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Notice 2025-08: Treasury and IRS update the elective safe harbor for domestic content bonus credit

Tax Alert

Overview

On January, 16, 2025, Treasury and the IRS released Notice 2025-08 (the "Notice") which provides the first update to the elective safe harbor for the domestic content bonus credit ("First Updated Elective Safe Harbor") and modifies the safe harbor provided in Notice 2024-41.

The Notice provides key updates including the following:

- Expands the solar photovoltaic (PV) table into two distinct tables, providing updated assigned cost percentages for both ground-mount and rooftop solar facility and including new columns with optional assigned cost percentages for PV modules with domestic crystalline silicon cells and domestic wafers.
- Updates the assigned cost percentages in the battery energy storage system (BESS) table, which apply to both grid-scale BESS and distributed BESS.
- Clarifies the use of Notice 2024-41 and the Notice for a retrofitted facility meeting the 80/20 rule.
- Renames, reclassifies, and defines certain Applicable Project components (APCs) and manufactured product components (MPCs).

Taxpayers may apply the Notice, in its entirety, for any qualified facility under sections 45 or 45Y, an energy project under section 48, or a qualified facility or energy storage technology under section 48E (collectively, "Applicable Project") that begins construction before 90 days after any future modification, update, or withdrawal of the Notice. Taxpayers may also choose to rely on Notice 2024-41, in its entirety, for any project that begins construction prior to April 16, 2025 (the date that is 90 days after the effective date of the Notice).

Background

Taxpayers that qualify for the credit under sections 45, 45Y, 48, or 48E may be eligible for the domestic content bonus credit if the Applicable Project meets the domestic content requirements. For any qualified facility under sections 45 or 45Y, the amount of such credit is increased by 10% if the

domestic content requirement is satisfied. Similarly, for any energy project under section 48 or qualified facility or energy storage technology under section 48E, the applicable percentage for purposes of determining the credit amount is increased by 10 percentage points if the domestic content requirement is satisfied. However, the applicable percentage is increased by 2 percentage points if the domestic content requirement is satisfied, but the prevailing wage and apprenticeship requirements (or one-megawatt exception or begin construction exception) are not satisfied.

> ***Observation:*** For section 48E, the domestic content requirement must be satisfied at the level of each qualified facility or energy storage technology and not on the level of an energy project like under section 48. For sections 45 and 45Y, the domestic content requirement must also be satisfied at the level of the qualified facility.
>
> The term "qualified facility" is defined in the sections 45Y and 48E regulations to include functionally interdependent components of property, as well as integral part property, such as power conditioning and transfer equipment. Therefore, if a taxpayer is not using the elective safe harbor under either Notice 2024-41 or the Notice, the taxpayer's domestic content analysis should include all property that is part of the taxpayer's qualified facility, including integral part property. Although Treasury and the IRS did not issue regulations under section 45, the term "qualified facility" used in section 45 likely has the same meaning as under sections 45Y and 48E, so a taxpayer should likely also consider integral part property in its domestic content analysis under section 45.

Domestic content requirement

A taxpayer satisfies the domestic content requirement by certifying to the IRS that any steel, iron, or manufactured product which is a component of the Applicable Project upon completion of construction was produced in the United States.

Steel or iron

The domestic content requirement for steel and iron applies in a manner consistent with 49 CFR § 661.5, which provides that all steel and iron manufacturing processes must take place in the United States, except metallurgical processes involving refinement of steel additives.

Manufactured product (MP)

MPs are produced in the United States if at least a certain percentage ("Adjusted Percentage") of the total cost of all MPs of the Applicable Project are attributable to MPs (including components) which are mined, produced, or manufactured in the United States.

The Adjusted Percentage increases for section 45Y as follows:

Begin construction	Non-Offshore Wind	Offshore Wind
Before 2025	40%	20%
In 2025	45%	27.5%
In 2026	50%	35%
In 2027	55%	45%
After 2027	55%	55%

> ***Observation:*** The statute does not provide increased Adjusted Percentages applicable to section 48E, such that the Adjusted Percentage for section 48E remains at 40%. The General Explanation of Tax Legislation Enacted in the 117th Congress prepared by the Joint Committee on Taxation ("Bluebook") states that the Adjusted Percentage set forth in section 45Y(g)(11)(C) should apply to section 48E, although the Bluebook also highlights the potential

need for a technical correction to reflect this intent. Notice 2023-38 and Notice 2024-41 did not address this issue, and this Notice continues to be silent on the discrepancy between the technology neutral Investment Tax Credit (Tech-neutral ITC) and the technology neutral Production Tax Credit (Tech-neutral PTC).

Notice 2023-38

On May 12, 2023, Treasury and the IRS released Notice 2023-38, which provides rules intended to be included in the forthcoming proposed regulations regarding the domestic content bonus credit requirements and related recordkeeping and certification requirements. Notice 2023-38 continues to apply, as modified by Notice 2024-41 and this Notice, and provides guidance on the following aspects of the domestic content requirements:

- Key definitions (for example, APCs, MPCs, and manufacturing process) that are generally applicable to the domestic content requirements.
- The Steel or Iron Requirement, which does not apply to steel or iron used in MPCs or certain non-structural subcomponents.
- All MPs are deemed to be produced in the United States if the domestic cost percentage equals or exceeds the Adjusted Percentage. Domestic cost percentage is:

$$\frac{\text{Domestic Manufactured Product and Components Cost}}{\text{Total Manufactured Product Cost}}$$

  where the cost is the direct cost (as defined in Treas. Reg. § 1.263A-1(e)(2)(i)) paid or incurred by the manufacturer of the MPs to produce such MPs.
- Establishes a safe harbor for the categorization of APCs (Table 2 of Notice 2023-38).

Notice 2024-41: Elective safe harbor

Treasury and the IRS subsequently released Notice 2024-41 on May 16, 2024 (and a corrected version on May 24, 2024), which, among other things, provides an elective safe harbor (Table 1 of Notice 2024-41) that taxpayers may elect to use to classify APCs and to calculate the domestic cost percentage in an Applicable Project to qualify for the domestic content bonus credit amount. Taxpayers may elect to use the classifications and assigned cost percentages in Table 1 in lieu of the direct costs of the manufacturer of the MPs in the Applicable Project under Notice 2023-38. However, Table 1 only applies to solar PV systems, land-based wind facilities, and BESS technologies.

Notice 2024-41 also modifies "Table 2 – Categorization of Applicable Project Components" and other aspects of Notice 2023-38.

For more information regarding Notice 2024-41 and the background of the domestic content bonus credit, please see the prior Tax Alert on Notice 2024-41.

Details: Notice 2025-08

Notice 2025-08 made substantial modifications relating to the safe harbor provided in Table 1 of Notice 2024-41, discussed further below.

Updated elective safe harbor table

Solar PV – Ground-mount and rooftop

The Notice expands the Solar PV table into two distinct tables for ground-mount solar PV (tracking and fixed) and rooftop solar PV (Module-level power electronics (MLPE) and string) Applicable Projects. The updated tables now include additional columns that provide optional assigned cost percentages for Applicable Projects that use PV modules with domestic crystalline silicon photovoltaic ("c-Si PV") cells and domestic wafers. Treasury and the IRS provided these assigned cost percentages to recognize the higher cost associated with domestically produced c-Si PV cells and wafers.

> ***Observation:*** Even if the c-Si PV columns are applicable to an Applicable Project, a taxpayer can choose not to use them. However, if a taxpayer uses these columns, it may not use any assigned cost percentages from the columns for non-c-Si PV.

The Notice also updates Table 1 for Solar PV to rename, recategorize, or reclassify certain components in the following five ways:

- Renames certain APCs and MPCs. With respect to APCs: (i) "Pile or ground screw" is renamed "Steel pile or steel ground screw" for consistency with the description of other items categorized as a steel/iron product, and (ii) "Steel or iron rebar in foundation" is renamed "Steel or iron reinforcing products in foundation" to better reflect its function and to clarify that non-rebar steel or iron reinforcement is also covered. With respect to MPs: (i) "Climate Control" is renamed "Thermal Management System"; (ii) "Enclosure" is renamed "Enclosure & Skids" for the Inverter APC of both types of ground-mount PV systems; (iii) "Fasteners" is renamed "Structural Fasteners"; (iv) "Slew Drive" is renamed "Drive System"; and (v) "Motor" is renamed "Actuator" to better reflect each MPC's function by providing specificity.
- Revises the definitions of: (i) "Ground-mounted PV (fixed-tilt)" to clarify that it includes canopy steel racking structures and structures floating on a body of water; (ii) "Ground-mounted PV (tracker)" to clarify that it includes structures floating on a body of water; and (iii) "Rooftop PV (MLPE)" to clarify that it refers to a system where the microinverters or DC-optimizers regulate the DC electricity from each of its solar PV modules independently before the electricity is converted into alternating current electricity.
- Clarifies that the MPC "Electrical Parts" for ground-mount PV systems includes the following components that are not on printed circuit board assemblies (PCBA): control transformers, capacitors, inductors, bus/cables, circuit protection.
- For solar PV rooftop, categorizes DC-to-DC and DC-to-AC PCBA as separate MPCs, and provides that domestic PCBA that perform both functions (that is, convert both DC-to-DC and DC-to-AC) can get both cost percentages.
- Removes "Adhesives," which is listed as MPC for PV Solar in Table 1 of Notice 2024-41, to avoid redundancy and confusion because "Pottants" and "Edge Seals," which are listed as MPCs within the First Updated Elected Safe Harbor, are also adhesives.

Refer to Appendix 1 for the updated Solar PV tables for the Notice.

> ***Observation:*** The modification to change the MPC "Enclosures" to "Enclosures & Skid" indicates that Treasury and IRS view "skids" as an MPC and not an MP or steel or iron. This view might have impactful consequences for Applicable Projects using technologies for which the elective safe harbor is not applicable, such as qualified biogas projects.

Land-based wind

The Notice made only minor revisions to Table 1 for land-based wind. Specifically, it renames "Steel or iron rebar in foundation" to "Steel or iron reinforcing products in foundation," and further renames "Material," the MPC

for wind tower flanges, to "Preform." It did not revise any assigned cost percentages.

Refer to Appendix 1 for the updated land-based wind table for the Notice.

> ***Observation:*** The Notice renames "Steel or iron rebar in foundation" to "Steel or iron reinforcing products in foundation" to clarify that non-rebar reinforcing products in the foundation would also be subject to the steel or iron requirement. Under the new term, components like foundation ring or other steel or iron components used in the foundations for reinforcing need to be considered when applying this safe harbor.

BESS

The Notice updates the BESS Table 1 of Notice 2024-41 in four ways:

- Updates the Assigned Cost Percentages based on additional data.
- Renames certain components. With respect to APCs, it renames (i) "Battery Pack" to "Battery Pack/Module," (ii) "Inverter" to "Inverter/Converter," and (iii) "Steel or iron rebar in foundation" to "Steel or iron reinforcing product foundation." With respect to MPCs of the Inverter/Converter, it renames "Enclosure" to "Enclosure & Skids," and "Climate Control" to "Thermal Management System for Inverter."
- Recategorizes the following MPCs: (i) "Thermal Management System" and "Battery Management System" are recategorized from MPCs of "Battery Pack" to the MPCs of "Battery Container/Housing", and (ii) "Battery Racks and Metal Enclosures," an MPC of the "Battery Container/Housing" are renamed as "Enclosures." These changes are to reflect that these systems are usually located in the container outside of the battery pack/module. The new classifications also better align with the cost breakdown within the Department of Energy's (DOE's) cost analysis, and thus, improves the accuracy of the associated cost percentages.
- Removes the cost values for "Electrical Parts" (within the Inverter/Converter APC) from the distributed BESS column and increases the cost values for the PCBA within the same column.

Refer to Appendix 1 for the updated BESS table for the Notice.

> ***Observations:***
> - For grid-scale BESS, the Notice provides a new assigned cost percentage for domestic cells of 52.0 that is above the current Adjusted Percentage. The high assigned cost percentage would effectively make the sourcing of this component determinative of whether the domestic cost percentage can be achieved for a grid-scale BESS.
> - For distributed BESS, the Notice significantly reduces the assigned cost percentage for packaging (from 30.1 to 13.4), which decreases the importance of sourcing this MPC domestically. The Notice also adds a significant assigned cost percentage of 22.8 for the enclosure MPC.
> - The Notice renames the "enclosure" for the inverter/converter to "enclosure & skids," but provides no definition of the term "skids." The new term seems to require both the enclosure and the skid to be domestically manufactured to claim the assigned cost percentage. It is unclear if the mixed source item (MSI) rules could apply if only the enclosure or the skid is domestically manufactured.

Definitions of APCs and MPCs

The Notice includes numerous definitions of APCs and MPCs that are used in the First Updated Elective Safe Harbor. See Appendix 2: Definitions in Notice 2025-08 for a list of those definitions.

Observation: The definitions provided in the Notice only technically apply to the First Updated Elective Safe Harbor. However, where the same or similar terms are used in Notice 2024-41, the definitions provided in the Notice likely inform the thinking of those same or similar terms for the elective safe harbor in Notice 2024-41.

Conditions for use of the First Updated Elective Safe Harbor:

Taxpayers must meet the following conditions when electing to use the First Updated Elective Safe Harbor in the Notice:

- No partial safe harbor reliance: Taxpayers that elect to use the First Updated Elective Safe Harbor must apply the Notice in its entirety for a specific Applicable Project.
- To determine the domestic cost percentage, the taxpayer adds up the assigned cost percentages for each listed US MP and US MPC for the Applicable Project.
- If an APC or MPC is listed in the applicable table, but not used in the taxpayer's Applicable Project, that APC or MPC has a "zero" assigned cost percentage value.
- Any APCs and MPCs that are not listed in the Notice but contained in the taxpayer's Applicable Project are disregarded.
- Production Costs: The tables in the Notice contain a line item for "Production," which refers to the production cost of the relevant MP. The assigned cost percentage attributable to production can be included in the total domestic cost percentage only if all the MPCs of the MP are domestically produced.
- For solar PV systems with domestic c-Si PV cells and domestic wafers, taxpayers may elect to use the associated cost percentage if all, or a portion of, the PV modules in the Applicable Project use domestically manufactured c-Si cells that **exclusively** use domestically manufactured wafers.

Observation: The Notice imposes similar conditions for the elective safe harbor as Notice 2024-41, except for the new rule that allows taxpayers to elect to use the specific assigned cost percentages for solar PV systems with domestic c-Si cells and domestic wafers.

Application of the safe harbor in a repower project

Notice 2024-41 was silent regarding whether the elective safe harbor (Table 1) would apply in the case of a repower or retrofitted property and how to apply it to such property.

The Notice clarifies that the elective safe harbor in both the Notice and Notice 2024-41 applies to Applicable Projects in cases where the 80/20 Rule is met. To determine the domestic cost percentage for such projects using the elective safe harbor, only **new** property would qualify as US MPs or US MPCs for the purpose of domestic cost percentage calculation and the steel or iron requirement. All other existing MPs or MPCs would be considered as foreign sourced, and thus, must take a zero value for the domestic percentage calculation and are disregarded for the steel or iron requirement.

MSI rules for First Updated Elective Safe Harbor

Taxpayers who source the same type of MP or MPC (same row of the respective safe harbor table) from both foreign and domestic sources in a particular Applicable Project may use the First Updated Elective Safe Harbor to determine a single assigned cost percentage for each separate type of MSI in the Applicable Project.

For taxpayers electing to use the assigned cost percentages for solar PV with domestic c-Si cells domestic wafers where only a portion of the PV cells are

domestic c-Si cells that exclusively use domestic wafers, the taxpayer must treat all PV cells that do not exclusively use domestic wafers (even if the PV cells were domestically manufactured) as foreign sourced for purpose of using the assigned cost percentages in the Notice. In such a case, the taxpayer also cannot claim the "Production" cost percentage for any PV module that contains such cells.

MSI with nameplate capacity

For MSIs that have a nameplate capacity, the following weighted average formula ("MSI Formula") may be used to determine the Assigned Cost Percentage attributable to each type of MSI:

$$\frac{DCP_{\text{Domestic MSI}} \times \text{Nameplate Capacity}_{\text{Domestic MSI}}}{\text{Nameplate Capacity}_{\text{MSI}}}$$

For purposes of this MSI Formula:

- $DCP_{\text{Domestic MSI}}$ means the updated assigned cost percentage derived from tables in the Notice.
- $\text{Nameplate Capacity}_{\text{DomesticMSI}}$ means the nameplate capacity of the MSI of the same type in the Applicable Project that is produced in the United States.
- $\text{Nameplate Capacity}_{\text{MSI}}$ means the total nameplate capacity of the MSI of the same type in the Applicable Project.

MSI without nameplate capacity

For MSIs without nameplate capacity, the above formula is modified by replacing the nameplate capacity of the MSI (denominator) with the nameplate capacities of the associated APCs with which the MSI is directly integrated, for example:

- For solar, apply the formula to the associated PV module(s).
- For land-based wind, apply the formula to the associated wind turbine.
- For BESS, apply the formula to the associated battery pack(s).

If the MSI without nameplate capacity has multiple units that are both foreign- and domestic-sourced associated and directly integrated with the same APC with nameplate capacity, then all such MSIs must be treated as 100% foreign sourced.

Example 3 Illustrating the MSI rule

Example 3 in the Notice provides a helpful illustration of the MSI rule. The facts of this example are as follows:

The Applicable Project is a 100- megawatt direct current (MWdc) ground-mounted PV (tracker). It contains the following MPs:

- PV Modules: One set of PV modules with a capacity of 60 MWdc, is manufactured in the US with domestic c-Si PV cells and domestic wafers and all its MPCs listed in Table 1 are also manufactured in the US. The second set of PV modules with a capacity of 40 MWdc, is manufactured in the US with domestically manufactured cells using foreign wafers but has no other MPCs manufactured in US.
- Inverters: The inverters are not manufactured in the US and none of its MPCs listed in the Table 1 are manufactured in the US.
- PV Tracker: A portion of the torque tubes in the PV trackers are manufactured in the US, which are the only torque tubes associated and directly integrated with 80MWdc of the PV modules. The remainder of the torque tubes and the other PV tracker MPCs are not manufactured in the US.

The taxpayer does **not** elect to use the associated cost percentages for ground-mount (tracking) with domestic c-Si PV cells and domestic wafers. The example calculates the updated assigned cost percentage attributable to the MSIs are as follows:

- PV Modules: For the first set of modules, the total updated assigned cost percentage is $\frac{[(61.1\% + 4.7\%) \times 60\ MWdc]}{100} = 39.5\%$

  Where 61.6% equals total assigned cost percentage of all MPCs of the PV module and 4.7 equals the assigned cost percentage for production.
- PV Modules: For the second set of modules, the total updated assigned cost percentage is $\frac{38.0\% \times 40\ MWdc}{100} = 15.2\%$

  Where 38.0% is the assigned cost percentage of the cells.
- Torque tube: For the torque tube, the total updated assigned cost percentage is $\frac{11.0\% \times 80\ MWdc}{100} = 8.8\%$

  Where 11.0% is the assigned cost percentage of the torque tube.

The example concludes that the Applicable Project's overall domestic cost percentage is 39.5+15.2+8.8 = 63.5%.

Observations:

- The Notice adopts the same MSI rule provided in Notice 2024-41 and adds in a strict qualification rule for solar PV systems with domestic c-Si cells and domestic wafers. The Notice makes clear that the use of any foreign sourced wafer could jeopardize the taxpayer's ability to claim the favorable cost percentage for the entire PV module.
- The Notice omits the "BESS Multiplier" for solar energy property and energy storage technology as part of a single energy project (see Notice 2024-41, section 4.03(6)). Therefore, it seems that a taxpayer should apply Notice 2024-41 if the "BESS Multiplier" provides a favorable result for domestic content bonus credit under section 48.
- For solar projects under section 48, taxpayers are currently using MSI PV modules and using enough domestically sourced PV modules in their projects to achieve the requisite domestic cost percentage. Now, under section 48E, taxpayers will have to ensure they are using enough domestically sourced PV modules within each qualified facility (generally an inverter block) to achieve the requisite domestic cost percentage.

Certification requirement for the First Updated Elective Safe Harbor

Taxpayers must affirmatively elect to rely on the First Updated Elective Safe Harbor by providing the Domestic Content Certification Statement described in Notice 2023-38 with a statement that the taxpayer is relying on the First Updated Elective Safe Harbor. The statement must include the following:

- Whether the taxpayer elects to rely on the First Updated Elective Safe Harbor;
- Whether the Applicable Project is a qualified facility, energy project, or energy storage technology;
- The specific type of Applicable Project (for example, ground-mount PV or BESS);
- The geographic coordinates of an Applicable Project and the address of the Applicable Project, if applicable;
- The date the Applicable Project was placed in service;
- The total domestic content bonus credit amount determined under sections 45(b)(9), 45Y(g)(11), 48(a)(12), or 48E(a)(3)(B) with respect to the Applicable Project in the first taxable year in which the taxpayer reports a domestic content bonus credit amount for such Applicable Project;

- Any additional information with respect to the Applicable Project that is required by the applicable forms and instructions for reporting domestic content bonus credit amounts determined under sections 45, 45Y, 48, or 48E; and
- The signature of a person with legal authority to bind the taxpayer and contain the following statement: "Under penalties of perjury I declare that I have examined the information contained in this Domestic Content Certification Statement and to the best of my knowledge and belief, it is true, correct, and complete."

The Domestic Content Certification Statement must be attached to the applicable tax forms for reporting domestic content bonus credit amounts under sections 45, 45Y, 48, or 48E, filed with the taxpayer's annual return, and submitted to the IRS for the first taxable year in which the taxpayer reports a domestic content bonus credit amount for such Applicable Project. For each year thereafter for purposes of section 45 or 45Y, a taxpayer must attach a copy of the Domestic Content Certification Statement to the annual return.

> ***Observation:*** The Notice did not modify the certification procedures provided in Notice 2023-38 other than to require a statement that the taxpayer is electing to use the First Updated Elective Safe Harbor, where applicable. The same rule applies to the elective safe harbor in Notice 2024-41.

Appendix 1: Updated tables in Notice 2025-08

Updated Table for Solar PV Ground-Mount

APC	MPC	Ground-mount (Tracking)	Ground-mount (Tracking) with Domestic c-Si PV Cells & Domestic Wafers	Ground-mount (Fixed)	Ground-mount (Fixed) with Domestic c-Si PV Cells & Domestic Wafers
PV Module	Cells	38.0	51.6	53.2	66.6
	Frame/ Backrail	6.0	4.7	8.5	6.1
	Front Glass	6.0	4.7	8.4	6.1
	Encapsulant	3.8	3.0	5.4	3.8
	Backsheet/ Backglass	3.8	3.0	5.4	3.8
	Junction Box	1.0	0.8	1.4	1.0
	Edge Seals	0.3	0.2	0.4	0.3
	Pottants	0.3	0.2	0.4	0.3
	Bus Ribbons	1.5	1.2	2.1	1.5
	Bypass Diodes	0.4	0.3	0.6	0.4
	Production	**4.7**	**3.7**	**6.7**	**4.8**
Inverter	Printed Circuit Board Assemblies	2.4	1.7	3.1	2.2
	Electrical Parts	0.8	0.6	1.1	0.8
	Thermal Management System	0.5	0.4	0.7	0.5
	Enclosure & Skids	0.6	0.5	0.9	0.6
	Production	**1.2**	**0.9**	**1.7**	**1.2**
PV Tracker	Torque tube	11.0	8.6	-	-

	Structural Fasteners	0.4	0.3	-	-
	Drive System	1.9	1.5	-	-
	Dampers	0.5	0.4	-	-
	Actuator	2.8	2.2	-	-
	Controller	0.7	0.6	-	-
	Rails	2.0	1.6	-	-
	Production	**9.4**	**7.3**	-	-
Steel photovoltaic module racking	-	-	-	Steel/Iron Product	Steel/Iron Product
Steel pile or Steel ground screw	-	Steel/Iron Product	Steel/Iron Product	Steel/Iron Product	Steel/Iron Product
Steel or iron reinforcing products in foundation	-	Steel/Iron Product	Steel/Iron Product	Steel/Iron Product	Steel/Iron Product
Total	-	100	100	100	100

Updated Table for Solar PV Rooftop

APC	MPC	Rooftop (MLPE)	Rooftop (MLPE) with Domestic c- Si PV cells & Domestic Wafers	Rooftop (String)	Rooftop (String) with Domestic c-Si PV cells & Domestic Wafers
PV Module	Cells	31.1	43.9	38.5	52.1
	Frame/ Backrail	4.9	4.0	6.1	4.8
	Front Glass	4.9	4.0	6.1	4.7
	Encapsulant	3.1	2.5	3.9	3.0
	Backsheet/ Backglass	3.1	2.5	3.9	3.0
	Junction Box	0.8	0.6	1.0	0.8
	Edge Seals	0.2	0.2	0.3	0.2
	Pottants	0.2	0.2	0.3	0.2
	Bus Ribbons	1.2	1.0	1.5	1.2
	Bypass Diodes	0.3	0.3	0.4	0.3
	Production	**5.8**	**4.7**	**7.2**	**5.6**
Inverter	Printed Circuit Board Assemblies (DC-DC)	7.8	6.4	1.6	1.3
	Printed Circuit Board Assemblies (DC-AC)	11.8	9.5	2.4	1.9
	Thermal Management System	-	-	0.5	0.4
	Enclosure	4.3	3.5	1.3	1.0
	Production	**0.9**	**0.7**	**0.5**	**0.4**
Non- Steel Roof Racking	Structural Fasteners	3.5	2.9	4.4	3.4
	Rails	15.0	12.2	18.7	14.6
	Production	**1.1**	**0.9**	**1.4**	**1.1**
Total	-	100	100	100	100

Updated Table for Land-Based Wind

APC	MPC	Value
Wind Turbine	Blades	31.2
	Rotor Hub	9.9
	Nacelle	47.5
	Power Converter	8.9
	Production	**0.9**
Wind Tower Flanges	Preform	0.8
	Production	**0.8**
Tower	-	Steel/ Iron Product
Steel or iron reinforcing products in foundation	-	Steel/ Iron Product
Total	-	100

Updated Table for BESS

APC	MPC	Grid-scale BESS	Distributed BESS
Battery Pack/ Module	Cells	52.0	26.9
	Packaging	5.6	13.4
	Production	**8.0**	**2.9**
Inverter/Converter	Printed Circuit Board Assemblies	1.4	5.4
	Thermal Management System for Inverter	0.4	-
	Electrical Parts	0.5	-
	Enclosure & Skids	0.4	1.0
	Production	**1.9**	**4.3**
Battery Container/ Housing	Enclosure	14.8	22.8
	Battery Management System	7.4	10.1
	Thermal Management System for Battery Container/Housing	5.6	10.1
	Production	**2.0**	**3.1**
Steel or iron reinforcing products in foundation	-	Steel/ Iron Product	-
Total	-	100	100

Appendix 2: Definitions in Notice 2025-08

Definitions for Solar PV (Ground-Mount & Rooftop) Elective Safe Harbor

Term	Definition
Actuator	The component that produces the force, torque, and displacement.
Backrail	The component that secures the module laminate to its support structure. A Backrail can be used for the same purposes and in place of a Frame.
Backsheet/Backglass	The sheet or piece of glass on the back of solar modules that acts as an electric insulator and protects the inner components of such module from the surrounding environment.
Cells	The smallest semiconductor element of a solar module which performs the immediate conversion of light into electricity.
Controller	The component that transmits operating instructions to the actuator.

Crystalline silicon cells (c-Si cells)	A cell in a PV module, as defined in section 5.05(4) of Notice 2025-08, that is made of silicon atoms connected to form a lattice.
Drive system	The components that transmit force, torque, or displacement from the actuator to the torque tube.
Electrical parts	The components consisting of only control transformers, capacitors, inductors, bus/cables, and circuit protection not on printed circuit board (PCB) assemblies.
Encapsulant	The material used to adhere the cell strings between the front and rear glass (or backsheet) for the purpose of protecting against environmental stress.
Enclosure	The protective structure that houses, that is, encloses, the other inverter components.
Frame	The component that secures the module laminate to its support structure.
Front glass	The transparent, protective, structural front layer of a PV module.
Ground-mounted PV (fixed-tilt)	An energy system using photovoltaic solar modules to generate electricity, mounted to a non-building structure, including canopy steel racking structures, or floating on a body of water, where the PV modules are mounted at a fixed angle and orientation.
Ground-mounted PV (tracker)	An energy system using photovoltaic solar modules to generate electricity, mounted to a non-building structure, or floating on a body of water, which integrates a solar tracker to rotate the solar modules.
Junction box	The component that connects PV cell strings and keeps power flowing in one direction.
Printed circuit board assemblies	Finished, fully functional printed circuit boards that have all necessary subcomponents soldered and installed on to them.
Rails	The components that attach modules to torque tubes.
Rooftop PV (MLPE)	An energy system using photovoltaic solar modules to generate electricity, mounted to a building structure, which integrates one or more microinverters or uses a DC-optimized inverter system such that the rooftop PV system (with its microinverter(s) or DC-optimized inverter system) regulates the DC electricity from each of its modules independently before that electricity is converted into alternating current electricity.
Rooftop PV (string inverter)	An energy system using photovoltaic solar modules to generate electricity, mounted to a building structure, which integrates one or more inverters to convert direct current electricity from a string of solar panels into alternating current electricity.
Skid	The component upon which the enclosure sits.
Structural fasteners for use in ground-mount PV applications	A component that is used to connect the mechanical and drive system components of a solar tracker to the foundation of the solar tracker, to connect torque tubes to drive assemblies, or to connect segments of torque tubes to one another.
Structural fasteners for use in rooftop PV applications	A component that connects the rails, modules, and MLPE (if applicable) to one another.
Thermal management system	The system consisting of the heat sinks, heat pipes, fans and/or the liquid cooling systems.
Torque tubes	For purposes of the Manufactured Product Components provided within the table under section 5.05 of Notice 2025-08, Torque tubes a structural support element, including longitudinal purlins that: (i) is part of a solar tracker; (ii) is of any cross-sectional shape; (iii) may be assembled from individually manufactured segments; (iv) spans longitudinally between foundation posts; (v) supports solar panels and is connected to a mounting attachment for solar

	panels (with or without separate module interface rails); (vi) and is rotated by means of a drive system.
Wafer	A thin slice, sheet or layer of crystalline silicon semiconductor material that comprises the substrate or absorber layer of one or more photovoltaic cells. It is manufactured by forming an ingot from molten polysilicon and then slicing it into wafers, or by depositing a thin-film semiconductor photon absorber into a sheet or layer, that is, a thin-film deposition.

Definitions for Land-Based Wind Elective Safe Harbor

Term	Definition
Blades	The airfoil-shaped blade that is responsible for converting wind energy to low-speed rotational energy.
Land-based wind	An energy system using wind turbines to generate electricity on land.
Nacelle	The Assembly of the drivetrain and other tower-top parts of a wind turbine (with the exception of the blades, rotor hub, and power converter, if located atop the tower) within their cover housing.
Power converter	The component that translates the electrical energy generated by the generator within the nacelle into a frequency and voltage compatible with use or export to the grid.
Preform	The rough-formed forged metal component from which a wind tower flange is rolled and machined.
Rotor hub	The component to which the blades of a wind turbine are attached, which controls the pitch angle of the blades with respect to the wind and is connected to and transfers its rotation to the drivetrain within the nacelle.

Definitions for BESS Safe Harbor

Term	Definition
Battery pack/module	The packaged unit of battery cells that are configured electrically, in series or parallel, and is ready for installation in the battery container/housing without an additional manufacturing process.
Inverter/converter	An end product that is suitable to convert between direct current and alternating current or direct current and direct current electricity to enable battery charge and discharge.
Battery container/housing	A superstructure that houses, protects, and manages a system of multiple battery packs/modules.
Battery management system	A combined system of electrical and electronic parts that serves to monitor (and may also control) the condition of the battery pack/module.
Cells	An electrochemical cell comprised of one or more positive electrodes and one or more negative electrodes.
Distributed BESS	An energy storage system for electricity generation using battery cells and battery modules, which has a nameplate capacity not greater than 1 megawatt-hour.
Electrical parts	The components consisting of only control transformers, capacitors, inductors, bus/cables, and circuit protection not on printed circuit board (PCB) assemblies.
Enclosure	A structure that houses and protects other equipment and may provide structural support to other products and components.
Grid-scale BESS	An energy storage system for electricity generation using battery cells and battery modules, which has a nameplate capacity greater than 1 megawatt-hour.
Packaging	The materials that surround battery cells to create a battery pack/module.
Printed circuit board assemblies	Finished, fully functional printed circuit boards that have all necessary subcomponents soldered and installed on to them.

Thermal management system for inverter	The primary cooling unit to optimize operation and safety, external to and/or within the Inverter/Converter (in which it is a Manufactured Product Component of the Inverter/Converter).
Thermal management system for battery container/housing	The primary cooling unit to optimize operation and safety of the BESS (in which it is a Manufactured Product Component of the Battery Container/Housing).