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Inflation Reduction Act of 2022 substantially changes tax code provisions related to energy transition and renewable energy

- *The climate-related provisions focus on incentivizing and accelerating renewable energy, advancing the adoption of electric vehicle (EV) technologies and improving the energy efficiency of buildings and communities.*
- *Many of the provisions are expected to spur significant development and investment.*
- *New provisions related to transferability of certain credits are expected to introduce more options for project developers and sponsors to monetize tax attributes, thus giving them alternatives to tax equity financing.*
- *The new rules can be very complex, and it is important for taxpayers to understand the rules and how they apply to their particular projects.*

On August 16, 2022, President Biden signed into law the Inflation Reduction Act of 2022 (the IRA). Embedded in the IRA is $369 billion in climate and energy-related provisions, which are designed to (1) incentivize and accelerate the buildout of renewable energy, (2) advance the adoption of EV technologies and (3) improve the energy efficiency of buildings and communities. The IRA's energy- and climate-related provisions are a monumental and unprecedented investment in the adoption and expansion of renewable and alternative energy sources.

Specifically related to energy transition and renewable energy, the IRA:

- Includes a two-tiered credit structure for many of the applicable tax credits (i.e., a base amount, which can be increased to a bonus amount, so long as prevailing wage and apprenticeship requirements are met (or if an exception applies))
- Includes, for tax credits related to certain technologies, an additional credit amount based on meeting domestic content requirements
- Includes a direct pay provision under a new IRC Section 6417 (while this provision applies largely to tax-exempt investors and government entities, it can also apply (in a limited, time-based manner) to certain IRC Section 45Q, new IRC Section 45V clean hydrogen and advanced manufacturing credits)
- Includes a new transferability provision under a new IRC Section 6418, which permits, in certain circumstances, the one-time sale or transfer of certain tax credits (including IRC Sections 30C, 45, 45Q, 45U, 45V, 48 and several others) in exchange for cash
- Extends the carryback period for certain tax credits to three years
- Extends and modifies the IRC Section 45 production tax credit (PTC) for projects beginning construction before 2025, including a new PTC for solar property and the extension of the geothermal-related PTC
- Extends and modifies the IRC Section 48 investment tax credit (ITC) for projects beginning construction before 2025, including expanding the definition of ITC-eligible property to include energy storage, qualified biogas property and microgrid controllers, and adds new rules for certain solar and wind facilities placed in service in connection with low-income communities
- Provides for new technology-neutral, clean-energy-related PTC and ITC beginning in 2025
- Extends and modifies IRC Section 45Q carbon capture use and sequestration (CCUS)-related tax credits (including higher credit amounts, a later beginning of construction deadline of before January 1, 2033, and lower annual capture requirements)
- Adds a specific clean hydrogen production tax credit (new IRC Section 45V)
- Includes a zero-emission nuclear power production credit (new IRC Section 45U)
- Makes changes for biodiesel, renewable diesel and alternative fuel credits under IRC Section 6426 and related provisions
- Includes provisions related to EVs and other energy efficient technologies and clean fuels

The IRA includes a 15% corporate alternative minimum tax on adjusted financial statement income (AFSI) for corporations with profits over $1 billion. In addition to allowing for the use of net operating losses and foreign tax credits, it also provide for exemptions for items like general business credits and defined pension benefits. A late modification also allows for the reduction of AFSI by depreciation from property under IRC Section 167. Direct pay amounts are generally disregarded for purposes of the calculation. (see Tax Alert 2022-1237).

Implications: Overall, many of the IRA's provisions, at least with respect to energy transition and renewable energy investments, ought to spur development and investment; however, the new rules can be very complex, and it is important for taxpayers to understand the rules and how they apply to their particular projects.

Two-tiered credit structure

The IRA contains a two-tiered credit-amount structure for many applicable tax credits. Specifically, many of the credits have a lower base credit amount that can be increased up to five times if the taxpayer can satisfy applicable prevailing wage or apprenticeship requirements.

In general, under the prevailing wage requirements, the IRA requires all laborers, mechanics and workers to be paid the prevailing wage during project construction (and, during the credit term, for repairs and alterations). Separately and subject to certain exceptions, to meet the apprenticeship requirements, qualified apprentices have to perform an applicable percentage of total labor hours for project construction. Further, the IRA establishes certain options to cure the failure to meet either the prevailing wage or apprenticeship requirements.

Implications: Taxpayers are 'deemed' to have met the prevailing wage and apprenticeship requirements until 60 days after Treasury provides the required guidance. Although it is difficult to anticipate how long it will take to develop these rules, taxpayers should begin to evaluate their ability to satisfy these critical provisions now.

Direct pay and transferability

Direct pay (new IRC Section 6417)

The IRA provides a direct pay option for certain credits. Under new IRC Section 6417, an "applicable entity" (see below) can make a direct pay election (effectively treating tax credits generated by a renewable energy project as equivalent to taxes paid on a filed return), but only for certain tax credits, including:

- Certain portions of the IRC Section 30C alternative fuel vehicle refueling property credit
- IRC Section 45 PTC (for facilities placed in service after December 31, 2022)
- IRC Section 45Q credit (for capture equipment originally placed in service after December 31, 2022)
- The new IRC Section 45U zero-emission nuclear power production credit
- The new IRC Section 45V hydrogen PTC (for facilities placed in service after December 31, 2012)
- The IRC Section 45W credit for commercial vehicles (for tax-exempt entities)
- The new IRC Section 45X advanced manufacturing credit
- The technology-neutral PTC (new IRC Section 45Y) and ITC (new IRC Section 48E)
- The new IRC Section 45Z clean fuel production credit
- IRC Section 48C qualifying advanced energy credit
- IRC Section 48 ITC

As noted above, the direct pay option can only be used by "applicable entities," which generally only include tax-exempt entities, state or local governments, the Tennessee Valley Authority, Indian tribal governments or an Alaska Native Corporation. However, certain important exceptions to the "applicable entity" limitation exist, so any eligible taxpayer can elect direct pay for:

- The first five years of the new IRC Section 45V credit for the production of clean hydrogen
- The first five years of the IRC Section 45Q credit (starting with any tax year in which the taxpayer has, after December 31, 2022, placed in service carbon capture equipment at a qualified facility)
- A five-year period of the new IRC Section 45X advanced manufacturing credit

For the IRC Section 45Q credit, the direct pay election applies separately with respect to carbon capture equipment originally placed in service by the applicable entity during a tax year. Additionally, any non-tax-exempt and non-governmental taxpayers that elect direct pay related to the new IRC Section 45V clean hydrogen credit can revoke their election (the revocation lasts for the balance of the five-year period).

From a procedural perspective, a direct pay election generally (1) applies separately to each applicable facility, (2) must be made in the first year the facility (or applicable equipment) is placed in service and, (3) applies for the full applicable credit term period, subject to the time-limited direct pay options for certain taxpayers described above. Certain credits tie the ability to elect direct pay to the satisfaction of the domestic content requirements. Additionally, partnerships or S corporations that directly hold a facility or property eligible for the credit must make the direct-pay election, and it is the partnership or S corporation that receives the direct payment (as opposed to the partners or owners). Finally, an additional 20% penalty can apply to taxpayers receiving "excessive payments."

Importantly, beginning in fiscal year 2023 and each fiscal year thereafter, the portion of any direct payment made to a taxpayer under an IRC Section 6417 election (or any amount treated as a payment made by the taxpayer under IRC Section 6417(a)) will increase by 6.0445% (this was designed to make the taxpayer whole in the event of a potential sequestration).

Transferability of credits (new IRC Section 6418)

The IRA contains provisions that allow certain credits to be transferred. Under new IRC Section 6418, an eligible taxpayer can elect to transfer all (or any portion specified in the election) of an eligible credit to an unrelated transferee taxpayer. The transfer, however, must be paid in cash, not be included in the income of the recipient taxpayer and not be deductible by the paying taxpayer. Further, the transfer must be a one-time transfer (i.e., the transferee cannot make a subsequent election to further transfer any portion of the transferred credit).

The taxpayer must elect to transfer the credits no later than the due date (including extensions) for the tax return for the tax year for which the credit is determined, and any election, once made, is irrevocable.

The transfer election under new IRC Section 6418 is available for the following tax credits:

- The IRC Section 30C alternative fuel vehicle refueling property credit
- The IRC Section 45 PTC
- The IRC Section 45Q CCUS credit
- The new IRC Section 45U zero-emission nuclear power production credit
- The new IRC Section 45V clean hydrogen production credit
- The new IRC Section 45X advanced manufacturing production credit
- The technology neutral PTC (new IRC Section 45Y) and ITC (new IRC Section 48E)
- The new IRC Section 45Z clean fuel production credit
- The IRC Section 48C qualifying advanced energy project credit
- The IRC Section 48 ITC

Elections related to the IRC Section 45 PTC or the credits under IRC Sections 45Q, 45V or 45Y must be made separately for each applicable facility and for each tax year during the 10-year period beginning on the date the facility was placed in service (or, for IRC Section 45Q CCUS purposes, for each year during the 12-year period beginning on the date the carbon capture equipment was originally placed in service at such facility).

The IRA does not allow applicable entities, as defined for direct pay purposes, to elect to transfer credits. As noted above, applicable entities are defined for direct pay purposes as tax-exempt entities, any state or local governments, the Tennessee Valley Authority, Indian tribal governments or Alaska Native Corporations. An additional 20% penalty can apply to "excessive credit transfers." For eligible credits resulting from property held by a partnership or S Corporation, any election to transfer a credit must be made at the partnership or S Corporation level.

Implications: The new IRC Section 6418 introduces more options for project developers and sponsors to monetize tax attributes, thus giving them alternatives to tax equity financing. It is too early to tell whether the direct transfer of tax credits (which will not monetize depreciation or provide an opportunity to "mark-up" ITC assets) is more attractive than tax equity. This will depend largely on the ultimate pricing of the direct transfer tax credits and the development of an efficient project-level debt market that could offset the failure to monetize depreciation or benefit from a mark-up inherent in tax equity structures.

Modified credit carryback

The IRA provides for a three-year carryback period (instead of a one-year period) for certain credits, including:

- IRC Section 30C credit for alternative fuel vehicle refueling property
- IRC Section 45 PTC
- IRC Section 45Q
- IRC Section 48 energy credit
- The zero-emission nuclear power production credit under new IRC Section 45U
- The credit for production of clean hydrogen under new IRC Section 45V
- The technology neutral PTC and ITC (new IRC Sections 45Y and 48E, respectively)
- The qualifying advanced energy project credit under IRC Section 48C
- The clean fuel production credit under new IRC Section 45Z
- The credit for advanced manufacturing production under new IRC Section 45X
- The IRC Section 45W credit for qualified commercial vehicles (in certain situations)

Energy production and generation

Extensions and modifications to IRC Section 45 PTC

Under prior law, the PTC was largely unavailable for projects that began construction after December 31, 2021. The IRA extends the PTC-related beginning-of-construction-deadline to projects that begin construction before January 1, 2025. Importantly, the IRA reinstates the PTC for solar projects (that begin construction before January 1, 2025), and the beginning-of-construction-deadline for geothermal projects is further extended. The IRA also eliminates the credit rate reduction for qualified hydroelectric production and marine and hydrokinetic renewable energy property.

The PTC is now subject to the two-tiered credit structure, with a base credit amount and a bonus credit amount. To obtain the full 2022 published rate of up to 2.6 cents per kWh for the IRC Section 45 PTC, a taxpayer generally needs to meet both the prevailing wage and apprenticeship requirements (with certain limited exceptions). Otherwise, the base credit amount for 2022 is .52 cents per kWh (i.e., 20% of the full bonus amount).

The IRA also includes a domestic content bonus for the PTC, which allows taxpayers to increase their IRC Section 45 PTC by 10%, so long as the applicable requirements are met (related to the applicable percentage of the total cost of components that are mined, produced or manufactured in the US) or in relation to qualified facilities located in applicable "energy communities" (which generally includes certain brownfield sites, certain areas that historically had significant employment related to the extraction, processing, transport, or storage of coal, oil, or natural gas, or a census track where certain coal mines or coal-fired power plants used to operate). The IRA also includes certain phase-out provisions for the domestic content rules, as well as other ancillary provisions.

Finally, the IRA requires a limited reduction of the IRC Section 45 PTC where tax-exempt bonds are used to provide the financing for the qualified facility.

The IRC Section 45 PTC amendments apply to facilities that are placed in service after December 31, 2021, with the exception of the following provisions, which apply to facilities placed in service after December 31, 2022: (1) tax-exempt bond financed facilities, (2) domestic content, (3) certain phaseout provisions, (4) energy communities and (5) hydropower.

Implications: The modifications to the IRC Section 45 PTC — specifically, the inclusion of certain technologies, extension through 2024, and switch over to the technology-neutral credit regime — ought to be positively received. Providing certainty and the ability to forecast investment decisions and related returns is critical in capital intensive industries.

IRC Section 48 ITC

Under prior law, the ITC began phasing out for certain projects beginning construction after December 31, 2019. The IRA extends the ITC for most projects that begin construction before January 1, 2025 (except for geothermal property, which is extended to before January 1, 2035, although such credit is subject to a phaseout schedule). For projects that began construction after December 31, 2019, and that were placed in service prior to January 1, 2022, the ITC credit amount is 26%. For projects placed in service after December 21, 2021, the limited ITC amount/phase-out generally does not apply.

Similar to the IRC Section 45 PTC and other credits, the IRC Section 48 ITC is subject to the two-tiered investment structure (with the top, bonus rate being achieved if the prevailing wage and apprenticeship requirements are met (with similar exceptions to the IRC Section 45 PTC)), with the credit amounts as follows:

- 6% (base) / 30% (top, bonus rate) for (1) qualified fuel cell property; (2) solar energy used to produce electricity, heat or cool a structure, providing solar process heat; (3) equipment that uses solar energy for certain lighting applications; (4) qualified small wind energy property; (5) waste energy recovery property; (6) combined heat and power systems; and (7) geothermal
- 2% (base) / 10% (top, bonus rate) for other energy property

The IRA expands the IRC Section 48 ITC to include three new technologies — standalone energy storage, qualified biogas property and microgrid controllers — if construction begins by December 31, 2024:

- Standalone energy storage ITC — The IRA expands the definition of eligible ITC property to include property 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. Thermal energy storage property is also included. Thermal energy storage property is property directly connected to a heating, ventilation or air conditioning system that 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. Regulated utilities claiming the standalone storage ITC can opt out of normalization of the credit for ratemaking purposes. This opt-out does not apply to other varieties of the ITC.

- Qualified biogas property ITC — The IRA expands the definition of eligible ITC property to include property comprising a system that (1) converts biomass into a gas that consists of not less than 52% methane by volume, or is concentrated into a gas that consists of not less than 52% methane, and (2) captures such gas for sale or productive use, and not for disposal via combustion. Property that is part of a system that cleans or conditions such gas is also included in the definition. For qualified biogas property, the IRC Section 45 PTC is modified to deny a double benefit if the IRC Section 48 ITC credit is allowed.
- Microgrid controller ITC — Under the IRA, an electrical system capable of generating not less than 4 kW and not greater than 20 MW of electricity, along with certain other requirements, is ITC-eligible property.

The IRA also contains other provisions, such as expanding: (1) the definition of qualified fuel cell property to include electromechanical (in addition to electrochemical), (2) energy property to include certain dynamic glass, (3) IRC Section 7701(e) to clarify that the operation of a storage facility ought to be treated as a service.

A potentially unpopular change from prior legislative proposals is the absence of the 30% ITC for transmission, with the IRA providing that an IRC Section 48 ITC only applies to qualified interconnection property used in installing energy property with a maximum net output of no greater than 5 MW.

Similar to the IRC Section 45 PTC (and subject to the same requirements), taxpayers are eligible for the 10% bonus rate for domestic content if the applicable requirements are met or the project is located in an applicable energy community (although the energy community-related bonus rate can be reduced to 2% if the applicable requirements are not met). The IRC Section 48 ITC credit is also subject to a partial reduction when tax-exempt bond proceeds are used to provide the financing for the qualified facility.

In addition, the IRA adds special rules for certain solar and wind facilities placed in service in connection with low-income communities, providing for (1) up to a 10% bonus credit for projects that are less than 5 MW and either located in a qualified low-income community or on Indian land, or (2) up to a 20% bonus for projects that are less than 5 MW and are part of a qualified low-income residential building project or a qualified low-income economic benefit project.

In general, many of the amendments to the IRC Section 48 ITC are effective for facilities placed in service after December 31, 2021. For the IRC Section 48 ITC related to standalone energy storage, qualified biogas property, microgrid controllers, or certain other technologies, however, the IRC Section 48 ITC is effective for property placed in service after December 31, 2022.

Implications: The inclusion of certain technologies under the IRC Section 48 ITC, its extension through 2024 and the switch over to the technology-neutral credit regime should be positively received. For example, the inclusion of standalone storage and qualified biogas is a helpful development, and renewable natural gas investments should benefit as renewable natural gas often consists of 96% to 98% methane. Providing certainty and the ability to forecast investment decisions and related returns is critical in capital intensive industries.

Technology-neutral PTC and ITC

New IRC Section 45Y clean electricity PTC

The IRA creates a new, 10-year PTC equal to the product of the kWh of electricity produced by the taxpayer in the US and an applicable amount if the electricity is produced at a (1) qualified facility and the electricity is sold by the taxpayer to an unrelated person during the tax year, or (2) qualified facility that is equipped with a metering device owned and operated by an unrelated person, and the electricity is sold, consumed, or stored by the taxpayer during the year. The base amount of the credit is $0.003 per kWh of electricity produced, with the top, higher rate being $0.015 per kWh, as adjusted for inflation, if the prevailing wage and apprenticeship requirements are met (similar to those described herein). The 10-year term of the new IRC Section 45Y PTC commences when the facility is placed in service.

The new IRC Section 45Y PTC is available for clean electricity produced at a qualified facility that (1) is placed in service after December 31, 2024 (which coincides with the proposed expiration of the IRC Section 45 PTC), (2) is used to generate electricity and (3) has a zero greenhouse gas emissions rate (i.e., the amount of greenhouse gasses emitted into the atmosphere by the facility in the production of electricity, expressed as grams of CO_2e per kWh, or for a facility that produces electricity through combustion or gasification, a net rate). The amount of greenhouse gases emitted does not include qualified carbon dioxide that is captured by the taxpayer and either (1) disposed of by the taxpayer in secure geological storage, or (2) "utilized" by the taxpayer under IRC Section 45Q(f)(5). For facilities placed in service before January 1, 2025, additional rules apply for new units and additional capacity placed in service after December 31, 2024. As part of the credit implementation, the Secretary will publish a table annually showing greenhouse gas emission rates for types or categories of facilities.

Similar to other credits, the IRA does not allow a double benefit by noting that the term "qualified facility" does not include any facility for which a credit under IRC Sections 45, 45J, 45Q, 45U, 48, 48A, or 48E is allowed for the tax year or any prior tax year.

The new IRC Section 45Y PTC begins to phase out for qualified facilities in the first calendar year after the later of (1) 2032, or (2) the calendar year in which the Secretary determines that the annual greenhouse gas emissions from the production of electricity in the US are equal to or less than 25% of the annual greenhouse gas emissions from the production of electricity in the US for calendar year 2022.

Similar to some of the other credits, the new IRC Section 45Y PTC is eligible for a 10% bonus amount if certain domestic content requirements are met or the qualified facility is located in an "energy community." Additionally, similar rules apply to reduce the amount of the credit where tax-exempt bonds were used to finance the facility.

Finally, the IRA clarifies that qualified property under the new IRC Section 45Y PTC is five-year property for purposes of the Modified Accelerated Cost Recovery System (MACRS) under IRC Section 168.

New IRC Section 48E Clean Electricity Investment Credit

Similar to the new Section 45Y technology-neutral PTC, the IRA creates a new IRC Section 48E technology-neutral ITC for any qualified electric generating facility and any energy storage technology that is placed in service after December 31, 2024 (to coincide with the expiration of the proposed IRC Section 48 ITC modifications) and for which the greenhouse gas emissions rate is not greater than zero. Qualified property is generally tangible personal property or other tangible property and is subject to certain limitations and restrictions.

The new IRC Section 48E ITC generally provides a 6% base rate, which can increase to 30% if the prevailing wage and apprenticeship requirements are met (similar to the other credits discussed herein). Also, and similar to the new IRC Section 45Y PTC and certain other credits, taxpayers are eligible for the 10% bonus if certain domestic content requirements are met, or the qualified facility or qualified energy storage technology is located in an energy community (although the bonus rate can be reduced to 2% if certain labor requirements are not also met). An additional 10% or 20% bonus credit may be available for certain solar and wind facilities located in low-income communities, as described in the IRA.

The new IRC Section 48E ITC is generally subject to phase out rules similar to those of the new IRC Section 45Y PTC, and similar rules apply to reduce the amount of the credit where tax-exempt bonds were used to finance the facility. If the Secretary determines that the greenhouse gas emissions rate for a qualified facility exceeds 10 grams of CO_2e per kWh, recapture rules generally apply.

Finally, the IRA clarifies that qualified property under the new IRC Section 48E ITC is five-year MACRS property.

<u>*Hydrogen PTC*</u>

The IRA creates a new PTC for hydrogen production under new IRC Section 45V (for hydrogen produced in the US). The hydrogen PTC applies to hydrogen produced after December 31, 2022, and has a 10-year term beginning on the date a qualified clean hydrogen production facility is placed in service. To qualify, the qualified facility must begin construction before January 1, 2033. For a taxpayer to be eligible for the hydrogen PTC, its lifecycle greenhouse gas emissions rate cannot exceed 4 kilograms of carbon dioxide equivalent (CO_2e) per kilogram of hydrogen produced.

As with other credits, the new IRC Section 45V PTC is subject to a two-tiered credit regime, with a base credit rate and a higher, top rate. The base credit rate is $0.60 per kilogram of qualified clean hydrogen, which will be adjusted for inflation, multiplied by an applicable percentage (which varies based on the lifecycle greenhouse gas emissions rate). The applicable percentage is as follows:

- 20% if the lifecycle greenhouse gas emissions rate is at least 2.5 kilograms of CO_2e per kilogram of hydrogen, but not greater than 4 kilograms of CO_2e per kilogram of hydrogen
- 25% if the lifecycle greenhouse gas emissions rate is at least 1.5 kilograms of CO_2e per kilogram of hydrogen, but less than 2.5 kilograms of CO_2e per kilogram of hydrogen
- 33.4% if the lifecycle greenhouse gas emissions rate is at least 0.45 kilograms of CO_2e per kilogram of hydrogen, but less than 1.5 kilograms of CO_2e per kilogram of hydrogen

- 100% if the lifecycle greenhouse gas emissions rate is less than 0.45 kilograms of CO2e per kilogram of hydrogen

The top rate is five times the amount of the base credit, which tops out at $3.00 per kilogram of qualified clean hydrogen produced. To achieve the top rate, similar rules related to prevailing wage and apprenticeship apply.

In an attempt to avoid stacking credits, the IRA allows a credit under new IRC Section 45V for any qualified clean hydrogen produced at a facility that includes carbon capture equipment for which a credit is allowed to any taxpayer under IRC Section 45Q for the tax year or any prior tax year.

Taxpayers have the option to elect the ITC instead of the new IRC Section 45V PTC for clean hydrogen production facilities. Further, and similar to other credits, the IRA provides rules related to the reduction of the new IRC Section 45V PTC where tax-exempt bonds were used to finance the facility.

Implications: While investments in hydrogen have progressed globally at varying paces, the new IRC Section 45V PTC for hydrogen should provide an immediate incentive to increase domestic production of hydrogen.

New IRC Section 45U zero-emission nuclear power production credit

The IRA creates a new, zero-emission nuclear power production credit under new IRC Section 45U for producing electricity at a qualified nuclear power facility that is sold by the taxpayer to an unrelated person. A qualified nuclear power facility means any nuclear facility that (1) is owned by the taxpayer and uses nuclear energy to produce electricity, (2) is not an advanced nuclear power facility as defined in IRC Section 45J(d)(1) and (3) is placed in service before the enactment of this section.

Similar to the other credits, the new IRC Section 45U tax credit is subject to the two-tiered credit regime, with a base credit amount of $0.3 cents per kWh, and a top, bonus amount of up to 1.5 cents per kWH (assuming the prevailing wage requirements are met). The credit will also be reduced by 16% of the excess of gross receipts from electricity produced and sold over $0.025 multiplied by the amount of electricity sold. Additionally, the new IRC Section 45U tax credit, which is generally effective for electricity produced and sold after December 31, 2023 (in tax years beginning after such date), does not apply to tax years beginning after December 31, 2032.

Extension of IRC Section 48C advanced energy project credit

Effective January 1, 2023, the IRA extends IRC Section 48C to include a variety of facilities, including: (1) those that manufacture energy storage systems and components; (2) property used to produce energy conservation technology; (3) electric grid modernization equipment; (4) equipment that re-equips a manufacturing facility with equipment designed to reduce greenhouse emissions by at least 20%; and (5) electric and hybrid vehicles. IRC Section 48C generally provides for an ITC for projects that equip or expand manufacturing facilities that produce specified renewable energy equipment (such as solar, wind, geothermal, CCUS, fuel cells and microgrids).

To qualify, taxpayers must apply for certification through a competitive process run by the Treasury Department in consultation with the Department of Energy, and the projects must be placed in service within two years of certification. Further, the total amount of IRC Section 48C credits available will not exceed $10 billion (of which no more than $6 billion may be allocated to investments that are not located in certain census tracts).

The IRC Section 48C credit has a base amount of 6% (which can go up to 30%, assuming the prevailing wage and apprenticeship requirements (similar to those described herein) are met). Finally, the IRC Section 48C credit is not available for an investment if a credit is allowed for such investment under IRC Sections 48, 48A, 48B, 48E, 45Q, or 45V.

New Section 45X advanced manufacturing production credit

The IRA adds IRC Section 45X, providing a new PTC for each eligible component that is produced by the taxpayer and sold to an unrelated person during the tax year. To qualify, the taxpayer must be in the trade or business of producing and selling the eligible component. In general, the term "eligible component" means (1) any solar energy component (such as photovoltaic cells, photovoltaic wafers, solar grade polysilicon, etc.), (2) any wind energy component, (3) an inverter (as described in the IRA), (4) any qualifying battery component (including battery cells and modules) and (5) any applicable critical mineral.

The new IRC Section 45X credit amount varies widely, depending on the eligible component. For example, for thin film photovoltaic cell or crystalline photovoltaic cell, the rate is 4 cents multiped by the capacity of the cell. Conversely, for a photovoltaic wafer, the credit is $12 per square meter. The new IRC Section 45X PTC phases out in the following manner: (1) 75% for eligible components sold during 2030, (2) 50% for eligible components sold in 2031, (3) 25% for eligible components sold in 2032 and (4) no credit for components sold in 2033 or after.

Only production in the US is considered and the amendments apply to components produced and sold after December 31, 2022.

IRC Section 45Q carbon oxide sequestration credits

Under prior law, eligible carbon oxide sequestration credit projects must begin construction before January 1, 2026. The IRA extends that beginning-of-construction-deadline to January 1, 2033. Further, the annual capture requirements decrease to the following:

- For direct air capture (DAC) facilities, at least 1,000 metric tons of qualified carbon oxide
- For an electricity-generating facility, (1) at least 18,750 metric tons of qualified carbon oxide, and (2) with respect to any carbon capture equipment for the applicable electric generating unit at such facility, has a capture design capacity of at least 75% of the baseline carbon oxide production of such unit (the IRA contains detailed definitions of the applicable electric generating unit, the baseline carbon oxide production, the capacity factor and others); or
- For all other facilities, at least 12,500 metric tons of qualified carbon oxide

The IRC Section 45Q carbon oxide sequestration tax credit is subject to the two-tiered credit regime, with a lower base rate and a higher bonus rate (if the prevailing wage and apprenticeship requirements are met (similar to those described above)). Under the IRA, the applicable credit rates are as follows:

- Permanent sequestration ($17/metric ton base rate / $85/metric ton top, bonus rate): For qualified carbon oxide that is captured and disposed of by the taxpayer in secure geological storage and not used, the base credit amount is $17 per metric ton of qualified carbon oxide, and the top, bonus rate is $85 per metric ton of qualified carbon oxide.
- Utilization or enhanced oil or natural gas recovery (EOR) ($12/metric ton base rate / $60/metric ton top, bonus rate): For qualified carbon oxides that are captured and either (1) utilized in an approved manner, or (2) used as a tertiary injectant in a qualified EOR project and disposed of by the taxpayer, the base rate is $12 per metric ton of qualified carbon oxide, and the top, bonus rate is $60 per metric ton of qualified carbon oxide.
- DAC: For projects that (1) use DAC facilities to capture carbon oxides and (2) dispose of the qualified carbon oxides in secure geological storage (and do not use them), the base rate is $36 per metric ton of qualified carbon oxide, and the top, bonus rate is $180 per metric ton. For taxpayers that either "utilize" the carbon oxides in an approved manner or use the carbon oxides in an approved EOR project and dispose of them properly, the base rate is $26 per metric ton of qualified carbon oxides, and the top, bonus rate is $130 per metric ton of qualified carbon oxides.

The IRA allows certain taxpayers to elect to have the 12-year credit term begin on the first day of the first tax year in which an IRC Section 45Q tax credit is claimed if certain conditions are met. This applies to carbon capture equipment that is originally placed in service at a qualified facility on or after the date the Bipartisan Budget Act of 2018 was enacted if (1) no taxpayer has claimed a credit under IRC Section 45Q for the equipment for any prior year, (2) the facility where the equipment is placed in service is located in an area affected by a federally-declared disaster after the capture equipment was originally placed in service and (3) the disaster resulted in the facility or equipment ceasing to operate after it was originally placed in service.

Like the IRC Section 45 PTC and the IRC Section 48 ITC, the revised IRC Section 45Q has similar rules on reducing the credit when tax-exempt bonds are used in financing the facility. The amendments generally apply (with certain exceptions) to facilities or equipment placed in service after December 31, 2022.

Implications: The increased credit amount, the lowering of the annual capture amounts, the extension of the beginning-of-construction-deadline, and the potential for some direct pay or transferability should be well received in the CCUS marketplace, as many projects are hoping for an increased credit to become economically viable.

Clean fuels

Extension of incentives for biodiesel, renewable diesel and alternative fuels

The IRA extends the $1.00 per gallon IRC Section 40A credit for biodiesel and renewable diesel used as fuel through December 31, 2024.

Extension of IRC Section 6426 fuel credits

The IRA extends the biodiesel mixture credit, the alternative fuel credit, the alternative fuel mixture credit and the payments for alternative fuels under IRC Section 6426 through December 31, 2024.

Extension of second-generation biofuel incentives

The IRA extends the IRC Section 40 second-generation biofuel producer credit through December 31, 2024.

New IRC Section 40B sustainable aviation fuel credit

The IRA creates a new IRC Section 40B for sustainable aviation fuels sold or used after December 31, 2022, through December 31, 2024. The base credit is $1.25 per gallon of fuel; however, the credit can increase to $1.75 per gallon if greenhouse gas emissions are reduced below 50%.

New IRC Section 45Z clean fuel production credit

The IRA adds a new IRC Section 45Z clean fuel production credit for low-emissions transmission fuel (not including facilities for which an IRC Section 45V, IRC Section 45Q or IRC Section 48 (related to hydrogen) credit is available). The new IRC Section 45Z credit is generally available for low-emissions transmission fuel produced at a qualified facility after December 31, 2025, but before January 1, 2028.

Similar to other credits, the new IRC Section 45Z credit is subject to the two-tiered credit regime (with the higher amount being obtainable so long as the prevailing wage and apprenticeship requirements are met). The new IRC Section 45Z base amount is $0.20 per gallon ($0.35 per gallon for aviation fuel) multiplied by an applicable emissions factor (if the fuel emissions are less than 75 kg of CO_2e per MMBtu, the factor is 100%), and the higher amount is $1.00 per gallon (or $1.75 per gallon for aviation fuel).

Electric and clean vehicles

IRC Section 30D credit for clean vehicles

The IRA changes the IRC Section 30D "new qualified plug-in electric drive motor vehicles credit" to a "clean vehicle credit." The clean vehicle credit is a dollar-for-dollar reduction of federal income taxes for new clean vehicles placed in service by a taxpayer during the tax year before January 1, 2033. Under this program, taxpayers can receive up to $7,500 in credit.

To claim the credit, (1) the taxpayer must commence original use of the clean vehicle, (2) the taxpayer cannot acquire the clean vehicle for resale, (3) the clean vehicle must be made by a qualified manufacturer, and (4) the final assembly of the clean vehicle must occur in North America.

The IRC Section 30D credit can reach $7,500, so long as the sourcing requirements are satisfied for each of the critical minerals contained in the clean vehicle's battery and its components. The credit is broken down into two parts. Taxpayers may be eligible for up to $3,750 of the credit for the critical minerals, with the credit value depending on the percentage of the critical minerals that were either extracted in the US (or extracted or processed in any country with which the US has a free trade agreement in effect), or recycled in North America. The applicable percentage is 40% for vehicles placed in service before 2024, with the percentage increasing over time. Taxpayers may also be eligible for up to $3,750 of the credit for the battery components, depending on the applicable percentage of the value of the battery components that were manufactured or assembled in the US. The applicable percentage is 50% for clean vehicles placed in service before 2024, with the applicable percentage increasing over time.

To qualify for the credit, price caps on the retail price of vehicles (e.g., $80,000 for vans, SUVs and pickup trucks, $55,000 for sedans and others), as well as limitations on taxpayer's adjusted gross income apply, along with exclusions for vehicles that source battery components or critical minerals from foreign entities of concern. Further, taxpayers can elect to transfer credits to an eligible dealer subject to certain requirements. Additionally, certain recapture rules apply.

IRC Section 25E credit for previously owned clean vehicles

The IRA adds IRC Section 25E to allow taxpayers who acquire a used clean vehicle (i.e., at least two years old) before January 1, 2033, to claim a federal tax credit during the tax year the vehicle is placed in service. The credit would be equal to the lesser of (1) $4,000 or (2) 30% of the sales price. The credit can be used once every three years for clean vehicles sold for $25,000 or less and would be based on the taxpayer's adjusted gross income.

IRC Section 45W credit for qualified commercial clean vehicles

The IRA creates IRC Section 45W to provide a new credit for qualified commercial clean vehicles acquired before January 1, 2033. The credit is the lesser of (1) 30% of the basis of a vehicle not powered by a gasoline or diesel internal combustion engine, or (2) the incremental cost of such vehicle (i.e., the excess of the purchase price of such vehicle over the price of a comparable vehicle). The IRC Section 45W credit cannot exceed $7,500 for vehicles weighing less than 14,000 pounds and $40,000 for other vehicles.

Extension of IRC Section 30C alternative-fuel-refueling-property credit

The IRA extends the IRC Section 30C alternative fuel refueling property credit of 30% of the cost of any qualified alternative fuel vehicle refueling property to those placed in service before January 1, 2033. Further, depreciable alternative fuel vehicle refueling property qualify for a 30% credit if certain wage and apprenticeship requirements are met. Otherwise, depreciable alternative fuel vehicle refueling property is limited to a 6% credit. The credit for depreciable alternative fuel vehicle refueling property cannot exceed $100,000. For any other alternative fuel vehicle refueling property, the limit is $1,000. Finally, the credit limitation applies per any single item of qualified alternative fuel vehicle refueling property instead of all qualified alternative fuel vehicle refueling property at a location.

Other funding provisions

- The IRA modifies the deduction under IRC Section 179D for energy efficient commercial buildings by providing for a similar two-tier credit regime.
- The IRA extends, increases and modifies the IRC Section 25C nonbusiness energy property credit, as well as extends the IRC Section 25D residential clean energy credit.
- The IRA extends, increases and modifies the IRC Section 45L credit for new energy-efficient homes.
- The IRA provides appropriations for additional agricultural conservation easements, including for conservation practices or enhancements that the Secretary determines directly improve soil carbon or reduce nitrogen losses or greenhouse gas emissions, or capture or sequester greenhouse gas emissions, associated with agricultural production.
- The IRA includes numerous other government funding provisions for rural energy development, forestry and other matters.

Implications and next steps

Now that the IRA has been enacted into law, the focus will turn to implementing regulations and guidance, as taxpayers evaluate the IRA's impact. Taxpayers should carefully analyze what the IRA's changes mean from a capital allocation and deployment perspective, as well as how some of the changes could impact current, pending or potential transactions and investments. Thoughtful and detailed analysis, including quantitative analysis, will be essential to properly analyze the IRA's potential impacts.

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