



## ANALYSIS

# CHINA AND RARE EARTHS

RISKS TO SUPPLY CHAIN RESILIENCE IN EUROPE

| FRANK JÜRIS |

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Cover page photo: Samples of the rare earth minerals, Molycorp's Mountain Pass Rare Earth facility in Mountain Pass, California. Reuters / David Becker / Scanpix

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Frank Jüris joined the Estonian Foreign Policy Institute at the ICDS in May 2019. His research is focused on China's domestic and foreign policy, EU-China relations, China's relations with the Central and Eastern European countries in the 16+1 format, and Sino-Russian relations. Mr Jüris holds a BA from Tallinn University and an MA from the University of Tartu. During his master's degree studies, he spent a semester at Hong Kong Baptist University and a year at Shanghai University in China. Mr Jüris holds an MA in Asia-Pacific Studies from Taiwan National Chengchi University. Mr Jüris has gained valuable experience working at the Estonian Ministry of Foreign Affairs, for the Delegation of the European Union to Taiwan, and as NGO Mondo volunteer in Burma. He was a lecturer teaching Mandarin Chinese at the University of Tartu and a visiting lecturer of Chinese studies at Tallinn University.

## FOREWORD

This analysis argues that the EU and NATO's efforts to strengthen supply chain resilience in critical raw materials are vulnerable to the People's Republic of China's leverage on key industry actors. It studies the case of the planned expansion of Silmet, Europe's only rare earths processing plant, as well as the entities that control the plant and their current and historical ties to the Chinese market, the PRC party-state, the People's Liberation Army, and China's defence sector.

**Silmet's ownership – Neo Performance Materials:** Estonia's Silmet, a rare earths processing plant that was established in the Soviet era to produce enriched uranium, is currently controlled by the Canada-based company – Neo Performance Materials (NPM). Silmet processes rare metals, including rare earth elements, that the EU has identified as critical raw materials. There are plans by Silmet's ownership to expand into producing rare earth magnets, which are essential for the green transformation and modern military equipment.

**A history of PRC state ownership and intervention:** NPM has a history of Chinese ownership. Its magnet-producing subsidiary, Magnequench (MQ), was acquired from General Motors in 1995 by a consortium of two Chinese state-owned enterprises coinciding with the PRC government's plan to develop the rare earths sector. By 2001, MQ production facilities were relocated to China. In 2005, MQ merged with Canada-based AMR Technologies, and Chinese shareholders' shares were not disclosed. In 2006, AMR Technologies changed its name to Neo Material Technologies (NEM).

For several years, both Silmet and NEM were owned by US investors. To increase supply chain resilience in the rare earths sector, US company Molycorp acquired Silmet in 2011 and NEM in 2012. However, in 2015, Molycorp filed for bankruptcy — just after the PRC government caused rare-earth element (REE) prices to plummet by temporarily easing market controls. Prior to Molycorp's bankruptcy, US-based Oaktree Capital Management (Oaktree) established a joint venture with a PRC state-owned asset management company to invest in distressed assets inside and outside of China. In 2016, Oaktree, due to the secured debt it issued to Molycorp prior to its bankruptcy, became NPM's majority shareholder and the owner of former Molycorp assets, including Silmet, Magnequench, and other REE processing facilities in China.

**Neo Performance Materials and the China market:** As of 2022, NPM's largest shareholder is Wyloo, a company owned by the Australian private investment group Tattarang. Tattarang's owners have personally reaped significant financial benefits through Fortescue Metals Group, selling iron ore to China, which still accounts for as much as 88% of Fortescue's revenue. Other evidence — documented in this analysis — points to ties between Tattarang's ownership and PRC political influence operations. NPM is similarly dependent on the Chinese market, from which it derives approximately 32% of its revenue. In addition, research shows that NPM has four production facilities located in China.

**Military-industrial framework – More oversight needed:** In Estonia, NPM's newly established magnet-producing subsidiary briefly had a name similar to that of Hangzhou Permanent Magnet Group (HPMG), a company established by former PLA servicemen and an important supplier for the PRC defence industry and the PLA. NPM Silmet's lawyers were negotiating for the purchase of patents and licences from HPMG. Although that deal was ultimately unsuccessful and HPMG is not known to have any active links to Silmet, the incident points to a risk that in the future, without proper due diligence and government scrutiny, the PRC's defence-sector companies could become involved in projects of strategic significance to the EU and NATO, such as REE magnet production. Furthermore, this analysis separately shows that NPM subsidiary in China already has indirect links with defence research institutions.

## INTRODUCTION: EU'S ONLY RARE EARTHS PROCESSING PLANT

The Soviet-era predecessor of the Neo Performance Materials' (NPM) Silmet plant in eastern Estonia produced reactor-grade enriched uranium, sourced from elsewhere in the USSR, to supply nuclear materials to Soviet nuclear power plants and weapons facilities until 1989. In 1970, it started processing rare earths and producing the rare metals niobium and tantalum – its main products until today.<sup>1</sup> The following rare earths are separated and purified at the Silmet plant: cerium, neodymium, praseodymium, samarium, dysprosium, and terbium.<sup>2</sup>

Rare earths are a set of seventeen metallic elements that have applications in civilian and military technologies. Rare-earth magnets are used in, for example, electric vehicles, wind turbines, anti-armour missiles, and fighter jets. China processes almost 90% of the world's rare earths, and Silmet is one of the few active rare earth processing plants in the West.<sup>3</sup> This makes the plant a strategic asset not only for Estonia but also for the EU and NATO.

In November 2021, Silmet announced plans to expand its production capacity in rare-earth processing and build a new factory to produce magnets used in electric vehicles and wind turbines. Silmet board member Raivo Vasnu commented on the expansion plans, saying that “the EU is interested in improving supply

chain resilience and becoming independent from suppliers outside the EU.”<sup>4</sup> The expansion project should commence by 2024 and will cost approximately 250 million euros.<sup>5</sup> For the construction of the magnet factory and the research and development (R&D) centre in Narva, NPM will invest 81.25 million euros and the Estonian government will contribute an additional 18.75 million euros.<sup>6</sup>

The EU's Critical Raw Materials List (last revised in 2023) includes light and heavy rare earth elements. Dependency on China in the processing is 85% and 100%, respectively.<sup>7</sup> As a result of the EU's pledge to achieve a climate-neutral economy by 2050, the demand for rare-earth elements (REE) used in permanent magnets is predicted to increase tenfold in order to enable the production of electric vehicles, digital technologies, and wind generators.<sup>8</sup>

EU and NATO leaders have repeatedly highlighted the scope of global reliance on China's rare earths processing, as well as the consequences thereof. In November 2022, at the 68th Annual Session of the NATO Parliamentary Assembly, NATO Secretary General Jens Stoltenberg warned against

<sup>1</sup> “About us,” NPM Silmet OÜ, accessed on 27 March 2023.

<sup>2</sup> Jim Sims, “Letter: This mining facility is not as rare as we thought,” Financial Times, 28 January 2021.

<sup>3</sup> Ursula von der Leyen, *2022 State of the Union Address by President von der Leyen* (Strasbourg: European Commission, 14 September 2022).

<sup>4</sup> Jüri Nikolajev, “[Silmet kavandab Ida-Virumaale magnetite tootmise suurtehasi](#) [Silmet is planning a large magnet production factory in Ida-Virumaa],” *ERR*, 18 November 2021; Ministry of Economic Affairs and Communications of Republic of Estonia and NEO Performance Materials, “[Joint Communiqué In Support Of Expanding Valued-Added Rare Earth Product Manufacturing In Estonia](#),” NEO Performance Materials, 17 November 2021.

<sup>5</sup> Jüri Nikolajev, “Silmet kavandab Ida-Virumaale magnetite tootmise suurtehasi”; Ministry of Economic Affairs and Communications and Neo Performance Materials, “Joint Communiqué.”

<sup>6</sup> “[Silmet owner to construct €100 million magnet factory in Narva](#),” *ERR*, 9 November 2022; Government of Republic of Estonia, “[Valitsuse pressikonverents, 10. november 2022](#) [Government's press conference 10 November 2022], Government of Republic of Estonia, 10 November 2022.

<sup>7</sup> Heavy rare earths - HREE (dysprosium, erbium, europium, gadolinium, holmium, lutetium, terbium, thulium, ytterbium, yttrium); light rare earths - LREE (cerium, lanthanum, neodymium, praseodymium and samarium); and scandium p 2 and 50. See Milan Grohol and Constanze Veeh, *Study on the Critical Raw Materials for the EU - Final Report* (Luxembourg: Publications Office of the European Union, 2023), 2.

<sup>8</sup> European Commission, *Communication from The Commission To The European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions Critical Raw Materials Resilience: Charting a Path towards greater Security and Sustainability*, COM(2020) 474 final (Brussels: European Commission, September 2020), 3-5.

shifting dependencies from one authoritarian power to another – i.e., from Russia to China.

We see growing Chinese efforts to control our critical infrastructure, supply chains, and key industrial sectors. Chinese rare earth minerals are present everywhere. Including in our phones, our cars, and our military equipment.<sup>9</sup>

In September 2022, at the State of the Union Address, European Commission President Ursula von der Leyen announced the European Critical Raw Materials Act (adopted 16 March 2023), which aims to support green and digital transitions by diversifying the EU’s critical raw materials supply chain.<sup>10</sup> In her speech, von der Leyen highlighted the sector’s dependency on China by saying that “[t]oday, China controls the global processing industry,” whereas “[a]lmost 90% of rare earths and 60% of lithium are processed in China.”<sup>11</sup>

In 2022, Thierry Breton, the EU’s Commissioner for the Internal Market, summed up the potential risks of overreliance on China for rare-earth elements by saying:

[The] supply of raw materials has become a real geopolitical tool. We saw it in 2010, when China slashed rare earth exports worldwide and entirely cut Japan off to pressure Tokyo to release a detained Chinese fishing trawler captain.<sup>12</sup>

## 1. NPM’S HISTORY OF PRC OWNERSHIP

Silmet’s parent company, NPM, is listed on the Toronto Stock Exchange and has a history of Chinese ownership. Despite security and economic concerns by the Committee on Foreign Investment in the United States, NPM’s magnet-producing wing Magnequench (MQ) was acquired in 1995 from General Motors by a consortium that included two Chinese state-owned enterprises (SOEs).<sup>13</sup> The Investment consortium behind MQ’s acquisition comprised of the Sextant group, a company headed by Archibald Cox Jr, and two large Chinese SOEs, San Huan New Material & High Tech (北京中科三环高技术) and China National Nonferrous Metals Import and Export Company (CNNMIEC, 中国有色进出口公司), chaired by Chinese Communist Party’s leader Deng Xiaoping’s sons-in-law Zhang Hong (张宏) and Wu Jianchang (吴建常).<sup>14</sup>

In 1992, Deng famously said, “The Middle East has oil, China has rare earths.” The challenge for China has been to facilitate the shift from rare earths processing with its heavy environmental impact to high-end production (e.g., magnets). For a long time, this has been restricted due

NAME	PERIOD	OWNERSHIP
Magnequench	1986-1995	General Motors
	1995-2005	Sextant group
		San Huan New Material & High Tech
		China National Nonferrous Metals Import and Export Company
AMR Technologies	2005	Archibald Cox Jr, Chinese SOEs’ shares were not disclosed
Neo Material Technologies	2006	Change of company name without change in ownership
Molycorp	2011	Molycorp acquires Silmet
Molycorp	2012	Molycorp acquires Neo Material Technologies
Molycorp	2015	Molycorp files for bankruptcy
Neo Performance Materials	2016	Oaktree Capital Management
Neo Performance Materials	2022	Tattarang

Table 1. Neo Performance Materials ownership history

<sup>9</sup> Jens Stoltenberg, *Speech by NATO Secretary General Jens Stoltenberg at the 68th Annual Session of the NATO Parliamentary Assembly (NPA)* (Madrid: North Atlantic Treaty Organization, 21 November 2022).

<sup>10</sup> “European Critical Raw Materials Act, European Commission,” European Commission, accessed on 27 March 2023; “Critical Raw Materials: ensuring secure and sustainable supply chains for EU’s green and digital future,” European Commission, 16 March 2023, accessed on 22 May 2023.

<sup>11</sup> Ursula von der Leyen, *2022 State of the Union Address*.

<sup>12</sup> Thierry Breton, “Critical Raw Materials Act: securing the new gas & oil at the heart of our economy,” Blog of Commissioner Thierry Breton, European Commission, Brussels, 14 September 2022.

<sup>13</sup> “关于我们 [About us],” NEO Magnequench, accessed on 29 August 2022.

<sup>14</sup> John Tkacik, “Magnequench: CFIUS and China’s Thirst for U.S. Defense Technology,” *The Heritage Foundation*, 2 May 2008; In 1997 Onfem (東方有色集團) controlled by China National Non-Ferrous Metals Industry Corp (parent company of CNNMIEC) acquired 62% stake in Magnequench parent company MQ Holdings (MQH), whose sole asset was 60% stake in Magnequench. With the deal Onfem acquired, from sister company CNNMIEC, a 47% stake and, from San Huan, a 15% stake in MQH. See: “Onfem in US magnetic deal,” *South China Morning Post*, 7 January 1997.

to limited know-how and a lack of patents.<sup>15</sup> With the acquisition of Magnequench, Deng's sons-in-law were, arguably, carrying out the Deng-initiated 863 Program, which sought to accelerate the acquisition and development of science and technology in the People's Republic of China for both civilian and military use.<sup>16</sup>

*The challenge for China has been to facilitate the shift from rare earths processing with its heavy environmental impact to high-end production*

In 2000, San Huan and the 863 Program achieved parity with the rest of the world in NdFeB magnets (the most widely used rare earth magnet in electric motors, hard drives, etc.). The fact that the world's major rare earth magnet producers were moving their production facilities to China has likely contributed to the government's technology acquisition goals.<sup>17</sup> Despite the consortium's promises not to move Magnequench production to China, the move, nevertheless, took place in 2001, coinciding with Cox Jr's period as president and CEO of Magnequench (i.e., from 1995 to 2006).<sup>18</sup>

In 2005, Magnequench merged with the Toronto Stock Exchange-listed company, AMR Technologies Inc, and changed its name to Neo Material Technologies Inc (NEM) in June 2006.<sup>19</sup> The shareholders' presentation prior to

the deal stated that with the acquisition of the merged companies, the principal shareholders would be Cox Jr and San Huan.<sup>20</sup> In AMR's Annual Information Form after the transaction had taken place, Cox Jr held 11.4% shares, but San Huan's and CNNMIEC's shares were not disclosed.<sup>21</sup>

## 2. MOUNTAIN PASS MINE AND MARKET CONTROLS

The bankruptcy of the US-based Molycorp is a valuable lesson that shows how a previous attempt to increase the West's supply chain resilience in rare-earths processing failed under the influence of the PRC's policies. Molycorp pursued a business strategy of "mines to magnets" by acquiring Silmet, Neo Material Technologies (NPM's predecessor), and the only rare earths mine in the US – the Mountain Pass mine. Soon after this rapid expansion, however, Molycorp filed for bankruptcy due to the PRC government temporarily easing market controls and thus causing rare-earth element prices to plummet.

In 2011, New York-listed American mining corporation Molycorp acquired the majority stake in Silmet from Estonian businessman and former Prime Minister Tiit Vähi.<sup>22</sup> One year later, Molycorp acquired Neo Materials Technologies to have access to its rare earths processing capabilities, patents, and facilities in China.<sup>23</sup> The acquisition of Neo Material Technologies by Molycorp was part of a vertically oriented "mines to magnets" business strategy that envisaged buying processing plants in Arizona and Estonia, as well as rebuilding the Mountain Pass mine. Molycorp promoted this initiative, meant to

<sup>15</sup> “中国的稀土有多重要？” [The importance of Chinese rare earths], Liaowang Institute, 21 May 2019; “中国钕铁硼出口遭日本专利壁垒 [Chinese Neodymium magnets break out from Japanese patent barriers],” Caijing, 14 July 2014; “日立金属专利被判无效 稀土产业联盟告捷 [Hitachi Metals patent is invalid, rare earth industry alliance wins],” Association of China Rare Earth Industry, 25 February 2016.

<sup>16</sup> John Tkacik, “Magnequench”; Christopher Cox and Select Committee, *Report of the Select Committee on U.S. National Security and Military/Commercial Concerns with the People's Republic of China* (Washington, DC: Featured House Publications, 2 January 1999), 10-13.

<sup>17</sup> Yao Zhigang (姚志刚), “抓住机遇迎接挑战——中科三环主业健康稳步发展 [Seize the opportunity to meet the challenge – the main business of San Huan develops healthily and steadily],” *Sina Finance*, 20 November 2003, accessed on 7 June 2022.

<sup>18</sup> “Archibald Cox,” World Economic Forum, accessed on 30 August 2022; “Board of Directors/ Archibald Cox, Jr. Lead Independent Director,” Unifi, accessed on 30 August 2022.

<sup>19</sup> “Federal Corporation Information NEO MATERIAL TECHNOLOGIES INC.,” Federal Corporation Information, Government of Canada, accessed on 30 August 2022; “NPM Annual Information Form,” NEO materials, 9 March 2018.

<sup>20</sup> AMR Technologies Inc, “Shareholder presentation June 2005,” AMR Technologies Inc, June 2005, 21.

<sup>21</sup> AMR Technologies Inc, *Annual Information Form* (AMR Technologies Inc., 31 March 2006), 26; John Tkacik, “Magnequench.”

<sup>22</sup> “About us,” NMP Silmet, accessed on 27 March 2023.

<sup>23</sup> “Molycorp buys Neo Material for C\$1.3 billion,” *Reuters*, 9 March 2012; “About us,” NMP Silmet, accessed on 27 March 2023.

increase supply chain security with private money, on Wall Street and at the Pentagon.<sup>24</sup>

Soon after, in 2015, Molycorp filed for bankruptcy due to a heavy debt burden and sinking prices as the PRC government temporarily eased market controls and caused rare-earth element prices to fall. Prior to Molycorp's rapid expansion, rare earth prices soared due to Chinese export controls and plummeted after the restrictions had been lifted, which made the California-based Mountain Pass's operations unprofitable despite having consumed 1.5 billion US dollars worth of investments and having only been completed in 2013.<sup>25</sup> In this instance, Molycorp's prized possession – the Mountain Pass mine in California, a cornerstone for building supply chain resilience – was one of the main reasons for its bankruptcy due to the great demand for investments that did not pay off when the prices of rare earths plummeted.

*Mountain Pass mine was one of the main reasons for Molycorp's bankruptcy due to the great demand for investments that did not pay off*

In 2014, ten months prior to Molycorp's declaration of bankruptcy, an American global asset management firm, Oaktree Capital Management (Oaktree), provided Molycorp with a secured debt of 198.7 million US dollars with terms that allowed it to claim repayment for 373.8 million US dollars.<sup>26</sup> In 2016, Molycorp's profitable China-based assets were restructured into Neo Performance Materials, whose majority shareholder, with 92.5%,

became Oaktree.<sup>27</sup> In 2021, after several public offerings, Oaktree, its affiliates, and other entities that it managed held 24.3% of NPM's common shares.<sup>28</sup>

In 2017, the Mountain Pass mine once again changed hands and moved under the New York Stock Exchange-listed MP Materials.

*Dependency on China is caused not only by the ownership of the Mountain Pass mine but also by the fact that the vast majority of MP Materials rare earths are bought by Shenghe, whose largest shareholder is directly under the PRC's Ministry of Natural Resources*

As of 2020, the US government was again attempting to increase supply chain resilience, but this time with the Department of Defense (DOD) public funding to MP Materials for creating domestic processing capabilities. Despite concerns by US government scientists over the minority stake of Chinese company Shenghe Resources (盛和资源) in MP Materials, DOD funding continued after a third-party review.<sup>29</sup>

Dependency on China is caused not only by the ownership of the Mountain Pass mine but also by the fact that the vast majority of MP Materials rare earths are bought by Shenghe.<sup>30</sup> Shenghe's largest shareholder, with 14.4%, is the Institute of Mineral Resources of the Chinese Academy of Geological Sciences, which is directly under the PRC's Ministry of Natural Resources.<sup>31</sup> One

<sup>24</sup> "UPDATE 1-Molycorp closes Neo Material takeover," *Reuters*, 12 June 2012; Christine Parthermore, "Testimony before the House Committee on Foreign Affairs and Subcommittee on Asia and the Pacific," in *China's Monopoly on Rare Earths: Implications for US Foreign and Security Policy*, (Washington, DC: House Hearing, 112 Congress, the U.S. Government Publishing Office, 21 September 2011); Jeffery A Green, "The collapse of American rare earth mining – and lessons learned," *Defense News*, 12 November 2019; "Molycorp Completes Work on its Phoenix Project, Names New CEO," *Mining Engineering*, 9 October 2013.

<sup>25</sup> "Molycorp Completes Work," *Mining Engineering*.

<sup>26</sup> Jim Christie, "Bloomberg gets hearing to contest order for information from its sources," *Reuters*, 21 January 2016.

<sup>27</sup> "Milbank Represents Oaktree Capital Management in Successful Reorganization of Molycorp, Inc.," Milbank, 1 April 2016.

<sup>28</sup> "Neo Performance Materials Announces Completion Of \$100.66 Million Bought Deal Treasury and Secondary Offering Of Common Shares," NEO Performance Materials, 16 November 2021.

<sup>29</sup> Mary Hui, "A Chinese rare earths giant is building international alliances worldwide," *Quartz*, 19 February 2021; U.S. Department of Defense, "DOD Announces Rare Earth Element Awards to Strengthen Domestic Industrial Base," U.S. Department of Defense, 20 November 2020.

<sup>30</sup> United States Securities and Exchange Commission, *MP Materials' Annual Report on Form 10-K* (Washington, DC: United States Securities and Exchange Commission, 2022), 6.

<sup>31</sup> "盛和资源控股股份有限公司 [Shenghe Resources Holding]," Baidu Aiqicha, accessed on 6 September 2022; "MP Materials Awarded Department of Defense Heavy Rare Earth Processing Contract," *Business Wire via MP Materials*, 22 February 2022.



year before Shenghe became the minority shareholder in Mountain Pass it also acquired a stake in the Kuannersuit (Kvanefjeld) uranium and rare earths site in Greenland with the intent of becoming the controlling shareholder. Independent researcher Jichang Lulu suggests that:

Shenghe's investment, one of a number of rare-earth investments globally, including at the Mountain Pass mine in the United States, is consistent with the PRC government's calls for the rare-earth industry to build up strategic reserves, and its encouraging companies to develop mining resources abroad.<sup>32</sup>

NPM has also set its sights on Greenland as it hopes to develop the Sarfartoq mine to provide source material for its rare-earth processing facilities in Estonia.<sup>33</sup> According to NPM, "[i]nvestment represents a key step in Neo's Magnets-to-Mine vertical integration strategy and its plans to expand into rare earth permanent magnet manufacturing in Europe."<sup>34</sup>

Silmet's managing director and board member Raivo Vasnu has commented on why NPM will succeed where Molycorp failed by saying:

Molycorp's business plan's weakness was that the whole supply chain was built on its own mine without alternative suppliers. NPM Silmet has free hands in choosing the suppliers of raw materials (except sanctioned entities) to guarantee competitive raw material price.<sup>35</sup>

<sup>32</sup> “[全国矿产资源规划（2016—2020年）](#) [National Mineral Resources Plan 2016-2020],” National Development and Reform Commission, n.d., accessed on 18 May 2023; “[工业和信息化部关于印发稀土行业发展规划（2016—2020年）的通知](#) [Ministry of Industry and Information Technology of China (MIIT) issued the Rare Earth Industry Development Plan (2016-2020)],” MIIT, 18 October 2016, accessed on 18 May 2023; Miguel Martin, “[China in Greenland: Mines, Science, and Nods to Independence](#),” *China Brief* Vol. 18, Issue 4 (The Jamestown Foundation, March 2018): 14-16; Jichang Lulu, “[Shenghe. Greenland gov't allowed to review uranium project agreement; confirms Shenghe 'intent' to buy controlling stake](#),” Jichang Lulu's blog, 14 June 2017.

<sup>33</sup> “[NPM Silmeti emafirma hakkab Eestisse Gröönimaalt maaki tooma](#) [The parent company of NPM Silmet will bring ore from Greenland to Estonia],” *Postimees/AP/BNS*, 23 August 2022.

<sup>34</sup> “[Hudson Resources And Neo Performance Materials Sign Agreement On The Sarfartoq Rare Earth Element Project In Greenland](#),” NEO Performance Materials, 22 August 2022.

<sup>35</sup> Author's email correspondence with Raivo Vasnu, board member of Silmet, 4 May 2023.

### 3. NPM'S SHAREHOLDERS' TIES WITH THE PARTY-STATE

Given China's dominance of the global rare earths sector, an industry actor's presence in China is not surprising. However, NPM's links to the PRC party-state go beyond trading with the Chinese market. NPM's former shareholder, Oaktree Capital Management, received an investment of 1 billion US dollars from a PRC state-owned investment fund shortly after the global financial crisis. Oaktree also enjoyed privileged access to the Chinese market. Oaktree was one of the first foreign companies to establish a joint venture with a PRC state-owned enterprise and later to set up a branch in China to invest directly into distressed assets in a heavily controlled Chinese finance sector.

*NPM's current shareholder Tattarang's relations with the PRC go beyond business circles and point to ties between Tattarang's ownership and the PRC's political influence operations*

NPM's current shareholder Tattarang's relations with the PRC go beyond business circles and point to ties between Tattarang's ownership and the PRC's political influence operations. These links demonstrate that NPM's shareholders are neither independent from nor neutral toward China, as these aforementioned links can act as leverage for the PRC in its goal of maintaining control over the rare earths sector.

NPM's access to the Chinese market is unprecedented as it is the only foreign entity allowed to process rare earths in China.<sup>36</sup> NPM is also dependent on the Chinese market: almost 40% of its revenue came from China in 2021, and four of its ten production facilities

<sup>36</sup> Canada Research, [Neo Performance Materials Inc. Company Report](#) (Raymond James Ltd, 2 October 2018), 5.

are located there.<sup>37</sup> In 2022, China was still the biggest source of revenue with 32%, giving ground to increased demand from North America and Europe.<sup>38</sup> Similarly, Oaktree also enjoys access to the Chinese market and investments. In 2009, in the aftermath of the global economic crisis, Oaktree received an investment of 1 billion US dollars from one of the world's largest sovereign wealth funds, the state-owned Chinese Investment Corporation (CIC, 中国投资有限责任公司).<sup>39</sup>

In November 2013, Oaktree signed a memorandum of understanding with Cinda (中国信达), one of China's four state-owned asset management companies, and established a joint venture "to jointly invest in distressed assets in China and to cooperate with respect to distressed assets investments in markets outside China."<sup>40</sup> This is significant, as it took place shortly before Oaktree provided Molycorp with a secured loan backed by its assets in China. In retrospect, with the loan to Molycorp, Oaktree invested in distressed assets in China and Estonia and became the majority shareholder of Neo Material Technologies, with management in Canada and production facilities in China, and Estonia-based Silmet.

Oaktree's uniqueness is most visible in its Shanghai subsidiary, which was one among the first batch of companies allowed, through the Qualified Domestic Limited Partners scheme,

to invest in Chinese distressed assets.<sup>41</sup> In 2020, Oaktree registered its subsidiary in Beijing, making it the first foreign asset-management company to be allowed to directly acquire non-performing loans from Chinese banks.<sup>42</sup>

*Regardless of the final beneficiary NPM – operating from Chinese territory with four production facilities and with 32% of revenue from China in a strategically important field – demands a good relationship with the PRC government*

In August 2022, Australian mining and metals business Wyloo Metals announced a 150 million Australian dollar investment in Australian REE developer Hastings Technology Metals Ltd (Hastings), for the latter to acquire a 22.1% stake in NPM from Oaktree.<sup>43</sup> Wyloo Metals is owned by Tattarang, Australia's largest private investment group, and Tattarang is owned by the family of Australian mining magnate Andrew Forrest, who made his fortune with Fortescue Metals Group (FMG) by selling iron ore to China, where 88% of

<sup>37</sup> Neo Performance Materials, [Neo Performance Materials Inc. Consolidated Financial Statements For The Year Ended December 31, 2021](#) (Toronto: Neo Performance Materials, 31 December 2021), 16-17, 42; "About us," Jiangyin Jiahua Advanced Material Resources, accessed on 27 March 2023; "About us," Zibo Jiahua Advanced Material Resources, accessed on 27 March 2023; "About us," Magnequench, accessed on 27 March 2023.

<sup>38</sup> Neo Performance Materials, [Neo Performance Materials Inc. Consolidated Financial Statements For The Year Ended December 31, 2022](#) (Toronto: Neo Performance Materials, 31 December 2022), 48.

<sup>39</sup> "中投将向橡树资本投资10亿美元 双方都保持低调 [CIC to invest \$1 billion in Oaktree, both sides keep a low profile]," 上海证券报 [Shanghai Securities Journal] via 中国经济网 [Economic Daily], 28 September 2009; "中投: 千亿资金转向能源资源领域 [CIC: Hundreds of billions of funds turned to energy resources]," 华夏时报 [China Times] via Business Sohu, accessed on 6 September 2022.

<sup>40</sup> "Oaktree and China Cinda Asset Management Announce Joint Venture," Oaktree Capital Group, 25 November 2013; "信达与橡树资本共同投资中国不良资产 [Cinda and Oaktree Capital jointly invest in China's non-performing assets]," *Caixin*, 26 November 2013.

<sup>41</sup> "橡树海外投资基金管理(上海)有限公司 [Oaktree Capital Shanghai]," Baidu Aiqicha, accessed on 7 September 2022; 海星[Starfish], "橡树资本落地北京 中国将迎来首家外资AMC [Oaktree Capital Lands in Beijing China will usher in the first foreign AMC]," Morgan Stanley Finance via Tencent, n.d., accessed on 12 September 2022; 尚志科 [Shank Zhike], "Ferocious 'Wall Street Vulture'! Demystifying Oaktree Capital, the world's largest buyer of non-performing assets," China Financing Guarantee Association, accessed on 12 September 2022.

<sup>42</sup> " (北京) 投资管理有限公司 [OAKTREE Beijing Investment Management Co, Ltd], Tianyancha, accessed on 12 September 2022; 胡志挺 [Hu Zhiting], "首家外资AMC要来了? 橡树资本全资投资管理子公司在京落地 [The first foreign AMC is coming? Oaktree Capital's wholly-owned investment management subsidiary landed in Beijing], *The Paper*, 18 February 2020; 刘文曦 [Liu Wenxi], "美国橡树资本落户北京 [American Oak Capital settled in Beijing]," *China News Service*, 19 February 2020; "收购中国8个巨额不良资产包! 橡树资本完成私募基金管理人备案! [Acquired 8 huge non-performing asset packages in China! Oaktree Capital completes the filing of private equity fund managers!]," 中润鑫汇资本 [Zhongrun Xinhui Capital], 24 August 2020.

<sup>43</sup> "Wyloo Metals Invests \$150 Million In Rare Earth Materials," Wyloo Metals, 26 August 2022; "Hastings acquires stake in Neo Performance Materials for \$97m," Mining Technology, 14 October 2022; Peter Ker and Brad Thompson, "Forrest pumps \$150m into rare earths aspirant," *The Australian Financial Review*, 26 August 2022; Anthony Macdonald, Sarah Thompson, and Kanika Sood, "Hastings Tech Metals readies \$100m-odd raise after Wyloo investment," *The Australian Financial Review*, 5 September 2022.

FMG's revenue still comes from.<sup>44</sup> Regardless of who the final beneficiary of NPM is, NPM – operating from Chinese territory with four production facilities and with 32% of revenue from China in a strategically important field – demands a good relationship with the PRC government. Besides dependency on China in FMG sales, another of FMG's shareholders is the Hunan provincial SOE Hunan Valin Iron and Steel Group (湖南钢铁集团有限公司) with 7.41% of shares. This amount has shrunk almost twofold since 2019 but still makes Valin FMG's fourth largest shareholder.<sup>45</sup>

One of Andrew Forrest's points of contact in China has been Xing Yunming (邢运明), the then executive vice president of the China Association for International Friendly Contact (CAIFC), a People's Liberation Army (PLA) intelligence agency's influence platform targeting foreign elites.<sup>46</sup> Major General Xing Yunming concurrently held the position of the Director of the Liaison Department of the General Political Department (now the Liaison Bureau of the Political Work Department) of the People's Liberation Army.<sup>47</sup> In July 2012, Forrest and an Australian business delegation met in Beijing's leadership compound with Xing and the PRC's vice premier at the time, Wang Qishan, and Deng Xiaoping's daughter Deng Rong, who concurrently held the positions of director and vice chairwomen of CAIFC. According to Australian analyst John Garnaut, the meeting gave shape to a high-level

China-Australia Senior Business Leaders Forum at the sidelines of the Boao Forum for Asia (sometimes dubbed the "Asian Davos") the following year.<sup>48</sup> In 2013, Forrest's FMG provided Australian journalists with free trips to attend the Boao Forum, which led to the positive reporting of both China and the event in Australian media, but without reference to receiving financial support for the coverage.<sup>49</sup>

FMG has been Boao Forum's supporter since 2008 and has been facilitating the China-Australia Senior Business Leaders Forum since 2013. In 2021, FMG became Boao Forum's strategic partner to help China achieve green transformation.<sup>50</sup> At the Boao Forum in March 2023, Forrest encouraged Beijing, Canberra, and Washington to come together to fight climate change, stating that:

[China] is a country that could really turn the battle against global warming, which is on the precipice of a really efficient manufacturing supply chain, not just for wind, not just solar, not just for electrolyzers [related to hydrogen production] but for trucks, trains, ship engines, everything we need to send our world green.<sup>51</sup>

In a more recent media stunt at the height of diplomatic tensions between Australia and China over the investigations into the origin of COVID-19 pandemic, Forrest invited China's consul-general in Melbourne to speak at a press conference organised by Australia's Health Minister, Greg Hunt, who praised

<sup>44</sup> "Twiggy's grand bet on Australian iron ore turns sour," *Reuters*, 16 September 2012; "Who we are," Wyloo metals, accessed on 27 March 2023; Fourtescue Metals Group Ltd., "Appendix 4E – For the year ended 30 of June 2022," in *Fortescue's Annual Report, for the year ended 30 June 2022* (Fortescue Metals Group, 2022), 89.

<sup>45</sup> John Garnaut, "China holds back on Fortescue," *Stuff*, 24 April 2009; John Garnaut, "Fortescue finds favour in China," *The Age*, 2 November 2007; "Merger control, investment scrutiny and foreign investor protection," Moulis Legal, 24 April 2009; Kathryn Diss, "Fortescue Metals Group shares soar on Chinese investment speculation," *ABC News*, 26 May 2015; "Fortescue strikes \$1.2b deal with China," *Australian Mining*, 25 February 2009; David Stanway, "Vale-FMG tie-up positive for Chinese market: Hunan Valin chairman," *Reuters*, 9 March 2016; "Top 20 Shareholders," FMG Group, accessed on 27 March 2023; Hunan Valin Iron and Steel Group, *Fortescue Metals Group LW (ASX: FRIG) Form 604: Notice of change of interests of substantial shareholder* (Changsha: Hunan Valin Iron and Steel Group, 5 March 2019).

<sup>46</sup> John Garnaut, "Chinese military woos big business," *The Sydney Morning Herald*, 25 May 2013.

<sup>47</sup> Since January 2016, Political Work Department of the Central Military Commission.

<sup>48</sup> John Garnaut, "Australia's China reset," *The Monthly*, August 2018; John Garnaut, "Chinese military woos big business," *The Sydney Morning Herald*, 25 May 2013; Mark Stokes and Russell Hsiao, *The People's Liberation Army General Political Department: Political Warfare with Chinese Characteristics* (Project 2049 Institute, 2013), 20.

<sup>49</sup> Matthew Knott, "Twiggy takes journos on an undisclosed China junket," *Crikey*, 24 December 2013.

<sup>50</sup> John Garnaut, "Chinese military woos big business," *The Sydney Morning Herald*, 25 May 2013; Geoff Wade, "Spying beyond the facade," *Australian Strategic Policy Institute (ASPI)*, 13 November 2013; "Honorary Chairman Xu Kuangdi Meets with the Business Leaders from Australia," China Association for International Friendly Contact (CAIFC), 29 July 2012; "Vice-chairman Deng Rong Meets with Guests from Australia," CAIFC, 9 April 2013; "Fortescue to be Diamond Partner of the 2020 Boao Forum for Asia," Fortescue Metals Group (FMG), 16 January 2020; "与中国的合作 [About cooperation with China]," FMG, accessed on 30 March 2023; "Fortescue Metals Group steps up as a strategic partner of the 2021 Boao Forum for Asia," FMG, 21 April 2021.

<sup>51</sup> Eryk Bagshaw, "Forrest insists China is not a national security threat," *The Sydney Morning Herald*, 29 March 2023.

Forrest for securing millions of COVID-19 tests from China through his personal business contacts.<sup>52</sup> Previously, Forrest had questioned the Chinese origin of COVID-19, suggesting that “it just might be Australia, it just might be Britain, it just might be China.”<sup>53</sup> While former Prime Minister Scott Morrison in an interview to the Australian media called such claims “fantasyland” and asked Forrest to stop interfering in Australian foreign policy.<sup>54</sup>

## 4. NPM'S INDIRECT TIES WITH PLA

The senior researcher of Magnequench, NPM's magnet-producing subsidiary, graduated from and worked in the PRC's civilian defence universities. In addition, he was an engineer in a Chinese company that produces jet engines for fighter jets. These links to the PLA and Chinese defence sector are significant as REE magnets are widely used in both the civilian and the defence sector.

The Magnequench Research and Development Centre in Singapore is led by senior researcher Chen Zhongmin (陈钟敏), who received his formal education in material science and engineering at Northwestern Polytechnical University.<sup>55</sup> After obtaining his Bachelor's degree in 1982, Chen worked for two years as a metallurgical engineer at jet engine producing Xi'an Aero-Engine Corporation (西安航空发动机), which is the subsidiary of Aviation Industry Corporation of China (AVIC, 中国航空工业集团公司).<sup>56</sup> Besides the fact that it produces jet engines for fighter jets, its parent company AVIC

<sup>52</sup> Tim Treadgold, “China Friendship Costs Andrew Forrest \$900 Million In A Week,” *Forbes*, 4 May 2020; Phillip Coorey, “Hunt thought Chinese diplomat worked for Twiggy,” *The Australian Financial Review*, 1 May 2020; Stephen Dziedzic, “How Australia ended up with 10 million more COVID-19 tests to help with the coronavirus fight,” *ABC News*, 30 April 2020.

<sup>53</sup> Myriam Robin, “Where did COVID-19 come from? Don't ask Twiggy Forrest,” *Financial Review*, 3 April 2020.

<sup>54</sup> Samantha Maiden, “Scott Morrison hits out at suggestion by Andrew ‘Twiggy’ Forrest COVID-19 could have originated in Australia,” *News.com.au*, 1 May 2020.

<sup>55</sup> “研究与创新 [Research and innovation],” Magnequench, accessed on 8 August 2022.

<sup>56</sup> “Zhongmin Chen,” LinkedIn, accessed on 11 May 2023; “中航工业西安航空发动机集团有限公司 [AVIC Xi'an Aero Engine Group Co, Ltd],” TTFly, accessed on 8 August 2022.

is, according to the US Defense Department, affiliated with the Chinese military.<sup>57</sup>

After obtaining his PhD in 1990, Chen worked as an associate professor at Xi'an Jiaotong University (西安交通大学), according to ASPI's Chinese Defence Universities Tracker, Xi'an Jiaotong University is a high-risk university due to its defence laboratories.<sup>58</sup> In addition, Northwestern Polytechnical University (NWPU) is one of the Seven Sons of National Defence and, according to ASPI's tracker, is also considered a very high-risk university due to its “top-secret secrecy credentials, very high number of defense labs, and defense research areas.”<sup>59</sup> As noted previously, this is significant due to the importance of rare earth magnets for both civilian and military use. Since 2000, Chen has been working in MQ, holds several patents, and has published widely on rare earth magnets.<sup>60</sup>

## 5. RISKS TO EUROPE'S RARE EARTHS INDUSTRY

PRC companies in the defence sector, with strong links to the PLA, enjoy commercial links to global actors in the China-dominated rare earths sector. In the absence of regulatory scrutiny and oversight, the PRC party-state could exploit those links to obtain leverage in Europe's rare earths industry. Earlier business

<sup>57</sup> Bethany Allen-Ebrahimian and Zach Dorfman, “Defense Department produces list of Chinese military-linked companies,” *Axios*, 20 June 2020.

<sup>58</sup> “Zhongmin Chen,” LinkedIn; “Xi'an Jiaotong University,” China Defense Universities Tracker, accessed on 13 March 2023.

<sup>59</sup> “Zhongmin Chen,” LinkedIn; “Northwestern Polytechnical University,” China Defense Universities Tracker, accessed on 13 March 2023.

<sup>60</sup> “Zhongmin Chen,” LinkedIn; 研究与创新 [Research and innovation], Magnequench, accessed on 8 August 2022; “2021年电气元件和结构部件领域中国局专利的发展竞争态势——主要聚集在广东和江苏、OPPO、电子科技大学、华为领先 [The development and competition situation of Chinese patents in the field of electrical components and structural components in 2021 - mainly concentrated in Guangdong and Jiangsu, with OPPO, UESTC and Huawei leading],” *ScienceNet*, 6 February 2022; “说明: 与本文内容上较为接近的文献 [Description: Documents that are close to the content of this article],” 中国知网 [China National Knowledge Infrastructure, CNKI], accessed on 18 May 2022; “Inventor: 陈钟敏 [Chen Zhongmin],” Google Patents, accessed on 9 August 2022; “Rare earth magnetic powder, bonded magnet containing the same, and hot-pressed magnet,” Google Patents, accessed on 2 August 2022; “陈钟敏 [Chen Zhongmin],” 中国知网 [China National Knowledge Infrastructure, CNKI], accessed on 9 August 2022.

contacts between Silmet and a PLA-linked PRC firm highlight the need for such scrutiny. Although those contacts have been abandoned and do not currently constitute a direct threat, the fact that they could take place without drawing regulatory scrutiny suggests that such threat could re-emerge in the future.

*PRC companies in the defence sector, with strong links to the PLA, enjoy commercial links to global actors in the China-dominated rare earths sector. In the absence of regulatory scrutiny and oversight, the PRC party-state could exploit those links to obtain leverage in Europe's rare earths industry*

In the spring of 2022, for the purpose of producing rare earth magnets in Estonia, NPM and local law firm Cobalt established a new company by the name of MQ HPMG Europe. According to Silmet's managing director and board member Raivo Vasnu, the newly established company's name – that combined the acronyms of both NPM's magnet-producing wing Magnequench (MQ) and one of the Chinese market leaders in the same field by the name Hangzhou Permanent Magnet Group (HPMG, 杭州永磁集团有限公司) – was the Cobalt lawyers' mistake.<sup>61</sup>

The original board member of MQ HPMG Europe, Raivo Vasnu (also the managing director and a board member of NPM's subsidiary Silmet since 2019) has admitted to the author that Cobalt's lawyers were unsuccessfully negotiating with HPMG for the acquisition of its patents and licenses.<sup>62</sup> In November 2022, MQ HPMG Europe changed its name to Magnet Ventures Europe, wholly owned by Magnet Ventures (established in Singapore in September 2022), whose directors are NPM's president Rahim Suleman, NPM's subsidiary Magnequench' Executive Vice President Gregory Kelley Kroll, and Vice President of

Sales and Marketing Shan Zhan (单湛). In March 2023, the company's name once again changed to its current form NPM Narva.<sup>63</sup>

Reached out for a comment, Raivo Vasnu stated that:

MQ HPMG in the original name is purely a lawyers' mistake and this is the reason for changing the name. The final beneficiaries were originally Cobalt's lawyers as this is standard practice for "ordering" a legal body from a law firm, which in a later stage was sold to the client. The final name for the company is NPM Narva. I am aware that lawyers were negotiating with HPMG for the acquisition of patents and technology. These negotiations were unsuccessful and just recently NPM acquired UK-based SG Technologies Group with their licenses.<sup>64</sup>

Hangzhou Permanent Magnet Group (HPMG), started in 1980 as a state-owned company, had become a private company by 1996.<sup>65</sup> The majority of HPMG shares (90%) belong to Jia Guiyuan (贾贵元), who joined the PLA in 1967 when he was 17 years old. In his own words, Jia discovered the possibility of making a living out of producing magnets while on leave from the military service in the 1980s.<sup>66</sup> In the first quarter of 2019, HPMG was one of the five biggest suppliers to Xi'an Tianhe Defense Technology (西安天和防务技术), a private defence company that has provided services to the Chinese military for 19 years and has obtained several military industry credentials in "radar detection, photoelectric

<sup>61</sup> "MQ HPMG Europe OÜ (16493223)," e-äriregister [e-business register], accessed on 10 November 2022.

<sup>62</sup> Author's correspondence with Raivo Vasnu, board member of Silmet. 4 May 2023; "MQ HPMG Europe OÜ (16493223)," e-äriregister; "NPM Silmet OÜ (10294959)," e-äriregister [e-business register], accessed on 10 November 2022.

<sup>63</sup> "Magnet Ventures Europe," e-äriregister [e-business register], accessed on 13 March 2023; "MAGNET VENTURES PTE. LTD.," Business Filing Portal Of ACRA, accessed on 13 March 2023; "Who we are," NEO Performance Materials, accessed on 13 March 2023; "Shan Zhan 单湛," LinkedIn, accessed on 13 March 2023.

<sup>64</sup> Author's correspondence with Raivo Vasnu, board member of Silmet. 4 May 2023. "Neo Performance Materials Acquires Leading European Magnet Manufacturer," NPM, 18 April 2023.

<sup>65</sup> "杭州布莱迪强磁有限公司 [Hangzhou Brady Magnetics Co, Ltd]," Baidu Aiqicha, accessed on 14 August 2022; "杭州布莱迪强磁有限公司 [Hangzhou Brady Magnetics Co, Ltd]," Baidu Aiqicha, accessed on 14 August 2022.

<sup>66</sup> 骆红婷 [Luo Hongting] and 黄玉洁 [Huang Yujie], "天南海北义乌人——贾贵元：打造国内一流磁钢企业 [Jia Guiyuan, a native of Yiwu: to build a first-class magnetic steel enterprise in China]," 义乌新闻 [Yiwu News], 9 November 2016; "杭州永磁集团有限公司 [Hangzhou Permanent Magnet Group Co, Ltd]," Qichacha, accessed on 28 January 2022.

detection, underwater acoustic detection, metamaterials, big data, etc.”<sup>67</sup>

HPMG products have also contributed to Chinese space missions, including Tiangong-1 and Shenzhou-10, where it has partnered with Guizhou Space Appliance Co Ltd (贵州航天电器股份, also known as Aerospace Electric, 航天电器).<sup>68</sup> Its largest shareholder is Aerospace Jiangnan Group (航天江南集团), which is wholly owned by SOE China Aerospace Science & Industry Corp (CASIC, 中国航天科工集团有限公司).<sup>69</sup> The Guizhou Space Appliance website reads that it is a subsidiary of the China Aerospace Science & Industry Corp Tenth Research Institute, which was known until 2015 only through its military designation as 061 Base’s 302 Research Institute responsible for the development of surface-to-air missile systems and Shenzhou type rockets.<sup>70</sup> Aerospace Jiangnan Group (061 Base) is a primary supplier of specialised missile components and software for CASIC and produces, among other things, batteries and micromotors, which would explain its cooperation with HPMG. The 302 Research Institute functions as one of five software

development centres under CASIC that likely focus on surface-to-air missile components.<sup>71</sup>

Silmet lawyer’s negotiations with HPMG highlight the risk, that without proper due diligence and government scrutiny, PRC defence sector related companies could get involved in strategic projects that have significance to both the EU and NATO’s energy and defence sectors.

## CONCLUSION

NPM has a history of Chinese ownership and indirect ties with the PLA and its influence platforms. This analysis finds that these ties could potentially be used as sources of leverage over the Silmet plant’s ownership – in particular, concerning the PRC’s potential to prioritise rare earths supply chain control over Europe’s supply chain resilience. This could ultimately lead to a shortage of rare earths in Europe when they are most needed.

Recent years have shown how important it is to increase supply chain resilience in rare earths processing and do so independently from China. China already controls around 90% of the global rare earths processing market and has used that leverage in the past to pressure Japan over territorial disputes in the East China Sea. Control over REE processing and the production of REE magnets (found in electric vehicles, wind turbines, anti-armour missiles, and fighter jets) could allow China to pressure the world into accepting an invasion of Taiwan – a fatal blow to the rules-based world order that has enabled Estonia and Europe to develop and prosper since the fall of the Soviet Union.

In addition, the analysis has identified a strong threat of high-risk PRC actor serving the PRC’s military interests that may exploit its links to a China-dominated sector to gain influence on Europe’s rare earths industry. Links such as those detailed in this analysis show the need for EU and government agencies to exercise active scrutiny and oversight of rare earth industry actors’ partnerships and connections with PRC entities. Increasing

<sup>67</sup> “天和防务：2019年第一季度报告全文 [Tianhe Defense: Full text of the report for the first quarter of 2019],” *Sina Finance*, 26 April 2019; “公司简介 [Company introduction], Tianhe Defense, accessed on 13 August 2020; “西安天和防务技术股份有限公司 [Xian Defense Technology],” Tianyancha, accessed on 12 September 2022; “西安天和防务技术股份有限公司 [Xian Defense Technology],” Baidu Aiqicha, accessed on 12 September 2022.

<sup>68</sup> 楼雅琪 [Luo Yaqi], “点赞！佛堂人创办的企业曾助力神舟十号、天宫一号飞天 [The enterprise founded by the people of Fotang have helped Shenzhou 10 and Tiangong 1 fly into the sky],” 义乌市佛堂镇人民政府 [People’s Government of Fotang Town, Yiwu City] via WeChat, 19 October 2016; 骆红婷 [Luo Hongting] and 黄玉洁 [Huang Yujie], “天南海北义乌人——贾贵元：打造国内一流磁钢企业 [Jia Guiyuan, a native of Yiwu is all over the place: to build a domestic first-class magnet enterprise],” 中国义乌网·义乌商报 [China Yiwu web, Yiwu business paper], 9 November 2016; “贵州航天电器股份有限公司 [Guizhou Space Appliance Co],” Baidu Aiqicha, accessed on 12 September 2022.

<sup>69</sup> “航天江南集团有限公司 [Aerospace Jiangnan Group],” Baidu Aiqicha, accessed on 12 September 2022; “中国航天科工集团有限公司 [China Aerospace Science & Industry Corp],” Baidu Aiqicha, accessed on 12 September 2022.

<sup>70</sup> “关于我们 [About us],” 贵州航天电器股份有限公司 [Guizhou Space Appliance Co], accessed on 29 October 2020; 蒋子文 [Jiang Ziwen], “中国航天科工集团十院挂牌成立，为地空导弹系统科研生产基地 [China Aerospace Science & Industry Corp Tenth Research Institute was established, which is a research and production base for surface-to-air missile systems],” 澎湃新闻 [The Paper], 16 February 2015.

<sup>71</sup> Mark A Stokes and Dean Cheng, *China’s Evolving Space Capabilities: Implications For U.S. Interests* (Project 2049 Institute, 26 April 2012), 22-61.

Europe's rare earth elements processing and magnet production capabilities is welcomed, but necessary regulatory measures must be put in place to guarantee that public funds are used purposefully for increasing rare earth supply chain resilience and the EU and NATO's security. Otherwise, taxpayers' money could be used to help finance the Chinese companies' relocation closer to the European producers of electric vehicles and wind turbines, hampering the competitiveness of European businesses in the long term.

These risks could be mitigated by requiring industry actors that receive European subsidies to supply annual quotas of processed rare earths for the European market. More generally, the EU and member states should incentivise the development and diversification of European mining and processing capabilities to avoid depending on one operator or one plant. The EU and national governments should monitor China's leverage on industry actors and incentivise companies to reduce

China's leverage and move their supply chain to the member states and allies.

There is a significant cluster of risks in using Estonian and European taxpayer money to maintain and deepen dependencies on China in REE and to hamper European competitiveness in green technology by funding the expansion of the production facilities of China-linked actors closer to the target European market. China has proven willing to use economic leverage, including by cutting access to REE, in pursuit of political-strategic objectives and does not shy away from using foreign companies and business leaders to advocate for Chinese Communist Party interests. These are not insignificant lessons given Xi Jinping's continued support for Vladimir Putin's Russia or statements by former leaders such as Deng Xiaoping that China was seeking to control global REE supply in a manner analogous to the control of oil by the Organisation of the Petroleum Exporting Countries.

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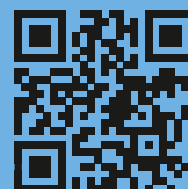
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