

Misreading China Could Delay Green Energy Transition

A more nuanced understanding of the rising super-power would benefit efforts to reach net zero

July 1st, 2024

With protectionism on the rise globally, confrontations and misunderstandings between China and Western democracies could be major hurdles for the transition to net zero. China plays a crucial role throughout supply chains for transition minerals (TMs)¹ and clean-energy technologies, particularly in material processing and downstream manufacturing. However, it is often treated as a monolithic opponent rather than a heterogeneous country that will be a vital partner in the energy transition.

While we appreciate the concerns raised by China's growing global influence, gaining a better understand of Chinese perspectives would be helpful for those working on TMs. This document outlines some of the key factors that have shaped these viewpoints. Please contact Orlando Bowie (orlando.bowie@asktmp.com) for more information.

¹ These materials are key for energy transition technologies, like renewable energy, electric vehicles (EVs), and electricity grids, and include lithium, copper, rare earth elements (REEs), graphite, cobalt, nickel and manganese, amongst others.

INTRODUCTION

This brief picks out four key challenges facing China that could have serious implications for transition mineral (TM) supply chains.

- 01** An unprecedented economic slowdown could undermine the legitimacy of the Chinese Communist Party (CCP), increasing its focus on security and raising the likelihood it will exploit control of TM supplies for geopolitical ends. Supporting efforts to adapt to this new normal would benefit the West's relations with China.
- 02** This insecurity feeds into Beijing's fear of containment,² which has been further exacerbated by the West's efforts to reshore TM mining and processing. Diversifying production without cutting out Chinese players will help maintain cooperation.
- 03** Strained relations with many of its neighbors add to the geopolitical tensions. International agreements on fishing rights that recognize the impact of climate change on food security offer a possible path towards de-escalation.
- 04** A large proportion of China's TM assets are highly exposed to widely underestimated climate-change impacts and social license risks, which could cause operational disruptions that substantially restrict global supplies. Protecting social license to operate while building resilience to climate impacts will help ensure availability.

Our preliminary data³ shows that China is among the most exposed countries to near-term climate-change impacts globally. Key areas for copper and lithium production (e.g. Yichun in Jiangxi, Chifeng in Inner Mongolia, and parts of Sichuan province) are some of the most exposed areas to overlapping climate and social grievance risks, which could restrict availability of two of the most important materials for the energy transition.

Future TMP reports will analyze our climate data in more detail and dig deeper into China's geopolitical strategy, including trade policy and the shifting focus of the Belt and Road Initiative (BRI) towards TM and clean-energy projects.

-
- 2 The fear of foreign powers trying to contain and suppress China's economic and diplomatic development. https://ciss.tsinghua.edu.cn/info/subemail_wzjx/6361, <https://www.163.com/dy/article/ISGNQMUJ0552EZ9J.html>, <https://zhuanlan.zhihu.com/p/681439690>, <https://www.bbc.co.uk/news/world-asia-china-64857194>
 - 3 Our unique data has a near-term focus (i.e. the next 5-10 years), is focused on extreme climate events (like droughts or heatwaves), and combines climate data with contextual information on social, economic, political, environmental and demographic factors.

The ongoing slowdown in China's economic growth⁴ is distracting policymakers from constructive diplomacy and economic reforms, while increasing their focus on security. An analysis of official statements from the annual Central Economic Work Conference held in December reflects this trend: use of the term "security" has risen in recent years, while mentions of "reform" has decreased, despite mounting structural challenges facing the economy.⁵

These issues include over-reliance on exports amid weak global demand; a fast-aging, shrinking population; high youth unemployment; a deteriorating property sector; and high local government debt.⁶ China's legislature set an ambitious GDP growth target of 5% at its Two Sessions (两会)⁷ annual meeting in March but produced little policy support.⁸ This reflects Xi Jinping's deep-seated ideological aversion to bold stimulus measures⁹ or bailouts for China's beleaguered property developers.¹⁰

While the new growth target is roughly in line with reported growth for 2023 (5.2%), this year's goal will be harder to achieve: performance last year benefited from China's reopening after strict COVID lockdowns, a low base for comparison, and a boom in clean-energy industries (see more below). Analysts surveyed by Bloomberg project growth of 4.6% in

2024,¹¹ while the International Monetary Fund (IMF) recently raised its estimate to 5.0% from 4.6% but expects growth to slow to 4.5% in 2025.¹²

This slowdown could be exacerbated by extreme climate events this decade, with China among the most highly exposed countries globally to near-term climate and grievance risks, according to our preliminary data. Of China's 33 provincial-level administrative regions, 22 are rated as "very exposed" or worse, including four that are "extremely exposed"; only Hainan province has the lowest risk-rating ("slightly exposed").

Combined climate and grievance risk by province¹³



Source: TMP Public

4 <https://asia.nikkei.com/Economy/China-s-economy-is-headed-for-slower-growth-IMF-says>

5 <https://www.ft.com/content/97ea31ae-2581-4139-b387-abfb1329bf67>

6 <https://www.ft.com/content/21255a46-6a6e-4bba-b5b2-df72cf1dc969>

7 <http://lianghui.people.com.cn/2024/n1/2024/0306/c458561-40189768.html>

8 <https://www.ft.com/content/9e2b59be-1f06-4001-bf68-91974951ec59>

9 <https://www.scmp.com/comment/china-opinion/article/3257038/hold-bazooka-weak-china-growth-low-stimulus-new-normal>

10 <https://www.economist.com/business/2024/04/03/the-mind-bending-new-rules-for-doing-business-in-china>

11 <https://www.bloomberg.com/news/articles/2024-03-05/china-s-gdp-growth-target-this-year-set-around-5-reuters-says>

12 <https://www.imf.org/en/News/Articles/2024/05/28/pr24184-china-imf-staff-completes-2024-art-iv-mission>

13 We considered eight climate variables including increases in extreme temperature, unseasonably warm temperature, change in annual precipitation, change in annual dry days, unseasonably high rainfall, unseasonably low rainfall, change in consecutive dry days, and change in consecutive wet days. We then combined these indicators with a social risk model (Landscape) that TMP developed to identify grievance risk for real infrastructure assets. The social risk model draws on 14 indicators of ESG risk, including corruption, vulnerability to poverty, asset ownership, and others. More information can be found at the following link: https://tenurerisks.com/landscape_methodology.pdf

XI FURTHER CENTRALIZES CONTROL

Rather than market-oriented policymaking, the Two Sessions were characterized by ideological rhetoric and praise of Xi Jinping Thought. The press conference that usually concludes the event was cancelled for the first time, reflecting shrinking space for discussion and further tightening of Xi's grip over the government and economy.¹⁴

This continues a trend away from market-led growth since Xi came to power. During his rule, the boundaries between the CCP and government institutions have been increasingly blurred. Unproductive state-owned enterprises (SOEs) have been strengthened, while private companies – particularly foreign ones – have endured an increasingly hostile and unpredictable environment.

Authorities have cracked down on some of China's most innovative homegrown sectors, such as consumer tech, in recent years.¹⁵ And high-flying executives and entrepreneurs have found China's business environment increasingly precarious – last year at least 11 listed domestic firms made disclosures alerting investors to the unexplained disappearance of executives or board members.¹⁶

The defining slogan of the meetings, “new productive forces” (新质生产力), hints at the importance of moving up the value chain with emerging industries like clean-tech and AI, while reiterating the long-recognized need to improve productivity, reduce reliance on exports, expand the services sector, and increase domestic consumption. This pivot will be even more challenging given the increasingly hostile environment for private enterprise and lackluster policies to stimulate consumer spending – China's consumer confidence index is wallowing around the low levels seen during COVID lockdowns.



Source: National Bureau of Statistics (NBS)

GREEN DEVELOPMENT IN FOCUS

On a more encouraging note, green development is seen as increasingly important. “Green” was one of the most used words in Premier Li Qiang's annual work report delivered at the opening of the Two Sessions, surging from previous years, while references to “ecology” also reached a record high.¹⁷ The report also highlighted the need to improve carbon accounting and verification along with carbon footprint assessments.¹⁸

Clean-energy industries moreover were one of the few bright spots in China's economy last year, particularly the so-called “new three” (新三样) – solar energy products, electric vehicles (EVs), and batteries. Without this boost from clean-energy products, GDP would have grown just 3% in 2023 rather than 5.2%, far short of the official target of 5%.¹⁹ This manufacturing boom has cemented China's dominance in clean-energy supply chains,

14 <https://www.bbc.co.uk/news/world-asia-china-64819857>, <https://www.bbc.co.uk/news/world-asia-68508868>

15 <https://www.scmp.com/tech/big-tech/article/3227753/timeline-chinas-32-month-big-tech-crackdown-killed-worlds-largest-ipo-and-wiped-out-trillions-value>

16 <https://www.economist.com/business/2023/12/07/the-case-of-chinas-vanishing-chairmen>

17 <https://www.economist.com/china/2024/03/12/is-china-a-climate-saint-or-villain>

18 https://npcobserver.com/wp-content/uploads/2024/03/2024-Government-Work-Report_EN.pdf, https://npcobserver.com/wp-content/uploads/2024/03/2024-Government-Work-Report_ZH.pdf

19 <https://www.carbonbrief.org/analysis-clean-energy-was-top-driver-of-chinas-economic-growth-in-2023/>

shoring up its price advantage, and leaving other countries to choose between its low prices or costly investments in their own supply chains.²⁰

Given that the average lead time from mineral discovery to production is about 17 years²¹ and recent price routs for some key TMs are further disincentivizing investment,²² the growing urgency

of combatting climate change means most countries will need to take a balanced approach and work with China in some capacity to hit emissions targets. A strategy overly focused on rebuilding supply chains on the other hand could backfire and delay the global effort to reach net zero.

02

FEAR OF CONTAINMENT

The fear of foreign powers suppressing China's rise adds another layer to Beijing's feelings of insecurity that could push it to make geopolitical moves which are counterproductive for the energy transition. This fear of containment – a common theme in Beijing's discourse²³ – has been enflamed by policies recently introduced by the US and EU to “de-risk” supply chains, such as the US's Inflation Reduction Act (IRA). Signs of rising trade protectionism among countries hitherto unaligned or even allied to China, such as in Latin America,²⁴ could further exacerbate such fears as the country looks to export its way out of its economic downturn.

China has responded angrily to US and EU re-shoring efforts, with the Ministry of Commerce (MOFCOM) calling them “discriminatory” and in violation of WTO rules.²⁵ The IRA denies US government subsidies for EVs containing batteries and raw materials produced by “foreign entities of concern” (FEOCs). This includes companies that are controlled by or subject to the jurisdiction of China's government, those that produce or process any components or materials in China, and any private entities in which a FEOC has a stake of more than 25%.²⁶

The FEOC rules appear to leave some room for private Chinese companies to access funding through licensing agreements or joint ventures (JVs) in countries that have free-trade agreements with the US.²⁷ However, aggressive enforcement of the rules could further antagonize China, which might interpret them as unfair punishment for having the foresight to support these industries. This seems hypocritical, given that China has long relied on similar policies. The “Made in China 2025” and “Dual Circulation” policies for example are aimed at increasing self-reliance for strategic industries with generous state spending.

Pro-China voices however tend to downplay the impact of such mercantilist policies. Instead, they emphasize the dynamism of the domestic market due to cut-throat competition, and the West's willingness in the past to offshore dirty industries such as TMs along with the social and environmental problems their development entails. Underlying these sentiments are historical grievances rooted in the “century of humiliation” (c.1845-1945) when the country was fragmented and exploited by foreign powers. This helps legitimize policies that attempt to level the playing field and restore China to its pre-eminence on the global stage.²⁸

20 <https://www.carbonbrief.org/analysis-clean-energy-was-top-driver-of-chinas-economic-growth-in-2023/>

21 <https://www.statista.com/statistics/1297832/global-average-lead-times-for-mineral-resources-from-discovery-to-production/>

22 <https://www.reuters.com/breakingviews/nickel-rout-is-energy-transition-warning-west-2024-03-08/>

23 https://ciss.tsinghua.edu.cn/info/subemail_wzjx/6361, <https://www.163.com/dy/article/ISGNOMUI0552EZ9J.html>, <https://zhuanlan.zhihu.com/p/681439690>, <https://www.bbc.co.uk/news/world-asia-china-64857194>

24 <https://www.bloomberg.com/news/features/2024-05-21/latin-america-steel-tariffs-on-china-imports-show-relationship-strain>

25 <https://www.globaltimes.cn/page/202209/1275909.shtml>

26 <https://public-inspection.federalregister.gov/2023-26513.pdf>

27 <https://rhg.com/research/pole-position-chinese-ev-investments-boom-amid-growing-political-backlash/>

28 <https://world101.cfr.org/contemporary-history/global-era/how-does-history-inform-chinese-communist-partys-domestic-and>

Such historical grievances also underpin the nationalistic line common in state media.²⁹ More moderate voices meanwhile are harder to find in Chinese-language discourse. Jia Qingguo (贾庆国), a foreign policy adviser in the Chinese People's Political Consultative Conference (CPPCC) and former Dean of Peking University's School of International Studies, is among the only outspoken voices urging Beijing to avoid overreacting to provocations from the US, while highlighting potential areas for collaboration.³⁰

Chinese diplomats also tend to take a more moderate tone, pushing for “win-win” relationships. In a recent speech to the Carter Center Forum in the US, newly appointed ambassador Xie Feng said the Sino-US relationship should be treated as a track and field competition

rather than a boxing match.³¹

Meanwhile, China is often described as having a chokehold on TM supplies despite making substantial investment overseas, particularly in the Global South. Chinese nickel processing in Indonesia has expanded rapidly following the latter's ban on ore exports.³² China has also invested in value-added processing in Chile in a bid to diversify copper and lithium supplies.³³

And the Belt and Road Initiative, its flagship foreign investment program, has in recent years increased its focus on so-called “new infrastructure” (新基建) such as renewable energy and TM extraction.³⁴ Such developments in fact align with the push by Western countries to diversify TM supply chains outside China.

03

AGGRESSIVE TERRITORIAL CLAIMS

As well as being sensitive to confrontation with Western countries, China has put strain on its relationships with neighbors by aggressively asserting territorial claims that serve to increase geopolitical tensions in the region and globally. These include its claims over Taiwan and parts of the South China Sea³⁵ and on its Himalayan border with India.³⁶

China's provocative approach to policing its borders means clashes involving coast guards, fishing boats and border patrols in these areas could metastasize into more serious conflicts. China's land reclamation efforts in the South China Sea have also been much more aggressive than those of its neighbors – this involves

dredging reefs to create larger islands, severely damaging marine biodiversity. Chinese fishing boats also exploit local fisheries more than their neighbors do, particularly when it comes to prized species like giant clams.³⁷ Increased competition over natural resources that is likely to result from climate change will only serve to fuel tensions arising from overfishing.

29 <https://www.globaltimes.cn/page/202208/1273162.shtml>

30 <https://hk.crntt.com/doc/1068/9/0/5/106890505.html>, <https://web.archive.org/web/20240319161441/https://news.ifeng.com/c/8Y4neOEAFu>

31 https://web.archive.org/web/20240111033724/https://world.hebnews.cn/2024-01/10/content_9126045.htm

32 <https://www.bloomberg.com/news/articles/2022-12-15/chinese-companies-are-flocking-to-indonesia-for-its-nickel>

33 <https://www.bloomberg.com/news/articles/2023-10-16/china-s-tsingshan-gets-access-to-chilean-lithium-in-battery-metal-race>

34 <https://www.thedialogue.org/analysis/new-infrastructure-emerging-trends-in-chinese-foreign-direct-investment-in-latin-america-and-the-caribbean/>

35 <https://blogs.voanews.com/state-department-news/2012/07/31/challenging-beijing-in-the-south-china-sea/>

36 <https://www.crisisgroup.org/asia/south-asia/india-china/334-thin-ice-himalayas-handling-india-china-border-dispute>

37 <https://features.csis.org/environmental-threats-to-the-south-china-sea/#group-section-II-Reef-Destruction-RRlkF3AdSA>

Territorial claims in the South China Sea



Source: [Voice of America](#)³⁸

Again, history helps to explain China's actions. The CCP claims sovereignty over territories administered by the Qing dynasty (1644-1911), a period during which the size of the Empire ballooned to include areas such as Xinjiang. And Beijing did not consolidate power over Western Tibet until 1950. The recent advent of Chinese rule in these areas coupled with their distinct local languages and cultures explains the antipathy of indigenous populations towards the CCP. From the Marxist perspective of the CCP, it liberated these territories from feudalism and religious dogma, despite the wishes of locals to remain independent.

China's claims over much of the South China Sea are similarly contentious, based on the territory controlled by Japan, whose empire expanded

rapidly in the first half of the 20th century to include much of East China and the surrounding seas. These claims were later backed up with tenuous evidence – the discovery of historical artifacts originating from China in the area (despite inconclusive evidence that these belonged to Chinese traders).³⁹

This led to adoption of the Japanese Empire's "11-dash line"⁴⁰ by the Kuomintang (aka the Chinese Nationalist Party) when it came to power in 1945. The maritime border was later reduced to the "nine-dash line"⁴¹ by the CCP after it took control in 1949 and ceded some territory in the Gulf of Tonkin to Vietnam. Tribunals have found that these territorial claims have no basis under international law, though this has not perturbed China.⁴²

38 <https://blogs.voanews.com/state-department-news/2012/07/31/challenging-beijing-in-the-south-china-sea/>

39 <https://www.economist.com/china/2023/06/29/why-china-is-so-keen-to-salvage-shipwrecks-in-the-south-china-sea>

40 A dotted line demarcating maritime borders claimed by Japan and China in the South China Sea (<https://time.com/4412191/nine-dash-line-9-south-china-sea/>)

41 https://en.wikipedia.org/wiki/Nine-dash_line

42 <https://www.aljazeera.com/news/2023/10/24/why-does-china-claim-almost-the-entire-south-china-sea>

Preliminary analysis of our geospatial data for copper, lithium and manganese assets in China found that roughly half are situated in so-called autonomous areas. The proportion is particularly high for manganese mines and refineries (81%). These autonomous regions are areas with large populations from China's 55 recognized ethnic minority groups, which together make up about 8.5% of the national population. Such areas include prefectures in provinces like Sichuan and Qinghai, as well as provincial-level regions like Xinjiang, Tibet, and Inner Mongolia.

These areas do not in fact have genuine autonomy, and their indigenous populations have little agency when it comes to major industrial projects such as TM mining and processing. Such capital-intensive projects are often controlled by external stakeholders from the Han Chinese majority or foreign investors.

For example, the Longgu mine and smelter, one of China's largest hardrock lithium projects, is in Ngawa Tibetan and Qiang Autonomous Prefecture in Sichuan Province but is owned by the conglomerate Zhongte Energy Holding Co. Ltd. (中特能源控股有限公司). And China's largest manganese mine is in Guangxi Zhuang Autonomous Region but owned by CITIC Group (中国国际信托投资公司), one of China's oldest state-owned conglomerates.

While local officials and business owners are often from ethnic minorities, they must still toe the party line and advocate central government policies. Local populations meanwhile suffer the environmental impacts of these projects. Moreover, in many of these places topographic features have religious importance (e.g. Inner Mongolia, Tibet), making damage to the landscape from mining projects a particular source of social

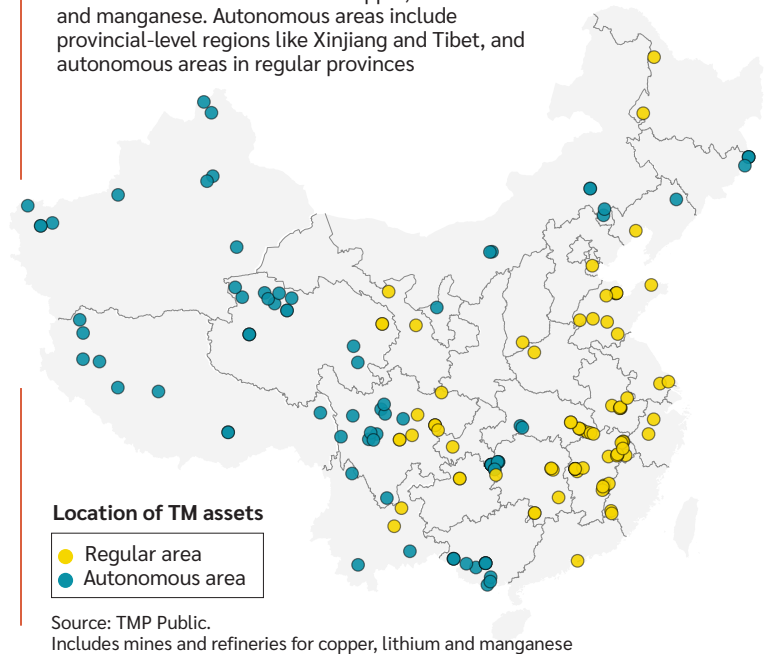
friction.⁴³ These factors heighten risks around social license to operate that we expect in turn will be further exacerbated by climate change.

Prior to the Xi Jinping era, reports of protests against mining projects and violent responses from local authorities were more frequent.⁴⁴ Since Xi has centralized control, access to such areas has become more difficult and such reports have become less common – examples have been hard to find since 2016.⁴⁵

The increasing frequency of extreme climate events is nevertheless likely to heighten social risks from TM extraction: reduced rainfall could fuel tensions over water access, flooding could exacerbate pollution from tailings pools, and increased temperatures are broadly associated with social unrest. A renewed push to assimilate ethnic minorities recently launched by Beijing is likely to bring further tensions.⁴⁶

Half China's key TM assets located in autonomous areas

Shows mines and refineries for copper, lithium and manganese. Autonomous areas include provincial-level regions like Xinjiang and Tibet, and autonomous areas in regular provinces



43 <https://savetibet.org/tibetans-in-amchok-protest-mining-project-at-holy-gong-ngon-lari-mountain/>

44 <https://www.theguardian.com/environment/2009/may/26/activism-tibet-protesters-shot>, <https://humanrightshouse.org/articles/tibet-4-mine-protesters-killed-30-wounded/>

45 https://www.washingtonpost.com/world/asia_pacific/tibetans-in-anguish-as-chinese-mines-pollute-their-sacred-grasslands/2016/12/25/bb6aad06-63bc-11e6-b4d8-33e931b5a26d_story.html

46 <https://www.bloomberg.com/news/articles/2023-12-28/xi-s-call-for-ethnic-unity-gets-boost-with-new-xinjiang-rules>

CONCLUSION

Long lead times for mines coupled with price routs for some TMs are disincentivizing private investment in such areas. The growing urgency of combating climate change means most countries will need to take a balanced approach and work with China in some capacity to hit emissions targets. While we appreciate that conflicting national interests pose a challenge for the relationship, a strategy overly focused on rebuilding supply chains without any Chinese involvement could backfire and delay the global effort to reach net zero.