THE MCKELL INSTITUTE

Policy Briefing

Securing Sovereign Capacity

Strengthening National Resilience in the Refined Metals Sector

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About the McKell Institute

The McKell Institute is an independent, not-for-profit research organisation dedicated to advancing practical policy solutions to contemporary issues.

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Acknowledgement of country

This report was written on the lands of the Darug and the Eora Nations. The McKell Institute acknowledges Aboriginal and Torres Strait Islander peoples as the Traditional Owners of Country throughout Australia and their continuing connection to both their land and seas.

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Executive Summary

Australia's refined metals sector is critical for Australia's economy, regional jobs, and long-term security. However, it is currently grappling with multiple challenges, including global market manipulation of refined metals, a new wave of international industrial policies, deliberate geoeconomic interference from Beijing, and rising global energy prices.

This policy briefing examines these challenges in detail, then outlines the rationale and key features of a potential Albanese Government strategy for the refined metals sector.

A combination of changing global market conditions, heavily influenced by active interventions in major economies, combined with local complexities in the energy and procurement space, have led to a perfect storm of factors that expose Australia's heavy industry to closures. While much of the commentary around the challenges facing this industry are focused on the energy difficulties heavy energy users face, an equally acute threat is the emergence of market interference in the global market for refined metals. In particular, the role of state intervention in the Chinese market has seen global markets for manufactured goods, including refined metals, influenced.

Elsewhere, a new era of industrial policy is underway. In major economies, from the UK and European Union, through to the US and Asia, governments are increasingly intervening in their industrial sectors.

Within Australia, this dynamic has created a critical convergence where local cost pressures are colliding with global market manipulation. This is rendering certain Australian industrial outputs uncompetitive and threatens the survival of individual refiners and smelters, as well as the communities in which they are situated.

The challenge for policymakers, however, is that if Australia loses much of its industrial capacity during this period, it will be very challenging to reestablish it in the future. As Australia embraces a net zero future, in which the electrification of many industrial processes will be key, it must preserve existing capacity within the manufacturing sector to create a bridge to a net zero future. If key industrial assets are lost, we will also lose the skilled workforce and knowledge within our economy. This will imperil Australia’s sovereign manufacturing capabilities in the long term.

This policy briefing notes the current challenges facing Australia’s refined metals sector; describes the challenge posed by China’s industrial policy to Australia; calculates the risk to jobs of the sector’s demise; and outlines key features of a potential coordinated national strategy that the Commonwealth may consider to ensure the sector’s survival.

Key Points & Findings

1. **The refined metals sector is under threat:** Australia's refined metals sector is facing challenges that risk losing Australian jobs, and critical sovereign capacity in advanced manufacturing.

2. **Chinese government policies have helped to collapse the service charges for refining metals**: From 2009 to 2022, China implemented approximately 5,400 subsidy policies, primarily aimed at strategically important industries, including metals manufacturing.[1]

3. **Western nations are responding with major interventionist industrial policies**: In response, the US, Europe and South Asia are increasingly intervening in domestic industrial markets to derive a competitive edge and to protect domestic industry[2].

4. **Australia has made moves in this space:** Australia has already taken steps in the right direction to start tackling the problem of losing sovereign capability through the *Future Made in Australia* program**.**

5. **It needs to go further:** As our metals manufacturing sector teeters on the brink, the discussion around intervention has shifted beyond niche, ideological arguments about free markets and efficiency. The sector is too important for that. Government action is needed now.

6. **Across Australia**, **upwards of 70,000 jobs are at stake in the areas around facilities if the sector fails**: Not only would jobs be directly lost, but the compounding impact on communities would see families relocate, undermining the viability of many regional centres.[3]

7. **The loss of this sector will be a disaster for some communities:** If the smelter were to close in Port Pirie, the McKell Institute estimates that the town's population may drop by around 2,000 (11 per cent) in the first year after its closure. Most of these outflows will be of the town's most economically productive, along with their families.[4]

8. **Loss of refining capacity means an undermining of sovereign capacity**: Were Australia to lose the capacity to refine and smelt metals, it would be more dependent on imported goods to manufacture critical infrastructure, arms, and industrial inputs.

9. **Coordinated government intervention and a national strategy is needed**: It is imperative that the Albanese Government coordinates a cohesive national strategy in the refined metals sector that stabilises the industry, protects domestic jobs, and counters the interference in global markets by Beijing.

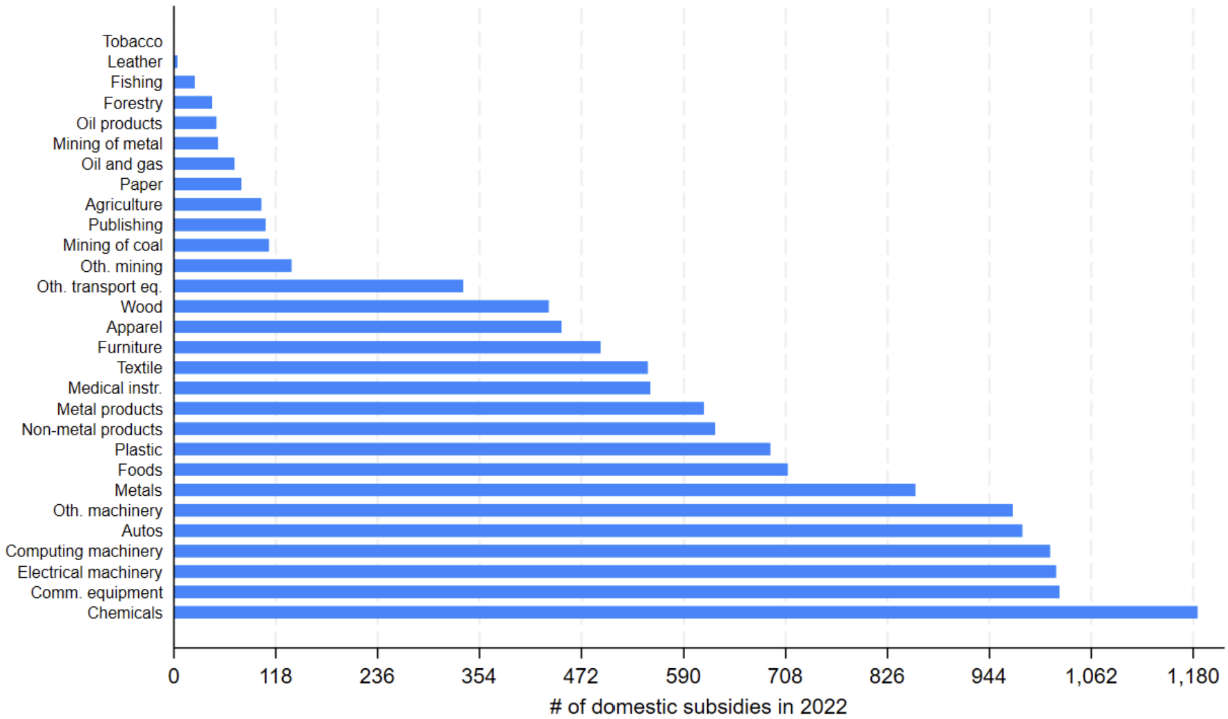
Part 1: China’s impact on the global refined metals market

Key Points

1. China likely spends more on industrial subsidisation than it does on defence.
2. As a conservative estimate, in 2019, China spent $407 billion on industrial subsidies in purchasing power parity exchange rates. This was equivalent to almost 2 per cent of their GDP.[5]
3. China’s subsidies for key industries have only grown since then.[6]

In 2022, by measure of the number of subsidies, *metals* were the seventh most heavily subsidised industry in China, as can be seen in Figure 1.

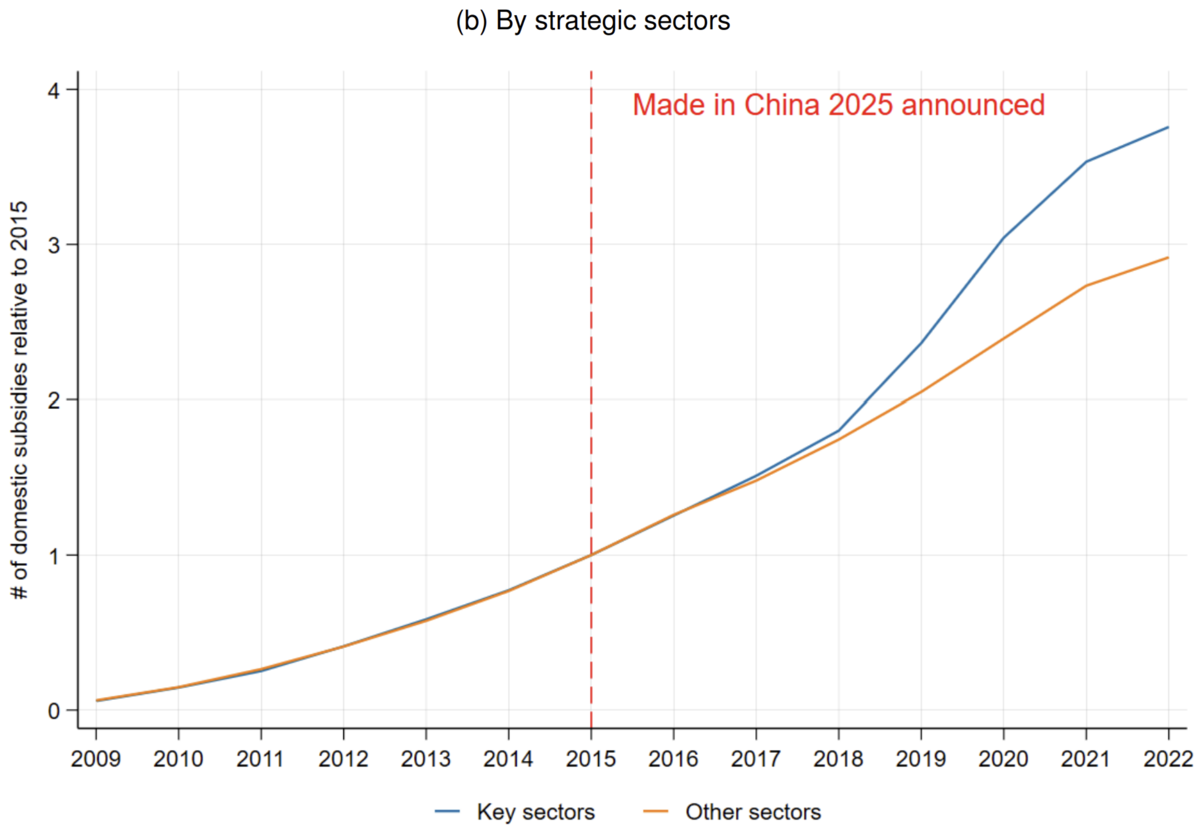
Figure 1: China's subsidies by industry and strategic sectors



Source: International Monetary Fund

Since 2019 when China's industrial subsidies hit almost 2 per cent of GDP, the number of subsidies has increased dramatically, even prior to the announcement of the *Made in China 2025* program, see Figure 2. Between 2015 and 2022, China's subsidies directed at strategic sectors, including the metals industry, nearly quadrupled.

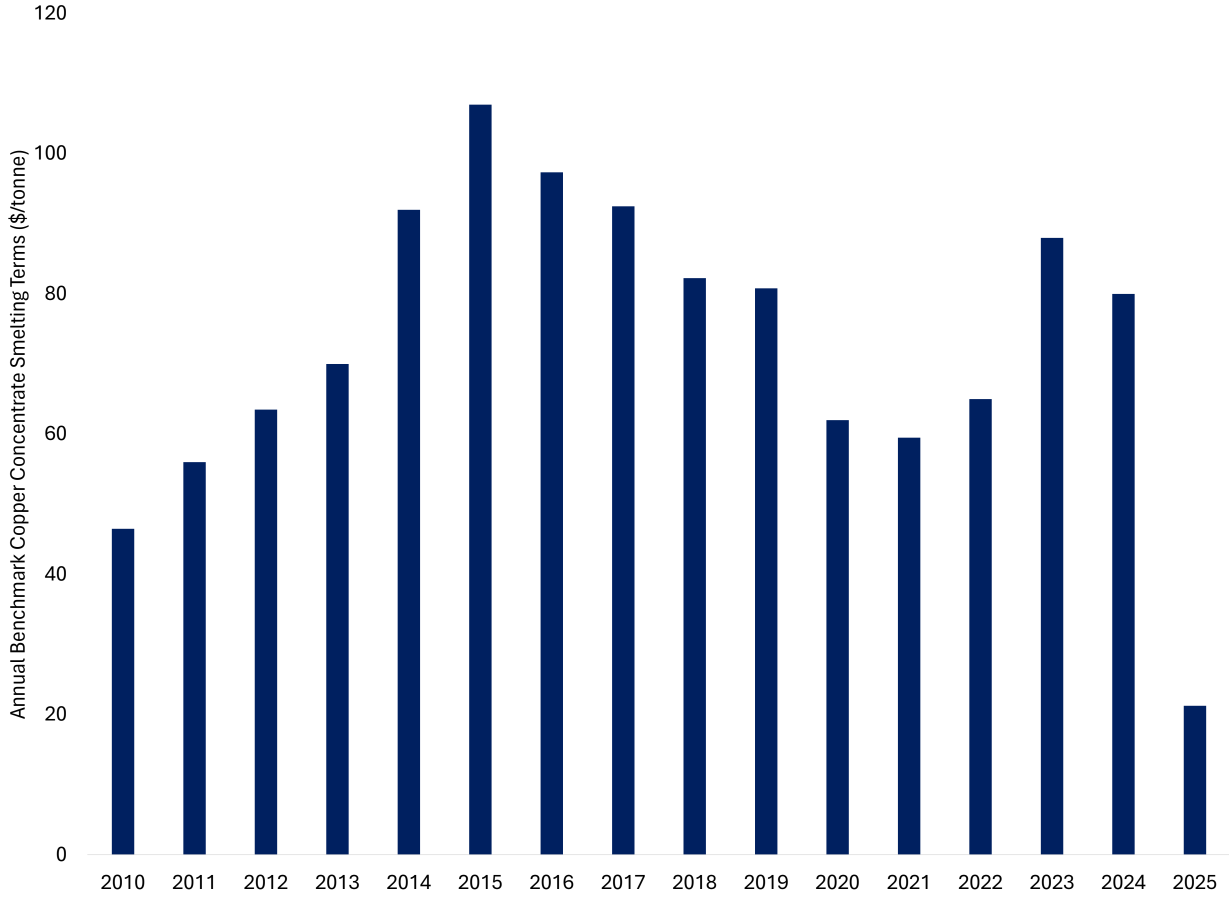
Figure 2: Growth in the number of industrial subsidies in China



Source: International Monetary Fund

This expansion in subsidies flowing to strategic sectors has occurred at the same time as a collapse in copper smelting terms (Figure 3).

Figure 3: Change in conversion fees for copper smelters, 2010 to 2025



Source: Thomson Reuters

This collapse in the price received for refining metals has put the Australian metal production industry into dangerous territory.

Part 2: Why Australia's Refined Metals Sector Matters

Key Points

1. Australia is a major player in the global refined metals market.
2. There are around **55,000** people employed in the metals manufacturing sector, with further jobs associated with the sector.[7]
3. The skills held within this sector are critical sovereign capabilities, and policymakers must do all they can to ensure the industry and its skills are retained.

Australia is a major player in refined metals

Australia is currently one of the larger players in the global economy when it comes to refined metals. The role of Australia in this global industry is sometimes overlooked or downplayed, but Australia is one of a few countries with capacity to refine and export certain raw commodities at scale. Australia ranks as the second-largest exporter of refined zinc, shipping 438 kilotonnes in 2023, holds the third position globally for lead exports, and maintains significant capacity for aluminium refining.[8]

These are major industrial outputs that play a critical role in global supply chains, represent a major value-added export commodity for Australia, and ensure Australia has the sovereign capabilities in metal refining, which is important for domestic manufacturing and construction, especially in the defence industry.

The refined metals sector is a major employer

Table 1: Illustrative Employment and Output Across Australia's Refined Metals Sector

State	Facility	Processing Type	Annual Output (approx.)	Employment (direct + contractors)
NSW	Tomago Aluminium Smelter	Primary Aluminium Smelting	~590,000 t Al/year	~1,000 FTE + ~200 contractors; supports ~5,000 associated jobs
QLD	Boyne Island Aluminium Smelter	Primary Aluminium Smelting	~545,000 t Al/year)	~1,000 direct
VIC	Portland Aluminium Smelter	Primary Aluminium Smelting	~358,000 t Al/year	
TAS	Bell Bay Aluminium Smelter	Primary Aluminium Smelting	~178,000 t Al/year	
SA	Port Pirie Multi-Metals Smelter (Nyrstar)	Lead, silver, zinc, copper by-products, sulphuric acid	Combined (with Hobart) ~A$1.7 b GVA;	~800 direct + ~250 contractors (~1,050 total)
TAS	Hobart (Risdon) Zinc Smelter (Nyrstar)	Zinc Smelting & Refining (RLE)	Part of ~A$1.7 b national GVA (	~550 direct employees
QLD	Mount Isa Copper Smelter (Glencore)	Copper Smelting (blister/anode from concentrates)	Processes ~20% of Australia's copper	~550 direct employees; supports up to ~17,000 downstream jobs
QLD	Townsville Copper Refinery (Glencore)	Copper Refining (electrolytic IsaKIDD)	Processes Mount Isa output to cathode copper	Shared ~550 staff with smelter above

The refined metals sector is a central pillar of Australia's industrial sovereignty

Not only is Australia's refined metals sector an important employer, with 55,000 people employed in the sector at the time of the 2021 Census, it is also a critical component of Australia's sovereign industrial capacity.

For a number of economic and security reasons, it is important that Australia continues to have an industrial base. Increasing global trade volatility, as demonstrated by the erection of tariff walls in the United States, and the flooding of certain markets by China, means relying on international suppliers for critical industrial capacity is increasingly risky.

Refined metals are important as they convert raw resources or scrap metals into usable products in manufacturing, construction, and for export.

While the sector is under stress, it has a bright future

While the sector is currently facing acute challenges, there are considerable opportunities on the horizon that promise more Australian jobs, and more Australian sovereign capacity in smelting.

The expansion of the Olympic Dam smelting capacity in South Australia, for example, represents the type of initiative that the Australian economy can sustain. It is important that this long-term opportunity isn't imperilled by inaction during this current moment of flux, driven by a number of determinants.

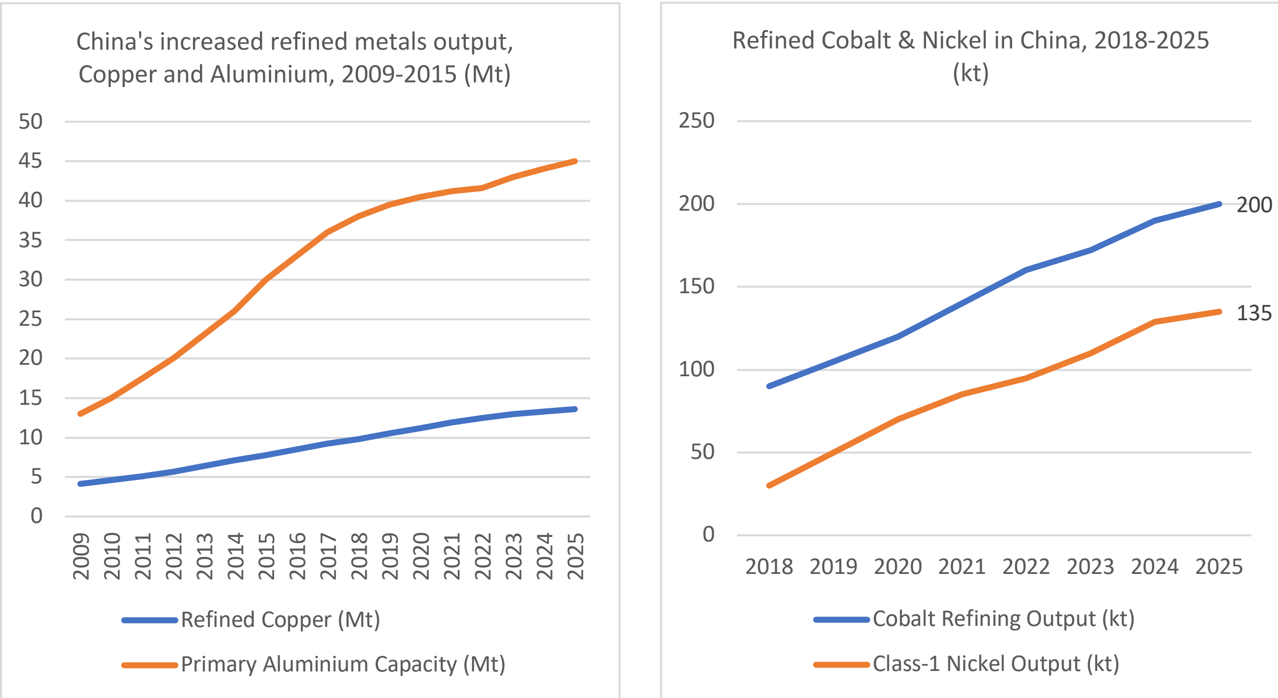
Part 3: The New Era of Geoeconomics Nullifies Ideological Preferences

Key Points

1. A new geoeconomic competition is emerging globally, largely driven by the policy preferences of Beijing, which has assertively subsidised domestic industry to gain control over the critical minerals sector.
2. Competitor economies to Australia, including China, are utilising domestic economic policy to achieve medium- and longer-term strategic security and foreign policy objectives.
3. Economies who wish to be viable in the long-run and robust to global economic or geopolitical shocks need to be able to manufacture metals. Without these capabilities, we render ourselves highly vulnerable.
4. Government intervention in the sector should be viewed as an insurance policy.
5. China has been particularly assertive in the rare earths space, enacting major export controls and stockpiling reserves, to give Beijing a dominance in rare earth processing.

Australia is experiencing the repercussions of a geoeconomic strategy by China, crafted to undermine the industrial foundations of rival economies while establishing China as the central hub of the global industrial landscape. Australia is not the only target or casualty of this form of geoeconomic interference, though it remains vulnerable to this strategy.

Figure 4: China’s Refined Metal Output Trends (2009-2025)



Source: McKell Institute calculations

Geoeconomics refers to the use of a state’s economy and economic policy to achieve strategic foreign policy aims. With its centralised economic authority, China stands out as a major economy adept at deploying economic leverage for its strategic objectives. In the realm of industrial policy, China's approach is widely acknowledged and thoroughly documented. It is, increasingly, using subsidies and export restrictions in its domestic industry to both influence global commodity prices, and to onshore domestic production.

When it comes to critical minerals and emerging technologies, China has been assertive. It has restricted exports of rare earths to other markets; heavily subsidised local manufacturing; and increasingly oriented the production of critical metals within a handful of larger state-controlled firms, which gives the government greater control over the market. It has also been stockpiling rare earths and shoring up its supply. [9]

It is estimated that China allocates up to 5 per cent of its GDP towards industrial policy interventions, which is a much larger investment than seen in other major economies. These subsidies effectively lower the cost of production in China and allow Chinese industry to dominate global output in heavy industry. This includes in the refined metals market.[10]

In terms of refined metals, China has also been working to centre global processing by subsidising refining and smelting. China can refine and smelt metals at significantly lower costs than other markets, including Australia, and saturate global markets with affordable products thanks to its extensive subsidy programs.

This tactic is central to China's geoeconomic strategy: by lowering the competitiveness of Australia and other economies refined metals, China is able to, over time, centre that industrial output within its economy, further consolidating control of a critical global market. Over a longer timeframe, this strategy gradually erodes the broader industrial capacity of competing economies.

China's geoeconomic strategy has short and longer term objectives

China's aspirations are twofold. In the short term, its geoeconomic strategy aim to onshore as much global heavy industrial capacity within the Chinese economy.

The economic rationale for this state-led approach in Beijing is clear—doing so places China's heavy industry at the heart of the global economy and concentrates much of this output within China's borders. This best places China to capitalise on new industrial production in the clean energy space.

This geoeconomic strategy doesn't only impact Australia, but Australia is considerably exposed to this approach.

In the longer term, however, China's economic strategy appears designed to limit the viability of critical manufacturing in competitor economies, including Australia, while preserving that capacity domestically. This fosters a sustained economic edge for China while progressively constraining Australia's industrial capacity over the long term.

What China's Geoeconomic Strategy Looks Like

> ***"China's*** ***manipulation of global markets****, whereby Chinese companies flood the market with excess supply, [is] driving prices down to levels that force mining operations in countries like the United States and Australia to shut down"*[11] ***– Center for Strategic & International Studies***

An analysis by the Center for Strategic and International Studies examined the nature of Beijing's critical minerals policy. It concluded that China's primary objectives were to undermine the commercial viability of a suite of industrial functions in competitor economies, and that in the rare earths space, Beijing was largely subsidising loss-making production to undermine competitors in global markets.

This is the global economy in which Australian industry finds itself—an economy no longer informed by a consistent adherence to free trade and market principles, but increasingly, a global market subject to market interference.

That same analysis found:

> ***"There is no sign that China will end its market manipulation****. It is expected to continue leveraging its dominance to influence prices, restrict supply, and squeeze competitors, all of which undermine initiatives to diversify supply chains and ensure access to critical minerals. Adding to this challenge, projects outside China often need to promise higher investment returns to attract financing, whereas large Chinese state-owned companies can sustain operations at much lower—or even negative—profit margins."*[12] ***– Center for Strategic & International Studies***

Australian policymakers should respond

For Australian industries, particularly the refined metals sector, this means that the economic foundations of the global markets they engage in are being disrupted. This interference is destabilising and, over time, threatens to weaken the industrial base of strategic rivals, including Australia and other regional and global economies. Such a shift could ultimately hinder competitors' ability to produce arms and heavy machinery.

Australia is on the frontline of this emerging geoeconomic strategy: the way in which its government responds will set the tone for a broader international response.

Part 4: How a Loss of Smelting & Refining Would Harm Regional Australia

Key Points

1. We estimate that there are about 73,000 jobs nationally that are dependent on metal manufacturing and refining in Australia
2. Many of these facilities are the backbone of regional communities, and their loss would represent a devastating economic and cultural impact on regional Australia.
3. If these facilities were to close, some towns could see a significant decline in their working-age population, harming the local economy, but also limiting these regional centres' capacity to provide services to regional communities.

To illustrate the potential regional impact of smelter and refinery closures, we have assessed the possible shock to surrounding communities by estimating a hypothetical population exodus from the area, assuming an immediate facility shutdown without any wind-down period, intervention, or employee redeployment efforts.

The results can be seen in Table 2, which shows that towns that have low ingratiation into surrounding areas are particularly impacted. Areas that have a cluster of refineries/smelters e.g., the Bunbury/Mandurah area and the Gladstone area are also particularly exposed.

If these facilities were to shut, the exodus from these regions is likely to predominantly consist of the region's working age population and their families, resulting in a major economic and demographic shock for the area.

The figures highlight the significant impact on regions heavily reliant on these facilities for employment.

Table 2: Estimated potential regional impact if sites were to close without intervention

Site	State	Direct employees	Estimated population outflow from shock	As a % of the area's population
Wagerup	WA	1060	3,612	1.5%
Pinjarra	WA	1570	5,350	2.2%
Worsley	WA	2000	6,815	2.9%
QAL	QLD	1000	1,304	1.9%
Yarwun	QLD	1100	1,433	2.1%
Boyne Island	QLD	1000	1,304	1.9%
Tomago	NSW	1200	1,967	0.5%
Portland	VIC	540	566	1.5%
Bell Bay	TAS	435	575	1.0%
Port Kembla	NSW	3000	10,698	3.3%
Whyalla	SA	1100	5,349	14.9%
Laverton	VIC	400	1,423	0.1%

Rooty Hill	NSW	222	800	0.2%
Port Pirie	SA	1050	2,002	11.4%
Nyrstar Hobart	TAS	650	690	0.3%
Glencore Mt Isa	QLD	570	881	3.9%
Impact if all sites closely located were to close				
Wagerup Pinjarra Worsley	WA	4630	15,777	6.6%
QAL Yarwun Boyne Island	QLD	3100	4,030	5.9%

Source: McKell Institute calculations

Part 5: Pillars of A Cohesive National Response to Australia's Smelting & Refining Sector

Key Points

1. A wholistic, nation-wide strategy for sustaining Australia's refining and smelting capacity should be designed and implemented by the Commonwealth Government.
2. It should confront market manipulation by being bold in its prescription for the industry.
3. The government should work in a coordinated fashion with all private operators, unions, and communities to ensure a positive outcome.

The government is currently responding to challenges on a plant-by-plant basis, working with individual refiners to keep specific facilities operational. However, this reactive approach may not be sustainable in the long term. A more cohesive and coordinated national strategy is needed to address the broad range of challenges facing the sector.

It is recommended that the National Strategy consider a suite of ambitious interventions and reforms, designed to shore up demand for, and preserve the operation of, Australia's refiners and smelters.

Explore Government Equity Stakes in Restructuring Packages

- The Government will likely have to provide financial support to the sector as it navigates a challenging period.
- The Government should be conscious, however, of firms planning for government bail outs, as part of their medium-term strategy. Some companies have, in the past, purchased ailing industrial assets with the hope that governments will support them in the future.
- To prevent this occurring, and to ensure Australian taxpayers benefit from any financial support to the sector, **the Australian Government should seriously consider acquiring equity stakes in businesses which they are providing significant financial support to.**

Strengthening Anti-Dumping Measures to Protect Australia's Market from Artificially Cheaper Refined Metals

- Australia has a robust anti-dumping framework, but it may need further strengthening to ensure the Australian market is not being flooded with artificially cheaper refined metal products.
- The Government could consider, as part of the National Strategy, **a review of the anti-dumping framework, and the extent to which it is effective in preventing the importation of artificially deflated goods into the Australian market.**

Shoring up Domestic Demand via Procurement Policy

- The National Strategy should consider greater domestic procurement requirements in major government projects, including in Commonwealth funded projects that are co-funded by state and territory governments.
- Australia's domestic infrastructure spend is considerable, and this market represents a major opportunity for Australia's refined metals.
- The **National Strategy should consider whether Australia's existing procurement policies are suitable for this current context, and after a review, implement guidelines and mandates in Commonwealth funded projects**.

Preventing the Export of Unprocessed Scrap

- Australia permits unprocessed scrap metal to be exported to other markets for recycling and repurposing. This represents a lost revenue stream for Australia's domestic mix metals refineries.
- The Australian Government should **consider limits on the export of unprocessed domestic scrap metal, as a way of shoring up domestic demand**.

Mandate, as well as Incentivise, Onshore Refining and Processing of Metals

- The Australian Government has recognised the need to further onshore value-adding of raw materials. The Critical Minerals Production Tax Offset[13] is designed to provide an incentive for resource firms to refine raw materials within the Australian market.

- However, it is clear that given the pace at which China and other markets are onshoring this type of production, incentives alone may not be sufficient.
- In most resource rich countries, governments are increasingly mandating that raw materials be processed, to a degree, within domestic markets.
- This is the case in China, but also in Indonesia, and across most African markets.
- There is a case for the Australian Government to **mandate that a proportion of raw materials extracted from Australia be refined in Australia**.

Reallocating Portions of the National Reconstruction Fund (NRF) to Safeguard Existing Industry

- Finally, the government may wish to reassess the mandate of the National Reconstruction Fund and consider adjusting it to enable support for the smelting and refining sector.
- Currently, the NRF is designed to 'diversify and support' Australia's economy by coinvesting in industrial and manufacturing capacity. It does, however, have a focus on defence capabilities, and value adding in the resource sector.
- There may be a case, however, for the NRF to be more specifically deployed to assist the smelting and refining sector to modernise and scale. The NRF shouldn't be the sole funder for any intervention — its purpose is to mobilise government capital to 'crowd in' other capital into strategically critical projects. This method
- The Albanese Government should **actively consider how the NRF can provide more strategic support for Australia's existing smelting and refining sector**, **and detail this revised approach in the National Strategy on smelting and refining.**

Providing Greater Energy Certainty via Stabilising Gas Markets

- The National Strategy should examine how to stabilise energy pricing for major industrial plants, such as Australia's smelters and refiners. Currently, this sector predominately relies upon liquified natural gas (LNG) as a feedstock.
- While Australia is a major LNG producer, much of the Australian supply is exported, prior to being allocated for domestic use.

- **The Government should consider the establishment of an East Coast Gas Reservation policy, to ensure local industry has ample affordable supply of LNG.**

Conclusion

Australia’s refined metals sector is at a critical juncture.

A suite of economic phenomena has coalesced to create a perfect storm for a sector which is critical not only for Australia’s regional communities, but also for Australia’s sovereign industrial capacity.

This policy brief has considered these challenges.

It has noted the acute market manipulation in the sector being undertaken by China, as well as the challenges posed by global energy markets and industrial policy abroad.

In response to this, the Australian Government should consider a cohesive national strategy that ensures the sector doesn’t fail.

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