



Tomago Aluminium

Tomago Aluminium

Industry Briefing Session

14 November 2022

TOMAGO ALUMINIUM

ERNST & YOUNG

Agenda

- 1 Acknowledgement to Country**
- 2 Introduction**
- 3 Tomago's Sustainability Objectives**
- 4 EOI Process and Requirements**
- 5 Next Steps**
- 6 Q&A**



Tomago Aluminium

Introduction

Tomago Aluminium and Key Personnel

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Presenters



David Fallu | Director/Chairman

David is the current Chairman of the Tomago Aluminium Board.

David has also been Chief Financial Officer of Tomago Aluminium shareholder, CSR, since 2017. In 2020, David was also appointed Executive General Manager of CSR's Property and Aluminium businesses.



Stacey Sleeman | Chief Financial Officer & Co Sec

Stacey is the CFO and Company Secretary for Tomago Aluminium. With over 20 years of professional global experience across multi-commodity mining and manufacturing organisations and professional services firms. Stacey leads all commercial functions at Tomago Aluminium and is responsible for Energy including energy strategy, energy transition, decarbonisation and future energy procurement



Andrew Robbins | Acting Plant Manager

Andrew is the Acting CEO and has been with Tomago Aluminium since 2012 and during this period he has been a Senior Manager working across all the departments at the smelter. Andrew has extensive experience in the Aluminium Sector with operations, maintenance and project management roles in brownfield and greenfield sites which involved working nationally and internationally.



Dane Fernandez | Principal Engineer

Dane is a Principal Engineer at Tomago Aluminium and is leading the Future Energy and Decarbonisation team. Dane has over 10 years experience in the energy sector with particular expertise in power generation, manufacturing, strategic asset management and corporate risk.



Daniel Clark | Energy Strategy Analyst

Daniel is a Energy Strategy Analyst at Tomago Aluminium and is part of the Future Energy and Decarbonisation team and has been with Tomago since 2009. Daniel specialises in energy market research and analysis, energy market settlements, energy contract administration and environmental schemes.



Craig Mickle | Partner | Ernst & Young | craig.mickle@au.ey.com

Craig is a Partner in Ernst & Young's Infrastructure Advisory practice and has been with EY since 2011. He has over 20 years of experience in providing strategic advice, industry reform and economic analysis in the infrastructure sector. He has particular experience in energy working on infrastructure asset transactions.



Jomo Owusu | Director | Ernst & Young | jomo.owusu@au.ey.com

Jomo is a Director in Ernst & Young's Infrastructure Advisory team in Sydney and has 15 years' experience advising the buyers of energy, investors, banks and developers within the Power and Utilities sector.

Who is Tomago Aluminium?

**Tomago Aluminium is
Australia's largest aluminium
smelter and has been operating
24 hours a day since 1983**



The company contributes \$2.2 billion annually to the Australian economy, of which \$800 million is spent locally. The smelter produces 590,000 tonnes of aluminium every year, which is 37% of Australia's primary aluminium. 90% of the product made at Tomago is exported to the Asia-Pacific region.



Joint Venture partners are Rio Tinto, Gove Aluminium Finance (CSR) and Norsk Hydro.

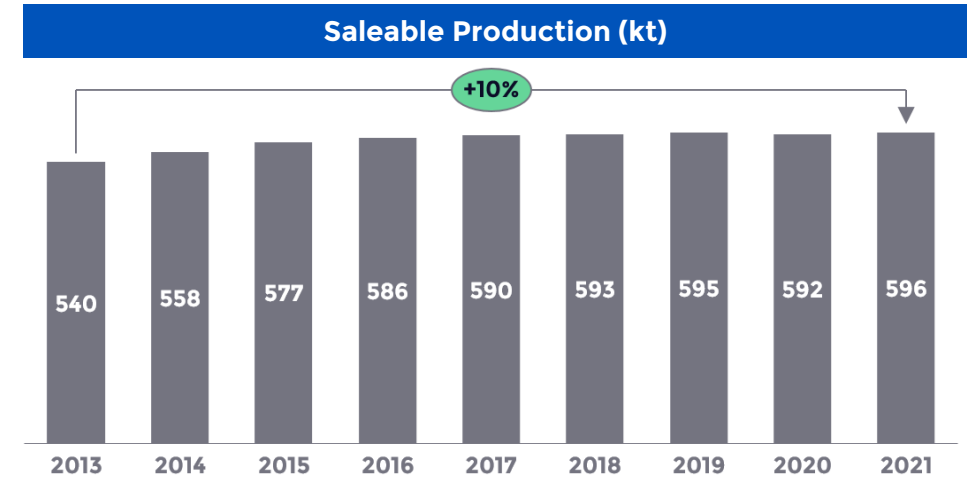
The owners provide raw materials to Tomago that are converted to aluminium at the Tomago plant. The product is supplied back to the owners who then take it to market.

**Tomago Aluminium is an
independently managed
joint venture**

Who is Tomago Aluminium?

Tomago Aluminium is the largest and most efficient smelter in ANZ producing ~600,000 t.pa of aluminium

Ownership	<ul style="list-style-type: none">• Rio Tinto 51.55%; Gove Aluminium Finance 36.05%; Norsk Hydro 12.4%• Smelter is independently operated and managed by Tomago Aluminium Company under a Tolling Model
Capacity and Infrastructure	<ul style="list-style-type: none">• Three Potlines with ~840 cells• VDC capacity of 120ktpa and ingot capacity of ~500ktpa• Port lease arrangements with Port of Newcastle
Technology	<ul style="list-style-type: none">• Highest intensity + efficiency in global AP18 club, operating at 258kA• AP-2X technology progressively moving to PALE
Products and Consumers	<ul style="list-style-type: none">• Principal products are remelt ingot, billet and slab with the ability to produce up to 300 different products• Key markets are in Asia
Safety & Risk Management	<ul style="list-style-type: none">• Consistent record of safety improvement and zero environmental licence breaches
Alumina Supply	<ul style="list-style-type: none">• Each participant in the Tomago Joint Venture supplies its alumina share under the JV agreement
Electricity Supply	<ul style="list-style-type: none">• 950MW constant power consumption, 12% of NSW Demand, largest load in Australia• Secure power and transmission arrangements - supplied from AGL under a long term power supply agreement to 2028
Anode Supply	<ul style="list-style-type: none">• On site plant with three natural gas-fired baking furnaces
Asset Life	<ul style="list-style-type: none">• No physical constraints on asset life





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Our Sustainability Objectives

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Sustainability Objectives

Renewable Energy Targets

Tomago Aluminium's primary energy contracting objective is to fully decarbonise the smelter through sourcing electricity supply from renewable sources and energy storage technologies, ideally by 2030.

Tomago Aluminium is also open to optimising its capability to interrupt its potlines, and evaluating the potential value of expanding this capability and/or extending the duration of interruption.



By 2030, we assume that 50% of our energy supply will be renewable and, by 2035, we expect it to be 100% renewable. An ideal accelerated energy transition scenario would see renewable energy delivering 100% of the company's electricity requirement by 2030

Key Requirements

Energy Contracting Objectives

Tomago Aluminium seeks to fully decarbonise its operation while ensuring value and a firm supply of electricity continues to be delivered to support continuous business operations.



Tomago Owners are aligned on Net Zero Vision and Commitment

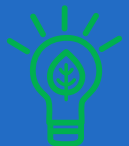
Commitment to reduce emissions by 50% by 2030



Tomago to move to as close to 100% Renewable Energy as possible by 2030



First of its kind partnership in Australia for the recycling of scrap aluminium



Repowering Tomago EOI goes to market in December 2022 for post 2028 Energy Procurement

Rio Tinto



- 15% reduction in emissions by 2025, 50% by 2030, Net Zero by 2050
- Repowering Pacific Aluminium Smelters via EOI process and establishment of RT Energy Development Team
- ELYSIS Zero Carbon Smelting Technology

CSR



- 50% of electricity generated by renewable energy by 2030
- 30% reduction of greenhouse gas emissions (CO2e) kg per tonne of saleable product

Hydro



- 10% reduction in emissions by 2025 and 30% by 2030 from a 2018 baseline
- Net Zero by 2050
- Development of zero-carbon green aluminium
- Technological advances in primary aluminium production such as chloride production and carbon capture and storage

Tomago



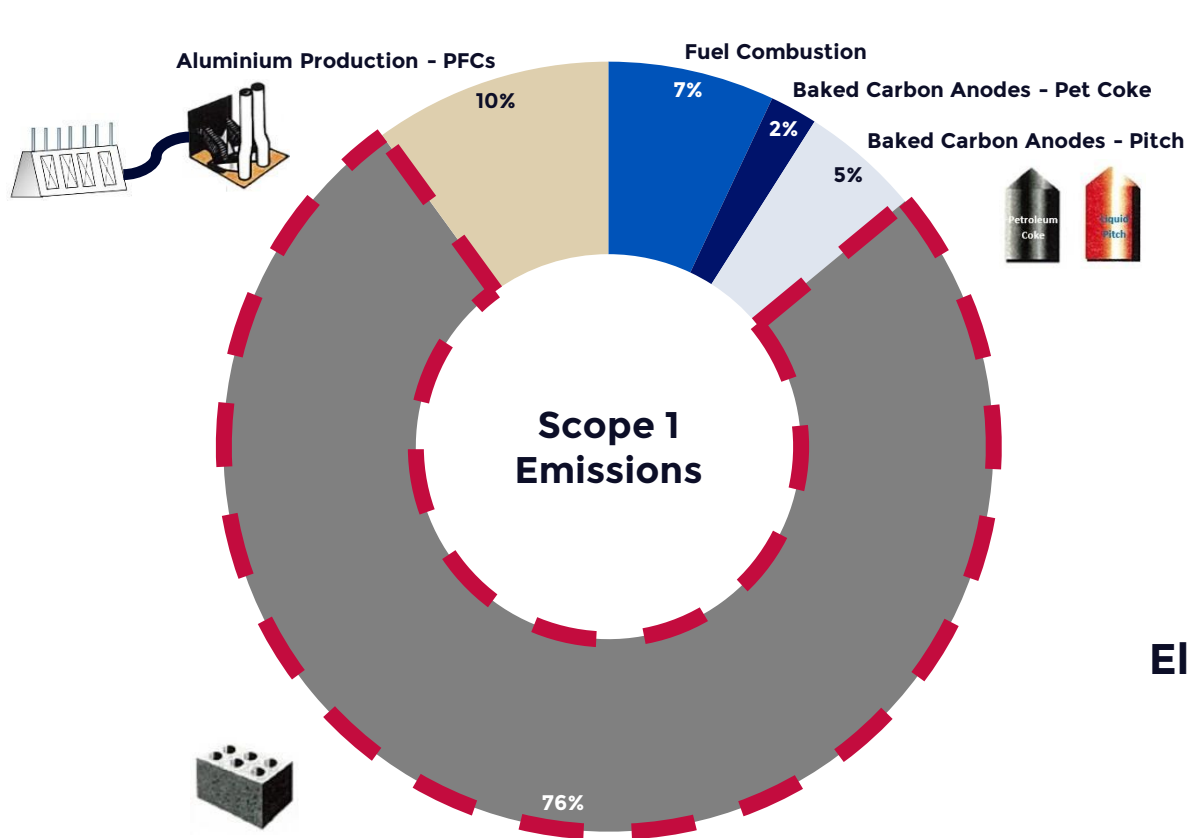
- As close to 100% Renewable Energy so far as is reasonably practicable by 2030
 - Target > 50% by 2030
- Repowering Tomago EOI - December 2022
- Open to incorporating some renewables in the portfolio as soon as possible
- Post production scrap aluminium recycling

Scope 1 + 2 Emissions Reduction

Repowering the smelter from thermal generation to renewables will reduce total emissions by **86%**

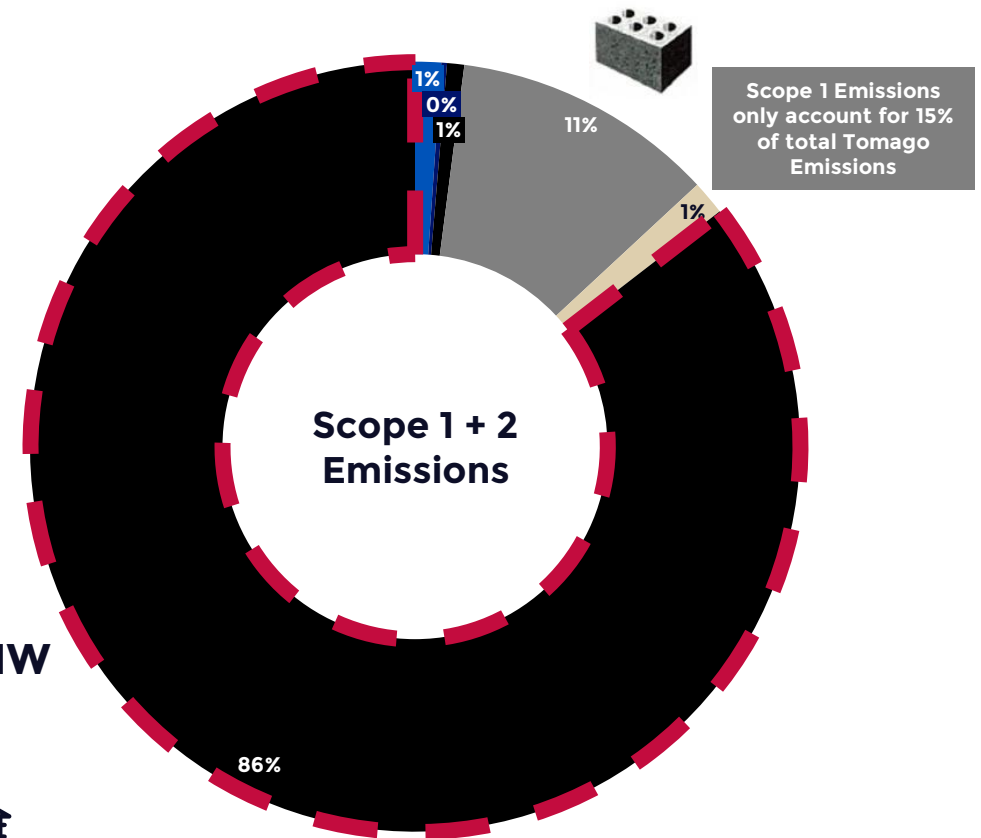
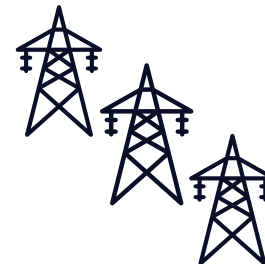
Scope 1 Emissions 1.1Mt (15% of total)

Scope 2 Emissions 6.8Mt (85% of total)



Baked Carbon Anodes - Consumption


Electricity 950MW

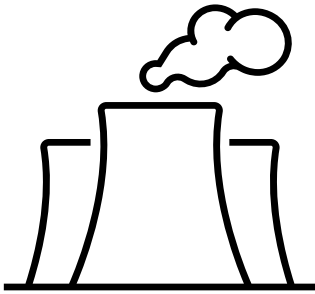


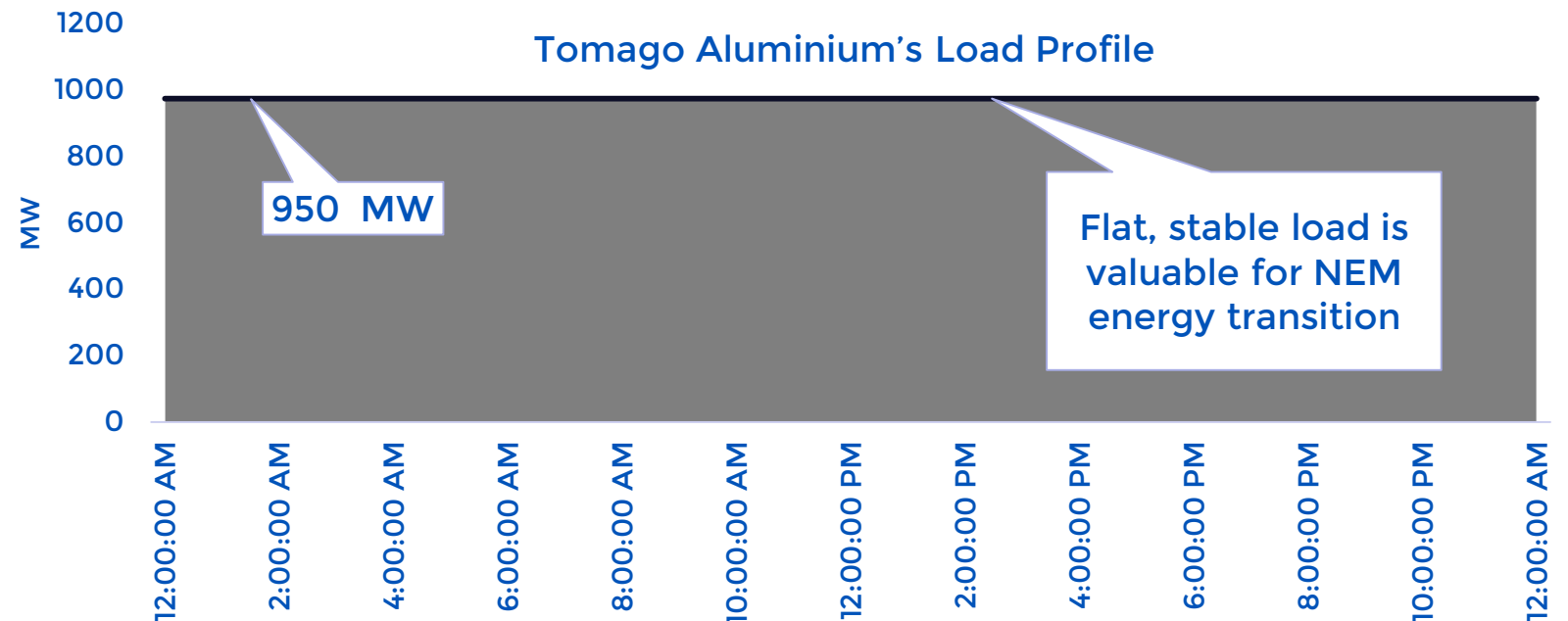
Scope 1 Emissions only account for 15% of total Tomago Emissions

Total Scope 1 & 2 = 7.9Mt

Tomago load profile

Total Energy Usage p.a.	
~ 8.5 TWh	
Significant capacity is needed to supply this volume of energy	

	Largest Power Consumption in NSW
Tomago Aluminium's load is approximately 12% of total consumed power in NSW	

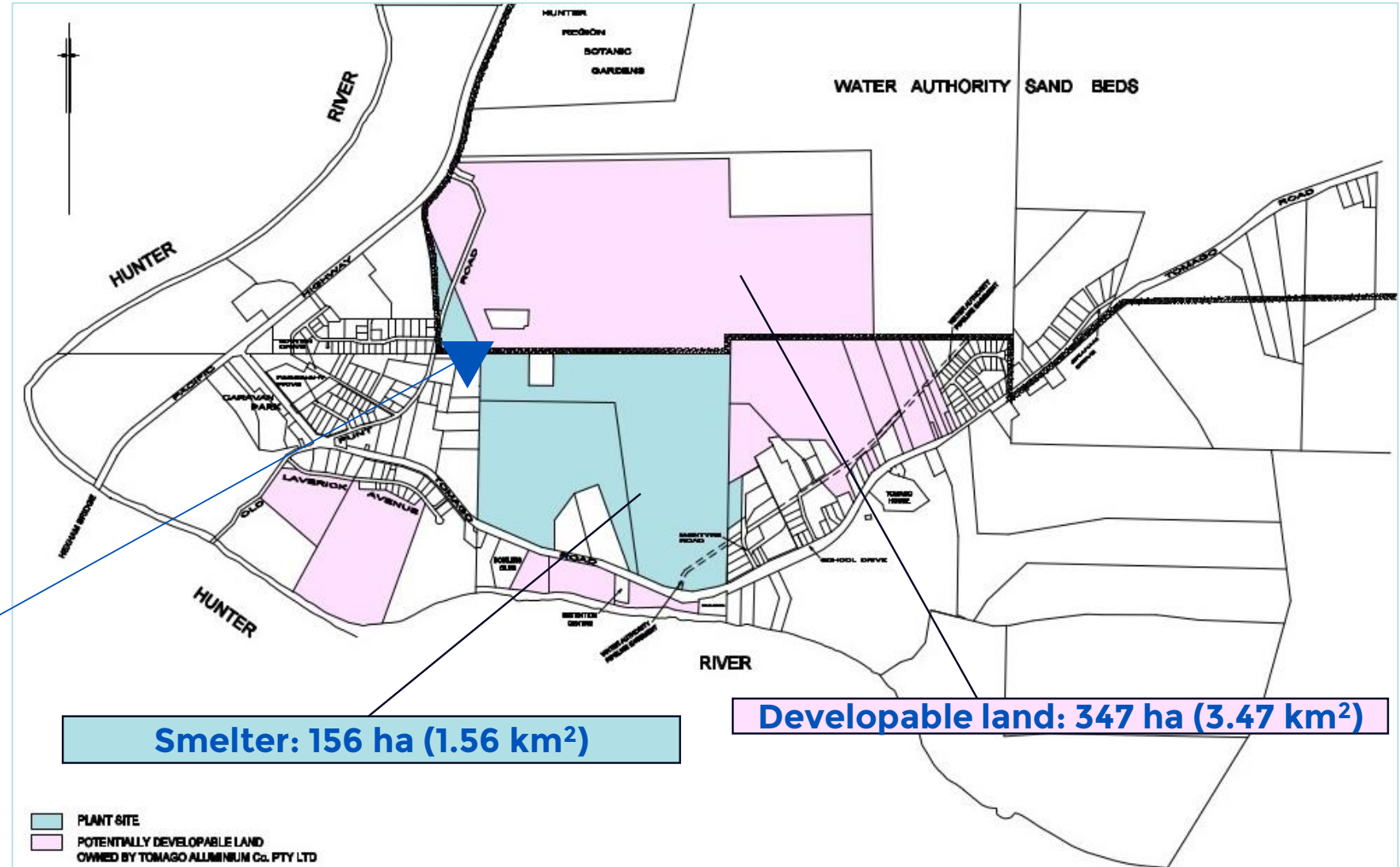


Tomago Aluminium's assets

There may be opportunities to realise value from existing owned assets to support the transition

Tomago Aluminium is open to considering opportunities for behind the meter power generation or energy storage projects

Tomago 330 kV substation





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EOI Process and Requirements

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The EOI approach

Given the scale of Tomago's sustainability ambitions, Tomago is approaching a range of industry participants that may be able to support Tomago in its renewable energy transition:

Renewable
Developers

Independent
Power
Producers

Electricity
retailers

Infrastructure
and super
funds

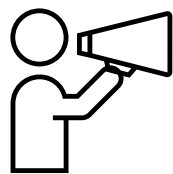
Private
equity

Tomago seeks to understand what opportunities there may be for Tomago to work with one or more industry participants to achieve its sustainability targets

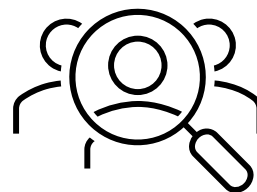


Objective

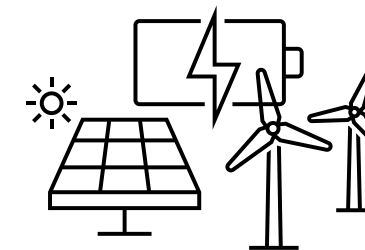
Tomago intends to undertake a Registration of Interest (ROI) and Expression of Interest (EOI) process to:



Seek proposals from market participants about **how Tomago can best source renewable energy and storage** sufficient to meet Tomago's sustainability targets



Garner feedback from the market regarding the **feasibility of, and market appetite to deliver,** particular renewable sourcing options that Tomago considers will enable it to achieve the sustainability targets



Understand the capacity and capabilities currently available in the market, and the potential for Tomago's process to **support growth in renewable and storage** technology development

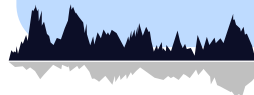
Tomago requirements

At this stage, Tomago is flexible in considering options and approaches that will expeditiously and cost-effectively meet its renewable energy targets

Tomago is open to all types of renewable energy and storage technologies



Facilitating Tomago's renewable energy will require storage and retail hedging support



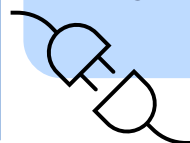
Tomago is seeking to access renewable and storage projects in NSW



50% of Tomago's load must be met by renewable energy and storage technologies by 1 January 2030; 100% by 1 January 2035



Tomago is interested in BTM and Demand Response solutions



Sourcing options

Procurement options under consideration



Contracting via Synthetic PPAs or Sleeved PPAs



Joint venture arrangements via offtake or through capital contribution

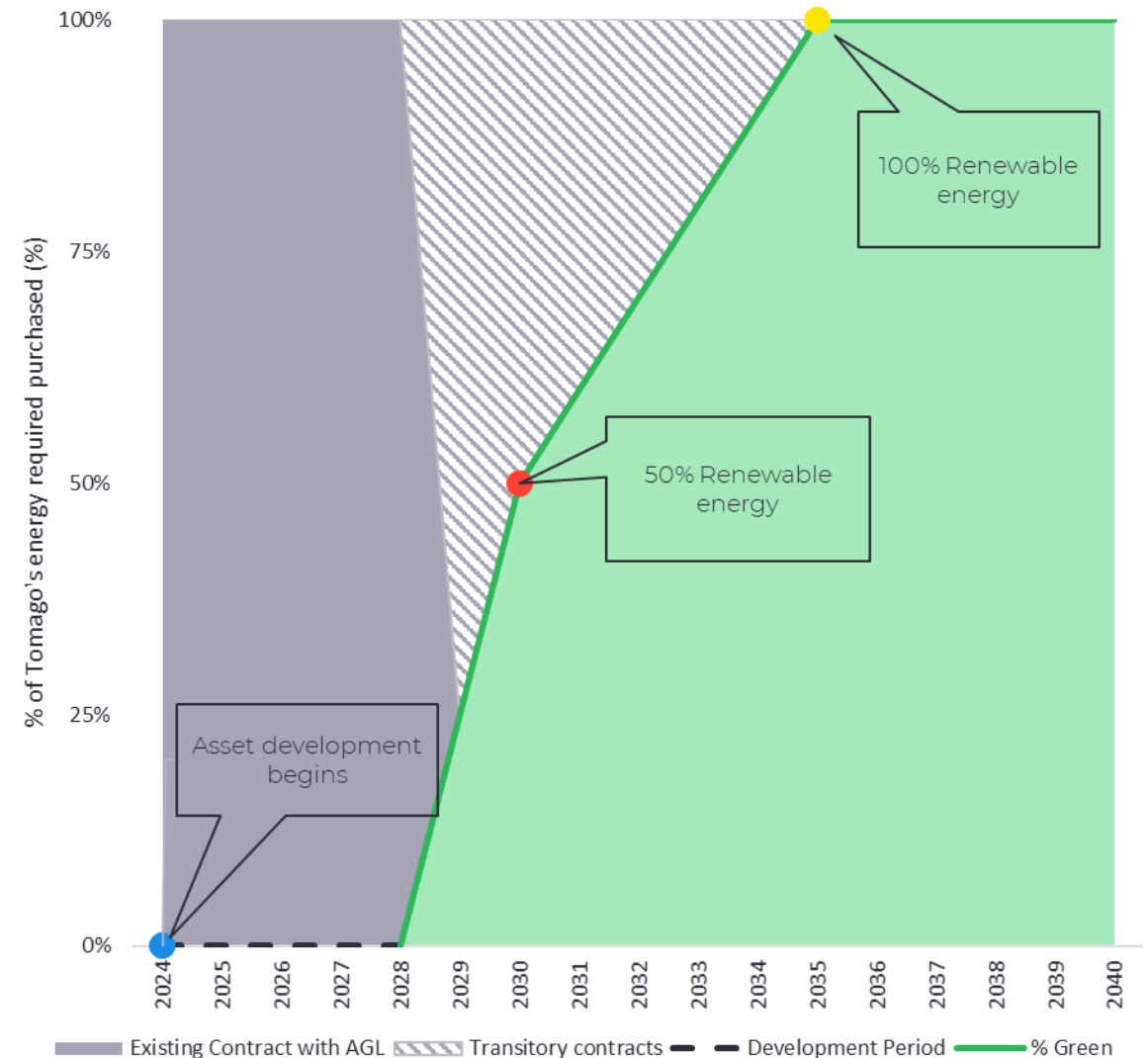


Tomago is seeking feedback on these options as part of this Industry Briefing and Registration of Interest process

Contracting – Sleeved / Synthetic PPAs

Implementing Tomago's renewable strategy will likely require contracting with a range of renewable and storage assets

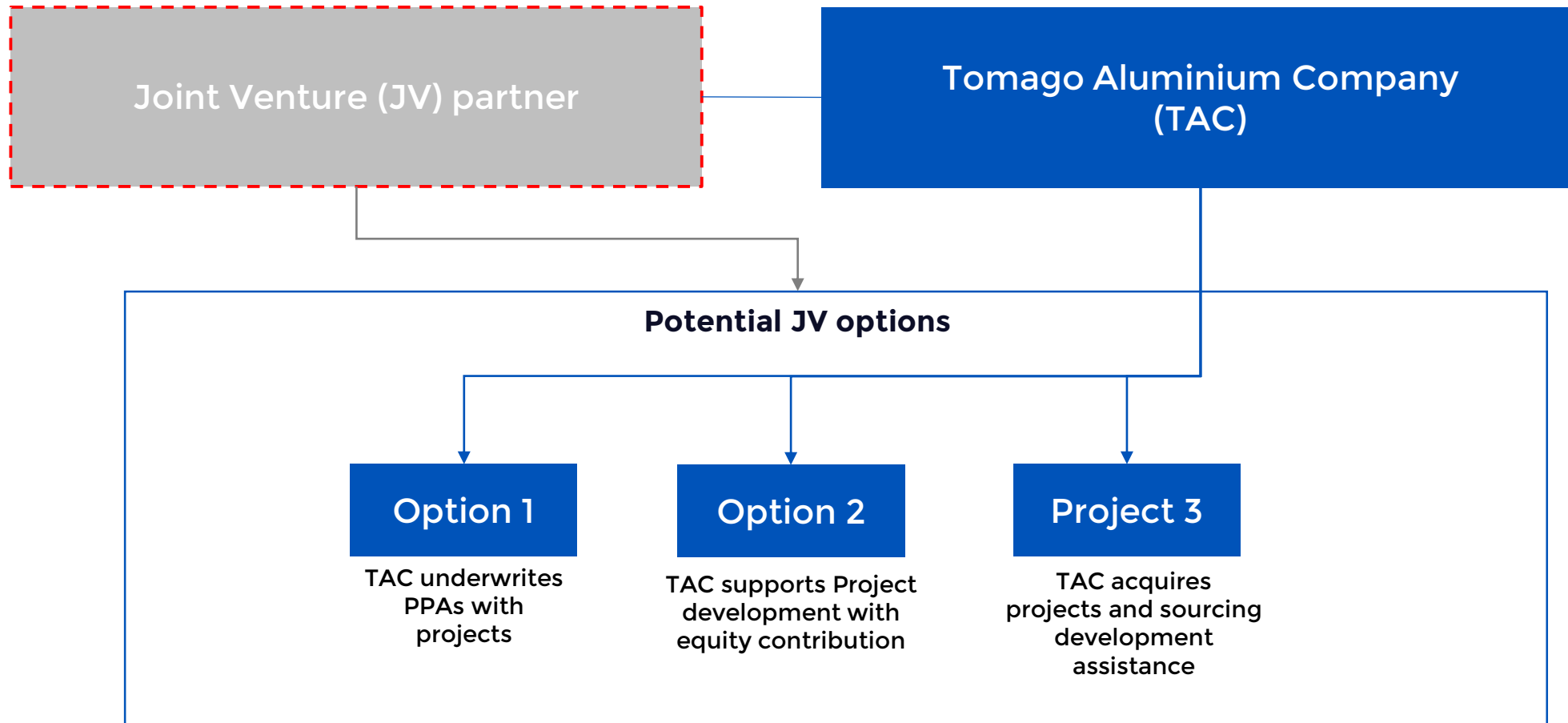
- Project development will need to occur from 2024 given lead-times involved in reaching Tomago's proposed targets
- Tomago would grow its portfolio of Synthetic PPAs or Sleeved PPAs over time to meet its sustainability targets
- Synthetic PPAs will need to be supported by a retail Energy Services Agreement (ESA) to meet physical electricity requirements
- Synthetic PPAs could be converted to Sleeved PPAs over time
- Sleeved PPAs would replace physical electricity being delivered under a retail ESA – an electricity retailer could front the Sleeved PPAs to manage this



Joint venture and partnering arrangements

Tomago considers its large, flat load to be a valuable profile for industry participants.

There may be opportunities to partner with one or more industry participants to achieve value and support growth in renewable energy and storage capacity in NSW





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Next Steps

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Intended Timing & Next Steps

Phase 1

Phase 2



ROI information sought

Information sought from the Registration of Interest process will be used to inform EOI development. Please let us know if there are challenges associated with providing this information

Key information required from ROI respondents

Strategy feedback

- Feedback on the proposed sourcing options and potential pricing mechanisms
- Your preferences regarding strategies that can support Tomago to achieve its sustainability targets in light of the information provided today and your organisation's capabilities

Portfolio feedback

- Information about the size, development status and timing of your NSW pipeline
- Information about the type of technologies in your NSW pipeline
- Some high-level technical information about storage capabilities (e.g. duration and specific technology)

Respondent information

- Capability and experience in your field (both in Australia and overseas)
- The type of industry participant you are



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Q&A

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Recap

Next steps

- An ROI survey will be issued to registered representatives
- ROI feedback will be analysed and incorporated into the EOI
- ROI feedback will influence the parties selected to participate in the EOI process
- All parties will be notified whether or not they have been invited to participate in the EOI process
- Send any further questions about the process to: projectarc@au.ey.com

Key timeframes

Industry Briefing Session

- 14 November 2022

ROI submission

- 21 November 2022

EOI Release

- Early December 2022 – early February 2023

Assessment and Shortlisting

- February 2023 – March 2023