

Pindyuk, Olga

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Implications of China's growing geo-economic influence for the EU: Addressing critical dependencies in the green transition

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Implications of China's Growing Geo-Economic Influence for the EU: Addressing Critical Dependencies in the Green Transition

Olga Pindyuk



Implications of China's Growing Geo-Economic Influence for the EU:

Addressing Critical Dependencies in the Green Transition

OLGA PINDYUK

Olga Pindyuk is Economist at the Vienna Institute for International Economic Studies (wiiw).

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Abstract

Although China has become a major trading partner of the EU, the EU-China relationship has deteriorated over the last decade. This has been demonstrated, for example, by disputes over trade issues, unequal treatment of EU investors by Beijing, frictions over the transfer of intellectual property, and human rights violations. The EU's critical dependency on supplies from China, which became evident during the COVID-19 pandemic, further complicates the relationship. The issue of the green transition has a central importance in the context of intensified geo-economic competition and possible decoupling from China, as here the EU has critical dependencies on the country, which is responsible for about 60% of global extraction of rare earth elements, about 60-65% of global processing of lithium and cobalt, and nearly 90% of global processing of rare earth elements.

So far, EU policy with respect to China has lacked co-ordination and solidarity, with the splits running across countries, institutions and economic sectors. This makes it challenging for the EU to develop a unified strategy toward Beijing. This paper examines the issues and sets out our suggestions for the policies the EU and Austria can undertake to decrease the bloc's dependency on China in supplies of critical inputs for its green transition and to minimise the vulnerabilities of their economies. For example, the EU should promote the security of mineral supplies. Among the most important actions are the development of industrial policies under the Critical Raw Materials Act to achieve a diversification of supplies of rare earths and other critical materials, co-operation with international partners in joint innovation projects on recycling and substitution of critical minerals, and international alignment of standards on green finance and clean energy. For the Austrian government it would be crucial to conduct regular critical assessments of the country's dependency on China and increase Austrian companies' awareness of the related geopolitical and geo-economic risks.

Keywords: China, European Union, Geopolitics, Geo-economic policy, Renewable energy, Energy security, Energy transition, Critical materials, rare earth elements

JEL classification: F02, F50, F52, F64, Q28, Q48, Q58

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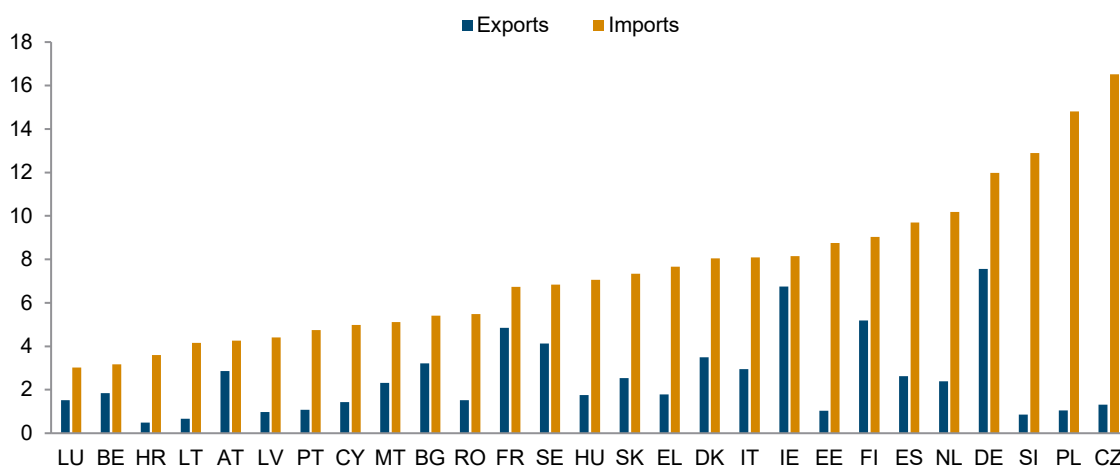
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Implications of China's growing geo-economic influence for the EU: Addressing critical dependencies in the green transition

1. INTRODUCTION

Economic relations between the EU and the People's Republic of China have been steadily developing. The country has become the EU's third-largest export destination and its largest source of imports. In 2021 China accounted for 8.3% of extra-EU merchandise exports and 16.6% of extra-EU merchandise imports, up from 2.8% and 6.4% respectively in 2002. Member states' trade relations with China are very diverse (see Figure 1), with Czechia, Poland, Slovenia and Germany having the heaviest reliance on China as a source of imports – it accounted for, respectively, 16.5%, 14.8%, 12.9% and 12% of their total (including intra-EU) merchandise imports in 2021. For Germany, China accounts for the highest share of merchandise exports among the EU member states – 7.6% in 2021. Austria is less dependent than most other EU members on Chinese trade – China's share in 2021 was only 2.9% of Austria's exports and 4.3% of its imports.

Figure 1 / Shares of China in merchandise exports and imports in 2021, %



Source: UN Comtrade.

The aggregate figures do not tell the whole story, however. The COVID-19 pandemic revealed that the EU depends on China for many critical products. Global value chains were significantly disrupted by Beijing's restrictions to limit the spread of the virus, strongly damaging EU firms that were dependent on Chinese inputs. Textiles, electrical equipment and electronic products are the EU products most reliant on inputs from China (Cernat, 2020; Reiter and Stehrer, 2021). China is the world's largest producer of active pharmaceutical ingredients – particularly low-cost drugs such as aspirin (Besch, Bond and Schuette, 2020) – and the EU relies on it for the bulk of its supplies of these products.

In Austria, Chinese imports are especially significant for several key technologies, such as AI and big data, as well as security technology, with import shares of more than 30% and 40% respectively (Klien et al., 2021). This is likely to be even more pronounced when considering indirect imports from China through the European Single Market. For example, Germany accounts for around half of Austria's facemask imports, but these appear to originate from China. Conversely, China seems to be reliant on Austria for some specific product categories (Seaman et al., 2022), in which Austrian enterprises have established themselves as international leaders, so-called hidden champions. For instance, Austria's exports of artificial fibres represent more than half of China's total imports of these products.

Although some EU member states worried about China's human rights record (i.e. forced labour of Uyghurs) and its territorial claims in the South and East China Seas, the EU was more focused on the commercial opportunities offered by a big Chinese market, and therefore was slower than the US to perceive China as a strategic threat (Besch, Bond and Schuette, 2020). However, over the last decade the EU-China relationship has deteriorated, as has been demonstrated by disputes over trade issues, such as the dumping of cheap Chinese steel on European markets and unfair subsidising of Chinese firms. The EU has complained that EU investors in China do not get the same treatment by regulatory authorities as domestic companies. There have been frictions over the transfer of intellectual property to China, which has sought to obtain Western technology as the price of gaining entry to the Chinese market. As a result, in March 2019 the European Commission referred to China in a paper to guide European Council discussion not only as 'a co-operation partner with whom the EU has closely aligned objectives', but also as a 'systemic rival promoting alternative models of governance'.

The COVID-19 pandemic, which highlighted the EU's vulnerabilities, has intensified European-Chinese disputes. US-China relations have been playing an important role in the EU's foreign policy considerations as well. The notion of decoupling has gained ground in response to newly perceived risks of losing technological leadership and industrial competitiveness to Chinese companies backed by the Chinese state, and of Chinese influence operations undermining the international liberal order and subverting democratic politics (Bond, Godement, Maull and Stanzel, 2022).

The issue of China being concomitantly a partner, a competitor and a rival is nowhere clearer than in the green transition. Achieving global climate goals is infeasible without a major Chinese contribution. Yet there are many differences of opinion between the EU and China in terms of how the burden of adjustment should be shared. And here also, especially in terms of green technology, the EU has critical dependencies on China.

China continues to refuse to impose a carbon cap and has increased its coal consumption in recent years. China is critical of the EU's Carbon Border Adjustment Mechanism, a central part of the EU's strategy to reduce its carbon emissions to net zero by 2050. The deal on its adoption was finalised on 18 December 2022 and is expected to be formally agreed by leaders at the European Council and adopted into EU law by the European Parliament before coming into force in 2026. China views it as exporting costs of the climate transition towards developing countries.

It is likely that the EU will move towards a united position on China that is less open than in the past. However, decoupling from China would have negative economic implications for the EU, given the high degree of economic integration. The need to accelerate the green transition, owing to Russia's war in

Ukraine, makes Europe even more exposed to the negative implications of decoupling, as it is strongly dependent on China's supplies of critical raw materials needed for this transition.

This paper examines the issues and sets out our suggestions for the policies the EU and Austria can undertake to decrease the bloc's dependency on China in supplies of critical inputs for its green transition and to minimise the vulnerabilities of clean energy value chains.

2. EU-CHINA: A CHANGING RELATIONSHIP CHARACTERISED BY CO-OPERATION AND RIVALRY

EU-China relations have been complicated for a while: the latter is defined in the EU's China strategy of May 2019 as simultaneously an economic competitor, a systemic rival and a negotiating partner. The rivalry aspect has been coming to the forefront recently, with attention focusing on China's coercive trade practices (such as those used against Lithuania), its attitude towards human rights in Hong Kong, its treatment of its Uyghur minority and its implicit support for Russia's war in Ukraine. The competition posed by China also constitutes a challenge to German and European industry; the country is becoming a major competitor in high-tech sectors and its 'Made in China 2025' industrial policy is aimed at capturing large parts of the key value chains. This naturally also has very important implications for Austria, for which Germany is by far the main trading partner, given that Austrian firms are heavily integrated into German supply chains as part of the Central European Manufacturing Core (Stöllinger, 2016).

US-China relations play an important role in the EU's foreign policy considerations. Over recent years, China has increasingly become the focus of US national security and foreign policy concerns. The new export controls, published on 7 October 2022, are the most consequential policy aimed at curbing China's development of advanced technologies. The US Department of Commerce's Bureau of Industry and Security (BIS) explains that the new restrictions result from consideration of the impact of advanced computing semiconductors, computers using such semiconductors, and semiconductor-manufacturing equipment on 'enabling military modernization, including the development of weapons of mass destruction (WMD), and human rights abuses'. The export controls, which will cut off China's access to the most advanced semiconductor and supercomputer technologies, are yet another step in the direction of global economic decoupling between the two countries.

The US is pushing its European allies to take a harder stance towards Beijing as it tries to leverage its position on Ukraine to gain more support from NATO countries for its efforts to counter China in the Indo-Pacific.¹ One problem for the EU is that, although it is more closely aligned with the US ideologically, it has significant economic interests in China and does not appear to consider it an 'existential threat'.

Recently, NATO – for the first time – has listed China as one of its strategic priorities. NATO says that it strives to subvert the rules-based international order through control of the key technological and industrial sectors, critical infrastructure, and strategic materials and supply chains. China uses its economic leverage and coercive policies to create strategic dependencies and challenge the Western bloc's 'interests, security and values' (NATO, 2022).

¹ <https://www.ft.com/content/1ac334c2-4ef5-480e-9863-5d9f00daa16b>

These developments compel the EU to re-evaluate its relations with China in view of the geopolitical and geo-economic challenges the region faces. The bloc has put on hold the ratification of the Comprehensive Agreement on Investment (CAI) between China and the EU, which was agreed on 30 December 2020, and has introduced several so-called autonomous instruments to counter negative effects from China's economic model – in particular, the large role of the state and the Communist Party. These include investment screening at the European level (Zavarská, 2022); the relaunch in February 2021 of EU trade policy, with a focus on enforcement; a co-ordinated EU industrial policy (e.g. the European Chips Act of February 2022); its connectivity strategy; and its digital strategy – all of these show that the EU wants to better position itself to compete with China (Schmucker and Wolff, 2022).

The recent paper prepared by the EU's foreign service sees China as an all-out competitor with limited areas of potential engagement and recommends a toughening of the EU's attitude towards the country. The paper suggests that the EU should work more closely with the US, strengthen its cyber and hybrid threat defences, diversify its supply chains away from China, and deepen ties with other Indo-Pacific powers.²

However, so far EU policy towards China has lacked co-ordination and solidarity, and the divisions between hawks and doves continue to complicate it. The splits run across countries, institutions and economic sectors, which makes it challenging for the EU to develop a unified strategy (Barroso, Nickel, Tursa and Wildau, 2022). Criticism of the recent visit to Beijing by the German Chancellor, Olaf Scholz, illustrates this lack of unity. Many in Germany and the wider EU view Mr Scholz as prioritising short-term German business interests over strategic concerns and EU unity. Moreover, even dovish governments are struggling to co-ordinate their positions; the French President, Emmanuel Macron, recently failed to convince them to organise a joint visit to Beijing.

Another example of a rift between the EU members is the 5G Security Toolbox, agreed by the EU in 2020 as a set of measures to reduce the bloc's reliance on 'high-risk vendors' for future telecoms networks (primarily aimed at a Chinese company, Huawei). Remarkably, Germany has become even more dependent on Huawei for its 5G radio access network equipment than in its 4G network. In Austria, the issue of a potential security risk from Huawei has not made much of an impact and the country is on course to expand its 5G network using the Chinese supplier.

The most recent example of this deficiency is Germany's agreement to allow the Chinese state-owned COSCO Shipping Ports Limited, one of the world's leading port and terminal operators, to purchase a 24.9% stake in a container terminal at Hamburg, Germany's largest port. Mr Scholz pushed the deal through before his visit to Beijing in early November 2022, disregarding protests by six German ministries, which claimed that the acquisition 'disproportionately expands China's strategic influence on German and European transport infrastructure as well as Germany's dependence on China',³ while China itself does not allow German participation in Chinese ports. The European Commission also warned the German government not to approve the investment deal. It argued that sensitive information about the business could pass into Chinese hands if Germany allowed the investment.

² <https://www.ft.com/content/b83615cb-6db0-4e67-85a3-7aab131abeb5>

³ "https://www.reuters.com/markets/deals/german-cabinet-approves-investment-by-chinas-cosco-hamburg-port-terminal-sources-2022-10-26/"

It is likely that the EU will move towards a united position on China that is less open than in the past. Yet this also carries major economic risks, given the high degree of economic integration between the EU and China. This requires a more serious debate within both Austria and the EU. So far, in only a few countries in the EU has there been a significant level of public debate coupled with concerted policy-level action to understand and address dependency-related issues. In many other countries, including Austria, the public debate has been active but has not translated into a significant level of policy engagement (Seaman et al., 2022).

3. CHINA'S CRITICAL ROLE IN THE EU'S GREEN TRANSITION

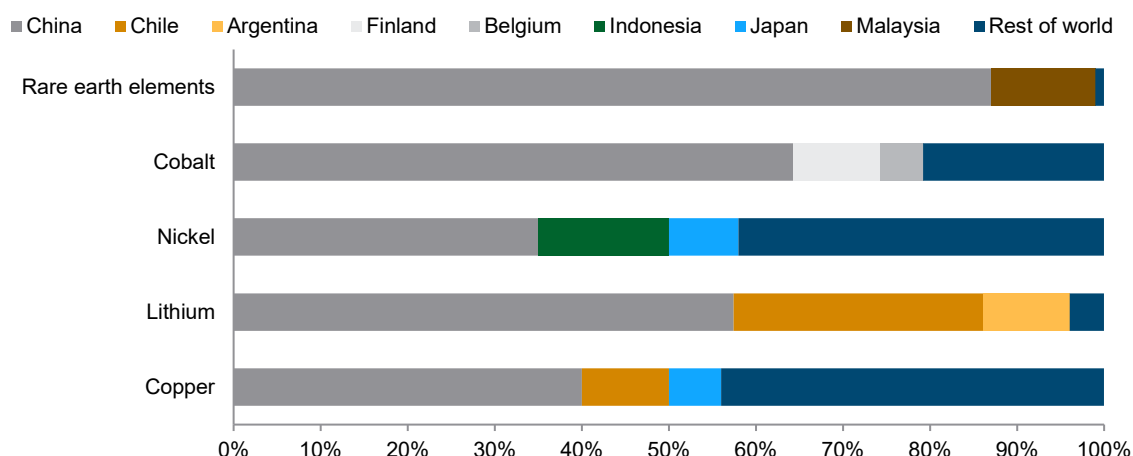
Amid a context of increased competition and possible decoupling from China, the issue of the green transition has a central importance. Addressing the climate crisis, and managing the energy transition, is fundamental to both the EU and China. Moreover, it seems inconceivable that any proper solution to this crisis will not involve both China and the EU (as well as the US).

However, in making this transition in an accelerated way in response to the Russian invasion of Ukraine, the EU may well end up even more dependent on China than is currently the case. The COVID-19 pandemic and the Russian invasion of Ukraine highlighted the danger of relying on undiversified supplies of critical inputs – whether pharmaceutical products, computer chips or energy. In the case of Russia, EU's dominant supplier of fossil fuels, the costs of such dependency became very clear when the EU was forced to go through an abrupt decoupling from it.⁴

Accelerated green transition is often seen as a silver lining of the crisis, which will allow for ending dependency on Russia as an energy supplier and also countering climate change. However, it will lead to a rapid increase in demand for many minerals used in green technologies, such as in the construction of solar photovoltaic (PV) plants and wind farms, and the manufacture of electric vehicles (EVs). A typical electric car requires six times the mineral inputs of a conventional car, and an onshore wind plant requires nine times more mineral resources than a gas-fired power plant (International Energy Agency (IEA), 2022). The IEA estimates that meeting the Paris Agreement goals would mean a quadrupling of mineral requirements for clean energy technologies by 2040. Lithium would see the fastest growth, with demand growing to over 40 times the current level by 2040, followed by graphite, cobalt, and nickel (around 20-25 times the current level).

Energy decoupling from Russia, therefore, will bring a new, potentially bigger challenge, of high dependency on China, which is responsible for about 60% of global extraction of rare earth elements, key inputs in the green technologies (International Energy Agency, 2022). The level of concentration is even higher for processing operations, with China accounting for about 60-65% of processed lithium and cobalt and nearly 90% of processed rare earth elements (see Figure 2). Of the 30 raw materials that the EU classifies as critical, 19 are predominantly imported from China (European Commission, 2020a). The list includes magnesium and rare earths, for which China accounts for up to 98% of the EU's supplies.

⁴ In October and November 2022, according to provisional data from commodity analytics company ICIS, gas demand in the EU was about 25% below the five-year average.

Figure 2 / Volume of processing of selected minerals globally, % share by country

Source: International Energy Agency.

Although only 23% of global supply of all lithium-ion battery raw materials comes from China, its dominance in chemical production of battery-grade raw materials stands at 80% of total global production (International Energy Agency, 2022). For lithium-ion batteries, China accounted for 73% of global production in 2021. China's share in the manufacturing stages for solar panels, from the production of polysilicon to the panels themselves, exceeds 80%.

This reliance on China puts EU's access to minerals at risk from natural disasters and geopolitical developments. There have already been precedents of China using its dominant position in the supply of rare earths to exert pressure on its political opponents. For example, Beijing announced a ban on exports of rare earths to two American defence contractors, Lockheed Martin Corp, the maker of F-35 fighter jets, and Raytheon Technologies Corp, the world's largest producer of guided missiles, which had been approved by Washington to provide maintenance services to Taiwan's missile defence systems.⁵ A report by the German business daily *Handelsblatt* said that experts in the Chinese Ministry of Industry and Information Technology debated in January 2021 whether to stop the export of rare earths to the US. Europe could be faced with a similar situation if China wants to use rare earths to exert pressure on European companies. China could also reduce raw materials exports to satisfy its own growing domestic demand.

Securing more diversified access to critical raw materials is essential to safeguard Europe's green transition. Although there are numerous deposits of many rare earth elements in Europe (Goodenough et al., 2016), the IEA has noted that it takes more than 16 years, on average, after discovery for mining projects to move to production. Moreover, production and processing of mineral resources give rise to a variety of environmental and social issues (International Energy Agency, 2022):

- › Processing rare earth elements often generates hazardous waste, such as heavy metals and radioactive materials, which can leak into groundwater, causing major health and safety issues, including fatalities, as has been the case in China. Large volumes of water are required for mining and processing, which poses contamination risks through acid mine drainage, wastewater discharge and

⁵ <https://asiatimes.com/2022/02/china-takes-rare-earth-aim-at-raytheon-and-lockheed/>

the disposal of tailings. Declining ore quality can lead to a major increase in mining waste and can cause large-scale environmental disasters (for example, the Brumadinho dam collapse in Brazil).

- › Mining brings major changes in land cover that can have adverse impacts on biodiversity. Changes in land use can result in the displacement of communities and the loss of habitats that are home to endangered species.
- › Water scarcity is a major barrier to the development of mineral resources. Copper and lithium have particularly high water requirements.

3.1. How China achieved its dominant position in green energy value chains

China was the largest investor in renewable energy technologies during the last decade. To secure direct access to resources China lacks, Chinese companies invest in foreign mines, extracting cobalt in Congo and platinum in South Africa, for example. Besides controlling supply chains of critical raw materials, China's dominance has been facilitated by lax regulations that have allowed it to neglect environmental costs and pay low wages.⁶

The rise of China's EV sector is closely linked to a number of industrial policy measures (Oertel, Tollmann and Tsang, 2020). In particular, the Chinese government has combined handing out subsidies with restricting market access for foreign-made cars and batteries (Sebastian and Chimits, 2022):

- › Consumer subsidies were tied to local production, which promoted transfer of core EV technologies by Western companies to Chinese competitors.
- › China excluded foreign battery companies from its domestic market to help domestic firms to move up the value chain. EV batteries are the most valuable part of EVs, accounting for 35-50% of value added.

China has established significant control of the supply chain for EVs through domination of lithium-ion battery manufacture, achieved by building significant capacity in metal refining, battery grade chemicals production, and cathode and anode manufacture.⁷

4. WHAT CAN THE EU AND AUSTRIA DO TO DECREASE VULNERABILITY OF THEIR CLEAN ENERGY SUPPLY CHAINS

In recognition of the risks to the supplies of raw materials, automotive producers have started to switch to direct deals with miners. In doing so, they have two main aims: to secure cheap sources of supplies, and to ensure that ethical and emissions standards are met.⁸ Tesla has been the most aggressive Western carmaker in its attempts to become directly involved in the mining and processing of critical raw materials. Mercedes-Benz has signed an offtake agreement – a promise to buy future output that helps suppliers to raise financing – with miners, and has begun work on its own processing facilities. Stellantis, owner of the Peugeot and Fiat brands, and GM are among those that have invested in early-stage mining companies. Strengthening international collaboration between producers and consumers is

⁶ <https://www.dw.com/en/how-chinas-mines-rule-the-market-of-critical-raw-materials/a-57148375>

⁷ <https://source.benchmarkminerals.com/article/china-controls-sway-of-electric-vehicle-power-through-battery-chemicals-cathode-and-anode-production>

⁸ <https://www.ft.com/content/a8e0f1bb-f69a-4a77-b762-02f957e47f5c>

important for improving the resilience and robustness of rare earth supply chains. However, these attempts are not likely to be the most efficient solution without relevant policies at the government level. Given the rapid rise in projected demand, production would need to increase dramatically, and these volumes need to be produced under higher environmental standards.

There are a number of actions that EU can take to promote security of mineral supplies:

- › It is important to create a consolidated mineral resources policy at EU level to address the evolving dependency on China on raw materials, in which the EU Commission plays a more central role. A step in this direction is a new legislative proposal, the Critical Raw Materials Act, announced in September 2022 by the European Commission president, Ursula von der Leyen. The EU needs to intensify its efforts to develop industrial policies under this Act, which could entail the relaxation of some of the state aid rules under its main subsidy scheme, the Important Projects of Common European Interest (IPCEI), to increase investment in the mining sector – as with the measures adopted in the European Chips Act (Eisl, 2022).
- › To achieve diversification of supplies of rare earths and other critical materials, the EU needs to ensure strong growth in investment in mineral supplies, taking into account the challenges of the production and processing of rare earths. A recently announced European Sovereignty Fund is crucial for maintaining a level playing-field between member states, which do not have the same fiscal space, to help in de-risking investments in future technologies and industrial production capacities, and to maintain the integrity of the Single Market. To be effective, the Fund must be given sufficient budgetary means. Its design should allow for direct and fast budgetary support to well-identified projects of interest for EU mineral resources security. All the projects should be screened for their environmental and social impacts, including the emissions associated with mining and processing, risks arising from inadequate waste and water management, and impacts from inadequate worker safety.
- › The EU should invest in research in recycling and substitution of critical minerals in co-ordination with international partners, especially Japan, Canada and the US. This should happen well before solar panels, wind turbines and batteries approach the end of their lifetimes and cause waste volumes to grow exponentially. Metal recycling has the potential to be a significant source of secondary supply, but so far it has not reached sizeable levels for many minerals and metals that are vital for green transition. The main barriers to development of secondary supplies include competition from primary supply, information deficits and limited waste collection (Söderholm and Ekvall, 2020). International co-ordination will be critical for recycling development because of the global nature of metal markets. If policies designed to stimulate demand for secondary supply are enacted unilaterally, they may lead only to a geographical change in use rather than a change in market supply. In addition, collaboration between countries or regions may be needed to improve transparency of the market through understanding market stock, costs and dynamics. Recycling potential will be even more important with growth of the share of EVs in the total car stock, which is expected to reach 50% by 2040, as an influx of spent batteries is expected and is likely to pose serious waste management challenges (International Energy Agency, 2022).
- › It is neither possible nor desirable to completely cut China out of the critical mineral resources supply chains. European policy makers instead need to strike a balance between managing China-related risks and continuing to work with Chinese suppliers where necessary (Kratz, Oertel and Vest, 2022). A crucial area of co-operation is international alignment of standards on green finance and clean energy (Oertel, Tollmann and Tsang, 2020). Environmental technology standards ensure interoperability, minimise costs and can help innovations to enter the market more easily.

- › An expanded dialogue with the US could support existing industry efforts to promote joint innovation co-operation rather than resort to a subsidy race to the bottom. This could strengthen alternative market players to Chinese companies, thereby preserving international competition and helping to avoid excessive dependency on China. The priorities for this dialogue could include areas in which China is already leading, such as battery technology, or those in which the EU is already investing heavily in innovation, such as green hydrogen.
- › Last, but not least, it is very important to raise public awareness of the contribution that such projects play in the transformation of the energy sector. There have been multiple examples of unsuccessful attempts to launch mining projects in the EU, thwarted by opposition from the local communities. Local activists have prevented mining of the only European deposit of heavy rare earth metals in Sweden, operation of lithium mines in western Spain and central Portugal, and a copper mine in Romania.

In the case of Austria, there are steps in addition to EU-level policies that the national government can take to decrease the vulnerability of its economy with respect to China.

- › Critical assessment of the country's dependency on China should be conducted on a regular basis to minimise Austria's geo-economic vulnerabilities. There should be a public dialogue about strategic choices regarding engagement with China, such as 5G security risks, investment screening mechanisms and Chinese ownership of media.
- › The government should increase companies' awareness of geopolitical and geo-economic risks and encourage better risk management at the corporate level (Schmucker and Wolff, 2022). Companies need to diversify their supply sources and improve the resilience of their production chains, and the government can assist them in this through various forms of public-private engagement.
- › Public-private partnerships or other forms of incentives can be used to further promote development of technologies that make Austria a strategically important player on the global economic stage. Examples of success in this area are the companies IMS Nanofabrication and EV Group, located north of Salzburg, which produce equipment that is essential for advanced semiconductor manufacturing. The presence of companies such as these strengthens Austria's geo-economic position in its dealings with its rivals.
- › Some measures can be taken to decrease the need for critical materials during the green transition. For example, lowering demand for private vehicles through increased use of public transportation and bicycles could be one such measure. A recent survey shows that 57% of Austrians use public transport rather than drive – slightly below the EU average of 61% and significantly lower than in some other EU member states⁹ (76% in Hungary, 75% in Spain, 72% in Slovakia and 71% in Bulgaria). This points to significant scope to improve urban mobility in a sustainable way. A nationwide climate ticket ('KlimaTicket') offering almost unlimited public transport use across the country with a single ticket for a full year, which was introduced in October 2021, is a step in the right direction. As a next step, it will be important to further improve the availability and quality of public transport services, especially in areas in the south of Austria with less dense transport networks. Austria has also scope to increase the use of bicycles, as currently only about 8% of people consider these their main mode of transport, compared with 41% in the Netherlands, 21% in Sweden and 15% in Germany (European Commission, 2020b). This would require new investments in good-quality cycling infrastructure and information campaigns on the benefits of cycling on a daily basis.

⁹ <https://www.eib.org/en/infographics/adopting-more-environmentally-friendly-means-of-transportation>

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