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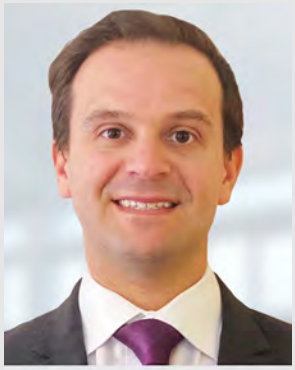

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In this article, Andrews examines how the Taxpayer Certainty and Disaster Tax Relief Act has given the renewable energy industry a lift by extending the production tax credit, the investment tax credit, and the credit for carbon oxide capture and sequestration.

I. Introduction

The renewable energy industry obtained a modest win when former President Trump signed the Taxpayer Certainty and Disaster Tax Relief Act of 2020 (the act), part of the Consolidated Appropriations Act, 2021 (P.L. 116-260). President Biden's stated goal is to attain carbon-pollution-free electricity generation by 2035. To achieve this goal, he intends to modify and extend renewable energy tax incentives by restoring the full electric vehicle tax credit; reinstating tax credits for residential energy efficiency; expanding tax deductions for energy retrofits, smart metering systems, and other emissions-reducing investments in commercial buildings; reinstating the solar energy investment tax credit; and modifying tax benefits for carbon capture, storage, and use. While the act does not achieve the widespread reform President Biden intends to promote in his renewable energy tax policy, it should provide greater certainty to the market and further encourage investment in renewable energy.

The act made the deduction for energy-efficient commercial buildings under section 179D permanent and contains several tax extenders[1] related to renewable energy credits. The act also extended several general business credits, including the production tax credit (PTC) under section 45(a), the ITC under section 48, and the credit for carbon capture and sequestration under section 45Q(a) (CCSC).[2] This article examines the PTC, ITC, and CCSC laws and analyzes the extension of these provisions.

II. Extension of Credits

A. Wind

Section 45(a) provides for a PTC equal to 1.5 cents per kWh of electricity produced at a qualified facility using wind and sold to an unrelated person during the 10-year period[3] from the facility's placed-in-service date. The wind PTC

[1]The tax extender provisions include the second-generation biofuel producer credit under section 40, the nonbusiness energy property credit under section 25C, the qualified fuel cell motor vehicles credit under section 30B, the alternative fuel refueling property credit under section 30C, the two-wheeled plug-in electric vehicle credit under section 30D, the energy-efficient homes credit under section 45L, the excise tax credits relating to alternative fuels under sections 6426 and 6427, and the residential energy-efficient property credit and the inclusion of biomass fuel property expenditures under section 25D. *See generally* the act, Division EE, Title I, Subtitle C.

[2]Section 38(a) provides businesses a credit against tax imposed by chapter 1 of the code for the tax year equal to the sum of the business credit carryforwards carried to that tax year, the amount of the current-year business credit, and the business credit carrybacks carried to that tax year. Under section 38(b), the amount of the current-year business credit is the sum of several business credits determined for the tax year, including the solar energy ITC under sections 46 and 48, the renewable electricity PTC under section 45(a), and the carbon dioxide sequestration credit determined under section 45Q(a).

[3]A taxpayer is entitled to a PTC for each of the 10 years following the facility's placed-in-service date based on the amount of energy produced by the wind facility in each year.

is a credit against the amount of electricity produced at a qualified facility. Before the act, section 45(d)(1) defined a qualified wind facility as a facility owned by a taxpayer that was originally placed in service after December 31, 1993, the construction of which began[4] before January 1, 2021. Section 45(b)(5) provides a phaseout schedule of the PTC for qualified wind facilities beginning construction after December 31, 2016. Before the act, for qualified wind facilities beginning construction after December 31, 2016, and before January 1, 2018, the PTC was 80 percent; for qualified wind facilities beginning construction after December 31, 2017, and before January 1, 2019, the PTC was 60 percent; for qualified wind facilities beginning construction after December 31, 2018, and before January 1, 2020, the PTC was 40 percent; and for qualified wind facilities beginning construction after December 31, 2019, and before January 1, 2021, the PTC was 60 percent.

In accordance with the IRS wind notices, construction of a wind facility is generally considered to begin when the taxpayer either begins physical work of a significant nature or pays or incurs 5 percent or more of the total cost of the wind facility. Both methods require that a taxpayer make continuous progress toward completion once construction has begun. Generally, a taxpayer that places a facility in service by a calendar year that is no more than four calendar years after that in which construction of the facility began will be considered to satisfy the "continuity safe harbor" as that term is defined in the IRS wind notices.[5]

Section 131(a)(1) of the act extended the beginning of construction deadline by one year to January 1, 2022. Thus, a qualified wind facility is a facility that is originally placed in service after December 31, 1993, the construction of which begins before January 1, 2022. The act's extension modified the phaseout schedule for qualified wind facilities beginning construction after December 31, 2019: The act now permits qualified wind facilities beginning construction after December 31, 2019, and before January 1, 2022, to claim a 60 percent PTC.

The act also extended the time for which qualified wind facilities can elect to claim an ITC in lieu of the PTC by one year —from before January 1, 2021, to before January 1, 2022. A taxpayer may elect to claim an ITC in lieu of a PTC for any qualified property[6] that is part of a qualified investment credit facility[7] under section 48(a)(5)(A). Under section 45(a)(5)(E), qualified wind facilities electing to claim the ITC are subject to a similar phaseout schedule applicable to wind facilities qualifying for PTCs in accordance with the table below. A taxpayer's election to claim an ITC must be in lieu of claiming a PTC (that is, no credit shall be allowed under section 45(a)) and is irrevocable.[8]

To illustrate the effect of the act's extension, assume that a taxpayer placed a wind facility in service in calendar year 2008 and received PTCs for the allowable 10-year period through calendar year 2018. Assume further that the taxpayer prefers to repower[9] the wind facility in calendar year 2019 to obtain another 10 years of PTCs. A wind facility would qualify as originally placed in

[4]The IRS provided the beginning of construction requirements for wind facilities in Notice 2013-29, 2013-1 C.B. 1085, which was later clarified, updated, and modified by Notice 2013-60, 2013-2 C.B. 431; Notice 2014-46, 2014-36 IRB 520; Notice 2015-25, 2015-13 IRB 814; Notice 2016-31, 2016-23 IRB 1025; Notice 2017-4, 2017-4 IRB 541; Notice 2019-43, 2019-31 IRB 487; and Notice 2020-41, 2020-25 IRB 954 (collectively, the "IRS wind notices").

[5]Notice 2020-41 extended the continuity safe harbor afforded by earlier IRS wind notices because of the COVID-19 pandemic since many taxpayers will not place facilities in service in time to meet the continuity safe harbor or may have difficulty demonstrating to investors that they have met the continuity requirement based on facts and circumstances. For projects that began construction in either calendar year 2016 or 2017, the continuity safe harbor will be satisfied if the taxpayer places a qualified wind facility in service by the end of a calendar year that is no more than five calendar years after that in which construction for that qualified wind facility began.

[6]For purposes of the election, qualified property means tangible personal property or other tangible property (except buildings or their structural components), but only if that property is used as an integral part of the qualified investment credit facility, which is depreciable (or amortizable) property that is constructed, reconstructed, erected, or acquired by the taxpayer, and the original use of which commences with the taxpayer. Section 48(a)(5)(D).

[7]For purposes of the election, qualified investment credit facility means any facility that is a qualified facility under section 45(d)(1)-(4), (6), (7), (9), or (11) that is placed in service after 2008 and the construction of which begins before January 1, 2022. Section 48(a)(5)(C).

[8]Section 48(a)(5)(B), (a)(5)(C)(iii).

[9]According to the National Renewable Energy Laboratory:
Full repowering refers to the complete dismantling and replacement of turbine equipment at an existing project site. Partial repowering is defined as installing a new drivetrain and rotor on an existing tower and foundation. Partial repowering allows existing wind power projects to be updated with equipment that increases energy production, reduces machine loads, increases grid service capabilities, and improves project reliability at lower cost and with reduced permitting barriers relative to full repowering and greenfield projects.

service, and therefore the taxpayer would be entitled to a new 10-year PTC period, even though that facility contains some used property, provided that the fair market value of the used property is not more than 20 percent of the facility's total value (the cost of the new property plus the value of the used property).[10] Assuming that the taxpayer meets the beginning of construction requirements in the IRS wind notices, the taxpayer would be entitled to either a 40 percent PTC or a 12 percent ITC. If instead the taxpayer decided to repower the facility in calendar year 2020 or 2021, they would be entitled to either a 60 percent PTC or an 18 percent ITC. Whether a taxpayer claims the PTC over a 10-year period versus a one-time ITC will depend on the economic modeling of the specific project.[11] The financial value of each incentive generally depends on installed project costs and expected production of energy. Project developers generally rely on calculations under a discounted cash flow method to measure the financial value of each project. Qualitative considerations include project performance risk, tax credit appetite, liquidity, subsidized energy financing, power sales to related or unrelated parties, and ownership versus leasing structures — as discussed in an article by Mark Bolinger and his co-authors.[12] Table 1 illustrates the beginning of construction dates and the corresponding PTC or ITC amounts.

Table 1

Beginning of Construction Date	Credit Amount
Before 01/01/2017	100% PTC or 30% ITC
01/01/2017 — 12/31/2017	80% PTC or 24% ITC
01/01/2018 — 12/31/2018	60% PTC or 18% ITC
01/01/2019 — 12/31/2019	40% PTC or 12% ITC
01/01/2020 — 12/31/2020	60% PTC or 18% ITC
01/01/2021 — 12/31/2021 *(added by the act)*	60% PTC or 18% ITC *(added by the act)*

Taxpayers that construct offshore wind facilities similarly have a choice between the PTC and ITC. Those that construct offshore wind facilities may have a longer period to begin construction compared with onshore wind facilities, depending on whether the taxpayer elects to claim the ITC in lieu of the PTC. Section 204 of the act (amending section 48(a)(5) to include an additional subparagraph (F)) provides that for any qualified offshore wind facility, the ITC election will be available for facilities that begin construction before January 1, 2026. Section 204(a) of the act defines a qualified offshore wind facility as a qualified wind facility within the meaning of section 45(d)(1) (determined without regard to any date by which the construction of the facility is required to begin) that is located in the inland navigable waters of the United States or in the coastal waters of the United States. As announced in IR 2020-281, the IRS ruled that a qualified offshore facility or energy property construction project satisfies the continuity safe harbor in the IRS wind notices if that taxpayer places the qualified wind facility into service within 10 calendar years after the calendar year during which construction of the project began.[13]

Offshore wind project owners may consider the ITC more financially viable given the capital-intensive nature of the projects, although economic modeling should provide the taxpayer with greater certainty on the financial viability of each tax incentive. Taxpayers claiming the ITC (in lieu of the PTC) will also benefit from

[10] Rev. Rul. 94-31, 1994-1 C.B. 16; *cf.* Rev. Rul. 68-111, 1968-1 C.B. 29 (holding that a railroad locomotive was new section 38 property when the cost of used materials and parts was not more than 20 percent of the total cost of materials and parts used in constructing it). The 80/20 rule will be satisfied if either the cost of the new property/(the cost of the new property plus the FMV of the used property) is greater than or equal to 80 percent, or the FMV of the used property/(the cost of the new property plus the FMV of the used property) is less than 20 percent.

[11] "Because the two credits are structured differently, and apply in different ways to different technologies, the choice between the [PTC or ITC] lends itself to quantitative financial analysis of the conditions under which either the PTC or the ITC would, at least in theory, provide greater financial value." Bolinger et al., "PTC, ITC, or Cash Grant? An Analysis of the Choice Facing Renewable Power Projects in the United States," National Renewable Energy Laboratory, at 2 (Mar. 2009).

[12] *Id.* at 11-12.

[13] *See generally* Notice 2021-5, 2021-3 IRB 479.

no-phaseout rules; thus, under section 48(a)(5)(A)(ii) and (a)(5)(F)(i)(II), qualified offshore facilities will be entitled to a 30 percent ITC on construction that begins before January 1, 2026. Taxpayers claiming the PTC for offshore wind facilities must adhere to the beginning of construction dates and applicable phaseout schedule outlined in Table 1.

B. Solar

The solar ITC[14] is a credit against investment costs in qualified solar energy property. Section 48(a)(3) defines qualified solar energy property as:

> equipment which uses solar energy to generate electricity, to heat or cool (or provide hot water for use in) a structure, or to provide solar process heat, excepting property used to generate energy for the purposes of heating a swimming pool . . . the construction, reconstruction, or erection of which is completed by the taxpayer, or which is acquired by the taxpayer if the original use of such property commences with the taxpayer, with respect to which depreciation (or amortization in lieu of depreciation) is allowable, and which meets the performance and quality standards (if any) which — (i) have been prescribed by the Secretary by regulations (after consultation with the Secretary of Energy), and (ii) are in effect at the time of the acquisition of the property.

Qualified solar energy property does not include any property that is part of an energy facility that has claimed a production energy credit under section 45 in the current or prior tax years.

Before the act, section 48(a)(2)(A)(i)(II) provided that the energy percentage for qualified solar energy property beginning construction before January 1, 2022, that is placed in service before January 1, 2024, is 30 percent. Section 48(a)(6), however, overlays a phase-down schedule of the ITC for qualified solar energy property beginning construction after December 31, 2019. Before the act, for qualified solar energy property beginning construction after December 31, 2019, and before January 1, 2021, that is placed in service before January 1, 2024, the ITC was 26 percent. For qualified solar energy property beginning construction after December 31, 2020, and before January 1, 2022, that is placed in service before January 1, 2024, the ITC was 22 percent. For any qualified solar energy property beginning construction before January 1, 2022, that is not placed in service before January 1, 2024, the ITC was 10 percent. The ITC was also 10 percent for qualified solar energy property beginning construction after December 31, 2021.

In accordance with the IRS solar notices, construction on qualified solar energy property is generally considered to begin when the taxpayer either begins physical work of a significant nature or incurs 5 percent or more of the total cost of the qualified solar energy property.[15] Both methods require that a taxpayer make continuous progress toward completion once construction has begun. Generally, a taxpayer that places a facility in service by a calendar year that is no more than four calendar years after that in which construction of the facility began will be considered to satisfy the "continuity safe harbor" as that term is defined in the IRS solar notices.[16] Under section 50(c)(3), a taxpayer must reduce the adjusted tax basis of the qualified solar energy property by 50 percent on account of claiming an ITC.[17]

Section 132 of the act extended the beginning of construction deadline by two years, from before January 1, 2022, to before January 1, 2024,

[14] A taxpayer realizes the economics of the ITC in the year the solar energy property is placed in service. If, however, the taxpayer sells the project before the end of its fifth year of commercial operations, the IRS can recapture a specific amount of the credit. *See generally* section 50(a)(1).

[15] Notice 2018-59, 2018-28 IRB 196, as modified by Notice 2019-43 and Notice 2020-41 (the "IRS solar notices").

[16] Notice 2020-41 extended the continuity safe harbor afforded by earlier IRS solar notices in light of effects of the COVID-19 pandemic when many taxpayers will not place facilities in service in time to meet the continuity safe harbor or may have difficulty demonstrating to investors that they have met the continuity requirement based on facts and circumstances. For projects that began construction in either calendar year 2016 or 2017, the continuity safe harbor will be satisfied if the taxpayer places a qualified solar energy property in service by the end of a calendar year that is no more than five calendar years after that in which construction of the qualified solar energy property began.

[17] There is no parallel rule for the PTC. Taxpayers claiming a PTC for a qualified wind facility are not required to reduce the adjusted tax basis of the facility's property on account of claiming the PTC.

and modified the phase-down schedule to permit a 26 percent ITC for qualified solar energy property beginning construction before January 1, 2022; a 22 percent ITC for qualified solar energy property beginning construction before January 1, 2024; and a 10 percent ITC for qualified solar energy property beginning construction after January 1, 2024. For qualified solar energy property beginning construction before January 1, 2024, that is not placed in service before January 1, 2026, the ITC is equal to 10 percent.

The act increased and extended the amount of the ITC available for qualified solar energy property. To illustrate the act's effect, assume that a taxpayer begins construction on four separate solar facilities (each containing qualified solar energy property) in California, Nevada, New Mexico, and Texas in calendar years 2020, 2021, 2022, and 2023, respectively. The California facility that began construction in 2020 would be entitled to a 26 percent ITC pre- and post-enactment of the act. Although the act does not change the ITC amount available to solar facilities using qualified solar energy property that began construction in 2020 (that is, 26 percent), it extended the placed-in-service deadline. Before the act, the taxpayer would have been required to place the California facility in service before January 1, 2024. The act extended the placed-in-service deadline by two years, permitting the taxpayer that began construction on the California solar facility to place the facility in service before January 1, 2026.

The act increased the amount of ITC available for qualified solar energy property beginning construction in calendar year 2021 and extended the placed-in-service deadline. Before the act, the Nevada solar facility would have been entitled to a 22 percent ITC (assuming that the facility was placed in service before January 1, 2024). Under the act, the taxpayer that begins construction on the Nevada facility is now entitled to a 26 percent ITC and has two more years to place the facility in service. Similarly, the New Mexico facility would be entitled to a greater ITC amount. Before the act, solar facilities that begin construction in 2022 were entitled to a 10 percent ITC. Under the act, the taxpayer would be entitled to the same 26 percent ITC on the New Mexico facility as it would on the Nevada facility. The taxpayer would also be required to place the New Mexico facility in service before January 1, 2026.

Whether the act increased the ITC amount for qualified solar energy property beginning construction in calendar year 2023 depends on when the taxpayer places that property in service. If the taxpayer that begins construction on the Texas facility places that facility in service before January 1, 2026, they are entitled to a 22 percent ITC. If, however, the taxpayer places the facility in service after January 1, 2026, they are only entitled to a 10 percent ITC. Tables 2 and 3 illustrate the beginning of construction and placed-in-service dates together with the corresponding ITC amounts as applicable before and after enactment of the act.

Table 2. Pre-Act Phase-Down Schedule

Date Construction Begins	Placed-in-Service Date	ITC Amount
Before 01/01/2020	Before 01/01/2024	30%
01/01/2020 — 12/31/2020	Before 01/01/2024	26%
01/01/2021 — 12/31/2021	Before 01/01/2024	22%
Before 01/01/2022	On or after 01/02/2024	10%
On or after 01/01/2022	Any	10%

Table 3. Post-Act Phase-Down Schedule

Date Construction Begins	Placed-in-Service Date	ITC Amount
Before 01/01/2020	Before 01/01/2026	30%
01/01/2020 — 12/31/2020	Before 01/01/2026	26%
01/01/2021 — 12/31/2021	Before 01/01/2026	26%
01/01/2022 — 12/31/2022	Before 01/01/2026	26%
01/01/2023 — 12/31/2023	Before 01/01/2026	22%
Before 01/01/2024	On or after 01/01/2026	10%
On or after 01/01/2024	Any	10%

C. Carbon Capture

Section 45Q(a), as amended in 2018, provides a credit for carbon capture and sequestration equipment during the 12-year period[18] from the equipment's placed-in-service date at a qualified facility. The CCSC amount is based on an "applicable dollar amount." For 2020, the credit was generally the sum of four amounts: $23.82 per metric ton of carbon oxide captured using equipment placed in service before February 9, 2018, that is not used as a tertiary injectant; $11.91 per metric ton of carbon oxide captured using equipment placed in service before February 9, 2018, that is used as a tertiary injectant; $31.77 per metric ton of carbon oxide captured using equipment placed in service on or after February 9, 2018, that is not used as a tertiary injectant during the first 12 years after the facility is placed in service; and $20.22 per metric ton of carbon oxide captured using equipment placed in service on or after February 9, 2018, that is used as a tertiary injectant during the first 12 years after the facility is placed in service. Carbon oxide not used as a tertiary injectant must be disposed of in a secure geological facility.

Before the act, section 45Q(d)(1) defined a qualified facility to include any industrial facility or direct air capture facility beginning construction before January 1, 2024 (within the meaning of Notice 2020-12, 2020-11 IRB 495). Like the guidance in the IRS wind and solar notices, Notice 2020-12 provides that a taxpayer begins construction by either beginning physical work of a significant nature or paying or incurring 5 percent or more of the total cost of the qualified facility or capture equipment. Both methods are subject to a continuity requirement, obligating the taxpayer to either maintain a continuous program of construction or make a continuous effort toward completion of the qualified facility or carbon capture equipment. Generally, a taxpayer can rely on a safe harbor to satisfy the continuity requirement if the project is placed in service within six years after the calendar year in which construction begins.

Section 121 of the act extended the beginning of construction deadline from January 1, 2024, to before January 1, 2026.[19] To illustrate the effect of the extension, assume that a taxpayer begins construction on a carbon capture and sequestration facility in calendar year 2024. The facility will use equipment that is used as a tertiary injectant during the first 12 years after the facility is placed in service. Before the act, that taxpayer would not be entitled to any CCSC. Under the act, however, the taxpayer would be entitled to a credit equal to $20.22 per metric ton of carbon oxide captured for a 12-year period. If the facility instead uses equipment that is not used as a tertiary injectant during the first 12 years after the facility is placed in service, the taxpayer would be entitled to a CCSC equal to $31.77 per metric ton of carbon oxide captured for a 12-year period.

III. Conclusion

The act has given the renewable energy industry a positive jolt. It extended many energy-related tax incentives, providing greater certainty to the market and investors. The act passed by a vote of 359 to 53 in the House and by a vote of 92 to 6 in the Senate. While it does not achieve the widespread reform President Biden intends to implement, it does indicate a bipartisan willingness to encourage investment in renewable energy. ■

[18] Analogous to the PTC, a taxpayer claiming the CCSC is entitled to the credit for each of the 12 years after the carbon capture and sequestration equipment is placed in service.

[19] Interestingly, this extension of the beginning of construction date tracks the intent of recent bipartisan legislation introduced in the House and Senate to extend that deadline. *See* Kristen A. Parillo, "Lawmakers Push for Carbon Capture Deadline Extension," *Tax Notes Federal*, Dec. 14, 2020, p. 1824.