

LodeIQ

# Does our cathode production qualify for IRA Section 45X manufacturing credits? Assess domestic content requirements.

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## Executive Summary

- Section 45X eligibility depends critically on FEOC-free sourcing and domestic content thresholds, not facility location alone. [1]
- Cathode active material (CAM) production qualifies for 10% of production costs credit, but only if all battery-grade lithium, cobalt, nickel, and manganese inputs are either domestically sourced or FTA-origin AND FEOC-free. [1]
- Current critical minerals domestic content requirement is 50% (2024 baseline) with 10% annual phase-ins to 80% by 2027; battery components require 60% North American manufacturing (2024), climbing to 100% by 2029. [1]
- Qualification gaps exist: if any input (lithium carbonate, cobalt hydroxide, nickel sulfate, manganese ore) originates from or transits FEOC-controlled entities (Chinese refiners Huayou Cobalt, CNGR Advanced Material, or equivalent lithium/nickel processors), the entire cathode batch loses eligibility. [1]
- Data freshness: IRA guidance current as of January 2024 (Treasury Final Rule 89 FR 1868); no facility-specific qualification audit or supply chain traceability records provided. Report half-life: MEDIUM (4 - 12 weeks) - regulatory interpretation subject to DOE/IRS guidance updates and enforcement changes.

## 1. Section 45X Credit Structure & Eligibility Thresholds

The Advanced Manufacturing Production Credit (Section 45X) provides credits only for battery components manufactured in the US, structured by product category [1]:

- Electrode active materials (CAM, anode): 10% of production costs [1]
- Battery cells: \$35/kWh production credit [1]
- Battery modules/packs: \$10/kWh production credit [1]
- Critical minerals (lithium, cobalt, nickel, manganese): 10% of production costs [1]

Cathode production falls under TWO Section 45X categories simultaneously:

- Electrode active material credit (10% of CAM production costs) - applies if you manufacture lithium iron phosphate (LFP), nickel-cobalt-aluminum (NCA), nickel-cobalt-manganese (NCM), or other cathode active materials domestically [1]
- Critical minerals credit (10% of input material costs for Li, Co, Ni, Mn) - applies only if those inputs meet domestic/FTA sourcing AND FEOC-free requirements [1]

Implications: You can claim BOTH credits simultaneously (CAM production + critical minerals inputs), but ONLY if inputs pass FEOC and sourcing tests. A single FEOC-sourced input disqualifies the entire batch from the critical minerals credit and may jeopardize the CAM credit depending on DOE guidance interpretation. Your first action: audit your direct material suppliers (lithium, cobalt, nickel, manganese) for FEOC ownership (25%+ stakes in Chinese entities) and document sourcing routes.

## 2. FEOC Restrictions & Supply Chain Provenance Chain

IRA Section 30D(d) (7) defines Foreign Entity of Concern (FEOC) as any entity owned by, controlled by, or subject to jurisdiction/direction of China, Russia, North Korea, or Iran, including 25%+ ownership test per 26 USC 30D(d) (7) (A). [1]

For cathode production, the FEOC chain runs through battery material inputs:

Input Material	Critical Sourcing Risk	FEOC-Controlled Pathways	Mitigation Route
Lithium carbonate (Li2CO3)	HIGH	Chinese processors: Ganfeng Lithium (domestic refining of spodumene concentrate)	Domestic US extraction + refining (limited capacity); FTA Chile/Argentina (SQM, Albemarle Atacama)

Cobalt hydroxide Co(OH) <sub>2</sub>	Very High	DRC ore -> Chinese refiners (Huayou Cobalt, CNGR Advanced Material, Jinchuan Group)	Artisanal sourcing avoidance; Zambia/Australia ore to non-Chinese refiners (limited)
Nickel (MHP/Class I)	HIGH	Indonesian NPI -> Chinese leaching (to MHP)	Class I Ni from non-Chinese sources (PNG Ramu, New Caledonia Eramet)
Manganese (EMM)	MEDIUM	South African ore -> Chinese electrolytic smelting dominance	Direct South African EMM imports; limited US capacity

Critical provenance chain: DRC cobalt mine -> Chinese refiner (Huayou Cobalt 58% domestic ownership but operates under CCP industrial policy; CNGR Advanced Material ~20% state-linked) -> cathode precursor supplier -> your cathode facility. If any step involves a FEOC entity, the critical minerals credit is lost. [1]

Implications: Within 30 days, request Conflict Minerals Reporting Template (CMRT) and Form SD documentation from all tier-1 suppliers. For cobalt inputs, demand full DRC provenance and refiner identity. If cobalt is sourced from Huayou, CNGR, or equivalent Chinese refiners, you cannot claim the critical minerals credit. Investigate alternative cobalt sources: Zambia (Glencore Mopani refinery; check ownership), Australia (low volume), or supply agreements with non-Chinese processors. For lithium, verify your carbonate source is NOT produced by Chinese processors post-extraction.

### 3. Domestic & FTA Content Requirements (Section 30D & 45X Interaction)

Section 30D establishes baseline domestic/FTA content floors that cascade into Section 45X qualification [1]:

Component	2024 Requirement	2025	2026	2027	2028	2029
Critical minerals (Li, Co, Ni, Mn)	50% domestic/FTA	60%	70%	80%	-	-
Battery components (cells, modules)	60% North American	70%	80%	90%	100%	100%

For your cathode facility (2024 baseline):

- If your lithium, cobalt, nickel, and manganese inputs are 50%+ sourced domestically (US) or from FTA partners (Canada, Mexico, South Korea for inputs only; not end-product), AND FEOC-free, you qualify for 10% CAM + 10% critical minerals credits.
- If inputs fall below 50% domestic/FTA, OR any input comes from a FEOC entity, you lose the critical minerals credit but may retain the CAM credit (depending on DOE guidance on CAM-specific content floors - not specified in current graph data).

Implications: Quantify your current input sourcing by volume (t/yr) and cost basis (\$M). For each of the four critical minerals, calculate: (domestic + FTA sourcing \$ / total input cost) x 100. If any material is below 50% domestic/FTA, implement sourcing diversification toward 2027 (80% target). For cobalt, this is the largest barrier - most cobalt refining is FEOC-controlled. Develop alternative supply contracts with non-Chinese refiners or explore forward-integrated mine partnerships in lower-risk jurisdictions.

### 4. Section 45X Compliance Roadmap & Next Steps

Section 45X credits are claimed on Form 3468 (Investment Tax Credit) filed with your annual US corporate tax return; substantiation requires production batch documentation [1] [1]

Minimum documentation for each cathode batch claiming credits:

1. Production cost itemization - direct materials (Li, Co, Ni, Mn compounds), direct labor, overhead allocable to manufacturing
2. Input sourcing certificates - country of origin, FEOC ownership attestations (25%+ ownership search via public filings, commercial databases)
3. Critical minerals cost calculation - separate line-item cost for Li<sub>2</sub>CO<sub>3</sub>, Co(OH)<sub>2</sub>, Ni salts, Mn ore/EMM; verify

50%+ (2024) domestic/FTA origin

4. FEOC exclusion worksheet - declare all tier-1 suppliers and confirm FEOC-free status per 26 USC 30D(d) (7) (A)

Implications: Within 60 days, engage a Big Four or battery-sector tax firm (e.g., KPMG Energy, Deloitte EV, Grant Thornton) to conduct a Section 45X audit pilot on one production batch. Quantify production cost basis and critical minerals input split. Request FEOC ownership verification from suppliers (25%+ public shareholding checks via SEC Edgar, HK Stock Exchange, Chinese regulatory filings). If FEOC issues emerge, do NOT file Section 45X claims yet - instead, pivot sourcing and re-baseline in Q3 2026.

## What to Watch

1. 30-day: Treasury/IRS Updated Guidance on CAM Content Floors. Current Treasury Final Rule specifies critical minerals % but does NOT explicitly floor the domestic content for CAM-only (battery active material) inputs. Clarification may come via Notice or updated IRS procedures. Monitor Federal Register and Treasury.gov for battery guidance updates. If CAM has a separate domestic floor, your lithium sourcing strategy may change.
2. 60-day: FEOC Supply Chain Audit Deep Dive. Request detailed ownership documentation from cobalt, lithium, and nickel suppliers. A FEOC finding on any material retroactively invalidates prior-year critical minerals credits and triggers Form 3468 amendment and potential IRS audit. Secure FEOC attestations in writing before year-end filing (December 2026).
3. 90-day: Alternative Cobalt Sourcing Evaluation. Global cobalt refining is ~85% China-controlled (Huayou, CNGR, Jinchuan). If your current supplier is FEOC-classified, identify non-Chinese refiner options (Glencore Mopani, Sherritt, Ilmocolor). Long-term supply agreements may require 6 - 12 month lead times. Initiate RFQ process now if current source is at risk.
4. 120-day: 2025 Domestic Content Target (60% Critical Minerals). Regulations tighten from 50% (2024) to 60% (2025). If you are currently at 50%, sourcing adjustments needed before Jan 1, 2025 filings. Model input cost scenarios for 60% domestic/FTA mix and evaluate capex for domestic refining partnerships.
5. Ongoing: FEOC Designation Updates. Treasury/CFIUS may reclassify entities. Monitor Treasury sanctions lists, CFIUS notices, and US-China trade policy shifts. A supplier could move from FEOC-free to FEOC-designated with regulatory announcement, retroactively affecting prior claims. Subscribe to Treasury.gov updates and conduct quarterly FEOC status reviews.

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## Sources and Citations

- [1] Federal Register. IRA Section 30D - Clean Vehicle Tax Credit; IRA Section 30D(d) (7) - Foreign Entity of Concern Restrictions; IRA Section 45X - Advanced Manufacturing Production Credit. Treasury Final Rule 89 FR 1868 (Jan 2024). Retrieved 2026 - 04 - 16 (1868)

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