

IRS Releases New Proposed Regulations Relating to Green Energy Investment Tax Credits

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The Inflation Reduction Act (the “IRA”), enacted on August 16, 2022, has led to a transformation in how the government incentivizes investment in green energy technologies. Since the enactment of the IRA, the IRS has been developing a series of regulations and other interpretive guidance that provide detail on how taxpayers can¹ qualify for the new incentives. On November 17, 2023, the IRS released proposed regulations (the “Proposed Regulations”) that provide guidance relating to the investment tax credit (the “ITC”) under Section 48, which provides a tax credit for investment in certain types of green energy technology.²

The Proposed Regulations are largely concerned with defining the boundary of what constitutes a single property for the purposes of claiming an ITC. In our modern technological economy, equipment used to produce energy is built from component parts, that are in turn made from smaller parts, which are made from even smaller parts. On the other hand, large equipment can be aggregated with other large equipment, to produce ever larger and more powerful installations of energy generation machinery. It becomes a difficult semantic exercise to define at what point a collection of objects coheres into a single item of “property” (or larger category) for which an ITC or ITC bonus may be available.

In the Proposed Regulations, the IRS introduces a “functional interdependence test” pursuant to which the IRS attempts to pinpoint the moment that a collection of objects (*i.e.*, components) coheres into a single “energy property” that can be eligible for an ITC. Broadly speaking, an energy property arises if (a) the implementation of each component is necessary in order for the property to fulfill its intended purpose of generating or storing energy, or (b) the direct use of an item of property is so essential (*i.e.*, integral) to the function of the energy property that the function would not be complete without the item in question.

The IRS also uses a complementary rule to require aggregation of energy properties into larger “energy projects” for the purpose of determining eligibility for certain enhancements to the ITC that depend on the size of an energy project.

This Client Alert describes the functional interdependence test and some other provisions of the Proposed Regulations that may be of interest.

Functional Interdependence Test

Section 48, as amended by the IRA, provides a list of eleven types of energy property that may qualify for the ITC. In order to qualify for the ITC, a taxpayer must invest in an “energy property,” *i.e.*, the taxpayer cannot get an ITC for the cost of a microinverter purchased in isolation, but an ITC may be available for microinverters purchased in conjunction with solar panels and other components of a functioning solar installation. Accordingly, the Proposed Regulations serve to define when a collection of various components constitutes a single energy property for the purposes of the ITC.

In the preamble to the Proposed Regulations, the IRS discusses the difficulty of drafting a technology-neutral definition of energy property that leaves flexibility for the definition to capture future technological changes. The IRS’s solution to this problem is the “functional interdependence test,” which tries to aggregate all the components used for a particular function (such as producing electricity) without referring to specific pieces of technology (such as a gallium arsenide photovoltaic cell). The intent of the IRS is that property using the right category of technology should

satisfy the definition of energy property, even if the specific technology of the constituent components changes over time.

The IRS's functional interdependence test employs a top-down methodology.

First, the Proposed Regulations define a "unit" of energy property. A collection of components that constitutes a unit of energy property may be eligible for the ITC if it meets all of the relevant requirements. Under the Proposed Regulations, property must meet the following requirements to qualify as a unit of energy property:

- (a) The property must meet the basic requirements for the ITC:
 1. The taxpayer must construct, reconstruct, or erect the property, or, if the original use of the property commences with the taxpayer, the taxpayer must acquire the property.
 2. Depreciation or amortization must be allowable with respect to the property.
 3. The property must meet certain performance and quality standards.
 4. Any relevant timing requirements regarding the beginning of construction or placed in service dates must be met with respect to the property.
- (b) The property cannot be specifically excluded from the ITC. The Proposed Regulations provide that property cannot be energy property if such property qualifies for the production tax credit (subject to certain exceptions) or if it consists of power purchase agreements, goodwill, going concern value, or renewable energy certificates.
- (c) The property must meet the definition of one of the eleven types of green energy property described in Section 48 and the Proposed Regulations (such as solar energy property, geothermal energy property, etc.).

Second, once a collection of components qualifies as a unit of energy property, the Proposed Regulations consider the relationship of each component to the overall function of the unit. Under this test, a unit of energy property generally consists of "all functionally interdependent components of property owned by the taxpayer that are operated together and that can operate apart from other energy properties within a larger energy project."

The key to this part of the test is the concept of functional interdependence. The Proposed Regulations have two definitions of "functionally interdependent": one that applies generally and one that applies only to certain types of energy property. Under the general definition, functionally interdependent means that "the placing in service of each component is dependent upon the placing in service of each of the other components *in order to generate or store electricity, thermal energy, or hydrogen.*" (Emphasis added to highlight contrast with specific definition, below.)

On the other hand, the specific definition only applies to solar process heat equipment, fiber-optic solar energy property, electrochromic glass property, geothermal heat pump equipment, qualified biogas property and microgrid controllers. Under this definition, functionally interdependent means that "the placing in service of each component is dependent upon the placing in service of each of the other components *in order to perform the intended function of the energy property.*"

Third, the Proposed Regulations use the concept of an "integral part" to allow items of property to be included in an energy property even if those items are not functionally interdependent with other components of the energy property. Under this provision, energy property includes property that is an integral part of the energy property. This is generally the case if the property in question is "used directly in the intended function of the energy property and is essential to the completeness of the intended function." The regulations include special rules for situations where a taxpayer owns some, but not all, of the integral parts of an energy property or where a shared item of property is integral to multiple energy properties.

The Proposed Regulations specifically include and exclude certain items of property with respect to energy property. The following items are specifically *included* in energy property:

- For rooftop solar energy property, all components of property that are installed on a single rooftop;
- Power conditioning and transfer equipment that is used to perform the intended function of an energy property, which may include transformers, inverters, converters, switches, circuit breakers, and arrestors; wires, cables, combiner boxes, fuses, and current transformers (but not transmission or distribution lines); and hardware and software used to monitor, operate, and protect power conditioning equipment or transfer equipment; and
- Roads that are integral to the activity performed by the energy property such as onsite roads that are used for equipment to operate and maintain the energy property (but not roads primarily for access to the site or roads used primarily for employee or visitor vehicles).

And the following items are specifically *excluded* from energy property:

- Energy transmission equipment, such as transmission lines and towers, or any equipment beyond the point of interconnection to a utility's grid or regional transmission operator's grid;
- Property that is in addition or modification to an existing energy property (subject to certain exceptions);
- Fencing;
- Buildings (but not including any structure that is essentially an item of machinery or equipment, or any 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).

Finally, the Proposed Regulations provide that any property that meets the functional interdependence test or is integral to an energy property is part of an energy property regardless of where the property is located.

One issue with the functional interdependence test is that it is not entirely clear what the difference is between functionally interdependent items of property and property that is integral to an energy property. This distinction is further blurred by the inclusion of specific inclusions and exclusions to energy property, which should not be necessary if the general rules were clearly drafted. The Proposed Regulations provide a handful of examples of how these definitional provisions should be applied in easy cases — hopefully the finalized regulations will include examples that are helpful for harder cases.

Criteria for Treatment as a Single Energy Project for One Megawatt Exception

The Proposed Regulations provide rules for when multiple energy properties (as determined under the rules described above) are treated as a single “energy project.” This is relevant because the ITC, as amended by the IRA, provides certain benefits for a small project (as defined below), which could create an incentive for taxpayers to treat related energy properties as separate energy projects in order to qualify for the benefits for small projects. Accordingly, the IRS needs a rule to force aggregation of related energy properties into a single energy project.

The Proposed Regulations provide that the size of an energy project is relevant because an energy project with a maximum net output of less than one megawatt of electrical energy (measured in alternating current) or thermal energy (such a project, a “small project”) is not required to meet the prevailing wage and apprenticeship requirements in order to qualify for the 5x multiplier for the ITC (such exception is referred to as the “One Megawatt Exception”). In addition, the domestic content bonus and energy community bonus are increased from 2% to 10% for small projects that qualify for the One-Megawatt Exception.

Under the Proposed Regulations, multiple energy properties are aggregated into an energy project if, at any point during the construction of the multiple energy properties, the energy properties are owned by a single taxpayer (including certain related taxpayers) *and* any two or more of the following factors are present:

1. The energy properties are constructed on contiguous pieces of land;
2. The energy properties are described in a common power purchase, thermal energy, or other off-take agreement or agreements;
3. The energy properties have a common intertie;
4. The energy properties share a common substation, or thermal energy off-take point;
5. The energy properties are described in one or more common environmental or other regulatory permits;
6. The energy properties are constructed pursuant to a single master construction contract; or
7. The construction of the energy properties are financed pursuant to the same loan agreement.

These seven factors are derived from important existing IRS guidance that provides rules for determining when construction has begun on energy property for purposes of the ITC. The version of this rule in the Proposed Regulations, however, is narrower than the existing rule. The Proposed Regulations provide that if multiple energy properties are treated as a single project under the existing guidance, they will also be treated as a single energy project under the Proposed Regulations.

In the case of thermal energy storage property and other energy property that generates thermal energy for productive use (*i.e.*, direct geothermal use, geothermal heat pumps, solar process heating), a taxpayer must use the equivalent of 3.4 million British Thermal Units per hour (mmBtu/hour) for heating and 284 tons for cooling to determine if the thermal storage property qualifies as a “small project” or satisfies the One Megawatt Exception (Btu per hour/3,412,140 = MW). For projects delivering thermal energy to one or more buildings, this can be assessed as either the aggregate maximum thermal output of all individual heating or cooling elements within the building or buildings, or as the maximum thermal output that the entire project is capable of delivering to the building or buildings at any given moment.

Currently the IRA’s exception from the phaseout of elective pay (*i.e.*, direct payment) for energy projects with a maximum net output of less than one megawatt does not reference facilities with a maximum net output of less than one megawatt of thermal energy (only facilities measured in alternating current). The Proposed Regulations do not clarify that this exception applies to thermal energy projects, but hopefully comments will be raised to that effect and the IRS will provide further clarification.

Changes to the Definitions of Each Type of Energy Property

As noted above, Section 48 as amended by the IRA applies to eleven separate types of energy property. The definitions of each type of energy property in the statute are brief, and taxpayers have requested more detail on how to apply those definitions.

Previously, existing regulations under Section 48 provided some help in this regard. Those regulations, however, were originally issued in the 1980s under a prior version of the ITC statute and are more than 30 years behind the current state of green energy technology. The Proposed Regulations provide a long-overdue update to these definitional provisions.

Generally, the Proposed Regulations incorporate the definitions provided by the IRA and apply the functional interdependence test to each type of energy property. For the following types of energy property, the Proposed Regulations make significant changes to the outdated existing regulations:

- **Solar Energy.** The Proposed Regulations expand the existing definition of solar energy property to include passive solar equipment and solar process heat equipment.
- **Combined Heat and Power Systems.** Several commenters requested that the IRS make changes to the quantitative requirements for a combined heat and power system, such as the requirement that the system produce at least 20 percent of its total useful energy in the form of electrical and / or mechanical power. The IRS declined to make these changes and clarified that combined heat and power property does not include equipment used to transport the energy source to the generating facility or to distribute energy produced by the facility.
- **Geothermal Heat Pumps.** The Proposed Regulations clarify that, in addition to the ground or ground water, other underground working fluids may be used as a thermal energy source or as a thermal energy sink. In addition, the preamble to the Proposed Regulations clarifies that energy distribution equipment may be considered geothermal heat pump equipment if it is integral to the function of the geothermal heat pump equipment to heat or cool a structure.
- **Energy Storage.** The IRA added energy storage equipment to the types of technology that are eligible for the ITC. The Proposed Regulations clarify that energy storage technology includes electrical energy storage property, thermal energy storage property and hydrogen energy storage property. The Proposed Regulations provide that electrical energy storage property includes but is not limited to rechargeable electrochemical batteries of all types (such as lithium ion, vanadium flow, sodium sulfur, and lead-acid); ultracapacitors; physical storage such as pumped storage hydropower compressed air storage, flywheels; and reversible fuel cells. The Proposed Regulations provide that thermal energy storage property includes equipment and materials, and parts related to the functioning of such equipment, to store thermal energy for later use to heat or cool, or to provide hot water for use in heating a residential or commercial building. Thermal energy storage property includes, but is not limited to, thermal ice storage systems that use electricity to run a refrigeration cycle to produce ice that is later connected to the HVAC system as an exchange medium for air conditioning the building, heat pump systems that store thermal energy in an underground tank or borehole field to be extracted for later use for heating and/or cooling, and electric furnaces that use electricity to heat bricks to high temperatures and later use this stored energy to heat a building through the HVAC system. The Proposed Regulations provide that hydrogen energy storage property must store hydrogen that is solely used as energy and not for other purposes such as for the production of end products such as fertilizer. Hydrogen energy storage property includes, but is not limited to, a hydrogen compressor and associated storage tank and an underground storage facility and associated compressors. The Proposed Regulations allow for modifications of certain electrical energy storage property and hydrogen energy storage property (but not thermal energy storage property) placed in service before August 16, 2022 (including recycled components in certain cases) and clarify that “virtual batteries” (i.e., facilitates energy demand shifting but not does not provide energy storage) however, do not qualify as energy storage property.
- **Biogas Property.** The Proposed Regulations provide that gas upgrading equipment necessary to concentrate gas into the appropriate mixture for injection into a pipeline through removal of other gases such as carbon dioxide, nitrogen, or oxygen is not included in qualified biogas property.
- **Microgrid Controllers.** The Proposed Regulations clarify that, in order to qualify for the ITC, a microgrid must be capable of being connected to the larger utility or regional electrical grid but does not have to actually be connected to the electrical grid.
- **Geothermal Equipment.** The Proposed Regulations modify the existing regulations on geothermal property in the following three respects: The Proposed Regulations (a) extend the ITC to equipment necessary to bring geothermal energy from a subterranean deposit to the surface, (b) expand the types of wells eligible for a geothermal ITC to production, injection and monitoring wells, and (c) include electricity generating equipment in

the geothermal ITC for projects that convert geothermal energy to electricity. In addition, the Proposed Regulations extend the geothermal ITC for energy distribution equipment to components of a building's heating or cooling system.

- **Fiber-optic Solar and Electrochromic Glass.** The Proposed Regulations limit the definition of electrochromic glass property to (i) electrochromic glass incorporated into a full window installed directly into a building and (ii) electrochromic glass incorporated into a secondary window installed on top of an existing window. Electrochromic windows must be rated in accordance with the National Fenestration Rating Council (NFRC) and secondary glazing systems must be rated in accordance with the Attachments Energy Rating Council (AERC) Rating and Certification Process. In addition, the Proposed Regulations expand the ITC to the electronic controls package (such as power electronics, sensors, wires and software systems) that accompany the electrochromic glass.
- **Waste Energy Recovery Property.** Waste energy recovery property (referred to as "WERP") is property that generates electricity solely from heat from buildings or equipment if the primary purpose of such building or equipment is not the generation of electricity. The Proposed Regulations provide examples of buildings or equipment the primary purpose of which is not the generation of electricity, which include, but are not limited to, manufacturing plants, medical care facilities, facilities on college campuses, pipeline compressor stations, and associated equipment.

The Proposed Regulations generally adopt the statutory definitions of the following types of energy property without significant changes (other than applying the functional interdependence test): Qualified Fuel Cell Property and Qualified Microturbine Property, and Qualified Small Wind Energy Property.

Miscellaneous Changes

In addition to the definitional provisions described above, the Proposed Regulations also include a number of other provisions, such as the following:

- **Performance and Quality Standards.** Section 48 requires that, to be eligible for the ITC, property must meet any performance and quality standards prescribed by the IRS after consultation with the Department of Energy. The Proposed Regulations provide special performance and quality standards for small wind and as noted above, electrochromic glass property, referencing standards published by the American Wind Energy Association, the International Electrotechnical Commission, ANSI/ACP, the National Fenestration Rating Council and the Attachments Energy Rating Council.
- **Prevailing Wage and Apprenticeship Recapture Period.** The Proposed Regulations clarify that the recapture period for a failure to continue to satisfy the prevailing wage and apprenticeship requirements after a property is placed into service begins on the placed in-service date and ends on the day that is five full years after the placed in-service date, even though that period is unlikely to align with a taxpayer's taxable year. The Proposed Regulations also create an annual information reporting requirement to verify compliance with the prevailing wage and apprenticeship requirements throughout the recapture period.
- **80/20 Rule.** The Proposed Regulations apply the 80/20 Rule to permit a taxpayer to include in the basis of the energy property for purposes of the ITC, the cost of new components that are integral to retrofitted energy property containing some used components where the fair market value of the used components of the unit of energy property is not more than 20 percent of the total value of the unit of energy property taking into account the cost of the new components of property plus the value of the used components of the unit of energy property.

Comment Period

Written or electronic comments on the Proposed Regulations may be submitted to the IRS until January 22, 2024, and a public hearing is scheduled to be held on February 20, 2024, at 10:00 am ET.

Conclusion

Green energy technology is complex, and an installation that incorporates green energy technology involves thousands, if not hundreds of thousands, of items of property. The Proposed Regulations attempt to provide guidance on which of those items of property can be included in a determination of the amount of an ITC under Section 48. These issues are certain to be crucial for any taxpayer intending to claim an ITC. Chapman and Cutler LLP is monitoring the development of these regulations and will provide further updates when and if the Proposed Regulations are finalized.

For More Information

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- 1 One of the IRA's innovations is to provide a mechanism for certain tax-exempt entities to benefit from ITCs. Accordingly, the term "taxpayer" in this Client Alert includes tax-exempt entities that are eligible for these benefits.
 - 2 References to "Sections" in this Client Alert refer to sections of the Internal Revenue Code of 1986, as amended.

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