ArentFox Schiff

Trump Tariffs and the PV Supply Chain

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Presented by

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Today's

AGENDA

More Than Just A Headline

The Trump tariffs are impacting every stage of the PV supply chain **<u>now</u>**, with more tariffs on the horizon.

- Tariffs (current and future) can increase costs on raw materials, consumables, components and equipment.
- These costs shape CAPEX *and* ongoing operating expenses for new U.S. manufacturing.
- Tariff policy and manufacturing policy are often at odds.
- Companies can stay ahead through proactive tariff planning and mitigation.

I. The Latest on the Trump Tariffs

Trump's Tariff Buffet

IEEPA Fentanyl
20-35%

IEEPA Reciprocal
10-41%

Section 232 (Sectorial)
25-50%

Section 301 (China)
7.5-25%*

IEEPA tariffs currently under litigation at the Supreme Court. Hearings expected early November 2025.

*In most cases; 50% for solar-grade polysilicon, solar cells and modules

IEEPA Reciprocal Tariffs

- New Executive Order issued on July 31 modifies US reciprocal tariff rates under IEEPA; see **Annex I for country-specific rates** (10-41%)
- New tariff rates take effect for goods entered or withdrawn for consumption on or after **August 7, 2025**
- **In-transit exemption**: Goods loaded before August 7 and entered before October 5 remain subject to prior duties
- Standard country-of-origin rules currently apply for origin determination
- **China remains at 10% until November 10**

Key Annex II Exemptions from Reciprocal Tariffs

HTS	Description
2804.61.00	Silicon containing by weight not less than 99.99% of silicon
3402.42.90	"Non-ionic organic surface-active agents, other than fatty substances of animal, vegetable or microbial origin, other than aromatic / modified aromatic"
8486	Machines and apparatus of a kind used solely or principally for the manufacture of semiconductor boules or wafers, semiconductor devices, electronic integrated circuits or flat panel displays; machines and apparatus specified in note 11(C) to this chapter; parts and accessories

Section 232 Metal Tariffs

- **Steel and Aluminum:** 50% tariffs on the steel and aluminum content of subject products
- **Copper:** 50% tariffs on 50 percent tariffs on semi-finished copper products and certain copper derivative products (e.g., insulated cable).
- **US melt and pour steel** and **US smelt and cast aluminum** are exempt from Section 232. Otherwise, no more exclusions, quotas or exemptions!
- Commerce just wrapped up its second round of "inclusions" requests on steel/aluminum tariffs
- For the most part, Section 232 tariff is only assessed on the metal content of the product.

Ongoing Section 232 Investigations

If President concludes that imports pose a threat to national security, then tariffs, quotas, or other remedies are possible.

Imports Targeted	Initiation Date	Reports Due to the President
Semiconductors and SMEs	April 1	December 27
Critical Minerals	April 22	January 10, 2026
Polysilicon and Derivatives	July 1	March 28, 2026
Robotics and Industrial Machinery	September 2 (comments due October 17)	May 30, 2026

China Tariffs: Where We Currently Stand

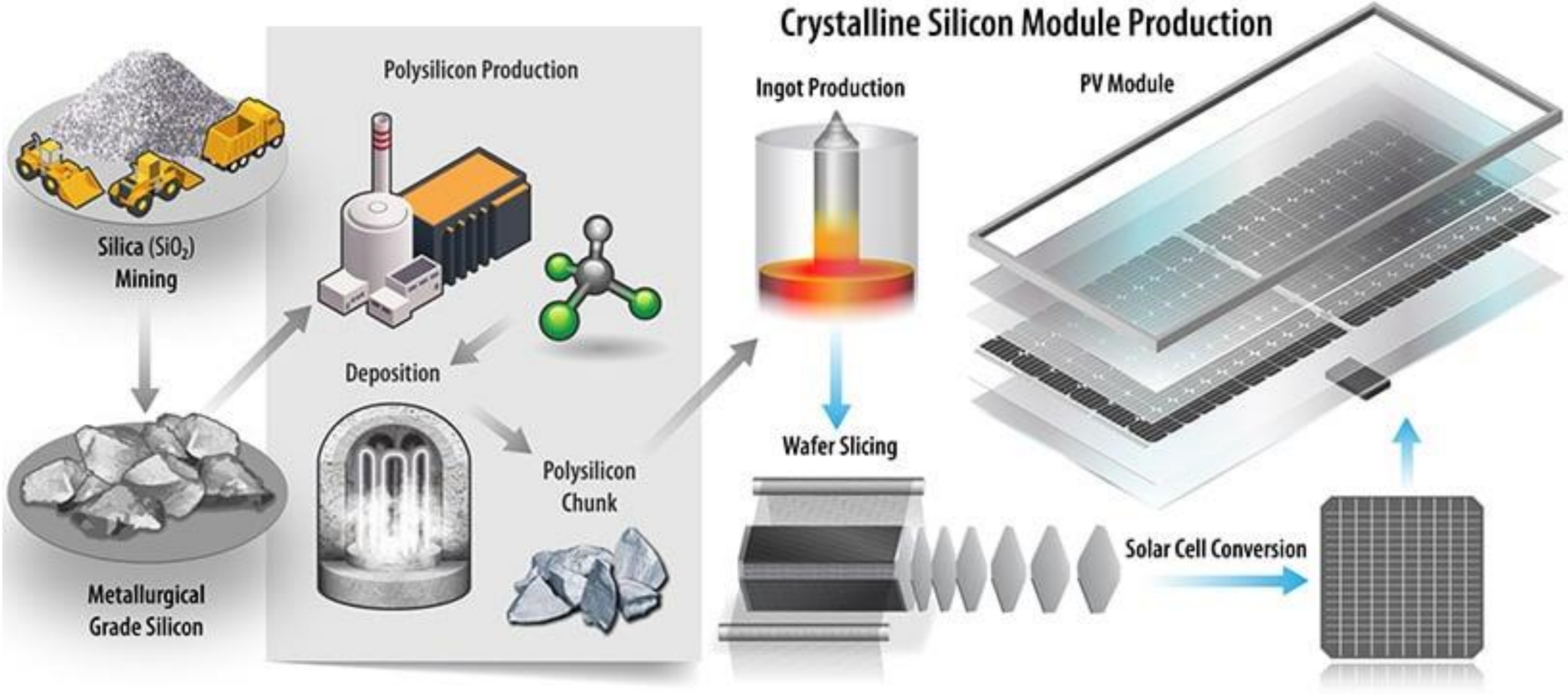
Special Tariff	Current Rate
IEEPA Reciprocal Rate	10% until 11/10/25
IEEPA Fentanyl Rate	20%
Sec. 301 Duties	7.5-25% (most cases) 50% on solar cells, modules and solar-grade polysilicon

Section 301 China Tariff Exclusions for Solar

- **Solar module inputs**
  - Certain tempered solar glass
  - Certain junction boxes
- **Solar manufacturing equipment** (14 total exclusions, covering ingot, wafer and cell manufacturing)
  - Silicon growth furnaces
  - Diamond wire saws
  - Screen printing line machines
- Exclusions set to expire **Nov. 29**
- USTR seeking public comments on possible extension of existing exclusions. Comments due **Oct. 16**

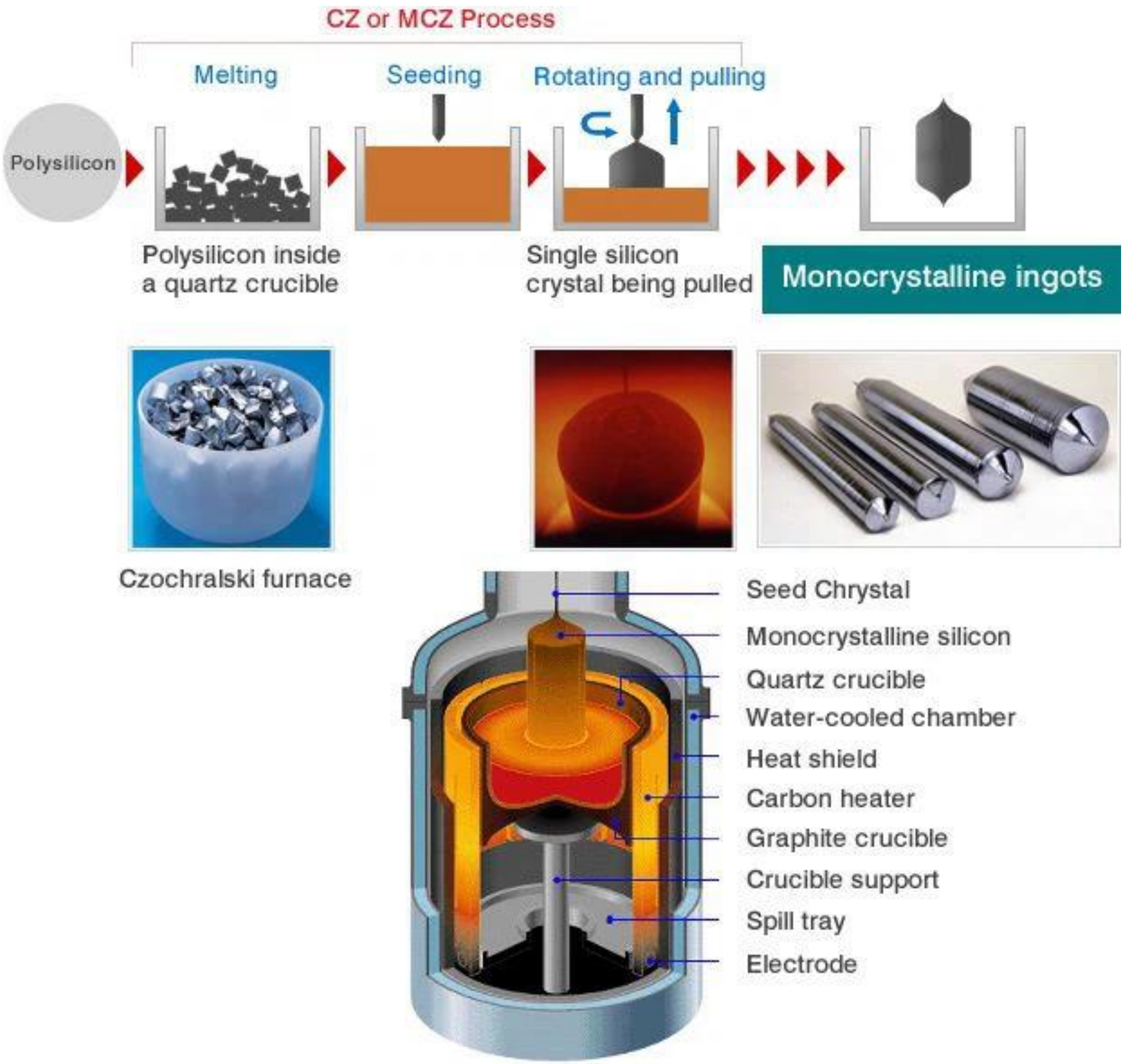
II. Tariff Impacts on the PV Supply Chain

Overview of PV Manufacturing Supply Chain



Ingot Manufacturing

- Converts purified polysilicon into large single- or multi-crystal silicon blocks.
- Uses high-temperature furnaces (≈1,400 °C) and quartz crucibles.
- Doping with boron or phosphorus creates electrical properties.
- Equipment: Czochralski pullers used for mono-crystalline ingot production.
- Energy-intensive, capital-heavy, and critical to wafer supply.

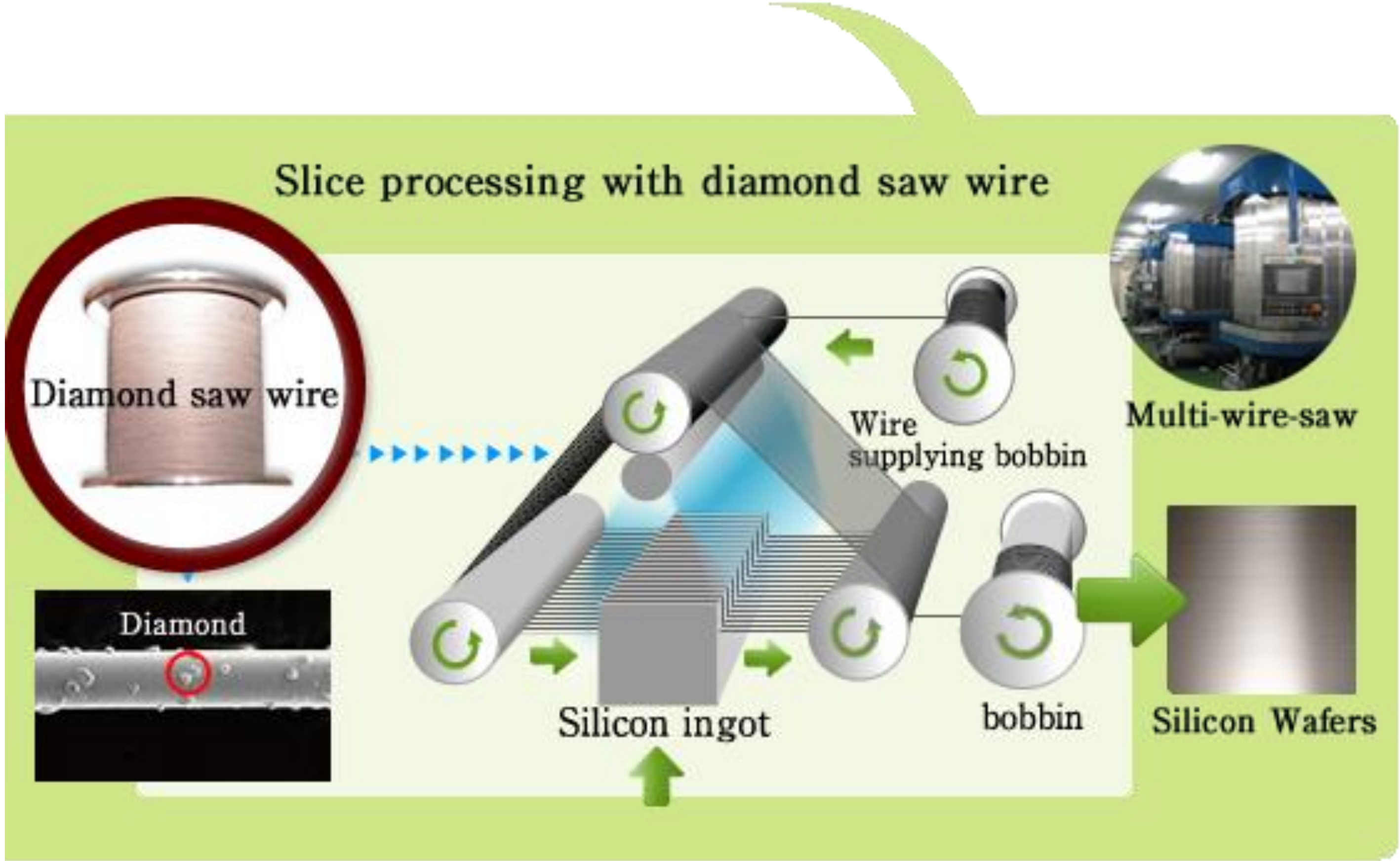


Tariff Impacts on Ingot Manufacturing

Material/Equipment	Common Sources	Potential Tariffs	Potential Exemptions
Solar grade polysilicon	China Germany Malaysia Korea Taiwan Japan	- MFN duties (0-5% generally) - China Section 301 (7.5-50%) - China Fentanyl + Reciprocal (30%) - EU Reciprocal (15% all-inclusive) - Malaysia Reciprocal (19%) - Korea Reciprocal (15%) - Taiwan Reciprocal - Japan Reciprocal (15% all-inclusive)	- Annex II Exemption (Reciprocal Tariff) - Section 301 Solar Equipment Exemption
Ingot puller			
Quartz crucible			
Hot zone components (graphite, insulation, etc.)			
Seed			
Other ingot puller components and spare parts			

Wafer Production

- Slices silicon ingots into thin wafers (~150–180 µm thick).
- Diamond wire saws dominate today's process.
- Automation and precision drive yield and cost.
- Foundation substrate for solar cell fabrication.

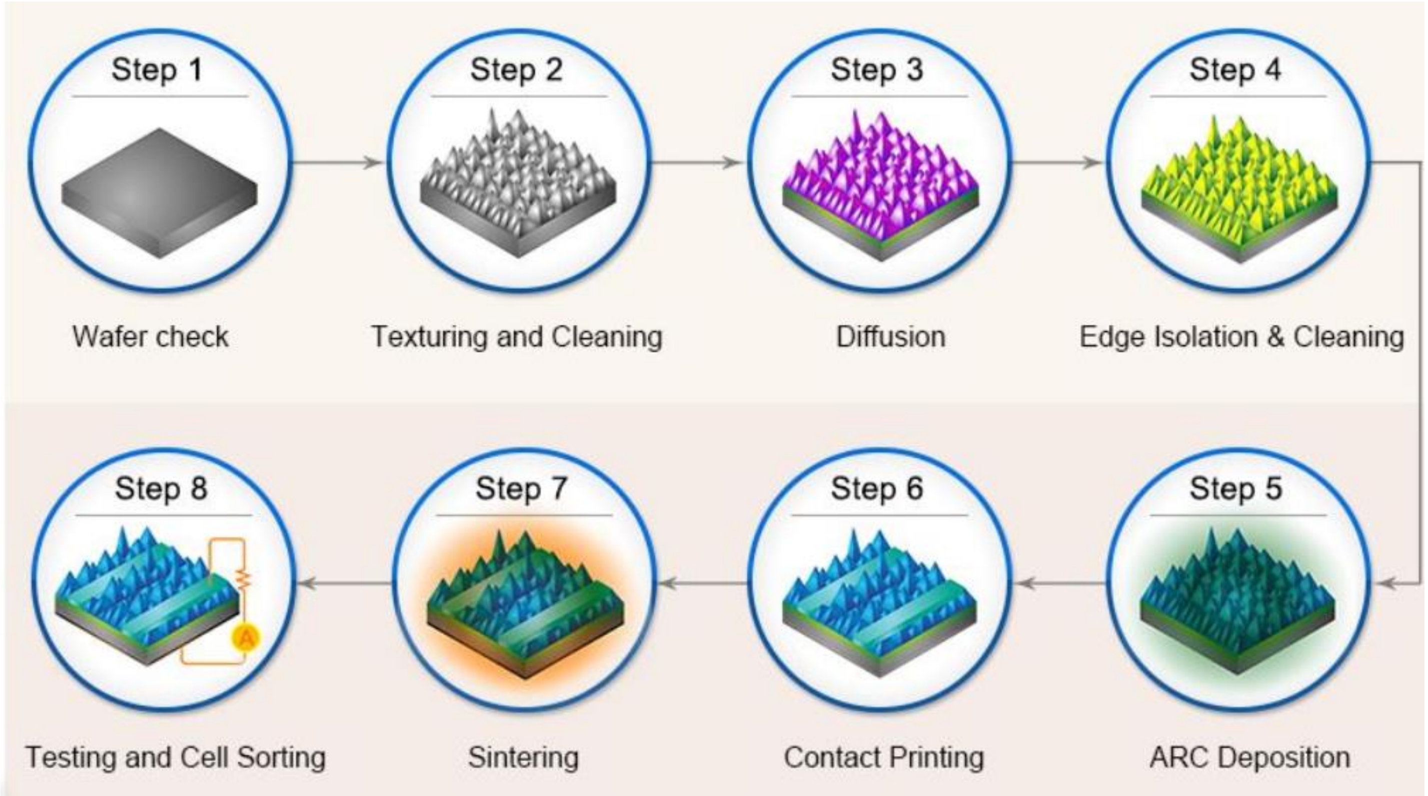


Tariff Impacts on Wafer Production

Material/Equipment	Common Sources	Potential Tariffs	Potential Exemptions
Diamond wire	China Korea Taiwan Japan Switzerland U.S.	- MFN duties (0-5.3% generally) - China Section 301 (7.5-25%) - China Fentanyl + Reciprocal (30%) - Korea Reciprocal (15%) - Taiwan Reciprocal (20%) - Japan Reciprocal (15% all-inclusive) - Switzerland Reciprocal (39%)	- Annex II Exemption Reciprocal Tariff - Section 301 Solar Equipment Exemption
Detergent			
Coolant additives			
Equipment (including multi-wire saw machines, cleaning, stacking and inspection systems)			

Cell Fabrication

- Converts wafers into electricity-generating devices.
- Involves diffusion, coating, metallization, and firing.
- Major consumables: dopant gases, silver paste, aluminum paste.
- Technologies: PERC, TOPCon, heterojunction.

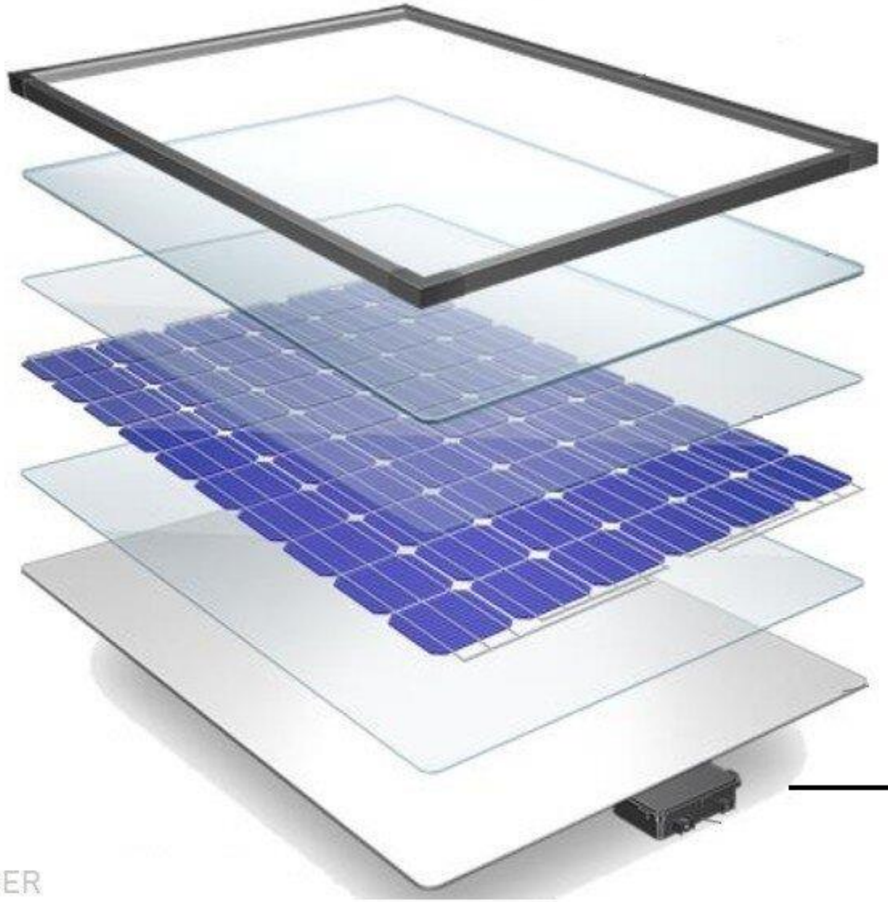


Tariff Impacts on Cell Fabrication

Material/Equipment	Common Sources	Potential Tariffs	Potential Exemptions
Busbars Silver paste Aluminum paste Equipment (chemical processing and screening printing tools)	- China - Korea - Taiwan - Singapore - Japan - EU	- MFN duties (0-5.3% generally) - China Section 301 (7.5-25%) - China Fentanyl + Reciprocal (30%) - Korea Reciprocal (15%) - Taiwan Reciprocal (20%) - Singapore Reciprocal (10%) - Japan Reciprocal (15% all-inclusive) - EU Reciprocal (15% all-inclusive)	- Annex II Exemption Reciprocal Tariff - Section 301 Solar Equipment Exemption

Module Assembly

- Connects and encapsulates cells into final panels.
- Layers: glass, encapsulant (EVA/POE), cells, backsheet or glass, frame.
- Requires copper ribbons, aluminum frames, junction boxes.
- Most U.S. manufacturing today occurs at this downstream stage.



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Tariff Impacts on Module Assembly

Material/Equipment	Common Sources	Potential Tariffs	Potential Exemptions
Aluminum frame Solar glass Wire Busbar Encapsulant Backsheet Junction box Sealant, potting, etc. Module-line equipment	- China - Vietnam - Korea - Malaysia - Thailand - India - Taiwan - Japan - US	- MFN duties (0-5.3% generally) - **Section 232 Aluminum (50%)** - **Section 232 Copper (50%)** - China Section 301 (7.5-25%) - China Fentanyl + Reciprocal (30%) - Vietnam Reciprocal (20%) - Korea Reciprocal (15%) - Malaysia Reciprocal (19%) - Thailand Reciprocal (19%) - Taiwan Reciprocal (20%) - Japan Reciprocal (15% all-inclusive)	- Section 301 Exemptions - US Smelt/Cast Exemption (232 Aluminum) - Metal Content Breakout (232 Aluminum, 232 Copper)

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III. Developing a Tariff Strategy

Three Key Pieces to the Tariff Puzzle

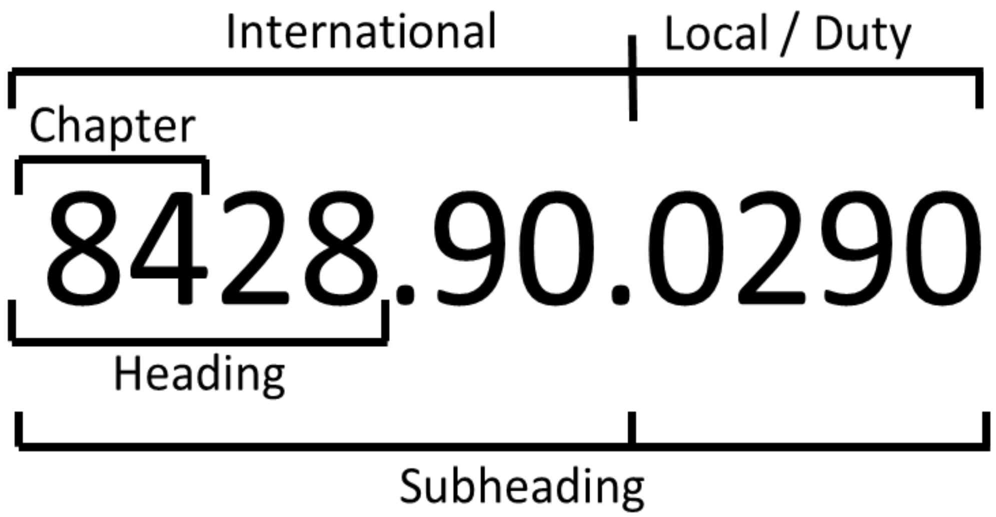
Classification (HTS)

Country of Origin

Valuation

HTS Code Structure

- Tariff Schedule: https://hts.usitc.gov/current
- Elements of the HTS
  - Headings and subheadings and their related numerical codes
  - General Rules of Interpretation (GRIs)
  - General Notes
  - Tariff Provisions
    - Section Notes (21 sections)
    - Chapter Notes (98 chapters)
    - Headings and Subheadings
    - Statistical suffixes
  - Appendices
  - Alphabetical Index



Customs Penalties

19 U.S.C. 1592 authorizes penalties if merchandise is entered, introduced or attempted to be entered or introduced by means of the transmission of data or information that is "material and false," or "any omission which is material"

Proving reasonable care will protect from or mitigate these penalties

Four key steps to develop a tariff strategy.

1. Know your **exposure.**
2. Leverage every **duty savings tool** at your disposal.
3. Employ **internal and external resources** effectively.
4. Manage **regulatory uncertainty**.

Tariff Mitigation Strategies

Tariff Classification

Origin

Value/First Sale

USMCA

Temporary Importation Bond

Foreign Trade Zones/BWs

Cost Sharing

Supply Chain Diversification

Trump Tariff Resources

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Featuring our monthly newsletter *As the (Customs and Trade) World Turns*

Questions?

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