

Alumina Limited – 2021 ESG Presentation

Attached is Alumina Limited's first ESG Presentation to investors and analysts – Contributing to a Sustainable World.

This ASX announcement was approved and authorised for release by Mike Ferraro, Chief Executive Officer.

Forward-looking statements

Neither Alumina Limited nor any other person warrants or guarantees the future performance of Alumina Limited or any return on any investment made in Alumina Limited securities. This document may contain certain forward-looking statements, including forward-looking statements within the meaning of the US Private Securities Litigation Reform Act of 1995. The words "anticipate", "aim", "believe", "expect", "project", "estimate", "forecast", "intend", "likely", "should", "could", "will", "may", "target", "plan" and other similar expressions (including indications of "objectives") are intended to identify forward-looking statements. Indications of, and guidance on, future financial position and performance and distributions, and statements regarding Alumina Limited's future developments and the market outlook, are also forward-looking statements.

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Alumina Limited

Contributing to a Sustainable World
October, 2021

Disclaimer

Summary Information

This Presentation contains summary information about the current activities of Alumina Limited (ACN 004 820 419) (**Alumina**) and its subsidiaries as at the date of this Presentation. The information in this Presentation should not be considered to be comprehensive nor to comprise all the information that a reader may require in order to make an investment decision regarding Alumina securities. This Presentation should be read in conjunction with Alumina's other periodic and continuous disclosure announcements lodged with the ASX, which are available at www.asx.com.au.

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Introduction

Sustainability has been in AWAC's DNA for 60 years

Aluminium is core to our sustainable future

- Unique characteristics: Lightweight, recyclable
- Positive demand outlook
- Key metal in a decarbonised world

AWAC's assets are highly competitive on key sustainability measures

- First quartile global emissions refining curve
- Average 0.51 t CO₂e / t of alumina produced
- 42% reduction in emissions since 2010 (Paris Agreement targets a 45% reduction by 2030)

Proven ESG management over 60 years

- Jarrah forest stewardship over 60 years
- Development of the Juruti mine in the Amazon
- Demonstrated success in decommissioning & rehabilitating

A focus on the future & innovation

- Mechanical Vapour Recompression
- Expanded sustainability team, focus on governance & influencing on key ESG issues
- Improvement in ESG disclosure
- Social practice and engagement with Indigenous People

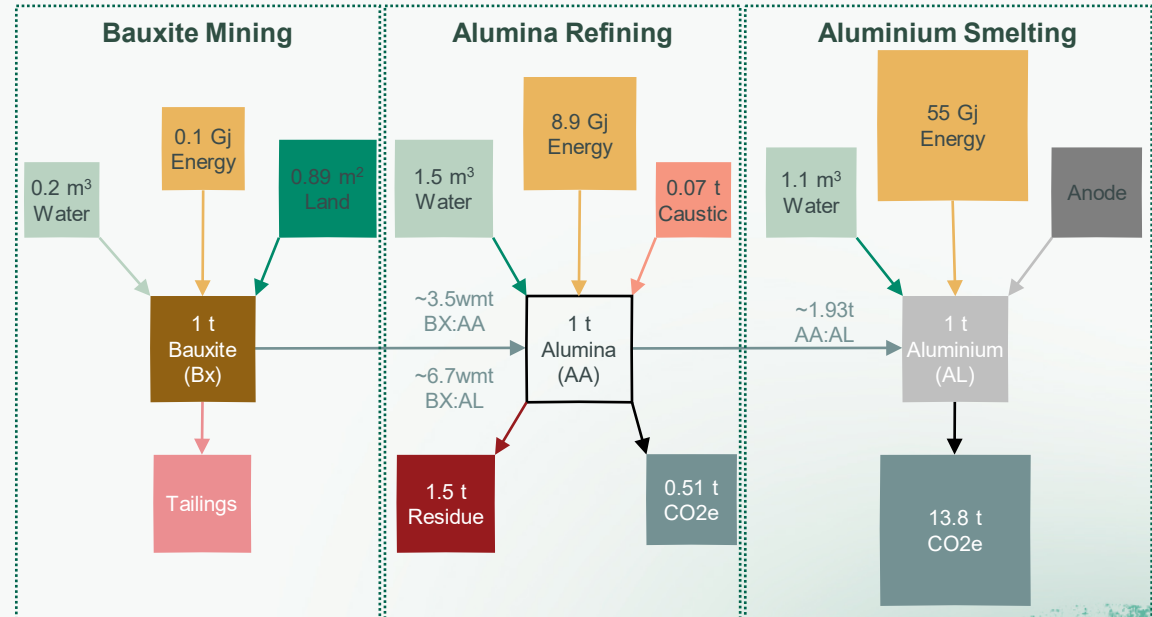


AWAC's material ESG issues

AWAC's value creation system & views of stakeholders determine material ESG issues

- Our sustainability assessment and reporting is done through a materiality lens
- Industrial processes and stakeholders impacts dictate material issues
- Site specific ESG focus may depend on the environment (e.g. preserving biodiversity in the Amazon)
- OHS is universal for AWAC sites
- Relationships with communities are very important as they are a basis for our social licence, and are a key input to manage rehabilitation and end of life of the assets
- Alumina Limited also supports the UN Sustainability Development Goals, and there is a linkage between these and Alumina's material ESG issues. This linkage is described in the 2020 Sustainability Update.

Average key inputs & outputs for AWAC's production



Alcoa Corporation's GHG Emissions



Ambition to achieve net-zero across global operations by 2050

- Endeavor to reach net-zero GHG emissions by 2050 for direct (scope 1) and indirect (scope 2 emissions) (Announced on 4 Oct, 2021)
 - 2025: 30% reduction in smelting & refining emissions (2015 baseline)
 - 2030: 50% reduction in smelting & refining emissions (2015 baseline)
 - No separate target for AWAC, but it is part of the broader Alcoa goal
- Develop new technologies to unlock decarbonisation at scale:
 - Elysis, zero carbon smelting process
 - MVR, to reduce emissions in the alumina refining process
- Alumina Limited welcomes the announcement
- Alumina notes that progress in further reducing emissions is dependent on:
 - Renewable energy growth
 - Adaption of new technology that is commercially scalable in alumina refining
- We will update our Climate Change position statement in 2021 and in that work consider Alumina Limited's position on net zero emissions.



FOR IMMEDIATE RELEASE

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Alcoa States Its Ambition to Reach Net Zero Greenhouse Gas Emissions by 2050

PITTSBURGH – October 4, 2021 – Alcoa Corporation (NYSE: AA) today announced an ambition to achieve net-zero greenhouse gas (GHG) emissions across its global operations by 2050.

This endeavor to reach net-zero GHG emissions by 2050 for direct (scope 1) and indirect (scope 2) emissions aligns with the Company's strategic priority to advance sustainably and complements the Company's existing targets, which include reducing direct and indirect GHG emissions from aluminum smelting and alumina refining operations by 30 percent by 2025 and 50 percent by 2030 from 2015 baselines.

"We're proud of our commitment to responsible environmental, social, and governance practices, and this new endeavor is an extension of our ongoing efforts to reach a decarbonization pathway," said Alcoa President and CEO Roy Harvey. "We have been recognized for our environmental practices, and we are developing new technologies that will help us progress toward our net-zero ambition by 2050."

Alcoa intends to grow its low-carbon portfolio, increase the use of renewable energy at its operations, and bring breakthrough innovations to the market over time. The Company plans to further reduce the emissions profile of its alumina refining system and its smelting portfolio, which is powered by over 75 percent renewable energy.

Alcoa is also developing new technologies, which are important to unlocking decarbonization at scale, including the [ELYSIS™ zero-carbon smelting process](#) and [mechanical vapor recompression \(MVR\)](#) to reduce emissions in the alumina refining process.

Alcoa invented the inert anode technology for aluminum smelting that serves as the basis for the ELYSIS joint venture. This technology emits pure oxygen and eliminates GHG emissions associated with the traditional process to make molten aluminum. Batches of carbon-free aluminum produced by ELYSIS have been sold for use by such companies as Apple and Audi, as the ELYSIS joint venture continues working toward an industrial scale.

MVR, a renewable energy-powered process that Alcoa is currently evaluating in Australia with support from a grant from the Australian Renewable Energy Agency (ARENA), is another innovation with the potential to significantly reduce carbon emissions in alumina refining.

Aluminium is core to our sustainable future



Lightweight and Recyclability Underpin Aluminium as a Metal for the Future

Light weighting

Every kilogram of aluminium replacing steel in car manufacture reduces the overall weight of the vehicle by a further kilogram. Using 100 kg of aluminium in a car reduces CO₂ emissions by up to eight grams per kilometre travelled, saving up to 46 litres of fuel per year.

Recyclability

Aluminium can be recycled over and over again without any loss of quality. Aluminium is one of the most recycled materials on earth. Almost 75 per cent of the 1.5 billion tonnes of aluminium ever produced is still in use today.

Europe's light-weighted fleet was set to save roughly 50 million tonnes of CO₂ over the life of the cars being built in 2019, that is nearly a 3 to 1 ratio of carbon saved compared to carbon emitted in the aluminium built into Europe's cars that year

A WORLD VIEW

75%

Around 75% of the almost 1.5 billion tonnes of aluminium ever produced is still in productive use today.



32%

The 2018 global Recycling Input Rate (RIR) of aluminium is currently 32%. The RIR is an indicator of the proportion of recycled from new¹ and old² scrap contained in the metal produced in a given region.



76%

The global Recycling Efficiency Rate (RER) of aluminium is currently 76%. The RER defines how efficiently aluminium is recycled throughout the value chain. It is an indicator used to estimate the amount of recycled aluminium produced annually from new scrap¹ and old scrap², as a percentage of the total amount of available scrap sources. This rate includes collection, processing and melting losses, but internal scrap³ is not included.

Aluminium is pivotal to a decarbonized world

Electric Vehicles

An EV can contain up to 250 kg of aluminium



Battery Box
contains the battery pack



Electric Motor Housing
protects the electric motor bodies



Other components
aluminium is widely used in EVs from wheels to transmission

Total demand in 2030: **12 Mt**

Solar Panels

In a solar panel there are

7.5 t per MW of aluminium



Panel Frames
protect the key components



Racking
fixes the solar panels to various surfaces



Supports
on which the panels are attached

Total demand in 2030: **3.8 Mt**

Wind Turbines

There are approximately

1 t per MW of aluminium

in a wind turbine



Nacelle
houses transformation and generation power units



Tower
supports the turbine

Total demand in 2030: **0.1 Mt**

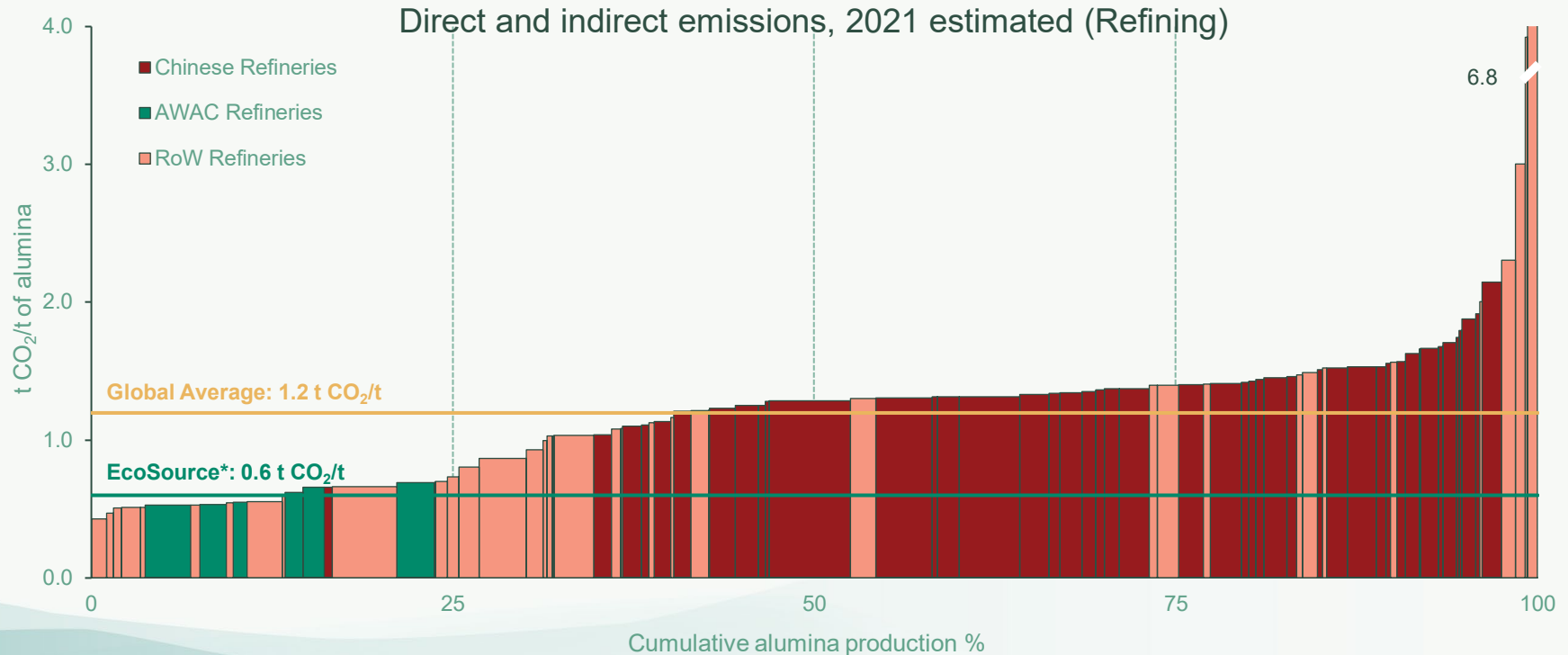
AWAC's assets are highly competitive on key sustainability measures



AWAC is the lowest CO₂ emitter amongst major alumina producers



Our relative emissions are a competitive advantage

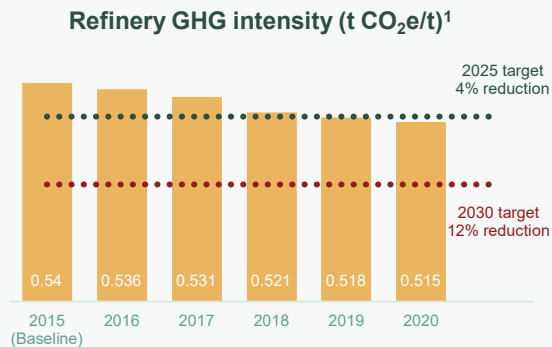


Source: CRU, July 2021

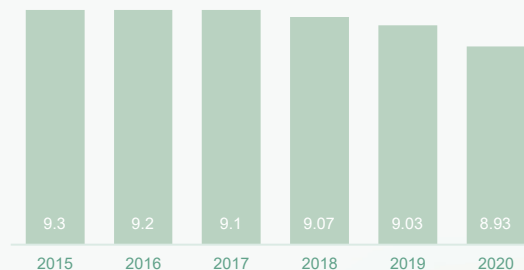
*EcoSource: AWAC's low carbon smelter grade alumina (SGA) product that has no more than 0.6 tonne of carbon dioxide equivalent per tonne of alumina

Energy efficiency & greenhouse emissions

Refining

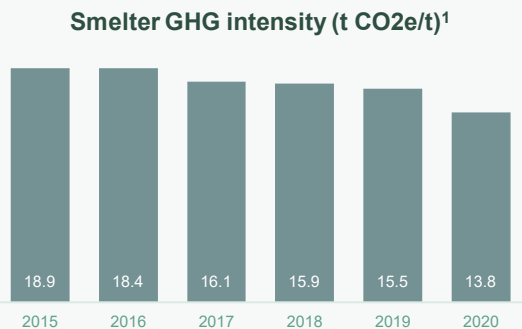


Refinery energy efficiency (Gj/t)¹

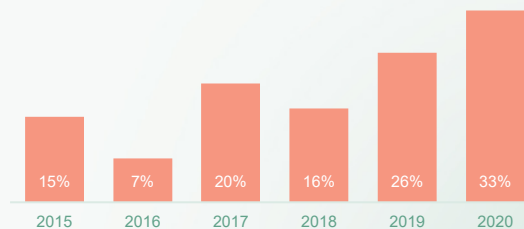


- Production increases improved the energy efficiency and GHG intensity of AWAC's refineries

Smelting



Renewables (% of electricity mix)^{1,2}

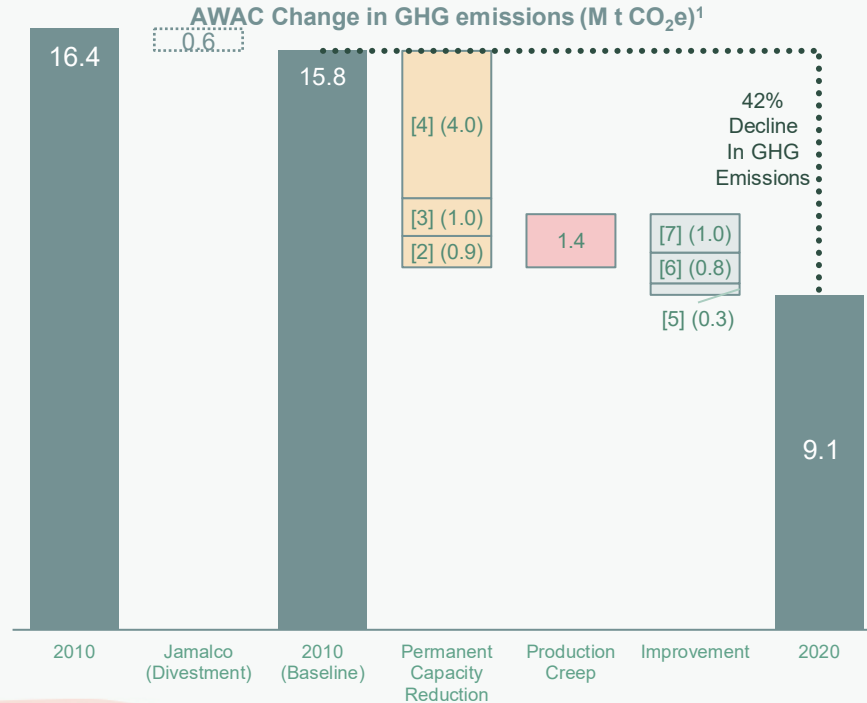


- AWAC uses 33% renewable electricity across its facilities
- Grid greening is the driver of GHG intensity at Portland

¹Full facility basis for AWAC operated & controlled assets (i.e. consolidated, includes equity interest of minority owners).
Excludes Ma'aden, CBG, MRN

²Purchased grid electricity for all AWAC sites

A Lower Carbon AWAC



2010 - 2020

- AWAC has reduced its emissions by 42%
- Current portfolio is cleaner, lower cost, less reliant on fuel oil
- Improvement driven by closure of high emission assets, fuel mix & an influx of renewables in electricity grids (“grid greening”) particularly at Portland

Looking forward

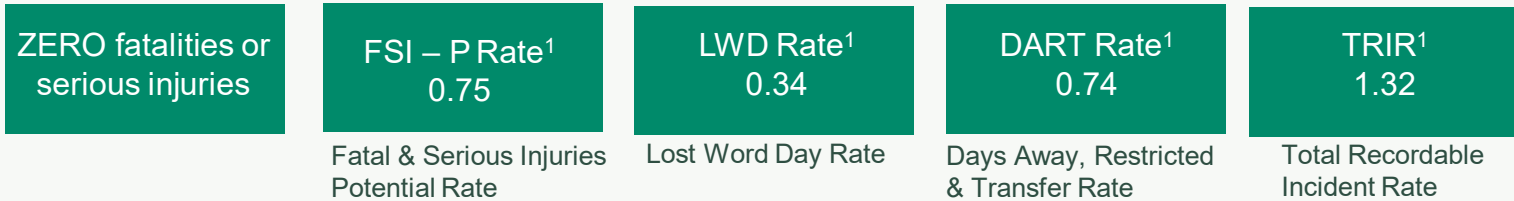
- Grid greening, potential fuel switches to further reduce GHG
- R&D into mechanical vapor recompression (MVR), preparing AWAC for a low carbon world
- AWAC is set to exceed a 45% reduction in GHG by 2030 from a 2010 baseline⁸

¹ Scope 1 & 2 emissions, AWAC equity share basis (39.96% of Alumar, 55% of Portland). Excludes Ma'aden, CBG, MRN
As per chart - ^[2]Point Comfort, ^[3]Suralco, ^[4]Point Henry, ^[5]San Ciprian fuel switch, ^[6]Efficiency / fuel mix, ^[7]Portland electricity

⁸Jamalco has been excluded from the baseline as this asset was a divestment

Safety Goal: zero fatalities, zero serious health impacts

2020 AWAC Performance



- Prioritised safety plan actions based on operational risk profile
- Commenced safety culture assessments
- 20% of salaried annual incentive compensation plan for AWAC employees focussed on safety targets
- Implemented decisive measures to minimise risk of exposure to COVID-19

¹ per 100 full time workers

AWAC Impoundments Review

- AWAC/Alcoa revised its impoundment management policies, standards and procedures, following a comprehensive review of its practices
- In 2020, a mandated Global Impoundment Policy was implemented for AWAC's residue and tailings dams
- The main tenet of the Policy is: Plan, design, construct, operate, maintain and close all Impoundments in accordance with the Alcoa Mandated Impoundment Standards and Guidelines, the International Council on Mining and Metals (ICMM) Global Tailings Standard, or the laws and regulations of the country in which the Impoundments are located (whichever are higher)



Management Regime: Key features

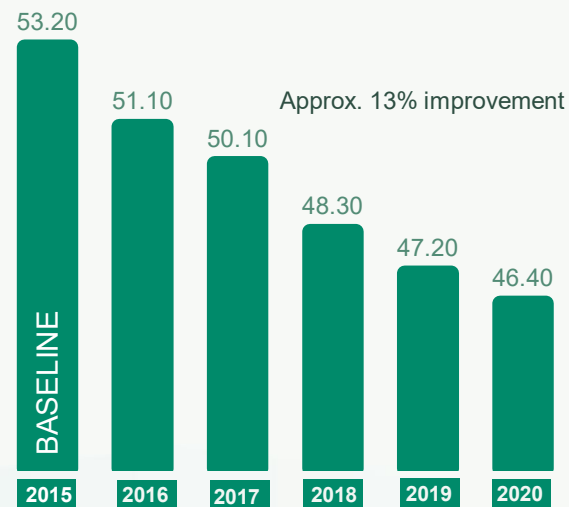
- An impoundment governance structure that provides global oversight with location accountabilities and responsibilities
- Trained and qualified personnel in key roles, including geotechnical engineering oversight at each location
- Review and assurance, such as peer reviews of impoundment design and annual independent third-party audits/inspections;
- Emergency preparedness and response plans for unforeseen or extreme events:
- Aligned with Globally recognised guidelines and conform with the Global Industry Standard on Tailings management
- Long-term (25-year) impoundment master (strategic) plans being finalised

All impoundments (including MRN and Ma'aden) total 90 of which:

- 51 are active
- 9 closed (Kwinana, Alumar and Hedges) and
- 30 inactive, Suralco, Point Comfort and MRN.

Bauxite residue land requirements

m² of land required per 1,000 tonnes of alumina produced



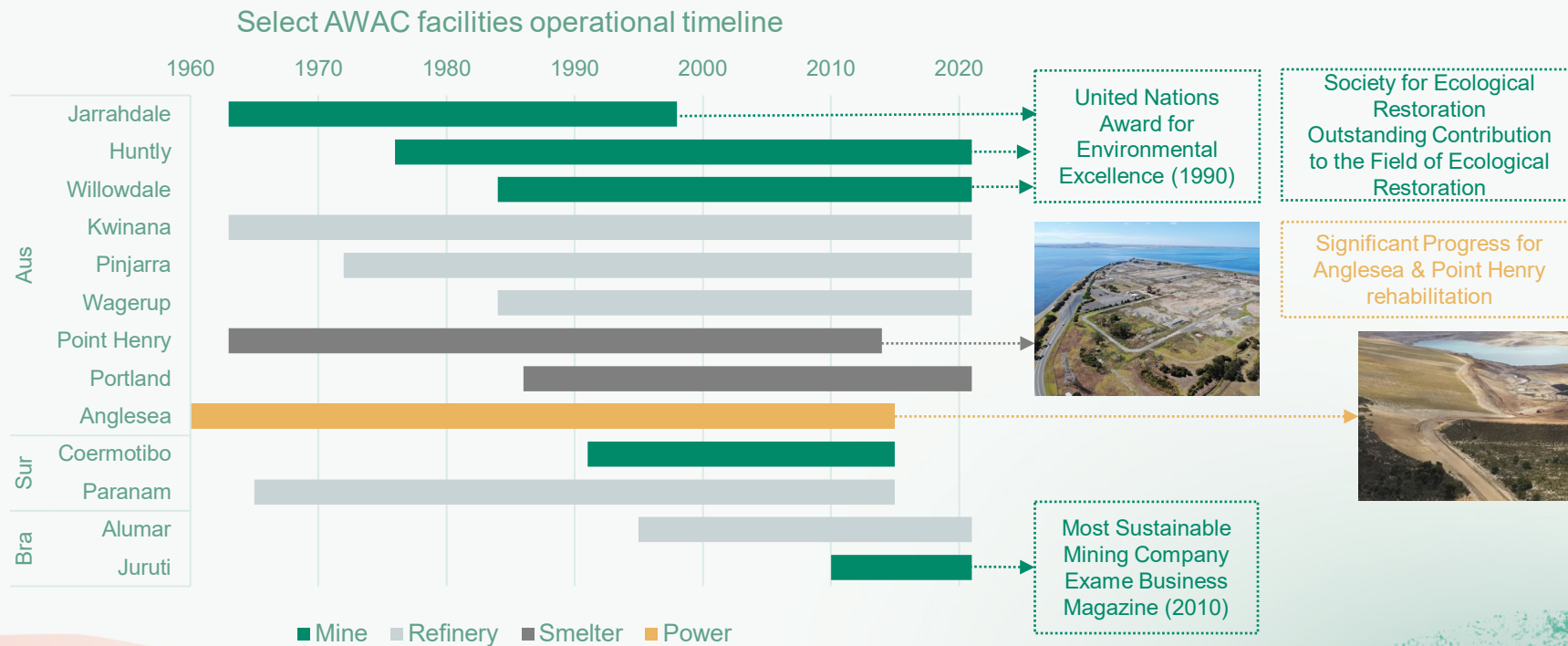
Data is for operational sites only. Changes from prior reporting are due to the removal of non-operational sites.

Proven ESG management over 60 years



ESG management over 60 years

A history of stewardship in biodiverse areas



Mine Rehabilitation & Biodiversity

ASSESSMENT

- Environmental assessments
- Engage with stakeholders – develop rehabilitation plan
- Identify potential impacts to biodiversity
- Ecosystem services benefits – eg. soil conservation

PROTECTION

- Biodiversity Policy & Standards
- Biodiversity Action Plans for all AWAC locations
- Respect legally designated areas
- No exploration or operation in World Heritage or IUCN¹ sites
- Agree post-mining use
- Progressively rehabilitate

GOALS

- No net loss of biodiversity for new sites of expansion sites
- Return land to pre-mining use or other sustainable future productive use
- Minimise enviro footprint
- Maintain a running five-year average ratio of 1:1 (meaning less than one) for active mining disturbance² to mine rehabilitation

¹ International Union for Conservation of Nature

² Excluding long-term infrastructure

Mine Rehabilitation & Biodiversity

Case study: WA mining operations

- AWAC's key objective is to re-establish a self-sustaining jarrah forest ecosystem that fulfils forest land uses that include conservation, timber production, water catchment and recreation.
- The Jarrah forest is recognised as one of the biodiversity hotspots of the world ranking alongside tropical rainforest for animal and plant diversity
- Annual monitoring of plant species richness is conducted to measure rehabilitation performance
- The first mining operation in the world to achieve 100% plant species richness in AWAC's WA rehabilitated mining areas
- Numerous environmental awards including Society for Ecological Restoration International Award for Outstanding Contribution to the Field of Ecological Restoration (2003)
- All AWAC mining and refining operations have earned certifications from the Aluminium Stewardship Initiative (ASI).



Mine Rehabilitation

Case study: Juruti (Amazon rainforest) world class landscape restoration

- AWAC recognised for its innovative nucleation rehabilitation technique 50% faster rehabilitation
- Functional plant species present at 12 months (typically takes 3-5 years)
- Innovative benchmark - method adopted by government and other miners
- Promoting shared results for the environment and for communities – purchase rehabilitation seedlings from the community (who receive training and support) 92 families and 20 communities



0 months



18 months



36 months

Mine Rehabilitation & Biodiversity

Case study: Mine closure rehabilitation

AWAC's Anglesea coal mine on the former Power Station site was closed in 2015. Following extensive engagement with the community and key stakeholders, a draft Mine Rehabilitation and Closure Plan has been developed and major works undertaken towards a sustainable future use.

- Major mine earthworks completed (moving and reprofiling of 7m tonnes of material over two years)
- Revegetation strategy include native heathy woodland rehabilitation completed
- rehabilitation of the mine void has commenced to form a large water body, and access for potential future alternative
- Proposed integration of the Eden Project Anglesea concept for a world-class eco-tourism attraction



Community

Case Study: Juruti Bauxite Mine

Conservation International says of the (Juruti) project: “Alcoa is raising the bar quite high and is creating hopefully a new model of how mining projects can be established in Amazonia without creating new waves of deforestation in the region.”



1. Created a multi-stakeholder council, Sustainable Juruti Council (CONJUS) that serves as a channel for dialogue between civil society, the company and the public authorities;

2. A system of sustainability indicators and metrics, to generate knowledge and measure progress with input from 600 community members;

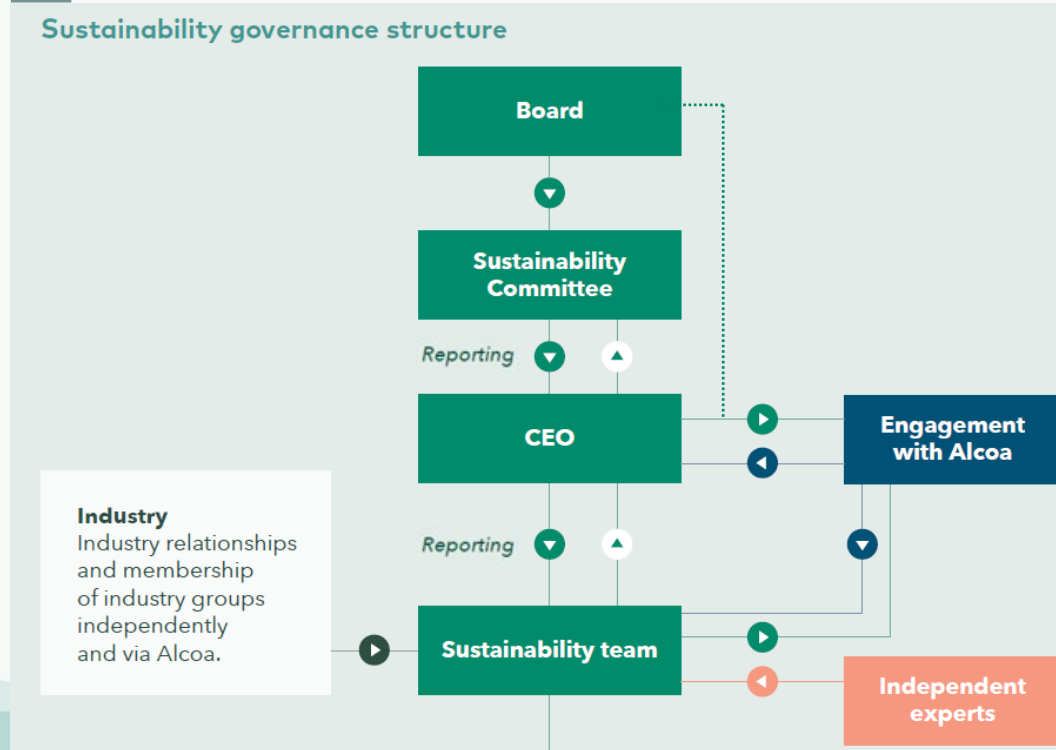
3. A development fund (FUNJUS) to allocate resources to be invested in sustainable initiatives proposed by the community itself. Funded construction of:

- Juruti community hospital & laboratory
- 16 classrooms & elementary school
- Legal complex & first Courthouse
- 3 deep freshwater wells
- Juruti cultural centre, &
- Facilitated business training

Governance

Alumina Sustainability Team

Sustainability governance structure



- CEO has responsibility for economic, environmental, and social topics, and engages regularly on key metrics and current issues
- In January 2021, we established a multidisciplinary sustainability team of four, led by our General Counsel
- Four key areas of focus:
 - Governance & reporting
 - Risk management
 - Metrics & targets
 - Strategy
- We have a significant role to play in understanding AWAC's sustainability risks and opportunities and guiding good outcomes through our governance involvement in AWAC
- Use of independent experts

A focus on the future & innovation



Mechanical Vapor Recompression (MVR)

A project with the potential to reduce refinery emissions

Project

- AofA conducting technical & commercial studies
- MRV turns waste vapor into steam
- ARENA grant of A\$11.3m
- If feasibility studies are successful, a 3Mw MVR module would be installed at Wagerup by 2023

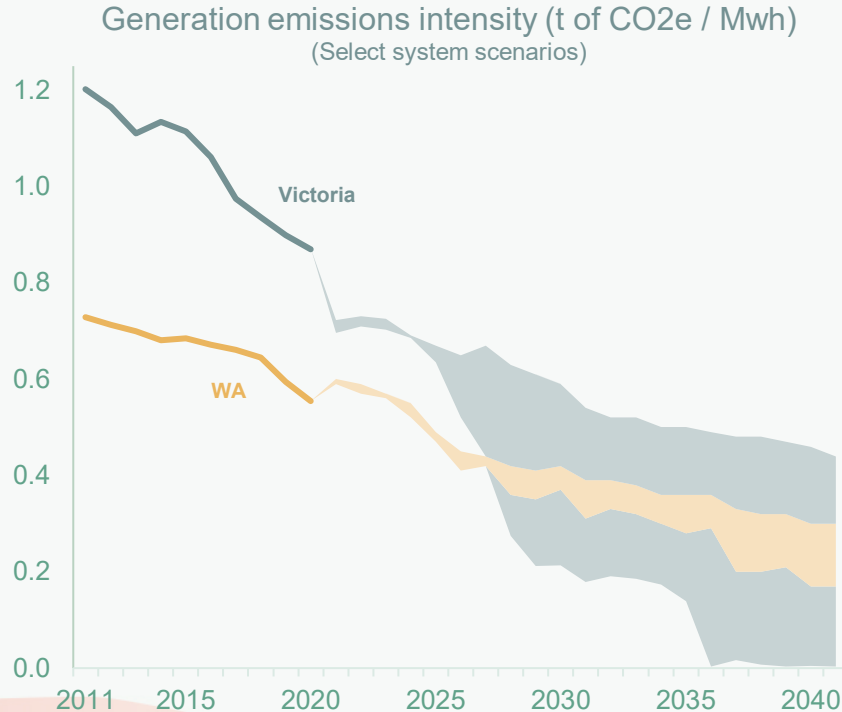
Benefits

- Carbon free, when combined with renewables
- Facilitated by Australia's renewable generation potential
- Could reduce a refinery's carbon footprint by 70%
- Reduces energy and water consumption



Decarbonisation of electricity grids

Grid greening benefits WA operations/Portland, could facilitate carbon free MVR



- AWAC uses approximately 5.3Twh² of electricity annually, the majority of which is Portland and WA refineries
- Grid emissions intensity expected to decrease with the influx of renewables
- Capitalises on Australia's exceptional renewable potential

¹Open NEM, AEMO Integrated System Plan 2021-2022 (Central & Step Change scenarios), WSP 2021 (Castaway & Double bubble scenarios),

²Full Facility Basis. Excludes Ma'aden, CBG, MRN

Transparency

Focus on improving TCFD compliance

TCFD Framework

1. Governance

- Board oversight ✓
- Management's role ✓

2. Strategy

- Risks & opportunities ✓
- Impact on organisation
- Resilience of strategy

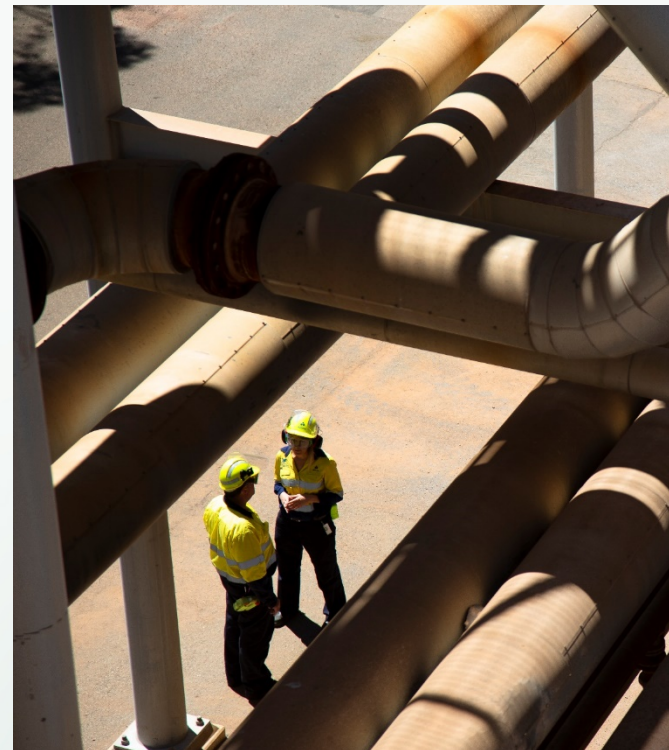
Focus
for 2022

3. Risk Management

- Risk identification and assessment processes ✓
- Risk management processes ✓
- Integration into overall risk management ✓

4. Metrics & targets

- Climate related metrics ✓
- Scope 1, 2, 3 GHG emissions ✓
- Climate related targets ✓



Human Rights

-
- ✓ Human Rights Risk Assessment at San Ciprian refinery & Juruti (2019)¹
 - ✓ Human Rights Due Diligence assessment at WA operations (2019) & Juruti (2020)¹
 - ✓ Initiated a gap analysis to the Voluntary Principles on Security and Human Rights – implement an action plan in 2021
 - ✓ Established regional human rights working group (2020)
 - ✓ Modern Slavery Statement lodged for AofA (June 2021) - No incidents of modern slavery identified in 2020
 - ✓ External third party living wage study conducted (2020) across all jurisdictions – confirmed AWAC pays a living wage
 - ✓ Became a member of the Western Australian Modern Slavery Collaborative
 - ✓ Supplier Standards were updated in 2020 to better incorporate, communicate and improve the visibility of AWAC's commitment to human rights and the certification requirements of the ASI Performance Standard and ICMM Performance Expectations
 - ✓ Launched inaugural Reconciliation Action Plan

¹ methodology of the Danish Institute for Business and Human Rights

Indigenous Peoples

Prevention of damage to sites of cultural significance

- Developed Indigenous Peoples Policy and mandated global standards for engagement with indigenous peoples and cultural heritage management
- Cultural awareness training conducted – training on cultural heritage under development
- Responsibility for cultural heritage & relationships with local Aboriginal corporations and family groups remains with the Location Manager

Intent

- Openly & honestly engage with indigenous and land connected peoples to accommodate each other's interests & formal agreements
- Recognise & respect rights – physical, spiritual, cultural, economic & general well being
- Respect their histories, cultures and aspiration for self-determination
- Operate with applicable laws and regulations



Q&A Session



Appendix

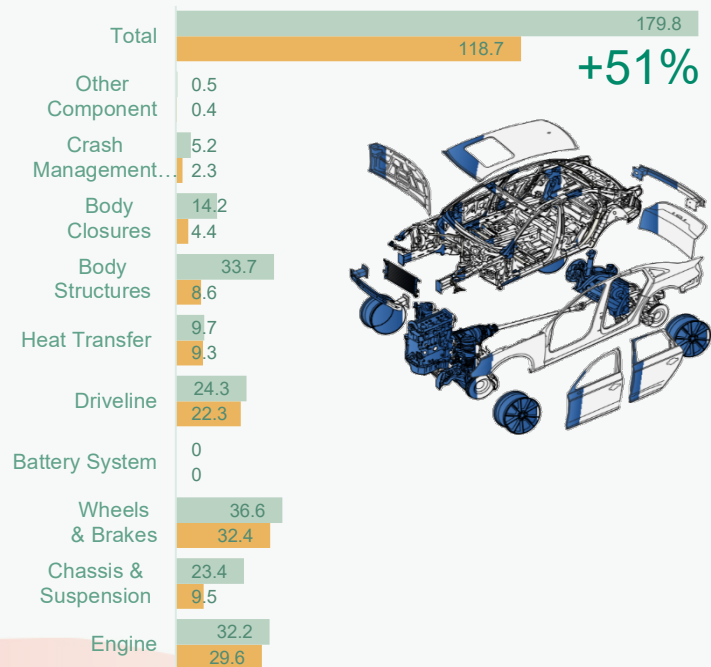


Electric Vehicles Use More Aluminium

Aluminium Penetration in Chinese Passenger Vehicles (kg)

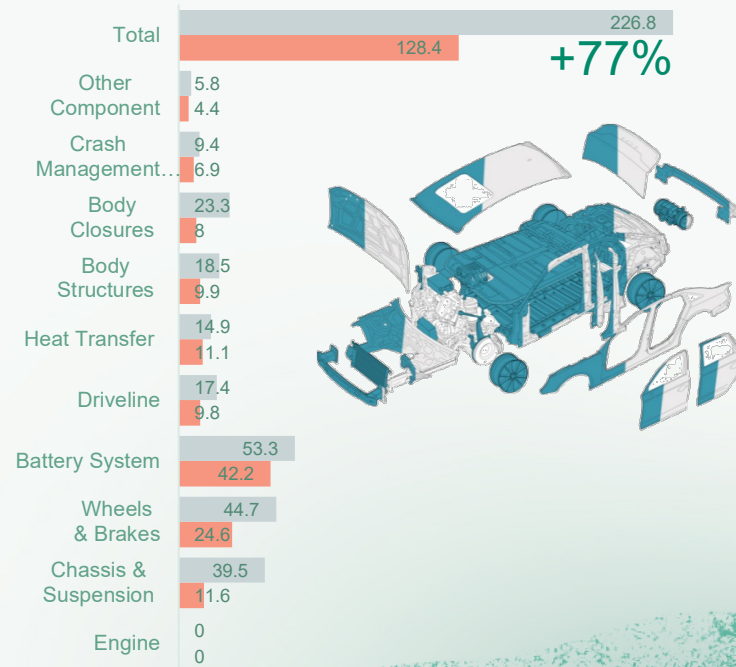
Internal Combustion Engine (ICE)

■ 2025 ■ 2018



Battery Electric Vehicle (BEV)

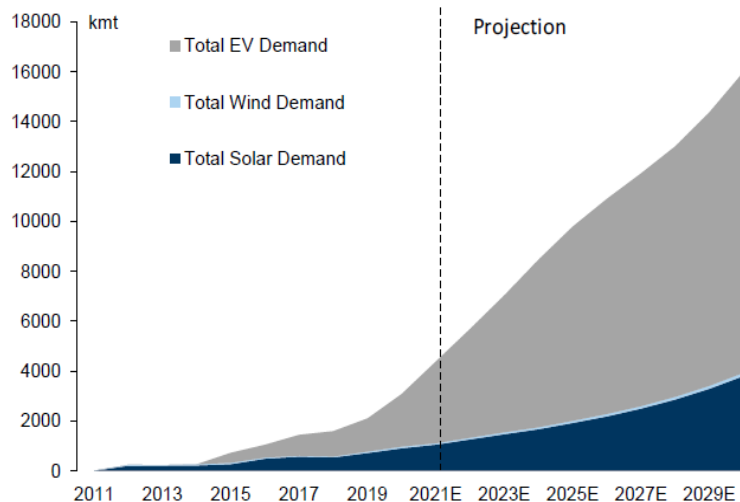
■ 2025 ■ 2018



Aluminium is a key metal in a decarbonised world

From Solar Panel to Wind Turbine, from EVs to Electricity Grids

Global aluminium Demand by Green Sector



Source: Broker research

Demand for Aluminium in Electricity Grids (Million t)



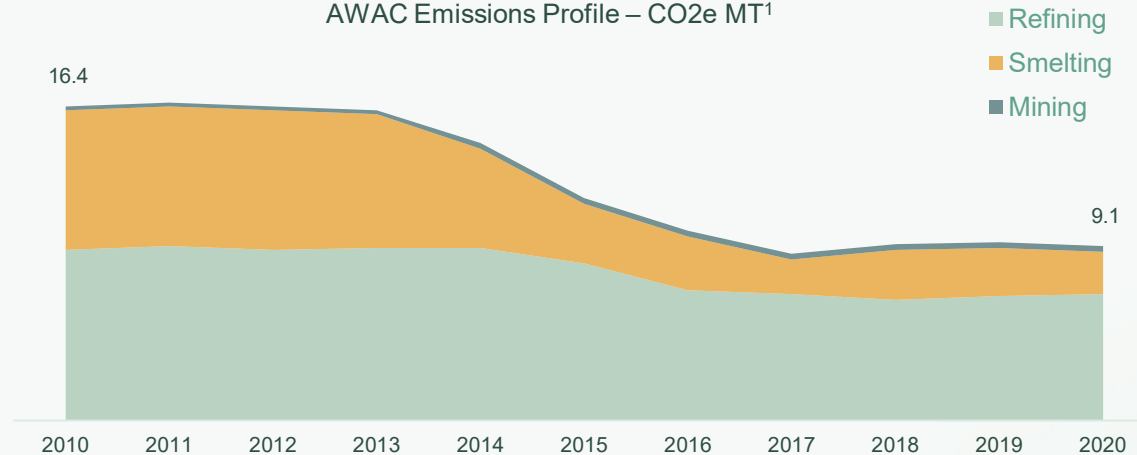
Source: International Energy Agency, IEA's Sustainable Development Scenario July 2021

- Aluminium demand is forecast to grow significantly between 2020-2030
 - Electric Vehicles – from 2.1 million t to 12 million t
 - Solar – from 0.9 million t to 3.8 million t
 - Wind – from 63kt to 123 kt

AWAC's historical emissions

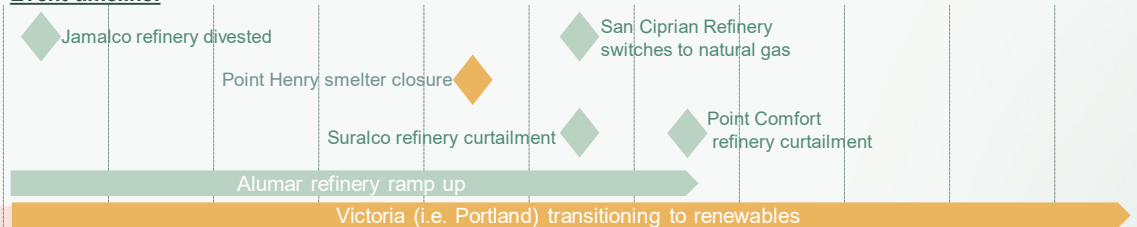
A record in reducing emissions

AWAC Emissions Profile – CO₂e MT¹



- Over the past decade, AWAC has steadily decreased its emissions.
- This has been done through permanent capacity reductions of inefficient assets. These inefficient assets relied on fossil fuels for their energy (e.g. fuel oil, brown coal, natural gas)
- AWAC's portfolio has also improved its emissions intensity, energy efficiency and fuel mix, all of which has contributed to reductions in emissions.

Event timeline:

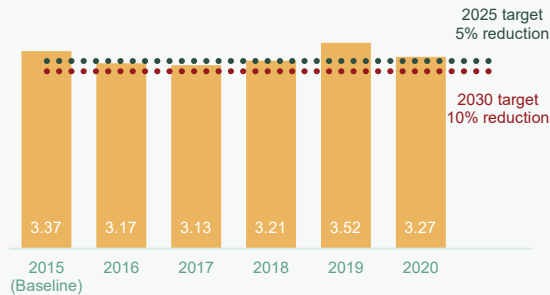


¹Scope 1 & 2 emissions, AWAC equity share basis (39.96% of Alumar, 55% of Portland). Excludes Ma'aden, CBG, MRN.

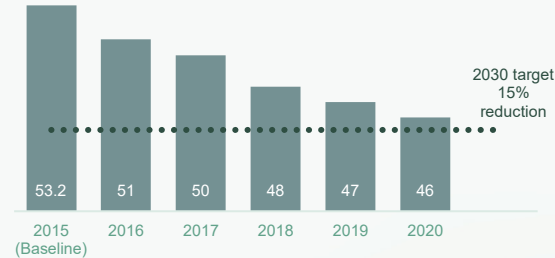
Environmental

Waste/tailings/residue, water, land

**Water use intensity - water stress areas
(cubic metres per tonne of alumina)¹**



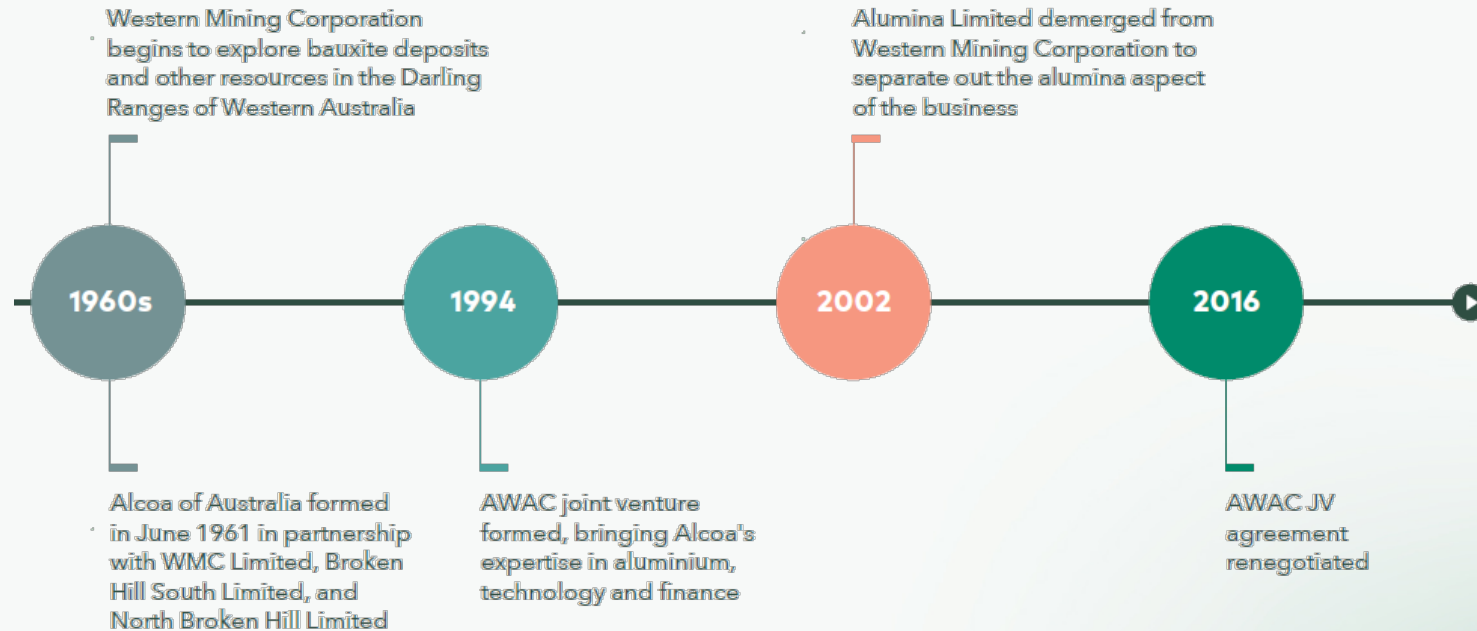
**Bauxite residue storage efficiency
(square metres of land per kt of alumina)¹**



- Water is vital input for AWAC's refineries, especially as they inhabit water stressed areas
- Press filtration (Pinjarra & Kwinana) has improved freshwater use intensity & bauxite residue storage efficiency

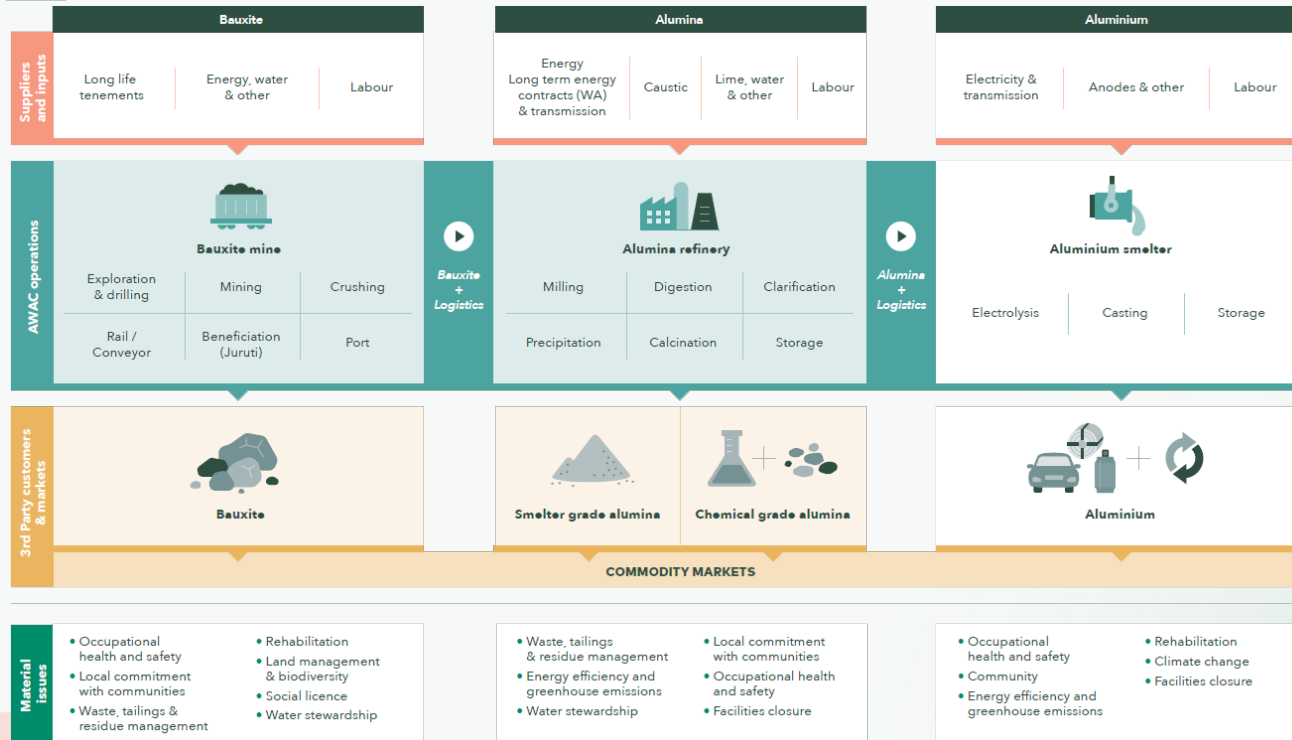
¹Full facility basis for AWAC operated & controlled assets (i.e. consolidated, includes equity interest of minority owners).
Excludes Ma'aden, CBG, MRN

About Alumina Limited & AWAC



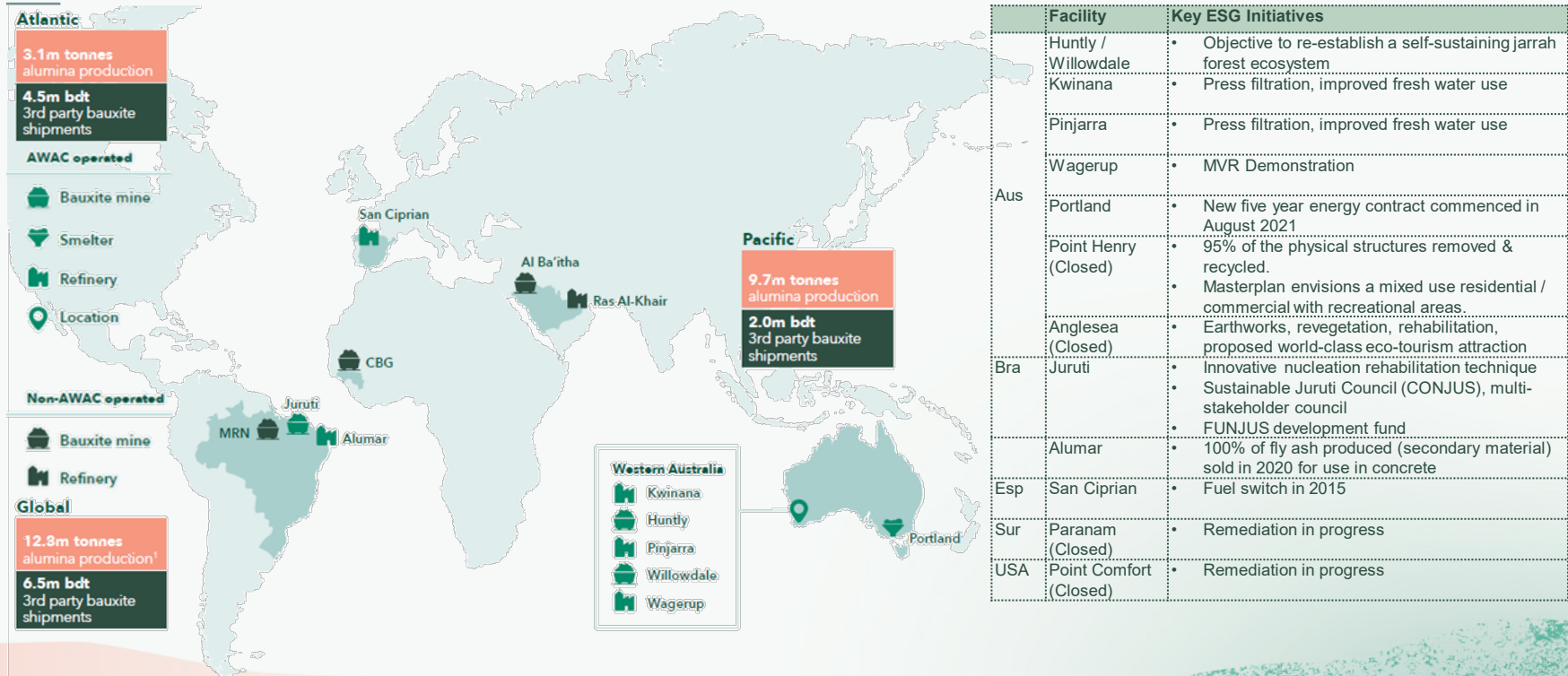
AWAC's material ESG issues

AWAC's value creation system & views of stakeholders determine material ESG issues



AWAC's Map of Operations

AWAC's tier 1 refineries produced 12.8Mt¹ of alumina in 2020

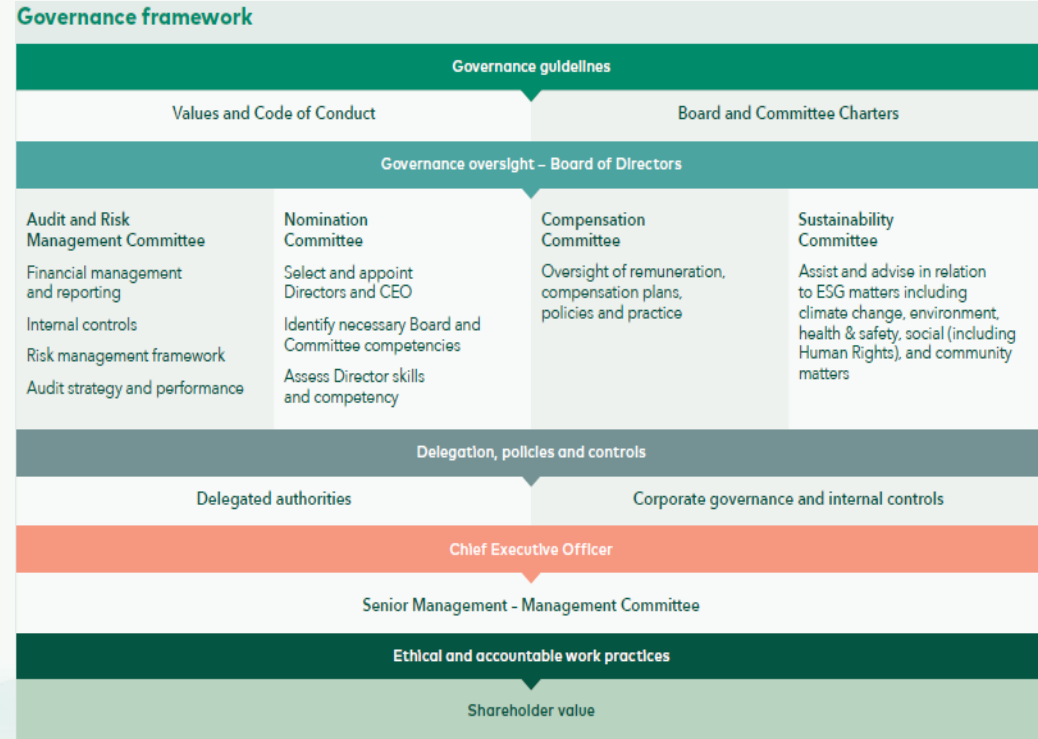


[1] excludes production from the Ras Al-Khair refinery

Governance

Alumina Limited

- Diverse, skilled and experienced Board of Directors
- Corporate Governance Framework is underpinned by strong, clear and ethical corporate values and Code of Conduct
- Comprehensive Charters, policies, controls and prudent delegation
- Joint participation on AWAC entities
- Participation on Strategic Council
- Ability to exercise rights under AWAC Agreements when considering ESG matters.



Wagerup – the alumina refining process

Schematic

