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US and EU must overcome protectionist tendencies to cooperate on battery supply chains

This post discusses the emerging regulatory frameworks adopted to address the sustainability and security challenges associated with clean energy technologies. In particular, our focus is on battery supply chains. As electric vehicle and battery energy storage deployment accelerates, several factors—ranging from trade war-, pandemic-, and conflict-induced supply chain shocks to resource availability and investor-led Environmental, Social and Governance (ESG) demands—have spurred national and regional efforts to protect supply chains. However, while adopted to foster resilience, national policies calling for increased ‘sovereignty’ over supply chains can lead to adverse impacts on free trade. The recently adopted US Inflation Reduction Act represents the latest in a series of measures designed to protect domestic industry, potentially at the expense of much-needed cooperation with allies.

This post is based on a forthcoming publication by the authors, entitled ‘The battery rush and global supply chains: Regulatory pathways towards secure supplies of critical minerals in the EU and the US’.

As governments across the world decarbonize their economies, the shift toward clean energy is highlighting new geopolitical tensions, supply chain vulnerabilities, and sustainability challenges associated with raw material extraction. With electrification as the main pathway to achieving decarbonization, one key technology—the battery—plays an outsize role in this shift. As the lithium-ion battery is currently the dominant technology for electric vehicles and stationary energy storage, exponential growth in critical mineral mining is required to meet demand. The International Energy Agency [projects](#) that the metals industry would need to build 50 new lithium mines, 60 nickel mines, and 17 cobalt mines by 2030 to meet global demand in line with national emissions-reduction pledges.

In response to these demands, the first and third largest economies in the world –the United States (US) and European Union (EU) – are implementing strategies to shore up critical mineral supply and battery production capacity. Driven in part by public sector priorities to remain competitive with the world’s second largest economy – China – which currently dominates battery supply chains, the US and EU have adopted and implemented policies of ‘Buy American’ and ‘strategic autonomy.’ The policy discourse around ‘reshoring’ manufacturing jobs ‘back home’ has thus increased in response to security risks in the US and the EU as the ‘battery arms race’[1] intensifies. While certain elements

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of EU ‘strategic autonomy’ and US ‘Buy American’ principles can be considered positive elements of progress around rapid development of battery supply chains, it should be noted that these policies carry a criticized ‘[protectionist tune](#)’[1] and can hamper a resilient and sustainable global value chain for batteries.

In the US context, ‘[Buy American](#)’ rules have featured prominently in government procurement law for decades and have mainly focused on defense and security. More recently, this strategy has evolved to mitigate vulnerabilities in battery supply chains. The Trump Administration extended its scope to [bulk power system](#), primarily to gain a competitive edge over China. In 2021, President Biden signed [an executive order](#) requiring a review of global supply chains. It specifically addresses batteries as well as strategic minerals and stresses the need to examine the extent to which sectors considered critical under the order are reliant on products from ‘competitor nations’. Recent stipulations in the [Infrastructure Investment and Jobs Act](#) (IRA) (November 2021), [Defense Production Act](#) (March 2022), and [Ukraine Aid Bill](#) (May 2022) likewise allocate funds to domestic sourcing, processing, and recycling of critical minerals, furthering the Biden Administration’s ‘[Build Back Better](#)’ agenda.

While European lawmakers have eyed recent developments in the US as part of a rapid and deepening turn toward protectionism, their fears had been somewhat mitigated by [recent bilateral cooperation](#) on battery supply chains between the US Li-Bridge Alliance and European Battery Alliance. However, concerns over US protectionist measures erupted into accusations of free trade rule violations with the adoption of the much-anticipated [US Inflation Reduction Act](#) (IRA). Signed into law in August 2022, the IRA has been hailed as a major boost for the clean energy sector. It secures nearly \$370 billion to promote green technology and curb climate change, which includes a \$7500 tax credit for certain new EV purchases and a variable Advanced Manufacturing Production Tax Credit for battery cells, modules, and critical minerals produced in the US.

Even before the bill reached President Biden’s desk, however, the EU—along with South Korea—[voiced concern](#) over the proposed rule and its potential to violate WTO rules. The two jurisdictions specifically cited the bill’s EV tax credit—eligibility for which depends on 40 percent of the battery minerals being mined, processed, or recycled in the US or a free-trade partner country (80 percent by 2026)—as discriminatory. Given that negotiations for [the Transatlantic Trade and Investment Partnership](#) were suspended in 2016, it is worth noting that no dedicated free trade agreement exists between the US and EU.

European lawmakers have been skeptical of the US approach partly because the EU has been careful to [stress a balance](#) between strategic autonomy and preservation of an open economy. While the concept of ‘[European strategic autonomy](#)’ has played a greater role in EU policy discourse – first in defense and security and more recently in trade and clean energy supply chains – it has also prioritized cooperation with allies as a key foundation for building resilience in critical industrial sectors. In the context of batteries, the EU Commission proposal for the [Sustainable Batteries Regulation](#) seeks to maintain this balance. The Regulation lays out requirements for all batteries placed on the EU market from the perspectives of sustainable production, deployment and waste management. In this respect, the proposed regulation seeks to create a harmonized regulatory framework concerning the entire lifecycle of batteries. More specifically, it aims to ensure that raw materials, battery cells, modules and packs are extracted or produced sustainably. In other words, they must be manufactured using clean energy, contain low amount of hazardous substances, adhere to high energy efficiency and design standards, and undergo proper collection, recycling, or repurposing. Thus, valuable materials feed back into the economy, effectively ‘closing the loop’.[2]



While the EU Batteries Regulation takes a life cycle sustainability approach to resilience, it effectively aims to achieve many of the same goals as the US strategy on battery supply chains. Although the pending legislation does not explicitly mandate local content requirements for battery production, it indirectly favors European manufacturers who have been actively engaged in the stakeholder process and are eager for the legislation to provide certainty around production and recycling processes. Just as the IRA's EV tax credit stipulation has raised free trade concerns, the EU's stringent sustainability and due diligence requirements for battery production risk penalizing noncompliant US exporters, who may resort to national and international bodies to litigate trade issues.

The EU's recent alarm over the IRA's protectionist measures raises questions over how to best balance preservation of domestic industry with transatlantic cooperation crucial to securing the battery supplies. However, it is essential that protectionist policies do not overshadow the benefits of transatlantic cooperation. Both the US and EU must act quickly to keep pace with other countries—most notably China—that are years ahead on securing supplies and capacity in mining, processing, and recycling raw materials and battery components. While the EU and the US have recently proposed and/or adopted aggressive policies to increase resilience of the battery supply chain from raw materials' extraction to manufacturing products, these policies should be carefully designed to be able to balance the risks and avoid narrow, inward-looking policies. For example, both jurisdictions fortunately have a comparative advantage when it comes to their enforcement of environmental, labor, and carbon intensity standards. Effective transatlantic cooperation thus has the potential to improve international sustainability standards, as well as unlock new sources of raw materials, innovation in battery chemistries, and capacity for battery life cycle processes.

[1] Moores S, 2021. The global battery arms race: lithium-ion battery gigafactories and their supply chain. 126 Forum. Oxford Institute of Energy Studies, p. 26.

[2] For an overview of the Sustainable Batteries Regulation, see Penttinen, S.-L. 2021. 'Batteries and the low-carbon energy transition: circularity and secondary supply approach highlighted in the EU's policy discourse' 30 (5) European Energy and Environmental Law Review, pp. 229-239.