

# Global demand and the role for low-carbon aluminium

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**Miles Prosser**

Secretary General

# About the International Aluminium Institute (IAI)



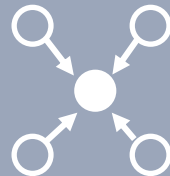
The International Aluminium Institute (IAI) is the only body representing the global primary aluminium industry.



Since its foundation in 1972, members of the IAI have been companies engaged in the production of bauxite, alumina and aluminium, the recycling of aluminium and/or fabrication of aluminium, or as joint venture partners.



Current IAI membership represents all major regions of global bauxite, alumina and aluminium production.



The IAI has been key to bringing the industry together on shared purpose over the past 50 years.

# Today

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- Aluminium demand and sustainability
- Components of sustainability.
- Low-carbon pathways and demand.



# Aluminium Is Sustainable

## RENEWABLE ENERGY



## TRANSITION TO ELECTRIC VEHICLES



## THE MOST RECYCLED DRINK CONTAINER



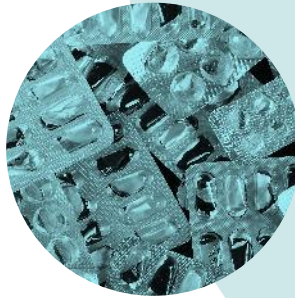


# Shaping A Better Tomorrow

**DURABLE**  
Alloys are weather-proof and corrosion-resistant resulting in very long lifetimes



**PROTECTIVE**  
Barrier properties preserve food, drink and medicines, reducing wastage



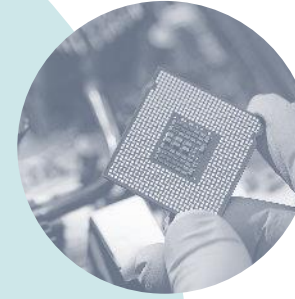
**LIGHTWEIGHT**  
High strength-to-weight ratio makes it possible to design light, strong & stable structures



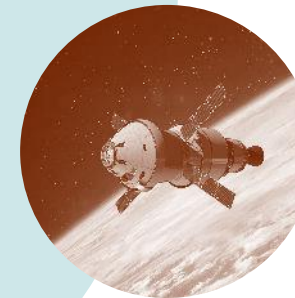
## ALUMINIUM

Shaping a better tomorrow

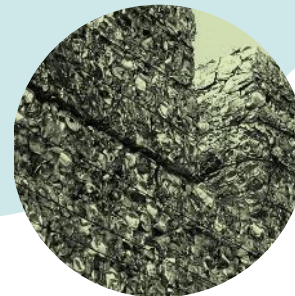
**CONDUCTIVE**  
High thermal conductivity minimises the time and energy to process, chill and heat food



**FORMABLE**  
Flexibility and formability enable unlimited design potential

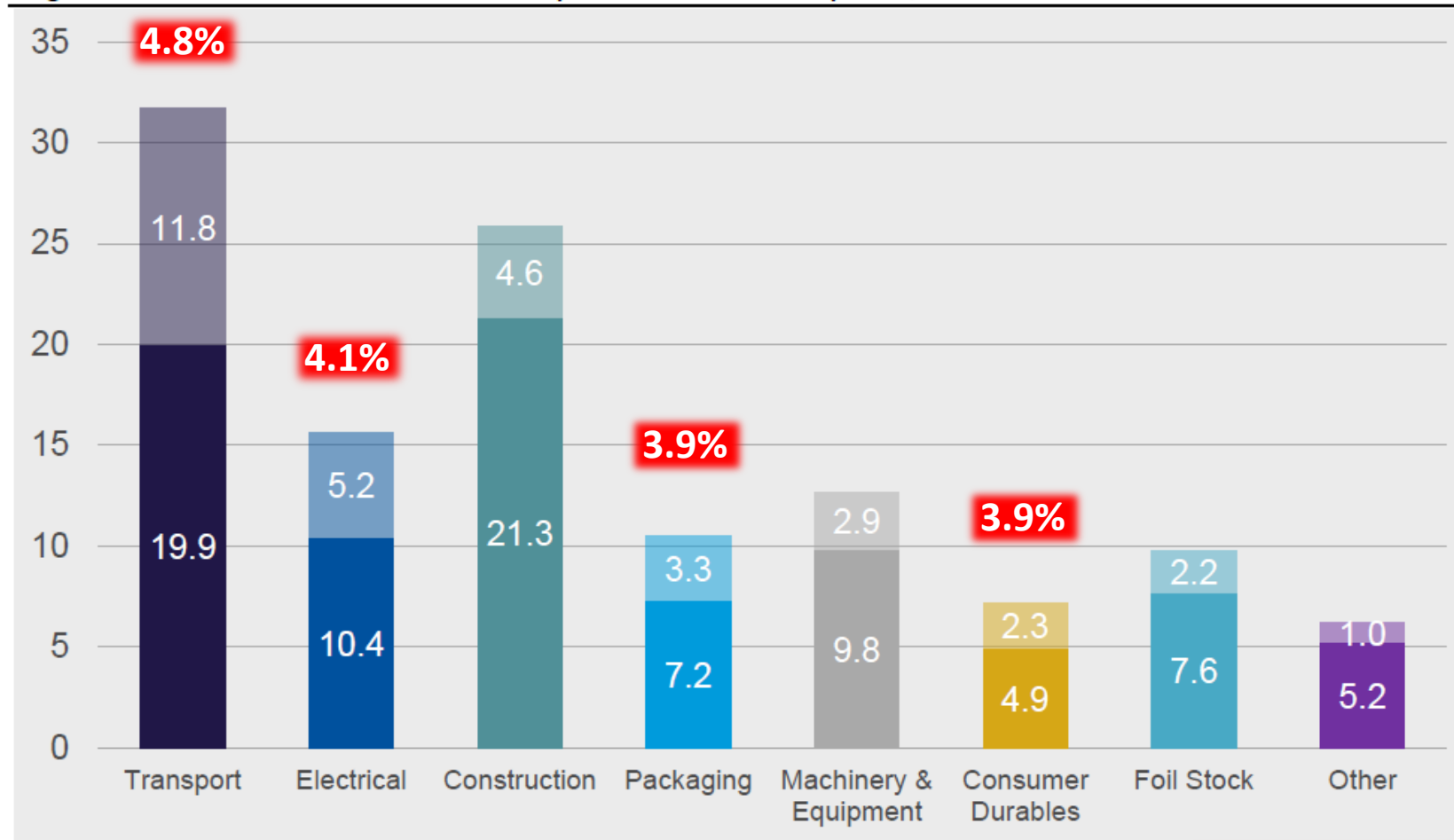


**RECYCLABLE**  
Recycling saves 95% of the energy required for primary production.



# Projected growth in aluminium demand

Figure 1 Aluminium semi-finished products consumption, 2020 vs 2030, Mt



Source: CRU

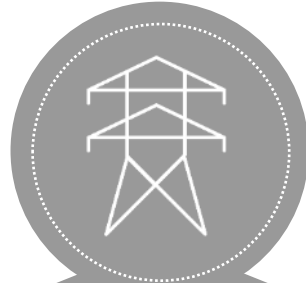
**CAGR 2020-30**

# Main Drivers Of Demand Growth



## Transportation

Decarbonisation policies and the **shift towards more aluminium intensive electric vehicles** will have a positive impact in the metal's consumption coming from the Transportation sector.



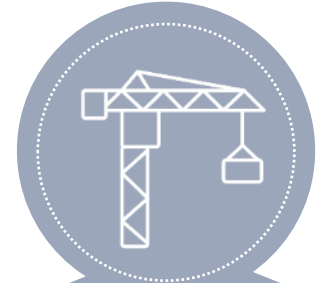
## Electrical

The **transition from traditional sources of power towards non-conventional renewable energy sources** represents one of the most substantial opportunities for the aluminium industry over the coming years



## Packaging

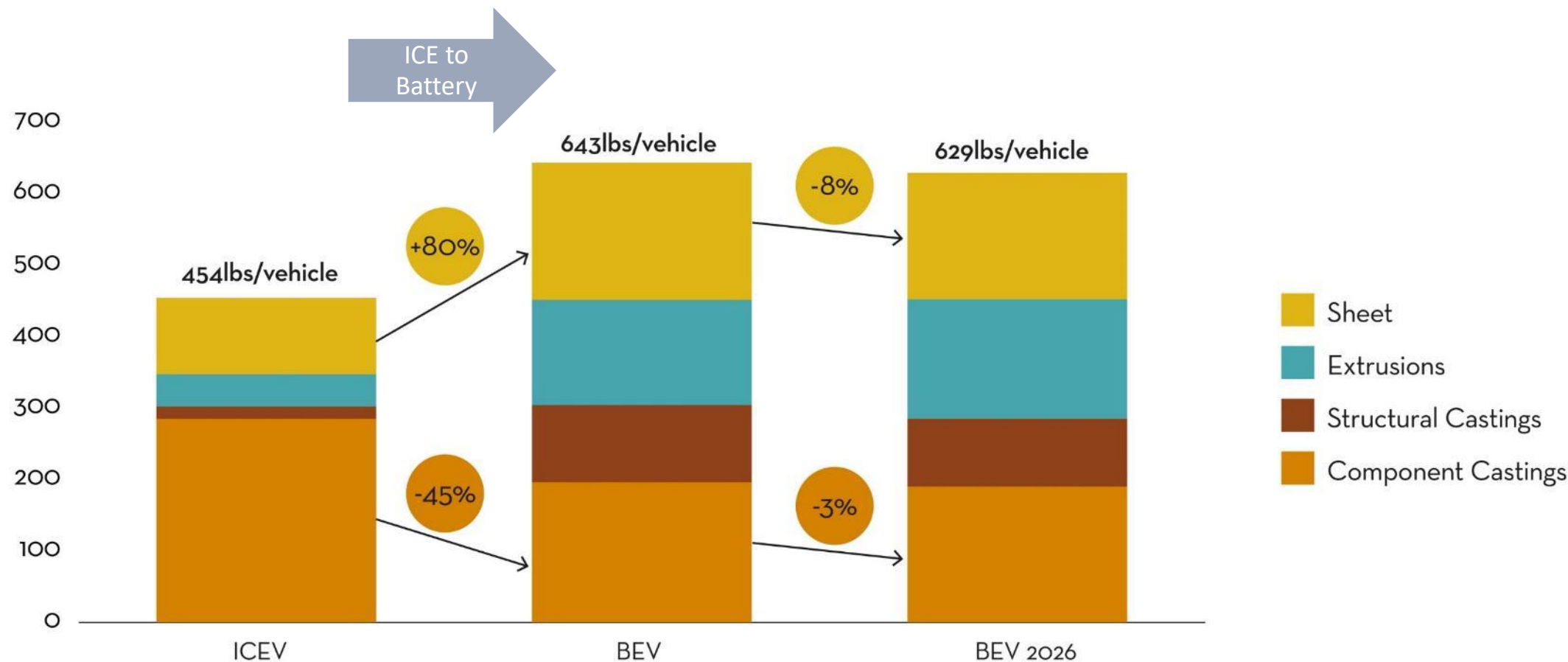
Driven mainly by **the rise in popularity of canned drinks** in North America, Europe and China, the packaging sector is experiencing a surge in demand of aluminium



## Construction

In contrast to other sectors, the construction sector is not expected to be driven by ESG trends and decarbonization policies.

# Automotive - The transition to EVs

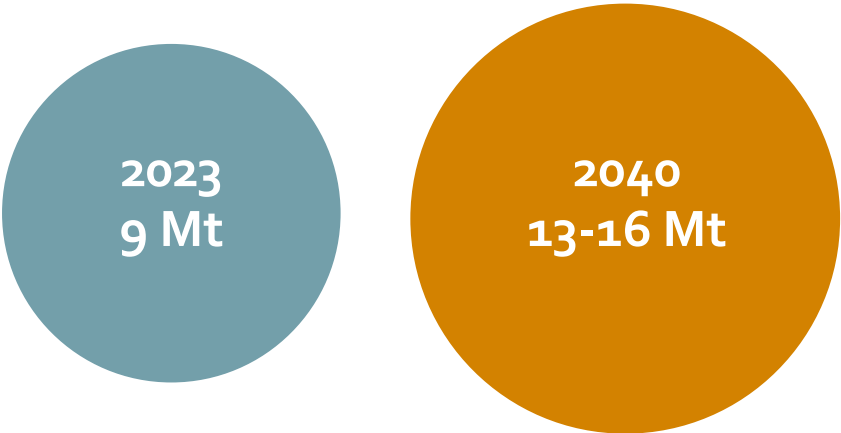


Source: Aluminum Association and DuckerFrontier:

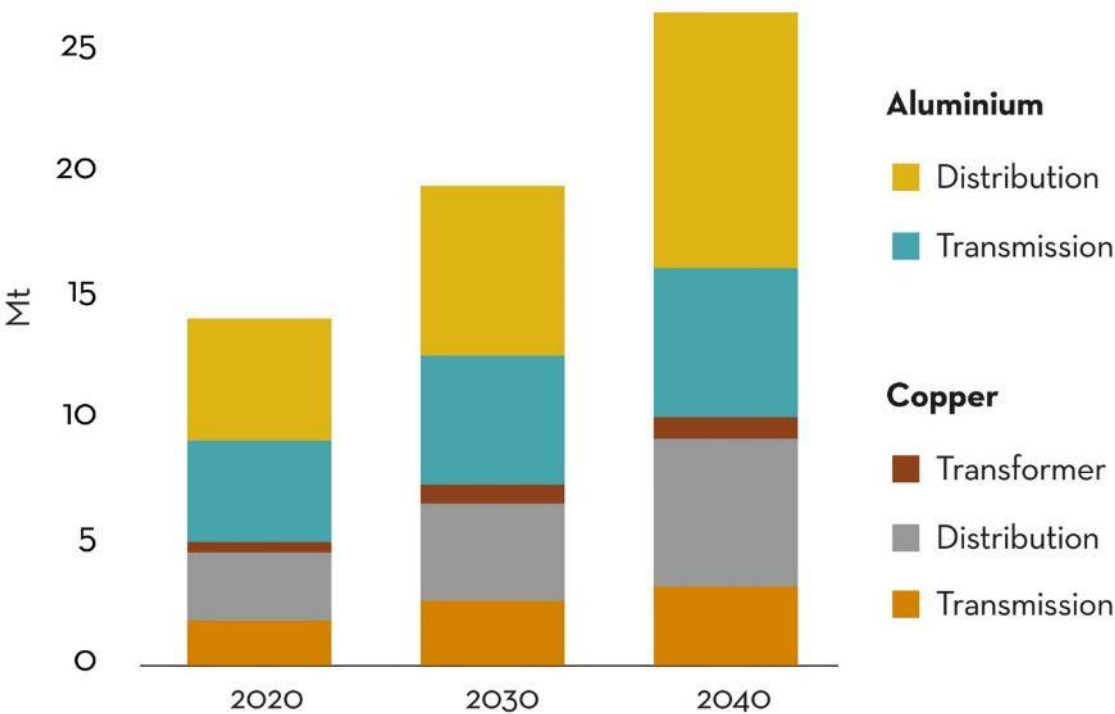


# Aluminium Demand For Electricity

Projected aluminium demand for electricity grid additions and replacements **increasing** from 9 Mt to 13-16 Mt by 2040.



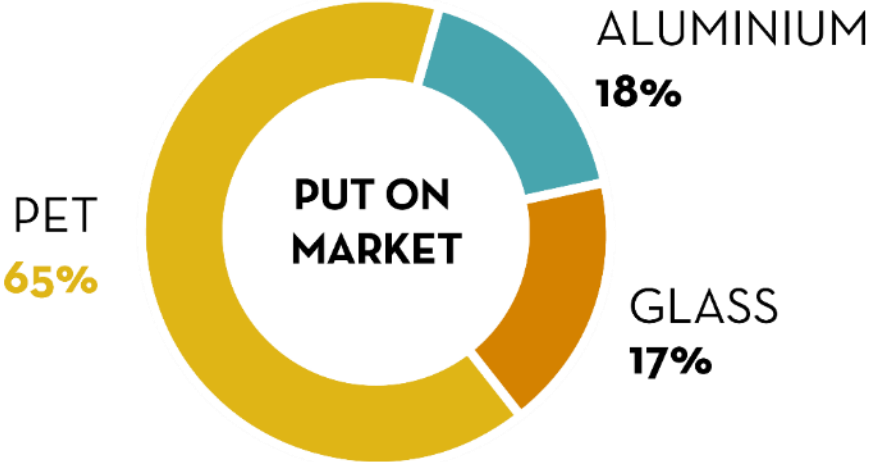
SDS  
Sustainable Development Scenario



Source: The Role of Critical Minerals in Clean Energy Transitions,  
IEA World Energy Outlook Special Report, May 2021

# Aluminium Cans: The Best Solution For A Circular Economy

Composition of containers put on the market, based on volume



**2 out of 3  
cans recycled**

One out of three aluminium cans is back on the shelf in as little as 60 days, and one other gets recycled into other highly recyclable products.



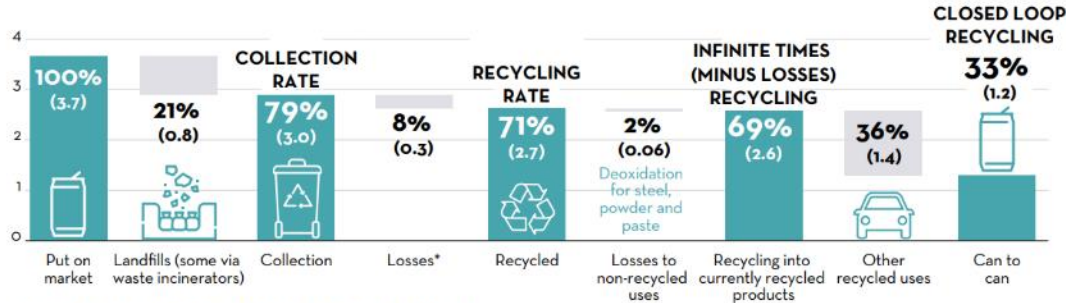
Source: <https://international-aluminium.org/resource/aluminium-beverage-can-study/>

# A Circularity Case For Aluminium Compared With Glass And Plastic

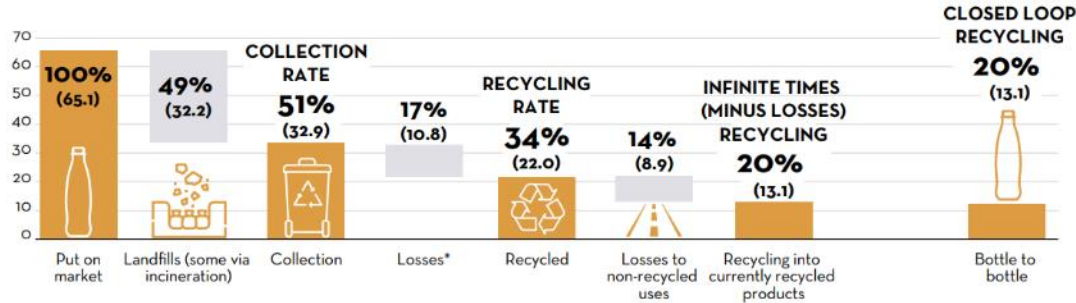
Includes USA, Brazil, Europe, Japan, China

2019 Real Recycling Rate

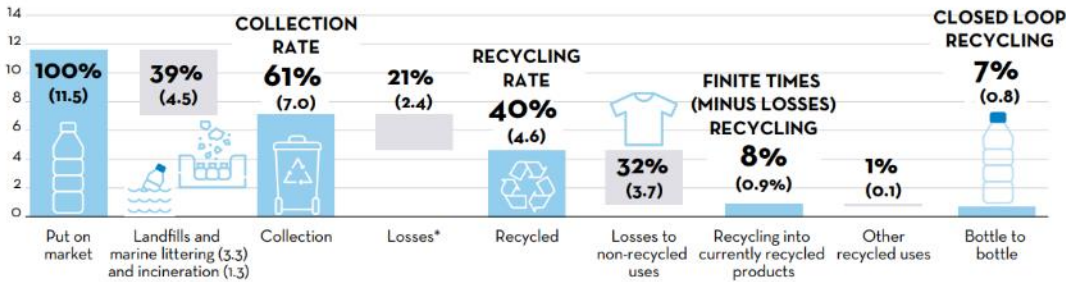
## ALUMINIUM CANS (MILLION TONNES)



## GLASS BOTTLES (MILLION TONNES)



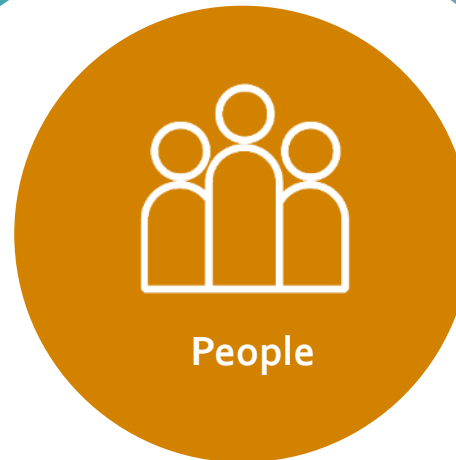
## PET BOTTLES (MILLION TONNES)



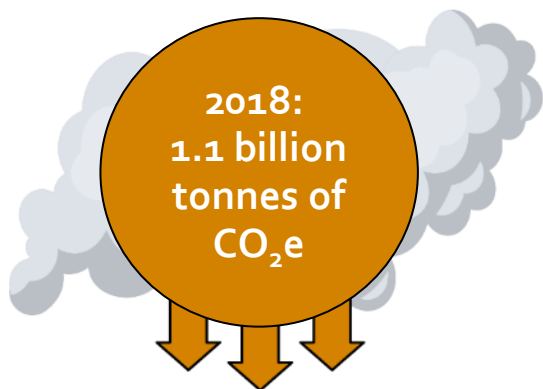
2019 Recycled Products

# Sustainability issues for the aluminium industry

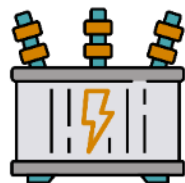
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# The climate change challenge

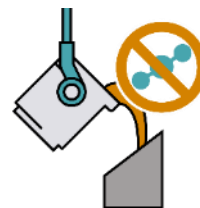


700 million



Electricity

300 million

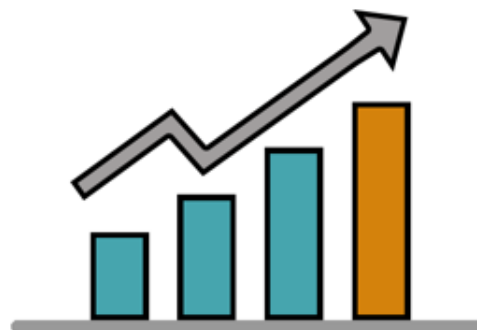


Process & Thermal

<100 million



Ancillary & Transport



2050 demand

By 2050, aluminium sector emissions need to be reduced by 80% while demand is forecast to grow by 70%.



# Greenhouse Gas Pathways To 2050

**2018**

IAI baseline

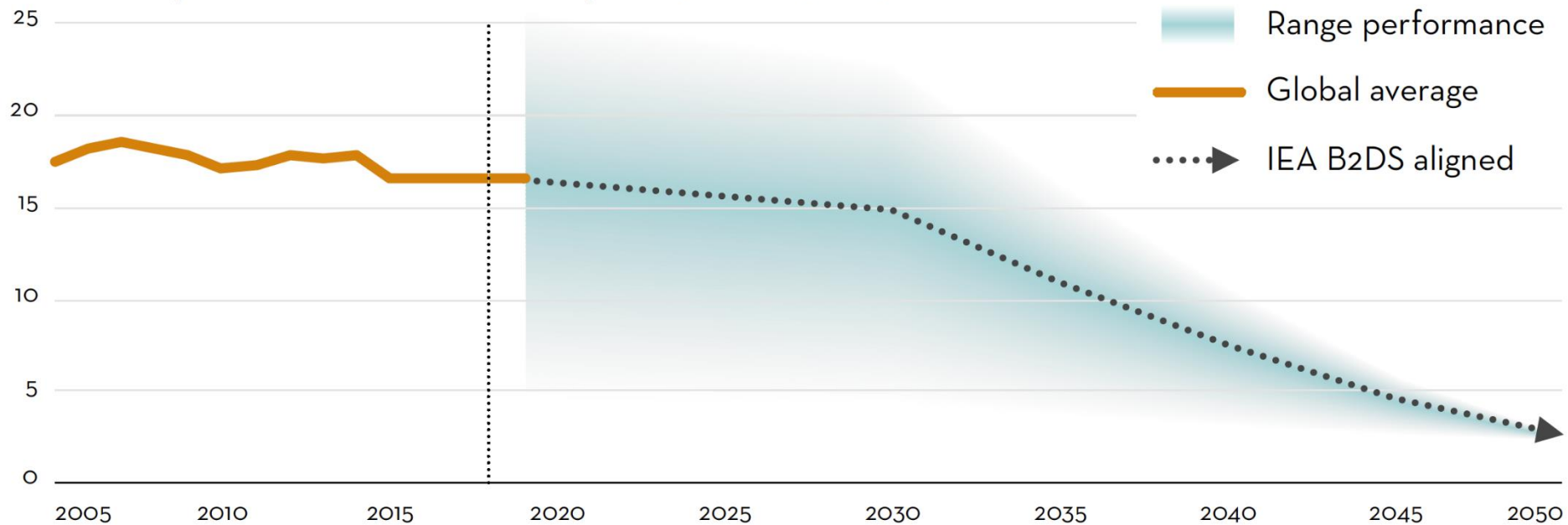
**BAU**

IAI 2050 **Business  
As Usual** scenario

**B2DS**

2050 carbon budget aligned with International Energy Agency  
**Beyond 2 Degrees Scenario**

## Primary aluminium carbon footprint (t CO<sub>2</sub>e/t Al)

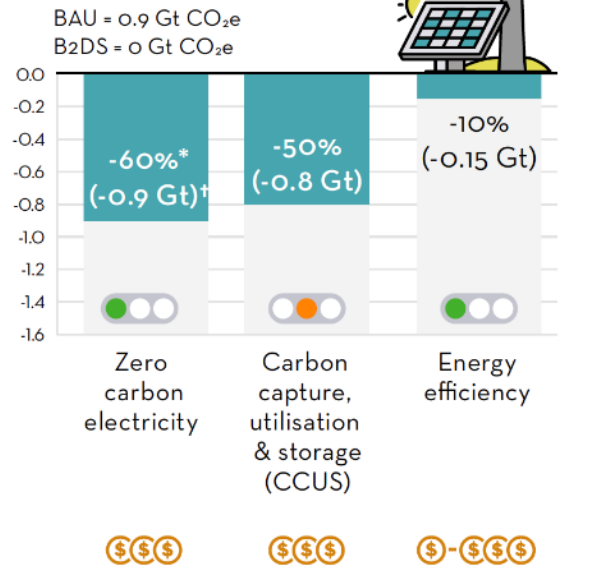


# Greenhouse Gas Pathways To 2050

## GREENHOUSE GAS EMISSIONS REDUCTION PATHWAYS

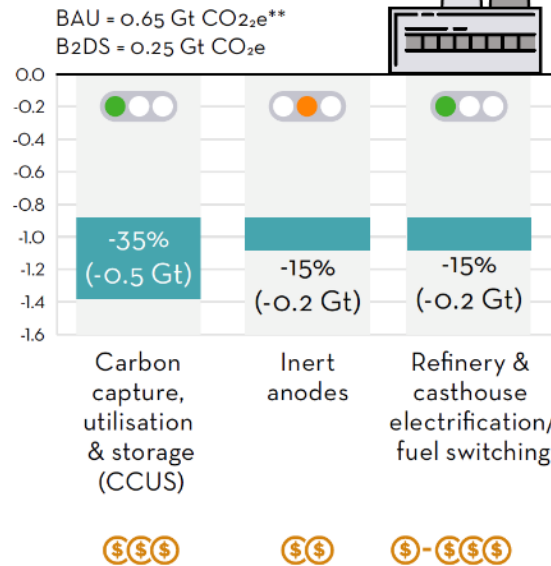
### Pathway 1

#### Electricity decarbonisation potential



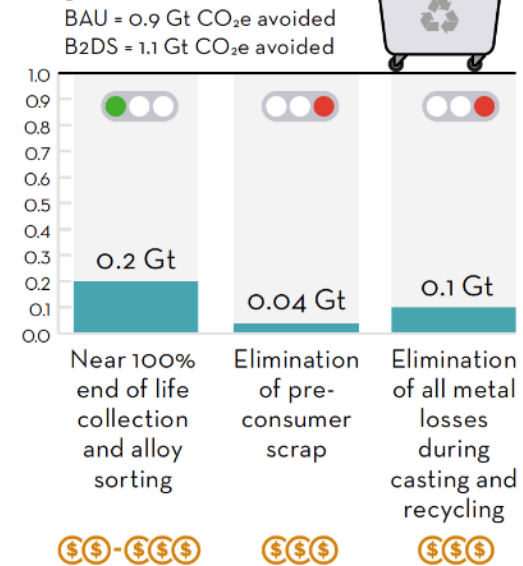
### Pathway 2

#### Direct emissions potential



### Pathway 3

#### Recycling & resource efficiency potential

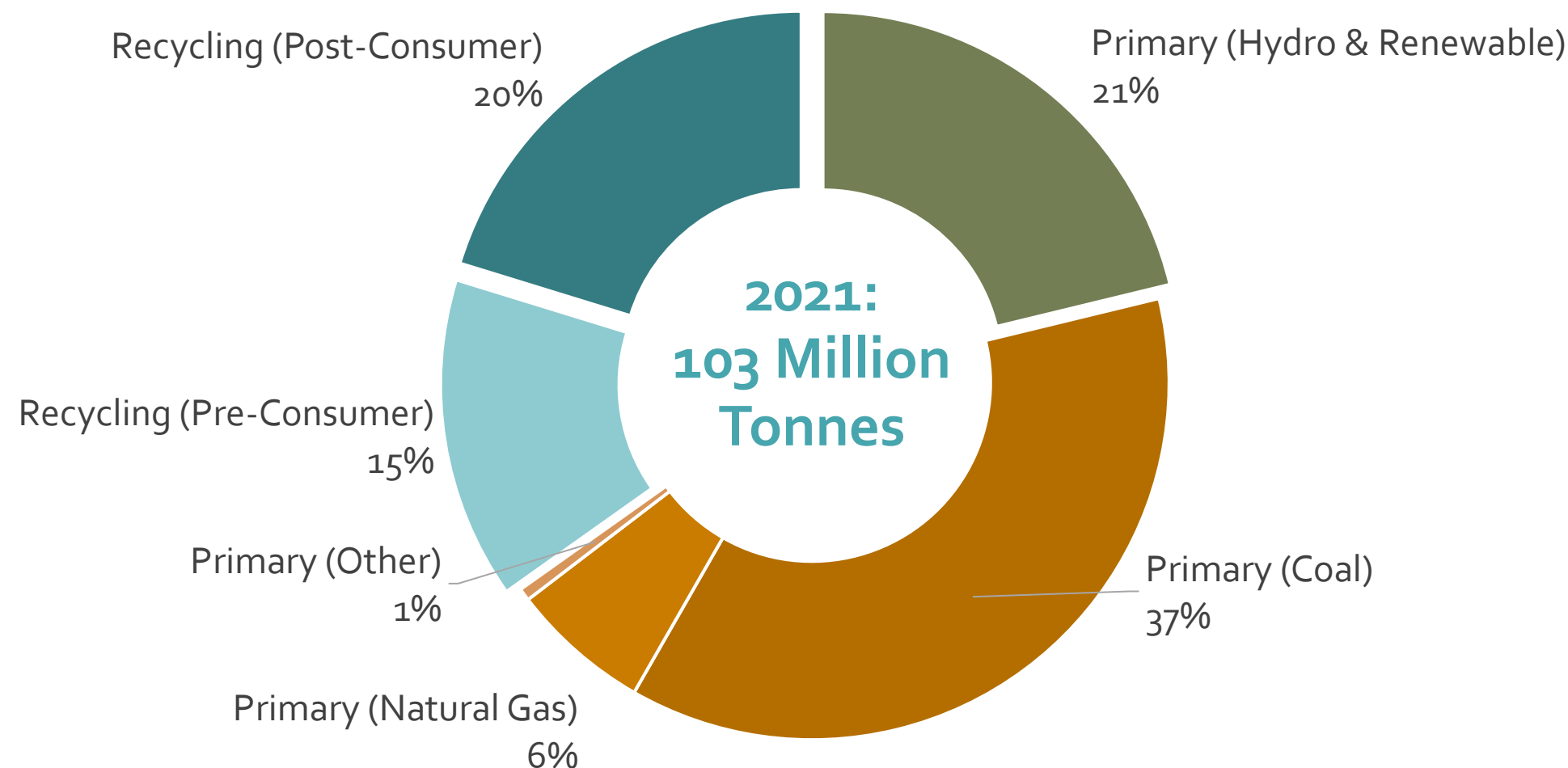


\* Potential reduction on BAU (1.6 Gt CO<sub>2</sub>e) emissions † Absolute CO

\*\* Includes 0.15 Gt CO<sub>2</sub>e from indirect emission sources (predominantly input materials & transport)

\$ Investment required

# Aluminium Production by Source



# Sustainability and the Aluminium Industry

Aluminium is part of the sustainability solution.



Aluminium has natural advantages over other materials.



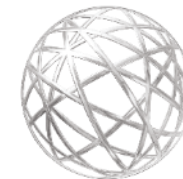
To grasp opportunities, we must demonstrate that aluminium is sustainable.



Decarbonisation is a key part of sustainability for the aluminium industry.



# Thank you

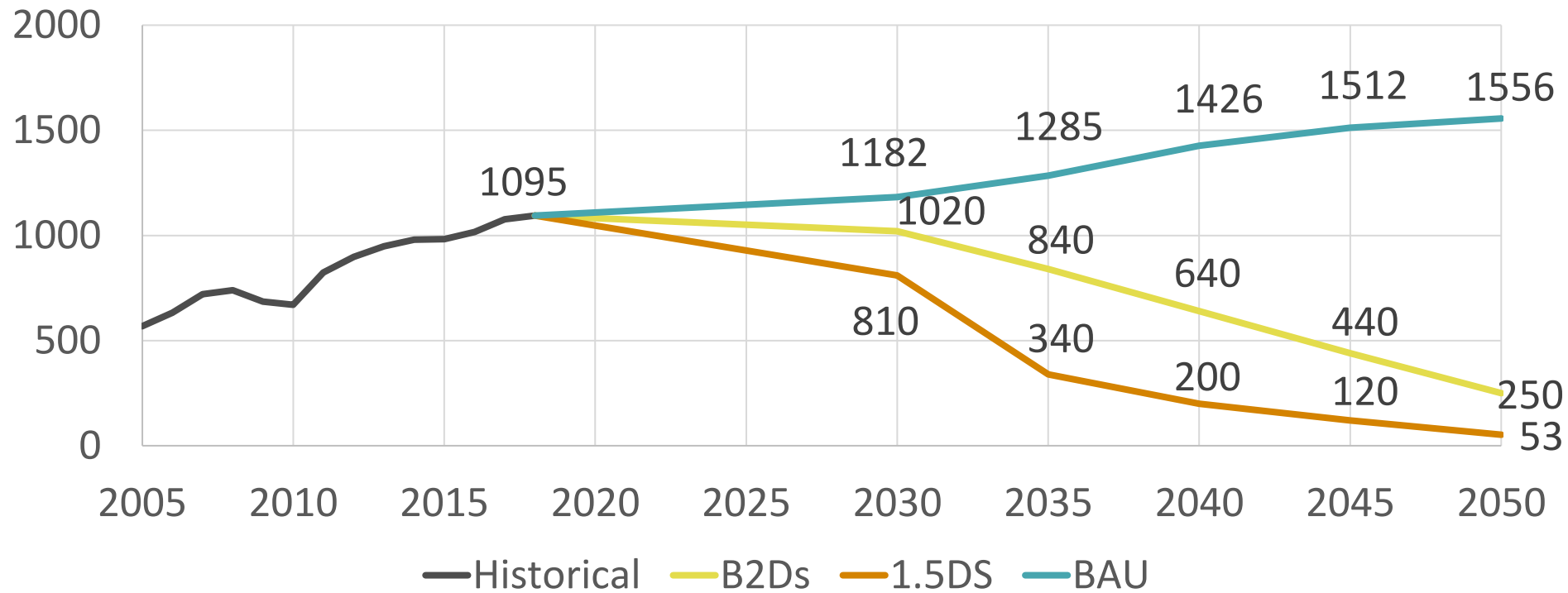


INTERNATIONAL  
**ALUMINIUM**



# IAI Emissions Scenarios

Aluminium Sector (million tonnes CO<sub>2</sub>e) – 2018



BAU

B2DS

1.5DS

IAI GHG Pathways to 2050 (IAI, 2021)