



IRA of 2022: 45X Advanced Manufacturing Proposed Regulation

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“The new Section 45X provides a credit for the production (within the United States) and sale of certain eligible components including solar and wind energy components, inverters, qualifying battery components and applicable critical minerals.”-Internal Revenue Service

Overview

The Inflation Reduction Act of 2022 (IRA) created tax incentives to help accelerate the nation’s transition to a clean energy economy. Intending to spur the growth and development of renewable energy, the legislation promotes accelerated redeployment of capital within the clean energy sector through the creation of transferable Investment Tax Credits (ITCs) and Production Tax Credits (PTCs). For the first time, the IRA allows for the transfer of ITCs and PTCs to corporations and individuals with passive income to reduce their tax liability which will dramatically expand the market by billions of dollars. Among the types of credits provided for within this legislation is the 45X Advance Manufacturing Production Tax Credit.

On December 14, 2023 the Department of Treasury and the Internal Revenue Service issued proposed regulations to provide guidance for the advanced manufacturing production tax credit. This guidance details the rules 1) around the production of eligible components, 2) surrounding the sale of components to unrelated persons and special rules for sales to related persons, and 3) for a taxpayer intending to claim the credit (including calculating the credit, specific record keeping, and reporting requirements). A public hearing is scheduled for February 22, 2024 at 10am ET regarding this proposed regulation.

Section 45X Overview:

Eligible components under the Section 45X Advanced Manufacturing Production Credit include certain solar energy components, inverters, wind energy components, qualifying battery components and applicable critical minerals. The proposed regulations will affect taxpayers who produce and sell these eligible components and intend to claim the advance manufacturing production credit either through making an elective payment or credit transfer elections. Section 45X(a)(1) provides that the advanced manufacturing production credit for a taxable year is equal to the sum of the credit amounts determined under section 45X(b) for each eligible component that is produced and sold during the taxable year to an unrelated person. These credits are calculated as a dollar value of credit multiplied by capacity/unit or as a percentage of the cost of producing the products. Compared to ITCs, which have a 5 year recapture period after a project enters service as well as a step up in cost basis component, PTCs tend to have a lower risk of recapture as well as basis. A PTC is generated as soon as the component is produced and sold.

It is worth noting that components will not be eligible if it is produced at a facility where the basis of any property that is a part of the facility is taken into account in qualifying for a 48C

credit. It is also worth noting that starting December of 2029, the credit amounts for eligible components other than applicable critical minerals. In the case of components sold during calendar year 2030, 2031, and 2032 the phase out percentages are 75%, 50%, and 25%, respectively.

Eligible Components under Section 45X:

Solar Energy Components

The proposed § 1.45X-3(b) defines the term “solar energy component” as a solar module, photovoltaic cell, photovoltaic wafer, solar grade polysilicon, torque tube, structural fastener, or polymeric backsheets. This section also defines the necessary specific documentation and calculation of the credit amount.

Component	Credit Rate
Solar module	\$.07/watt of capacity
Photovoltaic Cell	\$.04/watt of capacity
Photovoltaic Wafer	\$12/square meter
Solar Grade Polysilicon	\$3/kilogram
Torque Tube	\$.87/kilogram
Structural Fastener	\$2.28/kilogram
Polymeric Backsheet	\$.40/square meter

Wind Energy Components

The proposed § 1.45X-3(c) defines the term “wind energy component” as a blade, nacelle, tower, offshore wind foundation, or related offshore wind vessel. This section also clarifies the calculation of the credit amount for each type of wind energy component. The credit amount for a blade, nacelle, tower, or offshore wind foundation is based on the total rated capacity of the completed wind turbine for which such component is designed.

Furthermore, proposed § 1.45X-3(c)(4)(i) clarifies the definition of the term “related offshore wind vessel.” Section 45X(c)(4)(B)(iv) defines the term “related offshore wind vessel” as any vessel that is purpose-built or retrofitted for purposes of the development, transport, installation, operation, or maintenance of offshore wind energy components. For a related offshore wind vessel, the credit amount is equal to 10 percent of the sales price of the vessel.

Component	Credit Rate
Blade	\$.02/watt of turbine capacity
Nacelle	\$.05/watt of turbine capacity
Tower	\$.03/watt of turbine capacity
Fixed Offshore Wind Foundation	\$.02/watt of turbine capacity
Floating Offshore Wind Foundation	\$.04/watt of turbine capacity
Related Offshore Wind Vessel	10% of sales price

Inverters

The proposed § 1.45X-3(d) defines the term “inverter” as an end product that is suitable to convert DC electricity from one or more solar modules or certified distributed wind energy systems into AC electricity. This includes central inverters, commercial inverters, distributed wind inverters, microinverters or residential inverters. A suitable end product can convert DC

electricity from solar modules or wind energy systems into AC electricity it is able to connect with such modules or systems in the form it is sold from the manufacturer without the need for further modification.

The proposed § 1.45X-3(d) also clarifies the calculation of the credit amount for each type of inverter, equal to the product of the inverter's total rated capacity and the amount prescribed in section 45X(b)(2)(B) for such inverter. It also outlines the necessary documents for qualification. The rate varies from \$.11 to \$.25, depending on the inverter.

Battery Components

The proposed § 1.45X-3(e)(1) defines qualifying battery components as electrode active materials, battery cells, or battery modules. Electrode active materials include cathode electrode materials, anode electrode materials, and electrochemically active materials that contribute to the electrochemical processes necessary for energy storage.

The proposed § 1.45X-3(e)(2)(i)(B) defines cathode electrode materials to mean the materials that comprise the cathode of a commercial battery technology, such as binders, and current collectors. Proposed § 1.45X-3(e)(2)(i)(C) defines “anode electrode materials” to mean the materials that comprise the anode of a commercial battery technology, including anode foils. Proposed § 1.45X-3(e)(2)(i)(D) would define “electrochemically active materials that contribute to the electrochemical processes necessary for energy storage” to mean the battery-grade materials that enable the electrochemical storage within a commercial battery technology. These include electrolytes, catholytes, anolytes, separators, and metal salts and oxides.

Component	Credit Rate
Electrode Active Materials	10% of cost to produce
Battery Cells	\$35/KWh of capacity
Battery Modules	\$10/KWh of capacity or \$45/KWh of capacity

Critical Minerals

The proposed Section 45X(c)(6) defines applicable critical minerals which are eligible components. Certain minerals only qualify if they processed to a specific form, take for example the following: Section 45X(c)(6)(N) provides that the term “graphite” means graphite purified to a minimum purity of 99.9 percent graphitic carbon by mass; Section 45X(c)(6)(A) provides that aluminum that is converted from bauxite to a minimum purity of 99 percent alumina by mass or purified to a minimum purity of 99.9 percent aluminum by mass; § 1.45X-4(b)(1) clarifies that “commodity-grade aluminum” is limited to primary production of unwrought forms, as it specifies that commodity-grade aluminum must be produced directly from certain forms of aluminum.

In the case of any applicable critical mineral, the credit amount is equal to 10 percent of the costs incurred with respect to production of such mineral. The following list outlines the 50 critical minerals which apply: aluminum, antimony, arsenic, barite, beryllium, bismuth, cerium, cesium, chromium, cobalt, dysprosium, erbium, europium, fluorspar, gadolinium, gallium, germanium, graphite, hafnium, holmium, indium, iridium, lanthanum, lithium, lutetium, magnesium, manganese, neodymium, nickel, niobium, palladium, platinum, praseodymium, rhodium, rubidium, ruthenium, samarium, scandium, tantalum, tellurium, terbium, thulium, tin, titanium, tungsten, vanadium, ytterbium, yttrium, zinc, and zirconium.

Government Resources:

<https://www.irs.gov/newsroom/treasury-irs-issue-guidance-for-the-advanced-manufacturing-production-credit>

<https://www.federalregister.gov/public-inspection/2023-27498/advanced-manufacturing-production-credit>

<https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title26-section45X&num=0&edition=prelim>

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