



RioTinto



Te Rūnanga o NGĀI TAHU



Te Runaka o Awarua

New Zealand Aluminium Smelter

Murihiku Regeneration Expo

May 2023

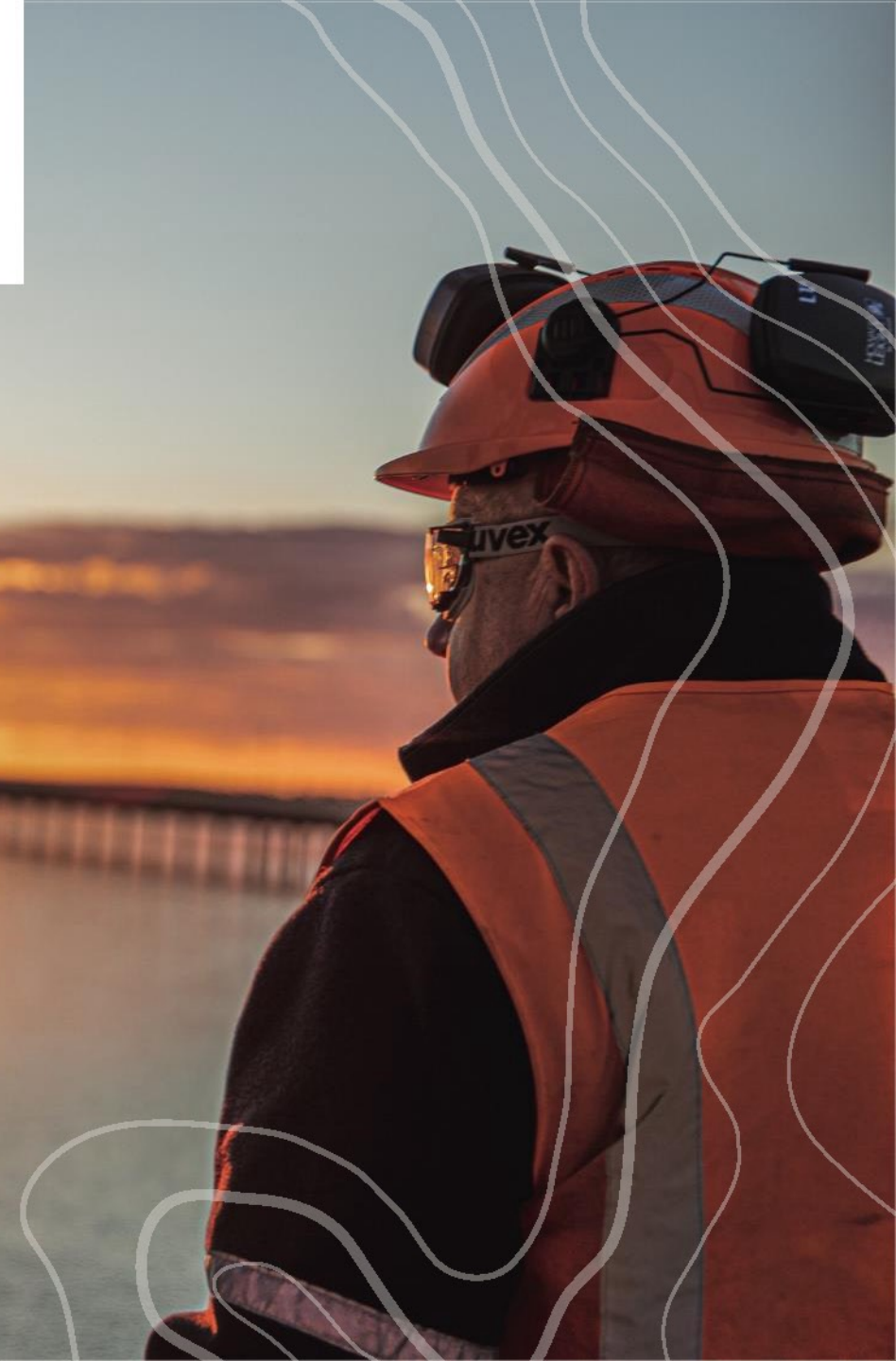


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Rio Tinto and Ngāi Tahu Partnership

Memorandum of Understanding

After extensive negotiation, in October 2022, Murihiku Rūnaka, Te Rūnanga o Ngāi Tahu, NZAS and Rio Tinto signed an MoU to work together on restoring the whenua at the Tiwai Peninsula and the future of the Tiwai aluminium smelter beyond December 2024

All parties agreed to work together on plans to remove waste, conduct environmental monitoring, and remediate the Tiwai Point site, which is a key priority for mana whenua, NZAS and Rio Tinto

Awarua is leading the partnership on behalf of Murihiku Rūnaka and is actively engaging with NZAS and all parties around remediation, cultural considerations, and future intentions



Advisory Group

Murihiku Rūnaka and Rio Tinto / NZAS have established an Advisory Group to progress the work under the MoU. In December 2022 the Advisory Group agreed the following:

We support ongoing operation of the smelter

Our remediation and waste philosophy is to reduce, reuse and recycle with a shared goal to protect Te Ao Tūroa, mahinga kai practices and principles, and whānau undertaking them; at or near Awarua/Tiwai peninsula coastal environment

We will continue to work together on the identification and protection plan on wāhi tapu, wāhi taonga and other sites of significance

The Advisory Group agrees that through collaboration we will achieve our goals “Mā whero, mā pango, ka oti ai te mahi”



Remediation Advisory Working Group

The Tiwai Advisory Group has established a Remediation Advisory Working Group (RAWG) to work together on restoring the whenua at the Tiwai Peninsula

The Remediation Advisory Working Group (RAWG) includes four representatives from Awarua Rūnaka / Ngāi Tahu and four representatives from NZAS who will work together to progress this important mahi

The work of the RAWG will continue irrespective of whether NZAS closes at the end of 2024 or continues to operate

The initial scope of work for the Remediation Working Group includes the following:

- Work together on the consent requirements for the existing landfill, with the initial focus on seeking reuse and recycling options for material in the landfill to align with our waste philosophy of reduce, reuse and recycle
- Co-design and work together to define the standard and criteria for progressive remediation and develop the remediation plan for the first area of land to be remediated
- Work together to develop the remediation plan for the drain network and assess options for future open drain design



Community Development Fund

In April 2023 the Advisory Group announced the establishment of the Murihiku Rūnaka and Rio Tinto / NZAS Community Development Fund

The fund has been established to acknowledge Ngāi Tahu and the Murihiku Rūnaka as mana whenua and support investment in a sustainable and positive future for mana whenua and the wider community

Rio Tinto / NZAS has made \$2 million available to the Community Development Fund through to the end of 2024 and intends to extend the operation of the Fund beyond 2024 in the event a long-term future for the smelter can be secured

The Fund will support projects within four focus areas that reflect the priorities of Rio Tinto, NZAS, Ngāi Tahu, and the wider community:

Human Rights	Culture, heritage and place	Community capacity and connections	Economic opportunity and decarbonisation
Enhancing diversity, equity, inclusion, and health and wellbeing outcomes across the community	Inter-generational culture, heritage, conservation, and environmental outcomes	Unlocking human potential and community resilience through education, science and innovation, and workforce development	Contributing to the region's economic development and climate transition by supporting businesses to expand and new industries to emerge

The Community Development Fund will be administered by the Murihiku Rūnaka and Rio Tinto / NZAS Advisory Group

Applications for the first round of funding are currently open and close on 12 June 2023. Application guidelines and forms can be found on the NZAS website nzas.co.nz under > Community > Support and Partnerships or enquiries can be made to community.fund@riotinto.com

NZAS Remediation

Environmental monitoring

NZAS conducts extensive environmental monitoring at Tiwai Point

In 2020 NZAS engaged GHD to conduct a Detailed Site Investigation to guide the remediation work at NZAS. Results were compared against the relevant criteria based on industrial or recreational land use

Since the release of the Detailed Site Investigation in 2021, NZAS has engaged GHD to complete further environmental testing and monitoring at the Tiwai site and within the Coastal Marine Environment. The results of this additional testing are expected to be released in Q3 2023

Going forward, plans for further testing will be co-designed with the Remediation Advisory Working Group



As part of our commitment to transparency environmental monitoring reports can be accessed on the NZAS website (nzas.co.nz) under Sustainability > Environmental Performance

Environmental monitoring preliminary results

The Detailed Site Investigation found exceedances of both recreational and industrial criteria and recommended additional monitoring which was completed in 2022



Industrial criteria exceedances



Recreational criteria exceedances

Preliminary results from the additional monitoring indicate:

- Contaminants are present in groundwater beneath the smelter and generally decrease towards the coast as they are diluted in the aquifer. Results do not vary significantly from the findings of the DSI with some minor fluctuation of contaminant concentrations evident between each sampling round
- The three main drains are the main pathway for contaminant transport towards the coastal marine area. Sediment concentrations in the drains confirm the elevated levels seen in the DSI and support the more detailed investigation of the drain discharge points and surrounding coastal marine area

Biota sampling preliminary results

A screening level assessment was undertaken of biota collected from around the Tiwai site

Samples were collected for gastropod, mussels, paua, whelk, sea urchin, cockles, pipis, bluff oysters and snails

All contaminant concentrations were below the available health-based criteria

This indicates, based on the chemical composition of the biota, these organisms are suitable for human consumption



● Biota sampling points

Progressive Remediation – Phase One

The initial focus area for progressive remediation is the land surrounding the SCL sheds and the drain network

The scope of work for the Remediation Advisory Working Group for this first phase includes the following:

- Co-design and work together to define the standard and criteria for progressive remediation and develop the remediation plan for the first area of land to be remediated
- Work together to develop the remediation plan for the drain network and assess options for future drain design



Landfill

The Advisory Group have agreed a waste philosophy of reduce, reuse and recycle

In May 2022, NZAS ceased depositing waste in the onsite landfill

The Advisory Group have agreed the objective for the onsite landfill is to develop a long-term pathway for closure of the landfill with an initial focus on seeking reuse and recycling options for material in the landfill

The Remediation Advisory Working Group is currently working together on the consent requirements for the existing NZAS landfill

NZAS intend to apply for two consents:

1. Short term consent will be sought for management of the landfill, with relevant controls, for the next 5 years. Application to be lodged in May 2023
2. Long term consent for management of landfill for the following 25 years. This consent will include management plans for potential future activities without specifying final closure decisions. NZAS plan to lodge the application before the end of 2023. The delay to lodging this application will allow more time for the RAWG to co-design the consent conditions and consult with iwi and broader community

The overall approach is designed to ensure NZAS has the required consents in place while providing the RAWG the time required to co-design the final landfill outcome and future landform

Landfill environmental monitoring

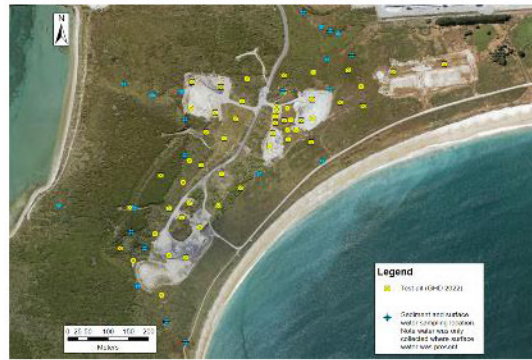
NZAS engaged GHD to complete extensive environmental testing at and around the onsite landfill. The results of this testing are expected to be released in Q3 2023

Preliminary results indicate:

- Sampling of waste in the landfill correlated with historical records and waste areas are well defined
- 90 - 95% of landfill groundwater flow is towards Foveaux Strait which is a dynamic environment. Most locations show concentrations have peaked and are declining
- 17ha of vegetated habitat is present in the 25ha landfill site, accounting for approximately 70% of the area. There is a likelihood of the occurrence of wetlands and species of conservation significance
- No direct threat identified to landfill from coastal erosion or shoreline retreat in next 100 years



Landfill groundwater sampling



Landfill sediment, soil and surface water sampling



Coastal Marine Area Investigation

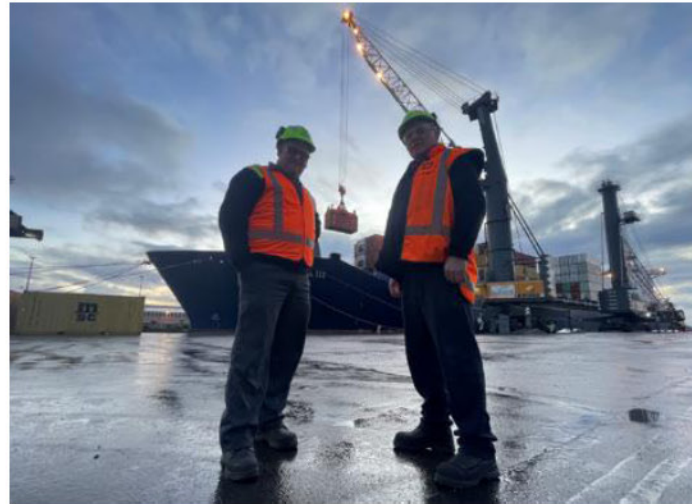
Spent Cell Lining (SCL)

SCL is a by-product from the aluminium smelting process that is used as a feedstock for the cement and ceramic industries

Shipments of SCL recommenced in July 2022 with 5,500 tonnes exported in 2022

Sampling of the SCL pad material to inform the planning for the future removal and processing of this material is underway

NZAS is currently completing a Pre-Feasibility study on the option to establish an on onsite processing plant



Dross Residues (including Ouvea)

Dross is a by-product from the aluminium smelting process that is processed onsite to remove the aluminium content. The dross residue is then used as a feedstock for the cement and ceramic industries

Final Ouvea stored in the community was returned to site in November 2022

13,200 tonnes of a total of 24,800 tonnes of Ouvea has been processed and exported

NZAS has approximately 33,500 tonnes of dross residue in the onsite landfill that will be excavated and processed for reuse

Pilot of 40 tonnes of dross residue has been excavated from the landfill for processing



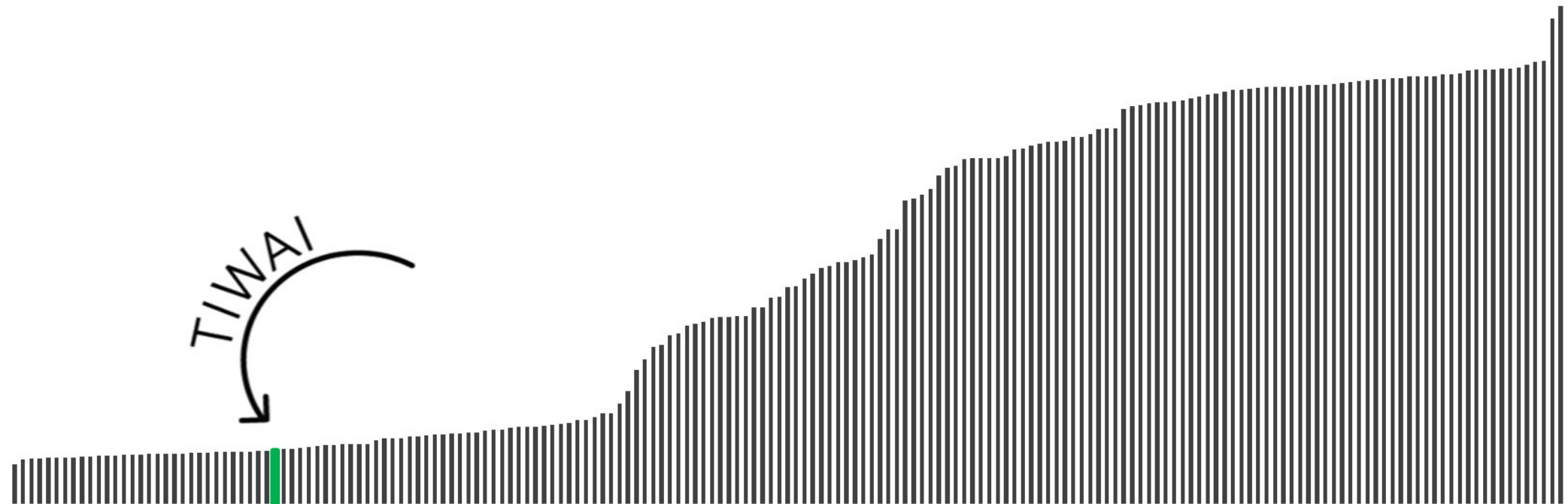
NZAS Ongoing Operation

Carbon Our place in the world

NZAS is a global leader in low carbon aluminium and has a pathway to becoming one of the earliest zero-carbon aluminium smelters globally

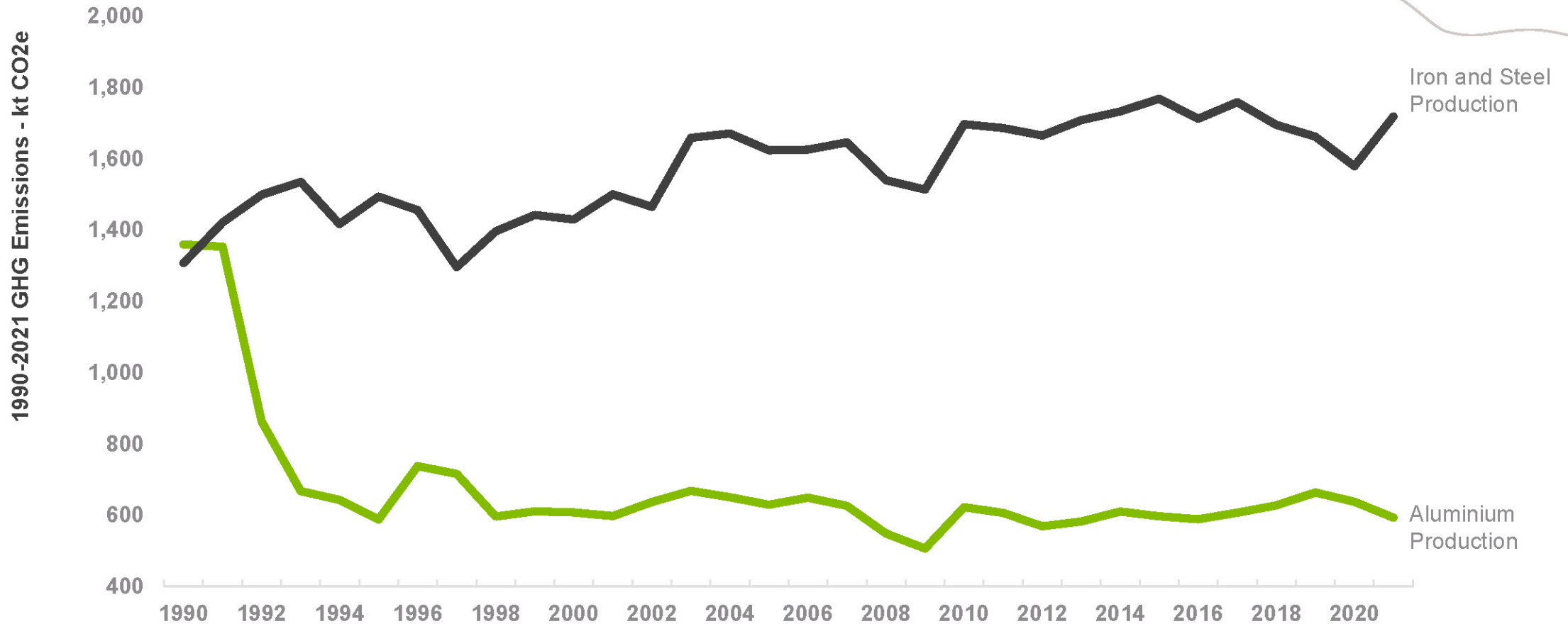
NZAS is one of only two producers of ultra-high purity aluminium, a key input to the energy transition

Scope 1 and 2 Emissions tCO2/t



Carbon Our place in Aotearoa

In the 1990s NZAS more than halved carbon emissions



Energy Tiwai's contribution

Ongoing operation of NZAS can enable an affordable, secure, and sustainable net-zero carbon energy system in New Zealand

Daily winter demand profile and NZAS peak shaving effect

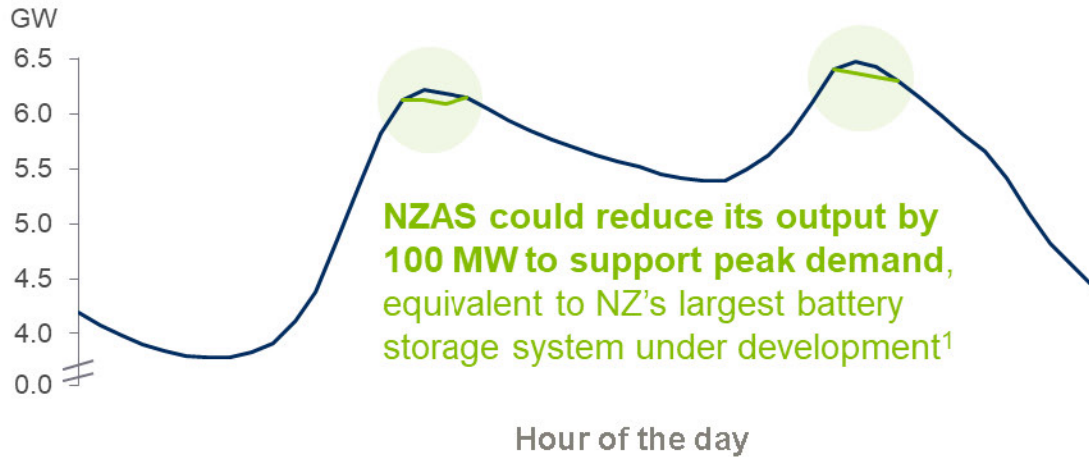


Chart source: Electricity Authority. Average daily demand from June-August 2022.

NZAS three step seasonal demand response

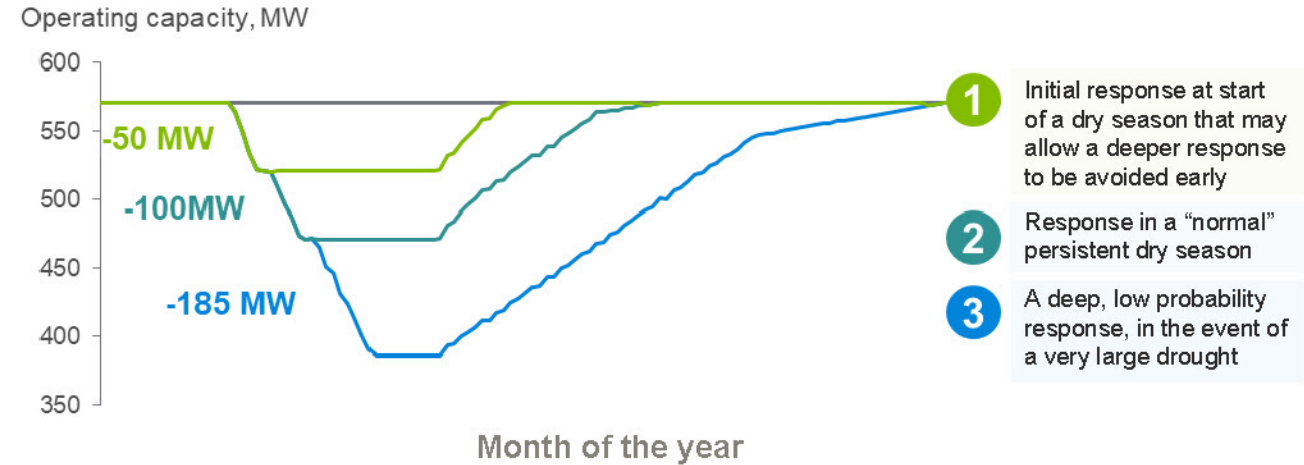


Chart source: NZAS analysis.



Immediate support for NZ's growing peak demand problem



Immediate and low risk support for dry year problem



Lead the way for other industrials to follow

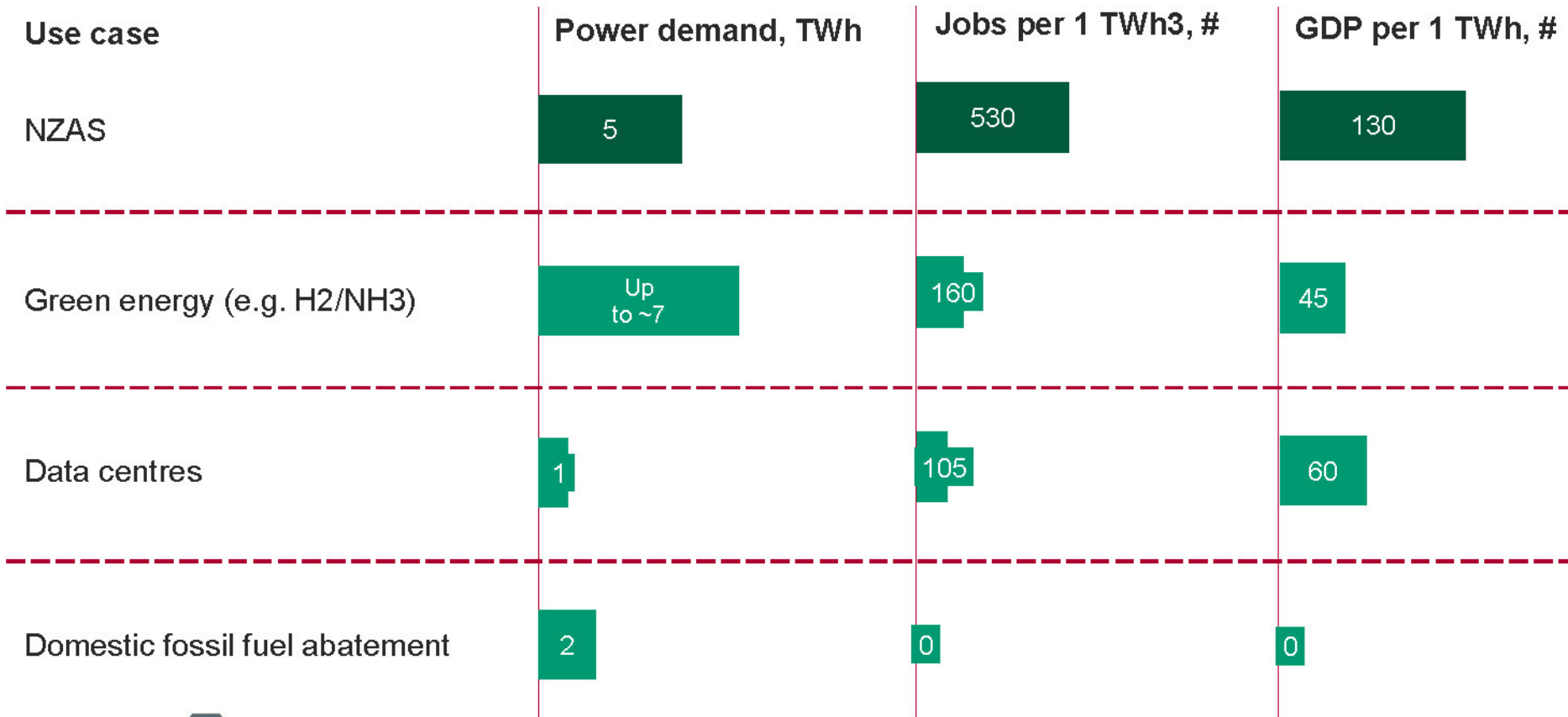


Downward pressure on electricity price and emissions

Future We want to be here

NZAS provides a significant contribution to national GDP and is one of the largest single site employers in New Zealand

Ongoing operation of NZAS combined with additional energy generation provides the opportunity to grow green industry in New Zealand



Summary

The Advisory Group have met monthly since signing the MoU and are proud of the partnership we have established

Significant progress has been made on remediation of the Tiwai site and we will continue to work together on restoring the whenua at the Tiwai Peninsula

We are also supporting the Southland Museum and Awarua Rūnaka to catalogue the cultural heritage artifacts removed from Tiwai when the smelter was constructed

NZAS produces some of the lowest carbon, highest purity aluminium in the world

Ngāi Tahu supports the ongoing operation of the Tiwai Smelter and hopes we can all have certainty on that in the near future

Rio Tinto / NZAS are working hard to secure a longer future for NZAS

We will continue to remove waste and remediate the site, irrespective of the smelter's future

NZAS will be holding two Community Forums next week – Wednesday 31 May 5.30pm at Ascot Park and Thursday 1 June 5.30pm at Bluff Town Hall

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