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Critical Raw Materials, the Net-Zero Transition and the 'Securitisation' of the Trade and Climate Change Nexus: Pinpointing Environmental Risks and Charting a New Path for Transnational Decarbonisation

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The exercise of environmental 'leverage' via trade-related measures and trade in environmental goods offer opportunities to tackle the climate crisis and advance transnational decarbonisation. Inward looking, adversarial and short-term national security-centred approaches, however, are disrupting the trade and climate change linkage. This article employs the race for critical raw materials and US and EU strategies to promote the net-zero transition at domestic level as case studies to illustrate the environmental pitfalls of the 'securitisation' of the trade and climate change nexus. The article demonstrates that the pursuit of strategic dominance in key net-zero sectors, increasing attempts to restructure and reshore supply chains, opportunistic forms of friendshoring and loose agreement on regulatory means jeopardise recourse to environmental conditionality and environmental 'leverage' and undermine decarbonisation at both national and transnational levels. This sheds 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 nexus.

Decarbonisation; 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 decarbonisation. Increasing recourse to unilateral trade-related measures that are designed to produce extraterritorial environmental effects provides a means for 'environmentally virtuous' jurisdictions to exercise environmental 'leverage' over third countries and promote the uptake of environmentally beneficial practices by market actors. Despite a number of shortcomings in its regulatory design, the EU flagship carbon border adjustment mechanism ('CBAM') indirectly pursues these environmental goals by levelling the economic playing field.[2] The new generation of EU non-product related

[1] Intergovernmental Panel on Climate Change, *Synthesis Report of the IPCC Sixth Assessment Report (AR6), Summary for Policymakers* (IPCC, March 2023).
[2] Council of the European Union, *Regulation of the European Parliament and of the Council establishing a Carbon Border Adjustment Mechanism (CBAM) – Compromise Text*, Interinstitutional File 2021/0214(COD). The Compromise Text has now been approved by both the European Parliament and Council. 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.

process and production method ('npr-PPM') standards offer further examples.[3] These include the requirements enshrined in the EU Regulation on deforestation-free commodities and products[4] and the low indirect land use change ('low ILUC') requirements provided for in the 2019 EU renewables framework.[5] 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 decarbonisation, providing an incentive for countries to join the club and take on specific sectoral greenhouse gas ('GHG') emission reduction commitments.[6] Further, the EU is also striving to exercise a degree of environmental 'leverage' throughout the negotiations of Free Trade Agreements with developed and developing country partners.[7]

Trade-driven environmental 'leverage' and transnational trade in environmental goods testify to the synergies between the trade and climate change law systems. Calls have recently intensified to reinforce the deliberative function of the WTO, with a view to supporting the achievement of climate change mitigation objectives via trade.[8] Nonetheless, new challenges lie ahead; these have arisen in the context of domestic decarbonisation 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 decarbonisation. This tension, as the article illustrates, is exemplified by the current race for critical raw materials and the increasing 'securitisation' of US and EU regulatory action at 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 then 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'),[9] the EU (revised)

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[3] As 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.

[4] By striving to tackle deforestation, the Regulation aims to preserve carbon sinks. See Council of the European Union, *Regulation of the European Parliament and of the Council on the Making Available on the Union Market as well as Export from the Union of Certain Commodities and Products Associated with Deforestation and Forest Degradation and Repealing Regulation (EU) No 995/2010 – Compromise Text*, Interinstitutional File 2021/0366(COD).

[5] 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; 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, Bioliquids and Biomass Fuels, OJ 2019 L 133/1.

[6] Negotiations are ongoing at transatlantic level 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).

[7] See European 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.

[8] See the recently circulated 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.

[9] The Inflation Reduction Act of 2022 (IRA), Public Law 117-169 (2022).

Batteries Regulation[10] and the proposal for an EU Net-Zero Act[11] 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.[12] Definitions, sub-categorisations and technical lists of this broad class of raw materials and minerals vary across jurisdictions.[13] 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 directly and indirectly regulated at US level under the IRA. At EU level, the European Commission's proposal for a Critical Raw Materials Act ('CRM Act') provides a framework for the governance of CRM supply.[14]

CRMs are characterised 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.[15] 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.[16]

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[10] Council of the European Union, *Proposal for a Regulation of the European Parliament and of the Council Concerning Batteries and Waste Batteries, Repealing Directive 2006/66/EC and Amending Regulation (EU) No 2019/1020 – Provisional Agreement Resulting from Interinstitutional Negotiations*, Interinstitutional File 2020/0353(COD), 5469/2023.

[11] European Commission, *Proposal for a Regulation of the European Parliament and the Council on Establishing a Framework of Measures for Strengthening Europe's Net-Zero Technology Products Manufacturing Ecosystem (Net-Zero Industry Act)*, 2023/0081(COD).

[12] For 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, electrolysers, fuel cells, heat pumps, and batteries for energy storage.

[13] US 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'. For an analysis, see sections 3 and 4 below. Since 2008, the EU has instead focused on the broader category of 'critical raw materials'. The recently proposed EU Critical Raw Materials Act draws a further distinction between 'critical' and 'strategic raw materials': see Annex I and II in particular.

[14] European Commission, *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 and Amending Regulations (EU) 168/2013, (EU) 2018/858, 2018/1724 and (EU) 2019/120*, COM(2023) 160 Final.

[15] Impact Assessment, *supra* note 12, p. 12.

[16] For 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

These elements would be sufficient to frame CRM supply as a question of *lato sensu* (i.e. economic) national security.[17] 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.[18] The processing stage is even more concentrated. The People's Republic of China controls 99% of the global refining capacity for rare earths, 56% for lithium, 60% for cobalt, and 58% for manganese,[19] and single country-concentration combines with considerable vertical (company) concentration and integration in global value chains.[20] 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 the People's Republic of China amount to national security risks.[21] In the US, this specificity of CRM value chains is assessed through the lens of adversarial approaches against 'foreign entities of concern'.[22] In the EU, post-Ukraine war anxieties surrounding the potential weaponisation of trade dependencies by 'unlike-minded' countries or 'systemic rivals' have strengthened calls for de-risking.[23]

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 domestic level to shed light on the tensions between national security and environmental protection and decarbonisation goals. First, the article demonstrates that the problematic linkage between national security and decarbonisation is expanding the grey area between 'environmental' and 'non-environmental' policy goals considerably. Analysing climate change challenges through the prism of trade 'securitisation' institutionalises the grey area between decarbonisation, reshoring, industrial policy, and economic competitiveness; these different and often conflicting policy goals are 'absorbed' by the catch-all concept of national security. The increasing 'securitisation' of the trade and climate change 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'.

Report, *Indonesia – Measures Relating to Raw Materials (Indonesia–Raw Materials)*, WT/DS592/R, under appeal as of 8 December 2022.

[17] See section 2 below for an in-depth analysis.

[18] Impact Assessment, *supra* note 12.

[19] Ibid.

[20] Ibid., p. 146. The state-owned enterprise China Rare Earth Group Co. controls 40% of the People's Republic 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.

[21] Throughout 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, the People's Republic of China is applying a new set of export control measures to rare earths: see Impact Assessment, *supra* note 12, 146. Media reports suggest that it is contemplating further export restrictions on rare earth elements, in response to US export restrictions on semiconductors.

[22] Under 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)).

[23] See in particular the explicit references in European Commission (2023), *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.

Second, and most importantly, the article demonstrates that a national security-centred vision of the trade and climate change 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 decarbonisation. This is characterised by the pursuit of *strategic dominance in key sectors of the net-zero economy*, increasing attempts to *restructure 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 jeopardises recourse to environmental conditionality and environmental 'leverage' and can undermine decarbonisation 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 nexus. Unlike national security-centred models, such an approach would be characterised by an *overarching policy vision* to advance decarbonisation 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 transnational level, and *solid agreement on recourse to 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 expansion of national security discourses and of the increasing 'securitisation' of the trade and climate change nexus. The third section examines relevant provisions in the US IRA and the EU Batteries Regulation, CRM Act and Net-Zero 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 'securitisation' of the EU approach, and highlights relevant environmental pitfalls. This section demonstrates that a narrow focus on strategic dominance in key sectors and reshoring produces disruptive effects. Not only does it shift the focus away from environmental conditionality and environmental 'leverage'; it can also slow down or jeopardise national and transnational decarbonisation efforts.

The fourth section conducts the same form of examination by focusing on bilateral CRM partnerships and prospective plurilateral 'CRM club' arrangements. This part of the analysis explores the gap between opportunistic friendshoring versus inclusive and value-driven partnerships, before emphasising 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 jeopardise the exercise of environmental 'leverage' and produce detrimental effects in environmental protection and decarbonisation terms. The fifth section ties up the strands of the enquiry and concludes.

2. The National Security 'Black Box' and the Environmental Pitfalls of Increasing 'Securitisation'

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.[24] 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 Article[25] and has critically assessed the dispute settlement organs' interpretation of the Article's subparagraphs and Chapeau.[26] The Panel Reports in the recent *US – Steel and Aluminium Products*[27] and *US – Origin Marking*[28] disputes have confirmed and reinforced the dispute settlement organs' traditional interpretative approach, which is characterised by a narrow framing of the exception in terms of national security *stricto sensu*.[29] The extent to which this reading can do justice to national regulatory responses in times of strategic geopolitical, environmental and socio-economic challenges has been called into question.[30] Nonetheless, there is some merit in the dispute settlement organs' attempts to tame the increasing 'securitisation' 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. 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'.[31] Such a trend is nowhere near being reversed.

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[24] M. Bunge (1963), 'A General Black Box Theory' *Philosophy of Science* 30(4), 346-358.

[25] See 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.

[26] See e.g. 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.

[27] Panel 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.

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

[29] Article 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.

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

[31] W. 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, p. 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. References to 'economic security' are included in different parts of the

On one side of the national security spectrum, we can locate 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.[32] Further along the spectrum, we find a set of reactive measures that more unequivocally reflect economic securitisation strategies. The recently adopted EU Regulations on foreign investment screening[33] and foreign subsidies,[34] for instance, reveal heightened concerns regarding the control of strategic assets and the desire to avoid interferences and distortions of competition 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.[35] 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 years 2008 to 2021, reflected a mere desire to ensure stability and predictability of CRM supply via *ad hoc* diversification and risk management strategies.[36]

Second, regulatory interventions may strive to *exclude reliance on specific jurisdictions* and indirectly *weaken their geopolitical and economic dominance* in strategic sectors. The express exclusion of EV tax credits under the IRA for any vehicles whose batteries contain components 'manufactured or assembled by a foreign entity of concern'[37] or 'critical minerals extracted, processed or recycled by a foreign entity of concern' is the clearest possible example.[38] The EU is on course to follow a softer yet partially aligned de-risking approach. This is reflected in non-binding targets included in the CRM Act and Net-Zero Act. The former Act provides 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.[39] The public procurement rules enshrined in the latter Act stipulate that any tender's contribution to

Panel Reports in DS544, DS552, DS556 and D564. 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.

[32] In 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 03 March 2023). As reported by the media, the People's Republic of China is currently retaliating via similar export restrictions on advanced solar photovoltaic technologies: see <https://asiatimes.com/2023/02/china-bans-export-of-core-solar-panel-technologies/> (accessed April 2023).

[33] Regulation (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.

[34] Regulation (EU) 2022/2560 of the European Parliament and of the Council of 14 December 2022 on Foreign Subsidies Distorting the Internal Market, OJ 2022 L 330.

[35] For use of this terminology, see Zhou et al., *supra* note 31.

[36] See 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.

[37] See section 13401(e)(7) of the IRA, modifying the section 30D EV tax credits by adding new specifications on 'Excluded Entities'. Under point (B), this exception applies after 31 December 2023.

[38] Ibid. Under point (A), this exception applies after 31 December 2024.

[39] CRM Act Proposal, *supra* note 14, Article 1(2)(b).

EU resilience shall be assessed by considering the extent to which net-zero technologies originate from a single source of supply, with a view to ensuring that no more than 65% of EU supply for any specific net-zero technology originates from any single source of supply.[40] Both provisions indirectly aim to address real or perceived risks associated with overreliance on imports from the People's Republic of China. These direct or indirect exclusion techniques are often complemented by recourse to *opportunistic forms of friendshoring*.[41] The IRA, again, provides one clear example. EVs may only be eligible for 50% (USD 3,750) of the relevant 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'.[42]

Third, regulatory measures may outrightly prioritise *reshoring* and *domestic manufacturing*. The IRA precondition that EVs shall undergo final assembly in North America in order to qualify for tax credits offers one example.[43] The same applies to the requirement that EVs may only be eligible for 50% (USD 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.[44] The EU has recently adopted a softer yet increasingly inward looking approach. As explained in the next section, the CRM Act and the Net-Zero Act respectively provide aspirational targets for the extraction, recycling and processing of CRMs at EU level and for EU manufacturing of strategic net-zero technologies.[45]

This brings us to the other extreme of the national security spectrum. At this end strategic geopolitical and economic interests, market competitiveness, reshoring and 'worker-centred' trade and industrial policy[46] are conflated and absorbed by national security *lato sensu*. Over the last years, different academic reconstructions of national security discourses have emphasised the binary logics of 'state' and 'markets'[47] and the attempt to address the distributional implications of aggregate wealth maximising trade liberalisation via national

[40] Net-Zero Act Proposal, *supra* note 11, Article 19(2)(d). See section 3 below for an overview of the applicable exceptions.
[41] The 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 <https://www.atlanticcouncil.org/news/transcripts/transcript-us-treasury-secretary-janet-yellen-on-the-next-steps-for-russia-sanctions-and-friend-shoring-supply-chains/> (accessed April 2023).
[42] See section 13401(e)(1)(A) and (B) of the IRA, modifying the section 30D EV tax credits by adding new provisions on 'Critical Minerals Requirements'.
[43] See section 13401(b) of the IRA, modifying the section 30D EV tax credits by adding new provisions on 'Final Assembly'.
[44] See section 13401(e)(2)(A) and (B) of the IRA, modifying the section 30D EV tax credits by adding new provisions on 'Battery Components'.
[45] See section 3 below for a more detailed analysis of the targets.
[46] US Trade Representative, 'US Trade Representative Katherine Tai Outlines Biden-Harris Administration's Historic "Worker-Centred" Trade Policy' (10 June 2021), available at <https://ustr.gov/> (accessed April 2023); and US Trade Representative, 'Remarks by Ambassador Katherine Tai at the Roosevelt Institute's Progressive Industrial Policy Conference' (11 October 2022), available at <https://ustr.gov/> (accessed April 2023). For an overview 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* (IMF).
[47] Cohen, *supra* note 31.

(economic) security-centred policy responses.[48] 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 interface. This has resulted in an increasing 'securitisation' of the trade and climate change 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 Administration[49] and remarks of US officers.[50] 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, national security and (national and transnational) decarbonisation goals are intertwined: the former is portrayed as a precondition to achieve the latter.[51] *Strategic dominance in key sectors* advances the net-zero transition at national level and diminishes the geopolitical and economic status of 'systemic rivals', allegedly triggering a virtuous circle of transnational decarbonisation and supporting the entrenchment of less carbon-intensive production methods.

The pursuit of national economic primacy *with a view to* decarbonising and tackling climate change in turn translates into an increasing focus on *reshoring* and direct attempts at *restructuring supply chains*.[52] This strikes a stark contrast with minimalist risk management approaches, which instead 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*. The assumption that domestic (green) manufacturing must be promoted *because* it is *'greener'* than third country (green) manufacturing feeds into this discourse; nonetheless, as detailed in the next sections, the 'green' credentials of domestic manufacturing are usually taken for granted. National security-centred models are not characterised by a close focus on environmental conditionality; nor do they involve recourse to environmental 'leverage' over third countries.[53] Reshoring strategies, as briefly mentioned above in this section, also open up opportunities to address socio-economic and distributional issues via *industrial policy*. 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. Friendshoring strategies ensure secure and reliable supply and

[48] N. Lamp, 'How Should We Think About the Winners and Losers of Globalization? Three Narratives and Their Implications for the Redesign of International Economic Agreements (2019) *European Journal of International Law* 30(4), 1359-1397.
[49] See 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).
[50] See White House, *Remarks by National Security Advisor Jake Sullivan on Renewing American Economic Leadership at the Brookings Institution* (27 April 2023); and in particular 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 April 2023).
[51] *Remarks by National Security Advisor Jake Sullivan* (13 October 2022), pp. 3 and 4.
[52] Ibid., p. 4.
[53] See section 3 below.

have 'systemic rivals' excluded by proxy;[54] they reflect the pursuit of specific economic and geopolitical, 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 separate ways when making decisions about *regulatory means*. Levels of coordination of climate change mitigation and decarbonisation policies are low, and *loose agreement* on the choice of relevant regulatory instruments is regarded as sufficient.[55] 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 linkage. Despite a continued commitment to rule-based open trade and a more ambiguous position, however, recent EU regulatory proposals signal that the Union is currently leaning in a similar direction and embracing partial 'securitisation'. 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. Decarbonisation, reshoring and economic competitiveness 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 'securitisation' of the trade and climate change linkage is associated with two major shortcomings. In times of climate crisis, the environmental price of this trend has become too high.

First, as anticipated in the introductory section, the 'securitisation' of the trade and climate change 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 economic (level playing field or reshoring), social (redistribution) and environmental (exercise of 'leverage' and national or transnational decarbonisation) policy goals. From a climate change mitigation perspective, 'securitisation' thus overshadows the environmental dimension and obscures the specific environmental effects of multi-purpose regulatory interventions.

Second, and more worryingly, 'securitisation' is disrupting the trade and climate change nexus. This challenge is *structural* and *systemic* in nature. As the in-depth analysis of the next sections demonstrates, the 'securitisation' of trade and climate change discourses is producing several detrimental environmental effects. First, national security-centred models are difficult to reconcile with a close focus on *environmental conditionality* and jeopardise the exercise of *environmental 'leverage'* over third countries. Second, they can slow down *national decarbonisation* efforts and produce other *national environmental externalities*. Third, they can also undermine *transnational decarbonisation*.

National security-centred discourses on decarbonisation translate into an inward looking, adversarial and short-term approach to the governance of the trade and climate change nexus. This model strikes a stark contrast with the outward looking, constructive and long-term

[54] Ibid., pp. 5 and 6.
[55] Ibid., p. 6.

approach that is urgently needed to tackle the climate crisis. Embracing a constructive model postulates the development of a *strategic vision for decarbonisation*, as opposed to a focus on strategic dominance in key sectors of the net-zero economy. Under this model, national security-centred attempts at reshoring are replaced with a *minimalist focus* on the diversification and resilience of supply chains. This combines with recourse to *environmental conditionality* and 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 least developed countries to move up the value chain, *while* maximising and *in order to* maximise 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 maximise the environmental integrity of the trade and climate change linkage and provide an effective pathway towards national and transnational decarbonisation. The development of an outward looking, constructive and long-term vision for inclusive transnational decarbonisation 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 disapplied and ultimately cease to exist. The fifth and final section reverts to this point.

3. The Perils of 'Securitisation' (I): Strategic Dominance in Key Sectors and Reshoring

3.1 National Security-Centred Approaches: The IRA

Signed in law by President Biden in August 2022, the IRA provides USD 369 billions of decarbonisation-related funding and incentives across different sectors. These include production and investment tax credits for renewable electricity production,[56] investment tax credits for renewable energy projects,[57] production tax credits for the manufacturing of specific qualifying solar and wind components and for the processing and refining of critical minerals,[58] and production tax credits for projects that reequip, expand or establish (i) energy production facilities; (ii) manufacturing facilities that produce or recycle components and goods in the renewables and EV sectors; and (iii) industrial facilities that process, refine or recycle critical minerals.[59] The Act also provides a mix of consumption subsidies and incentives, including the afore mentioned tax credits for the purchase (or leasing) of EVs.[60]

[56] See sections 13101 and 13701 of the IRA (for production tax credits) and section 13702 (for investment tax credits).
[57] See section 13102.
[58] See section 13502.
[59] See section 13501.
[60] See sections 13401 to 13404.

The Act pursues the laudable intent of accelerating US decarbonisation. In a post-*West Virginia*[61] landscape and in the face of specific constraints posed by US politics, recourse to subsidies was both predictable and warranted. Nonetheless, the regulatory design of the Act reflects a narrow national security-centred focus on strategic dominance, reshoring, and opportunistic friendshoring. From an environmental protection and decarbonisation perspective, this is associated with several problems.

First of all, US legislators have refrained from having recourse to environmental conditionality under the IRA. The only exceptions are a very 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.[62] Many provisions in the Act 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.[63] Further, several provisions include (discriminatory and prohibited) local content requirements or a local content tax credit 'bonus'.[64] These forms of conditionality reflect a close focus on reshoring and on the Biden-Harris 'worker-centred' policy agenda. Environmental conditionality, by contrast, is not part of the picture. National (economic) security imperatives *discourage* recourse to *environmental conditions* which could slow down the domestic (green) transition and make domestic manufacturing less competitive. All focus is on promoting domestic (green) production; the extent to which domestic manufacturing is 'green' or the question whether it could be 'greener' are ultimately perceived as irrelevant. Nor does the IRA, by any means, involve the exercise of *environmental 'leverage'*. Reshoring is obviously very difficult to reconcile with 'leverage' over third countries.

This strikes a stark contrast with the EU pre-IRA approach, as reflected in the Compromise Text of the EU Batteries Regulation. As briefly mentioned in the second section, the IRA tax credits for the purchase of EVs are tied to a number of specific 'origin-related' requirements. Reshoring and opportunistic friendshoring are front and centre stage, as is the exclusion of 'foreign entities of concern'; environmental conditionality, by contrast, is nowhere to be found. The EU Batteries Regulation embraces a diametrically opposite approach. This involves recourse to stringent environmental conditions and maximises environmental 'leverage'.

The opening Recital of the Regulation emphasises that Union's policies shall ensure that products marketed and sold 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*. The Regulation applies to EU produced as well as imported batteries[65]

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[61] *West Virginia* v *EPA*, 142 S. Ct. 2587 (2022).
[62] See sections 13203, 13204, and 13704.
[63] See sections 13101 to 1305, 13204, 13303, 13501, 13701, 13702 and 13704.
[64] Section 45 tax credits for electricity produced from renewable sources, modified under section 13101 IRA, include a *'bonus' credit* for projects that meet *domestic content requirements*; the same applies to section 48 tax credits (section 13102 IRA), section 45Y tax credits (section 13701 IRA), and section 48D tax credits (section 13801 IRA). Section 30D tax credits (section 13401 IRA) on EVs include *local assembly*, *local content* and *'origin-related' requirements*. Section 40B tax credits (section 13203 IRA), section 45V tax credits (section 13204 IRA), section 45X tax credits (section 13502 IRA) and section 45Z tax credits (section 13704 IRA) include *domestic production requirements*. These are all prohibited import substitution subsidies, as per Article 3.1(b) of the Agreement on Subsidies and Countervailing Measures ('SCMA').
[65] Provisional Agreement on the Batteries Regulation Proposal, *supra* note 10, Article 2 (Definitions).

and sets out detailed rules regarding the lifecycle carbon footprint of batteries, specific recycled content targets, sustainability parameters, and environmental performance indicators.[66] 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 specific carbon footprint performance classes, and by the adoption of *mandatory maximum lifecycle carbon footprint* (npr-PPM) *thresholds*. Article 8 lays out similar obligations in respect of the recycled content of minerals in batteries. In this case, the *mandatory percentage targets for recycled content* and the relevant timelines are set out in the Regulation; these npr-PPM standards are complemented by more detailed provisions and an overarching long-term strategy to promote the recovery and recycling of battery components.[67] Finally, Articles 45a to 45f and Annex X of the Regulation set in place a *mandatory due diligence system* for economic operators in the batteries sector; this covers the *value chain of the raw materials* listed in Annex X.[68] The Regulation's provisions on due diligence are the object of more detailed discussion in the fourth section of the article.

As this concise overview illustrates, environmental conditionality and environmental 'leverage' play a prominent role under the EU Batteries Regulation; this is highly beneficial from an environmental protection perspective. Such approach, on the other hand, is irreconcilable with the reshoring-centred regulatory design of the IRA.

This brings us to the second environmental shortcoming of a national security-centred focus on strategic dominance and reshoring. The central question in this respect is whether increasing reliance on industrial policy to promote net-zero sectors at the domestic level, in general, and recourse to production and investment subsidies, in particular, will facilitate or rather slow down decarbonisation at the transnational level. Unlike *consumption* subsidies or *innovation and R&D* subsidies, *production* and *investment* subsidies directly aim to promote import substitution, domestic manufacturing capacity and reshoring.[69] Throughout the years commentators have cast doubts on the economic efficiency of this category of subsidies, highlighting how they are unlikely to have welfare (and wealth)-enhancing effects in aggregate terms.[70]

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[66] Further, it includes rules on the remanufacturing of waste batteries, the restoration of battery capacity, and the processes for preparing for re-use or repurposing waste batteries.

[67] See Recital (26) and references to prospective revisions of the Eco-Design Regulation (as regards the removability and disassembling of components), Recital (73) and Article 48 (on waste management via separate waste streams, the collection of batteries with electric and electronic equipment, and revisions to the regulatory framework for end-of-life vehicles), Recitals (76) and (77) and Article 47 (on new extended producer responsibility provisions for batteries), Recital (79) and Article 49 (on take-back and collection networks), and Recital (87) and Article 58 (on revising rules for the shipping of waste).

[68] I.e. cobalt, natural graphite, lithium, nickel, and chemical compounds based on these raw materials which are necessary for the manufacturing of batteries.

[69] All IRA production and investment tax credits, except the ones that are tied to discriminatory local content or local production requirements, belong to the category of actionable subsidies. Article 5 SCMA, as is well known, provides that no Member should cause through the use of subsidies (a) injury to the domestic industry of another Member; (b) nullification or impairment of benefits accruing to other Members under the GATT; or (c) serious prejudice to the interests of another Member, as per Article 6 SCMA. In circumstances where relevant adverse effects take the form of (a) injury to the domestic industry of another Member, imported products that have benefited from actionable subsidies may be the object of countervailing duties under the procedures laid out in Part V SCMA.

[70] S. Charnovitz (2014), 'Green Subsidies and the WTO', *EUI Working Paper 2014/93*.

Recent data points to the considerable economic costs associated with promoting (US or EU) domestic manufacturing and reshoring supply chains in the solar photovoltaic ('PV') sector, where China is an undisputed leader. As highlighted by analysts, the rise of Chinese solar PV technology and falling prices in this sector enabled record-breaking solar installations.[71] In times of climate crisis, the costs of reshoring and promoting domestic industry via potentially economically inefficient subsidisation are not only borne by consumers and by tax-payers;[72] the environment and the climate system may also pay the price. Higher prices and lower offer can reduce demand for environmental goods. This is highly problematic. These concerns have recently prompted the European Commission to backtrack from its original plan to include 'Buy European' clauses in the Net-Zero Act; a 'Buy European' procurement system was regarded as overly costly and thus *economically* as well as *environmentally inefficient*. In a similar vein, the rules for net-zero technologies public procurement under the Net-Zero Act proposal include an exception from the afore mentioned 'national security-inspired' resilience (diversification of supply) criterion where its application 'would oblige the authority or entity to acquire equipment having a disproportionate cost […]'.[73]

Further, attempts at reshoring via recourse to production subsidies create trade friction and can trigger an economically and environmentally inefficient subsidy race. These concerns find clear expression in the submission of comments on the IRA by the EU Delegation to the United States. As the EU Delegation claimed in its representations, 'having access to subsidised low-carbon technologies and sources of clean energy, key parts of the United States economy will receive a market-distorting boost, tilting the global level playing field and turning a common global objective – fighting climate change – into a zero-sum game. This will lead to an *increased distortion of global markets* for industries delivering green hydrogen, solar, wind, batteries and EV solutions, and *less efficient outcomes for the reduction of global greenhouse gas emissions*' (emphasis added).[74]

This scenario has materialised at the transatlantic level; in March 2023, the European Commission further loosened EU state aid rules by adopting a new Temporary Crisis and

[71] *Increased scale* of net-zero technologies production, rather than *substitution*, are key to the green transition. See e.g. 'Waging War on Trade Will Be Costly' at <https://www.ft.com/content/92d95586-f1eb-4148-ae32-1864f7deeb43> and 'Solar Power: Europe Attempts to Get Out of China's Shadow' at <https://www.ft.com/content/009d8434-9c12-48fd-8c93-d06d0b86779e> (accessed April 2023).

[72] For critical analyses of the effects of Section 232 tariffs, 'Buy American' schemes and industrial policy on US consumers and tax-payers, see e.g. G.C. Hufbauer and H. Jung, 'The High Tax-Payer Cost of "Saving" US Jobs Through "Made in America"' (PIIE, 2020); S. Lester, 'Countering the "Unfettered Liberalisation" Narrative', *International Economic Law and Policy Blog*, December 2021; S. Lincicome and H. Zhu, 'Questioning Industrial Policy', *Cato Institute White Paper* (2021); J. Bacchus, 'Biden and Trade at Year One: The Reign of Polite Protectionism', *Cato Institute Policy Analysis no. 926/2022*; G.C. Hufbauer and M. Hogan, 'Biden Embraces "Buy American", Doubles Down on Trade Protection'(PIIE, 2023); and A. Posen, 'America's Zero-Sum Economics Doesn't Add Up', at <https://foreignpolicy.com/2023/03/24/economy-trade-united-states-china-industry-manufacturing-supply-chains-biden/> (accessed April 2023).

[73] See *supra* the analysis in section 2 and *supra* note 40. Under Article 19(4), a 10% difference in cost is regarded as disproportionate. As clarified in Recital (30), the resilience criterion of Article 19(2)(d) does not apply in respect of signatories to the WTO Agreement on Government Procurement. The People's Republic of China is not a signatory.

[74] Delegation of the EU to the US, *Submission of the EU on the IRA* (November 2022), p. 2, available at <https://www.regulations.gov/comment/IRS-2022-0020-0774> (accessed April 2023). The EU has called for *demand-side* interventions in form of *consumption* subsidies.

Transition Framework and revising the General Block Exemption Regulation.[75] The new rules have increased the notification thresholds for support for net-zero investments by Member States, simplified the conditions for the granting of aid, expanded the possibility of support for the deployment of renewables and for the decarbonisation of industrial processes, and introduced new measures to enable investment support for the manufacturing of products and components in the renewables sector or the production and recycling of CRMs. While sometimes misleadingly portrayed as aimed at promoting decarbonisation, the revised rules simply attempt to *level* the transatlantic *economic playing field*.[76] This is further confirmed by the inclusion of *ad hoc* anti-relocation measures. Under the revised rules, subject to several cumulative conditions, Member States may provide higher support to specific individual companies in case of IRA-associated relocation risks.[77]

As predicted by the EU Delegation to the United States, the transatlantic subsidies race has thus resulted in an 'increased distortion of global markets for the net-zero industry' and is very likely to produce 'less efficient outcomes for the reduction of global greenhouse gas emissions'.[78] This element lends further support to the argument that a narrow national security-centred focus on reshoring is both economically inefficient and environmentally detrimental in the long-term.

The final relevant aspect relates to the pervasive effects of national security-centred attempts to *surgically restructure supply chains* via local content or local assembly requirements, friendshoring, and the exclusion of 'systemic rivals'. These *amplify* the economic and environmental inefficiencies highlighted above and thus produce highly disruptive effects on national and transnational attempts at decarbonisation. While several IRA tax credits include discriminatory domestic content or domestic production requirements,[79] the EV tax credit provisions exemplify the economic and environmental pitfalls of 'securitisation' to the clearest possible extent. The combination of local assembly requirements, local content (battery components and critical minerals recycling) requirements, and further 'origin-related' requirements for the extraction or processing of critical minerals aims to promote a highly complex and very costly restructuring of supply chains. This is bound to produce economically

[75] For an overview, see European Commission, *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, A Green Deal Industrial Plan for the Net-Zero Age*, COM(2023) 62 Final; and European 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.

[76] Carbon leakage occurs when 'mitigation measures implemented in one country/sector lead to increased [GHG] emissions in other countries/sectors': see IPCC, *Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (IPCC, 2022), p. 124. In carbon leakage terms, the relocation of EU firms to the US is irrelevant as long as their production methods are just as 'green' as or 'greener' than they would have been in the EU. Similarly, it is irrelevant whether US products are sold at a more competitive price on the EU internal market as long as they are just as 'green' as or 'greener' than EU products.

[77] This may take the form of a 'matching aid' (the amount of support that the beneficiary could receive for an equivalent investment in the alternative location) or a 'funding gap' aid (the amount needed to incentivise the company to locate the investment in the EEA).

[78] A subsidies race may of course result in further problematic implications, including the ones associated with divergencies in the levels of fiscal/subsidisation capacity across different countries. See e.g. European Commission, *supra* note 75, p. 10; and Communication from the EU, *supra* note 8, section 2.1.

[79] *Supra* note 64.

and environmentally inefficient results, increasing the economic costs of US EVs and potentially affecting supply and quality levels.[80]

In practical terms, the combination of these requirements has already produced detrimental effects. As of April 2023, there are only 10 EVs that qualify for the full amount of the tax credit.[81] Not only does this limit consumer choice. It also slows down national decarbonisation efforts, as consumers may elect not to purchase an EV unless they can benefit from the full tax credit.

Against this backdrop, it is unsurprising to see how the March 2023 Guidance of the US Treasury Department Internal Revenue Service has loosened the rules in so far as allowed by the statutory text. The exclusion of previously owned or leased vehicles[82] 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.[83] By contrast, several economically and environmentally relevant regulatory loopholes have gone completely unnoticed in the literature. These include the Internal Revenue Service's categorisation of 'constituent materials' of EV batteries as *critical minerals*, rather than *battery components*;[84] the definition of 'recovery of critical minerals from waste' as a form of *extraction*, rather than a form of *recycling*;[85] and the application of a very lenient '50% of value added' test to calculate compliance with the percentages applied to the local content and 'origin-related' requirements for battery components and critical minerals.[86] These adjustments clearly aim to reduce the economic effects associated with the section 30D requirements, broadening the number of EVs that are eligible for the tax credit.

As demonstrated by the examination of relevant IRA provisions, 'securitisation' disrupts the trade and climate change nexus. The IRA 'domino effect' and the EU regulatory shift in the context of the CRM and Net-Zero Acts is the final point to address in this section. An analysis of the partial 'securitisation' of EU policy confirms that a national security-centred

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[80] 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', at <https://www.ft.com/content/b2f66486-80e5-425e-86e7-fe432da8aeec> (accessed April 2023).

[81] 'Only 10 Electric Vehicles Qualify for Full $7,500 US Tax Credit', <https://www.bloomberg.com/news/articles/2023-04-17/gm-tesla-and-ford-evs-will-be-the-only-cars-eligible-for-7-500-us-tax-credit> (accessed April 2023).

[82] See 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).

[83] Department of the Treasury, Internal Revenue Service, 26 CFR Part 1 [REG-120080-22], *Section 30D New Clean Vehicle Credits* (March 2023), pp. 24 and 25. A 'free trade agreement' is defined as an agreement 'that (A) reduces or eliminates trade barriers on a preferential basis, (B) commits the parties to refrain from imposing new trade barriers, (C) establishes high-standard disciplines in key areas affecting trade (such as core labour and environmental protections), and/or (D) 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, 'Trade Agreement Transparency for the New Year', *International Economic Law and Policy Blog*, December 2022; and K. Claussen, 'What is a Free Trade Agreement, Anyway?', *International Economic Law and Policy Blog*, December 2022.

[84] Ibid., pp. 22, 30, 53, 54 and 56. According to the Guidance 'constituent materials' may include, but are not limited to, powders of cathode active materials, powders of anode active materials, foils, metals for solid electrodes, binders, electrolyte salts, and electrolyte additives. The more lenient 'origin-related' requirements for critical minerals – rather than the local content requirements for battery components – will apply.

[85] Ibid., p. 55. The rationale for this categorisation is precisely the same.

[86] Ibid., pp. 20, 21 and 57.

approach produces detrimental environmental effects, undermining national and transnational decarbonisation.

3.2 Partial 'Securitisation': The EU Policy Response

The post-IRA shift towards 'securitisation' in EU policy discourses, signalled by recent declarations of the President of the European Commission,[87] is apparent from the Commission Communication on CRMs and the Commission's proposal for a CRM Act. The Communication lays particular emphasis on the development of a *CRM value chain in the EU*; symmetrically, it de-emphasises questions surrounding 'boosting the diversification of supply and partnering in a mutually beneficial manner in support of global production' as well as the environmental question of 'fostering sustainable sourcing and promoting circularity'.[88] The same order of priorities is reflected in Recital (3) and Article 1 of the CRM Act. This marks a departure from the pre-IRA minimalist risk management approach to CRMs.[89]

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 and stress testing obligations for companies, and an innovative joint purchasing system.[90] As implicitly acknowledged in the Preamble to the Act, these measures are sufficient to ensure secure supply of CRMs and strategic raw materials ('SRMs'). Nonetheless, the Regulation goes further than promoting stockpiling or discouraging over-dependencies[91] in so far as it introduces targets for SRM *Union* extraction capacity, *Union* recycling capacity, and *Union* processing capacity.[92]

An analysis of the targets for *EU reshoring* casts further light on the environmental implications of an inward looking perspective. First of all, the 10% EU extraction target and the de-prioritisation of recycling and circularity pit decarbonisation via the promotion of net-zero technologies and different environmental protection interests against each other. The Act provides a set of criteria to identify 'strategic projects', which include extraction projects. These 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]

Second, intuitively, partial reshoring and EU level targets limit the extent to which the EU may exercise environmental 'leverage'. Third, and even more problematically, the CRM Act has marked a departure from the Batteries Regulation approach and its close focus on

[87] European Commission (2023), *Special Address by the President at the World Economic Forum*, Davos, 17 January 2023; European Commission (2023), *Joint Statement by President Biden and President von der Leyen*, Washington DC, 10 March 2023; European Commission, *supra* note 23.
[88] European 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, p. 4.
[89] *Supra* note 36.
[90] CRM Act Proposal, Articles 19 to 24.
[91] Ibid., Article 1(2)(b).
[92] Ibid., Article 1(2)(a)(i), (ii) and (iii).
[93] Articles 5, 7, and 8 to 12. The benefits include their legal qualification as projects of 'public interest' or 'serving public health and safety', and the presumption that they should be legally considered as having an 'overriding public interest'.

environmental conditionality. The CRM Act Impact Assessment expressly acknowledges that the carbon footprint 'of CRM extraction and processing may cancel out, to an extent, the environmental benefits of their use in green technologies […]'; it also remarks that the market, left to its own devices, is unlikely to 'ensure that the impacts associated with the CRM value chain are properly identified and internalised'.[94] Nonetheless, the CRM Act takes a highly cautious approach to the exercise of environmental conditionality via npr-PPMs.

Article 30 stipulates that the Commission *may* adopt carbon footprint calculation and verification rules and establish carbon footprint performance classes for CRMs *if* it concludes that a carbon footprint declaration would be a necessary and proportionate regulatory response.[95] The Commission shall appraise *necessity* against a number of criteria;[96] further, it shall assess whether the measure would contribute to achieving the Union's climate and environmental objectives *without disproportionately impacting the ability of Union industry to source CRMs.*[97] Further, the Commission has backtracked from the Batteries Regulation approach by failing to include a long-term plan for the adoption of mandatory maximum lifecycle carbon footprint thresholds for domestic and imported CRMs.[98] 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.[99] This reflects a narrow national security-centred perspective. Not only does partial reshoring limit the exercise of 'leverage'; the extent to which such 'leverage' may be exercised is being further constrained by the failure to have recourse to environmental conditionality. This produces far-reaching detrimental environmental effects.

In a similar vein, the CRM Act does not set in place an *ad hoc* mandatory due diligence system or provide any obligations for market actors operating in the CRM sector. Despite the prospective horizontal applicability of the EU Corporate Sustainability Due Diligence Directive, the absence of specific applicable CRM due diligence obligations under the CRM Act strikes a stark contrast with the system enshrined in the Batteries Regulation and undermines environmental protection in third countries. This aspect is analysed in greater detail in the next section. Further, this piecemeal approach results in the application of different sets of rules to firms operating in the batteries sector, firms operating in different sectors where CRMs are employed, and firms involved in 'strategic projects' under the CRM Act.[100] Yet again, 'securitisation' and concerns surrounding access to CRMs have played a key role in excluding corporate sustainability due diligence from the scope of the CRM Act.[101]

Similar considerations apply in respect of the EU recycling and processing targets. The 15% EU recycling target is rather low. Promoting circularity, however, is a longer-term and more costly strategy than reliance on CRM extraction; this is difficult to reconcile with the desire to accelerate EU reshoring. The CRM Act includes provisions on recovery from

[94] Impact Assessment, *supra* note 12, p. 23.
[95] See also Annex V to the CRM Act Proposal.
[96] See Article 30(2) and (3)(a), (b) and (c).
[97] Article 30(4)(c).
[98] The Proposal only includes a couple of vague references in Recital (62) and Article 46.
[99] Impact Assessment, *supra* note 12, p. 58; and CRM Act Proposal, Article 30(4)(c).
[100] CRM Act Proposal, Article 5 and Annex III.
[101] Impact Assessment, *supra* note 12, p. 141.

extractive waste[102] and potential (prospective) recourse to minimum recycled content requirements for permanent magnets.[103] These circumscribed measures, however, fall short of providing an overarching EU-wide framework to promote circularity in the CRM sector. The proposal pays insufficient attention to the complexity and scale of the required interventions; these should have included a degree of EU-wide harmonisation of waste management rules, binding EU targets for material recovery and recycling for waste operators in CRM streams, and a close focus on the question of waste exports. Yet again, a focus on national security has gone to the detriment of environmental sustainability.

As already seen with the EU extraction target, partial reshoring limits the extent to which the EU may exercise environmental 'leverage' and promote CRM recycling in third countries. This effect of the EU recycling target is exacerbated by the criteria for the identification of 'strategic projects' in third countries, which include additional requirements compared to 'strategic projects' in the EU.[104] The 40% target for Union processing capacity has further (environmental and non-environmental) implications, in so far as it prevents the development of CRM value chains in third countries. This aspect is discussed in greater detail in the next section.

The final relevant point again relates to the failure by the Commission to promote recourse to environmental conditionality in the context of the provisions on recycling. The Impact Assessment notes that recycled CRMs from the *EU* and *third countries* could provide 75% of EU CRM sourcing.[105] Nonetheless, and despite public support for this option,[106] the Commission has refrained from setting out any mandatory targets for recycled CRMs or SRMs. *Economic security* and *reliable* and *affordable supply* are front and centre stage; national and transnational decarbonisation pay the price.

The Commission's proposal for a Net-Zero Act has only reinforced the trend towards 'securitisation' and soft reshoring, shifting the EU discourse further along the line. The proposed Regulation includes an aspirational target for EU annual manufacturing of net-zero technologies[107] to meet 40% of the Union annual deployment needs.[108] The Act does not simply aim to manage supply chain risks; on the contrary, it includes an industrial policy and reshoring component.[109] Despite the Commission's failure to provide for additional funding streams and the absence of concrete regulatory interventions geared towards reshoring, the Act reflects a narrow security-centred approach. For this reason, it lends itself to the very same criticisms and objections raised in the previous sub-section in respect of the IRA.

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[102] Article 26.
[103] Article 28.
[104] See Article 5(1)(a) and Annex III, point 2.
[105] Impact Assessment, *supra* note 12, p. 121.
[106] Ibid., p. 91.
[107] According to the Annex to the proposal, these include (1) solar photovoltaic and solar thermal technologies; (2) onshore wind and offshore renewable technologies; (3) battery/storage technologies; (4) heat pumps and geothermal energy technologies; (5) electrolysers and fuel cells; (6)sustainable biogas/biomethane technologies; (7) carbon capture and storage technologies; and (8) grid technologies.
[108] Net-Zero Act Proposal, Recital (18) and Article 1.
[109] Net-Zero Act Proposal, pp. 2, 4 and 67, and Recital (17). Like the CRM Act, the Net-Zero Act introduces a new category of 'strategic projects' and streamlines and accelerates the relevant permit procedures: see Recital (50) and Article 10. Additional EU level funding is provided under the Act for innovation and R&D.

This concludes the analysis of the environmental pitfalls of strategic dominance and reshoring. As this section has demonstrated, national security-centred paradigms are very difficult to reconcile with recourse to environmental conditionality and undermine the exercise of environmental 'leverage'. By contrast, both elements are key to a constructive and outward looking approach to transnational decarbonisation. Further, reshoring and the promotion of domestic (green) production can slow down national and transnational decarbonisation. A minimalist focus on resilience and security of supply via *ad hoc* risk management strategies is thus far more beneficial in environmental protection terms.

4. The Perils of 'Securitisation' (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 decarbonisation. 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 is the extent to which US and EU approaches to CRM sourcing via *ad hoc* bilateral (FTA, strategic partnership or partnership) and plurilateral 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 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 high risks of environmental degradation, recourse to carbon-intensive processing and production methods, significant levels of water pollution, and large amounts of solid waste.[110] For this reason, the race for CRMs can produce new environmental externalities and pit decarbonisation goals and different environmental protection interests against each other. This brings us to the second relevant – environmental protection – question. *Promoting value addition at local level* by making specific concessions *maximises* the extent to which CRM purchasing countries may have recourse to *environmental conditionality* and exercise *environmental 'leverage'* over resource-rich countries. 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* at local level.

From this perspective, embracing an inclusive approach in the negotiation of Raw Materials Chapters in FTAs or CRM partnerships opens up new opportunities to promote the adoption of high(er) environmental protection standards in resource-rich countries. The

[110] Impact Assessment, *supra* note 12, p. 23.

beneficial effects of recourse to environmental conditionality and 'leverage' are further maximised in this specific context by the potential uptake of environmental standards at *national* (as opposed to producer) *level*; this helps tackle 'resource shuffling', whereby 'green' products that comply with stringent PPM standards are exported to 'environmentally virtuous' countries while 'non-green' products are destined to the domestic market or exported to countries with lenient environmental standards.

Opportunistic friendshoring under national security-centred paradigms reflects an extractive rationale and an adversarial, exclusive approach to partnership building; in the CRM context, it comes into play to address the limits in domestic CRM extraction or recycling capacity. As already seen in the second section, friendshoring strategies pursue a twofold aim: ensuring secure and affordable supply for domestic producers, and undermining the geopolitical and economic position of 'systemic rivals' by forging exclusive alliances with 'friends'. Inclusion, environmental conditionality and environmental 'leverage' are not part of the picture.

The US is currently negotiating a set of *ad hoc* CRM partnerships; the March 2023 Treasury Guidelines support the view that these will qualify as 'free trade agreements' for the purposes of the section 30D EV tax credits.[111] As confirmed by the text of the recent US – Japan partnership, the US approach is not particularly ambitious in environmental protection terms.[112] This conforms to a narrow national security-centred approach and perfectly exemplifies recourse to opportunistic friendshoring strategy. 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.[113] How these plurilateral club arrangements will coordinate with separate US and EU bilateral initiatives is unclear. The current US 'race' for CRMs and increasing focus on a transatlantic critical minerals agreement, however, have brought about a degree of 'securitisation' in EU discourses. Not only is this reflected in the CRM Act 40% target for the *processing* of CRMs *at EU level*, as discussed in the previous section.[114] It is also apparent from the text of the Communication. Security and affordability of supply, CRM exploration and market development have gained increased prominence in the context of 'CRM club' proposals; questions surrounding inclusion and sustainability, by contrast, have been de-emphasised.[115]

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[111] See the analysis of *Section 30D New Clean Vehicle Credits* (March 2023), *supra* note 83. As already seen EVs whose batteries contain critical minerals extracted or processed in these countries will thus qualify for 50% of the section 30D tax credits, as long as the (increasing) percentages applied to the critical minerals requirements are met.

[112] See below in this section. Agreement Between the Government of the United States of America and the Government of Japan on Strengthening Critical Minerals Supply Chains (28 March 2023), available at <https://ustr.gov/> (accessed April 2023). See below in this section for more details.

[113] European Commission, *supra* note 88, p. 9. The 'CRM club' was originally officially announced by President Biden and President von der Leyen in their Joint Statement of the 10th of March: see *supra* note 87.

[114] Despite being aspirational rather than mandatory in nature, this EU processing target is difficult to reconcile with the aim of promoting value addition in third countries.

[115] European Commission, *supra* note 88, p. 9.

In a similar vein, the prohibition of import and export monopolies, licensing requirements and dual or minimum price systems are front and centre stage in all recently negotiated Raw Materials Chapters in EU Association Agreements and FTAs.[116] This reveals a *close focus* on the *elimination of export controls or restrictions*, and a disregard for increasing calls for the development of local value chains in resource-rich countries.[117] The modernised 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;[118] the EU – Mexico Modernised Association Agreement, on the other hand, does not include any provisions in this respect. All Agreements include references to promoting cooperation on raw material standards[119] and on responsible business conduct in raw material value chains, including references to sustainability and value addition.[120] Nonetheless, these cooperation obligations are largely aspirational in nature.

By embracing partial 'securitisation' and by refraining from making specific concessions, the EU is ultimately losing out on its opportunities to maximise environmental 'leverage'. An analysis of the Memorandum of Understanding ('MOU') establishing the EU – Namibia Strategic Partnership lends further support to this view.[121]

The text of the MOU sends out mixed messages regarding the Partnership's priorities and their implementation. First, the MOU includes several aspirational statements regarding value addition and 'local beneficiation of minerals'.[122] These, however, are difficult to square with the CRM Act 40% EU processing target and with the overarching goal of EU Strategies Partnerships: achieving the 'integration of raw materials value chain between the partner country and the EU'.[123] Second, the MOU refers to the adoption and enforcement of strong

[116] See in particular Free Trade Agreement Between the European Union and New Zealand (not yet adopted), Chapter 13, Articles 13.4 and 13.5; Modernised EU – Chile Agreement (not yet adopted), Chapter 8, Articles 8.4 and 8.5; Modernised 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 prohibition on performance requirements (including domestic processing or domestic marketing requirements) in the Investment Chapters of the relevant Agreements.

[117] See for instance Namibian Ministry of Industrialisation and Trade, *Mineral Beneficiation Strategy* (February 2021). The Chilean administration is reportedly moving towards nationalising its lithium industry; see 'Chile's President Moves to Bring Lithium under State Control', at <https://www.ft.com/content/ebd48bbc-1390-4679-99fe-682975bbdba8> (accessed April 2023).

[118] EU – New Zealand, Article 13.8; EU – Chile, Article 8.8; EU – Australia, Article X.8.

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

[120] EU – 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.

[121] European Commission, *supra* note 88, p. 12. The EU has currently negotiated Strategic Partnerships with Canada, Ukraine, and Kazakhstan.

[122] Memorandum of Understanding on a Partnership on Sustainable Raw Materials Value Chains and Renewable Energy Between the European Union and the Republic of Namibia, available at <https://single-market-economy.ec.europa.eu/system/files/2022-11/MoU-Namibia-batteries-hydrogen.pdf> (accessed April 2023), pp. 2, 3 and 4.

[123] Impact Assessment, *supra* note 12, p. 30. See also Memorandum of Understanding, p. 4, referring to the manufacturing of 'semi-finished and consumer-end products both [in Namibia] and abroad'.

environmental (and social) standards and to the application of corporate sustainability principles by 'EU and *Namibian* companies, *Namibia* and EU Member States' (emphasis added).[124] Nonetheless, the MOU does *not* include any concrete EU commitments in terms of funding, capacity-building, or technology transfer. As expressly stipulated, the MOU does neither establish a legally binding framework nor create rights or obligations under international or domestic law: nothing in the Partnership, in particular, 'shall represent a *commitment of financing* on the part of either side' (emphasis added).[125] This ambiguity leaves several questions unanswered. Partial 'securitisation' and the absence of any specific EU concessions or commitments could easily undermine the exercise of environmental 'leverage', the uptake of higher environmental standards by Namibia and Namibian companies, and domestic enforcement of these standards.

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 protection, and continue to improve these levels of protection.[126] They also recognise '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'.[127] 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 standardisation 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,[128] a piecemeal approach applies in respect of corporate sustainability due diligence obligations at EU level.

Economic operators in the *batteries sector* shall adopt a specific due diligence policy concerning raw materials and associated (social and) environmental risks;[129] 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

[124] Memorandum of Understanding, p. 4.
[125] Ibid., pp. 1 and 5.
[126] Agreement Between the Government of the United States of America and the Government of Japan, Articles 4(2) and (5).
[127] Ibid., Article 4(6).
[128] EU – New Zealand, Article 19.12; EU – Chile, Article 26.3; EU – Mexico, Articles 9 and 13; EU – Australia, Article X.9.
[129] Provisional Agreement on the Batteries Regulation Proposal, *supra* note 10, Article 45a and Annex X.

and implementation of a risk management strategy to prevent, mitigate and otherwise address adverse impacts.[130]

The CRM Act, by contrast, does not include any such due diligence obligations.[131] Despite the Impact Assessment's emphasis on the prospective adoption of the Corporate Sustainability Due Diligence Directive ('CSDDD'),[132] 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.[133] Second, unlike the CSDDD proposal, the Batteries Regulation *mandates* third-party verification and periodic auditing of the companies' due diligence policies[134] and *strongly encourages* third-party verification of upstream suppliers,[135] with a particular emphasis on cases where specific adverse effects may materialise in supply chains.[136]

Corporate sustainability due diligence systems cannot possibly achieve the same levels of environmental protection as well-designed npr-PPM standards.[137] International standardisation 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.[138] Second, it would involve the recognition of due diligence schemes that mandate compliance with such harmonised 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 (EU) corporate sustainability due diligence regulatory systems. The EU has pledged to follow a similar course of action in transnational negotiations. Whether it will live up to its promise in times of increasing 'securitisation', however, is very hard to gauge.

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

[130] Ibid., Articles 45b and 45c.
[131] Article 29 of the CRM Act Proposal only includes references to the prospective recognition of sustainability certification schemes by the European Commission.
[132] On the 25th of April 2023, the CDDD File passed the vote (1st reading) in the European Parliament's Legal Affairs Committee. At present, there is no agreement between the Council and the European Parliament on the scope and text of the amendments to the European Commission's original proposal.
[133] See Annex X, points 2, 3 and 3a. At this stage it is impossible to predict whether the CDDD will include any such clarifications and benchmarks.
[134] Article 45a(1a).
[135] Article 45b(v) and (vi).
[136] Article 45c.
[137] For an acknowledgment see Impact Assessment, *supra* note 12, p. 9.
[138] By way of example, these could include specific indicators on water use or on the carbon intensity of CRM extraction.

This article has employed an in-depth analysis of 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 'securitisation' of the trade and climate change nexus. As the third section has demonstrated, the pursuit of strategic dominance in key net-zero sectors and increasing attempts to restructure and reshore supply chains are very difficult to square with recourse to environmental conditionality and with the exercise of environmental 'leverage' over third countries. Further, they slow down and potentially undermine decarbonisation 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 decarbonisation. The analysis has shed light on the environmental limitations of national security-centred approaches, emphasising that a narrow focus on national security can neither maximise 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 linkage is urgently needed. This should draw on a strategic vision for transnational decarbonisation, combine a minimalist focus on supply chain diversification and resilience with recourse to environmental conditionality and the exercise of '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. Perhaps more worryingly, the partial 'securitisation' of EU policy reveals EU concerns about *US reshoring* and a desire to *level* the *transatlantic economic playing field*. From this specific perspective, the EU emphasis on trade weaponisation risks and 'systemic rivals' may simply aim to conceal different policy anxieties, masking transatlantic tensions.[139] If the EU traditional focus on *levelling the economic playing field*[140] is reframed in *national security* terms, the EU 'Open, Sustainable and Assertive Trade Policy'[141] ceases to be 'open'. This imperils the pursuit of transnational decarbonisation via the exercise of environmental 'leverage'.

Reshoring, recourse to local content requirements to surgically restructure supply chains, friendshoring and aggressive exclusion strategies all carry risks. If key players stop playing by the rules of the game, the rules are disapplied and may eventually cease to exist. National security-centred approaches to trade and climate change can generate a vicious circle of increasing transnational 'securitisation'. This is the greatest risk for the governance of the

[139] See section 2 above for an examination of the relatively soft EU approach to 'de-risking' in the CRM Act and Net-Zero Act Proposals. For great emphasis on a transatlantic economic playing field, see also European Commission (2023), *Keynote Address by Executive Vice-President Dombrovskis at American Enterprise Institute*, Washington DC, 12 April 2023.

[140] 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.

[141] European 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.

trade and climate change 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.