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Analysis that matters from Washington National Tax

Beginning of Construction for the Section 48 Investment Tax Credit

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Notice 2018-59¹ provides guidance for determining when construction begins on a facility eligible for the energy investment credit under section 48.² This article discusses the “begin construction” requirements for solar property as well as fiber-optic solar, geothermal, qualified fuel cell, qualified microturbine, combined heat and power system, qualified small wind, and geothermal heat pump property.

Legislative Background

On December 18, 2015, the Consolidated Appropriations Act,³ extended and modified the investment tax credit (“ITC”). As modified, the ITC is phased down for solar energy property, the construction of which begins after December 31, 2019, and before January 1, 2022, and further limits the amount of ITC available for solar energy property that is not placed in service before January 1, 2024.

On February 9, 2018, the Bipartisan Budget Act of 2018,⁴ further modified the ITC for ITC-eligible property other than solar energy property by replacing the prior-law requirement to place energy property in service prior to 2017 with a requirement to begin construction before January 1, 2022. This

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¹ Notice 2018-59, 2018-28 I.R.B. 196.

² Unless otherwise indicated, section references are to the Internal Revenue Code of 1986, as amended (the “Code”) or the applicable regulations promulgated pursuant to the Code (the “regulations”).

³ Pub. L. No. 114–113, Div. P, Title III, § 303, 129 Stat. 2242, 3039 (2016).

⁴ Pub. L. No. 115–123, Div. D, Title I, § 40411, 132 Stat. 150 (2018).

modification has the effect of retroactively extending by more than five years the ITC for fiber-optic solar, qualified fuel cell, qualified microturbine, combined heat and power system (“CHP”), qualified small wind, and geothermal heat pump property.

The table below summarizes these requirements.

Energy Credit Phase Out Chart

Type of Energy Property	Date Construction Begins	Placed in Service Date	ITC Amount
Solar	Before 1/1/20	Before 1/1/24	30%
	1/1/20 – 12/31/20	Before 1/1/24	26%
	1/1/21 – 12/31/21	Before 1/1/24	22%
	Before 1/1/22	On or after 1/1/24	10%
	On or after 1/1/22	Any	10%
Fiber-optic solar	Before 1/1/20	Before 1/1/24	30%
	1/1/20 – 12/31/20	Before 1/1/24	26%
	1/1/21 – 12/31/21	Before 1/1/24	22%
	Before 1/1/22	On or after 1/1/24	0%
	On or after 1/1/22	Not applicable	0%
Geothermal	Any	Any	10%
Qualified fuel cell	Before 1/1/20	Before 1/1/24	30%
	1/1/20 – 12/31/20	Before 1/1/24	26%
	1/1/21 – 12/31/21	Before 1/1/24	22%
	Before 1/1/22	On or after 1/1/24	0%
	On or after 1/1/22	Not applicable	0%
Qualified microturbine	Before 1/1/22	Any	10%
	On or after 1/1/22	Not applicable	0%
CHP	Before 1/1/22	Any	10%
	On or after 1/1/22	Not applicable	0%
Qualified small wind	Before 1/1/20	Before 1/1/24	30%
	1/1/20 – 12/31/20	Before 1/1/24	26%
	1/1/21 – 12/31/21	Before 1/1/24	22%
	Before 1/1/22	On or after 1/1/24	0%
	On or after 1/1/22	Not applicable	0%
Geothermal heat pump	Before 1/1/22	Any	10%
	After 1/1/22	Not applicable	0%

Types of Energy Property

Solar Energy Property

Solar energy property includes 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.⁵

Fiber-Optic Solar Energy Property

Fiber-optic solar energy property includes equipment which uses solar energy to illuminate the inside of a structure using fiber-optic distributed sunlight, but only with respect to property the construction of which begins before January 1, 2022.⁶

Geothermal Property

Geothermal property includes equipment used to produce, distribute, or use energy derived from a geothermal deposit (within the meaning of section 613(e)(2)), but only, in the case of electricity generated by geothermal power, up to (but not including) the electrical transmission stage.⁷

Qualified Fuel Cell Property

Qualified fuel cell property includes qualified fuel cell property a fuel cell power plant, which is an integrated system comprised of a fuel cell stack assembly and associated balance of plant components that converts a fuel into electricity using electrochemical means. To qualify for the ITC, qualified fuel cell property must have a nameplate capacity of at least 0.5 kilowatt of electricity using an electrochemical process and an electricity-only generation efficiency greater than 30 percent. Qualified fuel cell property does not include any property the construction of which does not begin before January 1, 2022.⁸

Qualified Microturbine Property

Qualified microturbine property includes a stationary microturbine power plant, which is an integrated system composed of a gas turbine engine, a combustor, a recuperator or regenerator, a generator or alternator, and associated balance of plant components that converts a fuel into electricity and thermal energy; all secondary components located between the existing infrastructure for fuel delivery and the existing infrastructure for power distribution, including equipment and controls for meeting relevant power standards, such as voltage, frequency, and power factors.

⁵ Section 48(a)(3)(A)(i).

⁶ Section 48(a)(3)(A)(ii).

⁷ Section 48(a)(3)(A)(iii).

⁸ Sections 48(a)(3)(A)(iv), 48(c)(1), and 48(c)(1)(D).

To qualify for the ITC, qualified microturbine property must have a name-plate capacity of less than 2,000 kilowatts, and an electricity-only generation efficiency of not less than 26 percent at International Standard Organization conditions. Qualified microturbine property does not any property the construction of which does not begin before January 1, 2022.⁹

Combined Heat and Power System Property

Combined heat and power system property includes CHP 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 heating and cooling applications).

To qualify for the ITC, CHP property must produce at least 20 percent of its total useful energy in the form of thermal energy which 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).¹⁰

Additionally, CHP property must have an energy efficiency percentage that exceeds 60 percent, except in the case of CHP systems that use biomass. The construction of CHP property must begin before January 1, 2022.¹¹

Qualified Small Wind Energy Property

Qualified small wind energy property includes qualified small wind energy property that uses a qualifying small wind turbine to generate electricity. To qualify for the ITC, a qualifying small wind turbine must have a nameplate capacity of not more than 100 kilowatts.¹²

Geothermal Heat Pump Property

Geothermal heat pump property includes geothermal heat pump 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, but only with respect to property the construction of which begins before January 1, 2022.¹³

⁹ Sections 48(a)(3)(A)(iv) and 48(c)(2).

¹⁰ Sections 48(a)(3)(A)(v) and 48(c)(3).

¹¹ Section 48(c)(3)(D). Also, section 48(a)(2)(A)(ii) provides that the energy percentage for CHP property is 10 percent. Section 48(c)(3)(B) provides a special formula for determining the ITC of CHP property with certain electrical capacity. Section 48(c)(3)(D)(ii) provides a special formula for determining the ITC of CHP systems that use biomass.

¹² Sections 48(a)(3)(A)(vi) and 48(c)(4). See Notice 2015–4, 2015–5 I.R.B. 407, as modified by Notice 2015–51, 2015–31 I.R.B. 133, for additional information on performance and quality standards.

¹³ Section 48(a)(3)(A)(vii).

Begin Construction

Notice 2018-59 provides two methods for taxpayers to establish the beginning of construction, the “Physical Work Test” and the “Five Percent Safe Harbor Test” (the “Safe Harbor Test”). The beginning of construction rules are similar to those applicable to renewable energy property under section 45.¹⁴

Physical Work Test

Generally, for self-constructed property, construction begins when physical work of a significant nature begins. This test focuses on the nature of the work performed, not the amount or the cost.

For construction performed for the taxpayer under a contract, construction begins when physical work of a significant nature begins under a binding written contract entered into prior to the manufacture, construction, or production of the energy property or components of energy property for use by the taxpayer’s business. A contract is binding if it is enforceable under local law against the taxpayer or a predecessor and, in the event of a breach, the contract does not limit damages to less than five percent of the total contract price.

Physical work of a significant nature does not include work (performed either by the taxpayer or by another person under a binding written contract) to produce components of energy property that are either in existing inventory or are normally held in inventory by a vendor. If a manufacturer produces components of property for multiple energy properties, a reasonable method must be used to associate individual components of property with a particular purchaser.

- [Off-Site Physical Work of a Significant Nature](#)

Generally, off-site physical work of a significant nature for energy property may include the manufacture of components, mounting equipment, support structures such as racks and rails, inverters, and transformers and other power conditioning equipment.

- [On-Site Physical Work of a Significant Nature](#)

Notice 2018-59 provides a non-exclusive list of examples for on-site physical work of a significant nature for the various types of energy property:

- Solar energy property—the installation of racks or other structures to affix photovoltaic (PV) panels, collectors, or solar cells to a site
- Fiber-optic solar energy property—the installation of collectors, concentrators, tracking systems, bundles of optical fibers, or fixtures within a structure

¹⁴ See Notice 2013-29, clarified and updated by Notice 2013-60; Notice 2014-46; Notice 2016-31; Notice 2015-25; Notice 2016-31; and Notice 2017-04.

- Geothermal property—physical activities that are undertaken at a project site after a valid discovery such as the installation of piping, turbines, generators, flash tanks, or heat exchangers
- Qualified fuel cell property—the installation of components of a fuel cell stack assembly such as electrodes, gas diffusion layers, membranes, gasketing, or plates
- Qualified microturbine property—the installation of a gas turbine engine, combustor, recuperator, regenerator, generator, alternator, or other plant components
- CHP property—the installation of a heat engine, generator, heat recovery components, or electrical interconnections
- Qualified small wind energy property—the installation of a foundation, tower, wiring, or grounding systems
- Geothermal heat pump property—the installation of ground heat exchangers, heat pump units, or air delivery systems (ductwork)

– Preliminary Activities

Physical work of a significant nature does not include preliminary activities, even if the cost of those preliminary activities is properly included in the depreciable basis of the energy property. Generally, preliminary activities include, but are not limited to: planning or designing; securing financing, exploring, researching, conducting mapping and modeling to assess a resource; obtaining permits and licenses; conducting geophysical, gravity, magnetic, seismic and resistivity surveys; conducting environmental and engineering studies; performing activities to develop a geothermal deposit prior to valid discovery; clearing a site; conducting test drilling to determine soil condition (including to test the strength of a foundation); excavating to change the contour of the land (as distinguished from excavation for a foundation); and, removing existing foundations, turbines, and towers, solar panels, or any components that will no longer be part of the energy property (including those on or attached to building structures).

– Single Project

Solely for purposes of determining whether construction of energy property has begun, multiple energy properties that are operated as part of a single project (along with any components of property, such as a computer control system, that serves some or all such energy properties) will be treated as a single energy property. Whether multiple energy properties are operated as part of a single project will depend on the relevant facts and circumstances.

Factors indicating that multiple energy properties are operated as part of a single project may include energy properties that are:

- Owned by a single legal entity
- Constructed on contiguous pieces of land

- Described in a common power purchase agreement or agreements
- Have a common intertie
- Share a common substation
- Described in one or more common environmental or other regulatory permits
- Constructed pursuant to a single master construction contract
- Financed pursuant to the same loan agreement
- Physical work of a significant nature

Only physical work of a significant nature on tangible personal property and other tangible property used as an integral part of the activity performed by an energy property will be considered for purposes of determining whether a taxpayer has begun construction of the energy property. This includes property integral to the production of electricity, but does not include property used for the transmission of electricity.

Roads that are integral to an energy property are integral to the activity performed by the energy property including onsite roads that are used for equipment to operate and maintain the energy property. Roads primarily for access to the site, or roads used primarily for employee or visitor vehicles, are not integral to the activity performed by an energy property. Generally, fencing is not an integral part of an energy property.

Finally, buildings are not integral parts of an energy property because they are not integral to the activity of the energy property unless a building is:

- A structure that is essentially an item of machinery or equipment; or,
- A structure that houses property that is integral to the activity of an energy property if the use of the structure is so closely related to the use of the housed energy property that the structure clearly can be expected to be replaced when the energy property it initially houses is replaced.

Safe Harbor Test

Generally, a taxpayer will be considered to have begun construction of energy property under the Safe Harbor Test if a taxpayer pays or incurs¹⁵ five percent or more of the total cost of the energy property, and makes continuous efforts to advance towards completion of the energy property.

¹⁵ Costs are “incurred” within the meaning of section 1.461–1(a)(1).

All depreciable costs of the energy property are taken into account to determine whether the Safe Harbor Test has been met but does not include the cost of land or any property not integral to the energy property.

– [Continuity Requirement for Physical Work and Safe Harbor Tests](#)

Both the Physical Work Test and the Safe Harbor Test require a continuous program of construction (“Continuous Construction Test”), which involves continuing physical work of a significant nature based upon all relevant facts and circumstances.

Facts and circumstances indicating continuous efforts to advance towards completion of an energy property may include, but are not limited to:

- Paying or incurring additional amounts included in the total cost of the energy property
- Entering into binding written contracts for the manufacture, construction, or production of components of property or for future work to construct the energy property
- Obtaining necessary permits
- Performing physical work of a significant nature

– [Excusable Disruptions to Continuous Construction and Continuous Efforts Tests](#)

Certain disruptions in a taxpayer’s continuous construction or continuous efforts to advance towards completion of an energy property that are beyond the taxpayer’s control will not be considered as indicating that a taxpayer has failed to satisfy the continuity requirement. However, these disruptions will not extend the “Continuity Safe Harbor” deadline as discussed below.

The following is a non-exclusive list of construction disruptions that will not be considered as indicating that a taxpayer has failed to satisfy the Continuous Construction Test, such as delays due to:

- Severe weather conditions
- Natural disasters
- Obtaining permits or licenses from federal, state, local, or Indian tribal governments, including, but not limited to, delays in obtaining permits or licenses from the Federal Energy Regulatory Commission (FERC), the Environmental Protection Agency (EPA), the Bureau of Land Management (BLM), and the Federal Aviation Agency (FAA)
- Written requests of a federal, state, local, or Indian tribal government regarding matters of public safety, security, or similar concerns

- Interconnection-related delays, such as those relating to the completion of construction on a new transmission or distribution line or necessary transmission or distribution upgrades to resolve grid congestion issues that may be associated with a project's planned interconnection
- The manufacture of custom components
- Labor stoppages
- The inability to obtain specialized equipment of limited availability
- The presence of endangered species
- Financing delays
- Supply shortages

– [Continuity Safe Harbor](#)

Notwithstanding the above tests for determining whether a taxpayer has satisfied the Continuous Construction Test, a taxpayer will be deemed to have satisfied this test if the energy property is placed in service by the end of the calendar year that is no later than four years after the calendar year during which construction of the energy property began.

While the excusable disruption rules do not apply for purposes of the safe harbor, if the energy property is not placed before the end of the fourth calendar year after the calendar year during which construction of the energy property began, whether the energy property satisfies the Continuous Construction Test under either the Physical Work Test or the Safe Harbor Test will be determined by the relevant facts and circumstances.

Note that the Continuity Safe Harbor does not extend any placed in service deadlines for energy property.

Other Rules Applicable to Physical Work and Safe Harbor Tests

Construction by Contract

For components of energy property that are manufactured, constructed, or produced for the taxpayer by another person under a binding written contract, the work performed and amounts paid or incurred under the contract are taken into account in determining when construction begins, provided the contract is entered into prior to the work taking place or the amounts paid or incurred.

Binding Written Contract

A written contract is binding only if it is enforceable under local law against the taxpayer or a predecessor and does not limit damages to a specified amount (for example, by use of a liquidated damages provision). For this purpose, a contractual provision that limits damages to an amount equal

to at least five percent of the total contract price will not be treated as limiting damages to a specified amount.¹⁶

Master Contract

If a taxpayer enters into a binding written contract for a specific number of components of property to be manufactured, constructed, or produced for the taxpayer by another person under a binding written contract (master contract), and then through a new binding written contract (project contract) the taxpayer assigns its rights to certain components of property to an affiliated special purpose vehicle that will own the energy property for which such components of property are to be used, work performed, or amounts paid or incurred with respect to the master contract may be taken into account in determining when construction begins with respect to the energy property.

Look-through Rule

Physical Work Test

Both on-site and off-site work (performed either by the taxpayer or by another person under a binding written contract) may be taken into account for purposes of demonstrating that physical work of a significant nature has begun with respect to an energy property.

Safe Harbor Test

For an energy property or components of energy property that are manufactured, constructed, or produced for the taxpayer by another person under a binding written contract with the taxpayer, amounts paid or incurred with respect to the energy property by the other person before the energy property is provided to the taxpayer are deemed paid or incurred by the taxpayer when the amounts are paid or incurred by the other person under the principles of section 461.

Application of 80/20 Rule to Retrofitted Energy Property

Energy property may qualify as originally placed in service even though it contains some used components of property, provided the fair market value of the used components of property is not more than 20 percent of the energy property's total value (the cost of the new components of property plus the value of the used components of property) (the "80/20 Rule").

In the case of a single project composed of multiple energy properties, the 80/20 Rule is applied to each energy property composing the single project. For purposes of the 80/20 Rule, the cost of a new energy property includes all properly capitalized costs of the new energy property.

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¹⁶ For additional guidance regarding the definition of a binding written contract, see section 1.168(k)-1(b)(4)(ii)(A)-(D).

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