ZETA | ZERO EMISSION TRANSPORTATION ASSOCIATION

February 5, 2024

United States Department of the Treasury
Internal Revenue Service
1500 Pennsylvania Avenue, NW
Washington, D.C. 20220

RE: REG-107423-23
Section 45X Advanced Manufacturing Production Credit
Submitted via Rulemaking Portal: http://www.regulations.gov.

The Zero Emission Transportation Association (ZETA) is an industry-backed coalition of over 60 member companies advocating for 100% electric vehicle (EV) sales. ZETA is committed to enacting policies that drive EV adoption, create hundreds of thousands of jobs, dramatically improve public health, and significantly reduce emissions. Our coalition spans the entire EV supply chain including vehicle manufacturers, charging infrastructure manufacturers and network operators, battery manufacturers and recyclers, electricity providers, and critical minerals producers, among others.

We thank the Department of the Treasury and the Internal Revenue Service (IRS) for the opportunity to comment on its notice of proposed rulemaking.[1] to implement the Advanced Manufacturing Production Tax Credit, found in Section 45X of the Internal Revenue Code as established by the Inflation Reduction Act (IRA). The Section 45X credit is critical to many ZETA members and will help ensure the continued availability of products necessary for a fully-electrified transportation sector.[2]

The Section 45X credit is a key component of the IRA that will accelerate American battery cell and module manufacturing and support continued growth in domestic EV assembly. Strategic implementation of the Section 45X credit could also help accelerate the development of a domestic critical mineral supply chain through increased production of raw and recycled materials. The Section 45X credit is designed to encourage American innovation in clean energy products and spur production of materials and products essential to zero emission transportation. It will also support the revitalization of manufacturing hubs and create new facilities with good-paying American jobs.

[1] *See* 88 FR 86844 (December 15, 2023)
[2] https://www.zeta2030.org/news/advanced-manufacturing-production-tax-credit-will-ssupercharge-american-manufacturing

The proposed rule is thoughtfully designed with regard to cell and module manufacturing and bidirectional onboard EV inverters but we encourage Treasury and the IRS to consider a definition of "eligible battery components" that includes the totality of battery components used in cell and module manufacturing. We also request Treasury confirm in the final regulations, consistent with the proposed rule, that inverters produced in the U.S. and used in onboard vehicle installations qualify for the Section 45X credit if, in the form sold by the manufacturer, they are suitable to connect with one or more solar modules or certified distributed wind energy systems to convert DC electricity into AC electricity from such connected source.

Most critically, the proposed exclusion of direct and indirect material costs and costs related to the extraction of raw materials would reduce the effective impact of the credit in onshoring key segments of the battery supply chain. If finalized, such an exclusion could also have significant impacts on the ability of the Section 30D New Clean Vehicle Tax Credit to maximally incentivize EV deployment. We expand on these and many more points in the comments below.

ZETA thanks the Biden-Harris Administration for its consideration of the following comments. We also note that many of ZETA's member companies have submitted comments in their individual capacities, and we urge the Administration to give full consideration to those as well.

Qualified Taxpayers Should be Eligible to Claim Direct and Indirect Materials Costs and Costs Related to Extraction Under the Section 45X Credit

Critical minerals are essential globally for commodities such as EVs, modern electronics, healthcare technology, and national security and defense infrastructure, among others. S&P Global estimates that due to the IRA, the U.S. projected demand for lithium will increase 15% by 2035, along with a 14% increase in demand for nickel, 13% for cobalt, and 12% for copper.[3] Properly incentivizing domestic U.S. production, including extraction, processing, and refining, will be essential in meeting this forthcoming demand and will contribute to maximizing the impact of the various pro-growth policies in the IRA.

<u>Extraction is a Value-Added Activity and Direct/Indirect Materials Costs are Essential Inputs to Other Key Value-Added Activities</u>

A key provision in the IRA is the Section 45X Advanced Manufacturing Production Tax Credit, which incentivizes private entities to develop a robust, domestic supply of critical minerals and battery components. If implemented thoughtfully, the Section 45X credit will ensure the success of current American industrial policy over the next decade by facilitating the deployment of domestically produced clean energy technologies—particularly EVs. The credit provides $35 per

[3] https://www.spglobal.com/marketintelligence/en/mi/research-analysis/us-ira-and-critical-mineral-supply-challenge.html

kWh for each battery cell and $10 per kWh for each battery module. The value of the credit is also available for 10% of the costs incurred by the taxpayer with respect to the production of applicable critical materials, which will significantly drive down the costs of domestic clean energy manufacturing. Unlike other eligible components,
applicable critical minerals are not subject to a credit phaseout after 2029, underscoring Congressional intent that the IRA incentivize onshoring of the critical minerals supply chain.

However, as proposed in the December 2023 Section 45X implementation guidance, the definition of costs incurred would exclude direct and indirect material costs as defined in § 1.263A–1(e)(2)(i)(A) and § 1.263A–1(e)(3)(ii)(E), respectively, and costs related to the extraction of raw materials.[4] This proposed exclusion was intended to "mitigate the risk of crediting the same cost multiple times" and ensure the credit is provided for production activities that add value to the applicable critical mineral.

Extraction is an inherently value-added activity. Companies that engage in the extraction of raw materials are fundamentally doing so in an effort to derive value from an otherwise less valuable resource. Separately but related, the direct and indirect materials costs are essential inputs to other value-added activities such as raw ore processing and battery recycling–activities whose capability to add value is contingent on accessing such inputs–and direct and indirect materials costs often go towards increasing the value of the critical mineral in each step of the process.

Implications for EV Deployment if Section 45X Guidance is Finalized as Proposed

EVs are playing a key role in helping achieve the Biden-Harris Administration's blueprint for decarbonizing the transportation sector while adhering to U.S. commitments under the Paris Climate Agreement.[5] Transportation electrification will not only reduce tailpipe emissions, but will promote American economic competitiveness, create good-paying jobs, and improve local health outcomes. Private sector investments in the domestic EV supply chain total billions of dollars and support hundreds of thousands of American jobs.[6]

In recognition of these realities, the IRA also modified the Section 30D New Clean Vehicle Tax Credit and, provided the vehicle purchaser and manufacturer meet the necessary qualifications, reduces the cost of new EVs by $7,500. Qualified manufacturers must meet increasingly stringent content requirements requiring sourcing battery components and critical minerals either domestically or from free trade agreement (FTA) countries. Because both requirements must be met for an EV to be eligible for the 30D credit, significant new investment is necessary to scale domestic critical mineral production, EV battery manufacturing, and recycling to maximize the impact of the 30D credit. Thoughtful implementation of the 45X credit would intentionally

[4] Proposed §1.45X-4(c)(3)
[5] https://www.energy.gov/sites/default/files/2023-01/the-us-national-blueprint-for-transportation-decarbonization.pdf
[6] https://www.zeta2030.org/education-fund/investments

recognize its nexus as an essential tool to meet Section 30D domestic content sourcing requirements. Strategic Section 45X credit implementation is therefore central to the success of broader U.S. industrial strategy.

The clean vehicle incentives established by Congress in the IRA have two key policy objectives: to increase EV deployment and to counter Foreign Entity of Concern (FEOC) influence by "friendshoring" clean energy supply chains. Designed to complement each other, the Section 30D New Clean Vehicle Tax Credit and the Section 45X Advanced Manufacturing Production Tax Credit will be two of the main drivers of these policy outcomes.

As proposed, the recent 45X credit guidance will help achieve neither and, in fact, could serve as a hindrance to the success of both of the aforementioned objectives. Without a robust, secure supply of critical minerals and battery components, increasingly stringent sourcing requirements tied to Section 30D eligibility could make fewer vehicles eligible over time. The decision to restrict access to the Section 45X credit to exclude direct and indirect materials costs as well as extraction costs will curtail future domestic supply, worsening a pre-existing bottleneck[7] rather than alleviating it.

This will have the practical effect of capping the Section 30D credit's ability to increase EV deployment and build a domestic critical mineral, battery component, and battery recycling supply chain. Failing to include direct and indirect material costs and costs related to the extraction of raw materials as eligible to receive the 45X credit in tandem with the IRA's Section 30D eligibility criteria could, in effect, phase the Section 30D credit out faster than the IRA's statutory expiration in 2032.

Treasury and IRS' Stated Concerns are Valid but Existing Prevention Mechanisms are Already Established and Should be Leveraged

ZETA understands and appreciates the concerns about double counting and reducing fraud, waste, and abuse and we strongly support the need to uphold the integrity of the 45X credit. However, as proposed, 45X would eliminate the ability to even single count direct and indirect materials costs and extraction costs, amounting to a missed opportunity to incentivize the development of a domestic critical minerals supply chain. As discussed below, Treasury and IRS can leverage existing regulatory authority, experience, and tools to develop a 45X implementation regime that can be administered in a way that minimizes the risk of double crediting costs and other forms of fraud, waste, or abuse.

As Treasury and IRS explain in the proposed regulations, they have three conditions for the inclusion of direct and indirect material costs and extraction costs under 45X: (1) IRS must be

[7] https://www.zeta2030.org/insights/critical-mineral-permitting-reform-framework

able to "effectively administer" the inclusion of direct and indirect material costs and extraction costs; (2) the inclusions must pose a limited risk of crediting the same production cost multiple times; and (3) the inclusion must pose a limited risk of increasing other forms of fraud, waste, and abuse. These three conditions can be satisfied for direct and indirect material costs and extraction costs by relying on general tax law principles, applying the proposed section 45X anti-abuse rule, and adopting certification and documentation requirements from existing tax provisions.[8]

Direct and Indirect Materials Costs

Crediting the same costs multiple times can be resolved using basis reduction mechanics or documentation requirements. The 45X credit, and the credit for electrode active materials under section 45X(b)(1)(J), are based on a portion of a taxpayer's cost. While these credits are production tax credits, they are calculated akin to investment tax credits like the credits available under sections 48 and 48C. The investment tax credits under sections 48 and 48C are calculated as a percentage of a taxpayer's basis in an eligible piece of property. However, a taxpayer's basis in such property may be reduced for purposes of investment tax credits under 26 U.S.C. §49(a)(1)(A). Section 49 reduces a taxpayer's basis by an amount equal to certain nonrecourse financing relating to such property. Treasury and IRS could adopt a similar approach for the 45X credit and require that taxpayers exclude from "costs incurred" any direct or indirect material costs for which a section 45X credit had previously been claimed. This approach would require taxpayers to receive confirmation from their suppliers of direct and indirect materials that no section 45X credit had been previously claimed for such materials. This is not unprecedented, as certain section 45Q provisions require a similar inquiry.[9]

Alternatively, Treasury and IRS could require taxpayers to provide a bill of sale, an attestation, or some other description of the use of a critical mineral to show that such critical mineral is not being sold to be recycled or reprocessed into another critical mineral. Section 45X(c)(3)(B)(vii)(II) provides a credit for "structural fasteners" for solar trackers and torque tubes. Structural fasteners are essentially nuts and bolts. Treasury and IRS recognized that the credit for structural fasteners posed a potential for abuse because structural fasteners have potential applications and customers outside the solar sector. Thus, Treasury and IRS have proposed a requirement that taxpayers evidence the purpose of a structural fastener using a bill of sale or similar description of the use of the fastener. Treasury may require critical mineral producers to maintain similar documentation to ensure that critical minerals are not used in further critical mineral production and that the critical minerals are instead put to productive use.

[8] See, e.g., Prop. Reg. §1.45V-2(b); Notice 2023-38 (domestic content) and Notice 2024-9 (exceptions to domestic content requirements for direct pay).

[9] Under the section 45Q regulations, subject to certain regulatory and statutory requirements, taxpayers can elect to apply a later placed in service date for facilities with carbon capture equipment and receive an enhanced credit, if no taxpayer, including earlier owners of the facility, previously claimed a section 45Q credit for carbon captured at the facility. Regulation §1.45Q-2(g)(4)(i)

Beyond multiple crediting events, it remains unclear what types of waste, fraud, and abuse Treasury and IRS worry may occur if direct and indirect material costs are included. Treasury and IRS are capable of tailoring guidance to prevent multiple crediting events and have significant experience designing rules to that effect, including most recently the anti-"stacking" provisions in section 45, 48, 45V, and 45Z credits and the prohibition on crediting recycled carbon oxides in the section 45Q credit.

For critical mineral producers, direct and indirect material costs include ore and other forms of raw materials, but they can also include the cost of reagents, reactants, solvents, flocculants, and materials used in certain pollution control technologies. For many critical mineral producers, the cost of direct and indirect materials that are consumed in the ordinary course of production exceed by substantial margins the cost of direct materials that become an integral part of the final critical mineral. Direct and indirect materials costs are often related to substances with reliable benchmarking price data, many of which (sulfur, soda ash, quicklime, and limestone) are commodities. With such robust pricing information, any inflation of direct and indirect materials costs would be readily apparent. It would therefore be entirely appropriate for Treasury and IRS to develop robust documentation requirements for taxpayers that would establish the accuracy of the direct and indirect materials costs incurred by the taxpayer.

Furthermore, excluding direct and indirect materials costs will likely exclude costs related to environmental protections. Critical mineral production often requires large quantities of chemicals that pose substantial environmental risks if not handled appropriately. For many processes, direct and indirect materials costs would include the cost of materials used to clean, neutralize, or otherwise mitigate the environmental burden of critical mineral production.

Importantly, environmental compliance costs can be a substantial factor for critical mineral producers in deciding between jurisdictions. Therefore, mitigating environmental compliance costs is an effective means of encouraging onshore critical mineral production. Including direct and indirect materials costs will offset environmental compliance costs without weakening U.S. environmental protections.

Extraction Costs

As with direct and indirect material costs, Treasury indicated in the Section 45X preamble that it is open to the inclusion of extraction costs if their inclusion is administrable and poses a limited risk of crediting the same cost multiple times and of increasing other forms of waste, fraud, and abuse. The inclusion of extraction costs encourages the development of domestic raw material production, thereby encouraging the development of a secure and resilient supply chain, from beginning to end. If Treasury and IRS allow taxpayers to consider extraction costs, they should

modify the definition of "produced by the taxpayer" in proposed section 1.45X-1(c)(2).[10] The plain language of Section 45X created a credit "equal to 10 percent of the costs incurred by the taxpayer with respect to *production* of [an applicable critical mineral]"(emphasis added).[11] Treasury and IRS should clarify that "production" can include extraction in addition to processing, conversion, refinement, and purification. This modification would not entitle taxpayers to the Section 45X credit merely for extraction activities because critical minerals must meet relevant statutory specifications, but it would provide clarity for taxpayers by aligning statutory language with regulatory definitions.

IRS will be able to effectively administer the inclusion of extraction costs. Extraction costs relating to hard minerals are currently addressed in the Code in, for example, sections 616 and regulations thereunder, which provides for a deduction of costs incurred in the development of a mine and which often requires taxpayers (and ultimately, IRS) to distinguish between development expenditures and production expenditures. Thus, IRS is already equipped with the experience and framework necessary to effectively evaluate the deduction of expenses relating to mining—it merely needs to apply that experience to the Section 45X credit rather than a deduction.

Including extraction costs as an eligible value-added activity under Section 45X poses little to no risk of crediting cost multiple times, because crediting costs multiple times only occurs where a critical mineral is used in the production of another critical mineral. Extraction, while not specifically defined in the proposed regulations, will always occur before the production of a critical mineral because the production of a critical mineral requires either "conversion" or "purification," neither of which can occur during or prior to extraction.[12]

Including extraction costs as eligible value-added activity under Section 45X poses little to no risk of increasing other forms of fraud, waste, or abuse. Or at least, no more than currently exists in the Code. Section 616 provides that certain development costs can be deducted. At a corporate effective tax rate of 21%, each dollar of development costs yields 21 cents of tax relief. Under the Section 45X credit, 10% of included costs generate a credit, thus each dollar of extraction costs yields 10 cents of tax relief.[13] Thus, there is greater incentive for fraud, waste, and abuse

[10] "For solar grade polysilicon, electrode active materials, and applicable critical minerals, the term produced by the taxpayer means processing, conversion, refinement, or purification of source materials, such as brines, ores, or waste streams, to derive a distinct eligible component." Proposed section 1.45X-1(c)(2).

[11] §45X(b)(1)(M)

[12] The definition of "critical minerals" in section 45X and proposed section 1.45X-4, invariably reference either the "conversion" of the critical mineral or "purification" of the critical mineral, and frequently both. In the case of the critical mineral "lithium," "lithium" may mean lithium that is "converted to lithium carbonate or lithium hydroxide" or "purified to a minimum purity of 99.9 percent lithium by mass." Section 45X(c)(6)(P). The proposed regulations define "conversion" to mean a chemical transformation from one species to another. 1.45X-4(c)(2)(i).

[13] Section 616 treats development costs and production costs differently, providing a deduction for the former and not for the latter. The potential for fraud, abuse, and waste in Section 616 is in the mischaracterization of production costs as development costs and differs from the potential for fraud, abuse, and waste under the 45X credit. Regardless, section 616 shows that IRS can administer an incentive structure that addresses extraction costs.

under the existing tax code than would exist under a broad reading of extraction costs in the 45X credit.

Implications for the Development of a Circular Critical Mineral and Battery Supply Chain if 45X Guidance is Finalized as Proposed

Finalizing Section 45X guidance that excludes direct and indirect materials costs would also hinder the growth of a circular critical minerals supply chain. Utilization of critical minerals in EVs is inherently different from the utilization of petroleum in internal combustion engine vehicles, in that petroleum is consumed as a fuel while minerals become a component of manufactured vehicles. Unlike petroleum, critical minerals can be recycled, meaning even when minerals are imported to the U.S. from other countries, their acquisition adds to the domestic mineral stock available for future domestic recycling.

Without a domestic second-life battery industry, valuable resources and batteries will go to waste, which in turn will undermine the Congressional intent that the IRA facilitate the development of a secure and resilient domestic battery supply chain. As seen in recent years with the rapid growth in new EV sales,[14] a subsequent rapid growth in recyclable battery feedstock should be expected to occur in the coming years as EVs reach the end of their useful lives. Such a dynamic underscores the need to build a robust domestic battery recycling industry capable of maximizing the value of these forthcoming inputs.

These investments will help prolong the useful life of critical minerals within the U.S. while also lowering our dependency on foreign-sourced materials. As the Environmental Protection Agency notes in its proposed rulemaking to set multi-pollutant emission standards for model years 2027-2032 light- and medium-duty vehicles:

> "Over the long term, battery recycling will be a critical component of the [EV] supply chain and will contribute to mineral security and sustainability, effectively acting as a domestically produced mineral source that reduces overall reliance on foreign-sourced products. While growth in the return of end-of-life PEV batteries will lag the market penetration of [EVs], it is important to consider the development of a battery recycling supply chain during the time frame of the rule and beyond."[15]

A clarification on the eligibility of direct and indirect materials costs would enable the domestic battery recycling industry to avail itself of the Section 45X credit. The direct cost to acquire

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Moreover, section 616 requires more fine-toothed distinctions between development and production compared to the 45X credit which would more broadly distinguish between extraction and non-extraction costs.

[14] https://www.coxautoinc.com/market-insights/q4-2023-ev-sales/

[15] *See* 88 FR 29323 (May 5, 2023)

recyclable feedstock and the indirect cost to acquire reagents used in the processing of recyclable feedstock are the predominant materials costs associated with battery recycling. Such costs are essential inputs to the value-added activity of battery recycling and should be eligible costs under the Section 45X credit.

ZETA also notes that "processing" in the context of battery recycling is often a two-step process. Many battery recyclers operate using a hub-and-spoke model that enables them to collect recyclable feedstock, aggregate it, and then begin the recycling process in bulk at a specialized facility. This inherently decentralized to centralized process warrants thoughtful consideration in the context of the Section 45X credit. In the interest of incentivizing the buildout of a secure and resilient domestic battery supply chain, ZETA encourages Treasury and IRS to finalize Section 45X requirements that recognize this paradigm and seek to decrease direct and indirect materials costs associated with the full scope of the value-added battery recycling process. As with extraction and raw material processing, concerns about potential fraud, waste, and abuse can be addressed by relying on general tax law principles, application of the proposed Section 45X anti-abuse rule, and adopting certification and documentation requirements from existing tax provisions.

ZETA also encourages Treasury and IRS to offer clarity on how best to allocate the value of the Section 45X credit between recovered critical minerals and other recovered coproducts, such as plastics and foils. Battery recycling is a highly efficient process that economically co-recovers more than just critical minerals. While we recognize that some recoverable coproducts would not be eligible to claim the Section 45X credit, many of the critical minerals recovered would be, provided ZETA's recommended modifications to the proposed rule are finalized. As such, we request clarity on how the value of the Section 45X credit would be partitioned between eligible and ineligible recovered co-products.

A final Section 45X rule clarifying that direct and indirect materials costs will give second-life battery manufacturers the confidence to make the large investments needed to establish a robust domestic industry and we urge Treasury and IRS to finalize such a clarification. We also urge Treasury and IRS to provide clarity with regard to how the value of the Section 45X credit is split between recoverable critical minerals and other recovered coproducts that would remain ineligible, such as plastics.

Conclusion

If implemented thoughtfully, the Section 45X Advanced Manufacturing Production Tax Credit will ensure the success of American industrial policy over the next decade by facilitating the deployment of domestically-produced clean energy technologies—particularly electric vehicles. While the credit is thoughtfully designed with regard to cell and module manufacturing, the

exclusion of direct and indirect material costs and costs related to the extraction of raw materials reduces the effective impact of the credit in onshoring key segments of the battery supply chain. However, the December 2023 proposed guidance falls short of incentivizing the onshoring of key upstream value-added activities such as extraction, processing, and recycling by excluding direct and indirect material costs and costs related to the extraction of raw materials.[16] Accordingly, **ZETA urges the Department of the Treasury and the Internal Revenue Service to reconsider including direct and indirect material costs and costs related to the extraction of raw materials as key value-added activities and eligible to claim the Section 45X Advanced Manufacturing Production Tax Credit in the final rule.**

ZETA and its member companies thank you for your attention to these comments and are available should you have any questions.

Sincerely,

Albert Gore
Executive Director
Zero Emission Transportation Association

[16] As defined in proposed § 1.263A–1(e)(2)(i)(A) and § 1.263A–1(e)(3)(ii)(E) respectively.