



# The US-EU Green Subsidies Race one year in: Some perspectives from the rest of the world

Emily Lydgate, L. Alan Winters, Sunayana Sasmal, Amrita Saha, Xinyan Zhao, James Bacchus<sup>1</sup>

Published 16th November 2023

## Briefing Paper 7

### Key points

- The US Inflation Reduction Act provides public funding for clean energy development as a means to mitigate climate change. It also restricts the participation of non-US countries in supply chains and the assembly of electric vehicles, distorting global competition.
- The EU has responded with its own set of incentives, entering a green subsidy race in which major competitor China already has a large head start.
- For countries that cannot win, or even necessarily enter, a subsidies race against the economic powerhouses of the US, EU and China, retaliation may be counterproductive and therefore cooperation is crucial. Pursuing multilateral solutions is both economically desirable and more likely to result in an equitable low carbon transition. Smaller countries play an important role in pushing for international cooperation.
- Growing a clean energy industry is not just about big public spending on subsidies... Creating an attractive investment environment through approaches such as infrastructure development and strong and predictable regulatory signals are also an important strategic focus for smaller countries.
- As well as subsidies, the low carbon transition raises important questions of global equity with respect to critical minerals. The US, EU and other developed countries are reliant on critical minerals mostly mined in developing countries. This reliance creates various risks, but also opportunities for innovative approaches to building resilient supply chains of critical raw materials that benefit both the demand and supply sides.

### Introduction

The United States (US) Inflation Reduction Act (IRA), signed into law in August 2022, was celebrated by many as a new era of US commitment to mitigating climate change. It underwrites the low carbon transition with US\$369bn in public funding, much of which is directed at clean energy development, to help the US achieve its 40% emissions reduction by 2030 target.

However, foreign governments have responded to the IRA with concern. As well as incentivising the low carbon transition, which would be achieved most cheaply by using renewable energy technology and materials regardless of their origin, the IRA also aims to boost US market dominance (see Box 1). In the words of a White

---

<sup>1</sup> The authors are grateful to Chloe Anthony for valuable advice and support for this Briefing Paper.

House statement: ‘President Biden’s vision [is] to make sure the United States—powered by American workers—remains the global leader in clean energy technology, manufacturing, and innovation.’<sup>2</sup>

The IRA is also configured to cohere with the US policy of containing China, but some of its incentives also cut the EU and other allies out of US electric vehicle supply chains. The EU has responded with its own set of incentives.<sup>3</sup> While potential diplomatic fallout between the EU and the US and the resulting green subsidies race has attracted much attention,<sup>4</sup> some of the greatest repercussions will take place outside the US-EU-China axis. In this Briefing Paper, we bring together experts on the World Trade Organization (WTO), UK trade policy and international development to highlight some of the ramifications for developed country allies of the EU and US, such as the UK, and for low-income countries supplying many of the critical raw materials to make the transition to electric vehicles (EVs) possible.

We conclude that medium-sized countries, for whom winning a subsidy race is out of the question, must be highly strategic. Taking the example of the UK, we propose four guidelines. First, subsidies are not the only incentive for green energy investment: a predictable business environment with infrastructure and skilled workers is also crucial. Second, specialising in key elements of the value chain, and subsidising those, is a promising strategy. Third, a rigorous award allocation process and allowing failing firms to fail can prevent wasteful subsidisation. Finally, coordinating with other countries and pursuing multilateral solutions is important both diplomatically and economically.

With respect to critical raw materials huge increases in global demand mean that the need for open, competitive and transparent supply chains has never been greater.<sup>5</sup> However, the trend has been just the opposite, with increasing numbers of restrictions both on the export side (largely imposed by developing countries) and the import side (largely imposed by developed countries). There is clearly an economic opportunity associated with the extraction and processing of critical raw materials, but it also raises geopolitical and national security concerns. In addition, extraction is associated with environmental and human rights harms that work against the environmental benefits of electric vehicles. Thus, critical raw materials extraction must be understood through a broader sustainable development lens.

Indeed, the more inclusive discussions about green subsidies and supply chains can be, the more likely that the low carbon transition can be done equitably and quickly; to this end, we also advocate broader cooperation on green subsidies, including through discussion at the WTO.

## Discriminatory elements of the IRA and the EU’s response

The IRA reinforces US efforts to strengthen domestic capacity to produce critical minerals and create supply chains with US allies that undercut China – see Box 1. For US consumers to be able to benefit from generous EV tax credits, the IRA requires that the final assembly of electric vehicles (EVs) takes place in North America. Batteries are also subject to content requirements: 40% of the critical minerals in EV batteries must be sourced from the US or from countries with which it has a free trade agreement (FTA), rising to 80% by 2026. Beginning in 2024, no battery parts can be imported from a “foreign entity of concern,” such as China or Russia,<sup>6</sup> a requirement extended to critical raw minerals by 2025. Meeting this requirement will necessitate the rapid development of alternative supply chains: in 2021, China was responsible for an estimated 65% of lithium-ion

---

<sup>2</sup> Inflation Reduction Act of 2022, Pub. L. No. 117-169, 136 Stat. 4392 and the White House Websites:

<https://www.whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook/> and

<https://www.whitehouse.gov/cleanenergy/clean-energy-tax-provisions/>

<sup>3</sup> C Scheinert, European Parliament briefing, ‘[EU’s response to the US Inflation Reduction Act \(IRA\)](#)’, Directorate-General for Internal Policies, PE 740.087 – June 2023.

<sup>4</sup> See, eg, Scott, M, Moens, B and S Stolton, ‘[Trade war threatens to overshadow EU-US summit](#),’ *Politico*, 17 November 2022; Espinosa, J and Fleming, S, ‘[EU opens subsidy race with US to fight exodus of green projects](#),’ *FT*, 9 March 2023.

<sup>5</sup> There is no agreed list of critical raw materials but we provide an indicative list on p. 8.

<sup>6</sup> [The US has a specific definition of foreign entities of concern, see: Jack, WA, Levine, DB and Koo, J, ‘Will Treasury Adopt the Same Interpretation of “Foreign Entity of Concern” for both the Section 48D Credit under the CHIPS Act and the Section 30D Credit under the Inflation Reduction Act?’](#), Inside Energy and Environment, March 28, 2023.

battery production.<sup>7</sup> Some of the incentives built into the IRA are also predicated on the use of domestic content; for example, the IRA offers more generous tax breaks for energy installations made with iron, steel or manufactured components from the US.<sup>8</sup> These domestic content requirements run counter to the non-discrimination requirements of the World Trade Organization.<sup>9</sup>

The EU's response - a Green Deal Industrial Plan and Net-Zero Industry Act - will facilitate EU clean energy incentives and investment, loosen State Aid (subsidies) approval and notification requirements, and provide anti-relocation investment aid to counteract IRA incentives, that is, to offset the fiscal advantages that the IRA would offer to EU firms if they relocated to the US – see Box 2. The US has subsequently agreed to pursue Critical Minerals Agreements with the EU, the UK and Japan, redefining its FTA requirement to include these agreements.<sup>10</sup> However, this doesn't address EV assembly restrictions or how US public funding in the IRA will distort global competition.

**Box 1: Key discriminatory elements in the U.S.'s Inflation Reduction Act**

Sectors	Nationality-based restriction
1. Clean Vehicles	<p><b>Clean Vehicle Credit:</b></p> <ul style="list-style-type: none"> <li>• \$3,750 credit for vehicles meeting the critical minerals requirement. The vehicle must contain a threshold percentage of critical minerals extracted or processed in the United States or in a country with which the United States has a free trade agreement or recycled in North America.</li> <li>• Additional \$3,750 credit for vehicles meeting the requirement that a threshold percentage of battery components be manufactured or assembled in North America. Vehicles must meet other requirements, including final assembly in North America.</li> <li>• Starting in 2024, qualifying vehicles cannot have battery components manufactured or assembled by a foreign entity of concern. Starting in 2025, qualifying vehicles' batteries cannot contain critical minerals extracted, processed, or recycled by a foreign entity of concern.</li> </ul>
2. Clean Electricity	<p><b>Clean Electricity Production Tax Credit:</b></p> <ul style="list-style-type: none"> <li>• Credit is increased by 10% for projects meeting certain domestic content requirements for steel, iron, and manufactured products.</li> </ul> <p><b>Clean Electricity Investment Tax Credit:</b></p> <ul style="list-style-type: none"> <li>• Credit is increased by up to 10 percentage points for facilities meeting certain domestic content requirements for steel, iron, and manufactured products.</li> </ul>
3. Clean Fuels	<p><b>Sustainable Aviation Fuel (SAF) Credit Only for US producers:</b></p> <ul style="list-style-type: none"> <li>• Base credit amount: \$1.25/gallon of SAF.</li> <li>• Bonus credit amount: Up to \$0.50/gallon depending on lifecycle greenhouse gas emissions of SAF relative to petroleum-based jet fuel.</li> </ul> <p><b>Clean Hydrogen Production Tax Credit Only for US producers:</b></p> <p>\$0.60/kg multiplied by the applicable percentage. The applicable percentage ranges from 20% to 100% depending on lifecycle greenhouse gas emissions. The \$0.60/kg is adjusted for inflation.</p>
4. Clean Energy Manufacturing	<p><b>Advanced Manufacturing Production Credit only for US manufacturers:</b></p> <p>Varies by technology. To see details, please check <a href="#">26 U.S. Code § 45X</a>.</p>

<sup>7</sup> IEA, 'Clean energy supply chains vulnerabilities', Energy Technology Perspectives 2023.

<sup>8</sup> Above n. 1.

<sup>9</sup> Bacchus, J., 'The High Price of Buying American: The Harms of Domestic Content Mandates', Cato Institute, Policy Analysis No. 948, June 6, 2023.

<sup>10</sup> Palmer, D, 'Biden 'Confident' U.S. Can Address EU Concerns about IRA Subsidies,' Politico, December 1, 2022.

## Box 2: EU Policies in Response to the U.S.'s Inflation Reduction Act

Proposed Legislations Under the Green Deal Industrial Plan	Objectives
1. Net-Zero Industry Act	<ul style="list-style-type: none"> <li>Identifying goals for net-zero industrial capacity.</li> <li>Ensuring simplified and fast-track granting of permits, promoting European strategic projects.</li> <li>Developing standards to support the scale-up of technologies across the Single Market.</li> <li>Overcoming barriers to scaling up the manufacturing capacity in Europe.</li> <li>Strengthening the European manufacturing capacity of net-zero technologies.</li> <li>Increasing the competitiveness of the net-zero technology base.</li> <li>Improving the EU's energy resilience.</li> </ul>
2. Amendment to the Temporary State Aid Crisis and Transition Framework	<ul style="list-style-type: none"> <li>Speeding up and simplifying aid granting.</li> </ul>
3. Proposed Revision of the General Block Exemption Regulation	<ul style="list-style-type: none"> <li>Streamlining and simplifying the approval of Important Projects of Common European Interest-related projects.</li> </ul>
4. Proposed European Sovereignty Fund	<ul style="list-style-type: none"> <li>Meeting investment needs.</li> </ul>

### If you can't beat me, join me?

Medium-sized allies of the EU and US, such as the UK, Korea, Canada and Japan, are also pursuing their own net-zero targets. In combination with supply chain restrictions, US and EU incentives will likely prompt renewable energy firms to invest in, rather than export to, the US and EU. An analysis from July 2023 suggests that the IRA has already led to increased relocation and investment in the US at the expense of EU and other global firms.<sup>11</sup> This includes investment flows that would otherwise have gone to smaller economies. It raises the question of whether such countries should respond by emulating these subsidies – to the extent they can afford it.

Alternatively, countries that face adverse competitive effects in industries as a result of the US or EU subsidies could impose countervailing duties or initiate a WTO dispute. This would signal support for the rule of law in the international trade system. However, retaliation may be less useful than cooperation, and will tend to make the cooperation that must eventually prevail more difficult.

### The green subsidies race and the UK

#### A. Four guidelines for navigating the green subsidies race

A key challenge for the UK is how to introduce decarbonisation incentives that are effective and have as few adverse economic and environmental consequences as possible. Focusing on the UK context, with which the authors are most familiar, we suggest four guidelines (almost principles, but perhaps with a little wiggle room) for introducing decarbonisation incentives that are effective and have as few adverse economic and environmental consequences as possible, as well as some suggestions about the sort of policies they suggest.

<sup>11</sup> Attinasi, MG, Boeckelmann, L, Meunier, B, 'Unfriendly friends: Trade and relocation effects of the US Inflation Reduction Act', CEPR, 3 Jul 2023.

1. **Subsidies aren't everything – ensure a positive environment for business.**

Industrial investment and competitiveness owe more to general business conditions than to specific subsidies. In the UK, Brexit has created uncertainty for business and investment, so the most pressing need is for a stable, predictable (and sensible) policy environment. Assuming this can be solved, the UK needs to think about infrastructure provision and the provision of a skilled workforce. There is little social value in producing high-class scientists and skilled workers if satisfactory conditions for their employment are not provided. In the case of scientists, that means investing in the science base such as research labs, universities and international collaborations.

2. **Fund a few key sectors.**

The UK is small and impecunious – it cannot compete with broad subsidy programmes undertaken by economic giants. All the UK can hope for is a few key sectors or stages in the value chain.

3. **Ensure a rigorous subsidy award process.**

Governments, including in the UK, are not generally very good at picking winners – too often they gravitate towards powerful incumbents and support for failing rather than promising sectors. Selection needs to be based on broad information and careful analysis, not executive branch fiat. Where support is provided to firms / industries, it is important to (a) recognise clustering / network effects both between firms and also collaboration between government, the private sector and the research community and (b) allow firms that do not or cannot deliver to fail. Support cannot be indefinite and unconditional. Allowing for failures is part of 'picking winners'

4. **Pursue multilateral and coordinated policies.**

The UK still projects itself as a supporter of a rules-based world trading system. To the maximum extent possible, the UK should make its policy consistent with the multilateral trading regime and liaise and coordinate with like-minded trading partners to avoid or at least mitigate the (almost inevitable) descent into a subsidy race and increased protectionism.

The UK has seen mixed signals from investors, with the collapse of its flagship low carbon battery producer Britishvolt,<sup>12</sup> and the announcement by Mini that it would move its EV operation to China; however Tata/Jaguar, encouraged by subsidies, announced that it will produce its new line of EVs in the UK.<sup>13</sup> Since then, the UK Prime Minister has announced a general weakening of net zero targets, including pushing forward a ban on new conventional petrol and diesel vehicles from 2030 to 2035 on the grounds that the original date imposed undue costs on consumers.<sup>14</sup> These developments do not help to create a favourable ecosystem and hence do not attract investment for UK low-carbon industries.

## **B. Subsidies are not domestic content requirements**

Where the UK has no production or expects to have no production, buying from the best-value source (whether subsidised by another government or not) is reasonably straightforward. Where there is actual or potential UK production, there will sometimes be a case for encouraging it, but consumption subsidies that are conditioned on domestic content requirements, or that limit the source of materials to only certain countries, will raise prices and reduce the accessibility of low carbon technologies. The IRA illustrates this problem, with some research estimating that 70 percent of the EVs currently on the US market will not qualify for tax incentives due to nationality-based supply-chain restrictions (see Box 1).<sup>15</sup> This slows the achievement of the subsidies' decarbonisation objectives, makes their administration much more complex, and very probably raises costs.

In addition to the economic and policy objectives underlying subsidies, countries must provide subsidies in accordance with the WTO Agreement on Subsidies and Countervailing Measures (ASCM). The ASCM addresses certain categories of subsidies and outright *prohibits* export subsidies and those subject to domestic content

---

<sup>12</sup> Dempsey, H and Campbell, P, 'Britishvolt collapse prompts calls for shake-up of UK subsidy policies', FT, 28 January 2023.

<sup>13</sup> Lewis, M., 'Why BMW is moving electric Mini production from the UK to China', Electrek, 17 October 2022.

<sup>14</sup> Ramey, J., 'The UK Is Already Pushing Back Its 2030 EV Goals', Autoweek, 21 September 2023.

<sup>15</sup> Hawkins, AJ, 'Fewer EVs will qualify for the federal \$7,500 tax credit under updated rules', The Verge, 31 March 2023.

requirements. It also considers certain other subsidies as *actionable* subsidies, such that they may be subject to WTO dispute settlement if they cause injury to the domestic industry of another member, nullify or impair benefits negotiated under the WTO (or the GATT) or cause serious prejudice.<sup>16</sup> A final category pertains to non-actionable subsidies in Article 8 of the ASCM, but they lapsed by 2000. Although there is increasing recognition of the urgency with which WTO subsidies disciplines must be rethought, to avoid WTO dispute proceedings, it is generally wiser to design supportive policies in consideration of these fundamental rules.

Thus, since subsidies or industrial policies based on domestic content requirements (such as the IRA) are prohibited under WTO law, they are likely to prompt WTO disputes, which may be followed by the imposition of retaliatory tariffs. As a smaller economy than the EU or US, the UK would be adversely affected by retaliation in the form of duties and would undoubtedly face counter-retaliation if it sought to impose content-dependent subsidies of its own. The EU has shown that it has a strong appetite for enforcement, introducing a WTO challenge when UK local content requirements were introduced into the bidding process of the UK Contract for Difference renewable electricity price stabilization scheme. These were dropped when the scheme was reformed.<sup>17</sup> Also, the introduction of domestic content requirements will slow the UK's progress toward its own net zero transition and make it more expensive because it would discourage using the best (lowest cost/highest quality) inputs.

Even UK subsidies that do not include domestic content requirements can be countervailed. But, as a form of industrial support, subsidies that promote R & D and innovation are generally seen as less harmful than subsidies on production that go directly to producers, especially if the benefits of the subsidies can be shared across firms. Further, as long as UK consumers can use subsidies to purchase EVs regardless of their origin (no local content requirements) it is more difficult to establish that such subsidies injure foreign competitors, making them less controversial in the WTO context.

Failing to keep up with competitors who are moving swiftly toward the electrification of their vehicle fleets would also have costs for the UK, if it gets left out of global value chains for EVs. In this context, there is certainly a place for consumer subsidies to make EVs affordable to a wider range of households in the context of a cost-of-living crisis.

### **C. A faster and cheaper low-carbon transition**

The UK must also decide whether, and how, to make any grievances about the IRA and the Green Deal known. Under WTO subsidies rules, if an importing country establishes that a subsidy is causing injury to a competing domestic industry, it can apply countervailing duties, i.e. tariffs, to offset the unfair advantage or correct for the injury. The ASCM can only discipline imported products. Renewable electricity itself is little traded, simply because of constraints in storage infrastructure.<sup>18</sup> In contrast, products that are widely traded, like renewable electricity-generating equipment or EVs, are frequently subject to countervailing duties.

Some US and EU subsidies may result in cheap exports of US and EU renewable energy materials, to which the UK could apply countervailing duties. But the UK should first ask what it intends to achieve. Where the home market is critical to the existence of UK production, UK countervailing duties may offer necessary respite to local producers, although at a cost to users/consumers. But this will be a continuing expense, because the UK is sufficiently small that its countervailing duties are most unlikely to persuade the US, EU or China to modify their policies. If a number of smaller countries were to join together to create a coordinated approach to countervailing duties, on the other hand, this may be more effective.

Alternatively, the UK can take a pragmatic approach and embrace the lower prices, which will make its low-carbon transition less expensive. US subsidies drive down international prices for renewable products, at the expense of the US taxpayer, so the UK might just say 'thank you very much'.

---

<sup>16</sup> Each of these terms is elaborated upon in the text of the ASCM.

<sup>17</sup> European Commission, '[EU and UK agree on way forward in WTO dispute concerning UK's green energy subsidy scheme](#)', News Article, 1 July 2022.

<sup>18</sup> Over the past decade the UK has imported only around 5% of its electricity.

The UK could also initiate a WTO dispute regarding the IRA's discriminatory elements: nationality-based requirements for EVs and batteries, and domestic content requirements. Here, the UK must weigh up the diplomatic costs of challenging the US against the potential benefits. The US will likely adhere to its discriminatory approach no matter what the UK does. In this context, agreeing the so-called Atlantic Declaration, which counts as a 'free trade agreement' under the IRA and thus absolves the UK of some (but not all) IRA supply chain restrictions, was a wise move.

In other words, not challenging the US isn't just rolling over to the US and EU, but rather taking maximum advantage of their policies to the UK's own ends. The risk, of course, is that the US/EU policies do not just give the UK cheaper access to goods and expertise needed for the green transition, but in the longer run divert investment in physical and human capital in key technologies of the future away from the UK. This again points back to the importance of providing a transparent and supportive system for rewarding innovation.

## International development implications

### A. Domestic subsidies in wealthy countries can't be at the expense of the developing world

Decarbonisation can only happen with global participation and cooperation. Developing green technologies, and divesting from emissions-intensive manufacturing, requires investment. Developing countries are ill-equipped to compete in a subsidy race and are less likely to have the foreign investment and technology transfer from multinational firms to support their progress. Public subsidies in wealthy countries will only exacerbate this problem, particularly if they result in additional barriers to market access that leave developing countries further behind.

Thus, analysis of green subsidies should be tied to a call for renewed pledges to climate finance policies that can complement mitigation and adaptation policies. The more immediate need is a commitment that developing countries will have access to developed country markets for low-carbon products and investment in capacities to use and adapt these to specific contexts. The Bridgetown Initiative<sup>19</sup> provides useful proposals for directing concessionary climate finance to the developing world by calling for new mechanisms to provide inclusive and resilient finance for mitigation and adaptation to climate and development crises.

If the UK cannot compete in a subsidies war with the EU / US, it will be even more difficult for least developing countries. Domestic content requirements are only a benefit to the extent that they help least developing countries make the transition. A radical suggestion (as was supposed to be the case with Covid vaccines) is to encourage the advanced economies that are subsidising and developing these green technologies to make them available to least developing countries on favourable terms. This would need carefully specifying because the US / EU will not want to hand them a competitive advantage.

### B. Critical raw materials supply chains: cooperation is preferable to coercion

The development of green technologies - ranging from wind turbines and electricity networks to electric vehicles - requires critical minerals including lithium, copper, nickel, cobalt and rare earth elements.<sup>20</sup> Resultantly, there is an increased global demand for these critical raw materials, while supply remains limited to and largely found in developing countries.<sup>21</sup>

---

<sup>19</sup> Masterson, M, 'The Bridgetown Initiative: Everything you need to know', World Economic Forum, 13 January 2023. Available at : <https://www.weforum.org/agenda/2023/01/barbados-bridgetown-initiative-climate-change/>

<sup>20</sup> See website of the International Energy Agency, <https://www.iea.org/topics/critical-minerals>

<sup>21</sup> Interestingly, the ITC provides contrasting data: Europe imports 64% of its critical raw materials (CRM) imports from other European countries (\$452 billion), whereas Asia imports 40% of its total CRM imports from other Asian countries (\$438 billion). <https://tradebriefs.intracen.org/2023/8/spotlight>

As a result of lessons learnt from the COVID-19 pandemic and Russian aggression in Ukraine, there is an increasing desire to “friendshore” supply chains<sup>22</sup>. Recent US and EU legislation and agreements aim to redirect critical raw materials supply chains and secure their access to the materials from reliable partners.

In a race to secure access, the US, China, the EU and other wealthy countries have invested in critical minerals development in global south countries.<sup>23</sup> While open and competitive markets are the most conducive to satisfying the increasing demand for critical raw materials and strengthening the resilience of supply chains, critical minerals supply chains are increasingly being managed.<sup>24</sup> While developed countries base their unilateral measures on security and uninterrupted access to supply, the emerging countries (like the BRICS nations)<sup>25</sup> locate them as an opportunity to pursue industrial policy and developmental objectives at home.<sup>26</sup>

A recent OECD study reported that OECD members are most dependent on imports from China, India, Argentina, Russia, Vietnam and Kazakhstan, and yet, these are the countries that issued the most new export restrictions relating to critical raw materials between 2009 and 2020.<sup>27</sup> The same report also highlights that such restrictions could potentially undermine global progress toward electrification.<sup>28</sup>

International trade law under the WTO does not regard quantitative export restrictions kindly.<sup>29</sup> Specifically, GATT Article XI:1 does not allow for “prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licences or other measures”, imposed in connection with exportation. This provision covers both de jure and de facto prohibitions and restrictions, such that a measure’s design, structure and architecture can implicate a measure without having to show its trade effects,<sup>30</sup> so long as a “limiting effect” is evident.<sup>31</sup> Furthermore, the panel in Indonesia – Raw Materials reiterated that measures can have the effect of restricting exports without taking the form of an express export prohibition.<sup>32</sup> But given the carve-out for duties, taxes and other charges in GATT Article XI:1, it is generally understood that export duties are not prohibited, unless Members took specific commitments at the time of accession or in their schedules.<sup>33</sup> This explains why countries resort to export taxes to restrict the supply of critical materials. This also became a point of contention in the disputes concerning China,<sup>34</sup> since China’s Accession Protocol contained commitments to limit the use of export restrictions (whether quotas or taxes).

---

<sup>22</sup> <https://carnegieendowment.org/2023/05/03/friendshoring-critical-minerals-what-could-u.s.-and-its-partners-produce-pub-89659c>

<sup>23</sup> See, eg: Critical Raw Materials: ensuring secure and sustainable supply chains for EU’s green and digital future, European Commission Press Release, March 16 2023, [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_23\\_1661](https://ec.europa.eu/commission/presscorner/detail/en/ip_23_1661); Victor Crochet and Weihuan Zhou, Critical insecurities? The European Union’s trade and investment strategy for a stable supply of minerals for the green transition, EJIL Talk!, February 23 2023, <https://www.ejiltalk.org/critical-insecurities-the-european-unions-trade-and-investment-strategy-for-a-stable-supply-of-minerals-for-the-green-transition/>.

<sup>24</sup> Simon J. Evenett and Johannes Fritz (2023), The Scramble for Critical Raw Materials: Time to Take Stock? The 31st Global Trade Alert Report, CEPR, pp. 4-5.

<sup>25</sup> Brazil, Russia, India, China, and South Africa

<sup>26</sup> *Id.* at p. 49.

<sup>27</sup> Kowalski, P. and C. Legendre (2023), “Raw materials critical for the green transition: Production, international trade and export restrictions”, *OECD Trade Policy Papers*, No. 269, OECD Publishing, Paris, <https://doi.org/10.1787/c6bb598b-en>.

<sup>28</sup> *Id.*

<sup>29</sup> Article XI, GATT 1994. For a detailed discussion of export restrictions under the WTO, see: Ilaria Espa, Export Restrictions on Critical Minerals and Metals – Testing the Adequacy of WTO Disciplines.

<sup>30</sup> Panel Report, Colombia – Ports of Entry, paras. 7.252-7.253.

<sup>31</sup> Appellate Body Reports, China – Raw Materials, para. 320.

<sup>32</sup> Panel Report, Indonesia – Raw Materials, para. 7.81. Indonesia lost this dispute but appealed the panel report into the void due to the absence of a functioning Appellate Body.

<sup>33</sup> Export Prohibitions And Restrictions, Information Note, WTO, April 23 2020, [https://www.wto.org/english/tratop\\_e/covid19\\_e/export\\_prohibitions\\_report\\_e.pdf](https://www.wto.org/english/tratop_e/covid19_e/export_prohibitions_report_e.pdf). For example, the Protocol of Accession of China and specific commitments undertaken in the working party reports of the following members: Bulgaria, Croatia, Estonia, Georgia, Latvia, Nepal, the Kingdom of Saudi Arabia, Ukraine, Tonga and Viet Nam. Schedules of Australia, Afghanistan, Kazakhstan and the Russian Federation include commitments not to impose export duties in respect of several goods.

<sup>34</sup> Panel Reports, China – Raw Materials and China – Rare Earths.



There are certain in-built relaxations in GATT Article XI from the prohibition of quantitative restrictions,<sup>35</sup> but the criteria are narrow: temporary carve-outs to prevent or relieve critical shortages of foodstuffs or other products essential to the exporting party; restrictions necessary for the application of standards or regulations for classification, grading or marketing of commodities; and those necessary to safeguard the interests of importers of foodstuffs. It is possible that in the future, countries may attempt to justify their export restrictions on critical materials on the grounds that they are essential to the exporting contracting party and are therefore necessary to prevent their critical shortage. But the determination of essentiality<sup>36</sup> and criticality are subjective and will necessarily depend upon the adjudicators, as evident from the ruling in China – Raw Materials.

Similarly, GATT Article XX provides for general exceptions including environmental justifications for measures found otherwise inconsistent with the GATT, but the China disputes did not provide any guidance on the topic as China's Accession Protocol did not provide for any explicit linkage between the reduction commitments and GATT Article XX. Thus, it is an issue ripe for adjudication at the WTO. As an added source of international trade law and given the lack of regulation of export taxes at the WTO, countries are utilising their FTAs to ensure legal commitments against export taxes, for e.g., EU – Canada,<sup>37</sup> EU – CARIFORUM and EU – East African Community arrangements.<sup>38</sup>

It is highly possible that supplier countries, given the essentiality of critical raw materials for the energy transition, continue to institute export restrictions to strengthen their bargaining position in the trading system. However, any such responses will only increase the supply chain disruptions outlined above. This background highlights two main considerations: the need for equity, and the importance of cooperative approaches toward building resilient supply chains of critical raw materials that benefit both the demanders and the suppliers.

More often than not, increased mining activities have undesirable environmental, ecological and societal consequences for communities living in the mining zones. Since mining activities generate revenues for the government, the incentives to protect against human rights and environmental abuses may be very weak. Thus, there needs to be a push for accountability driven by the private sector, international organisations, and civil society.<sup>39</sup>

State-state cooperation agreements are increasingly emerging. A good example is the EU – Kazakhstan Memorandum of Understanding (MOU) of 2022, which contains provisions on integration and the development of supply chains, modernisation of upstream and downstream processing technology, and possible cooperation in manufacturing components of batteries.<sup>40</sup> In combination with the provisions concerning the development of fair markets for renewable energies and cooperation on research and development and technology transfer, this MOU seems to present a constructive, equitable and economically sound way forward comprising both production and economic value-addition of critical raw materials.

Investment law and policy also have the potential to play an important role in the treatment of this issue. While bilateral investment treaties have traditionally been criticized as undermining human rights, the environment,

---

<sup>35</sup> These are in the form of carve-outs and not exceptions, meaning there are implications on the burden of proof in a dispute such that the claimant is required to prove that the export restriction is prohibited under Article XI:1.

<sup>36</sup> It is not a self-judging provision as per the panel report in China – Raw Materials. "The determination of whether a product is "essential" to that Member should take into consideration the particular circumstances faced by that Member at the time when a Member applies a restriction or prohibition under Article XI:2(a)."

<sup>37</sup> Victor Crochet and Weihuan Zhou, Critical insecurities? The European Union's trade and investment strategy for a stable supply of minerals for the green transition, EJIL Talk!, February 23 2023, <https://www.ejiltalk.org/critical-insecurities-the-european-unions-trade-and-investment-strategy-for-a-stable-supply-of-minerals-for-the-green-transition/>.

<sup>38</sup> Export taxes and other restrictions on raw materials and their limitation through free trade agreements: Impact on developing countries, European Parliament Policy Department, EP/EXPO/B/DEVE/FWC/2013-08/LOT7/15, April 2016, [https://www.europarl.europa.eu/RegData/etudes/STUD/2016/534997/EXPO\\_STU\(2016\)534997\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2016/534997/EXPO_STU(2016)534997_EN.pdf).

<sup>39</sup> Marín, A and Goya, G, Development dilemmas of the energy transition for progressive democracies in Latin America, Institute of Development Studies, February 2 2022, <https://www.ids.ac.uk/opinions/development-dilemmas-of-the-energy-transition-for-progressive-democracies-in-latin-america/>.

<sup>40</sup> Simon J. Evenett and Johannes Fritz (2023), The Scramble for Critical Raw Materials: Time to Take Stock? The 31st Global Trade Alert Report, CEPR, p. 60.

indigenous communities and the overall sustainability agenda, reform talks are underway at the UNCITRAL Working Group III with many countries considering the modification of their treaties.<sup>41</sup>

Ultimately, import-dependent countries need to invest in innovation and technological advancements domestically and share the benefits with suppliers. They must find innovative ways to access raw materials (e.g., in exchange for this technology), ensure a globally competitive environment for the development of upstream supply chains (e.g., attractive investment contracts that protect environmental and community rights), and invest in innovation and technological advancements.

## Conclusion: international cooperation beyond the EU and US

The EU and the US, as well as their purported rival China, are now all pursuing similar decarbonisation objectives using industrial policy approaches that have some common elements. These approaches raise important questions about global justice and trade fairness, some of which we have examined above.

Various initiatives have emerged to facilitate trade and climate cooperation, including the Trade and Environmental Sustainability Structured Discussions (TESSD) at the WTO, the German G7 proposal for a climate club, and the Coalition of Trade Ministers on Climate. However, green subsidies themselves have not been a central focus of these discussions. Even though consensus on such reform seems elusive, any discussions that take place through the WTO, even on a plurilateral basis, are inherently more inclusive, in the sense that all WTO members who wish to be involved have access to them. A greater emphasis on green subsidies discussion at the WTO would heighten the prospect that such discussions would consider a wider set of perspectives and priorities.<sup>42</sup> Ultimately, the challenges raised in this Briefing Paper illustrate the potential value of the WTO as a multilateral forum where countries can discuss ways in which subsidies can be used to help, rather than hinder, a fair and inclusive low-carbon transition.

---

<sup>41</sup> For more on sustainable and responsible mining, see: Extractive Industries, Columbia Center on Sustainable Investment, <https://ccsi.columbia.edu/content/extractive-industries###text-6158>.

<sup>42</sup> Bacchus, J, 'The Case for a WTO climate waiver' (2017), Centre for International Governance Innovation.