

# Notable highlights from section 48D final regulations (advanced manufacturing investment credit)

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The U.S. Treasury Department and IRS on October 22, 2024, released the long-awaited [final regulations](#) implementing the advanced manufacturing investment tax credit (ITC) under sections 48D and 50 as established by H.R. 4346, “The CHIPS and Science Act of 2022,” to incentivize the manufacture of semiconductors and semiconductor manufacturing equipment within the United States.

Section 48D provides a 25% ITC for a qualified investment in an advanced manufacturing facility, defined in the statute as a facility for which the primary purpose is the manufacturing of semiconductors or semiconductor manufacturing equipment. Read [TaxNewsFlash](#)

The final regulations adopt the March 2023 [proposed regulations](#), with some specific notable revisions and clarifications based on feedback received from commenters in response to those regulations. The final regulations provide clarity around certain key credit eligibility requirements, including the clarification and expansion of definitions, and clarifications of certain recapture provisions.

The final regulations go into effect on December 23, 2024, and apply with respect to property placed in service after December 31, 2022, and in a tax year that ends on or after October 23, 2024.

## Updated and expanded definitions

### Semiconductor

Treasury and the IRS have adopted the definition of “semiconductor” as provided in the proposed regulations, which state that a semiconductor is an integrated electronic device or system most commonly manufactured using materials such as, but not limited to, silicon, silicon carbide, or III-V compounds, and processes such as, but not limited to, lithography, deposition, and etching. Such devices and systems include, but are not limited to, analog and digital electronics, power electronics, and photonics, for memory, processing, sensing, actuation, and communications applications.

### Semiconductor manufacturing

While the final regulations do not revise or expand the definition of “semiconductor,” the final regulations do make important modifications to what types of manufacturing activities are considered semiconductor manufacturing. Specifically, the terms “semiconductor manufacturing” and “manufacturing of semiconductors” are synonymous and are expanded to include of semiconductor wafer production in addition to semiconductor fabrication and semiconductor packaging.

Very notably, the final regulations explain that semiconductor wafer production includes the processes of growing single-crystal ingots and boules, wafer slicing, etching and polishing, bonding, cleaning, epitaxial

deposition, and metrology. The preamble to the final regulations notes that “semiconductor wafer production” includes the production of solar wafers. Further, semiconductor fabrication includes the process of forming devices like such as transistors, poly capacitors, non-metal resistors, and diodes, as well as interconnects between such devices, on a wafer of semiconductor material.

Lastly, semiconductor packaging means the process of enclosing a semiconductor in a protective container (package) and providing external power and signal connectivity for the assembled integrated circuit and has been expanded to include the process of assembly and testing of semiconductors and advanced packaging of semiconductors.

### KPMG observation

This portion of the final regulations is responsive to feedback on the inclusion of wafer production and also acts to more closely align the section 48D rules with the corresponding rules and definitions implemented in the Commerce Department final rules relating to the CHIPS Act grant funding. Note that with the inclusion of solar wafer production in section 48D, solar wafer producers may be able explore potential benefits under both section 48D and section 45X, provided all relevant requirements are satisfied.

## Semiconductor manufacturing equipment

The proposed regulations defined semiconductor manufacturing equipment as the specialized equipment integral to the manufacturing of semiconductors and subsystems that enable or are incorporated into the manufacturing equipment.

The final regulations have clarified the definition of semiconductor manufacturing equipment, emphasizing that it includes highly engineered and specialized equipment used in semiconductor production, along with their subsystems. The final regulations provide additional examples of semiconductor manufacturing equipment and also clarify that the list of examples is non-exclusive. Importantly, the regulations specify that consumables like chemicals or gases do not qualify as equipment and are therefore not eligible under section 48D.

## Qualified property

Under section 48D(b)(1), the qualified investment with respect to any advanced manufacturing facility for any tax year is the basis of any “qualified property” placed in service by the taxpayer during such tax year that is part of an advanced manufacturing facility. The final regulations provide that property is part of an advanced manufacturing facility if it is physically located at the facility or on a contiguous piece of land. Property that does not meet this physical location requirement may still be considered part of the facility if it meets a three-part test: (1) is owned by the same taxpayer that owns the facility; (2) is connected to the facility (e.g., by pipeline); and (3) is wholly dedicated to the operation of the facility.

Section 48D(b)(2) provides that the term “qualified property” means tangible property with respect to which depreciation (or amortization in lieu of depreciation) is allowable that is integral to the operation of the advanced manufacturing facility if (1) constructed, reconstructed, or erected by the taxpayer, or (2) acquired by the taxpayer, if the original use of such property commences with the taxpayer. Qualified property includes a building or its structural components unless the building or portion of the building is used for offices, administrative services, or other functions unrelated to manufacturing.

The final regulations reaffirm the statutory exclusions for property used for offices, administrative services such as human resources or personnel services, payroll services, legal and accounting services, procurement services, sales or distribution functions, security services (not including cybersecurity

operations), or any other functions unrelated to the manufacturing of semiconductors or semiconductor manufacturing equipment.

The final regulations do provide some further clarification around the term “office” by listing certain buildings or parts of buildings within an advanced manufacturing facility that are considered related to manufacturing and not classified as offices. Ultimately, determining whether a specific building or part of a building is used as an office, for administrative services, or is otherwise unrelated to manufacturing is a factual determination.

The final regulations clarify that property is considered “integral to the operation” of manufacturing of semiconductors or manufacturing of semiconductor manufacturing equipment when it is used directly in the manufacturing operation, is essential to the completeness of the manufacturing operation, and is not transformed in any material way as a result of the manufacturing operation. The final regulations expand the examples of property that is considered integral to the operation of an advanced manufacturing facility, to include: equipment and tools used in the process of Atomic Layer Deposition (ALD), oxidation, annealing and epoxy; cleanroom equipment and specialty cleaning equipment; wastewater treatment systems; industrial automation control products and systems; tooling equipment; back-end manufacturing equipment related to assembly, testing and packaging; photolithography tools; photomasks, reticles, pellicle, steppers, scanners, and photoresist related equipment; emulsion tools; rapid thermal processing tools, melting laser annealing equipment, wafer bonding equipment, physical removal processing tools, and edge seal dispense; site infrastructure; chemical and gas delivery systems; bulk chemical purification systems; HVAC air conditioning and air handling systems; wafer stockers; temperature control systems; security and monitoring systems and devices; failure analysis labs and equipment; quality assurance equipment; certain transportation equipment; lighting products; industrial gas generation and handling systems; input shaping tooling; crystal formation and coating equipment; mechanical equipment and polishing equipment.

## Basis clarifications

Treasury and the IRS agreed with commenters who questioned the definition of “basis” as it relates to the allowance of capitalized costs after the placed in service date of qualified property. As such, the final regulations have removed from the final regulations the proposed requirement that basis is determined immediately before the qualified property is placed in service. The final regulations clarify that, with respect to any qualified property, the term “basis” has the same meaning as provided in § 1.46-3(c). Thus, if, for the first tax year in which property is placed in service by the taxpayer, the property meets the definition of qualified property but the basis of the property does not reflect its full cost for the reason that the total amount to be paid or incurred by the taxpayer for the property is indeterminate, a credit will be allowed to the taxpayer for such first tax year with respect to so much of the cost as is reflected in the basis of the property as of the close of such tax year, and a credit will be allowed to the taxpayer for any subsequent tax year with respect to any additional cost paid or incurred during such subsequent tax year and reflected in the basis of the property as of the close of such subsequent tax year.

### KPMG observation

The definitions provided in this section align closely with definitions provided in guidance regarding the section 48 investment tax credit (§ 1.48-1), for the purposes of determining ITC-eligible property. The final regulations provide for an extensive, but not exhaustive, list of property that can be treated as either ITC-eligible or excluded for the purposes of calculating the credit.

## Primary purpose

Section 48D(b)(3) provides that the term “advanced manufacturing facility” means a facility for which the primary purpose is the manufacturing of semiconductors or semiconductor manufacturing equipment.

The final regulations provide that the primary purpose of the advanced manufacturing facility should be the manufacturing of semiconductors or semiconductor manufacturing equipment. Primary purpose can include certain intermediate manufacturing steps such as semiconductor wafer production, which includes the processes of growing single-crystal ingots and boules, as well as wafer slicing, bonding, etching and polishing, cleaning, epitaxial deposition, and metrology. The final regulations also note that primary purpose is a facts and circumstances analysis, and facts that may indicate a facility has a primary purpose of advanced manufacturing include plans or other documents that demonstrate that the facility is designed for the manufacturing of semiconductors or manufacturing of semiconductor manufacturing equipment. Facts may also include the possession of permits or licenses needed for the manufacturing of semiconductors or manufacturing.

The final regulations clarify that a facility has the primary purpose of manufacturing of semiconductors or manufacturing of semiconductor manufacturing equipment if more than 50% of its potential output, as measured by cost to produce, revenue received in an arm's length transaction, or units produced, constitutes manufacturing of semiconductors or manufacturing of semiconductor manufacturing equipment. If a taxpayer fails to meet the primary purpose test during any of the years during the five-year recapture period, the facility is no longer an advanced manufacturing facility. Further, the final regulations retain the six months' time limit for possession of permits or licenses to manufacture finished semiconductors or finished semiconductor manufacturing equipment after the facility is placed in service.

### **KPMG observation**

The proposed regulations included examples indicating that there was a 75% threshold for "primary purpose." The clarification of the primary purpose rules in the final regulations, including using a lower and more specifically defined threshold, will hopefully make it easier for taxpayer to make eligibility determinations based on their facts.

## **Beginning of construction**

In this section, Treasury and the IRS provide guidance regarding the beginning of construction requirement for purposes of the section 48D credit effective dates. The credit allowed under section 48D does not apply to property that is part of an advanced manufacturing facility if construction of the property begins after December 31, 2026.

The final regulations for the beginning of construction rules largely leverage prior issued guidance to determine when a taxpayer has "begun construction." Specifically, the final regulations affirm that a taxpayer may establish that construction of an item of property of the taxpayer begins under either the physical work test, or the five percent safe harbor. The final regulations also provide examples of physical work that satisfies the physical work test for both on-site and off-site semiconductor manufacturing facilities.

The final regulations clarify that all costs properly included in the basis of the property are taken into account to determine whether the five percent safe harbor has been met. For property that is manufactured, constructed, or produced for the taxpayer by another person pursuant to a binding written contract, costs incurred with respect to the property by the other person before the property is provided to the taxpayer are deemed incurred by the taxpayer when the costs are incurred by the other person under the principles of section 461 of the Code.

Even if the physical work test or the five percent safe harbor is met, property will not be considered to have begun construction unless it meets the continuity requirement. With respect to the continuity requirement, the final regulations provide that continuity will be deemed satisfied if the taxpayer places the facility in service within 10 years of the beginning of construction. The preamble explains that 10 years is appropriate given the critical national security and foreign policies of the United States that the section 48D credit is intended to achieve.

A notable addition to this section of the final regulations is the definition of a single advanced manufacturing facility project for the purposes of determining the beginning of construction. This is defined for taxpayers with multiple items of qualified property or advanced manufacturing facilities that are operated as part of a single advanced manufacturing project. The final regulations state that those properties that are operated as part of a single advanced manufacturing facility project will be treated as a single item of qualified property for the purposes of determining beginning of construction.

This section goes on to define certain factors (similar to the aggregation rules provided in the section 48 energy credit proposed regulations) that will be used to determine whether facilities should be treated as a single advanced manufacturing facility. Specifically, for purposes of determining the beginning of construction multiple facilities will be treated as operated as part of a single project, if, at any point during construction of the multiple facilities, they are owned by a single taxpayer (or related taxpayers as defined in § 1.52-1(b)) and any two or more of the following factors are present: common legal ownership, properties that are constructed on a contiguous piece of land, properties that are described in a common contract, properties that share common electricity and/or water supply, properties described in common environmental or regulatory permits, properties constructed pursuant to a single master construction contract, or properties financed pursuant to the same loan agreement or financing arrangement.

## **Recapture of the advanced manufacturing ITC for certain expansions**

Under special section 48D recapture provisions, the section 48D credit claimed by an “applicable taxpayer” will be recaptured if the applicable taxpayer engages in a significant transaction involving the material expansion of semiconductor manufacturing capacity in a foreign country of concern during the 10-year period beginning on the placed in service date of the credit-eligible property.

The final regulations make some clarification to the definition of applicable taxpayer in the partnership context. Specifically, the final regulations clarify that in the case of property placed in service by a partnership, the term “applicable taxpayer” means any direct or indirect partner in a partnership: (1) who was allowed a section 48D credit for such property for any tax year prior to when such partnership entered into an applicable transaction and includes such partnership; (2) with respect to the partner’s share of any section 48D credit allowed for such property prior to when such partner entered into an applicable transaction; or (3) with respect to the partner’s share of any tax-exempt income from a partnership that made an election under section 48D(d)(2) for any tax year prior to when such partner entered into an applicable transaction

Additionally, the final regulations modify the term “significant transaction” by removing the monetary threshold of \$100,000 and providing that a “significant transaction” includes: (1) an investment, whether proposed, pending, or completed, including any capital expenditure, loan, or gift; (2) the formation of a subsidiary, whether classified as a corporation or partnership for Federal tax purposes; (3) a merger, acquisition, or takeover, including (a) the acquisition of a new or additional ownership interest in an entity, (b) the acquisition of a material portion of the assets of an entity, or (c) a consolidation; (4) the formation of a joint venture; or (5) a long-term lease or concession arrangement under which a lessee (or equivalent) makes substantially all business decisions concerning the operation of a leased entity (or equivalent), as if it were the owner.

Notably the final regulations also provide that, with respect to taxpayers that have entered into a required agreement with the Secretary of Commerce (related to CHIPS grant funding), the term “significant transaction” as defined in such agreement will control for purposes of the recapture rule.

The final regulations also provide some clarifications around the definition of the term “material expansion.” The final regulation retains the 5% expansion threshold from the proposed regulations but clarify that a material expansion for an existing facility means an increase in capacity due to the addition of a cleanroom, production line or other physical space, or series of such additions during the applicable period. And the final regulations clarify that the term “material expansion” includes any construction of a new facility for

semiconductor manufacturing. For purposes of determining whether a facility is new or existing, the final regulations provide that a facility that undergoes “significant renovations” will no longer be considered an existing facility. A significant renovation means building new cleanroom space or adding a production line or other physical space to an existing facility that, in the aggregate during the applicable period, increases semiconductor manufacturing capacity by 10% or more of the capacity.

# Conclusion

The final guidance provided long-awaited clarity for taxpayers with respect to the definition of key terms, and how those definitions will impact the planning and design of semiconductor and semiconductor manufacturing equipment facilities.

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