



# **START**

# Definitions, Methodology & Scope

## Aluminium Label

Version: July 2023

The Environment, Social, and Governance (ESG) metrics on the START Label are based on the data collected by Rio Tinto for its internal and external reporting purposes. All site-level, product-group, and corporate-level data are for Rio Tinto's managed operations (including QAL) and non-managed (Joint Ventures) sites.

# Introduction

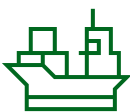
Sustainability is personal, and we believe everyone should play a part. That is why we use the term **VCare – Value Chain Care**, to reiterate the importance of caring for sustainability, and use it throughout our documents.

Sustainability is also holistic, so in our START label, we track 3 pillars – **Planet, People and Progress**.

They cover a wide spectrum of metrics, including environmental, social and governance.

This document seeks to define each metric in the **START Aluminium Label**.

# Provenance



## VCare - Chain

VCare Chain provides provenance from mine to metal, demonstrating the linkage between responsible production, responsible sourcing and procurement.

The bauxite and alumina provenance information is from 2019, and where there are multiple sources of supply, data is provided representing the highest percentage source country.

*Note on non-managed sites: The provenance of bauxite and alumina is based on the equity share of Rio Tinto aluminum in the Joint Venture (JV) partnership.*





# Environmental Metrics

## VCare Planet

These metrics focus on Rio Tinto's performance as a steward of the natural environment.



### Global Warming Potential (GWP)

Greenhouse Gases (GHG) are atmospheric gases that absorb and emit radiation within the thermal infrared range, contributing to the greenhouse effect and global climate change. Many different GHGs are produced as a result of human activities, including carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), nitrogen trifluoride (NF<sub>3</sub>), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF<sub>6</sub>).<sup>1</sup>

CO<sub>2</sub> equivalent (CO<sub>2</sub>-e) is the universal unit of measurement to indicate the GWP of each of the seven greenhouse gases, expressed in one unit of CO<sub>2</sub>. It is used to evaluate releasing (or avoid releasing) different greenhouse gases on a common basis.<sup>2</sup>

The emissions are expressed as tonnes of CO<sub>2</sub>-e per tonne of aluminium produced.

The START Label's site data is based on third-party validated cradle-to-gate 2019 (2020 for Becancour) LCA<sup>3</sup> data for cold metal produced.

Exclusions include use, end-of-life and recycling. ISO 14044 methodology is used to conduct the LCA. The emissions calculation for the sales order is based on cold metal. The global average data referenced in the START Label Insights is sourced from the CM Group's February 2020 report. The global average is based on the International Aluminium Institute (IAI) 2015 data. Other START Label Insights comparisons are based on the U.S. EPA calculator.<sup>4</sup>



### Water Management

Stewardship of a precious resource such as water is crucial to Rio Tinto's operations and communities.

Total water consumed is the total water withdrawn minus total water discharged or returned. Total water consumed is the total water incorporated into the products and onsite uses and includes water evaporated and water lost via transmission.<sup>5</sup>

Total water discharged or returned is the sum of effluents, used water, and unused water released to surface water, groundwater, seawater, or a third party, for which the organisation has no further use throughout the reporting period.<sup>6</sup>

Based on the World Business Council Sustainable Development (WBCSD) Water Assessment Tool, in 2019, only one of the aluminium smelter sites was assessed as operating in a "water-stressed" environment. Water stress measures total annual water withdrawals (municipal, industrial, and agricultural) expressed as a percentage of the total yearly available blue water.<sup>7</sup>

Most of the sites' water return is greater than water consumed, which flows back as return flow and can be reused downstream.

Additional information on water management standards can be found on Rio Tinto's website at [Water Quality Protection and Water Management Standard](#).

The START Label's site data is based on 2020 annual figures and expressed as cubic meters of water consumed and discharged per tonne of aluminium produced. An up or down trendline (2019-2020) is indicated with a  $\pm 10\%$  YoY difference in data. Where the YoY difference is  $\geq \pm 10\%$ , a comment outlining the reason for the change is included on page 2 of the label. Data referenced in the START Label Insights is sourced from a US EPA report.<sup>8</sup>

The Aqueduct Water Risk Atlas, developed by the World Resources Institute (WRI), evaluates, maps, and scores water risks globally based on 12 indicators, including baseline water stress. Baseline water stress measures the ratio between total water withdrawal and available renewable surface freshwater supply.<sup>9</sup>

1 Adapted from World Resource Institute / World Business Council for Sustainable Development's Greenhouse Gas Protocol: A Corporate Reporting and Accounting Standard, March 2004 (the GHG Protocol) ([www.ghgprotocol.org](http://www.ghgprotocol.org))

2 <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>

3 Available upon request

4 <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

5 <https://docs.wbcsd.org/2014/05/CSI-Protocol-for-Water-Reporting.pdf>

6 <http://www.globalreporting.org/>

7 [www.wri.org](http://www.wri.org)

8 <https://www.allianceforwaterefficiency.org/sites/www.allianceforwaterefficiency.org/files/assets/ws-commercial-water-sense-at-work-ci.pdf>

9 <https://www.wri.org/data/aqueduct-water-risk-atlas>

# Environmental Metrics



## Waste Management

Hazardous waste includes batteries, oils, fluorinated products, tar, and other flammable, corrosive, or toxic waste.

Non-hazardous waste includes other industrial waste, including filter cloths, packaging, piping, empty bags, belts, etc.

Waste is carefully handled and stored as it impacts the land. Hazardous waste is appropriately handled to protect people, wildlife, and water quality. Other waste types are most commonly managed through recycling, off-site treatment, disposal, or placement in on-site engineered landfills.

Additional information on waste control standards can be found on Rio Tinto's website at [Hazardous Materials & Non-Mineral Waste Control Standard](#).

Spent pot lining (SPL) is a solid waste generated during primary aluminium production. Aluminium is produced in lined steel pots. The lining of the pot is typically made of two layers – an insulating refractory lining and an interior carbon lining. When the lining of the pot comes to the end of its life, typically after 4-7 years, it is classified as SPL.<sup>10</sup>

Dross is a mixture of aluminium, aluminium oxide and oxides of alloying elements. Dross is a by-product of all aluminium melting processes. Typically, dross contains a large amount of metallic aluminium and is recovered and reused.

In the START Label, SPL is included but not considered waste as they are treated for subsequent reuse applications and not landfilled. The same applies to dross as it is recovered, treated, and the aluminium recovered is used as internal scrap. The residue from the aluminium dross treatment processes is also recycled.

The START Label's site data is based on 2020 annual figures and expressed as kilograms of waste disposed of per tonne of aluminium produced.

An up or down trendline (2019-2020) is indicated with a  $\pm 10\%$  YoY difference in data. Where the YoY difference is  $\geq \pm 10\%$ , a comment outlining the reason for the change is included on page 2 of the label.



## Energy (electricity) Source

All managed aluminium smelter assets, except three (one managed and two JVs) in the Pacific, are based primarily on hydropower energy, which is crucial to achieving low carbon emissions. The global average of GHG emissions in 2014 for coal was 820gCO<sub>2</sub>-eq / kWh, and for hydropower was 34gCO<sub>2</sub>-eq / kWh, about 24 times lower than coal-generated electricity.<sup>11</sup>

The percent source of renewable energy is taking a location-based approach.

In addition to fewer emissions with hydropower, there are two additional benefits to using renewable energy sources: reducing air pollution and the supply chain's accidents. For example, in 2014, death rates from energy production measured as the number of deaths from air pollution and accidents per terawatt-hour (TWh) were 24.62 for coal versus 0.024 for hydropower, i.e., hydropower was 1025 times lower than coal.

The START Label Insights data is sourced from US Energy Information Administration (EIA).<sup>12</sup>



## Air Emissions

PM<sub>10</sub> is particulate matter that measures less than or equal to 10 micrometers in aerodynamic mass median diameter. PM<sub>2.5</sub> is particulate matter that measures less than or equal to 2.5 micrometers in aerodynamic mass median diameter.

Both NO and NO<sub>2</sub> are reported and expressed as equivalent nitrogen dioxide (NO<sub>2</sub>e), often referred to as NO<sub>x</sub>.

Additional information on waste control standards can be found on Rio Tinto's website at [Air Quality Protection Standard](#).

The START Label's site data is based on 2020 annual figures and expressed as kilograms of particulate matter produced per tonne of aluminium. As air emission is a new metric, there is no trendline shown.

<sup>10</sup> [https://international-aluminium.org/work\\_areas/spent-pot-lining/](https://international-aluminium.org/work_areas/spent-pot-lining/)

<sup>11</sup> Sovacool et al. (2016); and Markandya, A., & Wilkinson, P. (2007) data published in Our World in Data [www.ourworldindata.org](http://www.ourworldindata.org)

<sup>12</sup> <https://www.eia.gov/tools/faqs/faq.php?id=97&t=3#:~:text=How%20much%20electricity%20does%20an,about%20914%20kWh%20per%20month.>

# Environmental Metrics



## Biodiversity IUCN Red Listed Species

The IUCN Red List is a critical indicator of the health of the world's biodiversity. Far more than a list of species and their status, it is a tool to inform and catalyse action for biodiversity conservation and policy change, critical to protecting the natural resources we need to survive.

It provides information about the range, population size, habitat and ecology, use and/or trade, threats, and conservation actions to help inform necessary conservation decisions. The IUCN Red List Categories and Criteria are intended to be an easily and widely understood system for classifying species at high risk of global extinction. It divides species into nine categories:

- Not Evaluated, Data Deficient, Least Concern, Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct in the Wild, and Extinct.<sup>13</sup>

Additional information on biodiversity protection standards can be found on Rio Tinto's website at [Biodiversity Protection & Natural Resource Management Standard](#). The START Label's site data is based on 2020 annual figures. As biodiversity is a new metric, there is no trendline shown.



## Land Management

Land disturbed is the footprint created from mining, processing, and related activities currently in use and/or not yet rehabilitated.

Land rehabilitated is land that has been disturbed for mining, processing, and associated activities, which has subsequently been rehabilitated and restored to an agreed-upon pre-activity level.

Additional land management and rehabilitation standards information can be found on Rio Tinto's website at [Land Management & Rehabilitation Standard](#).

Land disturbed and rehabilitated is provided for the reporting period (1 Jan – 31 Dec 2020). As land management is a new metric, there is no trendline shown.



## Recycled Content

The recycled content in the START Label includes pre-and-post-consumer scrap and scrap sold externally.

The label aligns with the industry definition of pre-consumer scrap (i.e., a material containing aluminium that is diverted from the waste stream from a manufacturing process) and post-consumer scrap (i.e., a material containing aluminium that is reclaimed from a consumer or commercial product that has been used for its intended purpose and which can no longer be used for its intended purpose)<sup>14</sup>.

The pre-consumer scrap includes scrap from a secondary producer such as extrusion butts, defect scrap, and external scrap, including material from aluminium purchases from customers and other third-party entities for internal remelting. Post-consumer scrap is end of life recycling and can include drink cans, wheel recycling, construction, or scrap yard materials.

Excluded are internal scrap produced (drain cast or internal rejects), dross untreated (including cold metal returned from treatment), scrap from a smelter or lining containing aluminium, transfers, or exchanges, among other Rio Tinto sites, and scrap from the casthouse. The same scrap produced is also consumed on-site. Also excluded in the pre-consumer scrap is the reutilisation of materials such as rework, regrind or scrap (i.e., internal scrap) generated in a process capable of being reclaimed within the same process that generated it.

The START Label's site data is based on 2020 annual figures and expressed as kilograms of recycled content produced and consumed per tonne of saleable production volume. An up or down trendline (2019-2020) is indicated with a  $\pm 10\%$  YoY difference in data. Where the YoY difference is  $\geq \pm 10\%$ , a comment outlining the reason for the change is included on page 2 of the label.

<sup>13</sup> <https://www.iucnredlist.org/>

<sup>14</sup> Adapted from ISO 14021:2016

# Social Metrics



## VCare - People

These metrics pertain to Rio Tinto's management of its relationships with its employees, suppliers, customers, and the communities where it operates.



### Safety Performance

Safety is a core value, and nothing is more important to Rio Tinto than our employees, contractors, and communities' safety and well-being. Safety extends beyond personal safety, so we also have robust standards, processes, and tools embedded across our business to protect the environment and ensure respect for the communities in which we operate.

All Injury Frequency Rate (AIFR) = (Sum of All Injuries AI) x 200,000 ÷ hours of exposure. AI is the sum of lost time injuries and medical treatment cases. Over the past ten years, the severity of injuries and our AIFR have fallen significantly.

Critical Risk Management (CRM) is fatality elimination through an increased understanding of critical risks and critical controls embedded at the front line. We are committed to zero fatalities and a zero-harm work environment and have maintained our focus on CRM to verify that critical controls are in place.

A Potential Fatal Incident (PFI) is an incident with a safety impact that has the potential to result in a single or multiple fatalities (MRC = major or catastrophic). This number excludes an actual fatality.

The START Label's 2020 safety data is provided at a product-group level. An up or down trendline (2019-2020) is indicated with a ±10% YoY difference in data. Where the YoY difference is ≥±10%, a comment outlining the reason for the change is included on page 2 of the label.



### Contribution to Communities

Rio Tinto engages communities in inclusive ways, respecting dignity, rights, culture and way of life. Our vision is to strengthen communities to sustain and drive their progress. We aim to maximise social and economic development and minimise potential issues, like noise and dust. We plan our business for the long term and aim to play a positive role in society and the communities in which we operate, where many of our employees and their families live.

Additional information on communities and social performance standards can be found on Rio Tinto's website at [Communities & Social Performance Standard](#).

The community investments 2020 data in the START Label is provided at a product-group level. An up or down trendline (2019-2020) is indicated with a ±10% YoY difference in data. Where the YoY difference is ≥±10%, a comment outlining the reason for the change is included on page 2 of the label.



### Third-Party Assessment

Our [Supplier Code of Conduct](#) sets out the expectations of our suppliers and their subsidiaries and subcontractors with respect to key issues, including human rights. It also clarifies that we may choose not to work with suppliers who do not meet our expectations.

In 2021, we amalgamated our "Know your Supplier" (KYS) and "Know Your Customer" (KYC) procedures into a single "Know your Third Party" (KYTP) Procedure. This simplified procedure aligns risk criteria and articulates the mandatory due diligence requirements for all third parties we engage with, including customers, suppliers, contractors, divestment targets, and joint venture partners.

Due-diligence processes help identify the potential risks of engaging, renewing, or extending a relationship with a third party, whether these risks relate to potential human rights impacts, bribery, corruption, money laundering, trade sanctions or denied rights party transactions. We apply this procedure to all-new third parties and renewals of contracts and engagements with existing third parties meeting the KYTP risk criteria relating to activity, country, and value per business engagement. We perform system-based monitoring on relevant third parties centrally following the completion of the third-party due-diligence screening, relating to any new enforcement actions or sanctions-related alerts, and where applicable, additional factors such as significant changes in counterparty data.

The 2020 data in the START Label is provided at a corporate level and will show the KYS values. An up or down trendline (2019-2020) is indicated with a ±10% YoY difference in data. Where the YoY difference is ≥±10%, a comment outlining the reason for the change is included on page 2 of the label.



# Governance Metrics

## VCare - Progress

These metrics account for Rio Tinto's leadership, executive compensation, internal controls, shareholder rights, and the relationship between shareholders and management.



### Ethics & Compliance Training

[The Way We Work](#) clarifies that we do not offer, pay or accept bribes, no matter where we operate, the situation, or who who is involved.

Employees must complete an annual online Ethics and Compliance training tailored to suit the risks they are most likely to encounter in their roles. In 2020, Rio Tinto also provided additional risk-based training to employees and contractors in 23 countries and launched enhanced business integrity training online, covering integrity-driven decision-making, anti-bribery and corruption, anti-money laundering, and fraud for higher-risk roles. In 2020, Rio Tinto also developed our ethics ambassadors programme to extend the sharing and reach of integrity insights and championing an integrity-driven culture across the business.

The 2020 data in the START Label is provided at a corporate level. An up or down trendline (2019-2020) is indicated with a  $\pm 10\%$  YoY difference in data. Where the YoY difference is  $\geq \pm 10\%$ , a comment outlining the reason for the change is included on page 2 of the label.

Additional information on business integrity standards can be found on Rio Tinto's website at [Business Integrity Standard](#).



### Diversity

At all levels of Rio Tinto's workforce, we want to reflect the communities in which we operate, so we focus on employing local candidates and, where needed, work with local communities and governments to develop skills and work readiness in communities.

Additional information on diversity and inclusion can be found on Rio Tinto's website at [Rio Tinto - People](#).

The data in the START Label is provided at a corporate level. An up or down trendline (2019-2020) is indicated with a  $\pm 10\%$  YoY difference in data. Where the YoY difference is  $\geq \pm 10\%$ , a comment outlining the reason for the change is included on page 2 of the label.



### Whistleblower Programme

In 2021, we launched our enhanced confidential reporting programme, myVoice, a complaints mechanism designed to help people voice concerns about potential misconduct or improper behaviour. myVoice is available to our people, suppliers (and their employees and contractors), community members, other stakeholders, and the public.

The myVoice programme permits reports to be made confidentially and anonymously, subject to local laws.

Reports to myVoice can relate to concerns about the conduct of the business or/and individuals, including suspicion of violations of our standards, policies, procedures, human rights including modern slavery, safety and environmental issues, financial reporting, fraud, and business integrity issues in general.

Additional information and the myVoice procedure can be found on Rio Tinto's website at [myVoice](#).

The START Label 2020 data is provided at a product-group level. An up or down trendline (2019-2020) is indicated with a  $\pm 10\%$  YoY difference in data. Where the YoY difference is  $\geq \pm 10\%$ , a comment outlining the reason for the change is included on page 2 of the label.



# Transparency

## VCare - Accountability

Our voluntary commitments related to the Social category include commitments to several global standards and international norms, and participation in several international, regional, and national organisations, initiatives, and industry accreditation programmes.

These include:

- [United Nations Guiding Principles on Business and Human Rights](#)
- [United Nations Universal Declaration of Human Rights](#)
- [Voluntary Principles on Security and Human Rights \(VPSHR\)](#)
- [United Nations Declaration on the Rights of Indigenous Peoples](#)
- [OECD Guidelines for Multinational Enterprises](#)
- [United Nations Global Compact's 10 Principles](#)
- [International Council on Mining and Metals Principles for Sustainable Development and Performance Expectations](#)
- [International Finance Corporation's Environmental and Social Performance Standards](#)
- [Mining Association of Canada's Toward Sustainable Mining](#)

We also [publish](#) reports and statements related to the Social category including:

- [Annual Modern Slavery and Human Trafficking Statement](#)
- [Annual Report to the Voluntary Principles Initiative](#)

Respecting human rights is central to our values and the way we work – wherever we operate.

At Rio Tinto, we know we can affect human rights everywhere we work and beyond our operations. We also know that what we do in one location may affect people's trust in how we respect human rights elsewhere. Rio Tinto is committed to respecting internationally recognised human rights as set out in the Universal Declaration of Human Rights and implementing the UN Guiding Principles on Business and Human Rights.

This commitment includes following a range of other international standards and guidelines, including the VPSHR, the OECD Guidelines for Multinational Enterprises, and the UN Global Compact's 10 Principles.

Rio Tinto publicly reports on its human rights performance, including publishing an Annual Report to the Voluntary Principles Initiative on implementing the VPSHR and our annual Modern Slavery Statement.

Our human rights performance is also assessed through various external initiatives, including the Aluminium Stewardship Initiative (ASI), Copper Mark, the Mining Association of Canada's Towards Sustainable Mining, and the Mining Principles from the International Council on Mining and Metals (ICMM).

Additional information on Rio Tinto's approach to human rights, including our Human Rights Policy, our implementation of external and internal standards, and our salient human rights issues, can be found on our Human Rights webpage. More targeted human rights data is expected to be added to the START Label in H1 2024.

# Contact us



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START



**START**

Materialising  
Progress

**RioTinto**