

ORIGINAL ARTICLE

Critical Raw Materials, the Net-Zero Transition and the ‘Securitization’ of the Trade and Climate Change Mitigation Nexus: Pinpointing Environmental Risks and Charting a New Path for Transnational Decarbonization

Giulia Claudia Leonelli

London School of Economics and Political Science, London, UK
Email: g.c.leonelli@lse.ac.uk

(Received 28 November 2023; accepted 9 May 2024)

Abstract

The exercise of environmental ‘leverage’ via trade-related measures and trade in environmental goods offers opportunities to tackle the climate crisis and advance transnational decarbonization. Inward-looking, adversarial, and short-term national security-centred approaches, however, are disrupting the trade and climate change mitigation linkage. This article employs the race for critical raw materials and US and EU strategies to promote the net-zero transition at the domestic level as case studies to illustrate the environmental pitfalls of the ‘securitization’ of the trade and climate change mitigation nexus. The article demonstrates that the pursuit of strategic dominance in key net-zero sectors, attempts to exclude systemic rivals and reshore supply chains, opportunistic forms of friendshoring and loose agreement on regulatory means jeopardize recourse to environmental ‘leverage’ and undermine decarbonization at both national and transnational levels. This analysis casts a light on the inherent tension between national security and climate change mitigation. Taking stock of these findings, the article advocates a radically different approach to the governance of the trade and climate change mitigation nexus.

Keywords: Decarbonization; national security; critical raw materials; net-zero transition; inflation reduction act; industrial policy; reshoring; friendshoring

1. Introduction: Critical Raw Materials, the Net-Zero Transition, and the Conceptual Backdrop of the Analysis

If any doubts regarding the pervasive and potentially irreversible effects of climate change persisted, they would have been dispelled by the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.¹ The climate crisis has prompted a reorientation of trade policy towards the achievement of transnational decarbonization. Recourse to trade-related measures that are designed and applied to produce environmental effects in other jurisdictions provides a means for ‘environmentally virtuous’ countries to exercise environmental ‘leverage’ over third countries and promote the uptake of environmentally beneficial practices by market actors.² Despite a number of shortcomings in its regulatory design, the EU flagship

¹Intergovernmental Panel on Climate Change (2023) ‘Summary for Policymakers’, *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. IPCC.

²For an in-depth analysis of environmental ‘leverage’ via trade-related measures, see G.C. Leonelli (forthcoming 2025) *Environmental Leverage in Times of Climate Crisis*. Oxford: Hart Publishing.

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carbon border adjustment mechanism (CBAM) indirectly pursues these environmental goals by levelling the economic playing field.³ The new generation of EU non-product related process and production method (npr-PPM) standards offers further examples.⁴ These include the requirements enshrined in the EU Regulation on the importation of deforestation-free commodities and products,⁵ and the low indirect land use change risk requirements laid out in the 2018 EU Renewable Energy Directive.⁶ Plurilateral climate club arrangements, involving the imposition of punitive remedies against products originating from non-Members, may potentially open up new opportunities to advance transnational decarbonization, providing an incentive for countries to join the club and take on specific sectoral greenhouse gas (GHG) emission reduction commitments.⁷ Further, the EU is striving to exercise ‘consent-based’ environmental ‘leverage’ in the context of the negotiation of Free Trade Agreements (FTAs).⁸

Trade-driven environmental ‘leverage’ and transnational trade in environmental goods testify to the synergies between the trade and climate change law systems. Calls have intensified to reinforce the deliberative function of the WTO, with a view to supporting the achievement of climate change mitigation objectives via trade.⁹ Nonetheless, new challenges lie ahead; these have arisen in the context of domestic measures that produce specific effects on transnational trade. In a rapidly evolving economic and geopolitical landscape, a tension has surfaced between inward-looking, adversarial, and short-term national security-centred approaches to the net-zero transition versus an outward-looking, constructive, and long-term agenda for transnational decarbonization. This tension, as the article illustrates, is exemplified by the current race for critical raw materials and the increasing ‘securitization’ of US and EU regulatory action at the domestic level.

Albeit via different policy levers, the US and the EU are both spearheading transnational efforts to mitigate climate change. The shift to electric mobility and the uptake of renewables are both key to the net-zero transition. It is thus unsurprising to see how considerable policy and regulatory capital is being invested in these two sectors. Measures such as the well-known and much discussed US Inflation Reduction Act (IRA),¹⁰ the EU (revised) Batteries

³Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 Establishing a Carbon Border Adjustment Mechanism’, OJ 2023 L 130/52. For an analysis of the shortcomings in the CBAM’s regulatory design, see G.C. Leonelli (2022) ‘Carbon Border Measures, Environmental Effectiveness and WTO Law Compatibility: Is There a Way Forward for the Steel and Aluminium Climate Club?’, *World Trade Review* 21(5), 619–632.

⁴As is well known, ‘npr-PPM’ standards regulate process and production methods in circumstances where they do not leave any visible traces on the final products.

⁵By striving to tackle deforestation, the Regulation aims to preserve carbon sinks. See ‘Regulation (EU) 2023/1115 of the European Parliament and of the Council of 31 May 2023 on the Making Available on the Union Market and the Export from the Union of Certain Commodities and Products Associated with Deforestation and Forest Degradation’, OJ 2023 L 150/206.

⁶See ‘Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the Promotion of the Use of Energy from Renewable Sources’, OJ 2018 L 328; and ‘Commission Delegated Regulation (EU) 2019/807 of 13 March 2019 Supplementing Directive (EU) 2018/2001 of the European Parliament and of the Council as Regards the Determination of High Indirect Land Use Change-Risk Feedstock for which a Significant Expansion of the Production Area into Land with High Carbon Stock is Observed and the Certification of Low Indirect Land Use Change-Risk Biofuels, Bioliqids and Biomass Fuels’, OJ 2019 L 133/1. These provisions have come under challenge in the *EU–Palm Oil* disputes. Most recently, see Panel Report, *European Union and Certain Member States – Certain Measures Concerning Palm Oil and Oil Palm Crop-Based Biofuels (EU and Certain Member States–Palm Oil (Malaysia))*, WT/DS600/R, adopted 26 April 2024.

⁷On the transatlantic proposal for the establishment of a steel and aluminium climate club. See European Commission and US Trade Representative, ‘Steel and Aluminium, EU–US Joint Statement of 31 October 2021’ (2021). For an analysis, see Leonelli, *supra* n. 3.

⁸European Commission, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. The Power of Trade Partnerships: Together for Green and Just Economic Growth*, COM(2022) 409 Final.

⁹See the Communication from the European Union, *Reinforcing the Deliberative Function of the WTO to Respond to Global Trade Policy Challenges, Communication from the European Union*, WT/GC/W/864 (22 February 2023), sections 2.1 and 2.2.

¹⁰The Inflation Reduction Act (IRA), Public Law 117–169 (2022).

Regulation,¹¹ and the EU Net-Zero Industry Act¹² provide examples of specific regulatory interventions in these areas.

The transition away from a fossil fuel-based economic system, however, relies on access to a number of raw materials and minerals. These are vital to the electric vehicle (EV) battery supply chain, the manufacturing of specific components in the renewables sector, and grid management for renewable energy.¹³ Definitions, categorizations, and technical lists of this broad class of raw materials and minerals vary across jurisdictions.¹⁴ For the purposes of the present analysis, the article employs the umbrella term of ‘critical raw materials’ (CRMs). As explained in the following sections, CRMs are indirectly regulated in the US under the IRA. At the EU level, the Critical Raw Materials Act (CRM Act) provides a framework for the governance of CRM supply.¹⁵

CRMs are characterized by a number of unique features. These distinctive characteristics have all contributed to an analysis of relevant regulatory challenges through the prism of national security. First, CRMs are strategically important in environmental as well as economic terms. Second, they are associated with considerable supply risks. Transnational demand for CRMs is expected to rise exponentially in the coming years and to largely exceed supply.¹⁶ Further, at the current stage of technical knowledge, the margins for their substitution with alternative raw materials or minerals are limited. Third, for several jurisdictions, supply risks in respect of specific CRMs are exacerbated by high levels of import dependence and vulnerable supply chains. In the wake of post-pandemic supply chain disruptions, concerns surrounding bottlenecks and high price volatility have only intensified. Export licensing requirements, export restrictions, dual or minimum pricing systems, and domestic processing or domestic marketing requirements expose importers to further supply or economic risks.¹⁷

These elements would be sufficient to frame CRM supply as a question of *lato sensu* (i.e. economic) national security.¹⁸ However, several other factors come into play. As a fourth point, import dependence is regarded as all the more problematic in this field in light of high levels of concentration of supply from single countries; 63% of the world’s cobalt, for example, is extracted from the Democratic Republic of Congo.¹⁹ The processing stage is even more

¹¹Regulation (EU) 2023/1542 of the European Parliament and of the Council of 12 July 2023 Concerning Batteries and Waste Batteries, OJ 2023 L 191/1.

¹²Regulation (EU) 2024/1735 of the European Parliament and of the Council of 13 June 2024 on Establishing a Framework of Measures for Strengthening Europe’s Net-Zero Technology Manufacturing Ecosystem and Amending Regulation (EU) 2018/1724, OJ 2024 L 735.

¹³For plenty of information, see Commission Staff Working Document, *Impact Assessment Report Accompanying the Proposal for a Regulation of the European Parliament and of the Council Establishing a Framework for Ensuring a Secure and Sustainable Supply of Critical Raw Materials*, SWD(2023) 161 Final. Lithium, cobalt, graphite, manganese, and nickel are all required for the production of lithium-ion batteries for EVs. Rare earth elements are necessary to manufacture permanent magnets in EV traction motors and wind turbines. Several other raw materials and minerals are required for the production of solar photovoltaic components and modules, wind turbines, electrolyzers, fuel cells, heat pumps, and batteries for energy storage.

¹⁴US Statutes, regulatory frameworks and *ad hoc* Free Trade Agreements aimed at strengthening critical mineral supply chains, for instance, refer to the notion of ‘critical minerals’. Since 2008, the EU has instead focused on the broader category of ‘critical raw materials’. The EU Critical Raw Materials Act draws a further distinction between ‘critical’ and ‘strategic raw materials’: see Annex I and II to the Critical Raw Materials Act.

¹⁵Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 Establishing a Framework for Ensuring a Secure and Sustainable Supply of Critical Raw Materials and Amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724, and (EU) 20189/1020, OJ 2024 L 1252.

¹⁶Impact Assessment, *supra* n. 13, 12.

¹⁷For an overview, see H. Gao and W. Zhou (2021), ‘Export Taxes and Raw Materials’, in P. Delimatsis and L. Reins (eds.), *Elgar Encyclopaedia of Environmental Law*, Vol. X. Cheltenham: Elgar, 230–236; and OECD (2023), *Raw Materials Critical for the Green Transition: Production, International Trade and Export Restrictions*, OECD Trade Policy Paper 269/2023. For a recent instance of WTO dispute settlement in this area, see Panel Report, *Indonesia – Measures Relating to Raw Materials (Indonesia–Raw Materials)*, WT/DS592/R, under appeal as of 8 December 2022.

¹⁸For an in-depth analysis, see below Section 2.

¹⁹Impact Assessment, *supra* n. 13.

concentrated. China controls 99% of the global refining capacity for rare earths, 56% for lithium, 60% for cobalt, and 58% for manganese,²⁰ and single country-concentration combines with considerable vertical (company) concentration and integration in global value chains.²¹ This brings us to the fifth relevant consideration. From the vantage point of US and EU policy-makers, the concentration of several CRMs in jurisdictions that are regarded as geopolitically unstable and the control of CRM global value chains by China amount to national security risks.²² In the US, this specificity of CRM value chains is assessed through the lens of adversarial approaches against foreign entities of concern (FEOCs).²³ In the EU, post-Ukraine war anxieties surrounding the potential weaponization of trade dependencies by ‘unlike-minded’ countries or ‘systemic rivals’ have strengthened calls for de-risking.²⁴

This article employs an in-depth examination of the race for CRMs and of US and EU strategies to promote the net-zero transition at the domestic level to shed light on the tensions between national security and decarbonization goals. First, the article demonstrates that the problematic linkage between national security and decarbonization is expanding the grey area between ‘environmental’ and ‘non-environmental’ policy goals considerably. Analysing climate change challenges through the prism of trade ‘securitization’ institutionalizes the grey area between decarbonization, the defence of fair competition, de-risking, and reshoring via industrial policy; these different and often conflicting policy goals are ‘absorbed’ by the catch-all concept of national security. The increasing ‘securitization’ of the trade and climate change mitigation linkage thus imperils any structured analysis of the rationale and environmental integrity of relevant measures, making it increasingly difficult to disentangle the ‘environmental’ from the ‘non-environmental’.

Second, and most importantly, the article demonstrates that a national security-centred vision of the trade and climate change mitigation nexus is associated with a number of environmental pitfalls. The entrenchment of national security discourses heralds the advent of an inward-looking, adversarial, and short-term approach to decarbonization. This is characterized by the pursuit of strategic dominance in key sectors of the net-zero economy, attempts to exclude systemic rivals and reshore supply chains, opportunistic forms of friendshoring, and loose agreement on regulatory means. As the article illustrates through the case studies, a narrow national security-centred approach jeopardizes recourse to environmental ‘leverage’ and can undermine decarbonization at both national and transnational levels.

Taking stock of these findings, the article advocates a radically different approach to the governance of the trade and climate change mitigation nexus. Unlike national security-centred models, such an approach would be characterized by an overarching policy vision to advance decarbonization and promote truly sustainable supply chains, a circumscribed focus on supply chain resilience and diversification, the establishment of inclusive and value-driven partnerships to promote the net-zero transition at the transnational level, and solid agreement on recourse to

²⁰Ibid.

²¹Ibid., 146. The state-owned enterprise China Rare Earth Group Co. controls 40% of China’s rare earth production, and 15 out of 19 mines in the Democratic Republic of Congo are owned or financed by a handful of Chinese enterprises.

²²Throughout the years, several Chinese export restrictions have come under challenge at WTO level: see Appellate Body Report, *China – Measures Relating to the Exportation of Various Raw Materials (China–Raw Materials)*, WT/DS394/AB/R, WT/DS395/AB/R, WT/DS398/AB/R, adopted 22 February 2012; and Appellate Body Report, *China – Measures Related to the Exportation of Rare Earths, Tungsten, and Molybdenum (China–Rare Earths)*, WT/DS431/AB/R, WT/DS432/AB/R, WT/DS433/AB/R, adopted 29 August 2014. Since January 2022, China has applied a set of export control measures to rare earths: see Impact Assessment, supra n. 13, 146. In July 2023, it enacted a set of *ad hoc* export restrictions for gallium and germanium. In October 2023, it also imposed new export controls on graphite.

²³Under US law, a ‘foreign entity of concern’ is defined under section 40207(a)(5) of the Infrastructure Investment and Jobs Act (42 U.S.C. 18741(a)(5)).

²⁴See, in particular, the explicit references in European Commission, ‘Speech by President von der Leyen on EU–China Relations to the Mercator Institute for China Studies and the European Policy Centre’, Brussels, 30 March 2023.

specific regulatory means. As the article concludes, an outward-looking, constructive, and long-term approach is urgently needed to tackle the climate crisis.

The article proceeds as follows. The second section provides an overview of the increasing ‘securitization’ of the trade and climate change mitigation nexus. The third section examines relevant provisions in the US IRA and the EU CRM Act, EU Batteries Regulation, and EU Net-Zero Industry Act against the conceptual backdrop laid out in the previous section. The analysis pinpoints the environmental shortcomings of the US national security-centred model, discusses the increasing ‘securitization’ of the EU approach, and highlights relevant environmental pitfalls. The fourth section conducts the same form of examination by focusing on Raw Materials Chapters in FTAs and bilateral CRM partnerships. This part of the analysis explores the gap between opportunistic friendshoring versus inclusive and value-driven partnerships, before emphasizing the need for solid agreement between like-minded partners regarding the adoption of specific regulatory means. This section thus illustrates how friendshoring and lack of regulatory coordination jeopardize the exercise of environmental ‘leverage’ and produce detrimental environmental effects. The fifth section ties up the strands of the enquiry and concludes.

2. The National Security ‘Black Box’ and the Environmental Pitfalls of ‘Securitization’

Black box models, extensively employed in computing studies, define a ‘black box’ as a system where inputs and outputs are known but internal processing dynamics remain unknown. The mechanisms by which inputs are processed and translate into specific outputs are obscure and unfathomable.²⁵ Borrowed in the social sciences by systems theoretical models, the metaphor of a black box is well suited to a contemporary analysis of national security.

The rich trade law literature on the national security exception of Article XXI GATT has uncovered the origins and drafting history of the Article²⁶ and has critically assessed the interpretation of the Article’s subparagraphs and Chapeau.²⁷ The Panel Reports in the recent *US–Steel and Aluminium Products*²⁸ and *US–Origin Marking*²⁹ disputes have confirmed and reinforced the dispute settlement organs’ traditional interpretative approach, which is characterized by a narrow framing of the exception in terms of national security *stricto sensu*.³⁰ The extent to which this reading can do justice to national regulatory responses in times of strategic

²⁵M. Bunge (1963) ‘A General Black Box Theory’, *Philosophy of Science* 30(4), 346–358.

²⁶See, for instance, M. Pinchis-Paulsen (2020) ‘Trade Multilateralism and US National Security: The Making of the GATT Security Exceptions’, *Michigan Journal of International Law* 41(1), 109–193.

²⁷See, for example, D. Boklan and A. Bahri (2020) ‘The First WTO’s Ruling on the National Security Exception: Balancing Interests or Opening Pandora’s Box?’, *World Trade Review* 19(1), 123–136; P. Crivelli and M. Pinchis-Paulsen (2021) ‘Separating the Political from the Economic: The *Russia – Traffic in Transit* Panel Report’, *World Trade Review* 20(4), 582–605.

²⁸Panel Report, *United States – Certain Measures on Steel and Aluminium Products (US–Steel and Aluminium Products (China))*, WT/DS544/R, under appeal as of 26 January 2023; Panel Report, *United States – Certain Measures on Steel and Aluminium Products (US–Steel and Aluminium Products (Norway))*, WT/DS552/R, under appeal as of 26 January 2023; Panel Report, *United States – Certain Measures on Steel and Aluminium Products (US–Steel and Aluminium Products (Switzerland))*, WT/DS556/R, under appeal as of 26 January 2023; Panel Report, *United States – Certain Measures on Steel and Aluminium Products (US–Steel and Aluminium Products (Turkey))*, WT/DS564/R, under appeal as of 26 January 2023.

²⁹Panel Report, *United States – Origin Marking Requirement (US–Origin Marking (Hong Kong, China))*, WT/DS597/R, under appeal as of 26 January 2023.

³⁰Article XXI(b)(iii), as is well known, sets specific preconditions for a Member ‘taking any action which it considers necessary for the protection of its essential security interests’; the measures must be ‘taken in time of war or other emergency in international relations’. The dispute settlement organs have put forward a narrow understanding of this notion, referring to situations ‘of armed conflict, or of latent armed conflict, or of heightened tension or crisis, or of general instability engulfing a state’. See Panel Report, *Russia – Measures Concerning Traffic in Transit (Russia–Traffic in Transit)*, WT/DS512/4, adopted on 26 April 2019, paras. 7.76 and 7.111. This interpretation has been reiterated by the Panels in DS544 (para. 7.148); DS552 (para. 7.136); DS556 (para. 7.166); DS564 (para. 7.163); and DS597 (paras. 7.294, 7.313, 7.353, and 7.358), where the Panel elaborated further on this notion and expressly referring to a ‘requisite level of gravity’ test.

geopolitical and socio-economic challenges has been called into question.³¹ Nonetheless, there is some merit in the dispute settlement organs' attempts to tame the increasing 'securitization' of both trade discourses and 'trade and' linkages.

With the adoption of the Section 232 and 301 tariffs and subsequent trade wars, the Trump presidency has heralded the advent of a new era for the national security paradigm.³² As extensively documented in the literature, the boundaries of national security have stretched considerably over the following years; economic security has ultimately become an 'embedded element of national security'.³³ Such a trend is nowhere near being reversed.

On one side of the national security spectrum, we can situate trade measures that aim to address strategic geopolitical and economic challenges but that are loosely related to *stricto sensu* national security and military and defence questions. US export restrictions on semiconductors provide one example.³⁴ Further along the spectrum, we find a set of reactive measures that more unequivocally reflect economic 'securitization' strategies. The recently adopted EU Regulation on foreign investment screening,³⁵ for instance, reveal heightened concerns regarding the control of strategic assets and the desire to avoid interferences in geopolitically and economically sensitive sectors.

The next category of measures on the spectrum address similar concerns by following a 'proactive' (as opposed to a 'defensive') approach.³⁶ Regulatory interventions aimed at managing supply chain risks in strategic sectors offer an example. A close analysis, however, reveals different nuances. First, regulatory interventions may simply seek to diversify supply with a view to ensuring resilience. The pre-IRA EU position on CRMs, as expressed in European Commission's documents dating back from the year 2008 through to 2021, reflected a mere desire to ensure stability and predictability of CRM supply via recourse to diversification and risk management strategies.³⁷

Second, regulatory interventions may strive to weaken the economic dominance of specific jurisdictions in strategic sectors by attempting to exclude reliance on products originating from these countries, or by directly restricting access to the domestic market for their exports. As explained in the next sections, some provisions in the IRA and several further US measures directed at Chinese exports fully conform to this rationale. Despite its continued adherence to the rules of the multilateral trade law regime and its softer approach to de-risking, the EU has also hardened its stance on China's strategic dominance in net-zero sectors. Concerns surrounding trade

³¹M. Pinchis-Paulsen (2022) 'Let's Agree to Disagree: A Strategy for Trade-Security', *Journal of International Economic Law* 25(4), 527–547.

³²On the Biden Administration's decision to increase Section 301 tariffs on Chinese imports, see below Section 3. Further tariff increases are regularly mentioned in the current electoral campaign debate in the US.

³³W. Zhou, H. Jiang, and Z. Chen (2022) 'Trade vs Security: Recent Developments of Global Trade Rules and China's Policy and Regulatory Responses from Defensive to Proactive', *World Trade Review* 22(2), 193–211, 211. For analyses of national economic security, see also H. Cohen (2020) 'Nations and Markets', *Journal of International Economic Law* 23(4), 793–815; K. Claussen (2020) 'Trade's Security Exceptionalism', *Stanford Law Review* 72(5), 1097–1164; J. Benton Heath (2020) 'The New National Security Challenge to the Economic Order', *Yale Law Journal* 129(4), 1020–1098; H. Cohen (2024) 'Toward Best Practices for Trade-Security Measures', *Journal of International Economic Law* 27(1), 93–113. References to 'economic security' are included in different parts of the Panel Reports in DS544, DS552, DS556, and DS64. See, for instance, paras. 2.6, 2.13, 2.14, 2.17, 2.27, 7.87, 7.89, 7.133, 7.137, and 7.142 in DS544.

³⁴In December 2022, China requested consultations with the US regarding its export control regime and trade restrictions on advanced computing semiconductor chips, supercomputer items, semiconductor manufacturing items, and other products and technologies (administered under 15 CFR, parts 730–774). See *United States – Measures on Certain Semiconductor and Other Products, and Related Services and Technologies (US–Semiconductors (China))*, DS615 (latest update dating back to 23 September 2023).

³⁵Regulation (EU) 2019/452 of the European Parliament and of the Council of 19 March 2019 establishing a Framework for the Screening of Foreign Direct Investments into the Union', OJ 2019 L 791.

³⁶For use of this terminology, see Zhou et al., *supra* n. 33.

³⁷See, for instance, European Commission, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Critical Raw Materials Resilience: Charting a Path Towards Greater Security and Sustainability*, COM(2020) 474 Final.

weaponization risks and unfair competition have coalesced to reinforce a more adversarial approach at the EU level. The first part of section 3 takes a close look at a number of measures that exemplify these trends.

Third, regulatory measures may outrightly prioritize reshoring and incentivize domestic investment and manufacturing. The IRA supply-side (production and investment) subsidies provide very clear examples. As documented in the second part of section 3, the US has also gone further than ever by including WTO law prohibited local content requirements (LCRs) in the IRA. Amid fears of de-industrialization, the EU is on course to follow a part-aligned yet WTO law compliant and more nuanced approach.

This brings us to the other extreme of the national security spectrum. At this end, strategic geopolitical interests, competitiveness on the global stage, reshoring, industrial policy, and the pursuit of a ‘worker-centred’ trade policy³⁸ are conflated and absorbed by national security *lato sensu*. Over recent years, different academic reconstructions of national security discourses have emphasized the binary logics of ‘state’ and ‘markets’³⁹ and the attempt to address the distributional implications of aggregate wealth maximizing trade liberalization via national (economic) security-centred policy responses.⁴⁰ Never have these tensions been as apparent as they are in the increasingly fragmented post-IRA landscape.

Problematically, as several examples made above demonstrate, this overly broad framing of national security is being transposed to the trade and climate change mitigation interface. This has resulted in an increasing ‘securitization’ of the trade and climate change mitigation nexus. This trend originated in the US; it is then unsurprising to see how central elements of this narrative are reflected in official documents adopted under the Biden–Harris Administration⁴¹ and remarks of US officers.⁴² These provide an overview of national security-centred models and help deconstruct their distinctive features and constituent elements.

Under national security-centred approaches to the governance of trade and climate change mitigation, national security and (national and transnational) decarbonization goals are intertwined: the former is portrayed as a precondition to achieve the latter.⁴³ Achieving strategic dominance in key sectors, excluding systemic rivals and restricting domestic market access for their exports will allegedly advance the net-zero transition, triggering a virtuous circle of transnational decarbonization and supporting the entrenchment of less carbon-intensive production methods.

The pursuit of de-risking strategies and of national economic primacy with a view to decarbonizing and tackling climate change in turn translates into an increasing focus on reshoring, industrial policy, and direct attempts to restructure supply chains.⁴⁴ This strikes a stark contrast

³⁸US Trade Representative, ‘US Trade Representative Katherine Tai Outlines Biden-Harris Administration’s Historic “Worker-Centred” Trade Policy’ (10 June 2021), <https://ustr.gov/> (accessed August 2024); and US Trade Representative, ‘Remarks by Ambassador Katherine Tai at the Roosevelt Institute’s Progressive Industrial Policy Conference’ (11 October 2022) <https://ustr.gov/> (accessed August 2024). For analyses of ‘industrial policy’, see R. Cherif and F. Hasanov (2019) *The Return of the Policy That Shall Not Be Named: Principles of Industrial Policy*, IMF Working Paper; and B. Mercurio (2024) ‘The Demise of Globalisation and Rise of Industrial Policy: Caveat Emptor’, *World Trade Review* 23(2), 242–250.

³⁹Cohen (2020), ‘Nations and Markets’, *supra* n. 33.

⁴⁰N. Lamp (2019), ‘How Should We Think About the Winners and Losers of Globalization? Three Narratives and Their Implications for the Redesign of International Economic Agreements’, *European Journal of International Law* 30(4), 1359–1397.

⁴¹See, for instance, White House, ‘National Security Strategy’ (October 2022); White House, ‘Building Resilient Supply Chains, Revitalising American Manufacturing, and Fostering Broad-Based Growth. 100-Day Reviews under Executive Order 14017’ (June 2021).

⁴²White House, ‘Remarks by National Security Advisor Jake Sullivan on Renewing American Economic Leadership at the Brookings Institution’ (27 April 2024); and White House, ‘Remarks by National Security Advisor Jake Sullivan on the Biden-Harris Administration’s National Security Strategy’ (13 October 2022), both available at <https://whitehouse.gov/> (accessed August 2024).

⁴³Remarks by National Security Advisor Jake Sullivan’ (13 October 2022), 3 and 4.

⁴⁴*Ibid.*, 4.

with minimalist risk management approaches, which instead simply aim to diversify supply and promote resilient supply chains. Under a maximalist national security-centred paradigm, the focus thus shifts from questions surrounding the promotion of *green* technologies to a new emphasis on the *domestic* manufacturing of (green) technologies.⁴⁵ Reshoring strategies, as briefly mentioned above in this section, also open up opportunities to address socio-economic and distributional issues via ‘worker-centred’ policies. For this reason, a national security-centred approach to the net-zero transition is alleged to result in triple – economic, environmental, and social – gains.

Where reshoring and self-sufficiency prove unfeasible, opportunistic forms of friendshoring fill the vacuum.⁴⁶ Friendshoring strategies ensure secure and reliable supply and have ‘systemic rivals’ excluded by proxy;⁴⁷ they reflect the pursuit of specific geopolitical and economic, as opposed to environmental, policy goals. This is the third distinctive element of national security-centred paradigms. Under both reshoring and friendshoring scenarios, the environmental effects and environmental limitations of national security-driven policies are hardly taken into account. It is then unsurprising to see how ‘friends’ go their different ways when making decisions about regulatory means. Levels of coordination of climate change mitigation and decarbonization policies are low, and loose agreement on the choice of relevant regulatory instruments is deemed sufficient.⁴⁸ This is the fourth and final element of the model.

The US has pioneered and championed national security-centred approaches to the trade and climate change mitigation linkage. Despite a continued commitment to rule-based open trade and a much softer position, however, recent EU regulatory interventions signal that the Union is also embracing partial ‘securitization’. How the inputs are being processed in the national security black box remains unclear. Nor is it clear how they are being translated into specific outputs. Decarbonization, economic competitiveness, and reshoring are portrayed as a precondition to achieve national security; yet, they are also a product of national security-centred discourses. The operation of the black box may as well remain obscure. Questions regarding the environmental implications of the process, however, must be urgently addressed. The ‘securitization’ of the trade and climate change mitigation linkage is associated with two major shortcomings. In times of climate crisis, the environmental price of this trend has become too high.

To begin with, as anticipated in the introductory section, the ‘securitization’ of the trade and climate change mitigation nexus blurs the boundaries between heterogenous and often conflicting policy goals. This poses challenges in analytical terms. Demarcating the boundaries between different policy goals is becoming a very challenging exercise. These attempts are further complicated by misleading assumptions surrounding the mutually reinforcing nature of geopolitical (de-risking), economic (level playing field or reshoring), social (redistribution), and environmental (exercise of ‘leverage’ and national and transnational decarbonization) policy goals. From a climate change mitigation perspective, ‘securitization’ thus overshadows the environmental dimension and obscures the specific environmental effects of multi-purpose regulatory interventions.

⁴⁵The assumption that domestic (net-zero) manufacturing must be promoted because it is ‘greener’ than third country (net-zero) manufacturing feeds into this discourse; nonetheless, the ‘green’ credentials of domestic manufacturing are often taken for granted. Many provisions in the IRA, for instance, grant additional tax credits to facilities that pay prevailing wages, that meet registered apprenticeship or other wage and workforce requirements, and that are located in specific communities. These forms of conditionality reflect a close focus on the Biden–Harris ‘worker-centred’ policy agenda. By contrast, environmental conditionality does not play a central role in the IRA. The only exceptions are a circumscribed set of supplemental tax credits available for sustainable aviation fuel, clean hydrogen, and clean fuels; these are attached to lifecycle GHG emission (npr-PPM) standards in ss. 13203, 13204, and 13704.

⁴⁶The term ‘friendshoring’ was famously employed by the US Secretary of the Treasury Janet Yellen during an Atlantic Council event held in April 2022. For a full transcript, see www.atlanticcouncil.org/news/transcripts/transcript-us-treasury-secretary-janet-yellen-on-the-next-steps-for-russia-sanctions-and-friend-shoring-supply-chains/ (accessed August 2024).

⁴⁷Remarks by National Security Advisor Jake Sullivan’ (13 October 2022), 5 and 6.

⁴⁸Ibid., 6.

Further, and more worryingly, ‘securitization’ is disrupting the trade and climate change mitigation nexus. This challenge is structural and systemic in nature. As the in-depth analysis of the next sections demonstrates, the ‘securitization’ of trade and climate change mitigation discourses is producing several detrimental environmental effects. First, national security-centred models jeopardize the exercise of environmental ‘leverage’ over third countries. Second, they can slow down national decarbonization efforts. Third, they can undermine transnational decarbonization.

National security-centred discourses on decarbonization translate into an inward-looking, adversarial, and short-term approach to the governance of the trade and climate change mitigation nexus. This model strikes a stark contrast with the outward-looking, constructive, and long-term approach that is urgently needed to tackle the climate crisis. Embracing a constructive model postulates the development of a strategic vision for decarbonization, as opposed to a focus on strategic dominance in key sectors of the net-zero economy. Under this model, national security-centred attempts to exclude rivals and achieve reshoring are replaced with a minimalist focus on the diversification and resilience of supply chains. Preserving trade openness combines with the exercise of ‘leverage’, which helps level the environmental (and economic) playing field for domestic manufacturers. The pursuit of clear environmental objectives cements value-driven and inclusive alliances, as opposed to opportunistic friendshoring. These should provide opportunities for developing and for least developed countries to move up the value chain, while maximizing (and in order to maximize) the exercise of environmental ‘leverage’. Solid agreement on recourse to specific regulatory and policy tools is then essential to achieve all pre-established policy goals.

As the next sections illustrate, such a model would provide an effective pathway towards national and transnational decarbonization. The development of an outward-looking, constructive, and long-term vision for transnational decarbonization is potentially within reach. The IRA domino effect and increasing EU alignment with the US national security-centred approach, however, threaten the whole project. When key players do not abide by the rules of the game, the risk is that all rules will be disappplied and ultimately cease to exist. The fifth and final section reverts to this point.

3. The Perils of ‘Securitization’ (I): Strategic Dominance in Key Sectors

3.1 Excluding FEOCs, Soft De-Risking, and Levelling the Economic Playing Field: Unpacking the Environmental Implications

The US has unquestionably embraced a maximalist approach to the exclusion of systemic rivals. The origin-related requirements for the eligibility of EV models for the IRA Section 30D tax credits offer a first example and a valuable case study to assess the environmental implications of national security-centred approaches. Section 13401 of the IRA has expanded and modified the pre-existing Section 30D consumer tax credits for the purchase of EVs. It lays out an express exclusion for any vehicles whose batteries contain components ‘manufactured or assembled by a foreign entity of concern’,⁴⁹ or ‘critical minerals extracted, processed or recycled by a foreign entity of concern’.⁵⁰ Section 30D(d)(7) cross-references the definition of a FEOC included in section 40207(a)(5) of the Infrastructure Investment and Jobs Act (IIJA).⁵¹ This provision stipulates that FEOCs shall include (i) foreign entities covered by specific designations, inclusions, and allegations by Federal Agencies; (ii) foreign entities owned by, controlled by, or subject to the jurisdiction or direction of a government of a covered nation, including the People’s Republic of China, the Russian Federation, the Democratic People’s Republic of Korea, and the Islamic Republic of Iran; and (iii) any foreign entity that the Secretary of Energy, Secretary of Defence,

⁴⁹See IRA, section 13401(e)(7), modifying the section 30D EV tax credits by adding new specifications on ‘Excluded Entities’. Under point (B), this exception has applied since 31 December 2023.

⁵⁰Ibid. Under point (A), this exception will apply after 31 December 2024.

⁵¹42 U.S.C. 18741(a)(5).

and Director of National Intelligence may find to engage in unauthorized conduct that is detrimental to US national security or US foreign policy.

Under the Department of Energy final guidance, released in May 2024, the definition of a ‘foreign entity owned by, controlled by, or subject to the jurisdiction or direction of a government of a covered nation’ includes any entity that is incorporated, headquartered, or performing its activities in a covered nation. The notion of the ‘government of a foreign nation’ is stretched so far as to encompass both subnational governments, and current or former senior political figures. Further, an entity is regarded as ‘owned by, controlled by, or subject to the direction of’ another entity that qualifies as a FEOC if the latter cumulatively holds 25% or more of the former entity’s board seats, voting rights, and equity interests. Specific contractual agreements, including licensing agreements, may also create control for the purposes of the FEOC definition.

This very broad definition of a FEOC is highly problematic in light of the quasi-monopolistic position of Chinese firms in the CRM sector, and their dominant position in the batteries supply chain. The FEOCs exceptions have resulted in the exclusion of the vast majority of EV models from the scope of application of the section 30D tax credits.⁵² This has slowed down the transition to electric mobility in the US considerably. In its final regulations released in May 2024, the US Treasury Department Internal Revenue Service was ultimately obliged to provide a transitional exception from the FEOCs restriction regarding critical minerals for a set of ‘impracticable to trace’ constituent materials of EV batteries, which will be applicable until 1 January 2027. The transitional exception covers natural and synthetic graphite, which is almost exclusively refined in China.⁵³ This adjustment clearly aims to broaden the number of EVs that are eligible for the Section 30D tax credit, and again testifies to the problems associated with the FEOCs restrictions.

The second example and case study shines further light on the implications for the net-zero transition of the US maximalist national security-centred approach. In May 2024, President Biden directed the US Trade Representative to increase tariffs under Section 301 of the Trade Act of 1974 on \$18 billions of Chinese imports. The tariffs on Chinese EVs will quadruple to 100% in 2024. The tariff rates on lithium-ion EV and non-EV batteries will increase from 7.5% to 25%, respectively, starting in 2024 and ending in 2026. The tariff rate on battery components will also increase to 25% in 2024. The tariffs imposed on a number of imported critical minerals, including natural and synthetic graphite and permanent magnets, will increase from zero to 25% starting in 2024 or 2026. Finally, tariffs on solar cells (whether or not assembled into modules) will double to 50%, and 14.25% tariffs on Chinese bifacial modules will apply as of 2024.⁵⁴

The considerable increase in tariff rates for Chinese EVs will *de facto* exclude access to the US market for Chinese vehicles, and artificially insulate US manufacturers from competition on the domestic market. Nonetheless, this move will hardly make tariff-protected US EVs more competitive on export markets, where Chinese EV manufacturers will maintain their competitive edge. On the contrary, lack of competition is highly likely to stymy innovation and raise costs.⁵⁵ Further, the high tariffs imposed on input products such as CRMs, lithium-ion batteries,

⁵²See <https://fueleconomy.gov/feg/tax2023.shtml>, for an up-to-date list of eligible electric vehicles (accessed August 2024), and below subsection 3.2.

⁵³26 CFR, Parts 1 and 301, S. 1.30D-6(c)(3)(iii). The same transitional exception also applies to the IRA origin-related requirements for the extraction, recycling, and processing of critical minerals; see subsection 3.2 below. Nonetheless, as explained in this subsection, the tariffs on Chinese natural graphite and Chinese natural and synthetic graphite anodes were increased to 25% in May 2024. The aim is to promote the restructuring of supply chains.

⁵⁴For more information on the tariffs, see White House (2024), ‘Fact Sheet: President Biden Takes Action to Protect American Workers and Businesses from China’s Unfair Trade Practices, Washington DC’, 14 May 2024. For media analyses of their specific detrimental effects, see www.ft.com/content/56685c0b-1bdd-43a5-b039-7bb2cb7c7f87 and www.ft.com/content/65ad5d93-51e2-4ef8-93bc-0ddcc15a2ad9 (accessed August 2024).

⁵⁵For an analysis of the negative effects of the imposition of tariffs and extremely limited advantages for tariff-protected industries, see E. York (2024) *Separating Tariff Facts from Tariff Fictions*. Cato Institute.

and battery components, will pass downstream through to US producers in the net-zero sectors. The exclusion of FEOCs and the promotion of a (slow and costly) restructuring of supply chains will thus come at the direct expense of the competitiveness of US manufacturers.

In a similar vein, US producers have failed to reap any economic benefits throughout the solar photovoltaics saga. Despite abundant recourse to tariffs and trade remedies for over a decade, the US has failed to establish a globally competitive domestic solar photovoltaics industry. On the contrary, the unavailability of cheap imported Chinese components or the increase in their final price have hurt US downstream producers in this sector and hampered their competitiveness.⁵⁶ Most importantly for the purposes of the present enquiry, this national security-driven attempt to restrict market access for Chinese products is also bound to have long-lasting environmental implications, slowing down the transition to electric mobility and the uptake of renewables.

The EU is taking a more cautious approach, and abides by the rules of the trade law regime. Nonetheless, recent policy developments signal heightened concerns about potential trade weaponization strategies and China's unfair competition. This partial or soft 'securitization' trend also produces detrimental environmental effects.

Starting from the question of trade weaponization, the CRM Act includes a non-binding target providing that by 2030 the Union should not rely on imports of strategic raw materials from any specific third country to any extent that exceeds 65% of its annual consumption.⁵⁷ This provision aims to address real or perceived risks associated with overreliance on Chinese imports. While falling short of excluding CRMs extracted or refined in China or by Chinese firms, soft de-risking provisions reveal a more adversarial approach and erode the margins for the exercise of environmental 'leverage' over China.

Turning to unfair competition, the EU institutions have hardened their stance on Chinese non-market practices. At a time when all major global players sanction recourse to industrial policy and subsidies, the criticisms against China have been re-articulated by emphasizing the scale of Chinese subsidies and the resulting alleged overcapacity in global markets for EVs, lithium-ion batteries, and solar photovoltaics. This discourse is unsurprisingly challenged by Chinese stakeholders, who instead point to the weakness of transnational demand in these sectors and the extent to which fierce competition on the Chinese domestic market, innovation, integrated supply chains, and clustering effects have helped Chinese firms to achieve economies of scale.⁵⁸ The overcapacity narrative and fears of de-industrialization have cemented an increasingly adversarial approach to Chinese net-zero industries in the EU.

In July 2024, the Commission closed its anti-subsidy investigation into the imports of Chinese EVs and announced its proposed provisional countervailing duties (CVDs), ranging from a minimum of 17.4% to a maximum of 37.6%.⁵⁹ The imposition of CVDs has come under fire within the EU's own halls of power, due to the entanglement of Chinese and European EV industry and supply chains.⁶⁰ CVDs will not make the struggling European EV industry more competitive on export markets, where Chinese EV manufacturers will in part redirect their products. Further, they are unlikely to shield EU manufacturers from competition on the EU market. According to

⁵⁶For a full list of US trade measures affecting the US solar PV industry since 2012, see 'Solar Panel Import Tariffs are Affecting the Industry by Increasing Prices by Up to 286%', <https://pv-magazine-usa.com/2024/06/06/solar-panel-import-tariffs-are-affecting-the-industry-by-increasing-prices-by-up-to-286> (accessed August 2024). For a critical assessment of their effects, see G. Beaumont-Smith (2023) *Congress's Shade on Suspended Solar Duties Shines Light on Troublesome Trade Remedy Laws*. Cato Institute.

⁵⁷CRM Act, supra n. 15, Article 5(1)(b).

⁵⁸For an overview and an assessment of different arguments, see C. Boullenois (2024) *Overcapacity at the Gate*. Rhodium Group.

⁵⁹Commission Implementing Regulation (EU) 2024/1866 of 3 July 2024 'Imposing a Provisional Countervailing Duty on Imports of New Battery Electric Vehicles Designed for the Transport of persons Originating in the People's Republic of China', OJ 2024 L 1866.

⁶⁰D. Cagney, 'The Brief: Make Electric Cars, Not War', www.euractiv.com/section/energy-environment/opinion/the-brief-make-electric-cars-not-war (accessed August 2024).

analysts, several Chinese EV models are still likely to remain cheaper and more competitive than EU EVs after the imposition of the EU 10% tariff rate and CVDs.⁶¹ Finally, and again more importantly for the present analytical purposes, CVDs will raise final EV prices for EU consumers and thus slow down the transition to electric mobility. China correctly raised this point throughout the anti-subsidy investigation, going as far as suggesting that the imposition of CVDs is difficult to reconcile with the European Green Deal and the EU climate neutrality targets.⁶²

As a last point, it is worth noting that concerns surrounding economic competitiveness and de-industrialization also find clear expression in the Net-Zero Industry Act. Article 25 on public procurement procedures lays out an obligation for tendering authorities to apply minimum mandatory requirements on environmental sustainability in the context of contracts or work contracts, including net-zero technologies covered by the Act.⁶³ These requirements may not be applied where they would increase costs by 20% or more.⁶⁴ However, and problematically, Article 25(7) includes further resilience criteria and additional obligations for tendering authorities in cases where the proportion of the net-zero technology or its main components originating in a third country accounts for more than 50% of the supply within the Union, or has increased by 10% for two consecutive years and reached 40% of Union supply. The exception of cost increase does not apply in the context of the application of these resilience criteria. In a similar vein, Article 26 on renewable energy auctions enshrines an obligation for EU Member States to include environmental sustainability and resilience requirements within the applicable pre-qualification or award criteria,⁶⁵ giving them a combined weight of 15–30%.⁶⁶ In this case, Article 26(5) enables Member States to disapply both criteria if they would increase costs by 15% or more. Nonetheless, Article 26(7) stipulates that the two criteria shall apply to at least 30% of the volume auctioned per year by every Member State, or 6 Gigawatts.

The inclusion of resilience criteria under these procedures obviously places (cheaper) Chinese equipment and components at a disadvantage. The effects of these provisions are difficult to predict and assess at this stage. Article 26(8) mandates a biyearly comprehensive assessment of the application of the sustainability and resilience criteria for auctions, and of their effect on EU renewables deployment. Nonetheless, the new resilience requirements certainly mark a further step towards the ‘securitization’ of EU policy.

The introduction and coexistence of sustainability and resilience criteria under the Net-Zero Industry Act prompts some conclusive considerations on the economic and environmental effects of adversarial approaches to the exclusion of FEOCs, de-risking via soft non-binding targets, and proactive attempts to level the playing field. It also shines a light on the way forward to operationalize a truly outward-looking approach and a circumscribed focus on supply chain resilience and diversification.

In times of climate crisis, preserving trade openness and boosting public and private demand for EVs and net-zero equipment can simultaneously help advance the net-zero transition, benefit domestic and foreign manufacturers, and address alleged excess supply in net-zero sectors.⁶⁷

⁶¹As reported by Reuters, www.reuters.com/business/autos-transportation/china-hopes-eu-will-reconsider-ev-tariffs-state-media-reports-2024-06-13 (accessed August 2024), and by the *Financial Times*, www.ft.com/content/d9a32016-a03b-452f-9d20-4d85a612c4c7 (accessed August 2024). Build Your Dream (BYD), in particular, charges more than double of the Chinese market price on the EU market, and would still achieve a more than 8% net margin at the current product scale. For an in-depth analysis, see G. Sebastian and A. Kratz (2024) *Ain't No Duty High Enough*, Rhodium Group. Further, Chinese firms could of course potentially avoid CVDs via foreign direct investment in the EU, or circumvention practices.

⁶²Commission Implementing Regulation (EU) 2024/1866, 199, para. (1250) ff.

⁶³Net-Zero Industry Act, supra n. 12, Article 25(1) to (5).

⁶⁴Ibid., Article 25(9) and (10).

⁶⁵Ibid., Article 26(1)(b).

⁶⁶Ibid., Article 26(4).

⁶⁷For a broad reference, see the proposal for a Clean Industrial Deal in European Commission (2024) ‘Europe’s Choice. Political Guidelines for the Next European Commission (2024–2029)’, Strasbourg, 18 July 2024. At this stage, it is unclear whether, and how, the Clean Industrial Deal will be operationalized.

Market competition between domestic and imported net-zero equipment and input products can promote innovation, and lower costs for both consumers and downstream producers. The thorny question of Chinese non-market practices and unfair competition should be addressed via negotiations and cooperation, as the EU is currently doing in the context of its EV anti-subsidy investigation. Trade remedies in the net-zero equipment sectors, as the US experience proves, are not economically beneficial and produce detrimental environmental effects. As regards public procurement and renewables auctions, time will tell what specific effects the resilience criteria will produce at the EU level. However, despite all the applicable conditions, specifications, and exceptions, they are more likely than not to be economically inefficient and environmentally harmful.

Last but not least, jurisdictions should maintain stringent environmental and decarbonization standards internally, and exercise environmental ‘leverage’ over third countries and market actors via trade-related measures and other domestic policies. The latter category of domestic measures may include environmental sustainability rules in procurement systems, along the lines of the Net-Zero Industry Act rules. It may also include references to environmental (e.g. decarbonization or carbon footprint) requirements as a precondition to grant supply-side (manufacturing or investment) subsidies, or as a condition for the eligibility of net-zero goods for consumption subsidies. The French Government has famously pioneered this approach by conditioning EV subsidies to the carbon footprint of batteries.⁶⁸

The combination of trade openness and environmental ‘leverage’ can accelerate the net-zero transition and level the environmental playing field, while helping to enhance the long-term competitiveness of domestic industries and mitigating concerns surrounding an increasingly unlevel economic playing field.⁶⁹ By contrast, as this section has demonstrated, national security-centred approaches threaten the net-zero transition, undermine ‘leverage’, and are also unlikely to yield economic benefits.

3.2 Hard and Soft Reshoring: Unpacking the Environmental Implications

Policy-makers may go further than excluding systemic rivals or promoting de-risking strategies. As testified by recent regulatory interventions on the two sides of the Atlantic, inward-looking national security-centred approaches are increasingly characterized by attempts to reshore supply chains and manufacturing in key sectors via abundant recourse to industrial policy. As this section illustrates, this trend can also slow down the net-zero transition and undermine environmental ‘leverage’.

The IRA offers some relevant case studies. The Act includes two sets of production or investment tax credits to promote the domestic manufacturing of equipment and components for the net-zero sectors, with a view to supporting the solar photovoltaics, wind, EVs, CRMs, and energy storage sectors.⁷⁰ The extent to which these supply-side, output-maximizing subsidies may respond to economic efficiency and succeed in promoting an economically competitive domestic net-zero industry is controversial. This question is particularly contested in times of alleged overcapacity, and in light of the considerable depression in global prices of net-zero goods.⁷¹ More importantly, the combination of restrictions to the US domestic market for cheaper Chinese

⁶⁸See also Net-Zero Industry Act, supra n. 12, Article 28.

⁶⁹Levelling the environmental playing field via the exercise of environmental ‘leverage’ and recourse to specific environmental standards increases economic costs for firms operating in third countries, and will thus at least in part level the economic playing field. For an analysis of the notions of an ‘economic’ and ‘environmental’ level playing field, see G.C. Leonelli (2022) ‘Practical Obstacles and Structural Legal Constraints in the Adoption of ‘Defensive’ Policies: Comparing the EU Carbon Border Adjustment Mechanism and the US Proposal for a Border Carbon Adjustment’, *Legal Studies* 42(4), 696–714.

⁷⁰Section 13501 of the IRA has extended the Advanced Energy Project (Section 48C) investment tax credits. Section 13502 instead has introduced a new production tax credit (Section 45X).

⁷¹As reported by the *Financial Times*, the price of Chinese solar photovoltaics equipment, in particular, is about two thirds lower than the price of US equipment. See www.ft.com/content/4a5f6396-c29d-40bb-baa6-13679c35cdca (accessed August 2024).

products and supply-side subsidies for US net-zero sectors has protective and import-substitution effects. These policies reveal a clear desire to promote the *domestic* (net-zero technology) *industry*, as opposed to a focus on the swift uptake of *net-zero technologies*. As already seen in the previous subsection, this inward-looking perspective carries many risks for the net-zero transition.

The US has also gone further than ever by attaching WTO law incompatible LCRs, origin-related requirements, and domestic content ‘bonus’ provisions to a number of IRA tax credits.⁷² The section 30D EV LCRs and origin-related requirements cast light on the economic shortcomings and environmental pitfalls of these forms of conditionality. First, in order to be eligible for the tax credits, EVs must have undergone final assembly in North America.⁷³ Second, they may only be eligible for 50% (\$3,750) of the relevant tax credit where a specific (increasing) percentage of the components of their batteries has been manufactured or assembled in North America.⁷⁴ Third, they will only be eligible for the remaining 50% of the tax credit where their batteries contain a specific (increasing) percentage of critical minerals recycled in North America, or extracted or processed in the United States or ‘any country with which the United States has a free trade agreement in effect’.⁷⁵

The combination of these requirements aims to promote a very complex and costly restructuring of supply chains. This is going to produce economically inefficient results, increasing the price of US EVs and affecting supply and quality levels.⁷⁶ In environmental terms, the combination of these requirements has already produced detrimental effects. As of July 2024, just over 20 EV models qualify for the full amount of the tax credit.⁷⁷ This number is likely to decrease further due to the exclusion of EVs whose batteries contain CRMs originating from FEOCs. It is thus unsurprising to see that more EVs have been leased than purchased so far;⁷⁸ none of the Section 30D conditions apply under the Section 45W tax credits for commercial clean vehicles.

It is equally unsurprising to see how the final regulations produced by the US Treasury Department Internal Revenue Service have partly loosened the rules. The exclusion of previously owned or leased vehicles⁷⁹ and the broad interpretation of the notion of countries ‘with which the United States has a free trade agreement in effect’ have both come under the spotlight; as explained in the fourth section, the US is currently in the process of negotiating critical mineral partnerships that will count as ‘free trade agreements’ under the IRA.⁸⁰ By contrast, several different regulatory loopholes have gone completely unnoticed in the literature. First, the final Internal Revenue Service rules categorize the ‘constituent materials’ of EV batteries as critical

⁷²See the IRA amendments to the Section 30D, 45, 48, 45Y, 48E tax credits.

⁷³IRA, Section 13401(b).

⁷⁴*Ibid.*, Section 13401(e)(2)(A) and (B).

⁷⁵*Ibid.*, Section 13401(e)(1)(A) and (B). For a critical analysis, see K. Claussen (2023) ‘What is a Free Trade Agreement, Anyway?’ <https://ielp.worldtradelaw.net/2023/01/what-is-a-free-trade-agreement-anyway.html> (accessed August 2024).

⁷⁶For an in-depth analysis, see G.C. Leonelli and F. Clora (forthcoming 2024) ‘Retooling the Regulation of Net-Zero Subsidies: Lessons from the US Inflation Reduction Act’, *Journal of International Economic Law*. The IMF has recently warned that the long-term efficiency costs of reshoring and friendshoring strategies could cut global GDP by 2%. See ‘Friendshoring is a Risk to Growth and Financial Stability, Warns IMF’, www.ft.com/content/b2f66486-80e5-425e-86e7-fe432da8aeeec (accessed August 2024).

⁷⁷See <https://fueleconomy.gov/feg/tax2023.shtml>, for an up-to-date list of eligible electric vehicles. (accessed August 2024).

⁷⁸C. Bown (2023) ‘Industrial Policy for EV Supply Chains and the US–EU Fight over the Inflation Reduction Act’, Peterson Institute for International Economics.

⁷⁹See section 13402 IRA, section 13403 IRA, and Department of the Treasury, Internal Revenue Service, *Section 45W Commercial Clean Vehicles and Incremental Cost for 2023, Notice 2023-9* (December 2022).

⁸⁰A ‘free trade agreement’ is defined as an agreement that reduces or eliminates trade barriers on a preferential basis; commits the parties to refrain from imposing new trade barriers; establishes high-standard disciplines in key areas affecting trade (such as core labour and environmental protections); and/or reduces or eliminates restrictions on exports or commits the parties to refrain from imposing such restrictions on exports. For a critical analysis, see K. Claussen (2022) ‘Trade Agreement Transparency for the New Year’, *International Economic Law and Policy Blog*, December 2022; and K. Claussen (2022) ‘What is a Free Trade Agreement, Anyway?’, *International Economic Law and Policy Blog*, December 2022.

minerals, rather than battery components.⁸¹ Second, they define ‘recovery of critical minerals from waste’ as a form of extraction.⁸² Third, they replace the use of the ‘physical tracking’ criterion to determine compliance with the requirements with a more lenient ‘allocation’ requirement.⁸³ These adjustments clearly aim to broaden the number of EVs that are eligible for the Section 30D tax credit.

As demonstrated by the examination of these IRA provisions, ‘securitization’ disrupts the trade and climate change mitigation nexus. The IRA ‘domino effect’ and the EU regulatory shift in the context of the CRM and Net-Zero Industry Acts is the next point to address in this section. An analysis of the partial ‘securitization’ of EU policy confirms that a national security-centred approach produces detrimental environmental effects.

The EU reaction to the IRA resonates with the European institutions’ focus on restoring and maintaining a global level playing field. The March 2023 EU revision of the Temporary Crisis and Transition Framework (TCTF) for State Aid Measures unsurprisingly covers the very same areas regulated under the IRA: the revised TCTF has further loosened the applicable state aid rules, and includes a set of *ad hoc* anti-relocation measures.⁸⁴ As predicted by the EU Delegation in the US in 2022, this transatlantic subsidies race has produced inefficient results for the reduction of global GHG emissions by turning the common global objective of tackling climate change into a zero-sum game.⁸⁵ As more recently lamented by the Commission, by diverting precious public resources away from innovation and R&D to fund anti-relocation schemes, it has also produced detrimental environmental effects.

Further, the EU post-IRA approach is characterized by the adoption of soft reshoring techniques, and greater restraint in the exercise of environmental ‘leverage’. The Net-Zero Industry Act has for the first time included a non-binding reshoring target, enshrining an aspiration that EU manufacturing will meet 40% of the Union annual deployment needs for net-zero technologies.⁸⁶ More problematically, the CRM Act combines similar soft reshoring targets with a clear shift away from ‘leverage’, marking a departure from the approach followed under the pre-IRA Batteries Regulation.

The Batteries Regulation aims to ensure that battery products marketed on the EU internal market are sourced and manufactured in a sustainable manner, with a view to contributing to lowering carbon emissions in the EU and at the transnational level. To this end, it sets in place a mandatory due diligence system for economic actors operating in the batteries sector, covering the value chain of relevant raw materials.⁸⁷ Additionally, it includes two sets of PPM standards. Article 7 and Annex II of the Regulation establish an obligation for manufacturers to provide a battery lifecycle carbon footprint declaration. This system will be complemented over time by the establishment of mandatory maximum lifecycle carbon footprint thresholds. Article 8 lays out mandatory percentage targets for the recycled content of minerals in batteries.

These standards and obligations have not been transposed to the CRM Act. The prospective horizontal applicability of the EU Corporate Sustainability Due Diligence Directive (CSDDD), as explained in the next section, will not achieve the same levels of protection. As regards PPMs, the CRM Act provides for a mere option for the Commission to adopt carbon footprint performance

⁸¹This means that the more lenient requirements for critical minerals will apply, rather than the local content requirements applied to battery components. ‘Constituent materials’ include powders of cathode and anode active materials, foils, metals for solid electrodes, binders, and electrolyte salts and additives. 26 CFR, Parts 1 and 301, S. 1.30D-2(b)(12).

⁸²The rationale for this categorization is precisely the same.

⁸³26 CFR, Parts 1 and 301, SS. 1.30D-2(b)(25)(i) and (ii), and 1.30D-6(c)(1), (2), and (3).

⁸⁴European Commission, *Communication from the Commission. Temporary Crisis and Transition Framework for State Aid Measures to Support the Economy Following the Aggression against Ukraine by Russia*, OJ 2023 C 101.

⁸⁵Delegation of the EU to the US, *Submission of the EU on the IRA* (November 2022), 2, www.regulations.gov/comment/IRS-2022-0020-0774 (accessed August 2024).

⁸⁶Net-Zero Industry Act, Recital (17) and Article 5.

⁸⁷See Chapter VII of the Batteries Regulation, and Annex X.

classes if it concludes that this would be a necessary and proportionate regulatory response.⁸⁸ As clearly suggested by the Impact Assessment, the Commission's reluctance to have recourse to both pr- and npr-PPMs is motivated by concerns surrounding the security of supply and affordability of CRMs.⁸⁹ This reflects a narrow national security-centred perspective.

Turning to the conclusive point of this subsection on soft reshoring targets, the post-IRA shift towards 'securitization' in EU policy discourses is apparent from the Commission Communication on CRMs. The Communication lays particular emphasis on the development of a *CRM value chain in the EU*; symmetrically, it de-emphasizes questions surrounding 'fostering sustainable sourcing and promoting circularity'.⁹⁰ The same order of priorities is reflected in Article 1 of the CRM Act. The Act sets out a number of risk management strategies: these include supply risk monitoring, obligations for Member States to report on their strategic stocks, auditing, stress testing obligations for companies, and an innovative joint purchasing system.⁹¹ As implicitly acknowledged in the Preamble to the Act, these measures are sufficient to ensure secure supply. Nonetheless, the Regulation goes further and introduces targets for strategic raw minerals (SRM) Union extraction, recycling, and processing capacity.⁹²

The 10% EU extraction target can pit decarbonization and different environmental protection interests against each other. The Act provides a set of criteria to identify 'strategic projects', which will benefit from accelerated and streamlined permit and impact assessment procedures. This has a number of potentially problematic implications in the context of the implementation of EU and Member State environmental impact assessment and nature and biodiversity protection regulatory frameworks.⁹³ Further, and intuitively, an inward-looking focus on reshoring limits the extent to which the EU may exercise environmental 'leverage'. The same consideration applies in respect of the 25% EU recycling target. Finally, but importantly, the 40% target for EU processing capacity has far-reaching policy ramifications. Not only this reshoring target jeopardizes recourse to 'leverage', in so far as it limits trade openness; but also, by preventing local CRM value addition, it is bound to alienate resource-rich countries and thus further erode the margins for the exercise of 'leverage'. The next section elaborates further on this point.

4. The Perils of 'Securitization' (II): Opportunistic Friendshoring and Lack of Regulatory Coordination

This section turns to the gap between opportunistic friendshoring under national security-centred paradigms versus inclusive and value-driven partnerships to promote transnational environmental protection and decarbonization. It also examines the implications of lack of coordination on recourse to specific regulatory means, which is typical of a narrow national security-centred approach.

The analysis employs US and EU approaches to CRM partnerships as a case study, and addresses two distinct yet interconnected questions. The first relevant question focuses on the extent to which US and EU approaches to CRM sourcing via *ad hoc* bilateral (FTA or strategic partnership) arrangements enable resource-rich developing and least developed countries to move up the value chain, generating added value locally and enhancing links between the extractive, processing, and manufacturing sectors in these countries. There are good reasons to regard the promotion of an inclusive approach to CRM sourcing as a self-standing policy goal. From an

⁸⁸See CRM Act, supra n. 15, Recital (60) and Article 31.

⁸⁹See Impact Assessment, supra n. 13, 58.

⁹⁰European Commission, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, A Secure and Sustainable Supply of Critical Raw Materials in Support of the Twin Transition*, COM(2023) 165 Final, 4.

⁹¹CRM Act, Articles 20 to 24.

⁹²*Ibid.*, Article 5(1)(a).

⁹³Articles 11 and 12.

environmental protection perspective, however, promoting this approach at the transnational level yields further benefits.

As briefly mentioned in the previous sections, the extraction, processing, and refining of several CRMs is associated with recourse to carbon-intensive PPMs and high risks of environmental degradation. Promoting value addition at the local level by making specific concessions maximizes the extent to which CRM purchasing countries may exercise environmental ‘leverage’ over resource-rich countries, opening up new opportunities to promote the adoption of high(er) environmental protection standards. Taking on specific capacity-building and finance and technology transfer commitments and granting specific benefits generates further incentives for the uptake of stringent environmental standards in third countries, while also improving their enforcement.

Opportunistic friendshoring under national security-centred paradigms, by contrast, reflects an extractive rationale and an adversarial, exclusive approach to partnership building; in the CRM context, as already seen, it comes into play to address the limits in domestic CRM extraction or recycling capacity.

The US is negotiating a set of *ad hoc* CRM partnerships; the Internal Revenue Service rules support the view that these will qualify as ‘free trade agreements’ for the purposes of the section 30D EV tax credits.⁹⁴ As confirmed by the text of the recent US–Japan partnership, the US approach is not particularly ambitious in environmental protection terms.⁹⁵ This conforms to a narrow national security-centred approach and perfectly exemplifies recourse to opportunistic friendshoring strategies. The environment and the climate system pay the price.

The EU approach to CRM sourcing from third countries is more complex yet ambivalent. According to the Commission Communication accompanying the CRM Act proposal, the transatlantic negotiations of a US–EU ‘targeted critical minerals agreement’ for section 30D IRA purposes provide ‘a basis for working towards a broader and wider CRM club’ that will bring together consuming and resource-rich countries.⁹⁶ How these plurilateral arrangements would coordinate with separate US and EU bilateral initiatives is unclear. The focus on a transatlantic critical minerals agreement, however, has brought about a degree of ‘securitization’ in EU discourses. Security and affordability of supply, CRM exploration, and market development have gained increased prominence in the context of the ‘CRM club’ proposal in the Communication; questions surrounding inclusion and sustainability, by contrast, have been de-emphasized.⁹⁷

In a similar vein, the prohibition of import and export monopolies, licensing requirements, and dual or minimum price systems are front and centre in all recently negotiated Raw Materials Chapters in EU Association Agreements and FTAs.⁹⁸ This reveals a close focus on the elimination of export controls or restrictions, and a disregard for increasing calls for the

⁹⁴As already explained, EVs whose batteries contain critical minerals extracted or processed in these countries will qualify for 50% of the section 30D tax credits, as long as the (increasing) statutory percentage requirements are met.

⁹⁵Agreement between the Government of the United States of America and the Government of Japan on Strengthening Critical Minerals Supply Chains (28 March 2023), <https://ustr.gov/> (accessed August 2024).

⁹⁶European Commission, *supra* n. 90, 9. At the end of the US–EU Trade and Technology Council of April 2024, however, the US and the EU only launched an *ad hoc* Forum under the Mineral Security Partnership to ‘formalise and expand ... engagements with mineral producing countries, with a particular focus on advancing and accelerating individual projects with high environmental protection and social governance and labour standards, and promoting discussion of policies that contribute to diverse and resilient supply chains’. See Joint Statement, EU–US Trade and Technology Council (Leuven, 5 April 2024), 6; and the press release on the Mineral Security Partnerships Forum, https://ec.europa.eu/commission/presscorner/detail/en/IP_24_1807 (accessed August 2024).

⁹⁷European Commission, *supra* n. 90, 9.

⁹⁸See in particular Free Trade Agreement between the European Union and New Zealand (into force), Chapter 13, Articles 13.4 and 13.5; Modernized EU–Chile Agreement (not yet adopted), Chapter 8, Articles 8.4 and 8.5; Modernized EU–Mexico Agreement (not yet adopted), Chapter X, Articles 3 and 4; and Free Trade Agreement between the European Union and Australia (under negotiation), Chapter X, Articles X.4 and X.5. These provisions are complemented by a

development of local value chains in resource-rich countries.⁹⁹ The modernized EU–Chile Association Agreement provides the only exception to date: subject to specific conditions, Article 8.5 and Annex II enable Chile to introduce or maintain preferential prices for the supply of raw materials to domestic industrial sectors with a view to fostering local value addition. The coverage of relevant environmental questions in these Chapters, by contrast, remains patchy. EU–New Zealand, EU–Chile, and EU–Australia mandate recourse to environmental impact assessments;¹⁰⁰ the EU–Mexico Modernized Association Agreement, however, does not include any provisions in this respect. All Agreements include references to promoting cooperation on raw materials standards¹⁰¹ and on responsible business conduct in raw materials value chains, including references to sustainability and value addition.¹⁰² Nonetheless, these cooperation obligations are largely aspirational in nature.

By embracing partial ‘securitization’ and by refraining from making specific concessions, the EU loses out on its opportunities to maximize environmental ‘leverage’. An analysis of the many Strategic Partnerships concluded by the EU institutions with resource-rich countries via a Memorandum of Understanding (MoU) lends further support to this view.¹⁰³ The examination reveals divergencies in the scope, focus, priorities, and levels of environmental ambition of different Strategic Partnerships. The text of the MoUs signed with Chile and Argentina shows a greater focus on local value addition, and the pursuit of high(er) levels of environmental protection.¹⁰⁴ The Partnerships with the Democratic Republic of Congo, Zambia, and Rwanda acknowledge these countries’ ambition to develop local processing, refining, and recovery and recycling capacity, build on the European Global Gateway initiative, and expressly mention the mobilization of funding for capacity-building purposes and for the development of infrastructure. These concessions from the EU have gone hand in hand with the inclusion of express references to strong commitments on environmental standards.¹⁰⁵ In a similar vein, the local investment plans laid out in the MoU with Ukraine, and in the Partnership with Serbia in particular, have enabled the EU to exercise environmental ‘leverage’ to a much greater extent.¹⁰⁶ These considerations do not apply to other MoUs, which are characterized by much more limited references to environmental standards. This factor confirms the close connection between the promotion of value addition at the local level and funding and capacity-building commitments, on the one hand, and the exercise of environmental ‘leverage’, on the other.

The final point to address relates to the absence of solid coordination on recourse to specific regulatory and policy tools. This is also typical of national security-centred approaches to CRM sourcing, and triggers several considerations. Under the US–Japan Partnership, the Parties reaffirm their commitment to implement the multilateral environmental agreements to which they are a Party, ensure that their environmental laws and policies provide for high levels of

prohibition on performance requirements (including domestic processing or domestic marketing requirements) in the Investment Chapters of the relevant Agreements.

⁹⁹For recent developments in the Chilean lithium industry, see www.energy-storage.news/chile-forms-state-controlled-entity-with-sqm-to-control-domestic-lithium-production/ (accessed August 2024).

¹⁰⁰EU–New Zealand, Article 13.8; EU–Chile, Article 8.8; EU–Australia, Article X.8.

¹⁰¹EU–New Zealand, Article 13.12; EU–Chile, Article 8.12; EU–Mexico, Article 10; EU–Australia, Article X.15.

¹⁰²EU–New Zealand, Article 13.14; EU–Chile, Article 8.14; EU–Mexico, Article 11; EU–Australia, Article X.17. Similar broad/aspirational references to supply chain due diligence are included in TSD Chapters. See EU–New Zealand, Article 19.12; EU–Chile, Article 26.3; EU–Mexico, Articles 9 and 13; and EU–Australia, Article X.9.

¹⁰³European Commission, *supra* n. 90, 12. The EU has so far negotiated Strategic Partnerships with Canada, Ukraine, Kazakhstan, Namibia, Argentina, Chile, the Democratic Republic of Congo, Zambia, Greenland, Rwanda, Norway, Uzbekistan, Australia, and Serbia. The MoUs are available at https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/raw-materials-diplomacy_en (accessed August 2024).

¹⁰⁴See pages 2 and 3 of the MoUs in particular.

¹⁰⁵See pages 2 and 3 of the MoUs in particular.

¹⁰⁶In this regard, see the text of the MoU with Serbia in particular.

protection, and continue to improve these levels of protection.¹⁰⁷ They also recognize ‘the importance of taking into consideration relevant environmental best practices and international guidelines on environmental sustainability ... when developing national policies and procedures on critical minerals’.¹⁰⁸ What these standards and guidelines are and how ambitious they could be, however, is far from clear.

Unlike the US, the EU has pledged to take a proactive approach to the question of international standardization and regulatory coordination in this area. This reveals a more genuine focus on the pursuit of high levels of environmental protection in CRM value chains. Nonetheless, at present, the EU approach to CRM sustainability remains ambiguous. Despite the consistent inclusion of provisions on supply chain due diligence in recent EU FTAs,¹⁰⁹ a piecemeal approach applies in respect of corporate sustainability due diligence obligations at the EU level.

Economic operators in the batteries sector shall adopt a specific due diligence policy concerning raw materials and associated (social and) environmental risks; this policy shall incorporate standards consistent with international due diligence guidance documents, referenced in the Annexes to the Batteries Regulation. The Regulation empowers the Commission to provide further specifications via implementing acts. Due diligence obligations involve *inter alia* the establishment of a system of controls and transparency over the value chain, the incorporation of due diligence obligations into contracts with suppliers, the identification and assessment of risks of adverse impacts in the supply chain, and the design and implementation of a risk management strategy to prevent, mitigate, and otherwise address adverse impacts.¹¹⁰

The CRM Act, by contrast, does not include due diligence obligations. It simply requires project promoters that apply for their project to qualify as ‘strategic’ within the meaning of the Act to provide evidence that that project has been or will be certified under a sustainability scheme recognized by the Commission.¹¹¹ Despite the prospective application of the CSDDD,¹¹² the inclusion of *ad hoc* Batteries Regulation-like corporate sustainability due diligence obligations in the CRM Act would have been beneficial in environmental terms. First, compared to the horizontally/generally applicable CSDDD, the Batteries Regulation provisions bring greater clarity on relevant benchmarks for the companies’ sustainability due diligence policy. Second, unlike the CSDDD, the Batteries Regulation mandates third-party verification and periodic auditing of the companies’ due diligence policies and strongly encourages third-party verification of upstream suppliers, with a particular emphasis on cases where specific adverse effects may materialize in supply chains.¹¹³

Corporate sustainability due diligence systems cannot achieve the same levels of environmental protection as well-designed npr-PPM standards. International standardization and the international recognition of specific due diligence schemes, however, can help strengthen their effectiveness and coordinate transnational regulatory responses. First, this process would involve the negotiation and adoption in relevant international fora of international technical standards on CRM sustainability. These should address specific categories of environmental risk and set relevant quantifiable benchmarks.¹¹⁴ Second, it would involve the recognition of due diligence

¹⁰⁷Agreement between the Government of the United States of America and the Government of Japan, Articles 4(2) and (5).

¹⁰⁸*Ibid.*, Article 4(6).

¹⁰⁹EU–New Zealand, Article 19.12; EU–Chile, Article 26.3; EU–Mexico, Articles 9 and 13; EU–Australia, Article X.9.

¹¹⁰Batteries Regulation, *supra* n. 11, chapter VII.

¹¹¹Article 30 of the CRM Act includes references to the prospective recognition of sustainability certification schemes by the European Commission.

¹¹²Directive (EU) 2024/1760 of the European Parliament and of the Council of 13 June 2024 on Corporate Sustainability Due Diligence and Amending Directive (EU) 2019/1937 and Regulation (EU) 2023/2859’, OJ 2024 L 1760.

¹¹³Batteries Regulation, *supra* n. 11, Articles 47 to 50.

¹¹⁴By way of example, these could include specific indicators on water use or on the carbon intensity of CRM extraction.

schemes that mandate compliance with such harmonized international standards. This could provide an effective way forward to coordinate due diligence policies and standards at the transnational level, levelling the transnational environmental (and economic) playing field while reinforcing the operation of specific corporate sustainability due diligence regulatory systems. The EU has pledged to follow a similar course of action. Whether it will live up to its promise in times of increasing ‘securitization’, however, is very hard to gauge.

5. Conclusions: Charting a New Path for Transnational Decarbonization?

This article has zoomed in on the race for CRMs and US and EU strategies to promote the net-zero transition at domestic level to illustrate the environmental pitfalls of the ‘securitization’ of the trade and climate change mitigation nexus. As the third section has demonstrated, the pursuit of strategic dominance in key net-zero sectors and increasing attempts to exclude systemic rivals and reshore supply chains are very difficult to square with recourse to environmental ‘leverage’ over third countries. Further, they slow down and potentially undermine decarbonization at both national and transnational levels. The fourth section has turned to the gap between opportunistic friendshoring versus inclusive and value-driven partnerships to promote transnational environmental protection and decarbonization. The analysis has shed some light on the environmental limitations of national security-centred approaches, emphasizing that a narrow focus on national security can neither maximize environmental ‘leverage’ nor promote solid agreement on recourse to specific environmental standards.

As argued in the second section, a radically different outward-looking, constructive, and long-term approach to the governance of the trade and climate change mitigation linkage is urgently needed. This should draw on a strategic vision for transnational decarbonization, combine a minimalist focus on supply chain diversification and resilience with recourse to ‘leverage’, promote value-driven and inclusive alliances, and build on solid agreement on recourse to specific regulatory and policy tools.

Such a paradigm shift is potentially within reach; nonetheless, several challenges lie ahead. The US policy and regulatory approach is permeated by *lato sensu* national security; this trend is nowhere near being reversed. If the EU traditional focus on levelling the economic playing field¹¹⁵ is reframed in terms of partial ‘securitization’, the EU ‘Open Strategic Autonomy’ and its ‘Open, Sustainable and Assertive Trade Policy’¹¹⁶ cease to be ‘open’. This imperils the pursuit of transnational decarbonization via trade openness and the exercise of environmental ‘leverage’.

Aggressive exclusion strategies, reshoring, and friendshoring carry significant risks. If key players stop playing by the rules of the game, the rules are disappplied and may eventually cease to exist. National security-centred approaches to trade and climate change mitigation can generate a vicious circle of increasing transnational ‘securitization’. This is the greatest risk for the governance of the trade and climate change mitigation nexus. As the climate crisis spirals out of control, however, time is running out for the US and the EU to rethink their policy trajectory.

¹¹⁵See supra n. 69.

¹¹⁶European Commission, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Trade Policy Review – An Open, Sustainable and Assertive Trade Policy*, COM(2021) 66 Final.