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Foreign Affairs Committee

A rock and a hard place: building critical mineral resilience

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Summary

Critical minerals are those that are essential to the UK's national security, to its economic resilience and to its ability to meet net zero targets. They are defined in part by their vulnerability to supply disruption, such as the dramatic halt to some global supply chains during the covid-19 pandemic and the intentional interruption following Russia's renewed illegal invasion of Ukraine. Critical minerals supply is not a geological challenge but a geopolitical one. The vast majority of critical minerals are concentrated in countries that are autocratic, non-aligned, or actively hostile. China dominates global critical minerals processing and has proved ready to exploit the economic advantages accruing from this global dominance and to retaliate. Critical minerals need to be understood through the lens of a global geopolitical competition that is as much about political power as practical industrial capacity. These insecurities, and growing global competition, have prompted industrial countries to develop critical minerals strategies aimed at strengthening their supply chains.

The UK Government has been behind its allies in acknowledging the aggressive capture of large parts of the critical minerals market by China but has belatedly produced a Critical Minerals Strategy and Refresh. However, the scope of the Strategy is too broad to be helpful as a guide to industry, which needs realistic targets and timeframes. Nor does it convey the sense of urgency and need for immediate, decisive action which is of paramount importance if the UK is to deliver on its net zero commitments and enhance its long-term economic resilience in the face of mounting challenges. The UK cannot afford to leave itself vulnerable on supply chains that are of such strategic importance.

We urge the Government to define the UK's role in the critical minerals value chain and to set out a coherent 'Team UK' proposition to explain the UK's offer to global partners. The UK is in a strong position to promote high environmental, social and governance standards in mining and we set out ways in which it should do so. As well as being the right moral choice, high standards are what set the UK and its partners apart from countries like China with whom we cannot compete on grounds of scale or cost.

The diplomatic service is well placed to deliver on the Government's ambitions. But to do so, the Foreign, Commonwealth and Development Office needs to pursue a strategic approach that considers the Government's domestic priorities, its geopolitical interests and the need to preserve relationships with countries forming important links in the value chain. The UK is in a global race for technological advantage, and it is one in which we cannot afford to be left behind. It must compete, and compete hard, to demonstrate that the challenge of critical minerals is being taken seriously. The cost of failure will be the loss of key industries, such as the automotive sector and the ecosystems of research, innovation and manufacturing that support green tech industries.

Given the Prime Minister's focus on the UK's strengths in science, technology and innovation, there is an opportunity for the UK Government to show leadership on critical minerals. The UK has huge advantages in engineering and chemical engineering, in innovation and the knowledge industries, in green energy and mining expertise. The Government needs to demonstrate a real commitment to support these sectors if it is to attract investment. It should act as the interface between the public and private sectors and the people of this country, drawing conversations around foreign policy,

mining, industry, and climate out of their echo chambers and into wider discourse. We agree with the Prime Minister that an honest public conversation about the way the UK reaches its net zero targets and secures economic resilience, including the trade-offs around mining, is crucial.

1 Introduction

1. Critical minerals, such as cobalt and lithium, are essential to modern technology, national security and the transition to a green economy. After years of trade liberalisation and confidence in a globalised free market to ensure economic security, the UK now finds itself caught between the threat of economic coercion from hostile states and a shift towards protectionism amongst the UK's allies. Factors from the rising cost of shipping to tech export bans and increased consumer demand have fuelled growing concerns about the fragility of some of the supply chains that support the UK economy. The sharp shock of energy price rises in Europe caused by Russia's renewed illegal invasion of Ukraine in February 2022 underscored the risks to supply chains dependent on a single source. This prompted governments around the world to assess their economic resilience more deeply. Chief among their concerns remains securing assured access to critical minerals.

2. In November 2022, we launched an inquiry into the security of UK access to critical minerals. The purpose of this inquiry was to look at the role the Foreign, Commonwealth and Development Office (FCDO) plays in implementing the international strands of the Government's critical minerals strategy, in the evolving geopolitical context. During our inquiry, we visited the Critical Minerals Intelligence Centre (CMIC) at the British Geological Survey (BGS) in Nottingham. We also visited Chile to better understand both the geological and geopolitical context in a country responsible, last year, for 30% of the world's lithium production. We took oral evidence from 13 witnesses, including Anne-Marie Trevelyan MP, the Minister with responsibility for critical minerals in the FCDO, and received 51 pieces of written evidence. We are grateful to everyone who contributed to the inquiry.

2 The need for a UK critical minerals strategy

What are critical minerals and why do they matter?

3. Critical minerals are defined as commodities (other than fuel) that are essential to a state's economy or national security, with a supply chain that is particularly vulnerable to disruption.¹ Geopolitical tensions, geological scarcity and lack of substitutability can all contribute to insecurity in the supply of a particular mineral. A mineral's criticality is an economic, rather than scientific or chemical, definition. This means the minerals that each state identifies as critical differ according to that country's economic, industrial and security needs. The UK Government currently identifies 18 minerals as critical,² following an assessment by the British Geological Survey (BGS), which evaluated the minerals according to their economic vulnerability and supply risk.³ The list is not definitive but is kept under review by the UK Critical Minerals Intelligence Centre.⁴

4. The 18 minerals on the UK's critical mineral list are heavily concentrated in specific geographic areas (see Figure 1). Several are mined predominantly in a single country—for example Brazil produces 98% of the world's active niobium reserve.⁵ The majority of global cobalt mining is in the Democratic Republic of Congo, and Russia has significant palladium deposits.⁶ China is the primary producer of 12 of the 18 minerals that the UK identifies as critical.⁷

1 Critical minerals are also referred to as green transition or technology metals or critical materials. Critical Mineral Association "[Defining Criticality - What Makes a Critical Mineral?](#)", accessed 30 November 2022

2 They are antimony, bismuth, cobalt, gallium, graphite, indium, lithium, magnesium, niobium, palladium, platinum, rare earth elements, silicon, tantalum, tellurium, tin, tungsten and vanadium. The UK list of critical minerals considers 17 "rare earths" collectively as one of the 18 critical minerals (see also footnote 12).

3 Business, Energy and Industrial Strategy, [Resilience for the future: the United Kingdom's Critical Minerals Strategy](#), July 2022

4 The CMIC is a public body set up under the auspices of the British Geological Survey to monitor the UK's minerals vulnerabilities and to assess the potential for domestic extraction.

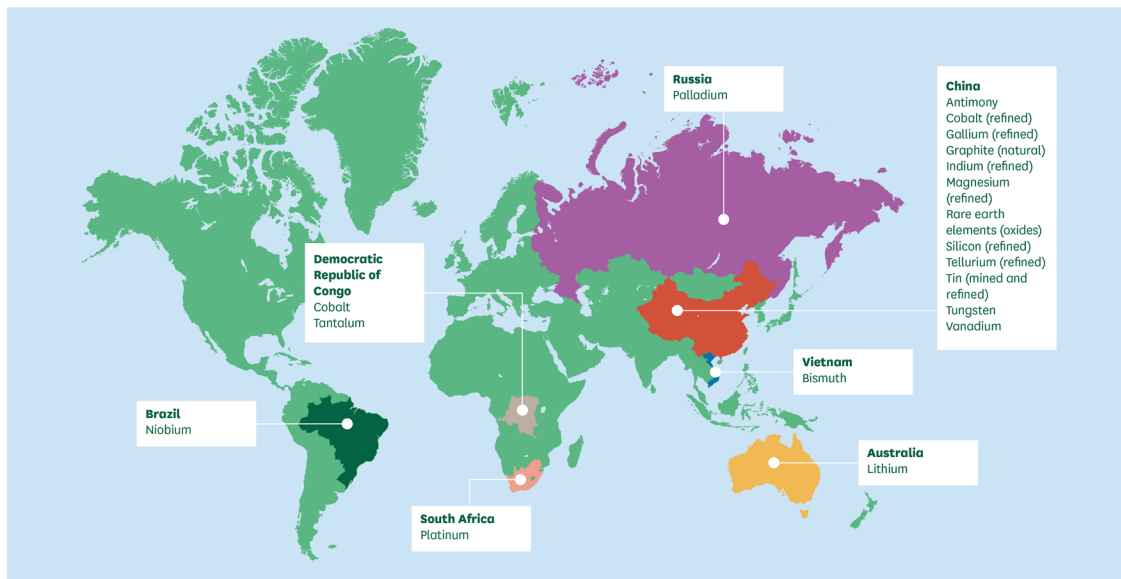
5 Rest of the World, "[Niobium: the mighty element you've never heard of](#)", 25 November 2020

6 BBC, "[Top tech firms sued over DR Congo cobalt mining deaths](#)", 16 December 2019

7 [Q4](#) [Guillaume Pitron]; According to the Government's Critical Minerals Strategy, China is the top global producer of antimony, refined cobalt, refined gallium, natural graphite, refined indium, refined magnesium, rare earth elements (oxides), refined silicon, refined tellurium, mined and refined tin, tungsten and vanadium. Business, Energy and Industrial Strategy, [Resilience for the future: the United Kingdom's Critical Minerals Strategy 2022](#), July 2022

Figure 1: Top global producers (5-year average 2016–2020) by mineral.

Country with the highest production of each critical mineral; refers to mined production, unless otherwise stated.
5-year average production 2016–2020



Source: [Resilience for the Future: The UK's Critical Minerals Strategy](#) based on data from the UK Critical Minerals Intelligence Centre, 2022

Transitioning to a green economy

5. Critical minerals matter because they underpin technologies that are essential to our day-to-day lives; are necessary for the aerospace and automotive sectors;⁸ and are essential for military hardware and cybersecurity.^{9,10} However, the key driver behind the current surge in global interest is that these materials are intrinsic to green transition technologies. Lithium, graphite, cobalt and nickel are needed in vast quantities to make the electric car batteries that will form the future of the global car industry.¹¹ Wind turbines depend on permanent magnets, built with rare earth elements (REEs)¹² and copper.¹³ Without these

8 UK Critical Minerals Intelligence Centre, "Scoping study on metals used in specialist alloys in the aerospace industry", [OR/23/016](#).

9 For example, "soldier-portable battery supply requires cathode materials; Anti-Tank weaponry and ammunitions require aluminium, beryllium, chromium, germanium, indium, lead, molybdenum, nickel, niobium, tantalum, titanium, tungsten, zinc, dysprosium and yttrium; and general defence supply chains more broadly require bauxite, coke, fluorspar, magnesium, manganese, silicon carbide, silicon metal, yellow phosphorus, and zinc." "Technologies including missile warheads, IR sensors, and aeronautics present in Anti-Tank weaponry and ammunition are especially vulnerable to disruption because of how reliant these are on critical minerals." RAND Europe ([MIN0040](#))

10 [Q89](#) [Paul Atherley]

11 Critical Minerals Association ([MIN0015](#)); Business and Trade Committee, First Report of Session 2023–24, [Batteries for electric vehicle manufacturing](#), HC 196

12 Rare earth elements (REEs) are a sub-category of the critical minerals list of 17 chemical elements (lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, lutetium, gadolinium, terbium, dysprosium, holmium, erbium, thulium and ytterbium). Of the 17 REEs, neodymium, praseodymium, dysprosium, and terbium are in particular demand, given their use in permanent magnets. Permanent magnets are needed for low-carbon technologies such as electric vehicles and wind turbines. Rare earths are not geologically "rare" but are produced in small quantities as the by-product of other mining. Both because of the small quantities produced and because of China's near monopoly on the midstream processing, they are highly vulnerable to supply disruption (See Box 1).

13 Oral evidence taken before the Business, Energy and Industrial Strategy Sub-Committee on National Security and Investment on 6 December 2022, HC(2022–23) 944, [Q6](#) (Paul Atherley)

minerals, the UK cannot meet its legally-binding net zero target, support job creation in the tech and automotive industries, nor retain critical defence and security capabilities.¹⁴ Our economic resilience and national security depend on critical minerals.

6. The UK is almost completely dependent on imports for critical minerals and mineral products.¹⁵ It currently lacks the necessary mines to be self-sufficient and faces many obstacles to developing them.¹⁶ Existing mineral deposits within the UK, even if exploited, would take years to produce a yield.¹⁷ This means that, for decades to come, the country will remain entirely reliant on global supply chains that are under increasing pressure from other countries scrambling to access the same limited resources.¹⁸ More concerning, the UK will remain dependent primarily on China as the dominant global player in these supply chains.

The role of China in critical minerals supply chains

7. The Chinese Government understood the importance of critical minerals several decades ago. In the post-Cold War years, when western governments actively sought to outsource the mining and processing of minerals, China welcomed these extractive industries.¹⁹ This gave China a significant first mover advantage in the mining and processing of critical minerals. Building on this lead, it established strategic mineral resource planning in the 2000s and a National Mineral Resources Plan with a catalogue of 24 “strategic minerals” in 2016.²⁰ What commodities and mining journalist Henry Sanderson refers to as “brute protectionism”²¹ allowed China to make rapid progress from mining to the development and production of high-value electric car batteries. Having rapidly scaled up business within the domestic market, Chinese companies were able to drive down costs allowing them to compete effectively on the global market.²² China’s desire to position itself as a leading producer of electric vehicles and other emerging technologies required more raw materials than it could mine domestically. The requirement for supplies of lithium, copper, nickel and cobalt to make electric batteries pushed China into global mining, part of its ‘Go Out’ policy.²³ The contemporaneous

14 Foreign, Commonwealth and Development Office (MIN0049); RAND Europe (MIN0040); Business, Energy and Industrial Strategy, [Resilience for the future: the United Kingdom’s Critical Minerals Strategy 2022](#), July 2022

15 P.A.J. Lusty, R.A. Shaw, A.G. Gunn, N.E. Idione, “[UK criticality assessment of technology critical minerals and metals](#)”, Decarbonisation & Resource Management Commissioned Report, British Geological Survey, 6 June 2022, CR/21/120

16 Delays to development of British mines run from the timescale required to get a mine open and running, to financing, local community consent (many deposits are in sites of natural beauty), cost of production and midstream processing of the resulting ores.

17 As set out in the British Geological Survey’s recent national surveys, “[Potential for Critical Raw Material Prospectivity in the UK](#)”, UK Critical Minerals Intelligence Centre, CR/23/024; Professor Adrian Finch warned that, outside of tin, tungsten and lithium, the UK could not produce any other critical minerals within the next decade, School of Earth & Environmental Sciences, University of St Andrews (MIN0010)

18 British Geological Survey (MIN0027)

19 [Q3](#) [Guillaume Pitron]; [Q1](#) [Henry Sanderson]

20 International Energy Agency, Policies database, “[National Plan for Mineral Resources](#)”, accessed 5 September 2023

21 Henry Sanderson, *Volt Rush: the Winners and Losers in the Race to Go Green*, (London: 2022), p43

22 Henry Sanderson, *Volt Rush: the Winners and Losers in the Race to Go Green*, (London: 2022), pp32–46

23 The ‘Go Out’ or ‘Going Out’ (走出 zouchuqu) policy adopted from 2000 onward encouraged Chinese investors to increase their outward foreign direct investment. It was formally embedded in the 10th Five-Year Plan (2001–05), with the Government encouraging Chinese companies to increase their overseas presence and Embassies directed to assist in helping them to understand global markets and legal systems. Premier Zhu Rongji, [Report on the Outline of the Tenth Five-Year Plan for National Economic and Social Development \(2001\)](#), 3 March 2010, retrieved on 14 September 2023

move towards higher standards in western countries has made manufacturing, refining and mining more expensive in the West as companies have sought to comply with high domestic and international environmental and safety regulations.²⁴ This combination of factors started a ‘great minerals rush’—a global race to secure access to the minerals of the future.

8. China’s coherent and long-term industrial policy has meant decades of state and private investment in its supply chains. Not only has it exploited its own natural resources at low cost, often neglecting basic environmental and labour standards, but it has supported Chinese-owned businesses to establish themselves outside China, controlling large-scale mining operations across Africa.²⁵ We heard on our visit to Chile how China had become a valued partner, in mining and other sectors. The Belt and Road Initiative was founded in part to insulate China against vulnerabilities in its own mineral resources.²⁶ From dominating critical minerals mining at home and abroad through the 1980s and 1990s, China then moved up the value chain to control, at its peak, 91% of global midstream processing (for example, see Box 1).²⁷ Although this figure has waned slightly over the last few years as China has moved into higher value manufacturing, it continues to operate a near monopoly over some metals such as REE and maintains a dominant presence in midstream processing more widely.²⁸

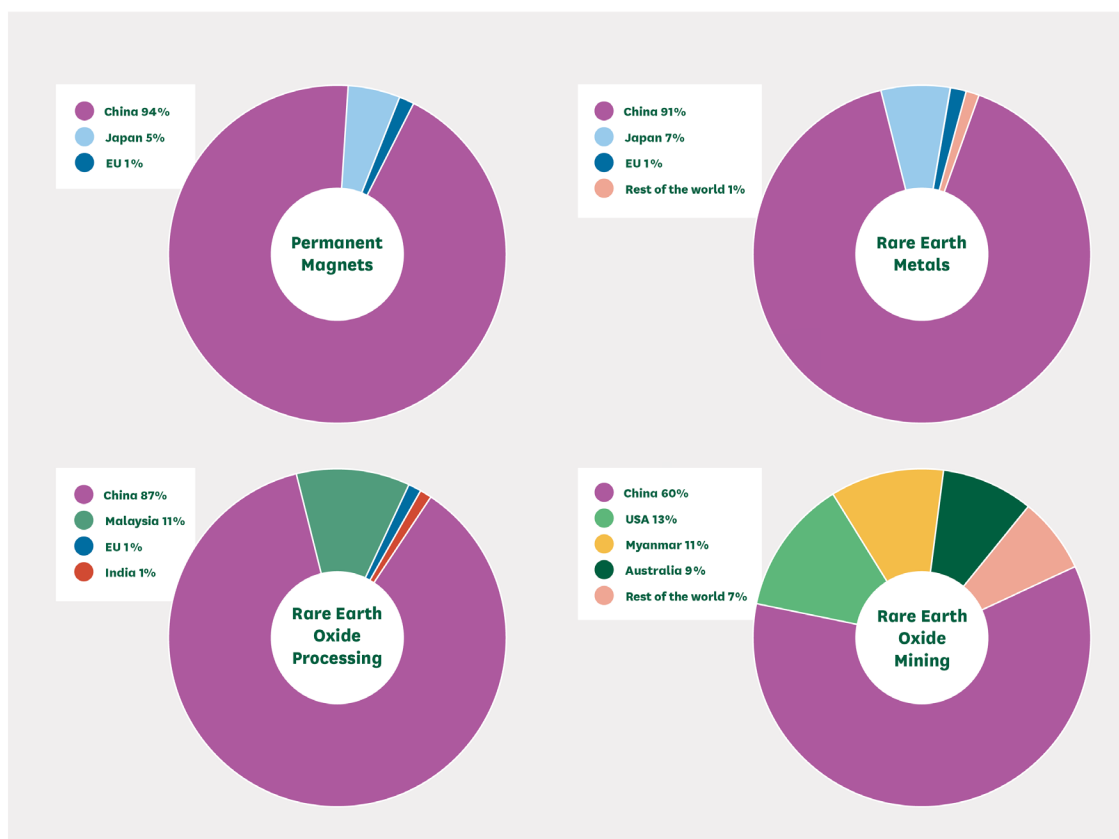
24 Guillaume Pitron, *The Rare Metals War*, English translation (London, 2020), pp 59-74

25 Critical Minerals Association, [Defining Criticality - What Makes a Critical Mineral?](#), accessed 1 December 2022

26 [Q4](#) [Henry Sanderson]; The ‘Belt and Road Initiative’ is a Chinese state initiative, begun in 2013, to finance and construct huge infrastructure projects, digital connectivity and economic corridors across countries and continents.

27 China Research Group, [The UK and China: Critical Minerals](#) (November 2021), p6; University College London, The Bartlett, & a network of UK universities and research organisations, Delft University of Technology and EIT Raw Materials ([MIN0012](#))

28 In 2022, according to a report by the Brookings Institution, China refined 68% of nickel, 40% copper, 59% lithium and 73% cobalt globally, as well as having 78% of the world’s cell manufacturing capacity for electric vehicle batteries. Brookings Institution, [China’s Role in Supplying Critical Minerals for the Global energy Transition](#) (July 2022), p6

Box 1: China's share of rare earth element (REE) processing

Source: University College London, The Bartlett, & a network of UK universities and research organisations, Delft University of Technology and EIT Raw Materials ([MIN0012](#))

9. In the early 2000s, China began to ‘weaponise’ critical minerals exports, restricting access for political leverage. Guillaume Pitron, a journalist specialising in the geopolitics of raw materials, referred to “unequivocal” analysis by the World Trade Organisation (WTO), which showed that “over the previous two decades, China had engineered a policy of systematic restrictions on rare-mineral exports”.²⁹ Concerns about the extent of China’s stranglehold came to a head with an unofficial Chinese ban on exports of REEs to Japan in 2010, after Japan detained the captain of a Chinese fishing trawler over a dispute in the East China Sea.³⁰ Governments around the world were alerted to the economic and security implications of allowing such a concentration of processing and mining in one state.³¹

10. According to Guillaume Pitron, western countries’ failure to maintain their own domestic mining and processing allowed China to establish its dominant position. He wrote that the decision by many governments at the end of the Cold War to end stockpiling of resources for defence led to a mass sell-off that caused a rapid decline in commodity prices.³² This fostered the impression that minerals were in abundant and easy supply and

29 Guillaume Pitron, *The Rare Metals War*, English translation (London, 2020), p87

30 The trawler was alleged to have been fishing in Japanese controlled waters which China has claimed as its own, when it collided with two Japanese coast guard boats. The New York Times, “[Amid Tension, China Blocks Vital Exports to Japan](#)”, 22 September 2010

31 The Chinese government denied that any such ban had taken place, saying instead that any decrease in exports was because pre-existing quotas had already been used up. Reuters, “[China denies banning rare earths exports to Japan](#)”, 23 September 2010

32 Guillaume Pitron, *The Rare Metals War*, English translation (London, 2020), pp74–5

allowed the establishment of ‘zero supply’ and ‘just-in-time’ manufacturing.³³ Relying on contractors and suppliers to meet just-in-time deadlines for raw materials or to provide outsourced parts has meant that manufacturers have worked in a way that is divorced from their wider supply chains. After decades of operating in this fashion, rising geopolitical tensions are jeopardising this way of working. Industries dependent on critical minerals are now working to limit the exposure of their supply chains.³⁴

11. After the 2010 REE export ban, some major industrialised countries, including Japan and the US, began to reduce their dependence on Chinese minerals and minerals processing, through stockpiling and challenging the validity of China’s activities through the WTO.³⁵ Despite this, the UK Government has argued that systematic competition with China over critical minerals has come faster than it anticipated and is only likely to increase. It assessed that, realistically, the UK’s ability to counter this dominance will vary by sector but that “the major factor may be the broader strategic goals of China’s industrial policy to dominate the whole value chain in key future-tech sectors.”³⁶ Jeff Townsend, Director of the UK Critical Minerals Association told us that, within industry, there has been concern for years about the acute vulnerabilities in the UK’s supply chains. He first began raising the issue with Government in 2012 and said, “I have been banging my head against a brick wall ever since”.³⁷

12. Successive governments have failed to recognise the importance of critical minerals to the UK economy and failed to respond adequately to the aggressive capture of large parts of the market over the last three decades by China. Allowing a single country to dominate the UK’s critical minerals supply chains shows a lack of foresight and has left the current Government with a mountain to climb to address the consequent vulnerabilities and protect the country’s economic resilience. The Government has tried a hands-off approach, but it has left the UK too vulnerable on what is, fundamentally, a security issue.

33 These types of supply chains, where parts are delivered ‘just in time’ for stages of product assembly are common in the automotive industry, among others. They allow manufacturers to keep a minimum of stock to hand, instead relying on a constant supply to keep pace with manufacture.

34 Guillaume Pitron, *The Rare Metals War*, English translation (London, 2020), pp 74–76. This is not unique to the critical minerals market. More widely ‘just in time’ industries are taking steps to diversify suppliers or stockpile critical products. See: Financial Times, “[Supply chains: companies shift from ‘just in time’ to ‘just in case’](#)”, 20 December 2021; Financial Times, “[How rising conflict is reshuffling global supply chains](#)”, 12 October 2023; The Guardian, “[Why it’s high time to move on from ‘just-in-time’ supply chains](#)”, 11 October 2021

35 Office of the US Trade Representative Archives, “[US Victory on Rare Earths Exports](#)”, March 2014. See also WTO Dispute Settlement Case [DS508](#), China—Export Duties on Certain Raw Materials. The EU joined the US case the following week: Reuters, “[EU launches WTO challenge to Chinese raw material duties](#)”, 19 July 2016; South China Morning Post, “[Japan moves to secure rare earths to reduce dependence on China](#)”, 17 August 2020

36 Foreign, Commonwealth and Development Office ([MIN0049](#))

37 [Q34](#) [Jeff Townsend]

3 The UK Critical Minerals Strategy

Why now?

13. Experts predict that a huge increase in mining—perhaps even a six-fold increase—³⁸ will be required to meet global need for critical minerals as the world transitions to clean energy.³⁹ Three hundred new mines are estimated to be needed by 2035;⁴⁰ each new mine can take from 10 to 16 years from exploration and permitting through to exploitation. There is currently a disparity between the requirements to meet current global climate commitments and the ability of the mining sector to deliver to the necessary scale and timeframe. Increasing geopolitical tensions makes the UK more vulnerable to hostile countries leveraging those minerals the UK currently has access to. Simultaneously, economic competition is increasing as many major economies enact measures to protect critical minerals access for their domestic industrial base. Countries have begun ‘re-shoring’ or ‘friend-shoring’ mining and processing to improve their resilience to market shocks.⁴¹ This further increases the UK’s vulnerability.

The scope of the Critical Minerals Strategy

14. In response to the challenges outlined above, the UK and other states have released strategies to safeguard and strengthen their supply of critical minerals. The UK Government published the *UK’s Critical Minerals Strategy, Resilience for the Future*, (the Strategy) in July 2022. The Strategy aims to “mitigate risks and to improve resilience of critical mineral supply chains”.⁴² It outlines a three-part approach to:

- accelerate the UK’s ability to meet its needs through greater domestic production, fostering relevant skills and encouraging greater recycling and reuse, while increasing research into alternative solutions;
- work through its international relationships to improve and diversify global supply chains and support UK business to participate in the global market; and
- enhance international markets by working with partner countries to improve environmental, social and governance (ESG) standards in mining and processing, improve market transparency and promote the City of London’s offer of responsible finance for critical minerals.

15. **Critical minerals are of strategic significance to the UK. We welcome the Government’s belated recognition of the need for a Critical Minerals Strategy.**

38 International Energy Agency, [The Role of Critical Minerals in Clean Energy Transitions](#) (2022), p8

39 Royal Society of Chemistry ([MIN0028](#)); British Geological Survey ([MIN0027](#)); Critical Minerals Association ([MIN0015](#)); International Energy Agency (IEA) ([MIN0019](#)); Foreign, Commonwealth and Development Office ([MIN0049](#))

40 Fiona Clouder ([MIN0043](#)); International Energy Agency (IEA) ([MIN0019](#))

41 Reshoring refers to moving mining, processing and manufacturing activities back to a country’s territory in order to have complete control over an end-to-end supply chain; friend-shoring or ally-shoring refers to taking measures to ensure aspects of your supply chain which cannot be met domestically are located in allied or friendly countries.

42 Business, Energy & Industrial Strategy, [Resilience for the future: the United Kingdom’s Critical Minerals Strategy](#), July 2022

16. The Strategy does not provide a set of targets with a clear plan for implementation or indicate an order of prioritisation. It has been described by the mining company Anglo American as “a guiding framework” rather than a “concrete list of policy actions.”⁴³ Nor does the Strategy make clear what actions the Government will undertake and what it expects of the private sector. In written evidence, Anglo American set out their expectation that the forthcoming Critical Minerals Delivery Plan be “more concrete”:

It is vital that this [upcoming Plan] includes tangible policy actions, backed by appropriate funding, to give clarity, to both the mining sector and the industries that will need raw materials, as to how the UK will aim to secure its critical minerals supply chains.⁴⁴

The Strategy Refresh

17. The Government published the anticipated Delivery Plan, reframed as a ‘refresh’ of its Strategy, *Critical Minerals Refresh: Delivering Resilience in a Changing Global Environment (the Refresh)*, in tandem with its update to the 2021 Integrated Review (IR), the *Integrated Review Refresh 2023: responding to a more contested and volatile world*, on 13 March 2023. In the Critical Minerals Refresh, the Government identified that increased geopolitical tensions over energy sources and the subsequent ramping up in the transition to clean energies had significantly increased the need for assured access to critical mineral supplies. The IR Refresh also reflected this view and concluded that “more robust measures to bolster the UK’s economic security” were required.⁴⁵

18. The Refresh is in part a loose delivery plan and in part a progress report on the work undertaken so far within the scope of the Strategy. It also identifies that, in addition to competition from hostile states, action by allies to strengthen their critical minerals supply chains may come at a detriment to the UK. It focuses on how the Government intends to deliver the Strategy in light of this sharpening geopolitical competition; sets out progress already made; lists upcoming delivery milestones; and introduces welcome plans for a Task & Finish Group to report on industry requirements.

19. Although the Government has, in the Refresh, narrowed an initial list of 53 policy interventions to ten, the new broad areas of priority do not substantially narrow the overall scope of the strategy. Instead, it commits to delivering on all the wider aims of the original Strategy. Detail about the role the UK Government envisages playing to support priority industries through its diplomatic efforts is also lacking. Christopher Vandome, Senior Research Fellow at the Africa Programme, Chatham House told us:

Even chatting to people involved in the industry, who are financing and trading on the African continent from the UK, there is a lack of understanding or awareness of what the critical minerals strategy is trying to achieve in this case, [...], and where in the value chain is the UK seeking to make an intervention.⁴⁶

43 Anglo American ([MIN0038](#))

44 Anglo American ([MIN0038](#))

45 Cabinet Office, *Integrated Review Refresh 2023: responding to a more contested and volatile world*, March 2023, [CP 811](#), p12–13

46 [Q36](#) [Christopher Vandome]

The Refresh does not clarify this position; Government repeats that it will “encourage investment along the whole critical mineral value chain” without addressing where within the value chain the UK should position itself.⁴⁷

The UK in a global competition

Action by allies on critical minerals

20. It is instructive to consider the Government’s policies alongside those of other countries. The UK’s allies understood the threat inherent in single-source supply chains and began undertaking strategic assessments of their critical mineral requirements more than a decade ago.⁴⁸ In the wake of the pandemic, many have pushed ahead with ambitious steps to de-risk their critical mineral supply chains. We heard from Duncan Wood, Vice President for Strategy and New Initiatives at the Wilson Center,⁴⁹ that over the past two years, in particular, the US has seen “nothing short of a seismic shift in its approach to critical minerals”.⁵⁰

21. The scope of the US approach is broad, running from mines through to high tech downstream manufacturing, in a way that reflects the country’s size and industrial strengths (See Box 2).⁵¹ Leveraging US consumer spending power and tech expertise, the US Government is encouraging investment in American mining and industry to improve its resilience and supplementing private investment with generous public subsidies. Likewise, action by Canada has been rapid and tailored to its particular national context (See Box 3). Its critical mineral strategy reflects Canada’s natural resource endowments and history of mining and exploration, with government-funded initiatives to fast-track mining operations, alongside investment and tax rebates to encourage geoscience and mineral exploration.⁵² The European Union announced an Action Plan on Critical Raw Materials in 2020 and a foresight study looking at future need through to 2030 and 2050.⁵³ It will set legally binding targets for raw materials and manufacturing to limit dependency and improve resilience through the proposed Critical Raw Materials Act (see Box 4). While our allies have built rapidly on years of preparation, the UK response has been from a standing start.

47 Business and Trade, [Critical Minerals Refresh: Delivering Resilience in a Changing Global Environment](#), March 2023

48 See Boxes 2, 3 and 4.

49 The [Wilson Center](#) is a non-partisan counsel based in Washington, D.C., that provides analysis, research and insight to policymakers.

50 [Q64](#) [Duncan Wood]

51 The White House, [Securing a Made in America Supply Chain for Critical Minerals](#), February 2023

52 Department for Natural Resources, [The Canadian Critical Minerals Strategy, From exploration to recycling: powering the green and digital economy for Canada and the world](#), 9 December 2022; The strategy is a \$3.8 billion investment in Canada’s mining and extractive industries. The Canadian Government will invest \$79.2 million in geoscience and exploration to identify domestic critical minerals deposits, with an additional 30% tax rebate for companies conducting critical minerals exploration projects. The critical minerals strategy also includes allocating “\$40 million for permitting procedures, \$21.5million to assist project developers in navigating regulatory processes, and \$1.5 billion to fund advanced projects”. Innovation News Network, [“Canadian Government unveils C\\$3.8bn critical minerals strategy”](#), 12 December 2022

53 European Commission, [Commission announces actions on Critical Raw Materials](#), September 2020

Box 2: United States

The supply chain disruption caused by Covid-19 in 2020 prompted the US administration to conduct an immediate and comprehensive analysis of its critical supply chains.^{54,55} The US Government subsequently made available trillions of dollars of subsidies through legislation such as the Inflation Reduction Act (IRA),⁵⁶ the Infrastructure Investment and Jobs Act⁵⁷ and Defence Production Act⁵⁸ to 're-shore' or strengthen America's critical minerals supply chains. In addressing the challenge of critical minerals supply, the administration clearly and publicly articulated the nexus between industrial and foreign policy, linking the domestic with the international.⁵⁹ US industry, incentivised by the generous subsidy schemes, is already beginning to re-shore supply chains.⁶⁰ The US has coupled this approach with a simultaneous focus on its international relationships.^{61,62}

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- 54 UK Critical Minerals Intelligence Centre, "Overview of activities and policies related to critical raw material standards and resource management" [CR/21/24](#), p6
- 55 [Q64](#) [Duncan Wood]
- 56 The Inflation Reduction Act (IRA) is an overall package worth over \$1 trillion. The electric vehicle financing component is frequently reported as worth \$373 billion, however Duncan Wood explained that this should not be understood as a ceiling. There is no cap on the total fund for qualifying vehicles and purchasers under IRA. [Q64](#) [Duncan Wood]
- 57 The Infrastructure Investment and Jobs Act makes available \$7.9 billion for "battery manufacturing, recycling, and critical minerals initiatives." This sum includes money for recycling, establishment of an integrated rare-earth extraction and separation facility and refinery, and mapping domestic mineral deposits. Joseph Majkut, Jane Nakano, Maria Krol-Sinclair, Thomas Hale and Sophie Coste, "[Building larger and more diverse supply chains for energy](#)", Center for Strategic and International Studies, July 2023
- 58 The Defence Production Act provides \$500 million for critical minerals projects in the US. [Q64](#) [Duncan Wood]
- 59 Brookings Institute, "[Renewing American Economic Leadership](#)", speech by US National Security Adviser, Jake Sullivan, 27 April 2023
- 60 [Q64](#) [Duncan Wood]
- 61 The US set up the Minerals Security Partnership in June 2022 as a critical minerals alliance whose partner countries will cooperate in mobilising public and private finance to support strengthening global critical minerals supply chains. Members commit to adopting and insisting on high ESG standards in the projects they fund; however the alliance does not subscribe to a single universally recognised standard. The original partner countries were Australia, Canada, Finland, France, Germany, Japan, the Republic of Korea, Sweden, the United Kingdom, the United States, and the European Commission. India and Italy have since joined. [Press release: Minerals Security Partnership - United States Department of State](#), 14 June 2022; [DowntoEarth.org](#), "[Minerals Security Partnership: India joins the critical minerals club](#)", 23 June 2023
- The US is also negotiating critical minerals specific free-trade agreements to allow allies access to IRA subsidies. It has signed such an agreement with Japan; an EU agreement is under negotiation; and it committed to beginning similar negotiations with the UK in the [Atlantic Declaration: a framework for a twenty-first century US-UK economic partnership](#), agreed by President Biden and the Prime Minister in June 2023.
- 62 It has also developed trading relationships with resource rich countries, signing a memorandum of understanding with both the Democratic Republic of Congo and Zambia that aims to strengthen regional critical minerals value chains. British Geological Survey ([MIN0027](#))

Box 3: Canada

The Canadian Critical Minerals Strategy aims to advance reconciliation with indigenous people, promote economic growth, climate action and environmental protection and improve global security and international partnerships.⁶³ The Government has already made progress in establishing Canada as a vital supply chain link, promising to supply global markets with materials from domestic mining that meet high ESG standards and committing to an increase in domestic mid-stream processing.⁶⁴ To enhance their existing bilateral trade in minerals, the US and Canada have established the Canada-US Joint Action Plan on Critical Minerals Collaboration “guiding cooperation between officials in areas such as industry engagement, innovation, defence supply chains, improving information sharing on mineral resources and potential, and cooperation in multilateral fora.”⁶⁵

Box 4: The European Union

In 2022, the European Commission proposed a draft regulation known as the Critical Raw Materials Act to build European capacity, improve resilience, support the circular economy and strengthen global supply chains.⁶⁶ The Act, which has now been agreed by the Council and European Parliament,⁶⁷ seeks to set an overarching target that no more than 65% of the EU’s annual need for a strategic raw material should come from a single third country.⁶⁸ Coordinated strategic stockpiling, investment in research and development, and a strong focus on recycling is intended to support self-sufficiency, while initiatives like the European Critical Minerals Club seek to draw allies together to enhance international supply chains.⁶⁹

Funding for critical minerals

22. The Government has launched a £15 million Circular Critical Materials Supply Chains programme to focus on UK REE supply chains;⁷⁰ made available £65.5 million under

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- 63 Department for Natural Resources, [The Canadian Critical Minerals Strategy, From exploration to recycling: powering the green and digital economy for Canada and the world](#), 9 December 2022
- 64 Although it should be noted that work on the processing plant has stalled while its financial viability is assessed—it needs customers that are willing to pay to diversify away from China. The Canadian Press for CBC News “[Canada’s only rare earths mining company pauses construction at Saskatoon processing facility](#)”, 21 April 2023
- 65 “With \$2.6-billion worth of goods and services moving between Canada and the U.S. every day, both of our economies are better off when we work together. By finalizing the Canada–U.S. Joint Action Plan on Critical Minerals Collaboration, we are advancing secure access to the critical minerals that are key to our economic growth and security — including uranium and rare earth elements — while bolstering our competitiveness in global markets and creating jobs for Canadians.” Former Canadian Minister of Natural Resources, The Hon Seamus O’Regan. Department for Natural Resources, “[Canada and the US finalize joint action plan on critical minerals collaboration](#)”, January 2020
- 66 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 [COM\(2023\) 160](#)
- 67 European Commission, [Commission welcomes political agreement on Critical Raw Materials Act](#), 13 November 2023
- 68 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 [COM\(2023\) 160](#)
In the position agreed by an overwhelming majority, the European Parliament further strengthened the provisions on environmental and social requirements for mining within the draft Act and increased the already ambitious targets, proposed by the Commission, for processing. Politico Pro, [Critical raw materials law clears European Parliament](#), 14 September 2023.
- 69 European Commission press release, [Critical Raw Materials: ensuring secure and sustainable supply chains for EU’s green and digital future](#), 16 March 2023
- 70 Business and Trade, [Critical Minerals Refresh: Delivering Resilience in a Changing Global Environment](#), 13 March 2023

the Accelerate-to-Demonstrate Facility for critical minerals technology innovation in developing countries;⁷¹ and committed £211 million in additional funding to the Faraday Battery Challenge to boost R&D across the EV battery sector. Funding has also been made available through the Automotive Transformation Fund, which provides a pot of £850 million to promote the large-scale industrialisation of an electric vehicle supply chain.⁷² The financial support offered by the Government is relatively small when compared with the scale of its ambitions. Jeremy Wrathall, Founder and Chief Executive of Cornish Lithium Limited described the strategy as “great, but it is a wish list with no substance in terms of finance”.⁷³ These projects span aspects of the entire supply chain from mineral extraction and refining, to manufacture of electric vehicle (EV) batteries, and research and innovation both at home and abroad. Lack of financial support commensurate with the challenge could be a determining factor for companies considering whether to continue to base themselves in the UK and invest in UK.⁷⁴ Without Government investment, the market will struggle to establish supply chains as rapidly as they will be required.⁷⁵ Furthermore, it is unclear to us, from the way the Strategy is funded, which supply chains the Government considers critical to prioritise for reasons of economic resilience or national security.

23. In March 2023, the Chancellor ruled out US-style subsidies for green industries in favour of a market-first approach,⁷⁶ an approach which the then Foreign Secretary confirmed to us remains the Government’s policy.⁷⁷ The UK cannot replicate a US-style approach, given larger American reserves of natural resources, economy and population, but it can and should do more to focus what funding it makes available on areas where the

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- 71 Accelerate-to-Demonstrate, or A2D, falls under the Clean Energy Innovation Facility platform. It includes a funding pillar on “technology innovations for critical minerals in developing countries, establishing the UK as an overseas aid funding leader on critical minerals.” Foreign, Commonwealth and Development Office ([MIN0049](#)) The money is available through the UK’s diplomatic network or development partners via project bids. The FCDO was unclear whether any money had yet been allocated under the fund. [Q133](#) [Tim Stern]
- 72 A number of small grants have been made available through the ATF to Less Commons Metals to conduct a “feasibility study for a fully-integrated supply chain for rare earth permanent magnet production in the UK”, to Pensana to develop a UK based rare-earth elements separation plant, to Green Lithium to build and operate a UK based refinery, and to Cornish Lithium to scope a hard rock project, to Weardale Lithium Limited to consider the feasibility of lithium extraction in County Durham, and to the now collapsed Britishvolt gigafactory. Business and Trade, [Resilience for the future: the United Kingdom’s Critical Minerals Strategy 2022](#), July 2022, p20
- 73 Oral evidence taken before the Business and Trade Committee on 9 May 2023, HC (2022–23) 1070, [Q12](#) [Jeremy Wrathall]
- 74 Oral evidence taken before the Business and Trade Committee on 9 May 2023, HC (2022–23) 1070, [Q30](#) [Simon Moores]
- 75 Oral evidence taken before the Business and Trade Committee on 9 May 2023, HC (2022–23) 1070, [Q2](#) [Simon Moores]. The Chief Executive of Benchmark Minerals Intelligence, explained that to build a gigafactory you need to look beyond the mine and have “the critical mineral supply deals, the contracts and the partners in place to see the lithium ion in the ground go all the way through to that battery plant.”
- 76 Writing in *The Times*, the Chancellor said: “[O]ur approach will be different—and better. We are not going toe-to-toe with our friends and allies in some distortive global subsidy race. [...] While taxpayer support is important to kick-start new industries, we need to leverage billions more in private capital. In a sense, this is ‘the British way’. Not massively distortive subsidies, but fantastic science, innovation-rich companies and a pro-growth regulatory regime—powered by private capital from our global financial centre.” [“Jeremy Hunt: We’re powering up Britain’s green industrial revolution”](#), 30 March 2023
- 77 “The Prime Minister has made it clear that we are always going to be an internationally focused trading nation. There are some challenges with focusing so heavily on a subsidies regime. Subsidies are less liked by markets because they are less predictable than frameworks. We are working on our protections in a way that is allied to but not the same as our US or European partners. If it was as simple as throwing money at a problem, that is what everyone in the world would do, but that is not what everyone is doing.” Oral evidence taken on 12 June 2023, HC (2022–23) 1095, [Q227](#) (James Cleverly)

UK excels and that can provide a point of differentiation.⁷⁸ Duncan Wood said the UK should look to its strengths and commit funding to human capital, through investment in higher education, and research and development. This, he argued, would give a greater return on lower Government investment, as well as improving the UK's competitiveness in the international market by making it a "destination" for parts of the value chain.⁷⁹

24. The Strategy and its Refresh form the basis of a useful framework to underpin the varied strands of government policy that will be required to improve the long-term resilience of UK critical minerals supply. However, the scope of the Strategy is too broad to be helpful as a guide to industry, which needs realistic targets and timeframes. We welcome the more frank and open assessment in the Critical Minerals Refresh of the challenges the UK faces in competing for critical minerals, but the Refresh still lacks the detail and prioritisation needed to be implementable.

Lack of urgency

25. The Government's response to its critical mineral challenges has been slow and lacking in clarity. For example, although the Strategy sets out its intention to increase UK domestic mining and processing of battery minerals, its past failure to address this has led to a "major disconnect" between supply and demand because of the timescales required to bring new mining operations online.⁸⁰ Domestic mining will not be established quickly enough to meet the demand of domestic gigafactories⁸¹ that will shore up the UK's automotive industry.⁸² Experts told the Business and Trade Committee that, while the US and European countries pressed ahead, the UK had "missed the boat" twice on the ten-year cycles for supply of critical minerals needed for electric battery gigafactories and would need to ensure it did not miss the "third and probably final round".⁸³ Former UK Ambassador to Chile, Fiona Clouder, expressed doubt that the UK Strategy is deliverable as it stands, because of the level of global competition and the growing gap between the UK and its allies.⁸⁴ Duncan Wood put it bluntly, saying that the UK was "at least 18 months behind the curve of what is happening in the United States", and that from an international perspective, the UK has not progressed from awareness of the problem to

78 Other major industrial countries have spent considerably more than the UK to develop their critical minerals sectors or secure their supply chains and have clearly targeted their investments to develop specific minerals or industrial sectors. The US has made available upwards of \$370 billion through the IRA alone for electric vehicles, while Canada has put \$15.4 billion towards clean technologies over the next five years, with \$3.8 billion approved for the Canadian Critical Minerals Strategy to 2030. Colin McClelland, Mining.com, "[Canadian budget contains over \\$15 billion for clean technologies and critical minerals](#)", March 28 2023. Colin McClelland, Mining.com, "[Canadian budget contains over \\$15 billion for clean technologies and critical minerals](#)", 28 March 2023. See also Annex for a snapshot of actions taken by allies as at February 2023, and Boxes 2, 3 and 4 above.

79 [Qq65–66](#) [Duncan Wood]

80 Oral evidence taken before the Business and Trade Committee on 9 May 2023, HC (2022–23) 1070, [Q11](#) [Paul Lusty]

81 The term 'gigafactory' refers to battery manufacturing facilities capable of manufacturing battery cells or fuel cells at scale. House of Lords Science and Technology Committee, First Report of Session 2021–22, [Battery strategy goes flat: Net zero target at risk](#), HL 53, para 139; Business and Trade Committee, First Report of Session 2023–24, [Battery manufacturing for electric vehicles](#), HC 196, para 9

82 Oral evidence taken before the Business and Trade Committee on 9 May 2023, HC(2022–23) 1070, [Q11](#) [Paul Lusty]

83 Oral evidence taken before the Business and Trade Committee, HC(2022–23) 1070, 9 May 2023, [Q9](#) [Simon Moores]

84 "If it were just the UK in this space, possibly. The real issue of course, is that everybody else is at this game. To be honest, in many cases they are way ahead of us." [Q92](#)

effective action.⁸⁵ We are not reassured that the Strategy conveys an understanding of this urgency. The Government's response to the global challenge has been slow and continues to lack a sense of pace.

26. Witnesses commented on the silence from the top of Government about the strategic importance of critical minerals and the lack of coherent messaging from Whitehall.⁸⁶ In comparison, in the EU the introduction of the European Critical Raw Materials Act came hand-in-hand with a “high-level political signal” both from the European Commission and from national leaders that critical minerals were “a crucial strategic issue”.⁸⁷ From early 2023, they began actively and vocally encouraging investment in European critical minerals mining, processing and recycling. This high-level engagement has been backed up with a range of specific and targeted policy actions that build on the EU's 2020 Action Plan.⁸⁸ Similarly, US President Biden has been vocal about ‘de-risking’ US critical supply chains and the strategic significance of critical minerals to US defence and economic resilience. In both instances, the sharp political focus on critical minerals from the top of Government has emphasised their importance, raised awareness of strategic vulnerabilities among industry and the wider public and driven a public dialogue about resilience.

27. The Critical Minerals Strategy does not convey the sense of urgency and need for immediate, decisive action which is of paramount importance if the UK is to deliver on its net zero commitments and enhance its long-term economic resilience in the face of mounting challenges.

Embedding the Strategy in the wider policy landscape

28. Critical minerals access is a cross-cutting challenge that arcs across multiple departments and policy areas. To establish secure critical mineral supply chains, the British Geological Survey argues that, “it is necessary for the Government to take a long-term view that is directly linked to delivery of the country's industrial strategy and promotes investment across the value chain.”⁸⁹ Other countries have embedded critical minerals firmly in their respective economic and industrial strategies.⁹⁰ The US explicitly acknowledged the critical minerals requirements of its industrial and defence strategies and incorporated planning and funding within the relevant strategies (see Box 2). Pointing to the disconnect between the UK Strategy and other domestic priorities, Jeff Townsend, Director of the UK Critical Minerals Association, told us, for example, that the 2017 Industrial Strategy identified:

85 Duncan Wood described the UK perspective as “Gosh, critical minerals matter, and we need to do something about it.” [Q64](#)

86 Jeff Townsend, CMA told us “If I was asking the Government for one thing, I would ask that the Prime Minister be more vocal, like his counterparts internationally, and I would ask that the Treasury understand the reality of this and put money behind it.” [Q62](#); See also [Q38](#), “This is a global game. We have other leaders who understand that and are mentioning that on a daily basis, positioning their country on a daily basis. We are, at the highest level, still not demonstrating that leadership.”; see also [Q23](#) [Guillaume Pitron]

87 [Q67](#) (Christopher Heron)

88 European Commission, [Action Plan on Critical Raw Materials Factsheet](#), 2 September 2020

89 British Geological Survey ([MIN0027](#))

90 Fiona Clouder ([MIN0043](#)); Former UK Ambassador to Chile, Fiona Clouder told us that other Five Eyes countries, like Canada, had developed more globally oriented action plans that considered the critical minerals challenge holistically, embedding it as part of a national economic strategy. See also Boxes 2, 3 and 4.

(...) four grand challenges: electric vehicles, renewable energy, advanced robotics and AI and the ageing economy. All four of those are dependent upon critical minerals. Critical minerals and the supply chain are not mentioned once in the Industrial Strategy.⁹¹

He suggested that a lack of understanding at the top of Government may be causing one part of Whitehall to unintentionally undermine the policies of another, creating confusion for industry.⁹² Developing understanding across Whitehall would also strengthen the FCDO's role in delivering the Strategy, as explored in paragraphs 32–35 below.

Task & Finish Group

29. The Task & Finish Group for Industry Resilience in Critical Minerals will, belatedly, begin to assess vulnerabilities and what industry needs to 'de-risk' its supply chains over the coming decade.⁹³ Its report, due at the end of 2023, could go some way towards addressing current uncertainty, described above, about the level of financial and practical support industry can expect from Government, sector by sector. It may allow for more detailed implementation strategies, which set out a clear order of priorities for Government investment and action. The Government's 2023 Semi-Conductor Strategy could serve as a model for a future strategy. It clearly identifies specific areas of strength and focus, then lays out what is required of both Government and industry. It includes clear deadlines for action in the short and medium term against three distinct areas of focus, as well as a mechanism for enforcement through the Semiconductor Advisory Panel.⁹⁴

30. While the UK's allies make substantial progress on implementing their strategies, the UK Government has yet to define its most urgent priorities and push industry to deliver them. There remains a disconnect between strategy and delivery because the priorities set out in the Critical Minerals Strategy do not make clear the UK's role in the critical minerals value chain. The Government should define that role, tying the aims of the Strategy to a wider strategy for industrial and economic resilience.

31. We regret that the Government did not assess the vulnerabilities and dependencies in UK industrial supply chains before producing the Critical Minerals Strategy; the result may have been a more focused and implementable document. *Building on the Strategy and the Refresh, the Government should now publish specific targets for priority sectors. The Government should use the report from the Task & Finish group to update the Critical Minerals Strategy with granular detail on those policy areas that are vulnerable to critical minerals supply disruption.*

91 He went on to say " We have a 10-point plan for a green economy. There is very limited knowledge and understanding of critical mineral supply chains and, when they are mentioned, the Government said, 'We are going to build it using the circular economy'. That shows a complete lack of understanding at the highest level. You have to build the stuff first before you can put it through a circular economy." [Q34](#)

92 [Q62](#) (Jeff Townsend), "There is a lack of joined-up thinking and a lack of understanding in the actions that are taken."

93 The Task & Finish group was announced in the Refresh on 13 March 2023. The independent group was established by the Department for Business and Trade to assess and report to the Government on the vulnerabilities and dependencies in UK industrial supply chains.

94 Science, Technology and Innovation, National semiconductor strategy, [Cm 838](#), 19 May 2023

FCDO support for the Strategy

32. Enhancing critical minerals supply requires a whole of Government approach, ideally, working in support of a broader industrial strategy. With responsibility spread across many different departments,⁹⁵ and delivery dependent on private sector and international partners, it is particularly important that there be a consistent message from the UK Government about its aims. To build the most effective relationships with international partners, James Black, at public policy research organisation RAND Europe, stressed the need for a genuine cross-Government approach, that also draws together the private and public sectors. Working to define a “Team UK proposition where different areas of Government are pulling together, plus industry” was crucial, he argued “because we do not have the scale to afford separate value propositions being presented by different bits of Government or industry in a way that is going to be meaningful to someone like the US or, indeed, the EU or China.”⁹⁶

33. Our engagement with overseas embassies suggested that greater clarity may be necessary for the FCDO to develop the relevant relationships abroad for strengthening UK access to critical minerals. For example, currently, there is limited detail publicly available on the Government’s objectives for developing key supply chains. The Minister maintained that Posts have been set “very clear direction on working with their in-country partners” to consider how the countries in question can work with the UK to “maximise” delivery of the Strategy.⁹⁷ This activity seems to amount to “making sure we are in the room”—a rather modest ambition given the scale and time-sensitivity of the challenge.⁹⁸ British Embassies could, for example, do more proactively to support relevant UK businesses abroad.⁹⁹

34. The FCDO cultivates the international relationships that can help to secure mineral access and to strengthen global supply chains. Among other things, it does so through development assistance, trade, knowledge exchange, facilitating UK investment abroad and promoting investment in the UK. We detected in Chile an appetite for partnering with the UK, particularly on knowledge exchange and research. However, Fiona Clouder told us that:

95 The Critical Minerals Strategy is owned by the Department for Business and Trade, with wider government work coordinated through the Cabinet Office. An International Energy Unit in the FCDO, working jointly with staff from the Department for Energy Security and Net Zero, has responsibility for the international strands of the Strategy, serving to connect Whitehall with the FCDO’s network of overseas posts. Foreign, Commonwealth and Development Office ([MIN0049](#))

96 [Q81](#) (James Black), “[...] I think there are opportunities for the UK to exert leverage, as has been said, through specialising in areas where there is a clear UK USP or value proposition—some way we can maximise our asymmetric areas of advantage, rather than seeking to merely mirror what the US is doing, but at a smaller scale and therefore in a less consequential way.

The key thing of defining that value proposition is that that does require from the UK maximising how integrated its approach is. I know that is a very loaded phrase in Whitehall, but it really does mean working cross-Government. It means working with industry and defining a kind of Team UK proposition where different areas of Government are pulling together plus industry, because we do not have the scale to afford separate value propositions being presented by different bits of Government or industry in a way that is going to be meaningful to someone like the US or, indeed, the EU or China. That really places a premium on that kind of integration at our end, so we can get the maximum bang for our buck.”

97 [Q121](#) (Anne-Marie Trevelyan)

98 [Q121](#) (Anne-Marie Trevelyan)

99 Critical Minerals Association ([MIN0015](#))

(...) what is not articulated [by the Government] at the moment is that broader international engagement, both to address the supply chain issue and to see this as a major foreign policy issue because of the wider geopolitics involved.¹⁰⁰

35. A more detailed implementation plan is needed, that defines a coherent ‘Team UK’ proposition to leverage the UK’s unique strengths in the critical minerals value chain. This would clarify the role that UK diplomats can and should play to support the UK’s economic resilience. Without a clear steer from Government, the UK risks a scattergun approach to ‘de-risking’ from industry, as well as ineffective use of the UK’s diplomatic leverage.

4 Building global resilience

36. The extractive industries have long been associated with corruption, poor labour conditions and environmental degradation. With an upsurge in demand for minerals, it would be easy for conditions to slip further in the rush to produce more, more quickly.¹⁰¹ A concurrent increase in illegal mining activity by illicit actors (either with or without state support) is also highly likely, leading to human rights abuses and further environmental damage.¹⁰² Many of the most sought-after minerals are located in countries that rank poorly in Transparency International's Corruption Perceptions Index, including as much as 94% of rare earth elements and 70% of cobalt.¹⁰³ Corruption diverts the benefit of any increase in value away from local communities, diminishing tax takings and investment in local infrastructure and jobs.

37. The FCDO faces a challenge: to leverage its relationships with countries to meet the critical minerals needs of industry and the economy, while supporting the UK's values, foreign policy aims and commitment to the Rules-Based International Order.

Environmental, social and governance standards

38. Improving environmental, social and governance standards (ESG) throughout global supply chains is one way to both meet the need for more critical minerals mining and respect the UK's values-led foreign policy. Higher ESG standards can create more stable supply chains,¹⁰⁴ provide a more attractive offer to resource-rich nations and give businesses a greater diversity of more ethical suppliers to choose from.¹⁰⁵ Mining that meets

101 BBC, "[Metal mining pollution impacts 23 million people worldwide](#)", 21 September 2023

102 "During previous commodity booms, a surge in demand has been accompanied by a surge in corruption, and even the anticipation of a boom can incentivise problematic behaviour. The promise of soaring profits and fast-paced deal-making increases the risk appetite of private and public sector actors alike, particularly where higher risk entities like state-owned enterprises are involved. Many players in today's transition mineral supply chains are also assuming new roles and negotiating unprecedented deals. Companies are managing unfamiliar risks, while regulators and oversight actors are struggling to keep up, particularly as the dominance of certain companies across multiple stages of the supply chain can inhibit accountability, for example in cobalt supply chains." Natural Resource Governance Institute ([MIN0046](#))

Resource exploitation is a major source of income for organised crime groups and private military companies, as evidenced by the Wagner Network's control of gold mining operation in the Central African Republic. See Foreign Affairs Committee, Seventh Report of Session 2022–23, [Guns for gold: the Wagner Network exposed](#), HC 167 incorporating HC 1248, para 23

As the value of other minerals increases, other hostile groups may diversify into critical minerals to take advantage of the global rush. This presents risks to vulnerable communities. See [Q109](#) [Dr Marina Caparini], "Gold seems to be the common denominator in most of these contexts, although there have been some analysts who are saying that Wagner looks to be diversifying. The nature of not only Wagner, but also organised crime groups is that as the demand for critical resources becomes more intense, prices go up and opportunity beckons."; see also Natural Resource Governance Institute ([MIN0046](#))

103 Transparency International Australia, [What does the energy transition mean for the mining sector?](#), October 2022

104 Where there is less risk of social unrest or environmental catastrophe, there is a more stable investment climate.

105 [Q23](#) [Guillaume Pitron], "On the Chinese side, there is a wariness that there may be a way to exclude the Chinese from western markets because the Chinese way of extracting metals would not be consistent with our own ESG standards. Battery metals would become 'blood batteries', and suddenly that would become a problem. The Chinese worry that this activity will be a new way to do away with their technology, a new protectionist way of doing things."

high ESG standards can also play a role in driving development.^{106,107} Bolstering ESG in critical mineral supply chains is one of the ten priorities the Government committed to in the Critical Minerals Refresh.

39. ESG improvements are more easily enforced when there is sufficient transparency to trace the provenance of minerals throughout the value chain. Transparency also has other benefits for consumer choice and empowerment, allowing purchasing power to push the market to higher standards.¹⁰⁸ The UK can add value to international work by advocating consistent data standards that introduce transparency into opaque critical minerals markets. The Government is making headway in putting together an international critical minerals market information system, for which, we were told, there is enthusiasm.¹⁰⁹

40. We acknowledge concerns that efforts to improve conditions within supply chains may inadvertently punish communities already at risk of exploitation and poor conditions by removing them from value chains. If the Government were to legislate to require levels of transparency that were not possible for smaller, or artisanal mines, there is a risk that companies requiring critical minerals would take their business elsewhere to avoid falling foul of the law. Commenting on this tension between upholding human rights and promoting UK mining interests, the London Mining Network told us that the Government should be proactive in advocating mandatory supply chain due diligence. It cautioned that in undertaking to support victims of human rights abuses, the Government should not encourage businesses to ignore ‘bad jurisdictions’ in favour of ‘good enforcement countries’ because prioritising ‘good enforcement countries’ risks allowing high-risk areas to degrade further.¹¹⁰ **There is a balance to strike between insisting on due diligence and protecting livelihoods. We urge the FCDO to continue to press for increased transparency but to consider where it could offer financial support or capacity building support to help countries to meet those higher standards.**

106 British Geological Survey ([MIN0027](#))

107 Aidan Davy, Chief Operating Officer of ICMM, cautioned us that while governance reforms are important, governments and multilateral institutions have retreated from putting real money into infrastructure investments “the anticipated investment on the back of those governance reforms has not materialised, so what has happened...is that those Governments have...essentially thrown the governance reform model out of the window for an unreformed model.” [Q87](#) (Aidan Davy)

108 Increased transparency would allow consumers to understand the provenance of their personal green technology and, in turn, to push for higher standards in extraction and refining. In much the way that consumers’ consciousness about blood diamonds has moved that market, increased transparency can drive improvements in minerals mining.

109 [Q141](#) [Paul Monks], “Alongside international partners, we are developing what is called EU CriMMIS, which is a critical minerals market information system. It is based on the agri-market information system. Why is that important? It is important because we want to be able to share information in these open and transparent markets. Critical minerals markets, of course, are quite opaque. Recently, under the auspices of FCDO, we hosted an international conference at Wilton Park to have a look at how to put together an international critical minerals market information system. We are just about to publish some recommendations on that. I have to say that there was great willingness across industrial partners, state actors, the WTO and a number of international organisations to move to that. In order to enforce ESG standards, which everybody thinks is an important element of the future market, that market information system will be an important underpinning feature.”

110 London Mining Network ([MIN0026](#))

International partnerships

Working through multilaterals

41. The UK is a key player in multilateral institutions that are making significant efforts to accelerate the diversification of critical minerals supply chains and increase the availability of global resources.¹¹¹ The 20 May 2023 G7 Leaders Communiqué from Hiroshima promised to increase strategic coordination to counter economic coercion and improve resilience; it included pledges to enhance supply chain resilience for critical goods such as critical minerals, semi-conductors and batteries.¹¹² At the G20 Energy Ministers meeting in Goa, on 22 July 2023, Ministers committed to supporting voluntary and mutually agreed efforts to enhance local value creation through beneficiation¹¹³ and reiterated the need to “reduce the potential negative impacts on people and the environment” and to “leverage multilateral cooperation as well as cooperation between the G20 members”.¹¹⁴

42. The UK also participates in the newly established Minerals Security Partnership (MSP), set up by the United States with like-minded allies. It aims to create consistent global standards that improve ESG throughout the value chain, benefitting resource-rich countries through improved labour and environmental standards, while also ensuring that minerals entering supply chains are of the highest possible provenance.¹¹⁵ Work is also ongoing to map out global supply chains for critical minerals and then to coordinate the creation of alternative supply networks made up of diverse sources and processing countries. MSP Members agreed to work together to facilitate financing for ESG-compliant projects and to provide diplomatic support for strategic projects.¹¹⁶ Members also committed to upholding the highest ESG standards within their bilateral trade relationships, though the MSP has not defined a common internationally recognised ESG standard. We understand from the FCDO that the MSP will establish a set of principles and objectives that MSP government-supported projects will be required to meet.¹¹⁷ The UK is well-placed to galvanise financial support for ESG-compliant projects.

43. As home to the London Metal Exchange, the headquarters of some of the biggest global mining firms and the City of London, including its prominent green finance sector, the UK can play a leading role in setting ESG standards by leveraging its financial

111 The G7, G20, International Energy Agency (IEA) and Extractive Industries Transparency Initiative (EITI), in which the UK participates, have all prioritised critical minerals. IEA member countries expanded its mandate in 2022 to explicitly include addressing critical minerals, as part of its wider role in coordinating a collective response to threats to global energy security. Its work will encompass stockpiling, market transparency, ESG and research and development. International Energy Agency (IEA) ([MIN0019](#)); Foreign, Commonwealth and Development Office ([MIN0049](#))

112 White House, [G7 Leaders' Statement on Economic Resilience and Economic Security](#), 20 May 2023

113 Beneficiation refers to processes that add value to an extracted ore, usually by improving its purity.

114 G20 Energy Ministers' meeting in Goa, [22 July 2023 outcomes paper](#), para 4

115 The MSP was established in June 2022 by the United States. Current members are Australia, Canada, the European Union, Finland, France, Germany, India, Italy, Japan, the Republic of Korea, Norway, Sweden, the United Kingdom and United States of America.

116 As of the meeting in London on 10 October 2023, the MSP is working to advance: eleven projects in upstream mining and mineral extraction, four projects in midstream minerals processing, and two projects in recycling and recovery; one project focusing primarily on lithium; three on graphite; two on nickel; one on cobalt; one on manganese; two on copper; and seven on rare earth elements; five projects in the Americas, seven projects in Africa, three projects in Europe, and two projects in Asia-Pacific. US Department of State, [Joint Statement on the Minerals Security Partnership Announce Support for Mining, Processing, and Recycling Projects](#), 10 October 2023

117 Foreign, Commonwealth and Development Office ([MIN0049](#))

firepower to encourage high standards in global industry. Christopher Vandome felt the Government undersold the UK's strengths in the Strategy when it described ESG as a "competitive disadvantage".¹¹⁸ He said:

For the UK, that is the offer. That is our competitive advantage. What we are offering is the fact that our corporate behaviour is increasingly being pushed towards generating benefits for citizens and, off the back of that, it is our soft power around knowledge, our training and our institutions, the rules of the game by which we want our companies to operate. That includes EITI,¹¹⁹ the voluntary principles on security and human rights, both of which we were a pioneer of. It is selling that.¹²⁰

Adoption of a globally accepted minimum standard would simplify reporting for industry, making compliance more cost-effective and straightforward. This in turn would encourage more companies to improve their ESG standards, benefitting producer countries as well as UK consumers who are increasingly aware of supply chain sustainability and human rights issues. The British Geological Survey has called for the FCDO to take a leading role "in the development of a globally accepted definition and framework for responsible sourcing" which it says "should align with the ESG and sustainable development principles."¹²¹ We agree. As new mines are developed at pace, there is an opportunity for the Government to leverage UK investment finance and pioneering UK work in standard-setting to promote adoption of minimum global standards.

44. We welcome the UK's participation in the Minerals Security Partnership, and its mission to provide a platform for funding a joined-up network of global supply chains that commit to the highest environmental, social and governance (ESG) standards. The UK can make a significant contribution to MSP investment by leveraging UK green investment finance. The Government should take advantage of the current global focus on critical minerals to show leadership in setting the standards for future responsible mining. We encourage the Government to push for the more widespread adoption globally of a recognised 'minimum standard' and be vocal in its support for the highest ESG standards throughout the value chain.

118 [Q62](#) [Christopher Vandome]; this point is echoed at [Q18](#) [Guillaume Pitron] "We also need to think about ESG standards. It is an important part of this diplomacy. We are an ambitious market with ambitious consumers who really want to be green, and that means extracting and refining these metals in a better way than the Chinese."

119 Extractives Industries Transparency Initiative (EITI), of which the UK Government is a member, is a multi-stakeholder group that advocates for better governance and transparency in the extractives industries. Participating countries agree to a common set of rules governing data disclosure, intended to improve transparency and guard against corruption. [Extractive Industries Transparency Initiative](#)

120 [Q62](#) [Christopher Vandome]

121 "However, there is a requirement for an agreed international definition of responsible sourcing, including a globally accepted framework, associated metrics and consistent and comprehensive datasets. Furthermore, these initiatives attempt to address this topic from different perspectives. These range from providing guidance to industry to monitoring the sourcing of minerals from conflict and other high-risk areas, to sustainable resource management and performance tools to assess the environmental, social and governance (ESG) risks of existing operations or provision of ESG ratings for investment purposes. The FCDO should play a major role in the development of a globally accepted definition and framework for responsible sourcing, which should align with the ESG and sustainable development principles. There are multiple tools available to undertake an assessment, but we need to ensure that the scope, scale and weighing of the three dimensions of ESG are equal in the chosen assessment process. It is important that the UK promotes sustainable resource management and assists with relevant capacity building in countries that are key mineral producers and suppliers to the UK." British Geological Survey ([MIN0027](#))

Bilateral agreements

45. Alongside multilateral diversification, bilateral partnerships with resource-rich nations could provide the UK with sources of supply. However, there are concerns that such relationships could appear exploitative, with the UK asking poorer countries to bear the environmental and social costs of intensive mining.¹²² Ensuring, wherever possible, equivalent environmental and social standards to a UK mine is therefore critical. Professor Adrian Finch of the School of Earth and Environmental Science at the University of St Andrews said that this could be mitigated if the UK government were “to promote financial models that provide infrastructure without debt, and which manage the social impacts of mining, as well as physical and financial ones.”

46. The UK can offer a strong ‘Team UK’ value proposition, as discussed in Chapter 3, in these bilateral relationships. Knowledge industries—from education support and academic engagement through to cooperation with national geological surveys and engineering and mining expertise—are one of the UK’s strengths.¹²³ Triangulated agreements¹²⁴ or agreements with middle-income countries to develop local value chains is another way in which the Government could utilise the UK’s diplomatic skills to support diversification.

47. The Government has already signed several bilateral critical minerals agreements, including with Canada, South Africa, Saudi Arabia, Kazakhstan and Australia (See Box 5). Negotiations are underway with Indonesia and the United States. It is, as yet, unclear how much the UK stands to benefit under these agreements, some of which are simply indicative memoranda of understanding rather than binding agreements. Nonetheless, we welcome the critical minerals agreements the Government has secured over the past year and its ongoing work with bilateral partners.

48. The Government’s recent Development White Paper is also encouraging, addressing the need to deploy expertise to help countries to develop and benefit from their critical mineral deposits within environmentally and socially responsible regulatory frameworks.¹²⁵ There is now an opportunity to foster better relationships with resource-rich countries, building new cultural and trade links both directly and through multilateral fora.

122 Christopher Vandome wrote “There is a need to ensure that the global green transition does not come at the detriment of African communities, who will bear the brunt of an inherently environmentally damaging industry. The UK should recognise that its drive for critical minerals is interpreted in Africa and elsewhere as overtly political and rooted in the green transition in which many African states feel their voices are not heard, and who are among the lowest emitters but worst affected by climate change. As the UK engages on critical minerals, it should also support alternative green financing initiatives in Africa, including carbon markets, and support research and technical skills development in this area.” Africa Programme, Chatham House ([MIN0033](#))

123 Africa Programme, Chatham House ([MIN0033](#))

124 Triangulated agreements are where a country undertakes to support or guarantee an agreement between regional partners.

125 Foreign, Commonwealth and Development, International development in a contested world: ending extreme poverty and tackling climate change, [CP 975](#), November 2023, para 5.24. We note with interest the intention to target campaigns on ESG issues at low- and middle-income countries through a new Responsible and Inclusive Business programme, “partnering to improve environmental and social standards in critical mineral supply chains and to support the protection of human rights for women workers in garment sector supply chains” para 5.56

Box 5: Bilateral Critical Mineral Agreements

UK-Canada agreement focuses on skill-sharing, research and development; facilitating investment and business ties; and promoting higher economic, social and governance (ESG) standards.¹²⁶

UK-Australia 'statement of intent' has similar goals and includes UK investment in Australian critical minerals projects.¹²⁷

UK-South Africa partnership will promote investment in exploration and beneficiation,¹²⁸ with an emphasis on supporting clean energy jobs throughout the value chain.¹²⁹

UK-Saudi Arabia partnership is intended to encourage new mining, bringing Saudi investment together with UK expertise in mining and mining finance and to make it easier for UK businesses to work within the Saudi mining sector.¹³⁰

UK-Kazakhstan deal: the FCDO says critical minerals were "a particularly promising area for deeper collaboration" with several British businesses already present in the country.¹³¹

The Prime Minister has also agreed to open negotiations with the **US** over a critical minerals-specific free trade agreement that would allow UK companies to qualify as part of subsidised American supply chains under IRA.

The Secretary of State for Business and Trade held the first **Japan-UK** Strategic Economic Policy and Trade Dialogue with the Japanese Trade Minister in September 2023, at which they underlined the need to work through international fora to "reduce supply-chain dependencies and to deter and counter economic coercion".¹³² The Ministers committed to agreeing a Critical Minerals Memorandum of Understanding, to support supply chain resilience.¹³³

A strategic approach to partnerships

49. The Rt Hon Anne-Marie Trevelyan, Minister of State at the FCDO, told us that, when it comes to decisions on future agreements, "[w]hether you are going to import it or make it at home depends on what minerals you want to have."¹³⁴ She said that the Government was working multilaterally with allies to map out how best to invest in the "extraordinary rainbow of choices" for greater cooperation.¹³⁵ We did not get a sense from the Minister, nor from our witnesses, that the FCDO has yet mapped out a strategic approach to its bilateral partnerships; this should not be solely dependent on decisions made in

126 Natural Resources Canada, [Canada and the United Kingdom Sign Critical Minerals Supply Chain Dialogue to Strengthen Collaboration](#), 6 March 2023

127 Australian Department of Industry, Science and Resources, [Australia-UK boost cooperation on critical minerals](#), 4 April 2023

128 Beneficiation refers to the processing or treatment of a raw material or metal physically or chemically that improves (benefits) it in preparation for smelting.

129 Business Energy and Industrial Strategy, [UK and South Africa working in partnership on minerals for future clean energy technologies](#), 23 November 2022

130 Business Energy and Industrial Strategy, [UK and Saudi Arabia pledge to deliver closer co-operation on critical minerals](#), 11 January 2023

131 Reuters, [UK to help Kazakh exports bypass Russia, seeks critical minerals](#), 18 March 2023; Foreign, Commonwealth and Development Office (ECA0023)

132 Business and Trade, [Joint Statement of the Japan-UK Strategic Economic Policy and Trade Dialogue](#), 6 September 2023

133 Business and Trade, [Joint Statement of the Japan-UK Strategic Economic Policy and Trade Dialogue](#), 6 September 2023; see also Nikkei Asia, [Japan and UK to jointly invest in critical minerals in Africa](#), 4 September 2023; The Japan Times, [Japan and Britain confirm close economic security partnership](#), 7 September 2023

134 Q126

135 Q126

multilateral fora. Potential partners would benefit from a clear indication, and soon, of how the Government is determining its order of priorities.¹³⁶ A consequence of the lack of specificity we identified in Chapter 2 is uncertainty amongst potential international partners about what the UK has and is willing to offer. “Whatever we [the UK] are doing or saying”, Former Ambassador Fiona Clouder told us, “we are not saying it loud enough for potential partners to then make us the partner of choice.”¹³⁷ Although we can see the advantage in establishing a series of bilateral partnerships in coordination with allies, this should not prevent the UK from acting independently to secure partnerships that meet our unique economic and security needs. **The Government should approach countries as active participants making decisions in their own national interests, rather than passive recipients of Chinese or western investment, and offer them an attractive alternative based on the UK’s unique offer, as set out in the previous chapter.**

50. For the UK’s bilateral agreements to effectively create a secure end-to-end supply chain for critical minerals, the FCDO needs to pursue a strategic approach that considers the Government’s domestic priorities, its geopolitical interests and the need to preserve relationships with countries forming important links in the value chain. *We recommend that, following the Task & Finish Group’s report, the Government assess the strategic vulnerabilities it reports in the UK’s critical minerals supply chains and map those to a diplomatic agenda to develop bilateral relationships that will best support the UK’s economic and security resilience.*

51. We are disappointed that the Minister could not articulate the decision-making process behind the UK’s bilateral partnerships on critical minerals, although we appreciate that efforts are being made to coordinate such partnerships with allies.

136 British Geological Survey ([MIN0027](#))

137 [Q92](#)

Conclusion

52. Critical minerals supply is not a geological challenge but a geopolitical one. Critical minerals are essential to delivery of the Government's climate agenda, its science agenda, the country's economic resilience and our national security. Yet there remains a gap between the UK's aspirations and the reality of our access. Those who seize the initiative can benefit from increased investment, highly paid jobs, technical innovation, and economic resilience that the green transition can usher in. Our friends and our competitors are already doing so.

53. Geologically, the UK is at a disadvantage. The vast majority of critical minerals are concentrated in countries that are autocratic, non-aligned, or actively hostile. They are not natural economic partners of the UK. We saw the potential consequences of such dependency when Russia restricted energy supplies to Europe and prices increased dramatically. Beyond mining, China dominates critical minerals processing and has proved ready to exploit the economic advantages accruing from this global dominance and to retaliate. The UK cannot afford to leave itself vulnerable to the exploitation of supply chains that are of such strategic importance.

54. The UK is in a global race for technological advantage, and it is one in which we cannot afford to be left behind. There is fierce competition for the green technology hubs that will stimulate future economic growth. Long-term investment decisions are being made now on the attractiveness of a subsidy package or a promise of Government support through other measures. The UK must compete, and compete hard, to demonstrate that the challenge of critical minerals is being taken seriously. The cost of failure will be the loss of key industries, such as the automotive sector and the ecosystems of research, innovation and manufacturing that support green tech industries. Voices from China, the US and the EU continue to dominate the global conversation around critical minerals supply.

55. Given the Prime Minister's focus on the UK's strengths in science, technology and innovation, there is an opportunity for the UK Government to show leadership on critical minerals. The UK has huge advantages in engineering and chemical engineering, in innovation and the knowledge industries, in green energy and mining expertise. The Government needs to demonstrate a real commitment to support these sectors if it is to attract investment. As momentum increases to diversify supply chains, the emphasis should be on doing so in ways that support good governance, increased transparency and high environmental and labour standards. Improving our resilience should not risk undermining high global norms and standards. As well as being the right moral choice, those high standards are what set the UK and its partners apart from countries like China with whom we cannot compete on grounds of scale or cost.

56. Critical minerals need to be understood through the lens of a global geopolitical competition that is as much about political power as practical industrial capacity. **The Government must articulate the ways in which the UK's economic needs for critical minerals and its foreign policy goals interact and what consequent trade-offs might need to be made. It should act as the interface between the public and private sectors and the people of this country, drawing conversations around foreign policy, mining, industry, and climate out of their echo chambers and into wider discourse. We agree**

with the Prime Minister that an honest public conversation about the way the UK reaches its net zero targets and secures economic resilience, including the trade-offs around mining, is crucial.

Consolidated list of conclusions and recommendations

The need for a UK critical minerals strategy

1. Successive governments have failed to recognise the importance of critical minerals to the UK economy and failed to respond adequately to the aggressive capture of large parts of the market over the last three decades by China. Allowing a single country to dominate the UK's critical minerals supply chains shows a lack of foresight and has left the current Government with a mountain to climb to address the consequent vulnerabilities and protect the country's economic resilience. The Government has tried a hands-off approach, but it has left the UK too vulnerable on what is, fundamentally, a security issue. (Paragraph 12)

The UK Critical Minerals Strategy

2. Critical minerals are of strategic significance to the UK. We welcome the Government's belated recognition of the need for a Critical Minerals Strategy. (Paragraph 15)
3. The Strategy and its Refresh form the basis of a useful framework to underpin the varied strands of government policy that will be required to improve the long-term resilience of UK critical minerals supply. However, the scope of the Strategy is too broad to be helpful as a guide to industry, which needs realistic targets and timeframes. We welcome the more frank and open assessment in the Critical Minerals Refresh of the challenges the UK faces in competing for critical minerals, but the Refresh still lacks the detail and prioritisation needed to be implementable. (Paragraph 24)
4. The Critical Minerals Strategy does not convey the sense of urgency and need for immediate, decisive action which is of paramount importance if the UK is to deliver on its net zero commitments and enhance its long-term economic resilience in the face of mounting challenges. (Paragraph 27)
5. While the UK's allies make substantial progress on implementing their strategies, the UK Government has yet to define its most urgent priorities and push industry to deliver them. There remains a disconnect between strategy and delivery because the priorities set out in the Critical Minerals Strategy do not make clear the UK's role in the critical minerals value chain. The Government should define that role, tying the aims of the Strategy to a wider strategy for industrial and economic resilience. (Paragraph 30)
6. We regret that the Government did not assess the vulnerabilities and dependencies in UK industrial supply chains before producing the Critical Minerals Strategy; the result may have been a more focused and implementable document. *Building on the Strategy and the Refresh, the Government should now publish specific targets for*

priority sectors. The Government should use the report from the Task & Finish group to update the Critical Minerals Strategy with granular detail on those policy areas that are vulnerable to critical minerals supply disruption. (Paragraph 31)

7. A more detailed implementation plan is needed, that defines a coherent ‘Team UK’ proposition to leverage the UK’s unique strengths in the critical minerals value chain. This would clarify the role that UK diplomats can and should play to support the UK’s economic resilience. Without a clear steer from Government, the UK risks a scattergun approach to ‘de-risking’ from industry, as well as ineffective use of the UK’s diplomatic leverage. (Paragraph 35)

Building global resilience

8. There is a balance to strike between insisting on due diligence and protecting livelihoods. We urge the FCDO to continue to press for increased transparency but to consider where it could offer financial support or capacity building support to help countries to meet those higher standards. (Paragraph 40)
9. We welcome the UK’s participation in the Minerals Security Partnership, and its mission to provide a platform for funding a joined-up network of global supply chains that commit to the highest environmental, social and governance (ESG) standards. The UK can make a significant contribution to MSP investment by leveraging UK green investment finance. The Government should take advantage of the current global focus on critical minerals to show leadership in setting the standards for future responsible mining. *We encourage the Government to push for the more widespread adoption globally of a recognised ‘minimum standard’ and be vocal in its support for the highest ESG standards throughout the value chain.* (Paragraph 44)
10. The Government should approach countries as active participants making decisions in their own national interests, rather than passive recipients of Chinese or western investment, and offer them an attractive alternative based on the UK’s unique offer, as set out in the previous chapter. (Paragraph 49)
11. For the UK’s bilateral agreements to effectively create a secure end-to-end supply chain for critical minerals, the FCDO needs to pursue a strategic approach that considers the Government’s domestic priorities, its geopolitical interests and the need to preserve relationships with countries forming important links in the value chain. *We recommend that, following the Task & Finish Group’s report, the Government assess the strategic vulnerabilities it reports in the UK’s critical minerals supply chains and map those to a diplomatic agenda to develop bilateral relationships that will best support the UK’s economic and security resilience.* (Paragraph 50)
12. We are disappointed that the Minister could not articulate the decision-making process behind the UK’s bilateral partnerships on critical minerals, although we appreciate that efforts are being made to coordinate such partnerships with allies. (Paragraph 51)

Conclusion

13. The Government must articulate the ways in which the UK's economic needs for critical minerals and its foreign policy goals interact and what consequent trade-offs might need to be made. It should act as the interface between the public and private sectors and the people of this country, drawing conversations around foreign policy, mining, industry, and climate out of their echo chambers and into wider discourse. We agree with the Prime Minister that an honest public conversation about the way the UK reaches its net zero targets and secures economic resilience, including the trade-offs around mining, is crucial. (Paragraph 56)

Annex

Table 1: Snapshot of measures taken by key critical minerals allies as at February 2023

United States	Critical mineral supply chain assessment and introduction of the Inflation Reduction Act. Department of Defence Industrial Base Sustainment program awarded MP Materials \$35m to process heavy rare earth elements, establishing an end-to-end domestic permanent magnet supply chain. Department of Energy exploring \$3bn in Bipartisan Infrastructure Law (BIL) funding to invest in refining battery materials such as lithium, cobalt, nickel, and graphite, and battery recycling facilities. Department of Energy exploring \$140m demonstration project funded by the Bipartisan Infrastructure Law (BIL) to recover rare earth elements and critical minerals from mine waste. Interagency Working Group (IWG) on legislative and regulatory reform of mine permitting and oversight to promote responsible mining under strong social, environmental, and labour standards.
Canada	C\$80m directed to public geoscience and exploration programs. Double Mineral Exploration Tax Credit for targeted critical minerals (nickel, copper, cobalt, rare earths, uranium). C\$1.5bn for new infrastructure investments to unlock new mineral projects in critical regions. C\$1.5bn to invest in new critical minerals projects prioritising processing, materials manufacturing and recycling for battery metals and rare earths. C\$144m to R&D to support responsible extraction and processing. Centre of Excellence on Critical Minerals funded for three more years with an allocation of C\$10m. C\$40m to support regulatory processes in reviewing and permitting critical minerals projects. C\$70m for global partnerships to promote Canadian mining leadership.

Australia	Critical Minerals Facilitation Office to provide national policy and strategic advice, and to facilitate the development of the sector. A\$2bn loan facility for critical minerals, administered by Export Finance Australia, to help start-up / scale-up of new projects. Recipients include EcoGraf (Battery Anode Material), Renascor Resources (Graphite mine and processing) and Iluka Resources (rare earth refinery and magnet manufacturing). Critical Minerals Accelerator Initiative (CMAI) offers A\$200m grants over 5 years to support early and mid-stage projects that contribute to robust global supply chains, build sovereign capability and create high-paying jobs. Supports feasibility studies, engineering design work, pilot testing and demonstration plants. Grants will accelerate projects and attract private sector finance. A\$1.3bn Modern Manufacturing Initiative (MMI) funding to help firms pilot, demonstrate or scale up new processes. Critical Minerals Processing is one of six priorities. First round of funding saw four critical minerals projects receive grants totalling A\$244m. A\$50 million over 3 years to establish the virtual National Critical Minerals Research and Development Centre. A\$4m to scope investment proposals for regional critical minerals hubs. Austrade; R&D tax incentives.
Japan	\$7.2 billion Economic Security Promotion Act has a Supply Chains pillar to provide subsidies for building refineries and mining facilities in Japan and abroad. R&D pillar provide funding for research into critical minerals related fields. The budget is under consideration by Treasury now but after the law comes into force, private companies/institutions will be able to submit project proposals to apply for the money.
France	Mobilising €1bn investment (50:50 public:private) to strengthen the resilience of critical minerals supply chains, particularly focus on battery metals and rare earths National call for prospective projects, including: new processing and manufacturing facilities; upgrading existing processes or production capacities; development and commercialisation of innovative technological processes that save raw materials and energy.
Germany	Germany has an Untied Loan Guarantee Scheme which finances mining project developments for mineral supply offtake like Kibaran's Tanzanian graphite project. Considering other options following US and EU recent legislative steps.

European Union¹³⁸

The European Investment Bank is playing an active role in the industry-led European Raw Materials Alliance (ERMA). ERMA's vision is to secure access to critical and strategic raw materials, advanced materials, and processing know-how for EU Industrial Ecosystems.

The alliance will involve all relevant stakeholders, including industrial actors along the value chain, Member States and regions, trade unions, civil society, research and technology organisations, investors and NGOs.

Source: Foreign, Commonwealth and Development Office ([MIN0049](#))

138 The EU has made considerable progress since the Government compiled this evidence. For example, draft legislation in the form of the Critical Raw Materials Act has been agreed and the EU Net-Zero Industry Act is being considered.

Formal minutes

Tuesday 5 December 2023

Members present

Alicia Kearns, in the Chair

Neil Coyle

Fabian Hamilton

Brendan O'Hara

Bob Seely

Henry Smith

Royston Smith

Graham Stringer

Critical minerals

Draft Report (*A rock and a hard place: building critical mineral resilience*), proposed by the Chair, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 56 read and agreed to.

Annex and Summary agreed to.

Resolved, That the Report be the First Report of the Committee to the House.

Ordered, That the Chair make the Report to the House.

Ordered, That embargoed copies of the Report be made available (Standing Order No. 134).

Adjournment

Adjourned till Monday 18 December at 12.45 pm.

Witnesses

The following witnesses gave evidence. Transcripts can be viewed on the [inquiry publications page](#) of the Committee's website.

Tuesday 21 March 2023

Guillaume Pitron, Journalist and Author of 'The Rare Metals War'; **Henry Sanderson**, Journalist and Author of 'Volt Rush'

[Q1–25](#)

Jeff Townsend, Founder, Critical Minerals Association; **Christopher Vandome**, Senior Research Fellow, Africa Programme, Chatham House

[Q26–62](#)

Tuesday 18 April 2023

Duncan Wood, Vice President for Strategy & New Initiatives, Wilson Center; **Christopher Heron**, Director for Communication & Public Affairs, Eurometaux (European Metals Association); **James Black**, Assistant Director, Defence and Security, RAND Europe; **Aidan Davy**, Chief Operating Officer, International Council on Mining and Metals (ICMM)

[Q63–87](#)

Tuesday 13 June 2023

Fiona Clouder, Former Regional Ambassador, Latin America and Caribbean, COP26; Former HM Ambassador to Chile; Independent consultant; **Paul Atherley**, Chairman, Pensana Plc, Founder and Chairman, Tees Valley Lithium

[Q88–107](#)

Dr Marina Caparini, Senior Researcher, Centre for Policy Research, United Nations University

[Q108–113](#)

Rt Hon Anne-Marie Trevelyan MP, Minister of State (Indo-Pacific), Foreign, Commonwealth and Development Office; **Tim Stern**, International Energy Director, Foreign, Commonwealth and Development Office; **Professor Paul Monks**, Chief Scientific Adviser, Department for Energy Security and Net Zero

[Q114–157](#)

Published written evidence

The following written evidence was received and can be viewed on the [inquiry publications page](#) of the Committee's website.

MIN numbers are generated by the evidence processing system and so may not be complete.

- 1 Africa Programme, Chatham House ([MIN0033](#))
- 2 Amnesty International UK (please note this submission supersedes version submitted yesterday) ([MIN0030](#))
- 3 Anglo American ([MIN0038](#))
- 4 Anti-slavery International ([MIN0024](#))
- 5 Blue Marine Foundation ([MIN0006](#))
- 6 British Geological Survey ([MIN0027](#))
- 7 CONFLICT MINERALS CAMPAIGN ([MIN0017](#))
- 8 CalPac Resources Limited ([MIN0029](#))
- 9 Clouder, Fiona ([MIN0043](#))
- 10 Cobalt Institute ([MIN0003](#))
- 11 Critical Minerals Association ([MIN0015](#))
- 12 Environmental Justice Foundation ([MIN0020](#))
- 13 Fauna & Flora International ([MIN0031](#))
- 14 Foreign, Commonwealth and Development Office ([MIN0049](#))
- 15 Forest Peoples Programme ([MIN0048](#))
- 16 Fryer, Russell (CEO, Critical Metals Plc) ([MIN0034](#))
- 17 Geothermal Engineering Ltd; and Kerogen Capital Ltd ([MIN0008](#))
- 18 Global Witness ([MIN0035](#))
- 19 Gonzalez-Rodriguez, Dr Jose (Associate Professor in Analytical Chemistry, University of Lincoln) ([MIN0018](#))
- 20 Green Alliance ([MIN0021](#))
- 21 Green Lithium Refining Limited ([MIN0047](#))
- 22 Greenpeace UK ([MIN0051](#))
- 23 Hedges, Dr Matthew (Post Graduate Teaching Assistant , University of Exeter) ([MIN0004](#))
- 24 Heyburn, Mr James (Policy & Engagement Officer, Imperial Policy Forum); Titirici, Professor Magda (Chair in Sustainable Energy Materials, Department of Chemical Engineering); and Speirs, Dr Jamie (Sustainable Gas Institute Fellow in Energy Analysis and Policy, Centre for Environment Policy) ([MIN0025](#))
- 25 Horner, Mr Richard (Member, Great Wheal Vor Community and Environment Group); and Brown, Mr Andrew (member, Great Wheal Vor Community and Environment Group) ([MIN0011](#))
- 26 INTRA International Raw Materials Observatory ([MIN0005](#))
- 27 International Energy Agency (IEA) ([MIN0019](#))
- 28 London Mining Network ([MIN0026](#))

- 29 Moore, Dr Kathryn (Senior Lecture in Critical and Green Technology Metals, Camborne School of Mines, University of Exeter); Johnson, Ms Cassia (Researcher, Camborne School of Mines, University of Exeter); and McFarlane, Dr Deborah (Lecturer in Politics and International Relations, Humanities and Social Sciences, University of Exeter) ([MIN0013](#))
- 30 Moore, Dr Kathryn (Senior Lecturer in Critical and Green Technology Metals, Camborne School of Mines, University of Exeter); and Diallo, Dr Penda (Qualitative Research Manager, Aluminium Stewardship Initiative) ([MIN0014](#))
- 31 Natural Resource Governance Institute (NRGI) ([MIN0046](#))
- 32 Oram, Mr Oliver (Founder, Project HyYield) ([MIN0023](#))
- 33 Pensana Plc ([MIN0009](#))
- 34 Protection Approaches ([MIN0050](#))
- 35 RAND Europe ([MIN0040](#))
- 36 Rights and Accountability in Development (RAID) ([MIN0042](#))
- 37 Royal Society of Chemistry ([MIN0028](#))
- 38 SQM (Sociedad Química y Minera) ([MIN0037](#))
- 39 SSE plc ([MIN0032](#))
- 40 School of Earth & Environmental Sciences, University of St Andrews ([MIN0010](#))
- 41 Sustainable Materials Engineering Ltd ([MIN0007](#))
- 42 Transport & Environment UK ([MIN0022](#))
- 43 UK Anti-Corruption Coalition ([MIN0036](#))
- 44 University College London, The Bartlett, & a network of UK universities and research organisations; and Delft University of Technology and EIT Raw Materials ([MIN0012](#))
- 45 University of Exeter - Met4Tech CE Centre ([MIN0041](#))
- 46 University of Exeter Circular Economy Hub ([MIN0039](#))
- 47 World Uyghur Congress; Anti-slavery International; Campaign for Uyghurs; Global Legal Action Network; Stop Uyghur Genocide; Unseen; and Uyghur Human Rights Project ([MIN0044](#))

List of Reports from the Committee during the current Parliament

All publications from the Committee are available on the publications page of the Committee's website.

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