Supply Chain Gaps Upstream Threaten Growth of American Manufacturing, New Crux Survey Finds

§45X spurred domestic manufacturing, but 47% of surveyed companies report lack of domestic producers as top barrier to securing their most constrained inputs.



Crux's new whitepaper, “The State of the Clean Economy Supply Chain: Where America Builds, Where It Can't, and What Can Be Done About It,” analyzes the strengths, vulnerabilities, and policy needs of US clean energy supply chains.

NEW YORK, NY, UNITED STATES, September 29, 2026 / EINPresswire.com/ -- Today Crux, the capital platform for the clean economy, released “The State of the Clean Economy Supply Chain: Where America Builds, Where It Can't, and What Can Be Done About It,” a new whitepaper analyzing the strengths, vulnerabilities, and policy needs of US clean energy supply chains.

The report finds that the United States has made significant progress in onshoring clean energy manufacturing since the 2022 creation of the §45X advanced manufacturing tax credit. But that progress has been concentrated in final assembly, while critical upstream and midstream inputs — including solar wafers and cells, electrode active materials for batteries, grain-oriented electrical steel for grid equipment, and refined critical minerals — remain dependent on foreign supply.

This distinction matters as American developers and manufacturers race to meet growing energy demand, and investors race to capitalize these projects. Tariffs, export controls, prohibited foreign entity (PFE) restrictions, and domestic manufacturing incentives are rapidly reshaping sourcing. But shifting imports away from China does not necessarily mean production reshores to the US. In several categories, sourcing has moved to other foreign suppliers while underlying domestic supply gaps remain.

The whitepaper draws on a 75-respondent industry survey, stakeholder interviews, and US trade data.

Key findings include:

> The United States has proven that policy can successfully drive billions of dollars of private sector investment into manufacturing capacity; now it needs to apply those same successes upstream."
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> *Hasan Nazar, Head of Policy at Crux*

1) §45X has been successful at incentivizing investment: Every $1 of §45X tax credit claimed has been associated with $4.82 of private and public manufacturing investment since Q3 2022. Realized manufacturing investment across solar, batteries and critical minerals grew roughly tenfold between 2020 and 2025, from $3.3 billion to $33.3 billion annually.

2) Supply chains are shifting, but not always back to the US: as an example, China's share of US battery import customs value fell from 72% in H1 2024 to 40% in H1 2026, while Japan, South Korea, and Malaysia together rose from 14% to 40%.

3) Domestic capacity remains the biggest constraint: 47% of surveyed companies identified the lack of a domestic producer, or one operating at sufficient scale, as their single biggest barrier to securing constrained inputs.

4) The biggest gaps remain upstream: solar module manufacturing has expanded rapidly, but China still controls roughly 95% of global wafer production capacity. In battery storage, domestic module capacity has scaled while critical midstream materials have not; China accounted for 98% of global LFP cathode material manufacturing in 2025.

5) Supply chain constraints are already affecting projects and costs: 40% of surveyed sourcing organizations reported redesigning or downsizing a project or production line in the past year, while 17% reported cancelling or indefinitely delaying one. Ninety-three percent said supply chain constraints increased their input or compliance costs.

The report also outlines how expanding tax credits could close the cost gap and fortify domestic manufacturing, with 87% of Crux's survey respondents ranking manufacturing tax credits — specifically expanded §45X coverage or new investment tax credits for domestic manufacturing or refining facilities — in the top three most effective policy tools.

"Moving supply chains away from China is not the same as building supply chains in America," says Hasan Nazar, Head of Policy at Crux. "The United States has proven that policy can successfully drive billions of dollars of private sector investment into manufacturing capacity; now it needs to apply those same successes upstream. Right now, American energy developers are seeking domestic sources of materials and components, but these sources need to be available at sufficient scale. Meeting that demand will require a broader and more durable industrial strategy than production incentives or tariff actions alone."

To download Crux's new whitepaper "The State of the Clean Economy Supply Chain: Where America Builds, Where It Can't, and What Can Be Done About It," please visit: www.crux.com/reports/the-state-of-the-clean-economy-supply-chain.

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