions rate showing that the facility is described in § 1.45Y–5(c)(2). Finally, proposed § 1.45Y–5(i)(2) would provide that future guidance may describe sufficient documentation to substantiate that certain facilities have a GHG emissions rate of not greater than zero. Because certain types or categories of facilities may have emissions rates that are highly variable and dependent on complex interactions between design choices, operational choices, and fuel and feedstock sourcing choices, the Treasury Department and the IRS seek comment on the relative risk of inadvertently crediting above-zero-emissions electricity generation for types or categories of facilities that may potentially be eligible for the section 45Y credit. In addition, comment is also requested on supply chain tracing and substantiation requirements that the Treasury Department and the IRS may require in the final regulations to demonstrate whether a facility used a specific fuel to produce electricity and that such fuel has the emissions attributes claimed by the taxpayer. Specifically, to inform the development of the substantiation rules for the Clean Electricity Tax Credits, comment is requested on the following topics:

(1) What types of documentation or substantiation should a taxpayer maintain to establish that an input in the supply chain of a fuel/feedstock used for electricity production has the energy attributes or other relevant characteristics (for example, source and production process) that were taken into account in determining a GHG emissions rate?

(2) What existing systems, industry standards, or practices may be used to substantiate that a facility's operations and the supply chain for the inputs it used to produce electricity resulted in a GHG emissions rate that is not greater than zero for a taxable year? If existing systems, standards, or practices are currently not sufficiently developed to serve as a form of substantiation, how should such tracking and verification systems be developed and how long might such development take?

(3) What supply chain tracing systems or verification bodies address fuels or feedstocks that may be commonly used by facilities that may be eligible for the Clean Electricity Tax Credits? What fuels or feedstocks could these systems or bodies address and for what purpose?

E. One-Megawatt Exception for Section 45Y

The Treasury Department and the IRS intend to provide a more detailed definition for the One-Megawatt Exception in section 45Y(a)(2)(B)(i) by expanding upon the definition provided in the August Proposed Regulations. The final regulations would provide that, for purposes of section 45Y(a)(2)(B)(i), the determination of whether a qualified facility has a maximum net output of less than one megawatt of electricity (as measured in alternating current) is determined based on the nameplate capacity. If applicable, taxpayers must use the International Standard Organization (ISO) conditions to measure the maximum electrical generating output of a qualified facility. For purposes of this measurement, the nameplate capacity is the maximum electrical generating output in MW (as measured in alternating current) that the 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. The Treasury Department and the IRS request comment on this proposed definition. This rule is proposed to apply to qualified facilities placed in service after December 31, 2024, and during taxable years ending on or after the date of publication of the final regulations in the **Federal Register**.

II. Rules Applicable to the Clean Electricity Investment Tax Credit

These proposed regulations are organized in five sections, proposed §§ 1.48E–1 through 1.48E–5 (section 48E regulations). Proposed § 1.48E–1 would provide an overview of the section 48E regulations, generally applicable definitions, and the rules applicable to the calculation of section 48E credit. Proposed § 1.48E–2 would provide rules

relating to a qualified facility, a qualified investment, a qualified property, and an energy storage technology (EST). Section 1.48E–3 is reserved for rules relating to the increased credit amount for meeting the prevailing wage and apprenticeship requirements. A cross reference will be added to § 1.48E–3 in the final regulations when § 1.48E–3 is finalized. Proposed § 1.48E–4 would provide the rules of general application under section 48E, including the rules regarding the inclusion of qualified interconnection costs in the basis of a low-output associated qualified facility, rules for expansion of a facility and incremental production, rules for retrofitting an existing facility, rules for the ownership of a qualified facility or an EST, rules regarding the coordination of the section 48E credit with other Federal income tax credits, and rules for credit recapture. Proposed § 1.48E–5 would provide rules pertaining to the determination of a GHG emissions rate for a facility under section 48E.

A. Amount of Credit

Proposed § 1.48E–1(a) would provide an overview of the section 48E regulations and provide definitions of terms for purposes of the section 48E regulations. Proposed § 1.48E–1(b) would explain how to calculate the amount of the section 48E credit for any taxable year.

Proposed § 1.48E–1(b)(1) would provide that the credit is an amount equal to the applicable percentage of the qualified investment for such taxable year with respect to any qualified facility (as defined in proposed § 1.48E–2(a)) and any EST (as defined in proposed § 1.48E–2(g)). Proposed § 1.48E–1(b)(2) would define the applicable percentage as the base rate in proposed § 1.48E–1(b)(3) or the alternative rate in proposed § 1.48E–1(b)(4). Proposed § 1.48E–1(b)(2) would also propose that the applicable percentage may be increased as provided in section 48E(a)(3)(A) and proposed § 1.48E–1(b)(5) in the case of a qualified facility that is located in an energy community. Similarly, § 1.48E–1(b)(2) would propose that the applicable percentage may be increased as provided in section 48E(a)(3)(B) and proposed § 1.48E–1(b)(6) in the case of a qualified facility that satisfies the domestic content requirements.

Proposed § 1.48E–1(b)(3) would describe the base rate as 6 percent. Proposed § 1.48E–1(b)(4) would describe the alternative rate as 30 percent if certain prevailing wage and apprenticeship requirements are satisfied.

Proposed § 1.48E–1(b)(5) would provide rules applicable to the energy communities increase in credit rate. Proposed § 1.48E–1(b)(6) would provide rules applicable to the domestic content increase in credit rate.

Proposed § 1.48E–1(c) would provide the credit phase-out rules. Generally, proposed § 1.48E–1(c)(1) would provide that the amount of the clean electricity investment credit under section 48E for any qualified facility or EST the construction of which begins during a calendar year described in section 48E(e)(2) is equal to the product of the amount of the credit determined under section 48E(a) and proposed § 1.48E–1(b) without regard to section 48E(e), multiplied by the phase-out percentage under section 48E(e)(2) and proposed § 1.48E–1(c)(2). Proposed § 1.48E–1(c)(2) would provide that the phase-out percentage is 100 percent for any qualified investment with respect to any qualified facility or EST the construction of which begins during the first calendar year following the applicable year; 75 percent for any qualified investment with respect to any qualified facility or EST the construction of which begins during the second calendar year following the applicable year; 50 percent for any qualified investment with respect to any qualified facility or EST the construction of which begins during the third calendar year following the applicable year; and 0 percent for any qualified investment with respect to any qualified facility or EST the construction of which begins during any calendar year subsequent to the calendar year described in section 48E(e)(2)(C). Proposed § 1.48E–1(c)(3) would define ''applicable year'' for purposes of proposed § 1.48E–1(c) as having the same meaning as provided in proposed § 1.45Y–1(c)(3).

B. Qualified Facility

Proposed § 1.48E–2(a) would define a ''qualified facility'' to mean a facility that is used for the generation of electricity; is placed in service by the taxpayer after December 31, 2024; and has a GHG emissions rate of not greater than zero (as determined under rules provided in § 1.45Y–5).

1. Property Included in Qualified Facility

Proposed § 1.48E–2(b) would provide that a qualified facility includes a unit of qualified facility (as defined in proposed § 1.48E–2(b)(2)(i)) and property owned by the same taxpayer that is integral to the unit of qualified facility (as described in proposed § 1.48E–2(b)(3)). Proposed § 1.48E–2(b)(1) would provide that any component of property that meets the requirements of proposed § 1.48E–2(b) is part of a qualified facility regardless of where such component of property is located. Proposed § 1.48E–2(b)(1) would provide that a qualified facility does not include any electrical transmission equipment, such as transmission lines and towers, or any equipment beyond the electrical transmission stage. Proposed § 1.48E–2(b)(1) would also provide that a qualified facility generally does not include equipment that is an addition or modification to an existing qualified facility. However, proposed § 1.48E–2(b)(1) would reference proposed § 1.48E–4(b) regarding the expansion of a facility or incremental production and proposed § 1.48E–4(c) for rules regarding retrofitted facilities (80/20 Rule).

2. Functionally Interdependent

Proposed § 1.48E–2(b)(2)(i) would provide that the unit of a qualified functionally interdependent components of a property (as defined in § 1.48E–2(b)(2)(ii) owned by the taxpayer that are operated together and that can operate apart from other property to produce electricity. Proposed § 1.48E–2(b)(2)(i) would further provide that no provision of this section, § 1.48E–1, or § 1.48E–4 through 1.48E–5 uses the term ''unit'' in respect of a qualified facility with any meaning other than that provided in § 1.48E–2(b)(2)(ii). A reference to § 1.48E–3 will also be added to the previous sentence in proposed § 1.48E–2(b)(2)(i) when that regulation is finalized, but it cannot be added until § 1.48E–3 is finalized. Proposed § 1.48E–2(b)(2)(ii) would define components as ''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.

3. Integral Part

Proposed § 1.48E–2(b)(3)(i) would provide that property owned by a taxpayer is an integral part of a qualified facility owned by the same taxpayer if it is used directly in the intended function of the qualified facility and is essential to the completeness of the intended function. Proposed § 1.48E–2(b)(3)(i) would also clarify that property that is an integral part of a qualified facility is part of the qualified facility. Lastly, proposed § 1.48E–2(b)(3)(i) would explain that a taxpayer may not claim the section 48E credit for any property that is an integral part of a qualified facility that is not owned by the taxpayer.

Proposed § 1.48E–2(b)(3)(ii) would describe power conditioning equipment and transfer equipment as integral parts of a qualified facility. Proposed § 1.48E–2(b)(3)(ii) would further provide that power conditioning equipment includes equipment that modifies the characteristics of electricity into a form suitable for use or transmission or distribution. Proposed § 1.48E–2(b)(3)(ii) would also provide that parts related to the functioning or protection of power conditioning equipment are also treated as power conditioning equipment and include examples.

Proposed § 1.48E–2(b)(3)(ii) would further provide that transfer equipment includes components that permit the aggregation of electricity generated by components of qualified facilities and components that alter voltage to permit transfer to a transmission or distribution line and would clarify that transfer equipment does not include transmission or distribution lines. Proposed § 1.45Y–2(b)(3)(ii) would provide examples of transfer equipment that include, but are not limited to, wires, cables, and combiner boxes that conduct electricity. Proposed § 1.45Y–2(b)(3)(ii) would provide that parts related to the functioning or protection of transfer equipment are also treated as transfer equipment and include examples.

Proposed § 1.48E–2(b)(3)(iii) would provide that roads that are an integral part of a qualified facility are those roads integral to the intended function of the qualified facility such as onsite roads that are used to operate and maintain the qualified facility. Proposed § 1.48E–2(b)(3)(iii) would also clarify that roads primarily for access to the site, or roads used primarily for employee or visitor vehicles, are not integral to the intended function of the qualified facility, and thus are not an integral part of a qualified facility.

Proposed § 1.48E–2(b)(3)(iv) and (v) would provide that fences and buildings (also referred to as structures) are generally not integral parts of a qualified facility because they are not integral to the intended function of the qualified facility. However, a building (or structure) may be an integral part of a qualified facility if it is essentially an item of machinery or equipment and a structure that houses property that is integral to the intended function of the qualified facility, if the use of the structure is so closely related to the use of the housed components of property therein that the structure clearly can be expected to be replaced if the components of property it initially houses are replaced.

Proposed § 1.48E–2(b)(3)(vi) would provide a rule for shared integral property stating that multiple qualified facilities (whether owned by one or more taxpayers), including qualified facilities with respect to which a taxpayer has claimed a credit under section 48E or another Federal income tax credit, may include shared property that may be considered an integral part of each qualified facility so long as the cost basis for the shared property is properly allocated to each qualified facility and the taxpayer only claims a section 48E credit with respect to the portion of the cost basis properly allocable to a facility for which the taxpayer is claiming a section 48E credit. Proposed § 1.48E–2(b)(3)(vi) would further clarify that the total cost basis of such shared property divided among the qualified facilities may not exceed 100 percent of the cost of such shared property. Lastly, proposed § 1.48E–2(b)(3)(vi) specifies that property that is shared by a qualified facility (as defined in section 48E(b)(3)) (48E Qualified Facility) and a qualified facility (as defined by section 45Y(b) (45Y Qualified Facility) that is an integral part of both qualified facilities will not affect the eligibility of the 48E Qualified Facility for the section 48E credit or the 45Y Qualified Facility for the section 45Y credit.

4. Coordination With Other Credits

Proposed § 1.48E–2(c)(1) would provide that the term ''qualified facility'' (as defined in section 48E(b)(3)) will not include any facility for which a credit determined under section 45, 45J, 45Q, 45U, 45Y, 48, or 48A is allowed under section 38 for the taxable year or any prior taxable year. Proposed § 1.48E–2(c)(1) would further clarify that a taxpayer that directly owns a qualified facility (as defined in section 48E(b)(3)) that is eligible for both a section 48E credit and another Federal income tax credit is eligible for the section 48E credit only if the other Federal income tax credit was not allowed with respect to the qualified facility. Proposed § 1.48E–2(c)(1) would provide that nothing in proposed § 1.48E–2(c) precludes a taxpayer from claiming a section 48E credit with respect to a qualified facility (as defined in section 48E(b)(3)) that is co-located with another facility for which a credit determined under section 45, 45J, 45Q, 45U, 45Y, 48, or 48A is allowed under section 38 for the taxable year or any prior taxable year.

Proposed § 1.48E–2(c)(2) would clarify that for purposes of proposed § 1.48E–2(c)(1), the term ''allowed'' only includes credits that taxpayers have claimed on a Federal income tax return or Federal return, as appropriate, and that the IRS has not challenged in terms of the taxpayer's eligibility.

Proposed § 1.48E–2(c)(3) would include several examples that illustrate the application of the rules provided in proposed § 1.48E–2(c).

5. Qualified Investment With Respect to a Qualified Facility

Proposed § 1.48E–2(d) would describe a qualified investment with respect to any qualified facility for any taxable year as the sum of the basis of any qualified property (as defined in proposed § 1.48E–2(e)(1)) placed in service by the taxpayer during such taxable year that is part of a qualified facility (as defined in proposed § 1.48E–2(a)) and the amount of any expenditures paid or incurred by the taxpayer for qualified interconnection property (as defined in proposed § 1.48E–4(a)(2)).

6. Qualified Property

a. Generally

Proposed § 1.48E–2(e) would define ''qualified property'' for purposes of proposed § 1.48E–2(a) to mean property that meets three requirements. First, proposed § 1.48E–2(e)(1)(i) would require that the property is tangible personal property (as defined in proposed § 1.48E–2(f)(1)) or other tangible property (not including a building or its structural components) (as defined in proposed § 1.48E–2(f)(2)), but only if such other tangible property is used as an integral part (as defined proposed § 1.48E–2(b)(3)) of the qualified facility (as defined in proposed § 1.48E–2(a)).

Second, proposed § 1.48E–2(e)(1)(ii) would require that depreciation (or amortization in lieu of depreciation) be allowable (as defined in proposed § 1.48E–2(f)(6)) with respect to the property.

Third, proposed § 1.48E–2(e)(1)(iii) would require that the taxpayer either constructs, reconstructs, or erects the property (as defined in proposed § 1.48E–2(f)(3)) or acquires the property (as defined in proposed § 1.48E–2(f)(4)) if the original use of the property (as defined in proposed § 1.48E–2(f)(5)) commences with the taxpayer.

Proposed § 1.48E–2(e)(2) would provide that any component of a qualified property that meets the requirements of proposed § 1.48E–2(e) is part of a qualified facility regardless of where such component of property is located.

b. Definitions Related to Qualified Property

Tangible Personal Property

Proposed § 1.48E–2(f)(1) would define the term ''tangible personal property'' for purposes of section 48E and proposed § 1.48E–2(b) to mean any tangible property except land and improvements thereto, such as buildings or other inherently permanent structures (including items that are structural components of such buildings or structures). Proposed § 1.48E–2(f)(1) would further provide that tangible personal property includes all property (other than structural components) that is contained in or attached to a building and that all property that is in the nature of machinery (other than structural components of a building or other inherently permanent structure) is considered tangible personal property even though located outside a building. Finally, proposed § 1.48E–2(f)(1) would clarify that local law is not controlling for purposes of determining whether property is or is not tangible property or tangible personal property. Therefore, proposed § 1.48E–2(f)(1) would explain that tangible property may be personal property for purposes of the section 48E credit even though under local law the property is considered a fixture and therefore real property.

Other Tangible Property

Proposed § 1.48E–2(f)(2) would define the term ''other tangible property'' to mean tangible property other than tangible personal property (not including a building and its structural components), that is used as an integral part of furnishing electricity by a person engaged in a trade or business of furnishing any such service.

Construction, Reconstruction, or Erection of Qualified Property

Proposed § 1.48E–2(f)(3) would define the term ''construction, reconstruction, or erection of qualified property'' to mean work performed to construct, reconstruct, or erect qualified property either by the taxpayer or for the taxpayer in accordance with the taxpayer's specifications.

Acquisition of Qualified Property

Proposed § 1.48E–2(f)(4) would define the term ''acquisition of qualified property'' to mean a transaction by which a taxpayer obtains rights and obligations with respect to qualified property including title to the qualified property under the law of the jurisdiction in which the qualified property is placed in service, unless the qualified property is possessed or controlled by the taxpayer as a lessee, and physical possession or control of the qualified property.

Original Use of Qualified Property

Proposed § 1.48E–2(f)(5)(i) would provide that the term ''original use of qualified property'' means the first use to which qualified property is put, whether or not such use is by the taxpayer. Proposed § 1.48E–2(f)(5)(ii) would clarify that a retrofitted qualified facility acquired by the taxpayer will not be treated as being put to original use by the taxpayer unless the rules in proposed § 1.48E–4(c) regarding retrofitted qualified facilities (80/20 Rule) apply. Proposed § 1.48E–2(f)(5)(ii) explains that the question of whether a qualified facility meets the 80/20 Rule is a facts and circumstances determination.

Depreciation Allowable

Proposed § 1.48E–2(f)(6)(i) would provide a general rule for purposes of applying proposed § 1.48E–2(b), that depreciation (or amortization in lieu of depreciation) is allowable with respect to qualified property if such property is of a character subject to the allowance for depreciation under section 167 of the Code and the basis or cost of such property is recovered using a method of depreciation (for example, the straight line method), which includes any additional first year depreciation deduction method of depreciation (for example, under section 168(k) of the Code). Proposed § 1.48E–2(f)(6)(i) would further clarify that if an adjustment with respect to the Federal income tax or Federal return for such taxable year requires the basis or cost of such qualified property to be recovered using a method of depreciation, depreciation is allowable to the taxpayer with respect to the qualified property. Proposed § 1.48E–2(f)(6)(ii) would describe exclusions from allowable depreciation stating that for purposes of proposed § 1.48E–2(b), depreciation is not allowable with respect to a qualified facility if the basis or cost of such qualified facility is not recovered through a method of depreciation but, instead, such basis or cost is recovered through a deduction of the full basis or cost of the qualified facility in one taxable year (for example, under section 179 of the Code).

Placed in Service

Proposed § 1.48E–2(f)(7)(i) would provide the general rule for determining when a qualified facility has been placed in service for purposes of the section 48E credit. Proposed § 1.48E–2(f)(7)(ii) would provide that notwithstanding the general placed in service rules provided in proposed § 1.48E–2(b)(7)(i), a qualified facility with respect to which an election is made under § 1.48–4 to treat the lessee as having purchased such qualified facility is considered placed in service by the lessor in the taxable year in which possession is transferred to such lessee.

Claim

Proposed § 1.48E–2(f)(8) would provide that with respect to a section 48E credit determined with respect to qualified facility of a taxpayer, the term ''claim'' would be defined to mean filing a completed Form 3468, Investment Credit, or any successor form(s), with the taxpayer's timely filed (including extensions) Federal income tax return or Federal return, as appropriate, for the taxable year in which the qualified facility is placed in service, and includes making an election under section 6417 or 6418 of the Code and corresponding regulations with respect to such section 48E credit and made on the taxpayer's filed return.

C. Energy Storage Technology

1. General Rule

Proposed § 1.48E–2(g)(1) would provide that an EST includes a unit of EST that meets the requirements of proposed § 1.48E–2(g)(2)(i). An EST also would include property owned by the taxpayer that is an integral part (as defined in proposed § 1.48E–2(g)(3)) of the unit of EST. Proposed § 1.48E–2(g)(1) would provide that equipment that is an addition or modification to an existing EST is not eligible for the section 48E credit. Proposed § 1.48E–2(g)(1) would further provide that, an EST would include electrical energy storage property described in proposed § 1.48E–2(g)(6)(i), thermal energy storage property described in proposed § 1.48E–2(g)(6)(ii), and hydrogen energy storage property described in proposed § 1.48E–2(g)(6)(iii).

Proposed § 1.48E–2(g)(2) would provide that a unit of EST includes all functionally interdependent components of property (as defined in proposed § 1.48E–2(g)(2)(ii)), owned by the taxpayer that are operated together and that can operate apart from other property to perform the intended function of the EST.

2. Functionally Interdependent

Proposed § 1.48E–2(g)(2)(i) would provide that for purposes of the section 48E credit, a unit of EST includes all functionally interdependent components of property (as defined in paragraph proposed § 1.48E–2(g)(2)(ii))

owned by the taxpayer that are operated together and that can operate apart from other property to perform the intended function of the EST. Proposed § 1.48E–2(g)(2)(i) would also provide that no provision of this section, § 1.48E–1, or § 1.48E–3 through 1.48E–5 uses the term *unit* in respect of an EST with any meaning other than that provided in § 1.48E–2(g)(2)(i). Proposed § 1.48E–2(g)(2)(ii) would provide that components 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 perform the intended function of the EST.

3. Integral Part

Proposed § 1.48E–2(g)(3) would provide that property owned by a taxpayer is an integral part of EST owned by the same taxpayer if it is used directly in the intended function of the EST and is essential to the completeness of such function. Proposed § 1.48E–2(g)(3) would also provide that property that is an integral part of an EST is part of an EST. Lastly, proposed § 1.48E–2(g)(3) would provide that a taxpayer may not claim the section 48E credit for any property that is an integral part of an EST that is not owned by the taxpayer.

4. Qualified Investment With Respect to Energy Storage Technology

Proposed § 1.48E–2(g)(4) would describe the qualified investment with respect to any EST for any taxpayer year as the basis of any EST placed in service by the taxpayer during such taxable year.

5. Placed in Service

Proposed § 1.48E–2(g)(5)(i) would provide rules for determining when an EST has been placed in service for purposes of the section 48E credit. Proposed § 1.48E–2(g)(5)(ii) also would provide that notwithstanding the general placed in service rules provided in proposed § 1.48E–2(g)(5)(i), an EST with respect to which an election is made under § 1.48–4 to treat the lessee as having purchased such EST is considered placed in service by the lessor in the taxable year in which possession is transferred to such lessee.

6. Types of Energy Storage Technologies

Proposed § 1.48E–2(g)(6)(i) would describe electrical energy storage property as property (other than property primarily used in the transportation of goods or individuals and not for the production of electricity) that receives, stores, and delivers energy for conversion to electricity and has a nameplate capacity of not less than 5 kWh. See subsection C of Overview of Section 48E. Proposed § 1.48E–2(g)(6)(i) also would provide examples of such electrical energy storage property, subject to the exclusion for property primarily used in the transportation of goods or individuals.

The Treasury Department and the IRS understand that this exclusion for property primarily used in the transportation of goods or individuals, at a minimum, would apply to batteries and other EST that are incorporated into or otherwise physically integrated within motor vehicles and other modes of transportation of goods or individuals and from which an electric motor of such vehicle or other mode of transportation draws electricity for propulsion.

Proposed § 1.48E–2(g)(6)(ii) would describe thermal energy storage property as 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. See section C of Overview of Section 48E. Proposed § 1.48E–2(g)(6)(ii) would also provide that thermal energy storage property includes equipment and materials, and parts related to the functioning of such equipment, to store thermal energy for later use to heat or cool, or to provide hot water for use in heating a residential or commercial building. In addition, proposed § 1.48E–2(g)(6)(ii) would provide that thermal energy storage property does not include a swimming pool, CHP property, or a building or its structural components. Lastly, proposed § 1.48E–2(g)(6)(ii) would provide examples of thermal energy storage property.

Proposed § 1.48E–2(g)(6)(iii) would provide that hydrogen energy storage property is property (other than property primarily used in the transportation of goods or individuals and not 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. Proposed § 1.48E–2(g)(6)(iii) would also provide that hydrogen energy storage property must store hydrogen that is solely used as energy and not for other purposes such as for the production of end products such as fertilizer. Proposed § 1.48E–2(g)(6)(iii) would also provide examples of hydrogen energy storage property.

Although the list of examples of energy storage technologies that proposed § 1.48E–2(g)(6) would provide is nonexclusive, and therefore many other technologies that are not addressed would meet these functional definitions, there are some examples that do not meet the functional definition. For example, some technologies are marketed as ''virtual batteries,'' which are aggregations of controllable electricity demand providing similar electrical grid services to an electrical grid battery. Such ''virtual batteries'' receive energy in the form of electricity, but they do not store it for later discharge as electricity. The function of ''virtual batteries'' is to shift demand to different points in time. Because such demand shifting is not a storage activity for purposes of section 48(c)(6) (and thus for purposes of section 48E(c)(2)), this technology is not an EST. There are other technologies for which the determination of whether they meet the statutory requirements is less clear.

7. Modification of Energy Storage Technology

Proposed § 1.48E–2(g)(7) would provide rules for modification of EST. Based on the rules in section 48(c)(6)(B), proposed § 1.48E–2(g)(7) would provide that with respect to electrical energy storage property and hydrogen energy storage property, modified as set forth in proposed § 1.48E–2(g)(7), such property will be will be treated as an electrical energy storage property (as described in proposed § 1.48E–2(g)(6)(i)) or a hydrogen energy storage property (as described in proposed § 1.48E–2(g)(6)(iii)), except that the basis of any existing electrical energy storage property or hydrogen energy storage property prior to such modification is not taken into account for purposes of proposed § 1.48E–2(g)(7) and section 48E.

8. Claim

Proposed § 1.48E–2(g)(8) would provide that with respect to a section 48E credit determined with respect to an EST of a taxpayer, the term ''claim'' means filing a completed Form 3468, Investment Credit, or any successor form(s), with the taxpayer's timely filed (including extensions) Federal income tax return or Federal return, as appropriate, for the taxable year in which the EST is placed in service, and includes making an election under section 6417 or 6418 and corresponding regulations with respect to such section 48E credit and made on the taxpayer's filed return.

D. Rules of General Application to Section 48E

1. Rules for Certain Lower-Output Qualified Facilities

Proposed § 1.48E–4(a)(1) would provide rules for qualified facilities with a maximum net output of not greater than 5 megawatts to include qualified interconnection costs in the basis of an associated qualified facility. Proposed § 1.48E–4(a)(1) would provide that the qualified investment for a qualified facility includes amounts paid or incurred by the taxpayer for qualified interconnection property in connection with the installation of a qualified facility that has a maximum net output of not greater than 5 MW (as measured in alternating current) (Five-Megawatt Limitation). Proposed § 1.48E–4(a)(1) would provide that the qualified interconnection property must provide for the transmission or distribution of the electricity produced by a qualified facility and must be properly chargeable to the capital account of the taxpayer as reduced by proposed § 1.48E–4(a)(6). Proposed § 1.48E–4(a)(2) would define the term ''qualified interconnection property.'' Proposed § 1.48E–4(a)(2) would further provide that qualified interconnection property is not taken into account to determine if a qualified facility meets the requirements for the increase in credit rate for energy communities or domestic content because qualified interconnection property is not part of a qualified facility.

Proposed § 1.48E–4(a)(3) would describe the Five-Megawatt Limitation as a measurement taken at the qualified facility level. Proposed § 1.48E–4(a)(3)(i) would provide that the maximum net output of a qualified facility is measured only by the nameplate generating capacity of the unit of qualified facility, which does not include the nameplate capacity of any integral property, at the time that the qualified facility is placed in service. Further, proposed § 1.48E–4(a)(3)(i) would also provide that the nameplate generating capacity of the unit of qualified facility is measured independently from any other qualified facilities that share the same integral property.

Proposed § 1.48E–4(a)(4) would define the term ''interconnection agreement.'' and proposed § 1.48E–4(a)(5) would define the term ''utility.''

Proposed § 1.48E–4(a)(6) would provide that expenses paid or incurred for qualified interconnection property and amounts otherwise chargeable to capital account with respect to such expenses must be reduced under rules similar to the rules contained in section 50(c). The taxpayer must pay or incur the interconnection property costs, and therefore, any reimbursement, including by a utility, must be accounted for by reducing the taxpayers' expenditure to determine eligible costs.

A taxpayer that is reimbursed for these costs may not include such reimbursed costs in the amount paid or incurred by the taxpayer for qualified interconnection property. Proposed § 1.48E–4(a)(6) would adopt this rule. In the case of a utility reimbursing a taxpayer for costs the taxpayer pays or incurs for qualified interconnection property, the utility should provide the taxpayer with information regarding such costs by the date on which the project is placed in service.

The Treasury Department and the IRS are aware of common situations in which a taxpayer could ultimately receive a payment, credit, or service from another entity, including a utility, related to the costs the taxpayer pays or incurs for qualified interconnection property. For example, one taxpayer may place in service a qualified facility and make payments to a utility with respect to qualified interconnection property involving the addition, modification, or upgrade to the utility's transmission system related to such qualified facility. Subsequently, a different taxpayer may, at a later date, place in service a qualified facility and make payments to the same utility related to the same additions, modifications, or upgrades to the utility's transmission system that were made in response to the first taxpayer's interconnection. The utility may pay, credit, or provide services to the first taxpayer in an amount related to the costs paid by the second taxpayer. The likely amount or timing of any such payment, credit, or service would not be known at the time the first taxpayer interconnects to the utility's transmission system.

The Treasury Department and the IRS request comment on whether such payment, credit, or service received by the first taxpayer, as the result of subsequent payments made to a utility by other parties, should be treated as a reimbursement to the first taxpayer and impact the amount of the costs of qualified interconnection property that the first taxpayer may include in its basis for purposes of the section 48E credit. The Treasury Department and the IRS also request comment on whether the costs paid by the second taxpayer should be treated as amounts paid or incurred for qualified interconnection property in connection with the installation of the second taxpayer's qualified facility. The Treasury Department and the IRS request comment on industry practices relevant to the determination of costs paid or incurred for qualified interconnection property, including the accounting treatment of costs paid or incurred for qualified interconnection property. The Treasury Department and the IRS also request comment on whether any clarifications are needed regarding the tax treatment of amounts paid or incurred for qualified interconnection property, including reimbursement of costs paid or incurred by a taxpayer for qualified interconnection costs.

In section 3.02(1)(b)(ii) of Notice 2022–49, the Treasury Department and the IRS requested comments concerning what type of documentation, in addition to interconnection agreements and cost certification reports, is readily available for a taxpayer to demonstrate that they have paid or incurred interconnection costs in the context of the section 48 credit. Taxpayers must retain documentation in compliance with section 6001. The proposed regulations do not provide any specific type of required documentation, and any documentation that satisfies section 6001 will suffice to substantiate that a taxpayer has paid or incurred qualified interconnection costs. Commenters to Notice 2022–49 provided feedback on the documentation that taxpayers may use to substantiate costs paid or incurred for qualified interconnection property in the context of the section 48 credit. The Treasury Department and the IRS request comments on this same question in the context of the section 48E credit.

Qualified interconnection property is either constructed, reconstructed, or erected by the taxpayer, or the taxpayer pays or incurs the cost with respect to the construction, reconstruction, or erection of such property; and the original use of which, pursuant to an interconnection agreement, commences with a utility. Therefore, in some cases, taxpayers will have the necessary information and documentation on these costs. In other cases, the taxpayers will need to receive this information from the utility, which, the Treasury Department and the IRS understand, will be a common scenario. For situations in which property is constructed, reconstructed, or erected by a party other than the taxpayer, final information with conclusive details such as a true-up report with the actual costs, final invoices, proof of payment or reimbursement, and permission to operate documentation or any other final project accounting documentation should be maintained. Other examples

of cost documentation records include, but are not limited to, the interconnection agreement, interconnection study, signed customer contracts, and cost certification reports.

2. Expansion of Facility; Incremental Production

Proposed § 1.48E–4(b) would provide rules related to the expansion of capacity of a qualified facility by the addition of a new unit or an addition of capacity. Proposed § 1.48E–4(b)(1) would provide, that solely for purposes of § 1.48E–4(b), 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 described in section 48E(b)(3)(A) (without regard to clause (ii) of such paragraph), which was placed in service before January 1, 2025, but only to the extent of the increased amount of electricity produced at the facility by reason of such new unit or addition of capacity. Proposed § 1.48E–4(b)(1) further provides that a new unit or an addition of capacity that meets the requirements of proposed § 1.48E–4(b) will be treated as a separate qualified facility. Proposed § 1.48E–4(b) provides that a new unit or addition of capacity requires the addition or replacement of qualified property (as defined in § 1.48E–2(e)), including any new or replacement integral property added to the facility necessary to increase capacity. If applicable, taxpayers must use modified or amended facility operating licenses or the International Standard Organization (ISO) conditions to measure the maximum electrical generating output of a facility to determine nameplate capacity. Additionally, § 1.48E–4(b)(1) would provide that for purposes of section 48E(a)(2)(B)(ii)(I) (that is, the One-Megawatt Exception), the capacity for a new unit or an addition of capacity is the sum of the nameplate capacity of the added qualified facility and the nameplate capacity of the facility to which the qualified facility was added.

Proposed § 1.48E–4(b)(2) would provide that solely for purposes of § 1.48E–4(b), a facility that is decommissioned or in the process of decommissioning and restarts can be considered to have increased capacity if the following conditions are met: (1) the existing facility must have ceased operations; (2) the existing facility must have a period of at least one calendar year during which it is without a valid operating license from its respective Federal regulatory authority (that is, the Federal Energy Regulatory Commission (FERC) or the Nuclear Regulatory Commission (NRC)); and (3) the increased capacity of the restarted facility must have a new, reinstated, or renewed operating license issued by either FERC or NRC.

Proposed § 1.48E–4(b)(3) would describe two different methods for a taxpayer to compute the qualified investment that increased the amount of electricity produced by either a new unit or an addition of capacity described in § 1.48E–4(b)(1). Proposed § 1.48E–4(b)(3)(i) would provide that the term ''new unit'' means components of property including any new or replacement integral property added to a facility necessary to increase the capacity of the facility but do not replace the existing capacity of the facility. Further, proposed § 1.48E–4(b)(3)(i) would provide that the taxpayer's qualified investment in the new unit during the taxable year that results in an increase in capacity is eligible for the section 48E credit.

Proposed § 1.48E–4(b)(3)(ii) would address the application of the rule to an addition of capacity by providing that the term ''addition of capacity'' means components of property, including any new or replacement integral property added to a facility necessary to increase the capacity of the facility by replacing, in whole or in part, the existing capacity of the facility. Proposed § 1.48E–4(b)(3)(ii) would provide that to determine a taxpayer's qualified investment during the taxable year that resulted in an increased capacity of a facility by reason of an addition of capacity not described in proposed § 1.48E–4(b)(3)(i), a taxpayer must multiply its total qualified investment during the taxable year with respect to the facility, by a fraction, the numerator of which is the increase in nameplate capacity that results from the addition of capacity, and the denominator of which is the total nameplate capacity associated with the components of property that result in the addition of capacity.

Proposed § 1.48E–4(b)(4) would provide examples to illustrate the application of both methods to determine the increased amount of electricity attributable to a new unit or an addition of capacity described in § 1.48E–4(b)(1).

3. Retrofit of an Existing Facility (80/20 Rule)

Proposed § 1.48E–4(c) would provide rules related to the retrofit of an existing qualified facility. Proposed § 1.48E–4(c)(1) would provide that for purposes of section 48E(b)(3)(A)(ii), a facility may qualify as originally placed in service even if it contains some used components of property within the unit of qualified facility, provided that the fair market value of the used components of the unit of qualified facility is not more than 20 percent of the unit of qualified facility's total value (that is, the cost of the new components of property plus the value of the used components of property within the unit of qualified facility) (80/20 Rule).

Proposed § 1.48E–4(c)(2) would provide that only expenditures paid or incurred that related to the new components of the unit of qualified facility are taken into account for computing the section 48E credit with respect to the unit of qualified facility.

Proposed § 1.48E–4(c)(3) would provide that the cost of new components of the unit of qualified facility includes all costs properly included in the depreciable basis of the new components.

Proposed § 1.48E–4(c)(4) would provide that if the taxpayer satisfies the 80/20 Rule with regard to a unit of qualified facility, and the taxpayer incurs new costs for property that is an integral part of the qualified facility, the taxpayer may include these new costs paid or incurred for property that is an integral part of the qualified facility in the basis of the qualified facility for purposes of calculating the section 48E credit.

Proposed § 1.48E–4(c)(5) would provide that costs incurred for new components of property added to used components of a unit of qualified facility may not be taken into account for purposes of the section 48E credit unless the taxpayer satisfies the 80/20 Rule. Proposed § 1.48E–4(c)(6) would provide examples.

4. Special Rules Regarding Ownership

Proposed § 1.48E–4(d) would provide rules related to the ownership of a qualified facility or EST. Proposed § 1.48E–4(d)(1) would provide that a taxpayer that owns a qualified investment with respect to a qualified facility or EST is eligible for the section 48E credit only to the extent of the taxpayer's eligible investment in the qualified facility or EST. In the case of multiple taxpayers holding direct ownership through their qualified investments in a single qualified facility or EST, each taxpayer determines its eligible investment based on the taxpayer's fractional ownership interest in the qualified facility or EST.

Proposed § 1.48E–4(d)(2) would provide that a taxpayer must directly own at least a fractional interest in the entire unit of qualified facility (as defined in § 1.48E–2(b)(2) or unit of EST (as defined in § 1.48E–2(g)(2)) for a section 48E credit to be determined with

respect to such taxpayer's interest. Proposed § 1.48E–4(d)(2) also provides that no section 48E credit may be determined with respect to a taxpayer's ownership of one or more separate components of a qualified facility or EST if the components do not constitute a unit of qualified facility (as defined in proposed § 1.48E–2(b)(2)) or unit of EST (as defined in proposed § 1.48E–2(g)(2)). However, proposed § 1.48E–4(d)(2) provides that the use of the components of property owned by one taxpayer that is an integral part of a qualified facility or EST owned by another taxpayer will not prevent a section 48E credit from being determined with respect to the second taxpayer's qualified investment in a qualified facility or EST.

Proposed § 1.48E–4(d)(3) would provide that if a qualified facility or EST is owned through an unincorporated organization that has made a valid election under section 761(a), each member's undivided ownership share in the facility or EST will be treated as a separate qualified facility or EST owned by such member.

Proposed § 1.48E–4(d)(4)(i) would define the term ''related taxpayers'' and proposed § 1.48E–4(d)(4)(ii) would provide a related taxpayer rule, that related taxpayers are treated as one taxpayer in determining whether a taxpayer has made an investment in a qualified facility or EST with respect to which a section 48E credit may be determined. Proposed § 1.48E–4(d)(5) would provide examples illustrating these ownership rules.

5. Coordination Rule for Section 42 and 48E Credits

Proposed § 1.48E–4(e) would provide that as provided under section 50(c)(3)(C), in the case of a taxpayer determining eligible basis for purposes of calculating a credit under section 42 of the Code (section 42 credit), a taxpayer is not required to reduce its basis in a qualified facility or EST by the amount of the section 48E credit determined with respect to the qualified investment with respect to such qualified facility or EST. Further, proposed § 1.48E–4(e) would provide that the qualified investment with respect to a qualified facility or EST may be used to determine a section 48E credit and may also be included in eligible basis to determine a section 42 credit.

6. Credit Recapture

Proposed § 1.48E–4(f)(1) would provide recapture rules for the section 48E credit that incorporate the recapture provisions of section 50(a). Proposed § 1.48E–4(f)(1) would further provide that the credit calculated under proposed § 1.48E–1(b) is subject to recapture for any qualified facility that has a GHG emissions rate (as determined under proposed § 1.48E–5) 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).

Recapture Event

Proposed § 1.48E–4(f)(2)(i) would provide that any failure of the qualified facility to not exceed a GHG emissions rate of 10 grams per CO_2e per kWh during the five-year recapture period is a recapture event. If a qualified facility's GHG emissions rate exceeds 10 grams of CO_2e per kWh averaged over the taxable year, the section 48E credit is subject to recapture. Proposed § 1.48E–4(f)(2)(ii) would provide that a change to the GHG emissions rate for a type or category of facility that is published in the Annual Table (as defined in proposed § 1.45Y–5(f)) after the facility is placed in service does not result in a recapture event.

Proposed § 1.48E–4(f)(2)(iii) would provide that a determination of whether a recapture event has occurred must be made for each taxable year (or portion thereof) occurring within the five-year recapture period, beginning with the taxable year ending after the date the qualified facility is placed in service. For each taxable year that begins or ends within the five-year recapture period, the taxpayer must determine, for any qualified facility for which it has claimed the section 48E credit, whether such facility has maintained a GHG emissions rate of not greater than 10 grams of CO_2e per kWh. A taxpayer that has claimed the section 48E credit amount under proposed § 1.48E–1 or transferred a specified credit portion under section 6418 of the Code is required to provide to the IRS information on the GHG emissions rate of the qualified facility during the recapture period at the time and in the form and manner prescribed in IRS forms or instructions or in publications or guidance published in the Internal Revenue Bulletin.

Proposed § 1.48E–4(f)(2)(iv) would provide that in the case of any recapture event, the carrybacks and carryforwards under section 39 must be adjusted by reason of such recapture event.

Proposed § 1.48E–4(f)(3)(i) would provide that if a recapture event has occurred, the tax under chapter 1 of the Code for the taxable year in which the recapture event occurs is increased by an amount equal to the applicable recapture percentage multiplied by the credit amount that was claimed by the taxpayer under proposed § 1.48E–1. Proposed § 1.48E–4(f)(3)(ii) provides the applicable recapture percentage for each year during the five-year recapture period.

Proposed § 1.48E–4(f)(4) would provide that the five-year recapture period begins on the date the qualified facility is placed in service and ends on the date that is five full years after the placed-in-service date. Each 365-day period (366-day period in the case of a leap year) within the five-year recapture period is a separate recapture year for recapture purposes.

Proposed § 1.48E–4(f)(5) would provide that the increased tax under chapter 1 of the Code for the recapture of the credit amount under proposed § 1.48E–1 occurs in the year of the recapture event.

E. Greenhouse Gas Emissions Rates

Section 48E(b)(3)(B)(ii) provides that rules similar to the rules of section 45Y(b)(2) regarding greenhouse emissions rates apply for purposes of section 48E. Proposed § 1.48E–5(a) would provide an overview of the rules pertaining to GHG emissions rates for qualified facilities under section 48E. Proposed § 1.48E–5(b) through (f) would clarify that the definitions of certain terms, rules for determining GHG emissions rates for Non-C&G Facilities, the rules for determining net GHG emissions rates for C&G Facilities, rules regarding carbon capture and sequestration, and requirement to publish the Annual Table provided in proposed § 1.45Y–5(b) through (f) also apply for purposes of section 48E and this section.

Proposed § 1.48E–5(g) would provide the rules applicable to provisional emissions rates. Proposed § 1.48E–5(g)(1) would provide that, in the case of any facility for which an emissions rate has not been established by the Secretary, a taxpayer that owns such facility may file a petition with the Secretary for determination of the emissions rate with respect to such facility (Provisional Emissions Rate or PER).

Proposed § 1.48E–5(g)(2) would provide that an emissions rate has not been established by the Secretary for a facility if such facility is not described in the Annual Table. Proposed § 1.48E–5(g)(2) would further provide that if a taxpayer's request for an emissions value pursuant to proposed § 1.48E–5(g)(5) is pending at the time such facility is or becomes described in the Annual Table, the taxpayer's request for an emissions value would be automatically denied.

Proposed § 1.48E–5(g)(3) would provide the process for filing a PER petition. Proposed § 1.48E–5(g)(3) would provide that to file a PER petition with the Secretary, a taxpayer must submit a PER petition attached to the taxpayer's Federal income tax return or Federal return, as appropriate, for the taxable year in which the taxpayer claims the section 48E credit with respect to the facility. Proposed § 1.48E–5(g)(3) would further provide that a PER petition must contain an emissions value and, if applicable, include as an attachment the DOE letter. An emissions value obtained from DOE based on an analytical assessment of the emissions rate associated with the facility performed by one or more of the National Laboratories, in consultation with other agency experts as appropriate, consistent with proposed § 1.48E–5. A taxpayer would be required to retain its books and records a copy of the taxpayer's request to DOE for an emissions value, including any information provided by the taxpayer to DOE pursuant to the emissions value request process provided in proposed § 1.48E–5(g)(5). Alternatively, an emissions value can be determined for a facility by using the most recent version of an LCA model, as of the time the PER petition is filed, that has been designated by the Secretary for such use under paragraph (g)(6) of this section. If an emissions value is determined using a designated LCA model or models, the taxpayer would be required to provide to the IRS information to support its use of the model or models in the form and manner prescribed in IRS forms or instructions or in publications or guidance published in the Internal Revenue Bulletin. A taxpayer may not request an emissions value from DOE for a facility for which an emissions value can be determined by using the most recent version of an LCA model or models that have been designated by the Secretary for such use under proposed § 1.48E–5(g)(6).

Proposed § 1.48E–5(g)(4) would provide that, upon the IRS's acceptance of the taxpayer's Federal income tax return or Federal return, as appropriate, containing a PER petition, the emissions value of the facility specified on such petition will be deemed accepted. Proposed § 1.48E–5(g)(4) would further provide that a taxpayer would be able to rely upon an emissions value provided by DOE for purposes of claiming a section 48E credit, provided that any information, representations, or other data provided to DOE in support of the request for an emissions value are accurate. If applicable, a taxpayer may rely upon an emissions value determined for a facility using an LCA model or models that have been designated by the Secretary for such use under proposed § 1.48E–5(g)(6), provided that any information, representations, or other data used to obtain such emissions value are accurate. The IRS's deemed acceptance of an emissions value would be the Secretary's determination of the PER. Finally, proposed § 1.48E–5(g)(4) would provide that the taxpayer must also comply with all applicable requirements for the section 48E credit, and any information, representations, or other data provided to DOE in support of the request for an emissions value would be subject to later examination by the IRS.

Proposed § 1.48E–5(g)(5) would provide the rules applicable to the emissions value request process. Proposed § 1.48E–5(g)(5) would provide that an applicant that submits a request for an emissions value must follow the procedures specified by DOE to request and obtain such emissions value, and that emissions values will be determined consistent with the rules provided in proposed § 1.48E–5. Proposed § 1.48E–5(g)(5) would further provide that an applicant may request an emissions value from DOE only after a front-end engineering and design (FEED) study or similar indication of project maturity, as determined by DOE, such as the completion of a project specification and cost estimation sufficient to inform a final investment decision for the facility. Proposed § 1.48E–5(g)(5) would provide that DOE may decline to review applications that are non-responsive, and those applications that relate to a facility that is described in the Annual Table (consistent with proposed § 1.48E–5(g)(2)) or a facility that can determine an emissions value using a designated LCA model under proposed § 1.48E–5(g)(6) (consistent with proposed § 1.48E–5(g)(3)), or applications that are incomplete. Proposed § 1.45Y–5(g)(5) would also provide that applicants must follow DOE's guidance and procedures for requesting and obtaining an emissions value from DOE. DOE will publish guidance and procedures that applicants must follow to request and obtain an emissions value from DOE. DOE's guidance and procedures will include a process that, under limited circumstances, a taxpayer may request a revision to DOE's initial assessment of an emissions value on the basis of revised technical information or facility design and operation. The Treasury Department and the IRS anticipate that the emissions value request process will open after the publication of the final regulations.

Proposed § 1.48E–5(g)(6) would provide that the rules provided in proposed § 1.45Y–5(g)(6) regarding the designation of an LCA model or models for determining an emissions value for C&G Facilities apply for purposes of section 48E and this section.

Proposed § 1.48E–5(g)(7) would provide rules governing the effect of a PER. Proposed § 1.48E–5(g)(7) would provide that a taxpayer may use a PER determined by the Secretary to determine the eligibility for the section 48E credit for a taxable year for the facility to which the PER relates, provided all other requirements of section 48E are met, unless the emissions rate for such type or category of facility is provided in the Annual Table for any portion of the taxable year. Proposed § 1.48E–5(g)(7) would further provide that the Secretary's PER determination is not an examination or inspection of books of account for purposes of section 7605(b) of the Code and does not preclude or impede the IRS (under section 7605(b) or any administrative provisions adopted by the IRS) from later examining a return or inspecting books or records with respect to any taxable year for which the section 48E credit is claimed. Finally, proposed § 1.48E–5(g)(7) would provide that a PER determination does not signify that the IRS has determined that the requirements of section 48E have been satisfied for any taxable year.

Proposed § 1.48E–5(h) would provide the rules applicable to determining an anticipated GHG emissions rate. Proposed § 1.48E–5(h)(1) would provide that a facility's anticipated GHG emissions rate must be objectively determined based on an examination of all the facts and circumstances. Proposed § 1.48E–5(h)(1) would further provide that certain Non-C&G Facilities, such as the facilities described in proposed § 1.45Y–5(c)(2), may have an anticipated GHG emissions rate that is not greater than zero based on the technology and practices they rely upon to generate electricity. Finally, proposed § 1.48E–5(h)(1) would provide that for facilities that require the use of certain feedstocks or carbon capture and sequestration, which may vary, to generate electricity with a GHG emissions rate that is not greater than zero, objective indicia that such facilities will operate with a GHG emissions rate that is not greater than zero for at least 10 years beginning from the date the facility is placed in service are required to establish that its anticipated GHG emissions rate is not greater than zero.

Proposed § 1.48E–5(h)(2) would provide a non-exhaustive list of examples of objective indicia that may establish an anticipated GHG emissions rate that is not greater than zero. Proposed § 1.48E–5(h)(2)(i) through (iv) would provide that these examples include co-location of the facility with a fuel source for which the combination of fuel, type of facility, and practice is reasonably expected to result in a GHG emissions rate that is not greater than zero; a 10-year contract to purchase fuels for which the combination of fuel, type of facility, and practice is reasonably expected to result in a GHG emissions rate that is not greater than zero; or a facility type that only accommodates one type of fuel or a small range of fuels for which the combination of fuel, type of facility, and practice is reasonably expected to result in a GHG emissions rate that is not greater than zero; or a 10-year contract for the capture, disposal, or utilization of qualified carbon dioxide from the facility for which the combination of fuel, type of facility, and practice is reasonably expected to result in a GHG emissions rate that is not greater than zero.

The Treasury Department and the IRS interpret the reference in section 48E(b)(3)(A)(iii) to an ''anticipated greenhouse gas emissions rate'' that is not greater than zero to require a reasonable expectation that a facility will operate with a rate or net rate of greenhouse gas emissions that is not greater than zero over a specified period of time (for example, the anticipated lifetime of the facility). The Treasury Department and the IRS request comment on what evidence or substantiation taxpayers should be required to maintain to establish an anticipated GHG emissions rate for a facility. In addition, comment is requested on the appropriate period of time for which taxpayers should be required to demonstrate that there is a reasonable expectation that a facility will operate with a GHG emissions rate that is not greater than zero.

Proposed § 1.48E–5(i) would provide that taxpayers may rely on the Annual Table in effect as of the date a facility began construction or the provisional emissions rate determined by the Secretary for the taxpayer's facility to determine the facility's GHG emissions rate, provided that the facility continues to operate as a type of facility that is described in the Annual Table or the facility's emissions value request, as applicable, for the entire taxable year.

Proposed § 1.48E–5(j)(1) would provide that a taxpayer must maintain in its books and records documentation regarding the design and operation of a facility that establishes that such facility had an anticipated GHG emissions rate that is not greater than zero in the year in which the section 48E credit is determined and operated with a GHG emissions rate that is not greater than 10 grams of CO_2e per kWh during each year of the recapture period that applies for purposes of section 48E(g).

Proposed § 1.48E–5(j)(2) would further provide that documentation sufficient to substantiate that a facility had a GHG emissions rate that is not greater than 10 grams of CO_2e per kWh during each year of the recapture period includes documentation or a report prepared by an unrelated party that verifies the facility's actual emissions rate. Proposed § 1.48E–5(j)(2) would also provide that facilities described in § 1.45Y–5(c)(2) can maintain sufficient documentation to demonstrate a GHG emissions rate that is not greater than 10 grams of CO_2e per kWh during each year of the recapture period by showing that the facility is described in § 1.45Y–5(c)(2). Finally, proposed § 1.48E–5(j)(2) would provide that future guidance may describe sufficient documentation to substantiate that certain other types of facilities have a GHG emissions rate that is not greater than 10 grams of CO_2e per kWh during each year of the recapture period.

Proposed Applicability Dates

These regulations are proposed to apply to qualified facilities (and for § 1.48E–1 through 1.48E–4, energy storage technologies) placed in service after December 31, 2024, and during taxable years ending on or after the date of publication of the final regulations in the **Federal Register**.

Special Analyses

I. Regulatory Planning and Review—Economic Analysis

Pursuant to the Memorandum of Agreement, Review of Treasury Regulations under Executive Order 12866 (June 9, 2023), tax regulatory actions issued by the IRS are not subject to the requirements of section 6 of Executive Order 12866, as amended. Therefore, a regulatory impact assessment is not required.

II. Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520) (PRA) generally requires that a Federal agency obtain the approval of the Office of Management and Budget (OMB) before collecting information from the public, whether such collection of information is mandatory, voluntary, or required to obtain or retain a benefit.

The collections of information in these proposed regulations contain recordkeeping and reporting requirements that are required to substantiate eligibility to claim a section 45Y or section 48E credit. These collections of information would generally be used by the IRS for tax compliance purposes and by taxpayers to facilitate proper reporting and compliance. The general recordkeeping requirements mentioned within these proposed regulations are considered general tax records under § 1.6001–1(e).

The recordkeeping requirements in these proposed regulations with respect to section 45Y would include the requirement in proposed § 1.45Y–5(i)(1) that taxpayers claiming the section 45Y credit must maintain in its books and records documentation regarding the design and operation of a facility that establishes that such facility had a GHG emissions rate that is not greater than zero for the taxable year. Included in proposed § 1.45Y–5(i)(2) are examples of documentation that sufficiently substantiates that a facility has a GHG emissions rate that is not greater than zero for the taxable year, which includes documentation, or a report prepared by an unrelated party that verifies that a facility had such an emissions rate. A facility described in proposed § 1.45Y–5(c)(2) can maintain sufficient documentation to demonstrate a GHG emissions rate that is not greater than zero for the taxable year by showing that it is a type of facility described in proposed § 1.45Y–5(c)(2). Proposed § 1.45Y–5(i)(2) would provide that Secretary may determine that other types of facilities can sufficiently substantiate a GHG emissions rate, as determined under this section, that is not greater than zero with certain documentation and will describe such facilities and documentation in IRS forms or instructions or in publications or guidance published in the Internal Revenue Bulletin. For PRA purposes, these general tax records are already approved by OMB under 1545–0074 for individuals, 1545–0123 for business entities, 1545–0092 for trust and estate filers, and 1545–0047 for tax-exempt organizations.

The recordkeeping requirements in these proposed regulations with respect to section 48E would include the requirement in proposed § 1.48E–5(i)(1) that a taxpayer must maintain in its books and records documentation regarding the design and operation of a facility that establishes that such facility had an anticipated GHG emissions rate that is not greater than 10 grams of CO_2e

per kWh during each year of the recapture period that applies for purposes of section 48E(g). Included in proposed § 1.48E–5(i)(2) are examples of documentation that sufficiently substantiates that a facility has a GHG emissions rate that is not greater 10 grams of CO_2e per kWh during each year of the recapture period, which includes documentation, or a report prepared by an unrelated party that verifies that a facility had such an emissions rate. A facility described in proposed § 1.45Y–5(c)(2) can maintain sufficient documentation to demonstrate a GHG emissions rate that is not greater than 10 grams of CO_2e per kWh by showing that it is a type of facility described in proposed § 1.45Y–5(c)(2). The Secretary may determine that other types of facilities can sufficiently substantiate a GHG emissions rate that is not greater than 10 grams of CO_2e per kWh with certain documentation and will describe such facilities and documentation in IRS forms or instructions or in publications or guidance published in the Internal Revenue Bulletin. For PRA purposes, these general tax records are already approved by OMB under 1545–0074 for individuals, 1545–0123 for business entities, 1545–0092 for trust and estate filers, and 1545–0047 for tax-exempt organizations.

The reporting requirements in these proposed regulations are in proposed §§ 1.45Y–5 and 1.48E–5, which provide the process for applicants to file a petition with the Secretary for a PER determination. To file a PER petition with the Secretary, a taxpayer must submit the PER petition attached to the taxpayer's Federal income tax return or Federal return, as appropriate, for the taxable year in which the taxpayer claims the section 45Y credit or the section 48E credit with respect to the facility to which the PER petition relates. A PER petition must contain an emissions value. If the applicant obtained an emissions value from DOE, the PER petition made to the IRS must include and emissions value letter from DOE. This emission value letter process will be approved by OMB under the DOE Control Number 1910–####. A taxpayer must retain in its books and records a copy of the taxpayer's request to DOE for an emissions value, including the supporting documentation provided to DOE with the request. Alternatively, if applicable, a PER petition may contain an emissions value determined for a facility using the most recent version of an LCA model, as of the time the PER petition is filed, that has been designated by the Secretary for such use. If an emissions value is determined using a designated model, a taxpayer is required to provide to the IRS information to support its determination of the emissions value in the form and manner prescribed in IRS forms or instructions or in publications or guidance published in the Internal Revenue Bulletin. The burden for these requirements will be included within the forms and instructions applicable to sections 45Y and 48E. For section 45Y, the burden for these requirements will be associated the form and instructions applicable to claiming this credit and will be approved by OMB, in accordance with 5 CFR 1320.10, under the following OMB control numbers: 1545–0074 for individuals/sole proprietors, 1545–0123 for business entities, 1545–0047 for tax-exempt organizations, and 1545–0092 for trust and estate filers. For section 48E, the burden for these requirements will be associated with Form 3468, Investment Credit, and will be approved by OMB, in accordance with 5 CFR 1320.10, under the following OMB control numbers: 1545–0074 for individuals/sole proprietors, 1545–0123 for business entities, 1545–0047 for tax-exempt organizations, and 1545–0092 for trust and estate filers.

III. Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) (RFA) imposes certain requirements with respect to Federal rules that are subject to the notice and comment requirements of section 553(b) of the Administrative Procedure Act (5 U.S.C. 551 *et seq.*) and that are likely to have a significant economic impact on a substantial number of small entities. Unless an agency determines that a proposal is not likely to have a significant economic impact on a substantial number of small entities, section 603 of the RFA requires the agency to present an initial regulatory flexibility analysis (IRFA) of the proposed rule. The Treasury Department and the IRS have not determined whether the proposed rule, when finalized, will likely have a significant economic impact on a substantial number of small entities. This determination requires further study. However, because there is a possibility of significant economic impact on a substantial number of small entities, an IRFA is provided in these proposed regulations. The Treasury Department and the IRS invite comments on both the number of entities affected and the economic impact on small entities.

Pursuant to section 7805(f) of the Code, this notice of proposed rulemaking has been submitted to the Chief Counsel of the Office of Advocacy of the Small Business Administration for comment on its impact on small business.

A. Need for and Objectives of the Rule

The proposed regulations would provide greater clarity to taxpayers for purposes of claiming the section 45Y credit or the section 48E credit. The proposed regulations would provide necessary definitions rules regarding the determination of credit amounts and the procedure for requesting a provisional emissions rate. The proposed regulations will provide greater clarity to taxpayers for purposes of claiming the section 45Y credit and the section 48E credit and encourage taxpayers to produce clean energy or invest in clean energy projects and facilities. Thus, the Treasury Department and the IRS intend and expect that the proposed rules will deliver benefits across the economy that will beneficially impact various industries.

B. Affected Small Entities

The RFA directs agencies to provide a description of, and if feasible, an estimate of, the number of small entities that may be affected by the proposed rules, if adopted. The Small Business Administration's Office of Advocacy estimates in its 2023 Frequently Asked Questions that 99.9 percent of American businesses meet its definition of a small business. The applicability of these proposed regulations does not depend on the size of the business, as defined by the Small Business Administration.

As described more fully in the preamble to this proposed regulation and in this IRFA, the section 45Y credit and the section 48E credit incentivize the production of clean energy and the investment in clean energy projects and facilities. Because the potential credit claimants can vary widely, it is difficult to estimate at this time the impact of these proposed regulations, if any, on small businesses.

The Treasury Department and the IRS expect to receive more information on the impact on small businesses through comments on these proposed rules and again once taxpayers start to claim the section 45Y credit or the section 48E credit using the guidance and procedures provided in these proposed regulations.

C. Impact of the Rules

The proposed regulations will allow taxpayers to plan investments and transactions based on the ability to claim the section 45Y production credit and/or the section 48E investment credit. The increased use of these

credits will incentivize increased production and use of clean energy as well as the development of new methods and technologies for generating clean energy. The use of the credits will also incentivize additional investment in the projects and facilities that produce and develop clean energy.

Because recordkeeping and reporting requirements relating to the section 45Y and 48E credits will not materially differ from the requirements relating to existing energy production and investment tax credits, the recordkeeping and reporting requirements should not materially increase for taxpayers that already claim existing credits. To claim the section 45Y credit or the 48E credit, taxpayers will continue to need to execute the relevant form (or successor form, or pursuant to instructions and other guidance) and file such form with the taxpayer's timely filed return (including extensions) for the taxable year in which the property is placed in service.

Although the Treasury Department and the IRS do not have sufficient data to precisely determine the likely extent of the increased costs of compliance, the estimated burden of complying with the recordkeeping and reporting requirements are described in the Paperwork Reduction Act section of this preamble.

D. Alternatives Considered

The Treasury Department and the IRS considered alternatives to the proposed regulations. For example, the Treasury Department and the IRS considered whether to impose different rules for determining if a section 48E qualified facility had a recapture event, and how and when a taxpayer was required to notify the Secretary that the emissions rate at a qualified facility was greater than 10 grams of CO_2e per kWh. The proposed regulations were designed to minimize burdens on taxpayers while ensuring that the IRS has sufficient information to determine if a section 48E qualified facility's emissions rate exceeded the recapture threshold. The proposed guidance requires that a taxpayer that claimed the section 48E credit to annually report to the IRS its GHG emissions rate in the form and manner prescribed in IRS forms or instructions or in published guidance as published in the Internal Revenue Bulletin.

An additional example is that the Treasury Department and the IRS considered alternatives to how a taxpayer should compute any increase in capacity at a qualified facility that for purposes of section 45Y and 48E was a qualified facility due to an increase in capacity. The proposed regulations were designed to provide a rule that was administrable for the IRS and taxpayers. Thus, the proposed regulations adopt a rule for taxpayers to compute the increase in capacity by multiplying the amount of electricity that the facility produces during a taxable year after the new unit or an addition of capacity is placed in service by a fraction, the numerator of which is the nameplate capacity that results from the new unit or an addition of capacity, and the denominator of which is the total nameplate capacity of the facility with the new unit or an addition of capacity

Comments are requested on the requirements in the proposed regulations, including specifically, whether there are less burdensome alternatives that ensure the IRS has sufficient information to administer the Clean Electricity Tax Credits.

E. Duplicative, Overlapping, or Conflicting Federal Rules

The proposed rules would not duplicate, overlap, or conflict with any relevant Federal rules. As discussed above, the proposed regulations would provide guidance relating to the section 45Y tax credit and the section 48E tax credit. The Treasury Department and the IRS invite input from interested members of the public about identifying and avoiding overlapping, duplicative, or conflicting requirements.

IV. Unfunded Mandates Reform Act

Section 202 of the Unfunded Mandates Reform Act of 1995 (UMRA) requires that agencies assess anticipated costs and benefits and take certain other actions before issuing a final rule that includes any Federal mandate that may result in expenditures in any one year by a State, local, or Indian Tribal government, in the aggregate, or by the private sector, of $100 million (updated annually for inflation). This proposed rule does not include any Federal mandate that may result in expenditures by State, local, or Indian Tribal governments, or by the private sector in excess of that threshold.

V. Executive Order 13132: Federalism

Executive Order 13132 (Federalism) prohibits an agency from publishing any rule that has federalism implications if the rule either imposes substantial, direct compliance costs on State and local governments, and is not required by statute, or preempts State law, unless the agency meets the consultation and funding requirements of section 6 of the Executive order. This proposed rule does not have federalism implications and does not impose substantial direct compliance costs on State and local governments or preempt State law within the meaning of the Executive order.

VI. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments) prohibits an agency from publishing any rule that has Tribal implications if the rule either imposes substantial, direct compliance costs on Indian Tribal governments, and is not required by statute, or preempts Tribal law, unless the agency meets the consultation and funding requirements of section 5 of the Executive order. This proposed rule does not have substantial direct effects on one or more federally recognized Indian tribes and does not impose substantial direct compliance costs on Indian Tribal governments within the meaning of the Executive order.

Comments and Public Hearing

Before these proposed amendments to the regulations are adopted as final regulations, consideration will be given to comments regarding the notice of proposed rulemaking that are submitted timely to the IRS as prescribed in the preamble under the **ADDRESSES** section. The Treasury Department and the IRS request comments on all aspects of the proposed regulations. All comments will be made available at *https://www.regulations.gov.* Once submitted to the Federal eRulemaking Portal, comments cannot be edited or withdrawn.

A public hearing with respect to this notice of proposed rulemaking has been scheduled for August 12, 2024, beginning at 10 a.m. (ET) and August 13, 2024, at 10 a.m. (ET). The hearing scheduled for August 12, 2024, will be held in the Auditorium at the Internal Revenue Building, 1111 Constitution Avenue NW, Washington, DC Due to building security procedures, visitors must enter at the Constitution Avenue entrance. In addition, all visitors must present photo identification to enter the building. Because of access restrictions, visitors will not be admitted beyond the immediate entrance area more than 30 minutes before the hearing starts. Participants may alternatively attend the public hearing on August 12, 2024, by telephone. On August 13, 2024, the public hearing will be by telephone only.

The rules of 26 CFR 601.601(a)(3) apply to the public hearing. Persons who wish to present oral comments at the public hearing must submit an

outline of the topics to be discussed and the time to be devoted to each topic by August 2, 2024. A period of 10 minutes will be allotted to each person for making comments. An agenda showing the scheduling of the speakers will be prepared after the deadline for receiving outlines has passed. Copies of the agenda will be available free of charge at the public hearing. If no outline of the topics to be discussed at the public hearing is received by August 2, 2024, the public hearing will be cancelled. If the public hearing is cancelled, a notice of cancellation of the public hearing will be published in the **Federal Register**.

Individuals who want to testify in person at the public hearing must send an email to *publichearings@irs.gov* to have your name added to the building access list. The subject line of the email must contain the regulation number REG–119283–23 and the language TESTIFY In Person. For example, the subject line may say: Request to TESTIFY In Person at Hearing for REG–119283–23.

Individuals who want to testify by telephone at the public hearing must send an email to *publichearings@irs.gov* to receive the telephone number and access code for the public hearing. The subject line of the email must contain the regulation number REG–119283–23 and the language TESTIFY Telephonically. For example, the subject line may say: Request to TESTIFY Telephonically at Hearing for REG–119283–23.

Individuals who want to attend the public hearing in person without testifying must also send an email to *publichearings@irs.gov* to have your name added to the building access list. The subject line of the email must contain the regulation number REG–119283–23 and the language ATTEND In Person. For example, the subject line may say: Request to ATTEND Hearing In Person for REG–119283–23. Requests to attend the public hearing must be received by 5 p.m. ET on August 8, 2024.

Individuals who want to attend the public hearing by telephone without testifying must also send an email to *publichearings@irs.gov* to receive the telephone number and access code for the public hearing. The subject line of the email must contain the regulation number REG–119283–23 and the language ATTEND Hearing Telephonically. For example, the subject line may say: Request to ATTEND Hearing Telephonically for REG–119283–23. Requests to attend the public hearing must be received by 5 p.m. ET on August 8, 2024.

Public hearings will be made accessible to people with disabilities. To request special assistance during a public hearing please contact the Publications and Regulations Branch of the Office of Associate Chief Counsel (Procedure and Administration) by sending an email to *publichearings@irs.gov* (preferred) or by telephone at (202) 317–6901 (not a toll-free number) and must be received by 5 p.m. ET on August 7, 2024.

Statement of Availability of IRS Documents

Guidance cited in this preamble is published in the Internal Revenue Bulletin and is available from the Superintendent of Documents, U.S. Government Publishing Office, Washington, DC 20402, or by visiting the IRS website at *https://www.irs.gov.*

Drafting Information

The principal author of these proposed regulations is the Office of the Associate Chief Counsel (Passthroughs and Special Industries). However other personnel from the Treasury Department, the DOE, the EPA, the USDA, and the IRS participated in the development of the proposed regulations.

List of Subjects in 26 CFR Part 1

Income taxes, Reporting and recordkeeping requirements.

Proposed Amendments to the Regulations

Accordingly, the Treasury Department and the IRS propose to amend 26 CFR part 1 as follows:

PART 1—INCOME TAXES

■ **Paragraph 1.** The authority citation for part 1 is amended by adding entries in numerical order for §§ 1.45Y–1 through 1.45Y–5 and 1.48E–1 through 1.48E–5 to read in part as follows:

Authority: 26 U.S.C. 7805 * * *

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Section 1.45Y–1 also issued under 26 U.S.C. 45Y(a), (c), (d), and (g).

Section 1.45Y–2 also issued under 26 U.S.C. 45Y(b) and (e).

Section 1.45Y–3 also issued under 26 U.S.C. 45Y(a) and (g).

Section 1.45Y–4 also issued under 26 U.S.C. 45Y(b) and (g).

Section 1.45Y–5 also issued under 26 U.S.C. 45Y(b).

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Section 1.48E–1 also issued under 26 U.S.C. 48E(a) and (c).

Section 1.48E–2 also issued under 26 U.S.C. 48E(b) and (c).

Section 1.48E–3 also issued under 26 U.S.C. 48E(a) and (b).

Section 1.48E–4 also issued under 26 U.S.C. 48E(b), (d), and (g).

Section 1.48E–5 also issued under 26 U.S.C. 48E(b).

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■ **Par. 2.** An undesignated center heading is added immediately following § 1.37–3 to read as follows:

General Business Credits

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■ **Par. 3.** Sections 1.45Y–0 through 1.45Y–5 are added to read as follows:

Sec.

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§ 1.45Y–0 Table of contents.

This section lists the captions contained in §§ 1.45Y–1 through 1.45Y–5.

§ 1.45Y–1 Clean electricity production credit.

(a) *Overview*—(1) *In general.* For purposes of section 38 of the Code, the section 45Y credit is determined under section 45Y of the Code and the section 45Y regulations (as defined in paragraph (a)(10) of this section). This paragraph (a) provides definitions of terms that, unless otherwise specified, apply for purposes of section 45Y, the section 45Y regulations, and any provision of the Code or this chapter that expressly refers to any provision of section 45Y or the section 45Y regulations. Paragraph (b) of this section provides rules for determining the amount of the section 45Y credit for any taxable year. Paragraph (c) of this section provides rules regarding the phase-out of the section 45Y credit. Paragraph (d) of this section provides rules regarding combined heat and power system (CHP) property. See § 1.45Y–2 for rules relating to qualified facilities for purposes of the section 45Y credit. See § 1.45Y–4 for rules of general application for the section 45Y credit. See § 1.45Y–5 for rules to determine greenhouse gas emissions rates for qualified facilities.

(2) *CHP property*—(i) *In general.* For purposes of section 45Y(g)(2)(B) and paragraph (d) of this section, the term *CHP property* means property comprising a system that uses the same energy source for the simultaneous or sequential generation of electrical power, mechanical shaft power, or both, in combination with the generation of steam or other forms of useful thermal energy (including for heating and cooling applications).

(ii) *Components excluded.* CHP property does not include property used to transport the energy source to the generating facility or to distribute energy produced by the facility.

(iii) *Unit of qualified facility.* For purposes of § 1.45Y–2(a), a unit of qualified facility includes all functionally interdependent components of property owned by the taxpayer that are operated together and that can operate apart from other property to produce useful thermal energy and electricity.

(3) *Code.* The term *Code* means the Internal Revenue Code.

(4) *kWh.* The term *kWh* means kilowatt hours.

(5) *Metering device*—(i) *In general.* For purposes of section 45Y(a)(1)(A)(ii)(II), the term *metering device,* means equipment that is owned and operated by an unrelated person (as defined in paragraph (a)(11) of this section) for energy revenue metering to measure and register the continuous summation of an electricity quantity with respect to time.

(ii) *Standards for maintaining and operating a metering device.* For purposes of section 45Y(a)(1)(A)(ii)(II) and this section, a metering device must be maintained in proper working order in accordance with the instructions of its manufacturer, meet the requirements of the American National Standards Institute C12.1–2022 standard, or subsequent revisions, be revenue grade with a +/− 0.5% accuracy and be properly calibrated.

(iii) *Network equipment.* For purposes of operating the metering device, the unrelated person may share network equipment, such as spare fiber optic cable owned by the taxpayer that produces the electricity and co-locate network equipment in the taxpayer's facilities.

(iv) *Examples.* This paragraph (a)(5)(iv) provides examples illustrating the application of this paragraph (a)(5).

(A) *Example 1. Qualified facility equipped with a metering device owned and operated by an unrelated person.* X owns a qualified facility equipped with a metering device that is owned and operated by Y, an unrelated person. The metering device meets the requirements of paragraphs (a)(5)(i) through (iii). X sells electricity produced at the qualified facility to Z, a related person during the taxable year. Because the

qualified facility is equipped with a metering device that is owned and operated by an unrelated person and meets the requirements of paragraphs (a)(5)(i) through (iii), X may claim a section 45Y credit based on the electricity produced by X and sold to Z during the taxable year.

(B) *Example 2. Electricity produced by the taxpayer at a qualified facility sold, consumed, or stored by the taxpayer during the taxable year.* X owns a qualified facility equipped with a metering device that is owned and operated by an unrelated person, Y. The metering device meets the requirements of paragraphs (a)(5)(i) through (iii). Because the qualified facility is equipped with a metering device that is owned and operated by an unrelated person and that meets the requirements of paragraphs (a)(5)(i) through (iii), X may sell electricity produced at the qualified facility during the taxable year to a related or unrelated person. X may also consume the electricity produced at the qualified facility during the taxable year onsite. Additionally, X may store the electricity produced at the qualified facility during the taxable year in EST owned by X. In any of these three situations, X may claim a section 45Y credit for the taxable year for the kWh of electricity produced at the qualified facility and sold, consumed, or stored by X during the taxable year.

(6) *Qualified facility.* The term *qualified facility* for purposes of the section 45Y credit has the meaning provided in § 1.45Y–2(a).

(7) *Related person*—(i) *In general.* For purposes of the section 45Y credit, the term *related person* means a person that is related to another person if such persons would be treated as a single employer under the regulations in this chapter under section 52(b) of the Code.

(ii) *Member of a consolidated group.* In the case of a corporation that is a member of a consolidated group (as defined in § 1.1502–1(h)), such member will be treated as selling electricity to an unrelated person if such electricity is sold to an unrelated person by another member of such group.

(8) *Secretary.* The term *Secretary* means the Secretary of the Treasury or her delegate.

(9) *Section 45Y credit.* The term *section 45Y credit* means the clean electricity production credit determined under section 45Y of the Code and the section 45Y regulations.

(10) *Section 45Y regulations.* The term *section 45Y regulations* means this section and §§ 1.45Y–2 through 1.45Y–5.

(11) *Unrelated person.* For purposes of section 45Y(a), the term *unrelated person* means a person who is not a related person as defined in section 45Y(g)(4) and paragraph (a)(7) of this section. In the case of sales of electricity to an individual consumer, such sales will be treated as sales to an unrelated party for purposes of the section 45Y credit. For example, assume Taxpayer X produces electricity at a qualified facility and sells it to Consumer Y. Consumer Y is an individual consumer and is not subject to aggregation under the regulations prescribed under section 52(b). Therefore, Consumer Y is not treated as a single employer with Taxpayer X under section 52(b), and a sale to Consumer Y is treated as a sale to an unrelated person. The result is the same if Consumer Y is an individual consumer who is a member of a cooperative or Indian tribe that owns or controls, directly or indirectly, Taxpayer X. The result is also the same if Consumer Y is an individual consumer who is a resident of a State or municipality that owns or controls, directly or indirectly, Taxpayer X.

(b) *Credit amount*—(1) *In general.* For purposes of section 38 of the Code, the section 45Y credit for any taxable year is an amount equal to the product of the kWh of electricity that is produced at a qualified facility and sold by the taxpayer to an unrelated person during the taxable year, multiplied by the applicable amount with respect to such qualified facility. In the case of a qualified facility equipped with a metering device that is owned and operated by an unrelated person, the section 45Y credit for any taxable year is an amount equal to the product of the kWh of electricity that is produced at a qualified facility and sold, consumed, or stored by the taxpayer during the taxable year, multiplied by the applicable amount with respect to such qualified facility. Only one section 45Y credit can be claimed for each kWh of electricity produced by the taxpayer at a qualified facility.

(2) *Applicable amount*—(i) *In general.* The term *applicable amount* means the base amount described in paragraph (b)(2)(ii) of this section or the alternative amount described in paragraph (b)(2)(iii) of this section. The applicable amount is subject to the inflation adjustment as provided in section 45Y(c)(1) and paragraph (b)(3) of this section. The applicable amount may also be increased as provided in section 45Y(g)(7) and paragraph (b)(4) of this section in the case of a qualified facility that is located in an energy community.

(ii) *Base amount.* In the case of any qualified facility that does not satisfy the requirements provided in section 45Y(a)(2)(B), the term *base amount* means 0.3 cents.

(iii) *Alternative amount.* In the case of any qualified facility that satisfies the prevailing wage and apprenticeship requirements provided in section 45Y(a)(2)(B), the term *alternative amount* means 1.5 cents.

(3) *Inflation adjustment*—(i) *In general.* In the case of a calendar year beginning after 2024, the base amount and the alternative amount will each be adjusted by multiplying such amount by the inflation adjustment factor for the calendar year in which the sale, consumption, or storage of the electricity occurs. If the base amount as adjusted under this paragraph (b)(3)(i) is not a multiple of 0.05 cent, such amount will be rounded to the nearest multiple of 0.05 cent. If the alternative amount as adjusted under this paragraph (b)(3)(i) is not a multiple of 0.1 cent, such amount will be rounded to the nearest multiple of 0.1 cent.

(ii) *Annual computation.* The inflation adjustment factor for each calendar year will be published in the **Federal Register** not later than April 1 of that calendar year. The base amount and the alternative amount, as adjusted under paragraph (b)(3)(i) of this section, will also be published in the **Federal Register** not later than April 1 of each calendar year.

(iii) *Inflation adjustment factor.* The term *inflation adjustment factor* means, with respect to a calendar year, a fraction—

(A) The numerator of which is the GDP implicit price deflator for the preceding calendar year, and

(B) The denominator of which is the GDP implicit price deflator for the calendar year 1992.

(iv) *GDP implicit price deflator.* The term *GDP implicit price deflator* means the most recent revision of the implicit price deflator for the gross domestic product as computed and published by the Department of Commerce before March 15 of the calendar year.

(4) *Energy communities increase in credit.* In the case of any qualified facility that is located in an energy community (as defined in section 45(b)(11)(B)), for purposes of determining the amount of the section 45Y credit with respect to any electricity produced by the taxpayer at such facility during the taxable year, the applicable amount will be increased by an amount equal to 10 percent of the applicable amount. The 10 percent increase under this paragraph (b)(4) applies after the inflation adjustment under paragraph (b)(3) of this section.

(5) *Domestic content bonus credit amount.* In the case of any qualified

facility that satisfies the requirements of section 45Y(g)(11)(B)(i) (domestic content requirement), for purposes of determining the amount of the section 45Y credit with respect to any electricity produced by the taxpayer at such facility during the taxable year, the amount of the credit otherwise determined under this paragraph (b), without application of paragraph (b)(4) of this section (related to energy communities), is increased by 10 percent.

(c) *Credit phase-out*—(1) *In general.* The amount of the section 45Y credit for any qualified facility, the construction of which begins during a calendar year provided in section 45Y(d)(2) and described in paragraph (c)(2) of this section, is equal to the product of—

(i) The amount of the credit determined under section 45Y(a) and described in paragraph (b) of this section, without regard to section 45Y(d) and this paragraph (c), multiplied by

(ii) The phase-out percentage provided under section 45Y(d)(2) and described in paragraph (c)(2) of this section.

(2) *Phase-out percentage.* The phase-out percentage described in this paragraph (c)(2) is equal to—

(i) For a facility the construction of which begins during the first calendar year following the applicable year, 100 percent,

(ii) For a facility the construction of which begins during the second calendar year following the applicable year, 75 percent,

(iii) For a facility the construction of which begins during the third calendar year following the applicable year, 50 percent, and

(iv) For a facility the construction of which begins during any calendar year subsequent to the calendar year described in paragraph (c)(2)(iii) of this section, 0 percent.

(3) *Applicable year.* For purposes of this paragraph (c), the term *applicable year* means the later of—

(i) The calendar year in which the Secretary makes the determination that the annual greenhouse gas emissions from the production of electricity in the United States are equal to or less than 25 percent of the annual greenhouse gas emissions from the production of electricity in the United States for calendar year 2022, or

(ii) 2032.

(4) *Phase-out data.* For purposes of paragraph (c)(3)(i) of this section, the annual greenhouse gas emissions from the production of electricity in the United States for any calendar year must be assessed separately using both of the following data sources:

(i) The U.S. Energy Information Administration's Electric Power Annual, summing the annual carbon dioxide emissions data from conventional power plants and combined heat and power plants and the Monthly Energy Review annual carbon dioxide emissions from the combustion of biomass to produce electricity in the Electric Power Sector; and

(ii) The U.S. Environmental Protection Agency (EPA) Inventory of U.S. Greenhouse Gas Emissions and Sinks (GHGI) annual electric power-related carbon dioxide, methane, and nitrous oxide emissions data including carbon dioxide emissions from the combustion of biomass to produce electricity.

(5) *Determination of phase-out.* For purposes paragraph (c)(3)(i) of this section, the Secretary will determine that the annual greenhouse gas emissions from the production of electricity in the United States are equal to or less than 25 percent of the annual greenhouse gas emissions from the production of electricity in the United States for calendar year 2022 only if, the annual greenhouse gas emissions from the production of electricity in the United States, as determined separately under both of the data sources described in paragraph (c)(4) of this section, are each equal to or less than 25 percent of the annual greenhouse gas emissions from the production of electricity in the United States for calendar year 2022. If a data source described in paragraph (c)(4) of this section becomes unavailable (for example, it is no longer published or does not provide the specified data), the Secretary must designate a similar data source to replace the unavailable data source.

(d) *Requirements for CHP property*—(1) *In general.* To be eligible for the section 45Y credit, a CHP property must produce at least 20 percent of its total useful energy in the form of useful thermal energy that is not used to produce electrical or mechanical power (or combination thereof), and at least 20 percent of its total useful energy in the form of electrical or mechanical power (or combination thereof). The energy efficiency percentage of CHP property must exceed 60 percent. These percentages are determined on a British thermal unit (Btu) basis.

(2) *Energy efficiency percentage.* The energy efficiency percentage of a CHP property is the fraction the numerator of which is the total useful electrical, thermal, and mechanical power produced by the system at normal operating rates, and expected to be consumed in its normal application, and the denominator of which is the lower heating value of the fuel sources for the system.

(3) *Special rule for calculating electricity produced by CHP property*—(i) *In general.* For purposes of section 45Y(a) and paragraph (b) of this section, the kWh of electricity produced by a taxpayer at a qualified facility includes any production in the form of useful thermal energy by any CHP property within such facility, and the amount of greenhouse gases emitted into the atmosphere by such facility in the production of such useful thermal energy is included for purposes of determining the greenhouse gas emissions rate for such facility.

(ii) *Conversion from Btu to kWh*—(A) *In general.* For purposes of section 45Y(g)(2)(A)(i) and this paragraph (d)(3), the amount of kWh of electricity produced in the form of useful thermal energy is equal to the quotient of the total useful thermal energy produced by the CHP property within the qualified facility, divided by the heat rate for such facility.

(B) *Heat rate.* For purposes of this paragraph (d)(3), the term *heat rate* means the amount of energy used by the qualified facility to generate 1 kWh of electricity, expressed as Btus per net kWh generated. In calculating the heat rate of a qualified facility that includes CHP property that uses combustion, a taxpayer must use the annual average heat rate, defined as the total annual fuel consumption of the CHP property (in Btus, using the lower heating value of the fuel) during the taxable year for which the section 45Y credit is claimed, divided by the annual net electricity generation (in kWh) of the CHP property during such taxable year.

(e) *Applicability date.* This section applies to qualified facilities placed in service after December 31, 2024, and during a taxable year ending on or after [DATE OF PUBLICATION OF THE FINAL REGULATIONS IN THE **FEDERAL REGISTER**].

§ 1.45Y–2 Qualified facility for purposes of section 45Y.

(a) *Qualified facility.* For purposes of the section 45Y credit, the term *qualified facility* means a facility owned by the taxpayer that meets the following requirements:

(1) The facility is used for the generation of electricity,

(2) The facility is placed in service after December 31, 2024, and

(3) The facility has a greenhouse gas emissions rate of not greater than zero

(as determined under rules provided in § 1.45Y–5).

(b) *Property included in qualified facility*—(1) *In general.* A qualified facility includes a unit of qualified facility (as defined in paragraph (b)(2) of this section) that meets the requirements of paragraph (b)(2) of this section. A qualified facility also includes qualified property owned by the taxpayer that is an integral part (as defined in paragraph (b)(3) of this section) of the qualified facility. Any component of property that meets the requirements of this paragraph (b) is part of a qualified facility regardless of where such component of property is located. A qualified facility generally does not include equipment that is an addition or modification to an existing qualified facility. However, see § 1.45Y–4(c) for rules regarding the expansion of a facility or incremental production and § 1.45Y–4(d) for rules regarding a retrofitted qualified facility (80/20 Rule).

(2) *Unit of qualified facility*—(i) *In general.* For purposes of the section 45Y credit, the unit of qualified facility includes all functionally interdependent components of property (as defined in paragraph (b)(2)(ii)) of this section) owned by the taxpayer that are operated together and that can operate apart from other property to produce electricity. No provision of this section, § 1.45Y–1, or § 1.45Y–4 through 1.45Y–5 uses the term *unit* in respect of a qualified facility with any meaning other than that provided in this paragraph (b)(2)(i).

(ii) *Functionally interdependent.* Components of property are functionally interdependent if placing in service each component is dependent upon placing in service other components to produce electricity.

(3) *Integral part*—(i)*In general.* For purposes of thesection 45Ycredit, a component of property owned by a taxpayer is an integral part of a qualified facility if it is used directly in the intended function of the qualified facility and is essential to the completeness of such function. Property that is an integral part of a qualified facility is part of the qualified facility.

(ii) *Power conditioning and transfer equipment.* Power conditioning equipment and transfer equipment are integral parts of a qualified facility. Power conditioning equipment includes equipment that modifies the characteristics of electricity into a form suitable for use, transmission, or distribution. Parts related to the functioning or protection of power conditioning equipment are also treated as power conditioning equipment and include, but are not limited to, switches, circuit breakers, arrestors, and hardware and software used to monitor, operate, and protect power conditioning equipment. Transfer equipment includes components of property that allow for the aggregation of electricity generated by a qualified facility and components of property that alter voltage to permit electricity to be transferred to a transmission or distribution line. Transfer equipment does not include transmission or distribution lines. Examples of transfer equipment include, but are not limited to, wires, cables, and combiner boxes that conduct electricity. Parts related to the functioning or protection of transfer equipment are also treated as transfer equipment and may include items such as current transformers used for metering, electrical interrupters (such as circuit breakers, fuses, and other switches), and hardware and software used to monitor, operate, and protect transfer equipment.

(iii) *Roads.* Roads that are an integral part of a qualified facility are those roads integral to the intended function of the qualified facility such as onsite roads that are used to operate and maintain the qualified facility. Roads used primarily for access to the site, or roads used primarily for employee or visitor vehicles, are not integral to the intended function of the qualified facility and thus are not an integral part of a qualified facility.

(iv) *Fences.* Fencing is not an integral part of a qualified facility because it is not integral to the intended function of the qualified facility.

(v) *Buildings.* Generally, buildings are not integral parts of a qualified facility because they are not integral to the intended function of the qualified facility. However, the following structures are not treated as buildings for this purpose:

(A) A structure that is essentially an item of machinery or equipment; and

(B) A structure that houses components of property that are integral to the intended function of a qualified facility if the use of the structure is so closely related to the use of the housed components of property therein that the structure clearly can be expected to be replaced if the components of property it initially houses are replaced.

(vi) *Shared integral property.* Multiple qualified facilities (whether owned by one or more taxpayers), including qualified facilities with respect to which a taxpayer has claimed a credit under section 48E or another Federal income tax credit, may include shared property that may be considered an integral part of each qualified facility. In addition, a component of property that is shared by a qualified facility (as defined in section 45Y(b)) (45Y Qualified Facility) and a qualified facility (as defined by section 48E(b)(3)) (48E Qualified Facility) that is an integral part of both qualified facilities will not affect the eligibility of the 45Y Qualified Facility for the section 45Y credit or the 48E Qualified Facility for the section 48E credit.

(vii) *Examples.* This paragraph (b)(3)(vii) provides examples illustrating the rules of paragraphs (b)(3)(i) through (vi) of this section.

(A) *Example 1. Co-located qualified facilities owned by the same taxpayer that share integral property.* X constructs a solar farm (Solar Qualified Facility) and nearby also constructs a wind facility (Wind Qualified Facility) that are each a qualified facility (as defined in § 1.45Y–2(a)). The Solar Qualified Facility and Wind Qualified Facility each connect to a transformer that steps up the electricity produced by each qualified facility to electrical grid voltage before it is transmitted to the electrical grid through an intertie. The fact that the Solar Qualified Facility and Wind Qualified Facility share property that is integral to both does not impact the ability of X to claim a section 45Y credit for both qualified facilities.

(B) *Example 2. Co-located qualified facilities owned by different taxpayers that share integral property.* X constructs a solar farm (Solar Qualified Facility), and nearby Y constructs a wind facility (Wind Qualified Facility) that are each a qualified facility (as defined in § 1.45Y–2(a)). X's Solar Qualified Facility and Y's Wind Qualified Facility each connect to a transformer that steps up the electricity produced by both qualified facilities to electrical grid voltage before it is transmitted to the electrical grid through an intertie. The fact that the Solar Qualified Facility and Wind Qualified Facility share property that is integral to both does not impact the ability of X or Y to claim a section 45Y credit for the electricity produced by their respective qualified facilities.

(C) *Example 3. Co-located qualified facility and Energy Storage Technology owned by the same taxpayer that share integral property.* X constructs a wind facility that is a qualified facility (as defined in § 1.45Y–2(a)) (Wind Qualified Facility) that is co-located with an EST (as defined in § 1.48E–2(g)) (Energy Storage). The Wind Qualified Facility and Energy Storage share transfer equipment that is integral to both. The fact that the Wind Qualified Facility and Energy Storage share property that is integral to both does not impact the ability of X to claim a section 45Y credit for the electricity produced

by the Wind Qualified Facility or to claim a section 48E credit for the Energy Storage.

(D) *Example 4. Co-located wind qualified facility and Energy Storage Technology owned by different taxpayers that share integral property.* X constructs a solar farm that is a qualified facility (as defined in § 1.45Y–2(a)) (Solar Qualified Facility) that is co-located with an EST (as defined in § 1.48E–2(g)) (Energy Storage) owned by Y. The Wind Qualified Facility and Energy Storage share transfer equipment that is integral to both. The fact that the Wind Qualified Facility and Energy Storage share property that is integral to both does not impact the ability of X to claim a section 45Y credit for the electricity produced by the Wind Qualified Facility or the ability of Y to claim a section 48E credit for the Energy Storage.

(c) *Coordination with other credits*—(1) *In general.* The term *qualified facility* (as defined in section 45Y(b)) does not include any facility for which a credit determined under section 45, 45J, 45Q, 45U, 48, 48A, or 48E is allowed under section 38 of the Code for the taxable year or any prior taxable year. A taxpayer that directly owns a qualified facility (as defined in section 45Y(b)) that is eligible for both a section 45Y credit and another Federal income tax credit is eligible for the section 45Y credit only if the other Federal income tax credit was not allowed with respect to the qualified facility. Nothing in this paragraph (c) precludes a taxpayer from claiming a section 45Y credit with respect to a qualified facility (as defined in section 45Y(b)) that is co-located with another facility for which a credit determined under section 45, 45J, 45Q, 45U, 48, 48A, or 48E is allowed under section 38 for the taxable year or any prior taxable year.

(2) *Allowed.* For purposes of paragraph (c)(1) of this section, the term *allowed* only includes credits that taxpayers have claimed on a Federal income tax return or Federal return, as appropriate, and that the Internal Revenue Service (IRS) has not challenged in terms of the taxpayer's eligibility.

(3) *Examples.* This paragraph (c)(3) provides examples illustrating the rules of paragraph (c) of this section.

(i) *Example 1. Taxpayer claims a section 45Y credit on a solar farm and section 48E credit on co-located EST.* X owns a solar farm that is a qualifying facility (as defined in § 1.45Y–2(a)) (Solar Qualified Facility), and X owns a co-located EST (as defined in § 1.48E–2(g)) (Energy Storage). The Energy Storage is not part of the Solar Qualified Facility, and, therefore, X may claim the section 45Y credit based on the kWh of electricity produced by the Solar Qualified Facility, and X may also claim the section 48E credit based on its qualified investment in the Energy Storage.

(ii) *Example 2.* Different taxpayers *claim section 45Y credit for a solar farm* and *a section 48E credit for co-located Energy Storage Technology.* X owns a solar farm that is a qualifying facility (as defined in § 1.45Y–2(a)) (Solar Qualified Facility), and Y owns a co-located EST (as defined in § 1.48E–2(g)) (Energy Storage). The Energy Storage is not part of the Solar Qualified Facility, and therefore, X may claim the section 45Y credit based on the kWh of electricity produced by the Solar Qualified Facility, and Y may claim the section 48E credit based on its qualified investment in the Energy Storage.

(iii) *Example 3. Taxpayer claiming a section 45Y credit; another credit is not allowed to the Taxpayer.* X owns a wind facility that satisfies the requirements of a qualified facility (as defined in § 1.45Y–2(a)) as well as the requirements of a qualified facility (as defined in § 1.48E–2(a)). X claims a section 45Y credit with respect to the wind facility. While a credit may be available with regard to the wind facility under section 48E, because X has claimed a section 45Y credit with respect to the wind facility, a section 48E credit is not allowed.

(iv) *Example 4. Interaction of section 45Y and section 45Q credits.* X owns a qualified facility (as defined in § 1.45Y–2(a)) (45Y Facility) that includes carbon capture equipment, which is functionally interdependent to the production of electricity by the 45Y Facility. X used the carbon capture equipment to capture and utilize (as described in section 45Q(f)(5)) qualified carbon dioxide and claimed a section 45Q credit in a prior taxable year. As a result, X cannot claim a credit for its 45Y Facility because a qualified facility does not include a facility for which a credit determined under section 45Q is allowed.

(d) *Applicability date.* This section applies to qualified facilities placed in service after December 31, 2024, and during a taxable year ending on or after [DATE OF PUBLICATION OF THE FINAL REGULATIONS IN THE **FEDERAL REGISTER**].

§ 1.45Y–3 [Reserved]

§ 1.45Y–4 Rules of general application.

(a) *Only production in the United States taken into account.* Consumption, sales, or storage are taken into account for purposes of the section 45Y credit only with respect to electricity the production of which is within the United States (within the meaning of section 638(1) of the Code), or a United States territory, which for purposes of section 45Y and the section 45Y regulations has the meaning of the term a possession of the United States (within the meaning of section 638(2)).

(b) *Production attributable to the taxpayer*—(1) *In general.* In the case of a qualified facility in which more than one person has an ownership share (and the arrangement is not treated as a partnership for Federal tax purposes) production from the qualified facility is allocated among such persons in proportion to their respective ownership shares in the gross sales from such qualified facility. The respective owners each determine their respective section 45Y credit under section 45Y(a) and based on their respective ownership shares in the gross sales from such qualified facility during the taxable year.

(2) *Example of gross sales.* A, B and C, all calendar year taxpayers, each own an interest in Facility, which is a qualified facility (as defined in § 1.45Y–2(a)). A owns 45 percent, B owns 35 percent, and C owns 20 percent, and each are allocated gross sales from Facility in proportion to their ownership interest. Facility produced 1000 kWh of electricity during the taxable year. A, B, and C will each determine their respective section 45Y credit under section 45Y(a) and § 1.45Y–1(b) based on their allocable share of the gross sales from the 1000 kWh of electricity produced at Facility during the taxable year.

(3) *Section 761(a) election.* If a qualified facility is owned through an unincorporated organization that has made a valid election under section 761(a) of the Code, each member's undivided ownership share in the qualified facility will be treated as a separate qualified facility owned by such member.

(c) *Expansion of facility; Incremental production*—(1) *In general.* Solely for purposes of this paragraph (c), 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 described in section 45Y(b)(1)(A) (without regard to clause (ii) of such paragraph), which was placed in service before January 1, 2025, but only to the extent of the increased amount of electricity produced at the facility by reason of such new unit or addition of capacity. A new unit or an addition of capacity that meets the requirements of this

paragraph (c) will be treated as a separate qualified facility. For purposes of this paragraph (c), a new addition or an addition of capacity requires the addition or replacement of components of property, including any new or replacement integral property added to a facility necessary to increase capacity. If applicable for purposes of this paragraph (c), taxpayers must use modified or amended facility operating licenses or the International Standard Organization (ISO) conditions to measure the maximum electrical generating output of a facility to determine its nameplate capacity. For purposes of assessing the One-Megawatt Exception provided in section 45Y(a)(2)(B)(i), the capacity for a new unit or an addition of capacity is the sum of the nameplate capacity of the added qualified facility and the nameplate capacity of the facility to which the qualified facility was added.

(2) *Special rule for restarted facilities.* Solely for purposes of this paragraph (c), a facility that is decommissioned or in the process of decommissioning and restarts can be considered to have increased capacity if the following conditions are met:

(i) The existing facility must have ceased operations;

(ii) The existing facility must have a shutdown period of at least one calendar year during which it is without a valid operating license from its respective Federal regulatory authority (that is, the Federal Energy Regulatory Commission (FERC) or the Nuclear Regulatory Commission (NRC); and

(iii) The increased capacity of the restarted facility must have a new, reinstated, or renewed operating license issued by either FERC or NRC.

(3) *Computation of increased amount of electricity produced.* To determine the increased amount of electricity produced by a facility by reason of a new unit or an addition of capacity, a taxpayer must multiply the amount of electricity that the facility produces during a taxable year after the new unit or addition of capacity is placed in service by a fraction, the numerator of which is the added nameplate capacity that results from the new unit or addition of capacity, and the denominator of which is the total nameplate capacity of the facility with the new unit or addition of capacity added.

(4) *Examples.* This paragraph (c)(4) provides examples illustrating the rules of paragraph (c) of this section.

(i) *Example 1. New Unit.* X owns a hydropower facility (Facility H) that was originally placed in service in 2020, with a nameplate capacity of 600 megawatts. During taxable years 2020 through 2024, X claimed a section 45 credit for the electricity produced by Facility H. On July 1, 2025, X places in service components of property comprising a new unit that results in Facility H having an increased nameplate capacity of 900 megawatts in 2025. For purposes of paragraph (c) of this section, this new unit will be treated as a separate facility (Facility J). X may claim a section 45Y credit during the 10-year credit period starting on July 1, 2025, based on the increased amount of electricity generated as a result of the new unit, which is determined by multiplying the electricity that Facility H produces by one-third (equal to the 300-megawatt increase in nameplate capacity that results from the addition of Facility J divided by the 900 megawatt nameplate capacity of Facility H with Facility J). Even though X claimed a section 45 credit for the existing capacity of Facility H in taxable years 2020 through 2024, X can claim a section 45Y credit for the production of electricity associated with Facility J. X may also continue to claim the section 45 credit through taxable year 2030 for electricity generated by Facility H (excluding the incremental electricity generation related to Facility J).

(ii) *Example 2. Addition of Capacity.* Y owns a nuclear facility (Facility N) that was originally placed in service on January 1, 2000, with a nameplate capacity of 800 megawatts. Y claimed a section 45U credit in taxable years 2024 and 2025 for the electricity generated by Facility N. On January 15, 2026, Y removed components of property with a nameplate capacity of 200 megawatts and placed in service components of property with a nameplate capacity of 400 megawatts. For purposes of this paragraph (c), Facility N's addition of capacity is treated as a new separate qualified facility placed in service on January 15, 2026 (Facility P). Y may claim a section 45Y credit during the 10-year credit period starting on January 15, 2026, based on the increased amount of electricity produced at Facility N that is attributable to the addition of capacity (Facility P), which is determined by multiplying the electricity that Facility N produces by ⅕ (equal to the 200-megawatt increase in nameplate capacity divided by Facility N's new total nameplate capacity of 1,000 megawatts). Even though Y claimed a section 45U credit in taxable years 2024 and 2025 for the existing capacity of Facility N, Y can claim a section 45Y credit for the production of electricity associated with Facility P. Y may also continue to claim the section 45U credit through taxable year 2032 for electricity generated by Facility N (excluding the incremental electricity generation related to Facility P).

(d) *Retrofit of an existing facility (80/20 Rule)*—(1) *In general.* For purposes of section 45Y(b)(1)(B), a facility may qualify as originally placed in service even if it contains some used components of property within the unit of qualified facility, provided the fair market value of the used components of the unit of qualified facility is not more than 20 percent of the total value of the unit of qualified facility (that is, the cost of the new components of property plus the fair market value of the used components of property within the unit of qualified facility) (80/20 Rule). If a facility satisfies the requirements of the 80/20 Rule, then the date on which such qualified facility is considered originally placed in service for purposes of section 45Y(b)(1)(B) is the date on which the new components of property of the unit of qualified facility are placed in service.

(2) *Cost of new components of property.* For purposes of this 80/20 Rule, the cost of new components of the unit of qualified facility includes all costs properly included in the depreciable basis of the new components of property of the unit of qualified facility.

(3) *Examples.* The following examples illustrate the rules of this paragraph (d).

(i) *Example 1. Retrofitted facility that that meets the 80/20 Rule.* A owns an existing wind facility. On February 1, 2026, A replaces used components of the wind facility with new components at a cost of $2 million. The fair market value of the remaining original components of the wind facility is $400,000, which is not more than 20 percent of the retrofitted wind facility's total fair market value of $2.4 million (the cost of the new components ($2 million) + the fair market value of the remaining original components ($400,000)). Thus, the retrofitted wind facility will be considered newly placed in service for purposes of section 45Y, and the section 45Y credit is allowable for electricity produced by A at the wind qualified facility and sold, consumed, or stored, during the 10-year period beginning on February 1, 2026, assuming all the other requirements of section 45Y are met.

(ii) *Example 2. Retrofit of an existing facility that meets the 80/20 Rule.* Facility Z, a facility that was originally placed in service on January 1, 2026, was not a qualified facility (as described in § 1.45Y–2(a)) when it was placed in service because it did not meet the greenhouse gas emissions rate

requirements (as determined under rules provided in § 1.45Y–5). On January 1, 2027, Facility Z was retrofitted and now meets the requirements to be a qualified facility under § 1.45Y–2(a). After the retrofit, the cost of the new property included in Facility Z is greater than 80 percent of Facility Z's total fair market value. Because Facility Z meets the 80/20 Rule, Facility Z is deemed to be originally placed in service on January 1, 2027. Therefore, a section 45Y credit is allowable for electricity produced by Facility Z and sold, consumed, or stored during the 10-year period beginning on January 1, 2027, assuming all the other requirements of section 45Y are met.

(iii) *Example 3. Retrofitted nuclear facility that satisfied the 80/20 Rule.* T owns a nuclear facility (Facility N) that was originally placed in service on March 1, 1982, and was decommissioned on September 20, 2010. T replaces used components of property at Facility N with new components at a cost of $200 million, and then places Facility N in service on July 15, 2026. The fair market value of the remaining original components of the Facility N, after being decommissioned and prior to restart, is $30 million, which is not more than 20 percent of Facility N's total fair market value of $230 million (the cost of the new components ($200 million) + the fair market value of the remaining original components ($30 million)). Thus, Facility N will be considered newly placed in service on July 15, 2026, for purposes of section 45Y, and T will be able to claim a section 45Y credit based on the electricity generated at Facility N, assuming all the other requirements of section 45Y are met.

(iv) *Example 4. Capital improvements to an existing qualified facility that do not satisfy the 80/20 Rule.* X owns an existing facility, Facility C, that was originally placed in service on January 1, 2023. X makes capital improvements to Facility C that are placed in service on June 1, 2026. The cost of the capital improvements is $500,000 and the fair market value of Facility C after the improvements is $2 million. The value of the old components of property is $1,500,000 out of $2.0 million, or 75 percent of the total fair market value of Facility C after the improvements. Because the fair market value of the new property included in Facility C is less than 80 percent of Facility C's total fair market value, Facility C does not meet the 80/20 Rule. Facility C will not be considered a qualified facility (as defined in § 1.45Y–2(a)) eligible for the section 45Y credit.

(e) *Applicability date.* This section applies to qualified facilities placed in service after December 31, 2024, and during a taxable year ending on or after [DATE OF PUBLICATION OF THE FINAL REGULATIONS IN THE **FEDERAL REGISTER**].

§ 1.45Y–5 Greenhouse gas emissions rates for qualified facilities under section 45Y.

(a) *In general.* This section provides rules and definitions for determining emissions rates for purposes of section 45Y. Section 1.45Y–5(b)(4) provides a definition for a facility that produces electricity through combustion or gasification and § 1.45Y–5(b)(7) defines a facility that does not produce electricity through combustion or gasification. Section 1.45Y–5(c) through (e) provide rules for determining the greenhouse gas emissions rates for facilities for purposes of section 45Y. Section 1.45Y–5(f) provides rules for the annual publication of emissions rates. Section 1.45Y–5(g) provides rules related to provisional emissions rates. Section § 1.45Y–5(h) provides rules regarding reliance on the annual publication of emissions rates and provisional emissions rates. Finally, § 1.45Y–5(i) provides rules regarding substantiation requirements.

(b) *Definitions.* The following definitions apply for purposes of this section.

(1) *CO_2e per kWh.* The term *CO_2e per kWh* means with respect to any greenhouse gas, the equivalent carbon dioxide (as determined based on global warming potential) per kWh of electricity produced. The 100-year time horizon global warming potentials (GWP–100) from the Intergovernmental Panel on Climate Change's Fifth Assessment Report (AR5) must be used to convert emissions to equivalent carbon dioxide emissions. For purposes of this definition, the GWP–100 from AR5 (as shown in Table 1) excludes climate-carbon feedbacks. Table 1 provides GWP–100 amounts for certain greenhouse gases applicable to this section.

TABLE 1 TO PARAGRAPH (b)(1)—100 YEAR GLOBAL WARMING POTENTIALS FOR GREENHOUSE GASES

Greenhouse gas	GWP
CO_2	1.
CH_4	28.
N_2O	265.
SF_6	23,500.
Hydrofluorocarbons	Varies by gas.
Perfluorocarbons	Varies by gas.

(2) *Combustion.* The term *combustion* means a rapid exothermic chemical reaction, specifically the oxidation of a fuel, which liberates energy including heat and light.

(3) *Gasification.* The term *gasification* means a thermochemical process that converts carbon-containing materials into syngas, a gaseous mixture that is composed primarily of carbon monoxide, carbon dioxide, and hydrogen.

(4) *Facility that produces electricity through combustion or gasification.* The term *facility that produces electricity through combustion or gasification* (C&G Facility*)* means a facility that produces electricity through combustion or uses an input energy source to produce electricity, if the input energy source was produced through a fundamental transformation, or multiple transformations, of one energy source into another using combustion or gasification.

(5) *Greenhouse gas emissions rate.* Consistent with section 45Y(b)(2)(A), the term *greenhouse gas emissions rate* means the amount of greenhouse gases emitted into the atmosphere by a facility in the production of electricity, expressed as grams of CO_2e per kWh.

(6) *Greenhouse gases emitted into the atmosphere by a facility in the production of electricity.* For purposes of section 45Y(b)(2)(A), for both C&G and Non-C&G Facilities, the term *greenhouse gases emitted into the atmosphere by a facility in the production of electricity* means emissions from a facility that directly occur from the process that transforms the input energy source into electricity. This definition excludes the following:

(i) Emissions from electricity production by back-up generators that are primarily used in maintaining critical systems in case of a power system outage or for supporting restart of a generator after an outage.

(ii) Emissions from routine operational and maintenance activities that are integral to the production of electricity, including, but not limited to, emissions from internal combustion vehicles used to access and perform maintenance on remote electricity generating facilities or emissions occurring from heating and cooling control rooms or dispatch centers.

(iii) Emissions from a step-up transformer that conditions the electricity into a form suitable for productive use or sale.

(iv) Emissions that occur before commercial operations commence or after commercial operations terminate, including, but not limited to, on-site emissions occurring from construction

or manufacturing of the facility itself, emissions from the off-site manufacturing of facility components, or emissions occurring due to siting or decommissioning.

(v) Emissions from infrastructure associated with the facility, including, but not limited to, emissions from road construction for feedstock production.

(vi) Emissions from the distribution of electricity to consumers.

(7) *Non-C&G Facility.* The term *Non-C&G Facility* means a facility that produces electricity and is not described in § 1.45Y–5(b)(4).

(8) *Fuel.* The term *fuel* means material directly used to produce electricity or energy inputs that are used to produce electricity.

(9) *Feedstock.* The term *feedstock* means any raw material used in a process for electricity generation or to produce an intermediate product or finished fuel used for electricity generation.

(c) *Non-C&G Facilities*—(1) *Determining a greenhouse gas emissions rate for Non-C&G Facilities.* Greenhouse gas emissions rates for Non-C&G Facilities must be determined under this paragraph (c) and paragraph (e) of this section.

(i) *Excluded emissions.* With respect to Non-C&G Facilities only, greenhouse gases emitted into the atmosphere by a facility in the production of electricity excludes emissions of greenhouse gases that are not directly produced by the fundamental transformation of the input energy source into electricity, including, but not limited to, the following:

(A) Emissions from hydropower reservoirs due to anoxic conditions;

(B) Ebullitive, diffuse, and degassing emissions from hydropower operations;

(C) Emissions of non-condensable gases from underground reservoirs during geothermal operations; and

(D) Emissions occurring due to activities and operations occurring off-site, including but not limited to, the production and transportation of fuels used by the facility, or land use change from siting or changes in demand.

(ii) *Emissions assessment process.* Subject to § 1.45Y–5(b)(6) and (c)(1), a greenhouse gas emissions rate for a Non-C&G Facility must be determined through a technical and engineering assessment of the fundamental energy transformation into electricity. This assessment must consider all input and output energy carriers and chemical reactions or mechanical processes taking place at the facility in the production of electricity.

(iii) *Example of greenhouse gas emissions rate determination for a Non-C&G Facility.*

(A) *Facts.* A facility uses solar photovoltaic technologies to convert light directly into electricity through use of the photovoltaic effect. This is a physical phenomenon in which certain semiconducting materials upon exposure to light, absorb the light and transform the energy contained in the light directly into an electric current. There are many materials that may be used to generate electricity through this method, including crystalline silicon, amorphous silicon, cadmium telluride, copper indium gallium diselenide, perovskites, quantum dots, and carbon-based materials known as organic photovoltaics. The smallest unit of photovoltaic materials is a cell. Multiple cells are typically assembled into a panel or module and electrically connected. Multiple modules or panels are generally connected to comprise a solar system or installation. Solar photovoltaic technologies produce direct current electricity that can be used as is or, more typically, can be fed into inverters to transform it into alternating current. Solar panels can be ground mounted at a fixed angle or can be mounted with tracking systems that move the panels to track the location of the sun over the course of the day and season in order to maximize electricity production. Solar panels may also be mounted on buildings (for example, on roofs), or solar photovoltaic materials can be integrated into other building components such as roofing tiles.

(B) *Analysis.* For solar photovoltaic technologies, the fundamental transformation of input energy (solar electromagnetic radiation) into electricity using the photovoltaic effect involves no mechanical energy or chemical reactions. Academic studies on the lifecycle greenhouse gas emissions from solar photovoltaic power indicate that there is a small but non-zero amount of emissions associated with the operational phase of these technologies. However, these emissions exclusively occur due to ongoing maintenance (for example, the washing of solar panels), preventative maintenance (for example, the periodic replacement of electrical equipment such as inverters), and a minimal amount of project management (for example, inverter standby mode at night). These emissions do not occur directly due to the production of electricity. Therefore, consistent with § 1.45Y–5(c)(1)(ii), the greenhouse gas emissions rate for facilities that produce electricity by solar photovoltaic properties is not greater than zero.

(2) *Non-C&G Facilities with a greenhouse gas emissions rate that is not greater than zero.* The following types or categories of facilities are Non-C&G Facilities with a greenhouse gas emissions rate that is not greater than zero:

(i) Wind (including small wind properties);

(ii) Hydropower (including retrofits that add electricity production to non-powered dams, conduit hydropower, hydropower using new impoundments, and hydropower using diversions such as a penstock or channel);

(iii) Marine and hydrokinetic;

(iv) Solar (including photovoltaic and concentrated solar power);

(v) Geothermal (including flash and binary plants);

(vi) Nuclear fission;

(vii) Nuclear fusion; and

(viii) Waste energy recovery property that derives energy from a source described in paragraphs (c)(2)(i) through (vii) of this section.

(d) *C&G Facilities*—(1) *Determining a greenhouse gas emissions rate for C&G Facilities.* Greenhouse gas emissions rates for C&G Facilities must be determined by a lifecycle analysis (LCA) that complies with this paragraph (d) and paragraph (e) of this section. The greenhouse gas emissions rate for a C&G Facility equals the net rate of greenhouse gases emitted into the atmosphere by such facility (taking into account lifecycle greenhouse gas emissions, as described in section 211(o)(1)(H) of the Clean Air Act (42 U.S.C. 7545(o)(1)(H))) in the production of electricity, expressed as grams of CO_2e per kWh.

(2) *LCA requirements.* For purposes of this paragraph (d), an LCA must comply with the following requirements:

(i) *Starting boundary.* The starting boundary of the LCA for an LCA involving generation-derived feedstocks (such as biogenic feedstocks) is feedstock generation. The starting boundary of the LCA for an LCA involving extraction-derived feedstocks (such as fossil fuel feedstocks) is feedstock extraction. The starting boundaries include the processes necessary to produce and collect or extract the raw materials used to produce electricity from combustion or gasification technologies, including those used as energy inputs to electricity production. This includes the emissions effects of relevant land management activities or changes related to or associated with feedstock production. The starting conditions are the material and energy flows, including associated direct and indirect greenhouse gas emissions, of the processes associated with the extraction or production of raw feedstock materials or fuel.

(ii) *Ending boundary.* The ending boundary of the LCA for electricity that is transmitted to the grid or electricity that is used on-site is the meter at the point of production of the C&G Facility. The use of such electricity generated by the C&G Facility (and what other types of energy sources it displaces), including emissions from transmission and distribution, are outside of the LCA boundary.

(iii) *Baseline.* The LCA must be based on a future anticipated baseline, which projects future status quo in the absence of the availability of the sections 45Y and 48E credits (taking into account anticipated changes in technology, policies, practices, and environmental and other socioeconomic conditions).

(iv) *Offsets and offsetting activities.* Offsets and offsetting activities that are unrelated to the production of electricity by the C&G Facility, including the production and distribution of any input fuel, may not be taken into account in the LCA.

(v) *Principles for included emissions.* The LCA must take into account direct emissions, significant indirect emissions in the United States or other countries, emissions associated with market-mediated changes in related commodity markets, emissions associated with feedstock generation or extraction, emissions consequences of increased production of feedstocks, emissions at all stages of fuel and feedstock production and distribution, and emissions associated with distribution, delivery, and use of feedstocks to and by a C&G Facility.

(A) *Direct emissions.* For purposes of paragraph this paragraph (d)(2)(v), direct emissions include, but are not limited to:

(*1*) Emissions from feedstock generation, production, and extraction (including emissions from feedstock and fuel harvesting and extraction and direct land use change and management, including emissions from fertilizers, and changes in carbon stocks);

(*2*) Emissions from feedstock and fuel transport (including emissions from transporting the raw or processed feedstock to the fuel processing facility);

(*3*) Emissions from transporting and distributing fuels to electricity production facility;

(*4*) Emissions from handling, processing, upgrading, and/or storing feedstocks, fuels and intermediate products (including emissions from on/offsite storage and preparation/pre-treatment for use (for example, torrefaction or pelletization) and emissions from process additives); and

(*5*) Emissions from combustion and gasification at the electricity generating facility (including emissions from the combustion and/or gasification process and emission from gasification or combustion additives).

(B) *Significant indirect emissions.* For purposes of this paragraph (d)(2)(v), examples of significant indirect emissions include, but are not limited to, emissions from indirect land use and land use change and induced emissions associated with the increased use of the feedstock for energy production.

(vi) *Principles for excluded emissions.* The LCA must not take into account the following types of emissions:

(A) Emissions from facility construction, siting or decommissioning (including on-site emissions occurring from construction or manufacturing of the facility itself);

(B) Emissions from facility maintenance (including emissions from the on and offsite construction or maintenance of the facility; emissions from vehicles used to access and perform maintenance on electricity generating facilities; emissions from back-up generators that do not provide additional firm power and are used in maintaining critical systems in case of a power system outage or for supporting restart of a generator after an outage; and emissions occurring from heating and cooling control rooms or dispatch centers);

(C) Emissions from infrastructure associated with the facility (including emissions from road construction for feedstock production and emissions from onsite backup or emergency generators used in an emergency or unplanned outage); and

(D) Emissions from the distribution of electricity to consumers.

(vii) *Alternative fates and avoided emissions.* The LCA may consider alternative fates and account for avoided emissions.

(e) *Carbon capture and sequestration.* For purposes of paragraphs (c) and (d) of this section, a greenhouse gas emissions rate for a Non-C&G Facility or C&G Facility must exclude any qualified carbon dioxide (as defined in section 45Y(c)(3)) that is produced in such facility's production of electricity, captured by the taxpayer, and pursuant to any regulations established under section 45Q(f)(2), disposed of by the taxpayer in secure geological storage, or utilized by the taxpayer in a manner described in section 45Q(f)(5) and any regulations established under such section.

(f) *Annual publication of emissions rates*—(1) *In general.* As required by section 45Y(b)(2)(C)(i), the Secretary will annually publish a table that sets forth the greenhouse gas emissions rates for types or categories of facilities (Annual Table), which a taxpayer must use for purposes of section 45Y. Except as provided in paragraph (h) of this section, a taxpayer that owns a facility that is described in the Annual Table on the first day of the taxpayer's taxable year in which the section 45Y credit or section 48E credit is determined with respect to such facility must use the Annual Table as of such date to determine an emissions rate for such facility for such taxable year.

(2) *Publication of analysis required for changes to the Annual Table.* In connection with the publication of the Annual Table, the Secretary must publish an accompanying expert analysis that addresses any types or categories of facilities added or removed from the Annual Table since its last publication. Types or categories of facilities will be added or removed from the Annual Table consistent with, for Non-C&G Facilities, a technical assessment of the fundamental energy transformation into electricity as provided in paragraph (c)(1)(ii) of this section, and, for C&G Facilities, an LCA that complies with paragraphs (d) and (e) of this section. Such expert analysis must be prepared by one or more of the National Laboratories, in consultation with other agency experts as appropriate, and must address whether the addition or removal of types or categories of facilities from the Annual Table complies with section 45Y(b)(2)(A) and (B) of the Internal Revenue Code and this section.

(g) *Provisional emissions rates*—(1) *In general.* In the case of any facility that is of a type or category for which an emissions rate has not been established by the Secretary under this paragraph (g), a taxpayer that owns such facility may file a petition with the Secretary for the determination of the emissions rate with respect to such facility (Provisional Emissions Rate or PER). A PER must be determined and obtained under the rules of this section.

(2) *Rate not established.* An emissions rate has not been established by the Secretary for a facility for purposes of section 45Y(b)(2)(C)(ii) if such facility is not described in the Annual Table. If a taxpayer's request for an emissions value pursuant to paragraph (g)(5) of this section is pending at the time such facility is or becomes described in the Annual Table, the taxpayer's request for an emissions value will be automatically denied.

(3) *Process for filing a PER petition.* To file a PER petition with the Secretary, a taxpayer must submit a PER petition by attaching it to the taxpayer's Federal income tax return or Federal

return, as appropriate, for the first taxable year in which the taxpayer claims the section 45Y credit with respect to the facility to which the PER petition applies. The PER petition must contain an emissions value, and, if applicable, the associated letter from DOE. An emissions value may be obtained from the Department of Energy (DOE) or by using an LCA model in accordance with paragraph (g)(6) of this section. An emission 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 other agency experts as appropriate, consistent with this section. A taxpayer must retain in its books and records a copy of the application and correspondence to and from DOE including a copy of the taxpayer's request to DOE for an emissions value, including any information provided by the taxpayer to DOE pursuant to the emissions value request process provided in paragraph (g)(5) of this section. Alternatively, an emissions value can be determined by the taxpayer for a facility using the most recent version of an LCA model, as of the time the PER petition is filed, that has been designated by the Secretary for such use under paragraph (g)(6) of this section. If an emissions value is determined using the most recent version of the model or models, the taxpayer is required to provide to the IRS information to support its determination in the form and manner prescribed in IRS forms or instructions or in publications or guidance published in the Internal Revenue Bulletin. *See* § 601.601 of this chapter. A taxpayer may not request an emissions value from DOE for a facility for which an emissions value can be determined by using the most recent version of an LCA model or models that have been designated by the Secretary for such use under paragraph (g)(6) of this section.

(4) *PER determination.* Upon the IRS's acceptance of the taxpayer's Federal income tax return or Federal return, as appropriate, containing a PER petition, the emissions value of the facility specified on such petition will be deemed accepted. A taxpayer may rely upon an emissions value provided by DOE for purposes of claiming a section 45Y credit, provided that any information, representations, or other data provided to DOE in support of the request for an emissions value are accurate. If applicable, a taxpayer may rely upon an emissions value determined for a facility using the most recent version of the specific LCA model or models that, as of the time the PER petition is filed, have been designated by the Secretary for such use under paragraph (g)(6) of this section, provided that any information, representations, or other data used to obtain such emissions value are accurate. The IRS's deemed acceptance of an emissions value is the Secretary's determination of the PER. However, the taxpayer must still comply with all applicable requirements for the section 45Y credit and any information, representations, or other data supporting an emissions value are subject to later examination by the IRS.

(5) *Emissions value request process.* An applicant that submits a request for an emissions value must follow the procedures specified by DOE to request and obtain such emissions value. Emissions values will be determined consistent with the rules provided in this section. An applicant may request an emissions value from DOE only after a front-end engineering and design (FEED) study or similar indication of project maturity, as determined by DOE, such as completion of a project specification and cost estimation sufficient to inform a final investment decision for the facility. DOE may decline to review applications that are not responsive, including those applications that relate to a facility described in the Annual Table (consistent with paragraph (g)(2) of this section) or a facility for which an emissions value can be determined by an LCA model designated under paragraph (g)(6) of this section (consistent with paragraph (g)(3) of this section), or applications that are incomplete. DOE will publish guidance and procedures that applicants must follow to request and obtain an emissions value from DOE. DOE's guidance and procedures will include a process for, under limited circumstances, requesting a revision to DOE's initial assessment of an emissions value based on revised technical information or facility design and operation.

(6) *LCA model for determining an emissions value for C&G Facilities.* The Secretary may designate one or more LCA models for determining an emissions value for C&G Facilities that are not described in the Annual Table. The Secretary may only designate a model under this paragraph (g)(6) if the model complies with section 45Y(b)(2)(B) and paragraphs (d) and (e) of this section. The Secretary may revoke the designation of an LCA model or models. In connection with the designation or revocation of a designation of an LCA model or models, the Secretary is required to publish an accompanying expert analysis of the model that is prepared by one or more of the National Laboratories, in consultation with other agency experts as appropriate, and such analysis must address the model's compliance with section 45Y(b)(2)(B) of the Internal Revenue Code and paragraphs (d) and (e) of this section.

(7) *Effect of PER.* A taxpayer may use a PER determined by the Secretary to determine eligibility for the section 45Y credit for the facility to which the PER applies, provided all other requirements of section 45Y are met. The Secretary's PER determination is not an examination or inspection of books of account for purposes of section 7605(b) of the Code and does not preclude or impede the IRS (under section 7605(b) or any administrative provisions adopted by the IRS) from later examining a return or inspecting books or records with respect to any taxable year for which the section 45Y credit is claimed. Further, a PER determination does not signify that the IRS has determined that the requirements of section 45Y have been satisfied for any taxable year.

(h) *Reliance on Annual Table or Provisional Emissions Rate.* Taxpayers may rely on the Annual Table in effect as of the date a facility began construction or the provisional emissions rate determined by the Secretary for the taxpayer's facility under paragraph (g)(4) of this section to determine the facility's greenhouse gas emissions rate for any taxable year that is within the 10-year period described in section 45Y(b)(1)(B), provided that the facility continues to operate as a type of facility that is described in the Annual Table or the facility's emissions value request, as applicable, for the entire taxable year.

(i) *Substantiation*—(1) *In general.* A taxpayer must maintain in its books and records documentation regarding the design, operation, and, if applicable, feedstock or fuel source used by the facility that establishes that such facility had a greenhouse gas emissions rate, as determined under this section, that is not greater than zero for the taxable year.

(2) *Sufficient substantiation.* Documentation sufficient to substantiate that a facility had a greenhouse gas emissions rate, as determined under this section, that is not greater than zero for the taxable year includes documentation or a report prepared by an unrelated party that verifies that a facility had such an emissions rate. A facility described in paragraph (c)(2) of this

section can maintain sufficient documentation to demonstrate a greenhouse gas emissions rate that is not greater than zero for the taxable year by showing that it is the type of facility described in paragraph (c)(2) of this section. The Secretary may determine that other types of facilities can sufficiently substantiate a greenhouse gas emissions rate, as determined under this section, that is not greater than zero with certain documentation and will describe such facilities and documentation in IRS forms or instructions or in publications or guidance published in the Internal Revenue Bulletin. *See* § 601.601 of this chapter.

(j) *Applicability date.* This section applies to qualified facilities placed in service after December 31, 2024, and during a taxable year ending on or after [the date of publication of the final regulations in the **Federal Register**].

■ **Par. 4.** Sections 1.48E–0 through 1.48E–5 are added to read as follows:

Sec.

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§ 1.48E–0 Table of contents.

This section lists the captions contained in §§ 1.48E–1 through 1.48E–5.

§ 1.48E–1 Clean electricity investment credit.

(a) *Overview*—(1) *In general.* For purposes of section 46 of the Code, the section 48E credit is determined under section 48E of the Code and the section 48E regulations (as defined in paragraph (a)(10) of this section). This paragraph (a) provides definitions of terms that, unless otherwise specified, apply for purposes of section 48E, the section 48E regulations, and any provision of the Code or this chapter that expressly refers to any provision of section 48E or the section 48E regulations. Paragraph (b) of this section provides rules for determining the amount of the section 48E credit for any taxable year. Paragraph (c) of this section provides rules regarding the phase-out of the section 48E credit. See § 1.48E–2 for rules relating to qualified investments in qualified facilities and energy storage technology (EST) for purposes of the section 48E credit. See § 1.48E–4 for rules of general application for the section 48E credit. See § 1.48E–5 for rules to determine greenhouse gas emissions rates for qualified facilities under section 48E.

(2) *Code.* The term *Code* means the Internal Revenue Code.

(3) *EST.* The term *EST* for purposes of the section 48E credit means energy storage technology as defined in § 1.48E–2(g).

(4) *kWh.* The term *kWh* means kilowatt hours.

(5) *Qualified facility.* The term *qualified facility* for purposes of the section 48E credit has the meaning provided in § 1.48E–2(a).

(6) *Qualified investment with respect to a qualified facility.* The term *qualified investment with respect to a qualified facility* for purposes of the section 48E credit has the meaning provided in § 1.48E–2(d).

(7) *Qualified investment with respect to EST.* The term *qualified investment with respect to EST* for purposes of the section 48E credit has the meaning provided in § 1.48E–2(g)(4).

(8) *Secretary.* The term *Secretary* means the Secretary of the Treasury or her delegate.

(9) *Section 48E credit.* The term *section 48E credit* means the clean electricity investment credit determined under section 48E of the Code and the section 48E regulations.

(10) *Section 48E regulations.* The term *section 48E regulations* means this section and §§ 1.48E–2 through 1.48E–5.

(b) *Credit amount*—(1) *In general.* For purposes of section 46 of the Code, the section 48E credit for any taxable year is an amount equal to the applicable percentage of the qualified investment for such taxable year with respect to any qualified facility and any EST.

(2) *Applicable percentage.* The term *applicable percentage* means the base rate described in paragraph (b)(3) of this section or the alternative rate described in paragraph (b)(4) of this section. The applicable percentage may be increased as provided in section 48E(a)(3)(A) and paragraph (b)(5) of this section in the case of a qualified facility that is located in an energy community. Similarly, the applicable percentage may be increased as provided in section 48E(a)(3)(B) and paragraph (b)(6) of this section in the case of a qualified facility that satisfies the domestic content requirements.

(3) *Base rate.* In the case of any qualified facility or EST that does not satisfy the requirements provided in section 48E(a)(2)(A)(ii) or (B)(ii), the term *base rate* means 6 percent.

(4) *Alternative rate.* In the case of any qualified facility or EST that satisfies the prevailing wage and apprenticeship requirements provided in section 48E(a)(2)(A)(ii) or (B)(ii), the term *alternative rate* means 30 percent.

(5) *Energy communities increase in credit rate*—(i) *In general.* In the case of any qualified facility or EST that is placed in service within an energy community (as defined in section 45(b)(11)(B)), the applicable percentage under section 48E(a)(2) and paragraph (b)(2) of this section will be increased by the applicable credit rate increase described in section 48E(a)(3)(A)(ii) and paragraph (b)(5)(ii) of this section.

(ii) *Applicable credit rate increase.* In the case of any qualified investment with respect to a qualified facility or EST to which the base rate is applicable, the applicable credit rate increase is 2 percentage points, and with respect to any qualified investment with respect to a qualified facility or EST to which the alternative rate is applicable, the applicable credit rate increase is 10 percentage points.

(6) *Domestic content increase in credit rate*—(i) *In general.* In the case of any qualified facility or EST that satisfies the requirements of section 45(b)(9)(B) (domestic content requirement), the applicable percentage under section 48E(a)(2) and paragraph (b)(2) of this section will be increased by the applicable credit rate increase described in paragraph (b)(6)(ii) of this section.

(ii) *Applicable credit rate increase.* In the case of any qualified investment with respect to a qualified facility or EST to which the base rate is applicable, 2 percentage points, and with respect to any qualified investment with respect to a qualified facility or EST to which the alternative rate is applicable, 10 percentage points.

(c) *Credit phase-out*—(1) *In general.* The amount of the credit as determined under section 48E(a) and paragraph (b) of this section for any qualified facility or EST, the construction of which begins during a calendar year described in section 48E(e)(2) and paragraph (c)(2) of this section is equal to the product of—

(i) The amount of the credit determined under section 48E(a) and paragraph (b) of this section without regard to section 48E(e) and paragraph (c) of this section, multiplied by

(ii) The phase-out percentage under section 48E(e)(2) and paragraph (c)(2) of this section.

(2) *Phase-out percentage.* The phase-out percentage under this paragraph (c)(2) is equal to—

(i) For any qualified investment with respect to any qualified facility or EST the construction of which begins during the first calendar year following the applicable year, 100 percent,

(ii) For any qualified investment with respect to any qualified facility or EST the construction of which begins during the second calendar year following the applicable year, 75 percent,

(iii) For any qualified investment with respect to any qualified facility or EST the construction of which begins during the third calendar year following the applicable year, 50 percent, and

(iv) For any qualified investment with respect to any qualified facility or EST the construction of which begins during any calendar year subsequent to the calendar year described in paragraph (c)(2)(iii) of this section, 0 percent.

(3) *Applicable year.* For purposes of this paragraph (c), the term *applicable year* has the same meaning provided under § 1.45Y–1(c)(3).

(d) *Applicability date.* This section applies to qualified facilities and ESTs placed in service after December 31, 2024, and during a taxable year ending on or after [DATE OF PUBLICATION OF THE FINAL REGULATIONS IN THE **Federal Register**].

§ 1.48E–2 Qualified investments in qualified facilities and EST for purposes of section 48E.

(a) *Qualified facility.* For purposes of the section 48E credit, the term *qualified facility* means a facility that meets all the following requirements:

(1) The facility is used for the generation of electricity;

(2) The facility is placed in service by the taxpayer after December 31, 2024; and

(3) The facility has a greenhouse gas emissions rate of not greater than zero (as determined under rules provided in § 1.45Y–5).

(b) *Property included in qualified facility*—(1) *In general.* A qualified facility includes a unit of qualified facility (as defined in paragraph (b)(2) of this section). A qualified facility also includes components of property owned by the taxpayer that are an integral part (as defined in paragraph (b)(3) of this section) of the qualified facility. Any component of property that meets the requirements of this paragraph (b) is part of a qualified facility regardless of where such component of property is located. A qualified facility does not include any electrical transmission equipment, such as transmission lines and towers, or any equipment beyond the electrical transmission stage. A qualified facility also generally does not include equipment that is an addition or modification to an existing qualified facility. However, see § 1.48E–4(b) regarding the expansion of a facility or incremental production and § 1.48E–4(c) for rules regarding a retrofitted qualified facility (80/20 Rule).

(2) *Unit of qualified facility*—(i) *In general.* For purposes of the section 48E credit, the unit of qualified facility includes all functionally interdependent components of property (as defined in paragraph (b)(2)(ii) of this section) owned by the taxpayer that are operated together and that can operate apart from other property to produce electricity. No provision of this section, § 1.48E–1, or § 1.48E–4 through 1.48E–5 uses the term *unit* in respect of a qualified facility with any meaning other than that provided in this paragraph (b)(2)(i).

(ii) *Functionally interdependent.* 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.

(3) *Integral part*—(i) *In general.* For purposes of the section 48*E* credit, a component of property owned by a taxpayer is an integral part of a qualified facility if it is used directly in the intended function of the qualified facility and is essential to the completeness of such function. Property that is an integral part of a qualified facility is part of the qualified facility. A taxpayer may not claim the section 48E credit for any property that is an integral part of the taxpayer's qualified facility that is not owned by the taxpayer.

(ii) *Power conditioning and transfer equipment.* Power conditioning equipment and transfer equipment are integral parts of a qualified facility. Power conditioning equipment includes equipment that modifies the characteristics of electricity into a form suitable for use, transmission, or distribution. Parts related to the functioning or protection of power conditioning equipment are also treated as power conditioning equipment and include, but are not limited to, switches, circuit breakers, arrestors, and hardware and software used to monitor, operate, and protect power conditioning equipment. Transfer equipment includes components of property that allow for the aggregation of electricity generated a qualified facility and components of property that alter voltage to permit electricity to be transferred to a transmission or distribution line. Transfer equipment does not include transmission or distribution lines. Examples of transfer equipment include, but are not limited to, wires, cables, and combiner boxes that conduct electricity. Parts related to the functioning or protection of transfer equipment are also treated as transfer equipment and may include items such as current transformers used for metering, electrical interrupters (such as circuit breakers, fuses, and other switches), and hardware and software used to monitor, operate, and protect transfer equipment.

(iii) *Roads.* Roads that are an integral part of a qualified facility are those roads integral to the intended function of the qualified facility such as onsite roads that are used to operate and maintain the qualified facility. Roads used primarily for access to the site, or roads used primarily for employee or visitor vehicles, are not integral to the intended function of the qualified facility, and thus are not an integral part of a qualified facility.

(iv) *Fences.* Fencing is not an integral part of a qualified facility because it is not integral to intended function of the qualified facility.

(v) *Buildings.* Generally, buildings are not integral parts of a qualified facility because they are not integral to the intended function of the qualified facility. However, the following structures are not treated as buildings for this purpose:

(A) A structure that is essentially an item of machinery or equipment; and

(B) A structure that houses components of property that is integral to the intended function of the qualified facility if the use of the structure is so closely related to the use of the housed components of property therein that the structure clearly can be expected to be replaced if the components of property it initially houses are replaced.

(vi) *Shared integral property.* Multiple qualified facilities (whether owned by one or more taxpayers), including qualified facilities with respect to which a taxpayer has claimed a credit under section 48E or another Federal income tax credit, may include shared property that may be considered an integral part of each qualified facility so long as the cost basis for the shared property is properly allocated to each qualified facility and the taxpayer only claims a section 48E credit with respect to the portion of the cost basis properly allocable to a qualified facility for which the taxpayer is claiming a section 48E credit. The total cost basis of such shared property divided among the qualified facilities may not exceed 100 percent of the cost of such shared property. In addition, a component of property that is shared by a qualified facility (as defined by section 48E(b)(3)) (48E Qualified Facility) and a qualified facility (as defined in section 45Y(b)) (45Y Qualified Facility) that is an integral part of both qualified facilities will not affect the eligibility of the 48E Qualified Facility to claim a section 48E credit or the 45Y Qualified Facility to claim the section 45Y credit.

(vii) *Examples.* This paragraph (b)(3)(vii) provides examples illustrating the rules of this paragraph (b)(3).

(A) *Example 1. Co-located qualified facilities owned by the same taxpayer that share integral property.* X constructs a solar farm (Solar Qualified Facility) and nearby also constructs a wind facility (Wind Qualified Facility) that are each a qualified facility (as defined in § 1.48E–2(a)). The Solar Qualified Facility and Wind Qualified Facility each connect to a transformer that steps up the electricity produced by each qualified facilities to electrical grid voltage before it is transmitted to the electrical grid through an intertie. X assigns 50% of the cost of the shared transformer to the Solar Qualified Facility and the Wind Qualified Facility, respectively. The fact that the Solar Qualified Facility and Wind Qualified Facility share property that is integral to both does not impact the ability of X to claim a section 48E credit for both qualified facilities. When X places the qualified facilities in service, 50% of the cost of the transformer is included in X's basis in each of the qualified facilities for purposes of computing the section 48E credit.

(B) *Example 2. Co-located qualified facilities owned by different taxpayers that share integral property.* X constructs a solar farm (Solar Qualified

Facility), and nearby Y constructs a wind facility (Wind Qualified Facility) that are each a qualified facility (as defined in § 1.48E–2(a)). The Solar Qualified Facility and the Wind Qualified Facility both connect to a transformer that steps up the electricity produced by both qualified facilities to electrical grid voltage before it is transmitted to the electrical grid through an intertie. X and Y each pay 50% of the cost of the transformer. The fact that the Solar Qualified Facility and Wind Qualified Facility share property that is integral to both does not impact the ability of X or Y to claim a section 48E credit for their respective qualified facilities. When X and Y place their respective qualified facilities in service, 50% of the cost of the transformer is included in X's and Y's basis in their respective qualified facilities for purposes of computing the section 48E credit.

(C) *Example 3. Co-located qualified facility and Energy Storage Technology owned by the same taxpayer.* X constructs a wind qualified facility (as defined in § 1.48E–2(a)) (Wind Qualified Facility) that is co-located with an EST (as defined in § 1.48E–2(g)) (Energy Storage). The Wind Qualified Facility and Energy Storage share transfer equipment that is integral to both. X assigns 50% of the cost of the shared transfer equipment to the Wind Qualified Facility and 50% of the cost to the Energy Storage. The fact that the Wind Qualified Facility and Energy Storage share property that is integral to both does not impact the ability of X to claim a section 48E credit for the Wind Qualified Facility and the Energy Storage. X may include 50% of the cost of the transfer equipment in its basis to determine a section 48E credit for the Wind Qualified Facility and the Energy Storage.

(D) *Example 4. Co-located qualified facility and Energy Storage Technology owned by different taxpayers.* X constructs a solar farm that is a qualified facility (as defined in § 1.48E–2(a)) (Solar Qualified Facility) and is co-located with an EST (as defined in § 1.48E–2(g)) (Energy Storage) owned by Y. The Solar Qualified Facility and Energy Storage share transfer equipment that is integral to both. X and Y each incur 50% of the cost of the transfer equipment. The fact that the Solar Qualified Facility and Energy Storage share property that is integral to both does not impact the ability of X to claim a section 48E credit for the Solar Qualified Facility or Y to claim a section 48E credit for the Energy Storage. When X and Y place in service the Solar Qualified Facility and Energy Storage, for purposes of computing the section 48E credit, 50% of the cost of the transfer equipment is included in X's basis in the Solar Qualified Facility and 50% of the cost is included in Y's basis in the Energy Storage.

(c) *Coordination with other credits*—(1) *In general.* The term *qualified facility* (as defined in section 48E(b)(3)) and paragraph (a) of this section does not include any facility for which a credit determined under section 45, 45J, 45Q, 45U, 45Y, 48, or 48A is allowed under section 38 of the Code for the taxable year or any prior taxable year. A taxpayer that directly owns a qualified facility (as defined in section 48E(b)(3)) that is eligible for both a section 48E credit and another Federal income tax credit is eligible for the section 48E credit only if the other Federal income tax credit was not allowed with respect to the qualified facility. Nothing in this paragraph (c) precludes a taxpayer from claiming a section 48E credit with respect to a qualified facility (as defined in section 48E(b)(3)) that is co-located with another facility for which a credit determined under section 45, 45J, 45Q, 45U, 45Y, 48, or 48A is allowed under section 38 of the Code for the taxable year or any prior taxable year.

(2) *Allowed.* For purposes of paragraph (c)(1) of this section, the term *allowed* only includes credits that taxpayers have claimed on a Federal income tax return or Federal return, as appropriate, and that the Internal Revenue Service (IRS) has not challenged in terms of the taxpayer's eligibility.

(3) *Examples.* This paragraph (c)(3) provides examples illustrating the rules provided in this paragraph (c).

(i) *Example 1. Taxpayer claims a section 45Y credit on a solar farm and section 48E credit on co-located Energy Storage Technology.* X owns a solar farm that is a qualifying facility (as defined in § 1.45Y–2(a)) (45Y Solar Qualified Facility), and a co-located EST (as defined in § 1.48E–2(g)) (Energy Storage). The Energy Storage is not part of the 45Y Solar Qualified Facility, and therefore X may claim the section 45Y credit based on the kWh of electricity produced by the 45Y Solar Qualified Facility, and X may also claim the section 48E credit based on its qualified investment in the Energy Storage.

(ii) *Example 2. Different taxpayers claim section 45Y credit for a solar farm and a co-located Energy Storage Technology.* X owns a solar farm that is a qualifying facility (as defined in § 1.45Y–2(a)) (45Y Solar Qualified Facility), and Y owns a co-located EST (as defined in § 1.48E–2(g)) (Energy Storage). The Energy Storage is not part of the 45Y Solar Qualified Facility, and therefore, X may claim the section 45Y credit based on the kWh of electricity produced by the 45Y Solar Qualified Facility, and Y may claim the section 48E credit based on its qualified investment in the Energy Storage.

(iii) *Example 3. Taxpayer claiming a section 48E credit; another credit is not allowed.* X owns a wind facility that satisfies the requirements of a qualified facility (as defined in § 1.48E–2(a)) under section 48E as well as the requirements of a qualified facility (as defined in § 1.45Y–2(a)) under section 45Y. X claims a section 48E credit with respect to the wind facility. While a credit may be available with regard to the wind facility under section 45Y, because X claimed a section 48E credit with respect to the wind facility, a section 45Y credit is not allowed.

(d) *Qualified investment with respect to a qualified facility.* For purposes of the section 48E credit, the qualified investment with respect to any qualified facility for any taxable year is the sum of the following—

(1) The basis of any qualified property (as defined in paragraph (e)(1) of this section) placed in service by the taxpayer during such taxable year that is part of a qualified facility (as defined in paragraph (a) of this section); and

(2) The amount of any expenditures paid or incurred by the taxpayer for qualified interconnection property (as defined in § 1.48E–4(a)(2)).

(e) *Qualified property*—(1) *In general.* For purposes of this paragraph (e), the term *qualified property* means property that meets all the following requirements:

(i) The property is tangible personal property (as defined in paragraph (f)(1) of this section) or other tangible property (not including a building or its structural components) (as defined in paragraph (f)(2) of this section), but only if such other tangible property is used as an integral part of the qualified facility;

(ii) Depreciation (or amortization in lieu of depreciation) is allowable (as defined paragraph (f)(6) of this section) with respect to the property; and

(iii) Either—

(A) The construction, reconstruction, or erection of the property is completed by the taxpayer (as defined in paragraph (f)(3) of this section); or

(B) The taxpayer acquires the property (as defined in paragraph (f)(4) of this section) if the original use of the property (as defined paragraph (f)(5) of this section) commences with the taxpayer.

(2) *Location of qualified property.* Any component of a qualified property

that meets the requirements of paragraph (e) of this section is part of a qualified facility regardless of where such component of property is located.

(f) *Definitions related to requirements for qualified property.* For purposes of section 48E and paragraph (b) of this section, the definitions of this paragraph (f) apply:

(1) *Tangible personal property.* The term *tangible personal property* means any tangible property except land and improvements thereto, such as buildings or other inherently permanent structures (including items that are structural components of such buildings or structures). Tangible personal property includes all property (other than structural components) that is contained in or attached to a building. Further, all property that is in the nature of machinery (other than structural components of a building or other inherently permanent structure) is considered tangible personal property even though located outside a building. Local law is not controlling for purposes of determining whether property is or is not tangible property or tangible personal property. Thus, tangible property may be personal property for purposes of the energy credit even though under local law the property is considered a fixture and therefore real property.

(2) *Other tangible property.* The term *other tangible property* means tangible property other than tangible personal property (not including a building and its structural components), that is used as an integral part of furnishing electricity by a person engaged in a trade or business of furnishing any such service.

(3) *Construction, reconstruction, or erection of qualified property.* The term *construction, reconstruction, or erection of qualified property* means work performed to construct, reconstruct, or erect qualified property either by the taxpayer or for the taxpayer in accordance with the taxpayer's specifications.

(4) *Acquisition of qualified property.* The term *acquisition of qualified property* means a transaction by which a taxpayer obtains rights and obligations with respect to qualified property including—

(i) Title to the qualified property under the law of the jurisdiction in which the qualified property is placed in service, unless the qualified property is possessed or controlled by the taxpayer as a lessee, and

(ii) Physical possession or control of the qualified property.

(5) *Original use of qualified property*—(i) *In general.* The term *original use of qualified property* means the first use to which the unit of qualified property is put, whether or not such use is by the taxpayer.

(ii) *Retrofitted qualified facility.* A retrofitted qualified facility acquired by the taxpayer will not be treated as being put to original use by the taxpayer unless the rules in § 1.48E–4(c) regarding retrofitted qualified facilities (80/20 Rule) apply. The question of whether a qualified facility meets the 80/20 Rule is a facts and circumstances determination.

(6) *Depreciation allowable*—(i) *In general.* For purposes of applying paragraph (b) of this section, depreciation (or amortization in lieu of depreciation) is allowable with respect to qualified property (as defined in paragraph (e) of this section) if such property is of a character subject to the allowance for depreciation under section 167 of the Code and the basis or cost of such property is recovered using a method of depreciation (for example, the straight line method), which includes any additional first year depreciation deduction method of depreciation (for example, under section 168(k) of the Code). Further, if an adjustment with respect to the Federal income tax or Federal return, as appropriate, for such taxable year requires the basis or cost of such qualified property to be recovered using a method of depreciation, depreciation is allowable to the taxpayer with respect to the qualified property.

(ii) *Exclusions from allowable.* For purposes of paragraph (b) of this section, depreciation is not allowable with respect to a qualified facility if the basis or cost of such qualified facility is not recovered through a method of depreciation but, instead, such basis or cost is recovered through a deduction of the full basis or cost of the qualified facility in one taxable year (for example, under section 179 of the Code).

(7) *Placed in service*—(i) *In general.* A qualified facility is considered placed in service in the earlier of:

(A) The taxable year in which, under the taxpayer's depreciation practice, the period for depreciation with respect to such qualified facility begins; or

(B) The taxable year in which the qualified facility is placed in a condition or state of readiness and availability to produce electricity, whether in a trade or business or in the production of income. A qualified facility in a condition or state of readiness and availability to produce electricity includes, but is not limited to, components of property that are acquired and set aside during the taxable year for use as replacements for a particular qualified facility (or facilities) in order to avoid operational time loss and equipment that is acquired for a specifically assigned function and is operational but is undergoing testing to eliminate any defects. However, components of property acquired to be used in the construction of a qualified facility are not considered in a condition or state of readiness and availability for a specifically assigned function.

(ii) *Qualified facility subject to § 1.48–4 election to treat lessee as purchaser.* Notwithstanding paragraph (f)(7)(i) of this section, a qualified facility with respect to which an election is made under section 50(d)(5) of the Code and § 1.48–4 to treat the lessee as having purchased such qualified facility is considered placed in service by the lessor in the taxable year in which possession is transferred to such lessee.

(8) *Claim.* With respect to a section 48E credit determined with respect to a qualified facility of a taxpayer, the term *claim* means filing a completed Form 3468, Investment Credit, or any successor form(s), with the taxpayer's timely filed (including extensions) Federal income tax return or Federal return, as appropriate, for the taxable year in which the qualified facility is placed in service, and includes making an election under section 6417 or 6418 of the Code and corresponding regulations with respect to such section 48E credit and made on the taxpayer's filed return.

(g) *EST*—(1) *Property included in EST.* An EST includes a unit of energy storage technology (unit of EST) (as defined in paragraph (g)(2) of this section) that meets the requirements of paragraph (g)(2)(ii) of this section. An EST also includes property owned by the taxpayer that is an integral part (as defined in paragraph (g)(3) of this section) of the EST. An EST does not include equipment that is an addition or modification to an existing EST. For purposes of the section 48E credit, EST includes electrical energy storage property (as described in paragraph (g)(6)(i) of this section), thermal energy storage property (as described in paragraph (g)(6)(ii) of this section), and hydrogen energy storage property (as described in paragraph (g)(6)(iii) of this section).

(2) *Unit of EST*—(i) *In general.* For purposes of the section 48E credit, a unit of EST includes all functionally interdependent components of property (as defined in paragraph (g)(2)(ii) of this section) owned by the taxpayer that are operated together and that can operate apart from other property to perform the intended function of the EST. No

provision of this section, § 1.48E–1, or § 1.48E–4 through 1.48E–5 uses the term *unit* in respect of an EST with any meaning other than that provided in this paragraph (g)(2)(i).

(ii) *Functionally interdependent.* 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 perform the intended function of the EST.

(3) *Integral part.* For purposes of the section 48*E* credit, property owned by a taxpayer is an integral part of an EST owned by the same taxpayer if it is used directly in the intended function of the EST and is essential to the completeness of such function. Property that is an integral part of an EST is part of an EST. A taxpayer may not claim the section 48E credit for any property that is an integral part of the taxpayer's EST that is not owned by the taxpayer.

(4) *Qualified investment with respect to EST.* The qualified investment with respect to any EST for any taxable year is the basis of any EST placed in service by the taxpayer during such taxable year.

(5) *Placed in service*—(i) *In general.* An EST is considered placed in service in the earlier of:

(A) The taxable year in which, under the taxpayer's depreciation practice, the period for depreciation with respect to such EST begins; or

(B) The taxable year in which the EST is placed in a condition or state of readiness and availability for the intended function of the EST, whether in a trade or business or in the production of income. An EST in a condition or state of readiness and availability for its intended function includes, but is not limited to, components of property that are acquired and set aside during the taxable year for use as replacements for a particular EST (or ESTs) in order to avoid operational time loss and equipment that is acquired for a specifically assigned function and is operational but is undergoing testing to eliminate any defects. However, components of property acquired to be used in the construction of an EST are not considered in a condition or state of readiness and availability for a specifically assigned function.

(ii) *EST subject to § 1.48–4 election to treat lessee as purchaser.* Notwithstanding paragraph (g)(5)(i) of this section, EST with respect to which an election is made under section 50(d)(5) of the Code and § 1.48–4 to treat the lessee as having purchased such EST is considered placed in service by the lessor in the taxable year in which possession is transferred to such lessee.

(6) *Types of EST*—(i) *Electrical energy storage property.* Electrical energy storage property is property (other than property primarily used in the transportation of goods or individuals and not for the production of electricity) that receives, stores, and delivers energy for conversion to electricity, and has a nameplate capacity of not less than 5 kWh. For example, subject to the exclusion for property primarily used in the transportation of goods or individuals, electrical energy storage property includes but is not limited to rechargeable electrochemical batteries of all types (such as lithium-ion, vanadium redox flow, sodium sulfur, and lead-acid); ultracapacitors; physical storage such as pumped storage hydropower, compressed air storage, flywheels; and reversible fuel cells.

(ii) *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 includes equipment and materials, and parts related to the functioning of such equipment, to store thermal energy for later use to heat or cool, or to provide hot water for use in heating a residential or commercial building. It does not include a swimming pool, combined heat and power system property (as defined in section 45Y(g)(2)), or a building or its structural components. For example, thermal energy storage includes, but is not limited to, thermal ice storage systems that use electricity to run a refrigeration cycle to produce ice that is later connected to the HVAC system as an exchange medium for air conditioning a building, heat pump systems that store thermal energy in an underground tank or borehole field to be extracted for later use for heating and/or cooling, and electric furnaces that use electricity to heat bricks to high temperatures and later use this stored energy to heat a building through the HVAC system.

(iii) *Hydrogen energy storage property.* Hydrogen energy storage property is property (other than property primarily used in the transportation of goods or individuals and not 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. Hydrogen energy storage property must store hydrogen that is solely used as energy and not for other purposes such as for the production of end products such as fertilizer. For example, hydrogen energy storage property includes, but is not limited to, a hydrogen compressor and associated storage tank and an underground storage facility and associated compressors.

(7) *Modification of EST.* With respect to an electrical energy storage property or a hydrogen energy storage property, modified as set forth in this paragraph (g)(7), such property will be treated as an electrical energy storage property (as described in paragraph (g)(6)(i) of this section) or a hydrogen energy storage property (as described in paragraph (g)(6)(iii) of this section), except that the basis of any existing electrical energy storage property or hydrogen energy storage property prior to such modification is not taken into account for purposes of this paragraph (g)(7) and section 48E. This paragraph (g)(7) applies to any electrical energy storage property and hydrogen energy storage property that either:

(i) Was placed in service before August 16, 2022, and would be described in section 48(c)(6)(A)(i), except that such property had a capacity of less than 5 kWh and is modified in a manner that such property (after such modification) has a nameplate capacity of not less than 5 kWh; or

(ii) Is described in section 48(c)(6)(A)(i) and is modified in a manner that such property (after such modification) has an increase in nameplate capacity of not less than 5 kWh.

(8) *Claim.* With respect to a section 48E credit determined with respect to an EST of a taxpayer, the term *claim* means filing a completed Form 3468, Investment Credit, or any successor form(s), with the taxpayer's timely filed (including extensions) Federal income tax return or Federal return, as appropriate, for the taxable year in which the EST is placed in service, and includes making an election under section 6417 or 6418 of the Code and corresponding regulations with respect to such section 48E credit and made on the taxpayer's filed return.

(h) *Applicability date.* This section applies to qualified facilities and EST placed in service after December 31, 2024, and during a taxable year ending on or after [DATE OF PUBLICATION OF THE FINAL REGULATIONS IN THE **FEDERAL REGISTER**].

§ 1.48E–3 [Reserved]

§ 1.48E–4 Rules of general application.

(a) *Rules for certain lower-output qualified facilities to include qualified interconnection costs in the basis of associated qualified facility*—(1) *In general.* For purposes of determining the section 48E credit, the qualified investment with respect to a qualified facility (as defined in § 1.48E–2(a)) includes amounts paid or incurred by the taxpayer for qualified interconnection property (as defined in paragraph (a)(2) of this section), in connection with a qualified facility (as defined in § 1.48E–2(a)) that has a maximum net output of not greater than 5 MW (as measured in alternating current) as described in paragraph (a)(3) of this section (Five-Megawatt Limitation). The qualified interconnection property must provide for the transmission or distribution of the electricity produced by a qualified facility and must be properly chargeable to the capital account of the taxpayer as reduced by paragraph (a)(6) of this section.

(2) *Qualified interconnection property.* For purposes of this paragraph (a), the term *qualified interconnection property* means, with respect to a qualified facility, any tangible property 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 qualified facility interconnects to such transmission or distribution system in order to accommodate such interconnection; is either constructed, reconstructed, or erected by the taxpayer (as defined in § 1.48E–2(f)(3)), or for which the cost with respect to the construction, reconstruction, or erection of such property is paid or incurred by such taxpayer; and the original use (as defined in § 1.48E–2(f)(5)) of which, pursuant to an interconnection agreement (as defined in paragraph (a)(4) of this section), commences with a utility (as defined in paragraph (a)(5) of this section). Qualified interconnection property is not part of a qualified facility. As a result, qualified interconnection property is not taken into account in determining whether a qualified facility satisfies the requirements for the increase in credit rate for energy communities provided in section 48E(a)(3)(A) or for the increase in credit rate for domestic content referenced in section 48E(a)(3)(B) (by reference to rules similar to the rules of section 48(a)(12)).

(3) *Five-Megawatt Limitation*—(i) *In general.* For purposes of this paragraph (a), the Five-Megawatt Limitation is measured at the level of the qualified facility in accordance with section 48E(b)(1)(B). The maximum net output of a qualified facility is measured only by nameplate generating capacity of the unit of qualified facility, which does not include the nameplate capacity of any integral property, at the time the qualified facility is placed in service. The nameplate generating capacity of the unit of qualified facility is measured independently from any other qualified facilities that share the same integral property.

(ii) *Nameplate capacity for purposes of the Five-Megawatt Limitation.* The determination of whether a qualified facility has a maximum net output of not greater than 5 MW (as measured in alternating current) is based on the nameplate capacity of the unit of qualified facility. The nameplate capacity for purposes of the Five-Megawatt Limitation is the maximum electrical generating output in megawatts that the unit of 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 should use the International Standard Organization (ISO) conditions to measure the maximum electrical generating output of a unit of qualified facility.

(4) *Interconnection agreement.* For purposes of this paragraph (a), the term *interconnection agreement* means an agreement with a utility for the purposes of interconnecting the qualified facility owned by such taxpayer to the transmission or distribution system of the utility.

(5) *Utility.* For purposes of this paragraph (a), the term *utility* means the owner or operator of an electrical transmission or distribution system that is subject to the regulatory authority of a State or political subdivision thereof, any agency or instrumentality of the United States, a public service or public utility commission or other similar body of any State or political subdivision thereof, or the governing or ratemaking body of an electric cooperative.

(6) *Reduction to amounts chargeable to capital account.* For purposes of this paragraph (a), in the case of expenses paid or incurred for qualified interconnection property (as defined in paragraph (a)(2) of this section), amounts otherwise chargeable to capital account with respect to such expenses must be reduced under rules similar to the rules of section 50(c) of the Code, specifically the rules under section 50(c)(3). In addition, the taxpayer must pay or incur the interconnection property costs; therefore, any reimbursement, including by a utility, must be accounted for by reducing the taxpayer's expenditure to determine eligible costs.

(7) *Examples.* This paragraph (a)(7) provides examples illustrating the rules of this paragraph (a).

(i) *Example 1. Application of Five-Megawatt Limitation to an interconnection agreement for qualified facilities owned by taxpayer.* X places in service two solar qualified facilities (48E Facilities) each with a maximum net output of 5 MW (as measured in alternating current). The two 48E Facilities each have their own inverter, which is integral property to each facility, and share a step-up transformer, which is integral property to both facilities. As part of the development of the 48E Facilities, interconnection costs are required by the utility to modify and upgrade the transmission system at or beyond the common intertie to the utility's transmission system to accommodate the interconnection. X has an interconnection agreement with the utility that allows for a maximum output of 10 MW (as measured in alternating current). The interconnection agreement provides the total cost of the qualified interconnection property. X may include the costs paid or incurred by X, respectively, for qualified interconnection property subject to the terms of the interconnection agreement, to calculate X's section 48E credit for each of the 48E Facilities because each qualified facility has a maximum net output of not greater than 5 MW.

(ii) *Example 2. Application of Five-Megawatt Limitation to an interconnection agreement for qualified facilities owned by separate taxpayers.* X places in service a solar farm that is a qualified facility (as defined in § 1.48E–2(a)) (Solar Qualified Facility) with a maximum net output of 5 MW (as measured in alternating current). The Solar Qualified Facility includes an inverter, which is integral property. Y places in service a wind facility (as defined in § 1.48E–2(a)) (Wind Qualified Facility), with a maximum net output of 5 MW (as measured in alternating current). The Solar Qualified Facility and the Wind Qualified Facility share a step-up transformer, which is integral to both facilities. As part of the development of the Solar Qualified Facility and Wind Qualified Facility, interconnection costs are required by the utility to modify and upgrade the transmission system at or beyond the common intertie to the utility's

transmission system to accommodate the interconnection. X and Y are party to the same interconnection agreement with the utility that allows for a maximum output of 10 MW (as measured in alternating current). The interconnection agreement provides the total cost of the qualified interconnection property. X and Y may include the costs paid or incurred by X and Y, respectively, for qualified interconnection property subject to the terms of the interconnection agreement, to calculate their respective section 48E credits for the Solar Qualified Facility and the Wind Qualified Facility because each has a maximum net output of not greater than 5 MW.

(b) *Expansion of facility; Incremental production*—(1) *In general.* Solely for purposes of this paragraph (b), 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 described in section 48E(b)(3)(A) (without regard to clause (ii) of such paragraph), which was placed in service before January 1, 2025, but only to the extent of the increased amount of electricity produced at the facility by reason of such new unit or addition of capacity. A new unit or an addition of capacity that meets the requirements of this paragraph (b) will be treated as a separate qualified facility. For purposes of this paragraph (b), a new unit or an addition of capacity requires the addition or replacement of qualified property (as defined in § 1.48E–2(e)), including any new or replacement integral property added to a facility necessary to increase capacity. If applicable for purposes of this paragraph (b), taxpayers must use modified or amended facility operating licenses or the International Standard Organization (ISO) conditions to measure the maximum electrical generating output of a facility to determine nameplate capacity. For purposes of assessing the One-Megawatt Exception in section 48E(a)(2)(A)(ii)(I), the capacity for a new unit or an addition of capacity is the sum of the nameplate capacity of the added qualified facility and the nameplate capacity of the facility to which the qualified facility was added.

(2) *Special rule for restarted facilities.* Solely for purposes of this paragraph (b), a facility that is decommissioned or in the process of decommissioning and restarts can be considered to have increased capacity if the following conditions are met:

(i) The existing facility must have ceased operations;

(ii) The existing facility must have a shutdown period of at least one calendar year during which it is without a valid operating license from its respective Federal regulatory authority (that is, the Federal Energy Regulatory Commission (FERC) or the Nuclear Regulatory Commission (NRC)); and

(iii) The increased capacity of the restarted facility must have a new, reinstated, or renewed operating license issued by either FERC or NRC.

(3) *Computation of qualified investment for a new unit or an addition of capacity*—(i) *New unit.* For purposes of this paragraph (b), the term *new unit* means components of property including any new or replacement integral property added to a facility necessary to increase the capacity of the facility but do not replace the existing capacity of the facility. The taxpayer's qualified investment in the new unit during the taxable year that results in an increase in capacity is eligible for the section 48E credit.

(ii) *Addition of capacity.* For purposes of this paragraph (b), the term *addition of capacity* means components of property, including any new or replacement integral property added to a facility necessary to increase the capacity of the facility by replacing, in whole or in part, the existing capacity of the facility. To determine a taxpayer's qualified investment during the taxable year that resulted in an increased capacity of a facility by reason of an addition of capacity (not described in paragraph (b)(3)(i) of this section), a taxpayer must multiply its total qualified investment during the taxable year with respect to the facility, by a fraction, the numerator of which is the increase in nameplate capacity that results from the addition of capacity, and the denominator of which is the total nameplate capacity associated with the components of property that result in the addition of capacity.

(4) *Examples.* This paragraph (b)(4) provides examples illustrating the rules of this paragraph (b).

(i) *Example 1. New Unit.* X owns a hydropower facility (Facility H) that was originally placed in service in 2020, with a nameplate capacity of 600 megawatts. During taxable years 2020 through 2024, X claimed a section 45 credit for the electricity produced by Facility H. On July 1, 2025, X places in service components of property comprising a new unit that results in Facility H having an increased nameplate capacity of 900 megawatts in 2025. For purposes of this paragraph (b), this new unit will be treated as a separate facility (Facility J). X determines the amount of its section 48E credit based on the amount of its qualified investment in Facility J. Even though X claimed a section 45 credit for the existing electricity capacity of Facility H in taxable years 2020 through 2024, X can claim a section 48E credit for its qualified investment in Facility J. X may also continue to claim the section 45 credit through taxable year 2030 for electricity generated by Facility H (excluding the incremental electricity generation related to Facility J).

(ii) *Example 2. Addition of Capacity.* Y owns a nuclear facility (Facility N) that was originally placed in service on January 1, 2000, with a nameplate capacity of 800 megawatts. Y claimed a section 45U credit in taxable years 2024 and 2025 for the electricity generated by Facility N. On January 15, 2026, Y removed components of property with a nameplate capacity of 200 megawatts and placed in service components of property with a nameplate capacity of 300 megawatts at Facility N. For purposes of this paragraph (b), Facility N's addition of capacity is treated as a new separate qualified facility placed in service on January 15, 2026 (Facility P). Y determines the amount of its section 48E credit based on the amount of its qualified investment in Facility P, which is determined by multiplying Y's qualified investment with respect to the addition of capacity by one-third (equal to the 100-megawatt increase in nameplate capacity divided by the 300 megawatt nameplate capacity associated with the new components of property that result in the addition of capacity). Even though Y claimed a section 45U credit in taxable years 2024 and 2025 for the existing capacity of Facility N, Y can claim a section 48E credit for its investment in the addition of capacity associated with Facility P. Y may also continue to claim the section 45U credit through taxable year 2032 for electricity generated by Facility N (excluding the incremental electricity generation related to Facility P).

(c) *Retrofit of an existing facility (80/20 Rule)*—(1) *In general.* For purposes of section 48E(b)(3)(A)(ii), a retrofitted qualified facility may qualify as originally placed in service even if it contains some used components of property within the unit of qualified facility, provided that the fair market value of the used components of the unit of qualified facility is not more than 20 percent of the total value of the unit of qualified facility (that is, the cost of the new components of property plus the value of the used components of property within the unit of qualified facility) (80/20 Rule).

(2) *Expenditures taken into account.* Notwithstanding the rule provided in

paragraph (c)(1) of this section, only expenditures paid or incurred that relate to the new components of the unit of qualified facility are taken into account for purposes of computing the credit determined under section 48E with respect to the qualified facility.

(3) *Cost of new components.* For purposes of this 80/20 Rule, the cost of new components of the unit of qualified facility includes all costs properly included in the depreciable basis of the new components of the unit of qualified facility.

(4) *New costs.* If the taxpayer satisfies the 80/20 Rule with regard to the unit of qualified facility and the taxpayer pays or incurs new costs for property that is an integral part of the qualified facility (as defined in § 1.48E–2(a)), the taxpayer may include these new costs paid or incurred for property that is an integral part of the qualified facility in the basis of the qualified facility for purposes of the section 48E credit.

(5) *Excluded costs.* Costs incurred for new components of property added to used components of a unit of qualified facility may not be taken into account for purposes of the section 48E credit unless the taxpayer satisfies the 80/20 Rule by placing in service a unit of qualified facility for which the fair market value of the used components of property is not more than 20 percent of the total value of the unit of qualified facility taking into account the cost of the new components of property plus the value of the used components of property.

(6) *Examples.* The following examples illustrate the rules of this paragraph (c).

(i) *Example 1. Retrofitted facility that satisfies the 80/20 Rule.* A owns an existing wind facility. On February 1, 2026, A replaces used components of the wind facility with new components at a cost of $2 million. The fair market value of the remaining original components of the wind facility is $400,000, which is not more than 20 percent of the retrofitted facility's total fair market value of $2.4 million (the cost of the new components ($2 million) + the fair market value of the remaining original components ($400,000)). Thus, the retrofitted wind facility will be considered newly placed in service for purposes of section 48E, assuming all the other requirements of section 48E are met, and A will be able to claim a section 48E credit based on its investment in 2026 ($2 million).

(ii) *Example 2. Retrofit of an existing facility that meets the 80/20 Rule.* Facility Z, a facility that was originally placed in service on January 1, 2026, was not a qualified facility (as defined in § 1.48E–2(a)) when it was placed in service because it did not meet the greenhouse gas emission rate requirements (as determined under rules provided in § 1.48E–5). On January 1, 2027, Facility Z was retrofitted and now meets the requirements to be a qualified facility (as defined in § 1.48E–2(a)). After the retrofit, the cost of the new property included in Facility Z is greater than 80 percent of Facility Z's total fair market value. Because Facility Z meets the 80/20 Rule, Facility Z is deemed to be originally placed in service on January 1, 2027. Assuming all the other requirements of section 48E are met, Z may claim a section 48E credit based on its investment in the new components used to retrofit the existing facility in 2027.

(iii) *Example 3. Retrofitted nuclear facility that satisfied the 80/20 Rule.* T owns a nuclear facility (Facility N) that was originally placed in service on March 1, 1982, and was decommissioned on September 20, 2010. T replaces used components of property at Facility N with new components at a cost of $200 million, and then places in Facility N in service on July 15, 2026. The fair market value of the remaining original components of Facility N, after being decommissioned and prior to restart, is $30 million, which is not more than 20 percent of Facility N's total fair market value of $230 million (the cost of the new components ($200 million) + the fair market value of the remaining original components ($30 million)). Thus, assuming all the other requirements of section 48E are met, Facility N will be considered newly placed in service on July 15, 2026, for purposes of section 48E, and T will be able to claim a section 48E credit based on its investment in the new components ($200 million).

(iv) *Example 4. Capital improvements to an existing qualified facility that do not satisfy the 80/20 Rule.* X owns an existing facility, Facility C, that was originally placed in service on January 1, 2023. X makes capital improvements to Facility C that are placed in service on June 6, 2026. The cost of the capital improvements total $500,000 and the fair market value of Facility C after the improvements is $2 million. The fair market value of the old components of Facility C is $1,500,000 or 75 percent of the total fair market value of the Facility C after the improvements. Because the fair market value of the new property included in Facility C is less than 80 percent of Facility C's total fair market value, Facility C does not meet the 80/20 Rule. Facility C will not be considered a qualified facility (as defined in § 1.48E–2(a)) eligible for the section 48E credit.

(d) *Special rules regarding ownership*—(1) *Qualified investment with respect to a qualified facility or EST.* For purposes of this paragraph (d), a taxpayer that owns a qualified investment with respect to a qualified facility or EST is eligible for the section 48E credit only to the extent of the taxpayer's eligible investment in the qualified facility or EST. In the case of multiple taxpayers holding direct ownership through their qualified investments in a single qualified facility or EST (and such arrangement is not treated as a partnership for Federal income tax purposes), each taxpayer determines its eligible investment based on its fractional ownership interest in the qualified facility or EST.

(2) *Multiple owners.* A taxpayer must directly own at least a fractional interest in the entire unit of qualified facility (as defined in § 1.48E–2(b)(2)) or unit of EST (as defined in § 1.48E–2(g)(2)) for a section 48E credit to be determined with respect to such taxpayer's interest. No section 48E credit may be determined with respect to a taxpayer's ownership of one or more separate components of a qualified facility or an EST if the components do not constitute a unit of qualified facility (as defined in § 1.48E–2(b)(2)) or unit of EST (as defined in § 1.48E–2(g)(2)). However, the use of property owned by one taxpayer that is an integral part of a qualified facility or EST owned by another taxpayer will not prevent a section 48E credit from being determined with respect to the second taxpayer's qualified investment in a qualified facility or EST. See § 1.48E–2(b)(3)(vi) for rules regarding shared integral property.

(3) *Section 761(a) election.* If a qualified facility or EST is owned through an unincorporated organization that has made a valid election under section 761(a) of the Code, each member's undivided ownership share in the qualified facility or EST will be treated as a separate qualified facility or EST owned by such member.

(4) *Related taxpayers*—(i) *Definition.* For purposes of the section 48E credit, the term *related taxpayers* means members of a group of trades or businesses that are under common control (as defined in § 1.52–1(b)).

(ii) *Related taxpayer rule.* For purposes of the section 48E credit, related taxpayers are treated as one taxpayer in determining whether a taxpayer has made an investment in a qualified facility or EST with respect to which a section 48E credit may be determined.

(5) *Examples.* The following examples illustrate the rules in this paragraph (d). In each example, X and Y are unrelated taxpayers.

(i) *Example 1. Fractional ownership required to satisfy section 48E.* X and Y each own a direct fractional ownership interest in an entire qualified facility (as defined in § 1.48E–2(a)) and as a result, a section 48E credit may be determined with respect to X's and Y's qualified investment in their fractional ownership interests in the qualified facility.

(ii) *Example 2. Ownership of separate components of property that are part of a qualified facility.* X and Y each own separate components of a qualified facility, which taken together would constitute a unit of qualified facility but taken separately would not constitute a unit of qualified facility. X owns component A and Y owns component B. No section 48E credit may be determined with respect to either component A or component B because X and Y each owns a separate component of a qualified facility that does not constitute a unit of qualified facility (as defined in § 1.48E–2(b)(2)).

(iii) *Example 3. Separate ownership of property that is an integral part of separate qualified facilities.* X owns a solar farm that is a qualified facility (as defined in § 1.48E–2(a)) (Solar Qualified Facility), which includes property that is an integral part of the Solar Qualified Facility, specifically a transformer in which the electricity is stepped up to electrical grid voltage before being transmitted to the electrical grid through an intertie. Y owns a wind facility that is a qualified facility (as defined in § 1.48E–2(a)) (Wind Qualified Facility) that connects to X's transformer. Because Y does not hold an ownership interest in the transformer, Y may compute its section 48E credit for the Wind Qualified Facility, but it may not include any costs relating to the transformer in its section 48E credit base.

(e) *Coordination rule for section 42 credits and section 48E credits.* As provided under section 50(c)(3)(C) of the Code, in the case of a taxpayer determining eligible basis for purposes of calculating a credit under section 42 of the Code (section 42 credit), a taxpayer is not required to reduce its basis in a qualified facility or EST by the amount of the section 48E credit determined with respect to the taxpayer's qualified investment with respect to such qualified facility or EST. The qualified investment with respect to a qualified facility or EST property may be used to determine a section 48E credit and may also be included in eligible basis to determine a section 42 credit. See paragraph (d) of this section for special rules regarding ownership.

(f) *Recapture*—(1) *In general.* The credit calculated under section 48E(a) and § 1.48E–1(b) is subject to general recapture rules under section 50(a). Additionally, section 48E(g) provides for recapture for any qualified facility for which a taxpayer claimed a section 48E credit that has a greenhouse gas emissions rate (as determined under rules provided in § 1.45Y–5) of greater than 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).

(2) *Recapture event*—(i) *In general.* Any event that results in a qualified facility having a greenhouse gas emissions rate (as determined under rules provided in § 1.45Y–5) of greater than 10 grams of CO_2e per kWh during the five-year period is a recapture event. If a qualified facility's greenhouse gas emissions rate exceeds 10 grams of CO_2e per kWh, the section 48E credit is subject to recapture.

(ii) *Changes to the Annual Table.* A change to the greenhouse gas emissions rate for a type or category of facility that is published in the Annual Table (as defined in 1.45Y–5(f)) after a facility is placed in service does not result in a recapture event.

(iii) *Yearly Determination.* (A) *In general.* A determination of whether a recapture event occurred under paragraph (f)(2) of this section must be made for each taxable year (or portion thereof) occurring within the five-year recapture period, beginning with the taxable year ending after the date the qualified facility is placed in service. Thus, for each taxable year that begins or ends within the five-year recapture period, the taxpayer must determine, for any qualified facility for which it has claimed the section 48E credit, whether such facility has maintained a greenhouse gas emissions rate of not greater than 10 grams of CO_2e per kWh.

(B) *Annual Reporting Requirement.* A taxpayer that has claimed the section 48E credit amount under § 1.48E–1(b) or transferred a specified credit portion under section 6418 of the Code is required to provide to the IRS information on the greenhouse gas emissions rate of the qualified facility during the recapture period at the time and in the form and manner prescribed in IRS forms or instructions or in publications or guidance published in the Internal Revenue Bulletin. See § 601.601 of this chapter.

(iv) *Carryback and carryforward adjustments.* In the case of any recapture event described in paragraph (f)(2) of this section, the carrybacks and carryforwards under section 39 of the Code must be adjusted by reason of such recapture event.

(3) *Recapture Amount*—(i) *In general.* If a recapture event occurred as described in paragraph (f)(2) of this section, the tax under chapter 1 of the Code for the taxable year in which the recapture event occurs is increased by an amount equal to the applicable recapture percentage multiplied by the credit amount that was claimed by the taxpayer under § 1.48E–1(b).

(ii) *Applicable recapture percentage.* If the recapture event occurs:

(A) Within one full year after the property is placed in service, the recapture percentage is 100;

(B) Within one full year after the close of the period described in paragraph (f)(3)(ii)(A) of this section, the recapture percentage is 80;

(C) Within one full year after the close of the period described in paragraph (f)(3)(ii)(B) of this section, the recapture percentage is 60;

(D) Within one full year after the close of the period described in paragraph (f)(3)(ii)(C) of this section, the recapture percentage is 40;

(E) Within one full year after the close of the period described in paragraph (f)(3)(ii)(D) of this section, the recapture percentage is 20.

(4) *Recapture period.* The five-year recapture period begins on the date the qualified facility is placed in service and ends on the date that is five full years after the placed in service date. Each 365-day period (366-day period in case of a leap year) within the five-year recapture period is a separate recapture year for recapture purposes.

(5) *Increase in tax for recapture.* The increase in tax under chapter 1 of the Code for the recapture of the credit amount claimed under section 48E(a) and § 1.48E–1(b) occurs in the year of the recapture event.

(g) *Cross references.* (1) To determine applicable recapture rules, see section 50(a) of the Code.

(2) For rules regarding the credit eligibility of property used outside the United States, see section 50(b)(1) of the Code.

(3) For rules regarding the credit eligibility of property used by certain tax-exempt organizations, see section 50(b)(3) of the Code. See section 6417(d)(2) of the Code for an exception to this rule in the case of an applicable entity making an elective payment election.

(4) For application of the normalization rules to the section 48E credit in the case of certain regulated companies, including rules regarding

the election not to apply the normalization rules to energy storage technology (as defined in section 48(c)(6) of the Code), see section 50(d)(2) of the Code.

(5) For rules relating to certain leased property, see section 50(d)(5) of the Code.

(h) *Applicability date.* This section applies to qualified facilities and energy storage technologies placed in service after December 31, 2024, and during a taxable year ending on or after [DATE OF PUBLICATION OF THE FINAL REGULATIONS IN THE **FEDERAL REGISTER**].

§ 1.48E–5 Greenhouse gas emissions rates for qualified facilities under section 48E.

(a) *In general.* Section 48E(b)(3)(B)(ii) provides that rules similar to the rules of section 45Y(b)(2) regarding greenhouse emissions rates apply for purposes of section 48E. Paragraphs (b) through (f) of this section thus provide that the definitions and rules regarding greenhouse gas emission rate requirements (as determined under rules provided in § 1.45Y–5) apply for purposes of section 48E and this section. Paragraph (g) of this section provides rules related to provisional emissions rates for purposes of section 48E and this section. Paragraph (h) of this section provides rules for determining an anticipated greenhouse gas emissions rate. Paragraph (i) of this section provides rules regarding reliance on the annual publication of emissions rates and provisional emissions rates. Finally, paragraph (j) of this section provides rules for substantiation.

(b) *Definitions.* The definitions provided in § 1.45Y–5(b) apply for purposes of section 48E and this section.

(c) *Non-C&G Facilities.* The rules provided in § 1.45Y–5(c) apply for purposes of determining greenhouse gas emissions rates for Non-C&G Facilities for purposes of section 48E and this section.

(d) *C&G Facilities.* The rules provided in § 1.45Y–5(d) apply for purposes of determining greenhouse gas emissions rates for C&G Facilities for purposes of section 48E and this section.

(e) *Carbon capture and sequestration.* The rules provided in § 1.45Y–5(e) regarding carbon capture and sequestration apply for purposes of section 48E and this section.

(f) *Annual publication of emissions rates.* The rules provided in § 1.45Y–5(f) regarding the annual publication of a table (Annual Table) that sets forth the greenhouse gas emissions rates for types or categories of facilities apply for purposes of section 48E and this section.

(g) *Provisional emissions rates*—(1) *In general.* In the case of any facility for which an emissions rate has not been established by the Secretary, a taxpayer that owns such facility may file a petition with the Secretary for determination of the emissions rate with respect to such facility (Provisional Emissions Rate or PER). A PER must be determined and obtained under the rules of this section.

(2) *Rate not established.* An emissions rate has not been established by the Secretary for a facility for purposes of sections 45Y(b)(2)(C)(ii) and 48E(b)(3)(B)(ii) if such facility is not described in the Annual Table. If a taxpayer's request for an emissions value pursuant to paragraph (g)(5) of this section is pending at the time such facility is or becomes described in the Annual Table, the taxpayer's request for an emissions value will be automatically denied.

(3) *Process for filing a PER petition.* To file a PER petition with the Secretary, a taxpayer must submit a PER petition by attaching it to the taxpayer's Federal income tax return or Federal return, as appropriate, for the taxable year in which the taxpayer claims the section 48E credit with respect to the facility to which the PER petition relates. The PER petition must contain an emissions value and, if applicable, the associated letter from DOE. An emissions value may be obtained from DOE or by using the designated LCA model in accordance with paragraph (g)(6) of this section. An emission value obtained from DOE will be based on an analytical assessment of the emissions rate associated with the facility performed by one or more of the National Laboratories, in consultation with other agency experts as appropriate, consistent with this section. A taxpayer must retain in its books and records the application and correspondence to and from DOE including a copy of the taxpayer's request to DOE for an emissions value, including any information provided by the taxpayer to DOE pursuant to the emissions value request process provided in paragraph (g)(5) of this section. Alternatively, an emissions value can be determined by the taxpayer for a facility using the most the recent version of an LCA model, as of the time the PER petition is filed, that has been designated by the Secretary for such use under paragraph (g)(6) of this section. If an emissions value is determined using the designated LCA model under paragraph (g)(6) of this section, a taxpayer is required to provide to the IRS information to support its determination in the form and manner prescribed in IRS forms or instructions or in publications or guidance published in the Internal Revenue Bulletin. *See* § 601.601 of this chapter. A taxpayer may not request an emissions value from DOE for a facility for which an emissions value can be determined using the most recent version of an LCA model or models designated for such use under paragraph (g)(6) of this section.

(4) *PER determination.* Upon the IRS's acceptance of the taxpayer's return to which a PER petition is attached, the emissions value of the facility specified on such petition is deemed accepted. A taxpayer can rely upon an emissions value provided by DOE for purposes of claiming a section 48E credit, provided that any information, representations, or other data provided to DOE in support of the request for an emissions value are accurate. If applicable, a taxpayer may rely upon an emissions value determined for a facility using the LCA model designated under paragraph (g)(6) of this section, provided that any information, representations, or other data used to obtain such emissions value are accurate. The IRS's deemed acceptance of an emissions value is the Secretary's determination of the PER. However, the taxpayer must also comply with all applicable requirements for the section 48E credit and any information, representations, or other data supporting an emissions value are subject to later examination by the IRS.

(5) *Emissions value request process.* An applicant that submits a request for an emissions value must follow the procedures specified by DOE to request and obtain such emissions value. Emissions values will be determined consistent with the rules provided in this section. An applicant can request an emissions value from DOE only after a front-end engineering and design (FEED) study or similar indication of project maturity, as determined by DOE, such as the completion of a project specification and cost estimation sufficient to inform a final investment decision for the facility. DOE may decline to review applications that are not responsive, including those applications that relate to a facility described in the Annual Table (consistent with paragraph (g)(2) of this section) or a facility for which an emissions value can be determined by an LCA model under paragraph (g)(6) of this section (consistent with paragraph (g)(3) of this section), or applications that are incomplete. Applicants must follow DOE's guidance and procedures for requesting and obtaining an

emissions value from DOE. DOE will publish this guidance and procedures, including a process for, under limited circumstances, a revision to DOE's initial assessment of an emissions value on the basis of revised technical information or facility design and operation.

(6) *LCA model for determining an emissions value for C&G Facilities.* The rules provided in § 1.45Y–5(g)(6) regarding the designation of an LCA model or models for determining an emissions value for C&G Facilities apply for purposes of section 48E and this section.

(7) *Effect of PER.* A taxpayer who files for a PER must use a PER determined by the Secretary to determine eligibility for the section 48E credit, provided all other requirements of section 48E are met. The Secretary's PER determination is not an examination or inspection of books of account for purposes of section 7605(b) of the Code and does not preclude or impede the IRS (under section 7605(b) or any administrative provisions adopted by the IRS) from later examining a return or inspecting books or records with respect to any taxable year for which the section 48E credit is claimed. Further, a PER determination does not signify that the IRS has determined that the requirements of section 48E have been satisfied for any taxable year.

(h) *Determining anticipated greenhouse gas emissions rate*—(1) *In general.* A facility's anticipated greenhouse gas emissions rate must be objectively determined based on an examination of all the facts and circumstances. Certain Non-C&G Facilities, such as the facilities described in § 1.45Y–5(c)(2), may have an anticipated greenhouse gas emissions rate that is not greater than zero based on the technology and practices they rely upon to generate electricity. For facilities that require the use of certain feedstocks or carbon capture and sequestration, which may vary, to generate electricity with a greenhouse gas emissions rate that is not greater than zero, objective indicia that such facilities will operate with a greenhouse gas emissions rate that is not greater than zero for at least 10 years beginning from the date the facility is placed in service are required to establish that its anticipated greenhouse gas emissions rate is not greater than zero.

(2) *Examples of objective indicia.* Examples of objective indicia that may establish an anticipated greenhouse gas emissions rate that is not greater than zero include, but are not limited to, the following:

(i) Co-location of the facility with a fuel source (for example, an anaerobic digester) for which the combination of fuel, type of facility, and practice is reasonably expected to result in a greenhouse gas emissions rate that is not greater than zero;

(ii) A 10-year contract to purchase fuels for which the combination of fuel, type of facility, and practice is reasonably expected to result in a greenhouse gas emissions rate that is not greater than zero;

(iii) A facility type that only accommodates one type of fuel or a small range of fuels for which the combination of fuel, type of facility, and practice is reasonably expected to result in a greenhouse gas emissions rate that is not greater than zero; or

(iv) A 10-year contract for the capture, disposal, or utilization of qualified carbon dioxide from the facility for which the combination of fuel, type of facility, and practice is reasonably expected to result in a greenhouse gas emissions rate that is not greater than zero.

(i) *Reliance on Annual Table or Provisional Emissions Rate.* Taxpayers may rely on the Annual Table in effect as of the date a facility began construction or the provisional emissions rate determined by the Secretary for the taxpayer's facility under paragraph (g)(4) of this section to determine the facility's greenhouse gas emissions rate, provided that the facility continues to operate as a type of facility that is described in the Annual Table or the facility's emissions value request, as applicable, for the entire taxable year.

(j) *Substantiation*—(1) *In general.* A taxpayer must maintain in its books and records documentation regarding the design and operation of a facility that establishes that such facility had an anticipated greenhouse gas emissions rate that is not greater than zero in the year in which the section 48E credit is determined and operated with a greenhouse gas emissions rate that is not greater than 10 grams of CO_2e per kWh during each year of the recapture period that applies for purposes of section 48E(g).

(2) *Sufficient substantiation.* Documentation sufficient to substantiate that a facility had a greenhouse gas emissions rate, as determined under this section, not greater than 10 grams of CO_2e per kWh during each year of the recapture period that applies for purposes of section 48E(g) includes documentation or a report prepared by an unrelated party that verifies the facility's actual emissions rate. A facility described in § 1.45Y–5(c)(2) can maintain sufficient documentation to demonstrate a greenhouse gas emissions rate that is not greater than 10 grams of CO_2e per kWh during each year of the recapture period that applies for purposes of section 48E(g) by showing that it is the type of facility described in § 1.45Y–5(c)(2). The Secretary may determine that other types of facilities can sufficiently substantiate a greenhouse gas emissions rate, as determined under this section, that is not greater than 10 grams of CO_2e per kWh during each year of the recapture period that applies for purposes of section 48E(g) with certain documentation and will describe such facilities and documentation in IRS forms or instructions or in publications or guidance published in the Internal Revenue Bulletin. See § 601.601 of this chapter.

(k) *Applicability date.* This section applies to qualified facilities placed in service after December 31, 2024, and during a taxable year ending on or after [DATE OF PUBLICATION OF THE FINAL REGULATIONS IN THE **FEDERAL REGISTER**].

Douglas W. O'Donnell,

Deputy Commissioner.

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