INTERNATIONAL ALUMINIUM

ALUMINIUM BEVERAGE CAN RECYCLING IN THE U.S.

Aluminium can recycling has a pivotal role to play in creating a more sustainable and economically robust future for the United States.

Aluminium cans are more than just convenient beverage containers. They represent a critical opportunity for sustainable resource management in the United States. Increasing the recycling rates of aluminium cans is paramount for multiple environmental and economic reasons.

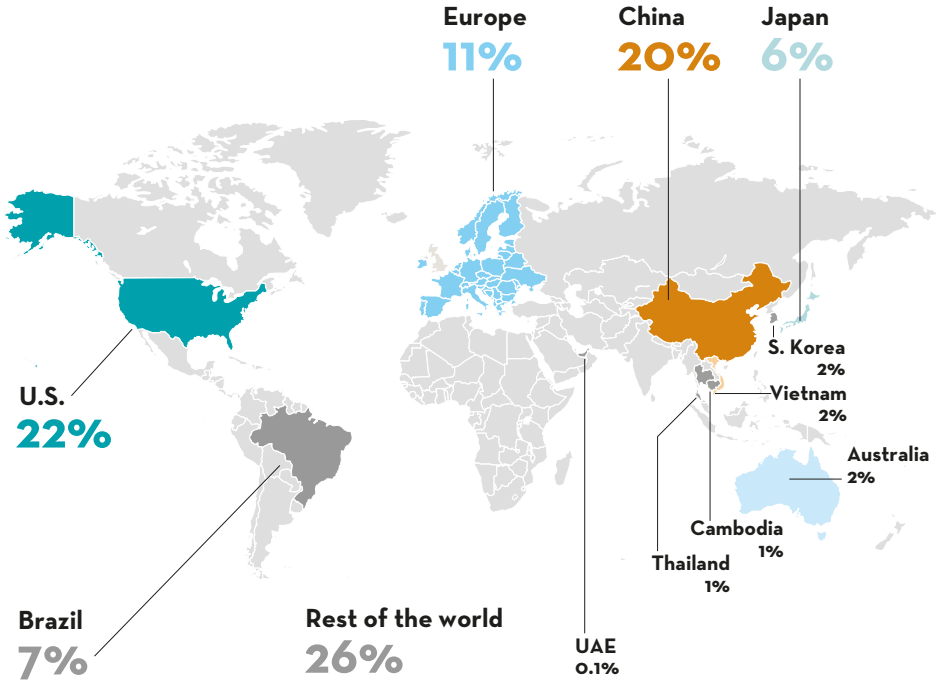
Recycling reduces carbon emissions and energy consumption, and enhances the production of low-carbon aluminium products. In the U.S., over the past three years, secondary producers have invested over $7 billion in recycling and rolling mill infrastructure, which includes significant capacity for aluminium can sheet. Can recycling provides essential feedstock to these facilities. Moreover, it aligns with the goals of aluminium producers, can manufacturers and brand owners who seek to increase recycled content in their products. Aluminium recycling saves 95% of the energy needed for primary production and reduces greenhouse gas emissions by over 90% globally.

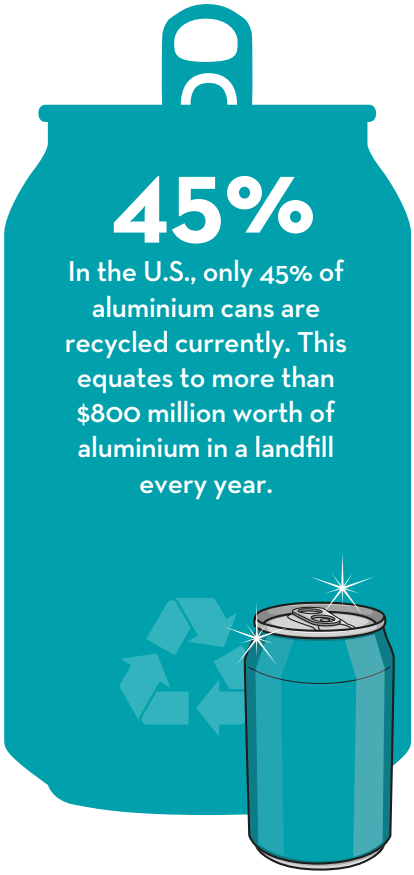
By improving recycling rates, the U.S. can strengthen its supply chain resilience through increased reliance on domestic resources.

U.S. OVERVIEW

The U.S. is the biggest user of aluminium beverage cans worldwide, followed by China and Europe.

ALUMINIUM BEVERAGE CAN USE BY COUNTRY





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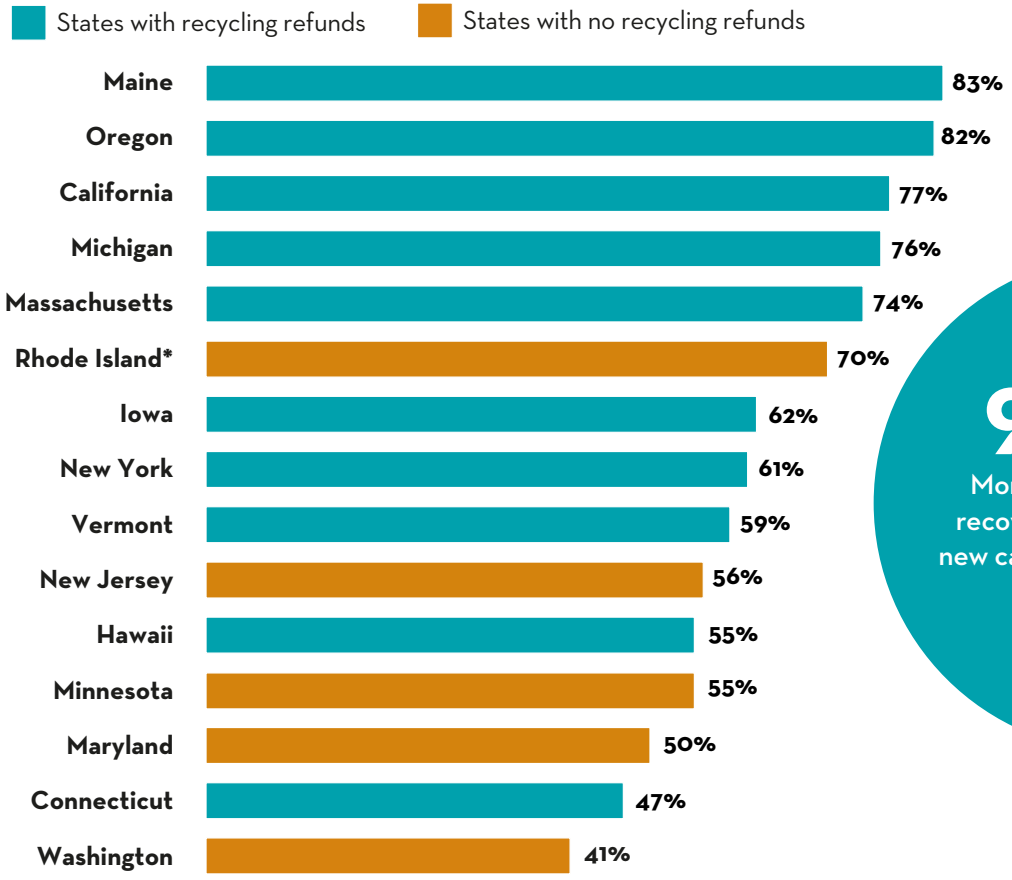
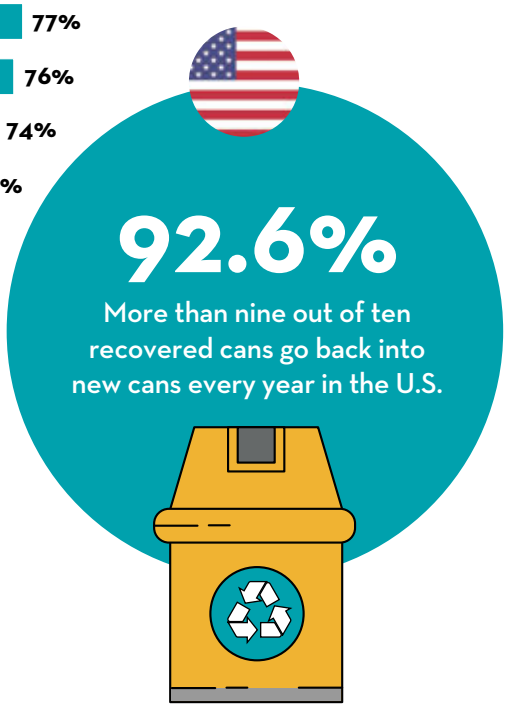
RECYCLING RATES BY STATE

TOP 15 STATES

U.S. states with the highest recycling rates for aluminium cans

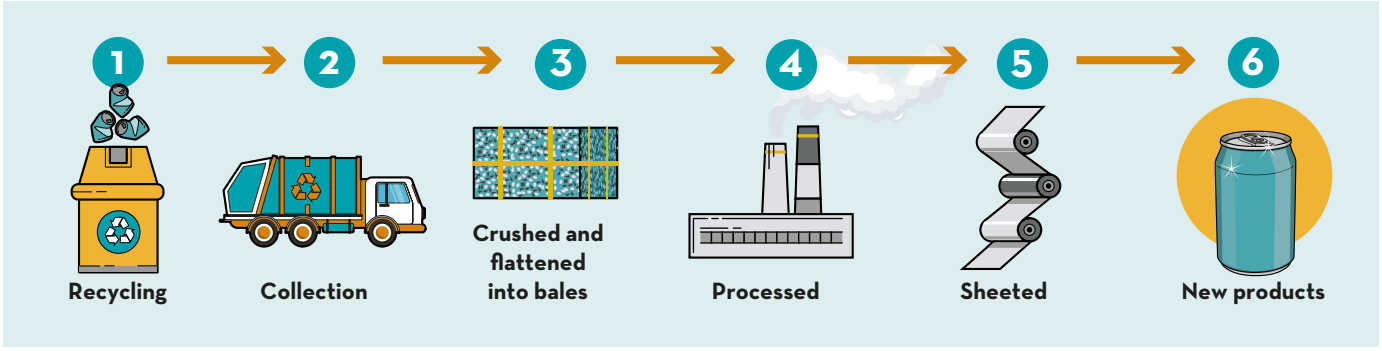




Source (bar chart only): Ball Corporation
Recycling rates include all losses (collection, processing and remelting)
**Artificially inflated in 2021 due to recycling of stock piled scrap*

The success of mandatory Deposit Return Scheme (DRS) largely depends on the availability of return locations and the value of the deposit fee. The highest recycling rates and optimal can-to-can recycling are achieved when Deposit Return Scheme are combined with Extended Producer Responsibility (EPR) policies.

The 10 states with Deposit Return Scheme (DRS) represent only 27% of the U.S. population, yet they account for 51% of all aluminium cans recycled. Two-thirds (66%) of all beverage containers recycled in a closed-loop nationally come from these states.



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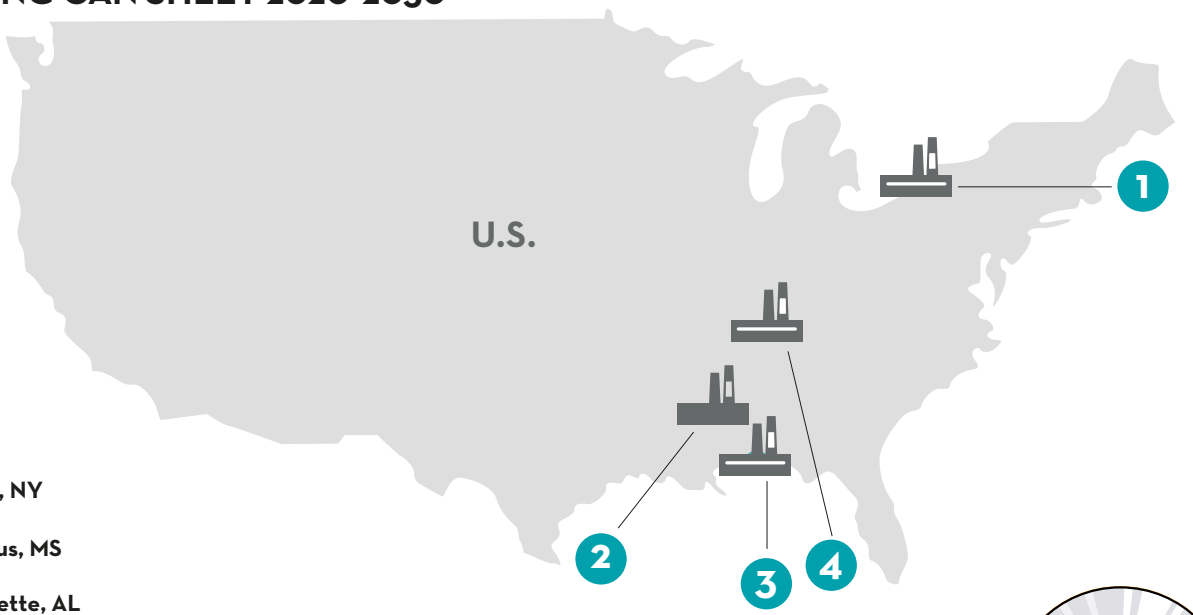
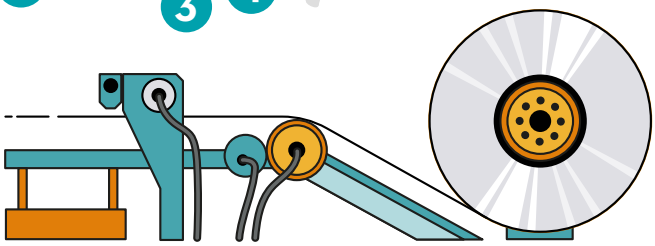
PRODUCTION INVESTMENT

NORTH AMERICA ALUMINIUM ROLLING MILL EXPANSION, INCLUDING CAN SHEET 2020-2030

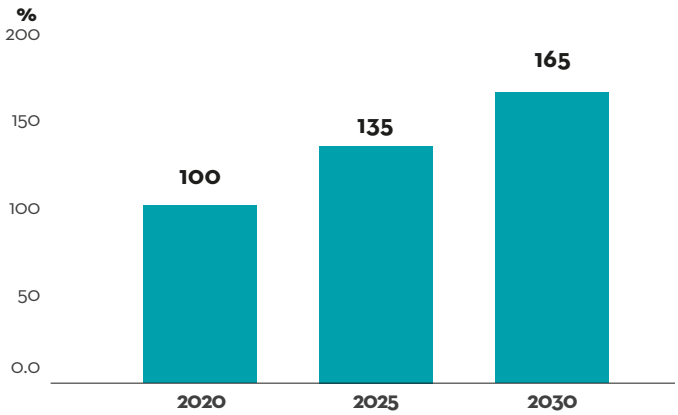


1. Oswego, NY
2. Columbus, MS
3. Bay Minette, AL
4. Russelville, KY

This map shows the expansion plans for aluminium rolling mills with can sheet operation across the U.S. from 2020 to 2030.



PROJECTED GROWTH OF CAN SHEET PRODUCTION

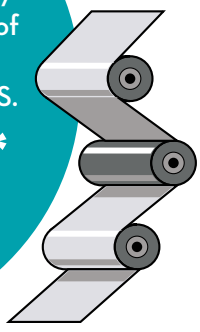


DID YOU KNOW?

Over US$7 billion* is currently invested into the production of low carbon aluminium sheet products from scrap in the U.S.

> US$7 BN*

*Includes two satellite recycled aluminium slab centres



HOW MUCH WILL USED BEVERAGE CAN RECOVERY NEED TO INCREASE BY 2030?

With this increase in production in the U.S., UBC recovery must increase to maintain the current 70%+ recycling content. From the current level of 627,000 tonnes, recovery needs to rise to over 850,000 tonnes by 2025 and, further, to more than 1 million tonnes by 2030, based on the IAI Material Flow Model. This coordinated growth in production and recycling is crucial to sustain the industry's commitment to using recycled materials in can manufacturing.

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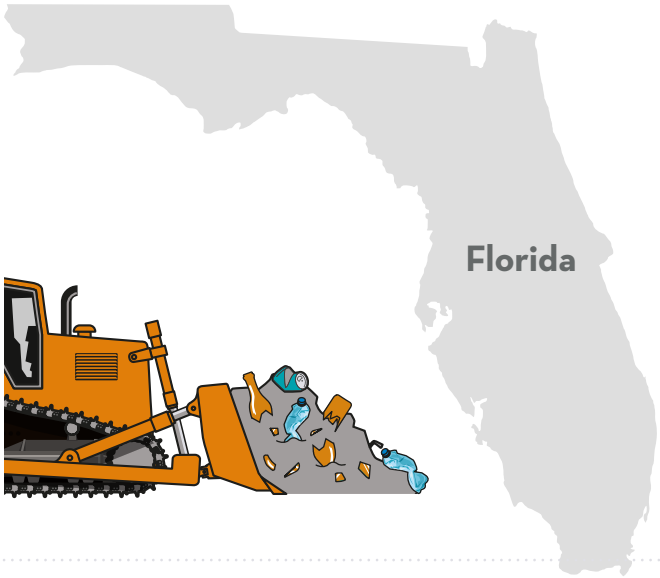
CASE STUDY: FLORIDA, 2023

Florida is the second largest consumer of aluminium beverage cans in the U.S., after Texas. While Florida has the collection infrastructure to collect more than 40% of the cans via dual stream collection, only one out of five cans is recovered, with the majority ending up in landfills or incinerators. Improving source separation, especially in multi-family and commercial settings, and addressing inefficiencies in materials recovery facilities (MRFs), could help bridge this gap between collection and recovery rates.

FLORIDA OVERVIEW:



Population (2021):

21.8 million

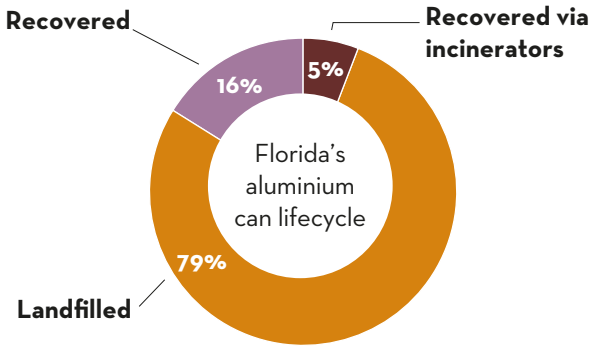
GDP per capita (2021):

$53,000

Annual aluminium can consumption (2020-21):

5.8 kg/capita

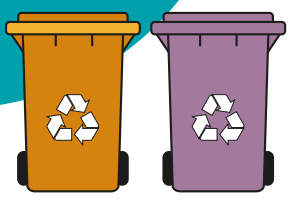
ALUMINIUM BEVERAGE CANS IN FLORIDA



Florida has a total waste recycling goal of 75%.
The aluminium sector and its product, aluminium beverage cans, would be the ideal packaging solution to support this overall goal. Currently, only 16% is recovered and the majority ends up in landfills. Florida's aluminium can lifecycle shows a stark contrast between collection and recovery rates.

DID YOU KNOW?

90% of single-family homes in Florida have access to dual stream collection, but less than half (49%) of aluminium beverage cans from single-family homes are collected via a provided system. This poor source separation contributes to the majority of collected cans ending up in landfills or incinerated.



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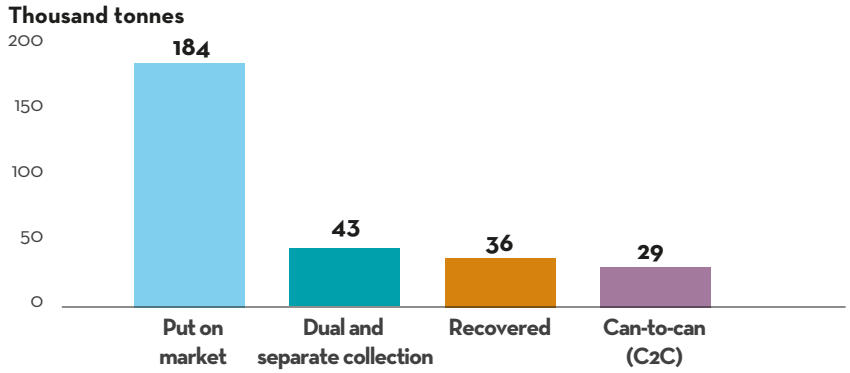
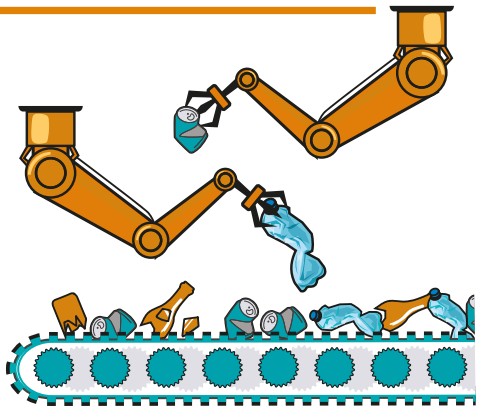
FLORIDA ALUMINIUM CAN MARKET, 2023

High collection volumes, but low recovery rates.





POSSIBLE SCENARIOS TO DIVERT USED BEVERAGE CANS (UBC) FROM LANDFILLS IN FLORIDA

1. **Deposit Return Scheme (or recycling refunds):** *A system where consumers pay a small deposit on beverage containers and receive a refund when returning them for recycling.*
   Expected UBC recycling (instead of current 36,000): **100,000-120,000 tonnes**

2. **Improved Collection System:** *A three-phase approach involving targeted collection points, can-return collection points for restaurants, and apartment building containers, aiming to recycle a maximum of 106,000 tonnes of UBC through varied profitability levels.*
   Expected UBC recycling (on top of current 36,000): **53,000 tonnes**

3. **Efficiency improvements at materials recovery facilities:** *Changing the payment model for Material Recovery Facilities to incentivise output rather than input.*
   Expected UBC recycling (on top of current 36,000): **8,000 tonnes**

ADDITIONAL RECOMMENDATIONS

1. **Public education:** Launch awareness campaigns to improve participation in recycling programmes, especially in areas where multi-stream separation is available.
2. **Incentive programmes:** Develop incentives for businesses and individuals to participate in the recycling programme, particularly in hotspot areas.
3. **Technology investment:** Invest in advanced sorting technologies for MRFs to improve recovery rates and quality of recyclables.
4. **Collaboration:** Foster partnerships between local governments, businesses and recycling facilities to create a more integrated and efficient recycling ecosystem.
5. **Regular monitoring and reporting:** Implement a system to track progress and identify areas for continuous improvement.
6. **Use building blocks to advance source separation.** Apply first a smaller profitable catalyst project to collect cans and inform the public. Then move to hotels and restaurants and apply source separation at apartment housing.

Source (Florida case study): Roland Berger