SPECIAL REPORT

Enabling Development of Aluminium Recycling Capability in Australia

March 2026

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Contents

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About Australian Aluminium Council Limited

The Australian Aluminium Council Limited (AAC) is the peak body representing Australia's aluminium industry, covering the full value chain from bauxite exploration and mining and alumina refining to aluminium smelting, semi-fabrication and recycling. The Council's members produce all of Australia's bauxite, alumina, aluminium, and almost all domestic extrusions.

The Council works collaboratively with governments, industry and other stakeholders to advocate for policy settings that support a sustainable, competitive and innovative aluminium sector. Its focus includes national policy, and promoting the economic and social contribution the industry makes to regional Australia.

More information about AAC can be found at **www.aluminium.org.au**.

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Executive summary

Australia is a global leader in bauxite mining, alumina refining and primary aluminium production, yet almost all aluminium scrap generated domestically — around 440 kilotonnes (kt) each year — is exported for remelting offshore. Establishing domestic recycling and remelting capability is therefore not about fixing a waste problem — it is instead about **capturing economic value**, strengthening **sovereign capability**, **reducing emissions intensity** and **meeting growing customer demand** for lower-carbon, recycled materials. It is a significant unrealised opportunity for Australia.

The **strategic case is clear**. Recycling aluminium uses only 5% of the energy required for primary production and offers strong stewardship benefits. A domestic recycling and remelting industry could support more than 1,000 skilled and blue-collar jobs, reinforce Australia's industrial resilience, and complete the existing value chain from mining through to finished products with a recycled option, ensuring more of the value currently exported is retained locally. Demand signals are already emerging from manufacturers, builders and brand owners seeking verified recycled content.

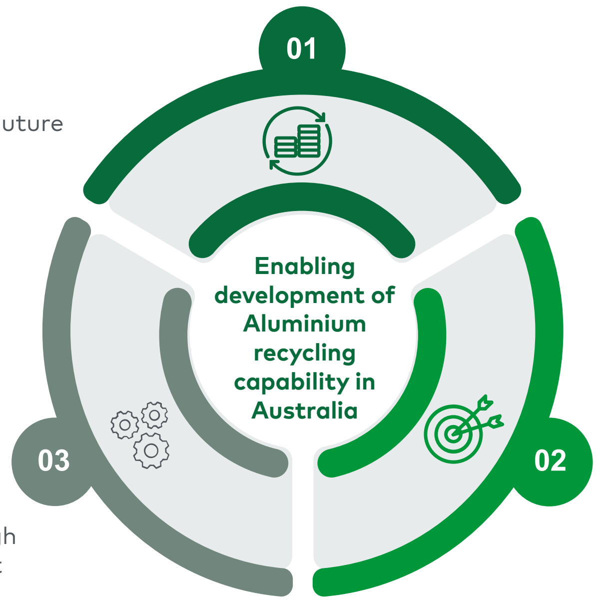
However, **significant barriers prevent the viability of onshore investment today**. Economic constraints dominate: scrap prices sit above 90% of the London Metal Exchange (LME) benchmark, leaving limited margin for potential domestic remelters once transport and energy costs are factored in. Technical challenges — including mixed-alloy scrap and limited pre-treatment infrastructure — compound these pressures, while Australia's geography makes collection beyond 500 kilometres (km) uneconomic without support.

International experience shows that scrap-retention policies and recycled-content mandates are unlikely to build sustainable recycling industries. Successful regions — Europe, North America and parts of Asia — use direct government co-investment to fund remelt plants, casthouse upgrades and new technologies. In Australia, policy support remains fragmented: the Powering the Regions Industrial Transformation Stream would be inaccessible due to emissions thresholds, the Recycling Modernisation Fund excludes aluminium, and the National Reconstruction Fund (NRF) and Clean Energy Finance Corporation (CEFC) require commercial returns that remelting cannot yet meet. The Future Made in Australia Innovation Fund is the most relevant mechanism but is insufficient on its own.

To unlock investment, **three coordinated policy shifts are needed:**

- **First**, preserve the competitiveness of existing smelters, which underpin the capabilities and workforce needed for future aluminium recycling.
- **Second**, mobilise capital for first-generation remelt plants through blended finance — combining Innovation Fund grants with concessional NRF or Export Finance Australia debt — and introduce investment credits or accelerated depreciation for low-emissions recycling technology.
- **Third**, build confidence in domestic markets and feedstock certainty through adjustment of thresholds in ReMade in Australia to reflect leading levels of recycled aluminium content, alignment with recycled content standards, procurement requirements for recycled content as a domestic industry emerges, improved scrap transparency, and targeted freight or logistics support.

Summary of policy recommendations



Securing today's industrial base & mobilising investment

- Ensure affordable, low-emissions energy for existing industry
- Recognise aluminium as a strategic industry under Future Made in Australia
- Utilise blended finance packages
- Establish a Recycled Aluminium Acceleration Facility

Policies to continue and evolve

- Integrate aluminium explicitly within ReMade in Australia
- Align ReMade certification with standards
- Implement mass-balancing for processed aluminium products (e.g. windows or building systems)

Potential policy requirements as projects emerge

- Stimulate demand through Government procurement & standards
- Promote scrap retention & data transparency
- Provide freight & logistics support

Conclusion

Developing domestic aluminium recycling and remelting capability is about building industrial resilience, sovereign capability and clean-manufacturing competitiveness for a low-carbon world. **And the prize is significant: domestic recycling of just c.40 kt of pre-consumer scrap (10% of Australian aluminium scrap arisings and the logical starting point for initial efforts) could directly support more than 130 jobs and as much as AU$300 million in economic value for the Australian economy.**

But Australia's aluminium industry cannot do this alone: there are significant commercial barriers to investing in new remelt and recycling capabilities in Australia, and, as Australia decarbonises its electricity system faster than the rest of the world, the industry today is facing high energy prices that are hindering its global competitiveness.

With coordinated policy action, Australia can transform a lost opportunity into a national advantage — capturing the economic, environmental and strategic benefits of keeping circular aluminium value onshore and positioning itself as a leader in the global transition to lower-carbon materials.

1. Introduction

Today, Australia is a global leader in the aluminium sector:

- It accounts for c.25% of global bauxite production, providing the aluminium-bearing minerals that are refined and smelted in Australia and around the globe.
- It is the second-largest alumina producer globally, accounting for more than 13% of global alumina supply.
- It produces c.1.5 megatonnes (mt) of primary aluminium, accounting for 2%-3% of global production and placing it within the top 10 producers worldwide. [1]

Despite this impressive footprint in the global aluminium industry and with aluminium being one of the most recycled metals around the globe (with almost 75% of all aluminium ever produced still in use today), a surprising fact is that Australia cannot recycle aluminium into equivalent new products — meaning that the chances are end-of-life aluminium window frames, solar panel surrounds or scrap aluminium from Australian companies fabricating and extruding aluminium products, as well as any used aluminium beverage cans, are almost certainly exported.

Australia's aluminium sector would like to change this.

The Australian Aluminium Council commissioned L.E.K. Consulting to develop a set of practical, evidence-based policy recommendations to enable the establishment of domestic aluminium remelt capability in Australia.

The project examines both the strategic rationale for onshore remelting and the specific policy and market mechanisms required to make it viable. It draws upon lessons from comparable international markets and includes extensive consultation with aluminium producers, downstream fabricators, recyclers and other key stakeholders across the value chain.

[1] Australian Aluminium Council Limited, "Summary Report: Economic Contribution of the Australian Aluminium Industry." 2024. https://aluminium.org.au/wp-content/uploads/2024/10/250204-AAC-Summary-Report-Economic-Contribution-of-the-Australian-Aluminium-Industry.pdf

Structure of this report

This report explores why and how Australia can and should develop domestic aluminium remelt capability through the following seven chapters:

- **Lessons from the international policy landscape** — Reviews global best practices including scrap export policies, recycled-content mandates and capital support mechanisms, drawing particularly from Japan, Canada, the United States and Europe
- **An overview of aluminium production and recycling** — Explains how aluminium is produced and recycled, including why different kinds of aluminium products necessitate multiple closed loops to enable high-quality recycled aluminium
- **An overview of Australia's aluminium sector** — Provides an overview of Australia's aluminium sector and its contribution to Australia
- **Strategic justification for action** — Explains why remelt capability is in Australia's national interest and why it should be seen as part of an industrial strategy rather than a waste policy
- **Barriers to developing recycling and remelting capability** — Details the technical, economic and logistical challenges that must be overcome
- **Shortcomings of the domestic policy environment** — Assesses how existing Australian programmes (including the National Waste Policy, NRF and Powering the Regions Fund) fall short of supporting aluminium remelt investment
- **What industry needs to succeed** — Concludes with the case for coordinated policy reform, targeted investment, and partnership between government and industry to unlock the circular aluminium opportunity

The intent of this report is to enable Australia to realise the significant opportunity to secure and grow the value of its aluminium sector in a decarbonising world — and with Australian industry under threat from increasing energy prices and global trade tensions, the impressive contribution that aluminium makes to Australia should not be taken for granted.

We hope that the report provides an enduring contribution to policy in Australia and beyond.

2. Lessons from the international policy landscape

Understanding the international policy landscape was a central component of the scope of this study — the research was designed to identify mechanisms used overseas that could meaningfully address the specific commercial barriers facing Australia, including high scrap prices and weak domestic economics for remelting. This section examines global policy tools through the lens of Australia's challenges, assessing which international approaches unlock the benefits of developing domestic remelt capability set out in Chapter 5 and which approaches could help overcome the structural constraints that are further outlined in Chapter 6.

The research and analysis focused on three areas:

- Scrap retention policies
- Financial support for aluminium remelting
- Mandates for domestically recycled aluminium content

Each of these approaches seeks to address different barriers — the supply side, infrastructure and investment, and the demand side, respectively — and provides insights into potential applications, as well as limitations, for the Australian context, as summarised in Figure 1 below.

Figure 1
Lessons from research and analysis of the international policy landscape

Objective: Keep scrap onshore for domestic processors	Objective: Drive demand for recycled aluminium via compulsory content requirements	Objective: Strengthen competitiveness and enable innovation
Examples: • South Africa – Price Preference System (2013) requiring domestic sale at 75% of LME price • UAE – export ban (2020) → later replaced by export duty system (2024) • European Union – waste shipment regulations restricting scrap exports to non-OECD countries **Outcomes:** • Short-term increase in domestic scrap supply • Business closures among exporters and minimal new investment • Policy instability and trade friction **Lesson:** • Retention measures fail without pre-existing domestic capacity; they depress prices but don't build industry	**Examples:** • India (2024) – mandatory recycled content for aluminium, copper and zinc • United States – state-level procurement mandates (e.g. California 10%, New York 25%) **Outcomes:** • Too early to evaluate success (India) • In the US, supports local demand but risks advantaging cheaper imports in open markets **Lesson:** • Difficult to enforce in small, open economies like Australia • Risk of perverse effects where imported material meets standards more cheaply than domestic product	**Examples:** • Canada – CA$110 million capital grant for Rio Tinto smelter expansion • United States – >US$100 million committed in 2024 for multiple recycling projects • Europe – EU RecAL programme and hydrogen-based remelt pilots in Germany, UK, Norway **Outcomes:** • Direct public funding offsets high energy costs • Spurs private co-investment and technology transfer **Lesson:** • Sustained capital and policy support for domestic remelting

Note: LME = London Metal Exchange ; OECD = Organisation for Economic Co-operation and Development
Source: L.E.K. research and analysis

Further information about each of these topics is included below, as well as other relevant topics where targeted policy examples were **not** found for Australia to take inspiration from.

Scrap retention policies

Globally, various models have attempted to ensure that aluminium scrap remains available for local processors.

South Africa's Price Preference System, introduced in 2013, required scrap exporters to first offer material to domestic buyers at 75% of the LME price.[2] While this reduced export volumes and provided local processors with cheaper scrap, it also created unintended consequences. The system did not stimulate

[2]Government of South Africa, "Guidelines for the export control of ferrous and non-ferrous waste and scrap." 2018. https://www.gov.za/sites/default/files/gcis_document/201809/41938rg10871gon1006.pdf

large-scale domestic investment due to limited processing capacity, and many exporters faced profitability challenges that ultimately led to business closures. By 2025, the scheme was under formal review, highlighting its instability.[3]

Japan provides another example through its **Extended Producer Responsibility scheme**, which requires producers to finance and participate in aluminium recycling systems across sectors such as small electronics,[4] home appliances[5] and end-of-life vehicles.[6] This has successfully created structured and reliable recycling streams.

However, applying a comparable scheme in Australia presents challenges. Unlike beverage containers, which are suited to deposit-style systems, more complex products such as aluminium windows have lifespans of 20-50 years and are typically generated in bulk through construction and demolition projects. The long delay between manufacture and end of life makes it difficult to assign responsibility to producers, many of whom may no longer exist.

Other international measures are also instructive. The **European Union** has introduced waste shipment regulations restricting scrap exports to non-Organisation for Economic Co-operation and Development (OECD) countries unless the destination country can prove it can manage the waste in an environmentally sound manner.[7] The concern with the policy is that it may depress prices paid for scrap, undermining investment in sorting and quality upgrades and ultimately reducing supply quality for EU remelters.[8] In August 2025, European Aluminium Association expressed support for the introduction of export fees to mitigate these downsides.[9] These changes have yet to be introduced.

Meanwhile, the **United Arab Emirates** has adopted a more direct approach. In 2020, the UAE imposed a full ban on aluminium scrap exports to guarantee supply for domestic smelters and rolling mills, which were struggling to secure low-cost

[3]South Africa Legal Academy, "Scrap Metal: Price Preference System Under Review." 2025. https://legalacademy.co.za/news/read/scrap-metal-price-preference-system-under-review

[4]National Institute for Environmental Studies, "Recycling small home appliances and metals in Japan." 2013 https://www-cycle.nies.go.jp/eng/column/page/202005_01.html

[5]Ministry of the Environment, Japan, "Law for the recycling of specified kinds of home appliances". https://www.env.go.jp/en/laws/recycle/08.pdf

[6]Ministry of Environment, Japan, "Act on Recycling of End of Life Automobiles."2002. https://www.japaneselawtranslation.go.jp/en/laws/view/3829/en

[7]European Recycling Industries' Confederation, "EU waste shipment regulation: What's changing for EU exports waste?" 2024. https://euric.org/resource-hub/public-consultations/eu-waste-shipment-regulation-whats-changing-for-the-export-of-eu-waste

[8]European Recycling Industries' Confederation, "Aluminium 'scrap' export restrictions won't solve the trade and energy concerns underpinning the crisis faced by EU aluminium producers." 2025.https://euric.org/resource-hub/press-releases-statements/aluminium-scrap-export-restrictions-wont-solve-the-trade-and-energy-concerns-underpinning-the-crisis-faced-by-eu-aluminium-producers

[9]European Aluminium, "Restore fair trade: The case for aluminium scrap export fees." 2025. https://european-aluminium.eu/wp-content/uploads/2025/06/25-08-28-European-Aluminium_Scrap-export-fees.pdf

raw materials in the face of rising global demand.[10] While the ban succeeded in diverting scrap into the local market, it also put pressure on traders and collectors, who saw margins impacted. In response to industry concerns, the ban was lifted and replaced in 2024 with an export duty system.[11] Although this new mechanism resulted in a more predictable supply of scrap and catalysed the Emirates Global Aluminium building a 170,000 tonnes per year (t/yr) recycling plant, it has also compressed the margins of scrap exporters and the downstream consumers which process the aluminium, making the industry more uncompetitive.[12]

Conclusion on scrap retention policies: While international scrap retention policies may have provided local processors with some short-term benefits, they have also harmed exporters and, in most cases, failed to stimulate sustainable industry growth. For Australia, adopting such policies would likely disadvantage exporters without building sufficient domestic processing capacity, making them unsuitable for local implementation.

Domestic recycled content mandates

Australia does not currently have useful international examples of domestic recycled aluminium content mandates to draw from.

The closest example is **India's 2024 amendment to its Hazardous and Other Wastes Rules**, which introduced mandatory recycled content requirements for aluminium, copper, and zinc products.[13] These rules gradually increase the required levels of recycled content over time but remain in the early stages, with limited evidence of their effectiveness.

Other policies, such as state-level procurement mandates in the United States, require government agencies to purchase products containing minimum levels of recycled content. For example, California mandates at least 10% post-consumer recycled content in metal products, while New York requires up to 25% for certain aluminium items.[14] While effective in their jurisdictions, these policies would not be suitable in Australia, where imported products could meet such standards more easily and at lower cost, disadvantaging domestic manufacturers.

[10] GMK Center, "UAE has extended the ban on scrap exports for another three months." 2023. https://gmk.center/en/news/uae-has-extended-the-ban-on-scrap-exports-for-another-three-months/

[11] Ministry of Economy & Tourism – United Arab Emirates, "Fees payment of exporting industrial waste." 2025. https://www.moet.gov.ae/en/w/fees-payment-of-exporting-industrial-waste

[12] Gulf Today, "EGA marks 50% milestones for UAE's major recycling facility." 2025. https://www.gulftoday.ae/business/2025/05/13/ega-marks-50-milestone-for-uaes-major-recycling-facility

[13] Business Standard. "Non ferrous metal products to have 5% recycled content from FY28." 2024. https://www.business-standard.com/economy/news/govt-to-mandate-recycled-content-in-non-ferrous-metals-for-sustainability-124082100820_1.html

[14] New York State Office of General Services, "Approved GreenNY specifications." https://ogs.ny.gov/greenny/approved-greenny-specifications

Conclusion: There are no viable international models of domestic recycled content mandates that Australia can apply directly. Existing policies either remain too new to evaluate or operate in contexts where they risk benefitting imports over domestic producers. Consequently, such mandates would not offer a workable path forward for the Australian aluminium industry.

Financial support for aluminium remelting

By contrast, numerous international examples demonstrate the value of financial support for domestic recycling and remelting. In Europe, significant funding has been directed towards initiatives such as the EU's RecAL project and hydrogen-based remelt trials in the UK, Germany and Norway. Canada committed CA$110 million to support Rio Tinto's smelter expansion in 2023, [15] and in the United States, c.US$100 million has been allocated in 2024 to support Constellium's zero-carbon casting plant and an upgrade to Golden Aluminium's plant to support increases in aluminium recycling.[16]

These measures highlight a growing trend of sovereign governments investing heavily in their aluminium sectors to offset high energy costs, support technological development and expand remelting capacity. The result is a competitive landscape where producers benefit directly from subsidies that strengthen their cost base and innovation capacity.

Conclusion: The international policy landscape demonstrates that while countries have experimented with scrap retention mechanisms and recycled content mandates (though not domestic ones), these approaches have not delivered sustainable industry growth and often disadvantage exporters or manufacturers. The one consistent and effective lever has been direct financial support for domestic recycling and remelting. Across Europe, North America and Asia, governments are investing heavily in their aluminium industries to underwrite competitiveness, drive innovation and expand processing capacity.

Other relevant policy areas

Our research and analysis of the international policy landscape found useful and relevant examples in the three areas above but also searched for a wide range of other policy examples that could address the barriers identified in the previous chapter for an Australian aluminium recycling industry.

[15]Reuters. "Rio Tinto to invest $1.1 billion to expand aluminium smelter in Canada." 2023. https://www.reuters.com/markets/commodities/rio-tinto-invest-11-billion-expand-aluminum-smelter-canada-2023-06-12/

[16]The Aluminium Association, "Department of Energy Grants Support Further U.S. Aluminium Decarbonisation, Growth." 2024. https://www.aluminum.org/news/department-energy-grants-support-further-us-aluminum-decarbonization-growth

As one example, given the high costs of aggregating and transporting scrap aluminium over the distances required in the Australian context, we looked for examples of direct subsidies for transport of scrap metals in other markets but could not find any strong examples. While we did observe that there are examples of transport cost subsidies in Australia and overseas, typically to offset enduring disadvantages faced by consumers or producers in remote areas, we also considered an ongoing direct subsidy of this nature difficult to justify in the aluminium context. There may be more justification for governments to reduce the costs they impose on transporting, such as road or rail access charges or similar.

We draw the conclusion that there is substantial room for policy innovation to target the issues for Australian industry and enable development of domestic remelting and recycling capabilities.

Overall conclusions from international policy review

For Australia, the lesson is clear: the policy challenge is about ensuring that domestic producers have the financial support necessary to compete on a level playing field. Without such measures, Australia risks falling behind in the global aluminium value chain, despite its natural resource advantages.

3. An overview of aluminium production and recycling

Aluminium production and consumption form a complex, globally connected value chain that links mining, refining, manufacturing and recycling. While the aluminium value chain can be simplified into five broad stages — from bauxite mining through to recycling — the reality is far more interconnected. At each step, aluminium and its intermediates may be exported, imported or processed domestically, depending on economics, energy costs and market demand. This makes aluminium both a major traded commodity and an essential input into countless manufactured products.

The five stages below outline how the material moves through this system and why recycling it domestically is such a challenge:

- **From ore to alumina:** The aluminium production process starts with mining and refining bauxite, which is refined through the **Bayer process** to produce alumina (aluminium oxide) at refineries.

- **From alumina to metal:** Alumina is then converted into aluminium metal via the energy-intensive **Hall-Héroult process** in smelters. This molten metal is further alloyed and cast into ingots, slabs, billets or t-bars — the building blocks for all aluminium products. These basic shapes align with different manufacturing routes and are typically alloyed with elements like magnesium or silicon to achieve specific performance characteristics (such as strength, flexibility or corrosion resistance), creating many chemically distinct grades of aluminium that are tailored to end use applications (and complex to recycle, as discussed further below).

- **Semi-fabrication and alloying:** The cast metal forms of aluminium are further melted, cast, rolled, extruded or forged, depending on what the aluminium is to be used for. Slabs and ingots are rolled into flat products such as plate, sheet and foil that are used in construction applications, transport, marine, and general fabrication and packaging. Conversely, billets are heated and extruded into profile shapes, bars and components — some highly complex — for use in windows and doors, transport and other applications. While Australia has an active aluminium extrusion sector, it no longer has aluminium rolling capabilities, making the recycling of rolled aluminium products like beverage cans challenging in the absence of making the basic shapes and alloys for these products. Further information about the structure of Australia's aluminium value chain and the implications for recycling is provided in the following section.

- **Manufacturing and use:** Semi-finished aluminium products are supplied to manufacturers that produce fabricated items and components used in architectural, transport and marine, defence, packaging, and countless other applications. These products enter use in homes, buildings, transport and infrastructure, where they may remain for years or decades before being recovered. Both manufacturing scrap (offcuts and trimmings) and post-consumer scrap (from end-of-life products) enter the recycling loop.

- **Recycling:** While aluminium can be endlessly recycled, not all scrap can or should be remelted together. Firstly, because alloys differ, scrap from one application (e.g. window frames or beverage cans) is best reused for the same purpose. Secondly, there is the risk of non-metallic contamination. Therefore, scrap arising both during manufacturing (offcuts and trimmings) and at end of life requires careful separating, sorting, collection and processing to maintain quality and safety in remelting.

The implication of this value chain is that while recycling and remelting can be technically straightforward, they are logistically and commercially complex in practice. Because different alloy compositions are tailored to specific applications, aluminium from one end use (such as used beverage cans) cannot simply be recycled and used for another end use (for example, extruded profiles cannot be used to make window frames). Even with careful separation, only a certain amount of blending between alloys can be achieved.

Building domestic aluminium recycling capabilities therefore requires separate recycling for each product stream — ensuring that rolled and extruded aluminium can each return to the applications they came from.

4. An overview of Australia's aluminium sector

Australia is one of the few nations in the world with a vertically integrated aluminium sector, extending from bauxite mining through alumina refining and primary aluminium smelting to extrusion and semi-fabrication.

Australia's performance in global settings is strong: it is the world's largest exporter of alumina and a top producer of bauxite and primary aluminium.[17] Australia has major bauxite mining operations in Queensland, Western Australia and the Northern Territory supplying both domestic alumina refineries and export markets, with alumina refineries in Western Australia and Queensland as well as four aluminium smelters across the East Coast.

The sector's export earnings exceed AU$15 billion, underpinning regional economies and reinforcing sovereign capability in a critical minerals and export sector. This translated to AU$18 billion in industry value added across direct, indirect and induced effects in 2023, and the sector supported over 75,000 full-time equivalent jobs nationwide. A summary of the industry's footprint and economic contribution is shown in Figure 2 below.[18]

Figure 2
Summary of Australian aluminium industry footprint and economic contribution

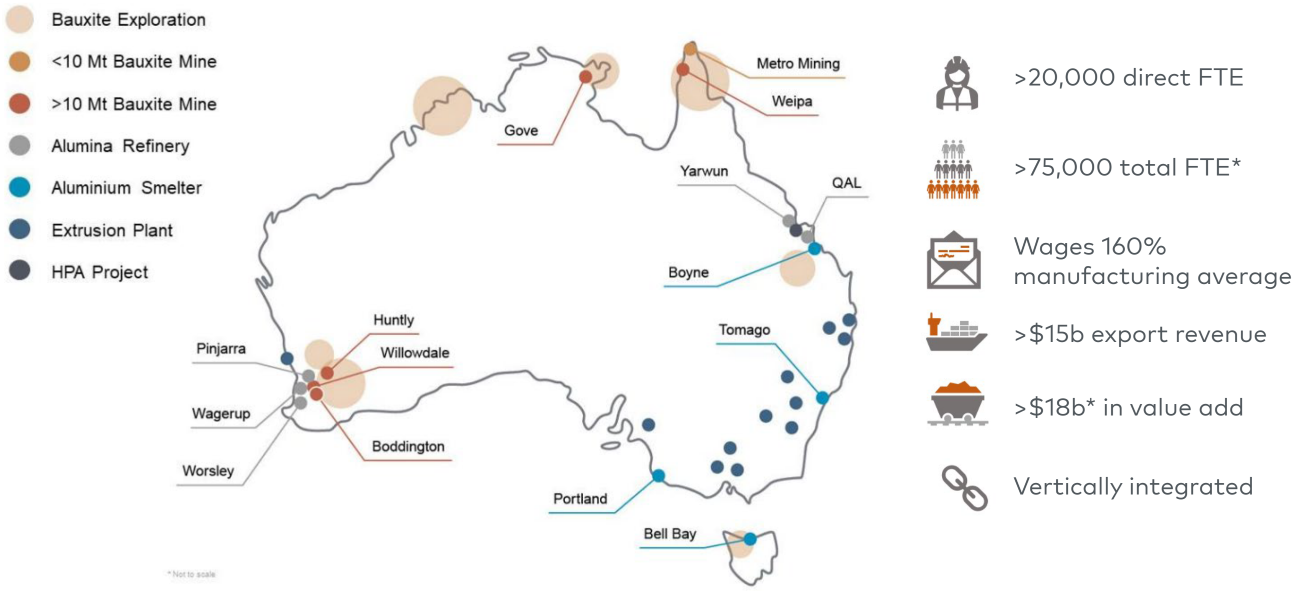


Chart not to scale. *Total FTEs includes direct, indirect and induced

Note: HPA=High Priority Alumina; Mt=Millions Tonnes; FTE=Full-Time Equivalent
Source: Australian Aluminium Council Limited (2025)

[17] Australian Aluminium Council Limited, "Australia's Aluminium Industry – Trade and Competitiveness." 2025. https://aluminium.org.au/wp-content/uploads/2025/04/J008227-AAC-TRADE-AND-COMPETITIVENESS-FACTSHEET-APRIL-2025_FINAL_WEB.pdf

[18] Australian Aluminium Council Limited, "Strengthening Our Aluminium Industry." 2025. https://aluminium.org.au/wp-content/uploads/2024/10/250630-AAC-Factbook-2025.pdf

The vertical integration of the industry matters: by doing more than just mining and exporting raw bauxite, Australia captures a greater share of value domestically through refining alumina, smelting aluminium, and even producing extruded profiles and semi-fabricated products. This helps stabilise revenues, sustain regional employment and build skills while reducing susceptibility to external supply chain disruptions.

In sum, the Australian aluminium sector is much more than a mining industry — it is a full value chain that adds depth to the economy, anchors regional communities and gives Australia a competitive presence in global aluminium markets.

Australian aluminium smelting

Australia has four operating aluminium smelters — at Bell Bay (Tasmania), Tomago (New South Wales), Boyne Island (Queensland) and Portland (Victoria) — which together produce around 1.6 million tonnes of primary aluminium per year. They collectively produce a mix of ingot, slab, billet and t-bar. Most of this output is exported to customers in the Asia-Pacific region.

Australia previously had two additional aluminium smelters — Point Henry in Victoria and Kurri Kurri in New South Wales — that played important roles in Australia's industrial base. Point Henry, operated by Alcoa from 1963 until 2014, included an adjoining rolling mill at Geelong that produced sheet and plate for the automotive and manufacturing sectors, providing a rare example of integrated smelting and downstream fabrication in Australia. Kurri Kurri, operated by Hydro Aluminium from 1969 until 2012, also undertook limited remelting and recovery of clean process scrap. The closure of these facilities, as well as the rolling mill at Yennora, marked the loss of Australia's integrated smelting and rolling capability and reduced the nation's capacity to recycle and reform aluminium into finished products domestically.

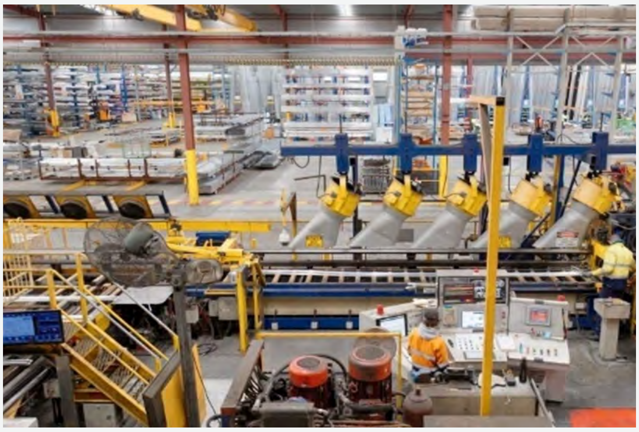
Australian aluminium extrusion and fabrication

Australia also has a small but important downstream aluminium extrusion industry that converts cast billet into finished profiles used in building, transport and industrial applications.

There are around 11 major extrusion businesses nationally, operating 24 presses across multiple states. These businesses typically source billet from the Boyne or Tomago smelters or import billet from international suppliers, producing extruded sections for windows, doors, curtain walls, transport components and other fabricated products for both domestic and export markets.

The existence of this domestic extrusion and fabrication industry creates the opportunity to develop a closed-loop recycling system centred on extruded products. Such a system could involve remelting clean pre-consumer scrap generated within extrusion plants — such as offcuts, rejects and process waste — into new billet containing recycled content, reducing energy use and embodied carbon. Over time, this loop could be expanded to include post-consumer scrap recovered from end-of-life aluminium products such as windows, doors and façade systems, provided suitable sorting and alloy separation are in place. Establishing this form of circular supply chain would allow Australia's extruders to reuse domestically collected aluminium, strengthen supply security and position locally produced billet as a lower-carbon, recycled alternative to imported material.

Case study 1: Building a closed-loop recycling system for extruded aluminium



Capral Aluminium has progressively trialled closed-loop recycling partnerships to demonstrate how pre-consumer aluminium scrap can be remelted and reused within Australia.

Its first pilot, conducted with Tomago Aluminium in 2022, successfully proved that extrusion scrap could be remelted domestically, though commercial expansion was limited by logistics and planning constraints.

In 2024, Capral extended this approach through a new collaboration with Rio Tinto and Sims Metal, creating a circular supply chain in which Capral's clean extrusion scrap is collected and processed by Sims, remelted by Rio Tinto at Boyne Smelters, and returned to Capral as billet containing at least 20% recycled content.

The project represents the first integrated, scalable model for closed-loop aluminium recycling in Australia and highlights how cooperation between extruders, recyclers and smelters can enable a future onshore circular aluminium economy.

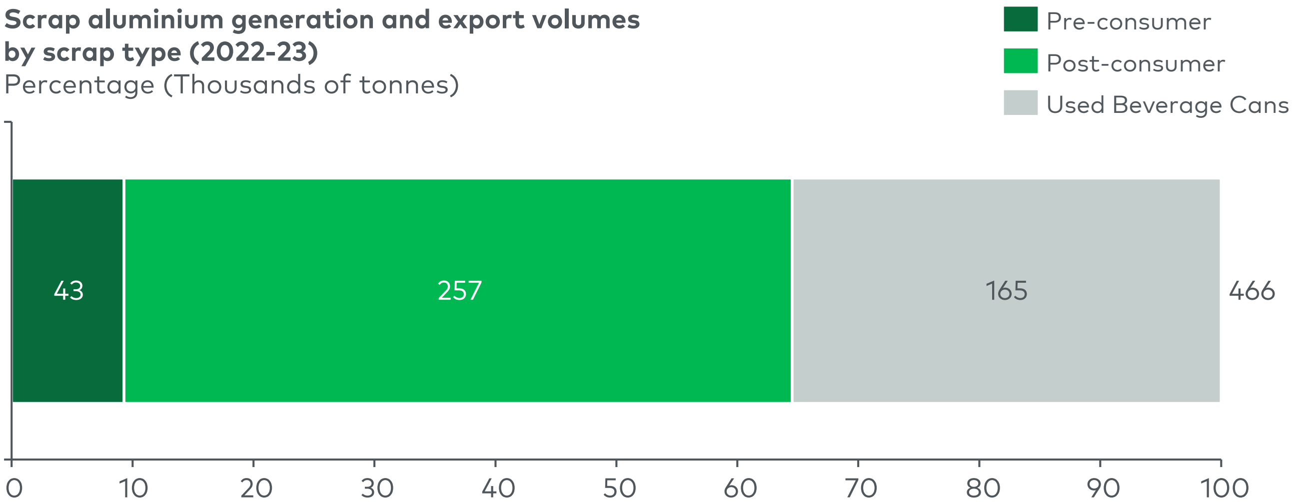
Source: Capral Limited, https://www.capral.com.au/sustainability/forging-a-greener-future-capral-sims-metal-and-rio-tinto-launch-closed-loop-aluminium-recycling/

Australian aluminium recycling

Australia's aluminium sector increasingly recognises recycling as a critical pathway to reducing energy use, carbon intensity and dependence on imported metal containing recycled content. Recycling aluminium makes intuitive sense — when properly sorted and managed, it can be recycled indefinitely, and remelting scrap requires only about 5% of the energy used in primary production. Nevertheless, the domestic recycling infrastructure remains underdeveloped: since its rolling-mill closures in 2014, Australia has exported around 95% of its aluminium scrap rather than remelting it locally.

A 2024 market-sounding exercise conducted for the AAC estimated that Australia exports on the order of 440 kt of aluminium scrap annually, including 43 kt of pre-consumer extrusion scrap. While the pre-consumer scrap is well documented and known, the rest is not well documented in terms of alloy types or source location.[19] This scrap is typically aggregated by scrap and recycling businesses and generally exported for further processing and remelting offshore.[20]

Figure 3
Total Australian volumes of aluminium scrap by type



Source: Australian Aluminium Council Limited (2024)

In recent years, industry players have begun pilot and early-stage closed-loop recycling initiatives. For example, Capral Aluminium, together with G.James Aluminium Products, Alspex Extrusions, Sims Metal and Rio Tinto, has launched a programme in which post-production scrap from these extruders is processed by Sims Metal and remelted at Rio Tinto's Boyne Smelters to produce billet containing a minimum of 20% recycled content, which is then returned for extrusion.

[19] Australian Aluminium Council Limited, "Market Sounding Report: Domestic Utilisation of Australian Scrap Aluminium." 2024. https://aluminium.org.au/news/market-sounding-report-domestic-utilisation-of-australian-scrap-aluminium/

[20] Australian Aluminium Council Limited, "Strengthening Our Aluminium Industry." 2025. https://aluminium.org.au/wp-content/uploads/2024/10/250630-AAC-Factbook-2025.pdf

At the same time, container deposit schemes across Australian states and territories help recover beverage cans and other aluminium packaging. Australia now has deposit-refund schemes in all states and territories — South Australia (since 1977), New South Wales (2017), Australian Capital Territory (2018), Queensland (2018), Western Australia (2020), Victoria (2023) and Tasmania (2025). However, in order to be reused, this recovered aluminium is being exported to countries that are able to remelt and recycle the aluminium and reintegrate it into the rolled products value chain that does not exist in Australia (see case study 2). This is therefore not the current focus of recycling opportunities in Australia due to the absence of rolling mills.

Case study 2: "Re-In-Can-Ation" — closing the loop on Australian aluminium cans

In 2025, Stone & Wood (part of Lion) launched a pilot initiative called "Re-In-Can-Ation" in partnership with Visy, Novelis and Rio Tinto to demonstrate how beverage packaging can support a more circular aluminium economy. The programme produces cans containing an average of 83% recycled aluminium, combined with low-carbon primary aluminium supplied from Rio Tinto's Bell Bay smelter in Tasmania — one of Australia's lowest-emissions smelters due to its hydro-based electricity supply.

The recycled component of the can sheet is supplied by Novelis, which manufactures the aluminium coil in South Korea using a blend of pre- and post-consumer recycled material sourced through its global recycling network. The coils are then shipped to Visy's can-making plant in Queensland, where they are formed into cans for the pilot release. Although the recycling and remelting occur offshore, the collaboration highlights how Australian brand owners and producers can help create market demand for low-carbon and recycled aluminium, setting the groundwork for future onshore remelting and closed-loop recycling initiatives.

Source: Stone & Wood, https://stoneandwood.com.au/pages/recycling

Case study 3: G.James closed-loop aluminium manufacturing ecosystem

G.James Aluminium Products runs a fully closed-loop aluminium manufacturing ecosystem — showing what local, circular processing can look like at scale. The company captures clean pre-consumer extrusion scrap from its own production lines and keeps it in-house to guarantee quality and full material traceability.

Scrap is sent to G.James' integrated remelt facility, where it is transformed into certified recycled aluminium ingot with 85%-88% recycled content. By controlling the entire process, G.James maintains tight alloy specifications, cuts waste dramatically and reduces reliance on primary aluminium.

The recycled ingots then move to Cheras Industries — the group's aluminium foundry — where they are cast into components for commercial, architectural, marine, rural and general-purpose uses. Many of these castings flow straight back into products made by G.James subsidiaries such as Gossi Park & Street Furniture and Quick Ally Scaffolding & Access Solutions, closing the material loop entirely inside the group.

G.James' model proves that advanced, domestic aluminium recycling is already happening in Australia — what's missing is the support needed to scale it up.

Source: G.James

5. Strategic justification for action

As shown in the previous chapter, Australia is one of the world's largest producers of primary aluminium and has c.440 kt of aluminium scrap arising each year (with 10% of this being pre-consumer) that is readily available for recycling.

While almost all aluminium scrap generated domestically is currently exported, it is likely to be recycled overseas due to its high value. Aluminium is one of the world's most recycled materials, and because it retains its properties indefinitely, there is strong global demand for scrap as a feedstock for recycled aluminium production.

The global LME price for primary aluminium typically ranges between US$1,800 and US$3,000 per tonne, and scrap aluminium is priced at a small discount to that benchmark. Industry participants report that it is common to receive more than 90% of the LME price for pre-consumer scrap today. This can be even higher when regional premiums and product premiums are included.

This means that aluminium scrap is a valuable traded commodity, not a waste product, and it is almost always recovered and reused (particularly once separated and traded). Unlike lower-value or contaminated waste streams such as mixed plastics, where weak economics and poor traceability have led to environmental and social concerns overseas, aluminium scrap is consistently handled through established global supply chains and remelted responsibly offshore.

For this reason, **developing domestic recycling and remelt capability should not primarily be viewed as a waste policy issue**. Increasing domestic processing capacity is unlikely to materially change overall aluminium recycling rates, which are already high.

Instead, the strategic case for developing this capability in Australia lies in its **industrial, economic and sovereign benefits** — ensuring that more of the value inherent in Australia's aluminium endowment is retained locally while positioning the industry to meet future customer and sustainability expectations.

There are four principal reasons why domestic aluminium recycling and remelt capability should be developed in Australia.

1. **Securing economic value-add and sovereign capability**
2. **Creating jobs, growth and skills**
3. **Further enhancing stewardship of resources**
4. **Meeting growing market and consumer demand**

Each of these is discussed in turn below.

1. Securing economic value-add and sovereign capability

Developing onshore recycling capability would enable Australia to capture more of the economic value-add from its aluminium supply chain.

Australia is already a leading global producer of bauxite, alumina and primary aluminium but lacks a domestic facility capable of recycling scrap at industrial scale. Closing this gap would strengthen Australia's position as a complete, end-to-end aluminium producer and reduce reliance on imported recycled billet.

Evidence from international markets shows the scale of potential benefit. A US study estimated that increasing the recycling rate of aluminium cans alone would deliver US$6.6 billion in economic benefits by diverting 1.3 million tonnes of aluminium from landfill.[21] While the economic benefits of diverting from landfill would likely be somewhat larger than diverting from export,[22] if Australia achieved a similar level of benefit per tonne, simply enabling domestic recycling of 43 kt of pre-consumer scrap could deliver over AU$300 million in economic value for the nation.

Beyond direct economic impact, domestic recycling contributes to sovereign capability — reducing exposure to global supply chain disruptions and ensuring that recycled materials for construction, manufacturing and defence can be sourced locally.

[21] Waste & Recycling Magazine, "The economic impact of aluminum recycling: Jobs, supply chain and sustainability.", https://wasterecyclingmag.ca/materials/the-economic-impact-of-aluminum-recycling-jobs-supply-chain-and-sustainability

[22] For example, 43 kt of prime aluminium scrap landfilled represents a loss of valuable aluminium that at around 90% of LME could be worth c.AU$100m-$170m.

2. Creating jobs, growth and skills

Recycling and remelting facilities are capital-intensive, technology-based operations that create stable, skilled employment, albeit at a smaller scale than primary aluminium facilities.

In the United States, the aluminium recycling industry accounts for almost 10,000 direct jobs,[23] supported by roughly 3.3 million tonnes of aluminium scrap processed each year.[24]

As shown in the previous chapter, Australia generates approximately 440 kt of aluminium scrap annually. If the Australian employment intensity were to match the intensity in the US sector, a domestic aluminium recycling sector could directly support around 1,300 jobs (or 130 jobs alone from processing only the 10% of arisings from pre-consumer scrap). These could be highly skilled, regionally distributed roles in manufacturing, logistics and clean-technology operation — aligned with Australia's broader ambitions for advanced and low-emissions industry growth.

3. Further enhancing stewardship of resources

The aluminium industry has a long-standing commitment to responsible resource stewardship. It is expected that by 2050, global demand for aluminium will nearly double.[25] While recycling will supply a growing share of that demand, the world will still require additional primary production — driving comparable increases in bauxite mining and alumina refining. Strengthening domestic aluminium recycling is therefore an important stewardship measure: every tonne of recycled aluminium avoids the need to mine around four tonnes of bauxite and uses only about 5% of the energy required for primary production, significantly reducing carbon intensity. Keeping more recycling onshore also ensures better oversight of environmental performance, stronger traceability and higher quality assurance across the value chain — helping Australia use its primary resources more responsibly while meeting rising global demand.

[23]The Aluminium Association, "Record Recycling Jobs and Economic Output for U.S. Aluminum as Investment Continues" 2024. https://www.aluminum.org/news/record-recycling-jobs-and-economic-output-us-aluminum-investment-continues

[24]United States Geological Survey, "Mineral Commodity Summaries 2024" 2024. https://pubs.usgs.gov/periodicals/mcs2024/mcs2024-aluminum.pdf

[25]International Aluminium Institute High Substitution Scenario, 2023. https://alucycle.international-aluminium.org/public-access/public-regiona-cycle/

4. Meeting growing market and consumer demand

There is strong and growing demand — from consumers, investors and downstream manufacturers — for products that incorporate recycled or lower-carbon aluminium. For example, surveys show that 75% of US consumers are more willing to buy products made with recycled content.[26] Developing domestic recycling capability could allow Australia to meet this demand with local product, enabling manufacturers and builders to specify Australian-made aluminium with verified recycled content. This would strengthen the competitiveness of local extruders and fabricators, create new export opportunities in premium low-carbon markets, and reinforce Australia's reputation as a responsible producer of sustainable materials.

Conclusion

While aluminium scrap generated in Australia is already being recycled overseas, developing this capability domestically would deliver a different kind of value. The case for action is not about diverting waste from landfill but about creating economic opportunity, industrial resilience and environmental stewardship. Developing domestic remelt and recycling capacity would complete the aluminium value chain in Australia — allowing each segment, from mining to manufacturing to end consumers, to contribute more fully to national prosperity and the circular economy.

[26] Waste Management, "2024 WM Recycling Report: Opportunities to Improve Recycling with Education, Access and Investment" 2024. https://filecache.mediaroom.com/mr5mr_wm/178072/WM-2024-Recycling-Report.pdf.

6. Barriers to developing recycling and remelting capability

Developing domestic aluminium recycling and remelting capability in Australia is constrained by a combination of economic and technical barriers, each of which interacts to limit industry viability as summarised in Figure 4.

Figure 4
Summary of barriers to developing recycling and remelting capability in Australia

Economic Barriers – It Doesn't Stack Up Commercially

- **High global scrap prices:** Scrap exports fetch ~90-100% of LME price → domestic processors can't compete
- **Export orientation:** ~95% of aluminium scrap is exported (≈440 ktpa)
- **High energy & logistics costs:**
  - Transport uneconomic beyond ~500 km radius (volume-outs before weigh-outs)
  - Energy prices volatile and higher than peers'
- **No scale economies:** No large domestic remelter → no base load to justify investment

Australia loses both the scrap and the value-add

Technical Barriers – Complex and Dispersed Scrap Streams

- **Mixed alloys:** Building and manufacturing scrap blends incompatible alloy series
- **Contaminants:** Coatings, plastics and fasteners require costly pretreatment
- **Limited domestic capability:**
  - Smelters (Tomago, Boyne, Bell Bay, Portland) can only handle small, clean scrap volumes
  - No advanced melt purification or alloy sorting tech since Yennora & Point Henry closures

Remelt quality and scale demand new infrastructure and technology investment

Note: LME = London Metal Exchange ; ktpa = Kilotonnes per annum
Source: L.E.K. research and analysis

Each of these issues is discussed further in the following section.

Economic barriers

Economic barriers are the most significant and cut to the core of profitability for recycling and remelting in Australia.

Aluminium scrap is a globally traded commodity with strong demand, making it more lucrative for recyclers to sell into export markets. In August 2025, for example, global scrap prices were above 90% of the LME benchmark,[27] though local scrap dealers can receive a lower amount than this. This pricing dynamic is underpinned by several international drivers:

- The substantial energy advantage of recycling compared to primary smelting (95% less energy use)
- Trade distortions such as US tariffs that have shifted flows of EU scrap[28]
- Increased imports into China and India
- Large-scale investment in new recycling infrastructure across Europe and Asia (for example, Novelis doubling its UK beverage can recycling and opening a new South Korean facility in 2024)[29]

At the same time, domestic logistics add cost and complexity. Transporting unbaled, low-density aluminium is inefficient, and transporters 'volume out' before they 'weigh out', thus making it uneconomic to collect scrap beyond roughly a 500 km radius (with these domestic logistic costs greater than the costs that would be incurred for scrap to be Free on Board (FOB) for export in an Australian metro).

A further economic barrier is the substantial capital cost of establishing recycling and remelt capacity. Recent international projects indicate investment levels at the upper end of US$1,000-$1,300 per tonne of annual capacity for modern remelt facilities, depending on technology configuration and whether the plant is greenfield or integrated with existing smelter infrastructure.[30] Applying these benchmarks to a 40 kt per annum facility, and converting to Australian construction conditions using a modest uplift for higher labour, materials and project-delivery costs, suggests an installed capital cost in the order of AU$100 million-$150 million.[31] This estimate is indicative only and would vary with site location, technology scope and the extent to which existing casthouse infrastructure can be leveraged. Nevertheless, it underscores the scale of upfront investment required.

[27]Argus Media, "UBC prices hold despite stronger LME" 2025. https://www.argusmedia.com/metals-platform/newsandanalysis/article/2681712-US-Al--UBC-prices-hold-despite-stronger-LME

[28]Reuters, "Trump tariffs fan calls by European metal producers for scrap export curbs." 2025. https://www.reuters.com/sustainability/climate-energy/trump-tariffs-fan-calls-by-european-metal-producers-scrap-export-curbs-2025-06-24

[29]Novelis, "Novelis doubles capacity to recycle used beverage cans in the UK." 2024. https://investors.novelis.com/news-events/press-releases/detail/1353/novelis-doubles-capacity-to-recycle-used-beverage-cans-in-uk?utm

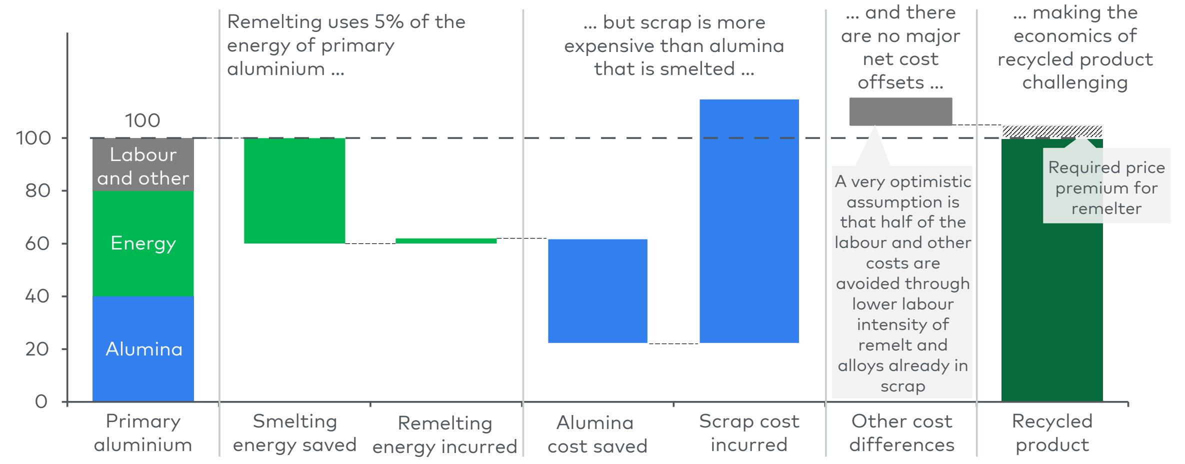
[30]Low capex per tonne estimate based on Rio Tinto Arvida recycling plant (Montreal) (US$29 million for 30 kt in 2022). Refer to: https://www.businesswire.com/news/home/20220825005647/en/Rio-Tinto-invests-in-a-new-aluminium-recycling-centre-in-Arvida. High capex per tonne estimate based on Hydro Cassopolis, Michigan (US$150 million for 120 kt). Refer to: https://www.hydro.com/en/global/about-hydro/hydro-worldwide/americas/united-states/midwest/hydro-aluminum-cassopolis

[31]Capital estimate assumes USD:AUD FX of 65c and a scale-up factor of 1.6 to 2.4 to cater for installation and local labour and enabling costs.

Breakout: Illustrative remelt economics

The economics of creating recycled aluminium are complex, but there are some clear factors that show why it is commercially challenging despite the advantages of reduced energy consumption. In the illustrative economics of primary vs recycled aluminium shown in the diagram below, there is a very clear benefit from remelting using 5% of the energy of making primary aluminium, but the sheer cost of scrap (more than 90% of LME for prime pre-consumer scrap) overwhelms the savings in energy and bauxite/alumina in this example.*

Illustrative economics of primary vs recycled aluminium
Percentage of LME



The remaining costs of both primary and recycled aluminium production are relatively small compared to these energy and input material costs, and costs avoided (for example, electrodes) can be offset by other impacts (for example, production rates). Importantly, the costs of moving scrap domestically around Australia are also higher than those of exporting — despite the shorter domestic distances involved — reflecting greater scale economies and competition in international logistics. Optimistically assuming half of the 'labour and other' costs from primary aluminium production could be avoided (for example, to reflect lower labour intensity and avoided costs of alloys, without including an increase to scrap vs exports), it is unlikely that recycled aluminium can be produced at a lower cost than primary aluminium.**

The implication is that recycled product typically (and paradoxically) requires a price premium over new primary aluminium, and return on investment to build the infrastructure and capabilities is challenging.

*These simplified economics represent a smelter that is producing non alloyed primary (P1020). The economics would vary depending the product mix and a range of other factors including but not limited to customer mix and available inputs. A standalone remelt facility would also have substantially different economics.
**While it may be possible to reduce the raw cost of scrap (for example, by purchasing post-consumer scrap), this would necessitate more direct participation in scrap by a remelter and/or other costs being incurred to enable production of high-quality aluminium that can achieve at least 100% LME, further increasing the commercial challenges involved.
Source: L.E.K. analysis

Technical barriers

Australia faces several technical hurdles in developing large-scale aluminium recycling and remelting, but none are insurmountable.

Unlike primary aluminium, scrap is highly variable by source and type. It can contain coatings, plastics, fasteners and a mix of alloy types — requiring specialised equipment to clean, sort and prepare material for high-quality remelting. Australia's post-consumer scrap streams are particularly mixed, making clean remelting difficult without more advanced processing technologies.

Alloy compatibility adds another complexity. Post-consumer scrap often combines multiple alloy families that cannot directly meet tight specifications for high-grade products such as 3104 (beverage cans) or 6063 (extrusions).

Existing primary smelters — Bell Bay, Boyne Island, Tomago and Portland — have limited capacity to remelt scrap because their casthouses are designed around large-scale primary production rather than scrap processing. In contrast, leading overseas remelters have already invested heavily in pretreatment technologies such as shredding, de-coating, drying and advanced sensor-based sorting.[32]

These gaps illustrate where Australia stands today — but they also show a clear pathway forward. With targeted investment in modern pretreatment, sorting and remelt purification technologies, Australia can rapidly build the technical capability needed to process complex scrap streams and produce high-quality recycled alloys. The barriers are real, but they are technical in the industry as it stands today — rather than fundamental — and can be overcome with deliberate development and support.

[32]Tomra, "Tomra pioneers a new deep learning-based solution to upgrade wrought aluminium scrap" 2025. https://www.tomra.com/waste-metal-recycling/media-center/news/2025/tomra-pioneers-a-new-deep-learning-based-solution-to-upgrade-wrought-aluminum-scrap

Overcoming these challenges requires deliberate policy and funding interventions. To make domestic recycling feasible, government support must assist to:

1. Create an investment environment where industry participants can achieve adequate returns on the significant capital required to build modern infrastructure and technical capability

2. Retain scrap in Australia without export bans

3. Stimulate demand for products with domestically recycled aluminium content, in parallel with creation of domestic industry

4. Reduce cost pressures associated with energy use and long-distance scrap transport

Without such measures, Australia will continue to export both aluminium scrap and the economic benefits of recycling.

7. Shortcomings of the domestic policy environment

The current domestic policy landscape for sectors like aluminium has been heavily focused on funding mechanisms designed to accelerate recycling and industrial decarbonisation (and, to a lesser extent, some domestic sovereign capabilities).

While Australia does have a range of federal programmes to support recycling, none of the existing schemes on their own appear to be directly suitable for supporting the aluminium industry in developing recycling and remelting capability.

A number of federal initiatives have been considered, including:

- National Reconstruction Fund
- Clean Energy Finance Corporation
- Powering the Regions
- Future Made in Australia
- Recycling Modernisation Fund

In addition to these funding initiatives, both the ReMade in Australia scheme and Solar Sunshot Program have been considered as mechanisms to drive recycled content demand.

Findings about the applicability of each are set out below.

National Reconstruction Fund

The NRF provides debt, equity and guarantees (but not grants) to support projects that:

- Are mainly or solely Australia-based
- Align with one or more of the seven legislated priority areas — renewables and low-emissions technologies, value-add in resources, enabling capabilities, medical science, transport, agriculture/forestry/fisheries, and defence capabilities

- Are not in prohibited sectors, such as coal or natural gas extraction, pipeline infrastructure, or native forest logging
- Demonstrate a positive financial return or the ability to repay debt, targeting approximately 2%-3% above the five-year Australian Government bond rate[33]

To date, the NRF has announced 11 investments worth about AU$675 million.[34] While none have involved aluminium, examples include AU$50 million for Liontown Resources' lithium expansion, AU$100 million for Resource Capital Funds to back downstream mineral processing and AU$40 million for Russell Mineral Equipment's Queensland manufacturing facility. In September 2025, the federal government announced its AU$5 billion Net Zero Fund, delivered by the NRF, which will support large industrial facilities to make major investments in new equipment, technologies and processes to promote decarbonisation.[35]

An aluminium recycling and remelting plant would align with NRF priorities by supporting low-emissions outcomes (recycling uses approximately 95% less energy than primary aluminium) and creating value-add through domestic processing. In principle, aluminium remelting could qualify, but developing a robust commercial case that clears the financial hurdles remains difficult given current scrap prices, energy costs and logistical challenges. The Net Zero Fund may provide a pathway to address some of these challenges.

Clean Energy Finance Corporation

The CEFC provides commercial debt and equity to projects that cut emissions through clean energy and low-emissions technologies.[36] Resource recovery and recycling fall within its mandate, supported by a AU$100 million Recycling Investment Fund (historically focused on plastics, paper, glass and tyres). Projects must be bankable, demonstrate measurable abatement, and be able to service debt or deliver returns.

Since inception, the CEFC has committed AU$14.5 billion across more than 350 projects, spanning renewables, storage, natural capital, electric vehicles, household energy upgrades, hydrogen and climate tech.[37] Aluminium remelting could attract CEFC financing if it delivers significant emissions reductions and integrates renewable energy.

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[33] The National Reconstruction Fund, "Investment guidance." https://www.nrf.gov.au/what-we-do/investment-guidance

[34] National Reconstruction Fund Corporation, "Our investments." 2024 https://www.nrf.gov.au/our-investments

[35] Minister for Industry and Innovation and Minister for Science, "New $5 billion Net Zero Fund will accelerate Australia's industrial decarbonisation." 2025. https://www.minister.industry.gov.au/ministers/timayres/media-releases/new-5-billion-net-zero-fund-will-accelerate-australias-industrial-decarbonisation

[36] Clean Energy Finance Corporation Investment Mandate. https://www.legislation.gov.au/F2023L01023/latest/text

[37] Clean Energy Finance Corporation, "CEFC annual report 2023-24." 2024. https://www.cefc.com.au/annual-report-2024/

However, as with the NRF, access would depend on proving a strong commercial case that projects can service debt and/or generate a return on equity. CEFC investment could form part of the capital stack, but further grant or operational support is likely to be needed to overcome the aluminium industry's economic barriers.

Powering the Regions — Industrial Transformation Stream (ITS)

The ITS is a AU$400 million initiative under the Powering the Regions Fund, established to accelerate decarbonisation of large industrial facilities in regional Australia.[38] Its purpose is to reduce Scope 1 and Scope 2 emissions by supporting projects that deploy clean energy technologies such as electrification, renewable integration, fuel switching, waste-heat recovery and advanced energy efficiency systems.

To be eligible, applicants must:

- Operate an industrial facility captured under the National Greenhouse and Energy Reporting (NGER) scheme and be located in regional Australia (outside metropolitan capitals)
- Demonstrate substantial emissions reduction potential, either through first-of-its-kind technology demonstrations or the commercial deployment of proven solutions
- Provide a 1:1 matched contribution, ensuring that government support leverages significant private or other public capital
- Address broader public benefits, such as workforce development, supply chain resilience and regional economic activity
- Not be receiving support under other Powering the Regions funds, such as the Safeguard Transformation Stream or the Critical Inputs to Clean Energy Industries – Alumina and Aluminium Sectors programme

The most relevant project funded under the scheme was AU$5.4 million granted to the Boyne Aluminium Smelter in Gladstone for energy efficiency upgrades.[39]

[38]ARENA, "Powering the Regions Industrial Transformation Stream." https://arena.gov.au/funding/powering-the-regions-industrial-transformation-stream/

[39]Ministers for the Department of Industry, Science and Resources, "$91 million to drive down emissions in heavy industry." 2024. https://www.minister.industry.gov.au/ministers/husic/media-releases/91-million-drive-down-emissions-heavy-industry

For a new aluminium recycling or remelting facility, the ITS is unlikely to be a suitable funding mechanism. Most remelters — particularly those handling c.40 kt of scrap annually — have relatively low direct emissions and energy consumption compared with primary aluminium smelters, and therefore typically do not meet NGER reporting thresholds. Without NGER coverage, a facility is automatically ineligible, regardless of its circular-economy benefits or emissions-avoidance value relative to primary production.

Future Made in Australia Innovation Fund

The Future Made in Australia (FMIA) Innovation Fund, administered by the Australian Renewable Energy Agency (ARENA), provides up to AU$1.7 billion in grant funding to support pre-commercial innovation, demonstration and deployment of clean technologies.[40] A key focus of the fund is green metals, with AU$750 million earmarked for projects in aluminium, alumina, steel and iron.

Projects are eligible if they:

- Demonstrate innovative or early-stage commercial technologies with strong emissions-reduction potential
- Can attract significant private co-investment
- Demonstrate meaningful support for Australia's net-zero transition, economic resilience and supply-chain security
- Provide tangible local benefits in employment, skills development and regional economic uplift

For an aluminium recycling and remelting plant, the FMIA Innovation Fund has relevance. A project that incorporates electrified remelting, energy efficiency upgrades or waste-heat recovery would qualify under the green metals stream, provided it is structured as an innovation or demonstration initiative with clear co-funding and community benefits.

Export Finance Australia

Export Finance Australia (EFA), traditionally Australia's export credit agency, has had its role expanded under the FMIA agenda to include domestic investments

[40] Budget 2024-25, "A Future Made in Australia." 2025 https://archive.budget.gov.au/2024-25/factsheets/download/factsheet-fmia.pdf

aligned with national interest objectives.[41] This allows EFA to provide loans, guarantees and other finance solutions to projects that strengthen Australia's industrial base, advance the clean energy transition or improve sovereign capability. All supported projects must be financially viable, comply with EFA's environmental and social safeguards, and align with the National Interest Framework.

For an aluminium remelting facility, EFA financing could complement grant funding by filling gaps that commercial lenders may be reluctant to cover. The project would need to demonstrate strong commercial fundamentals and national interest outcomes, such as reducing reliance on imported recycled aluminium, creating regional jobs and building low-emissions industrial capacity. If those criteria are met, EFA could provide structured finance alongside private capital, making it a useful partner in delivering the overall funding package.

Green Aluminium Production Credit

The Australian Government has launched a AU$2 billion Green Aluminium Production Credit (GAPC) to help smelters shift from fossil fuels to renewable electricity by 2036.[42] Delivered over 10 years, the credit is aimed at cutting Scope 2 emissions, which account for the bulk of emissions in primary aluminium production. The programme is part of the Future Made in Australia agenda, designed to maintain Australia's competitiveness in global metals markets, support regional jobs and build sovereign industrial capacity.

The GAPC rightfully targets primary aluminium smelters, which convert alumina into aluminium through highly electricity-intensive processes — and aluminium remelting facilities fall outside the scope of the programme.

Recycling Modernisation Fund

The Recycling Modernisation Fund is a federal initiative designed to expand Australia's domestic recycling infrastructure, with more than AU$1 billion in co-investment from the Commonwealth, states, territories and industry.[43] The fund specifically targets material streams affected by export bans — plastics, paper, cardboard, tyres and glass — and explicitly excludes aluminium from its priority

[41]Export Finance Australia. https://www.exportfinance.gov.au/Future-Made-in-Australia/

[42]Department of Industry, Science and Resources, "New Green Aluminium Production Credit will support the transition to green metals." 2025. https://www.industry.gov.au/news/new-green-aluminium-production-credit-will-support-transition-green-metals

[43]Department of Climate Change, Energy, the Environment and Water, "Investing in Australia's waste and recycling infrastructure." 2025. https://www.dcceew.gov.au/environment/protection/waste/how-we-manage-waste/recycling-modernisation-fund

scope.[44] Given this exclusion, the fund would not be relevant for an aluminium recycling and remelting plant.

Conclusion: Australia's funding landscape offers partial but fragmented support for aluminium recycling and remelting. The FMIA Innovation Fund provides the most direct grant opportunity through its green metals stream, while the NRF and CEFC could contribute if strong commercial and co-investment cases are established. EFA may complement this with structured finance, though its support is contingent on national interest alignment and project viability. No single programme addresses all barriers, making a blended funding approach essential.

ReMade in Australia

The ReMade in Australia programme is a national certification and labelling initiative that recognises products made in Australia using verified recycled content. Administered by the Department of Climate Change, Energy, the Environment and Water, the programme provides manufacturers with the right to display a trusted national mark that highlights their commitment to sustainability and circular economy practices.[45] Backed by AU$8 million in government funding between 2023-24 and 2025-26, it establishes certification standards, compliance rules and a promotional framework to help Australian-made recycled products gain stronger market recognition.

To use the ReMade in Australia label, however, manufacturers must demonstrate that their products meet defined certification criteria. These include:

- Verifying the proportion and source of recycled material
- Proving that the final manufacturing or transformation takes place in Australia
- Maintaining traceable records for audit

Under Rule 7.3 of the scheme, at least 50% of the recycled content (by mass) in a certified product or project must be Australian in origin. This requirement will increase to 100% by 2030, with a transition plan due by October 2030 for licensees not yet meeting that threshold.[46]

[44] Parliament of Australia, "Chapter 7 – Waste export regulations and the Recycling Modernisation Fund. In No time to waste: The effectiveness of the Albanese Labor Government's waste reduction and recycling policies in delivering a circular economy." 2025. https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Wastereduction/Report/Chapter_7_-_Waste_export_regulations_and_the_Recycling_Modernisation_Fund

[45] Department of Climate Change, Energy, the Environment and Water, "ReMade in Australia." 2025. https://www.dcceew.gov.au/environment/protection/waste/consumers/remade-in-australia

[46] Department of Climate Change, Energy, the Environment and Water, "Rules governing the use of the ReMade in Australia Certification Trade Mark." 2025. https://www.dcceew.gov.au/sites/default/files/documents/remade-in-australia-certification-trade-mark-rules-summary.pdf

Meeting these thresholds will be challenging for the aluminium industry. Firstly, as has been established, Australia exports a large proportion of scrap for offshore processing. Accessing a consistent supply of verified, traceable Australian scrap in sufficient volumes to meet the 50% rule — and eventually the 100% rule — would require major investment in scrap recovery, segregation and certification infrastructure. Secondly, ensuring full compliance with the scheme's chain-of-custody and traceability requirements adds further complexity and cost.

As a result, while technically eligible, the industry will find it difficult to qualify for ReMade in Australia without broader policy support to expand domestic scrap processing and verification systems. A more nuanced set of requirements around the application of ReMade in Australia to aluminium and metals sectors more generally would be preferable.

Solar Sunshot Program

The Solar Sunshot Program is an AU$1 billion initiative delivered by ARENA and designed to accelerate domestic solar-photovoltaic manufacturing, strengthen Australia's supply chains and commercialise innovation across the solar value chain.[47] While the programme is focused on solar, its emphasis on building local manufacturing capacity and resilient domestic supply chains creates an opportunity: recycled aluminium content could benefit from increased demand if solar module makers commit to using higher-content recycled aluminium in frames, mounting structures and module components. By aligning recycled-aluminium supply with on-shore solar manufacturing supported by Solar Sunshot, the programme could indirectly drive demand for domestic remelted aluminium and circular-economy input streams.

[47]ARENA, "Sunshot Solar." https://arena.gov.au/funding/solar-sunshot/

8. What industry needs to succeed

The development of domestic aluminium recycling and remelting capability in Australia will not occur organically. While the commercial case is compelling in principle — reduced emissions intensity, circularity and sovereign capability — the underlying economics remain challenging. The combination of high energy costs, fragmented policy settings, export-oriented scrap markets and capital intensity means that, without targeted policy intervention, private investment will remain constrained.

To enable success, policy must address three complementary levels of intervention:

(1) Key policy requirements

Securing today's industrial base

The success of a domestic aluminium recycling and remelting sector depends on the continued operation and competitiveness of Australia's existing primary aluminium smelters. These facilities anchor Australia's aluminium ecosystem — they hold the infrastructure, technical expertise and workforce that will help make large-scale remelting possible. They also provide the market demand for scrap and the industrial credibility investors require before committing capital. Without a viable primary industry, no remelt industry will emerge.

Recommended policy measures:

- **Ensure affordable and reliable low-emissions energy** for existing smelters through transitional cost relief and long-term Power Purchase Agreements.

Mobilise capital for remelt projects

Building modern remelt and recycling facilities requires substantial upfront investment in furnaces, alloy purification, de-coating systems and automation. The business case for such capital expenditure is marginal without blended public-private financing and risk-sharing mechanisms.

Recommended policy measures:

- **Provide blended finance packages** combining grant funding from the **Future Made in Australia Innovation Fund** with concessional debt from the NRF or

Export Finance Australia. This blended model can derisk the first generation of facilities (20-40 kt per annum, targeting pre-consumer scrap) — which is the key target — and validate commercial viability before scaling to encompass post-consumer scrap where economic.

- **Establish a recycled aluminium acceleration facility** within the **NRF** to co-invest in both stand-alone remelt and retrofits at existing smelters
- **Introduce a recycled aluminium investment credit** or accelerated depreciation for capital expenditure on low-emissions recycling technologies, improving project returns and speeding deployment.

Together, these measures will catalyse the first wave of commercial remelt projects, demonstrate viability at scale, and position Australia to capture the economic and environmental benefits of keeping aluminium recycling onshore.

(2) Policy to continue and evolve

Maintaining market confidence in standards

Certification systems and credible market recognition are already developing within Australia's circular economy framework, providing an important foundation for aluminium. The **ReMade in Australia** label offers an emerging mechanism for national recognition of products using recycled content, and the **Aluminium Stewardship Initiative (ASI)** provides an internationally recognised standard for responsible production, sourcing and stewardship across the value chain. There are also other certification schemes. Together, these initiatives can underpin consumer trust and create the market signals needed for recycled aluminium.

However, specific adaptations are required to ensure these schemes meaningfully include aluminium and enable domestic producers to participate.

Recommended policy measures include:

- **Integrate aluminium explicitly within the ReMade in Australia programme.**
- **Align ReMade certification with ASI standards**, creating a coherent certification framework that covers both responsible sourcing and verified recycled content.
- **Permit mass-balance accounting** for processed aluminium products (e.g. window or building systems) and staged compliance so Australian producers can qualify as domestic recycling capacity develops.

(3) Potential policy requirements as projects emerge

At the project level, policy must directly stimulate demand for domestically recycled aluminium and ensure reliable, transparent access to scrap feedstock. These levers will determine whether proposed remelt projects can operate viably and at scale.

Recommended policy measures include:

- **Government procurement and standards:** Introduce minimum domestic recycled content requirements (e.g. 10%-20%) in government-funded infrastructure, construction and defence projects using aluminium.
- **Scrap retention and transparency:** Develop a 'right of first refusal' system allowing domestic remelters to match export bids for clean scrap, coupled with a national data platform to track scrap flows and alloy composition.
- **Freight and logistics support:** Provide rebates or reduced rail access charges for moving scrap to regional smelters and extend the **Recycling Modernisation Fund** to cover aluminium sorting, baling and transport infrastructure.

These measures would directly improve project economics, strengthen investor confidence and encourage industrial collaboration across smelters, extruders and recyclers.

Conclusion

To unlock the economic and environmental benefits of aluminium recycling, Australia must pursue a coherent, three-tiered policy strategy.

- **At the national level**, sustain existing primary smelting capability while mobilising capital for remelt investments.
- **At the system level,** strengthen certification and market recognition through alignment of the ReMade in Australia and ASI or other similar frameworks.
- **At the project level**, create predictable demand and secure domestic scrap flows.

Together, these actions will enable Australia to capture the full circular value of aluminium, reinforce industrial resilience and establish the nation as a leader in low-carbon metals production within the global green economy.

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Alastair and Brent thank Nandini Singh (Senior Associate, Sydney) for undertaking research into the international and domestic policy environment for this project.

Enterprise artificial intelligence (ChatGPT-5.0 and Perplexity Pro) has been used in the preparation of this report. All errors and omissions are the authors' own.