

March 2019

RioTinto

Delivering a responsible future

Aluminium







Security of supply

Multi-sourced supply



Supply isn't dependent on a single source
Minimises geopolitical risks

Reliable delivery



Robust, flexible and trusted delivery
Casthouses are strategically located to ensure just-in-time delivery

Integrated supply chain



Integrated from mine to market
Strict quality controls ensure consistent, high quality products



A broad network of smelters

Click a location on the map to see our smelter production. Click the forward button to skip this section



3.2 million tonnes

delivered annually



A broad network of smelters



Alma smelter

Alma, Canada

Rio Tinto production*: 465,000 tonnes

Products: aluminium rod, t-foundry,
molten metal, high purity, remelt

*Production as of December 31, 2018



3.2 million tonnes
delivered annually





A broad network of smelters



Alouette smelter

Sept-Îles, Canada

Rio Tinto production*: 234,000 tonnes

Products: aluminium high purity,
remelt

*Production as of December 31, 2018



3.2 million tonnes

delivered annually





A broad network of smelters



Arvida AP60 smelter

Arvida, Canada

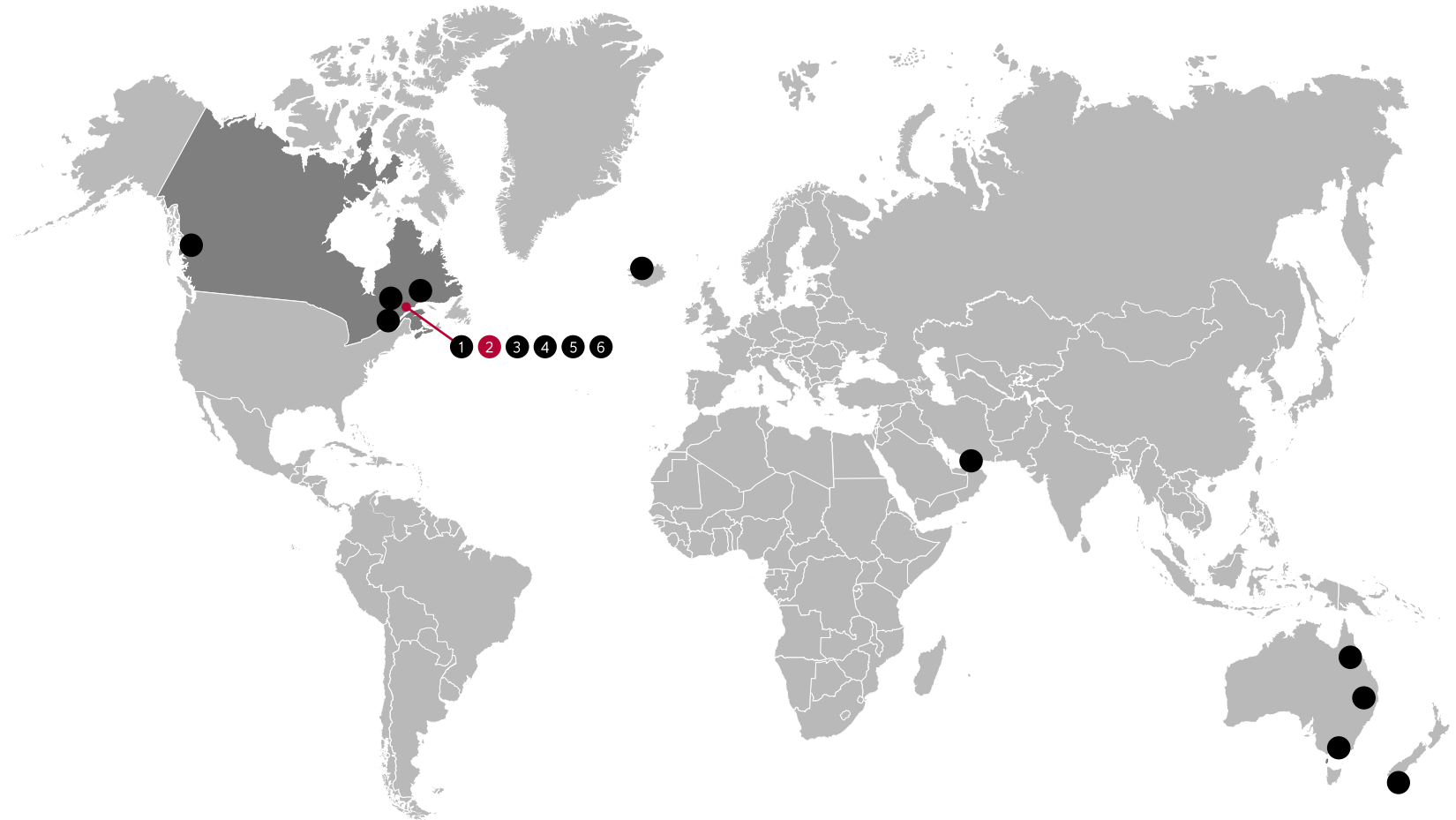
Rio Tinto production*: 52,000 tonnes

Products: aluminium high purity,
remelt

*Production as of December 31, 2018



3.2 million tonnes
delivered annually





A broad network of smelters



Arvida smelter

Arvida, Canada

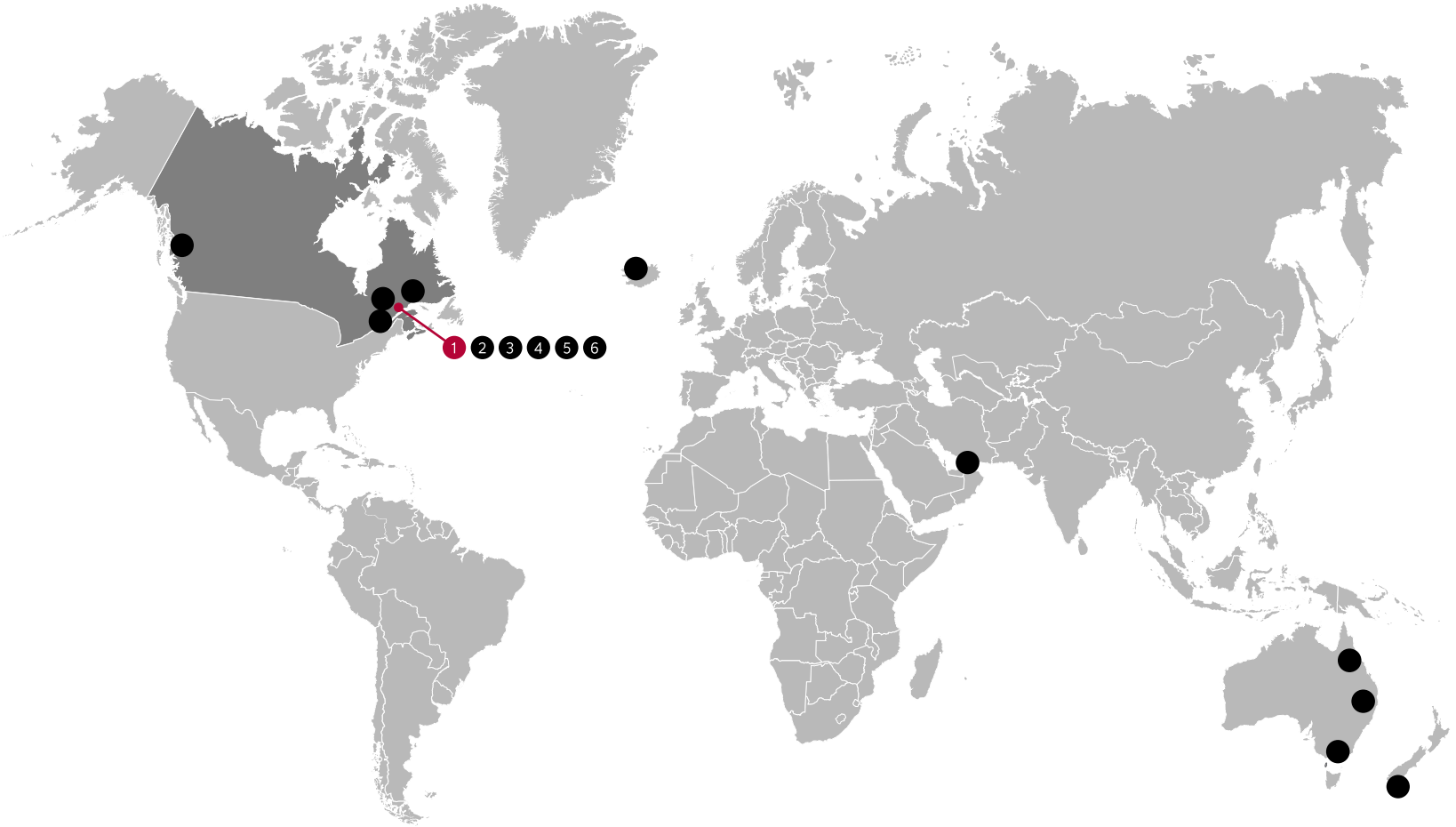
Rio Tinto production*: 173,000 tonnes
Products: aluminium billet, molten metal, remelt

*Production as of December 31, 2018



3.2 million tonnes

delivered annually





A broad network of smelters



Beauharnois casting center

Beauharnois, Canada

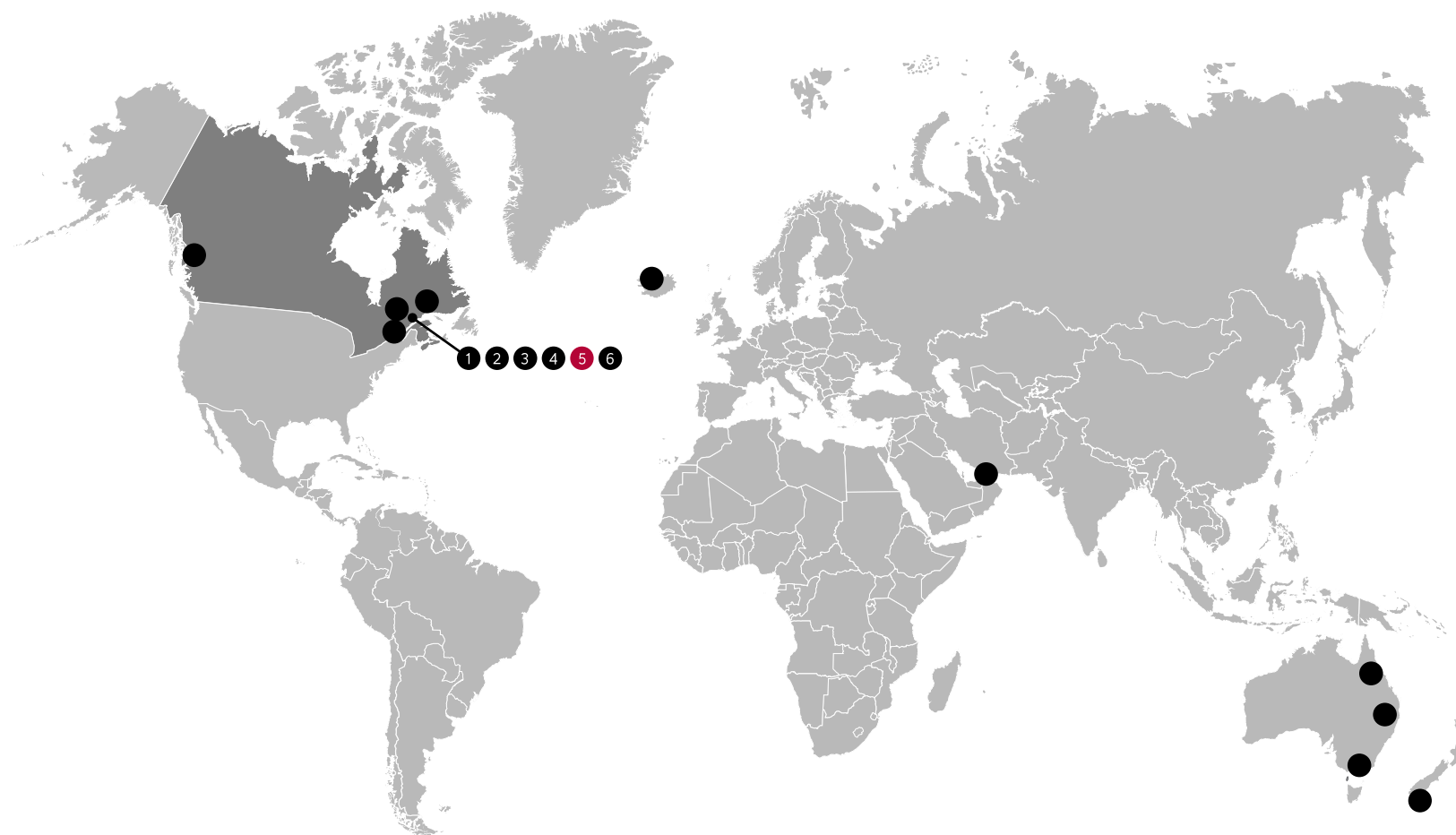
Shared production*: 48,000 tonnes

Products: mainly foundry alloys

*Production as of December 31, 2018



3.2 million tonnes
delivered annually





A broad network of smelters



Bécancour smelter

Bécancour, Canada

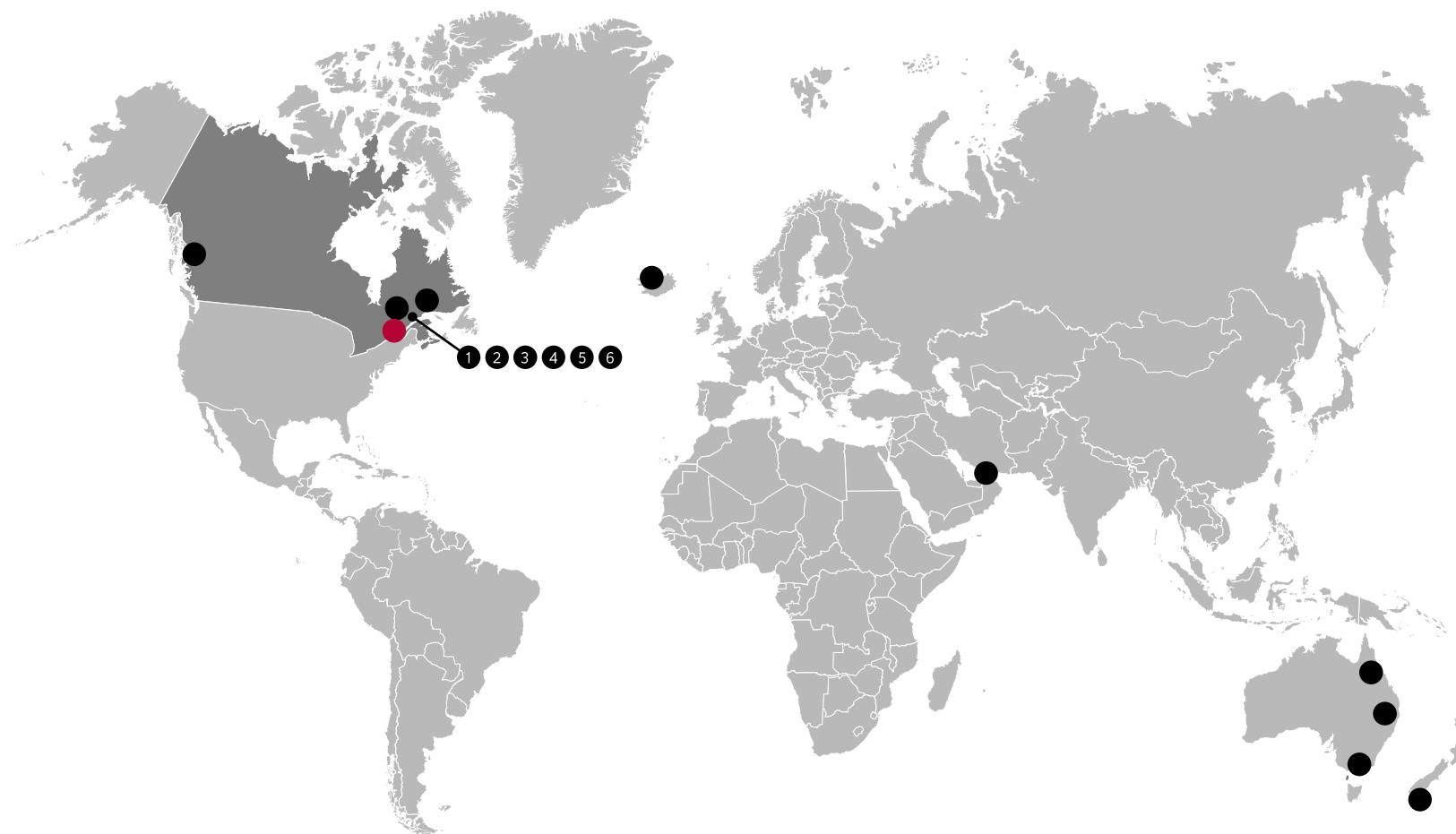
Rio Tinto production*: 34,000 tonnes

Products: aluminium slab, billet, t-foundry, remelt, molten metal

*Production as of December 31, 2018



3.2 million tonnes
delivered annually





A broad network of smelters



Bell Bay smelter

Bell Bay, Australia

Rio Tinto production *: 189,000 tonnes
Products: aluminium slab, molten metal,
small form and t-foundry, remelt

*Production as of December 31, 2018



3.2 million tonnes

delivered annually





A broad network of smelters



Boyne smelter

Boyne Island, Australia

Rio Tinto production*: 295,000 tonnes
Products: aluminium billet, EC grade,
small form and t-foundry, remelt

*Production as of December 31, 2018



3.2 million tonnes

delivered annually





A broad network of smelters



Dubuc/Small ingot Saguenay casting center

Chicoutimi, Canada

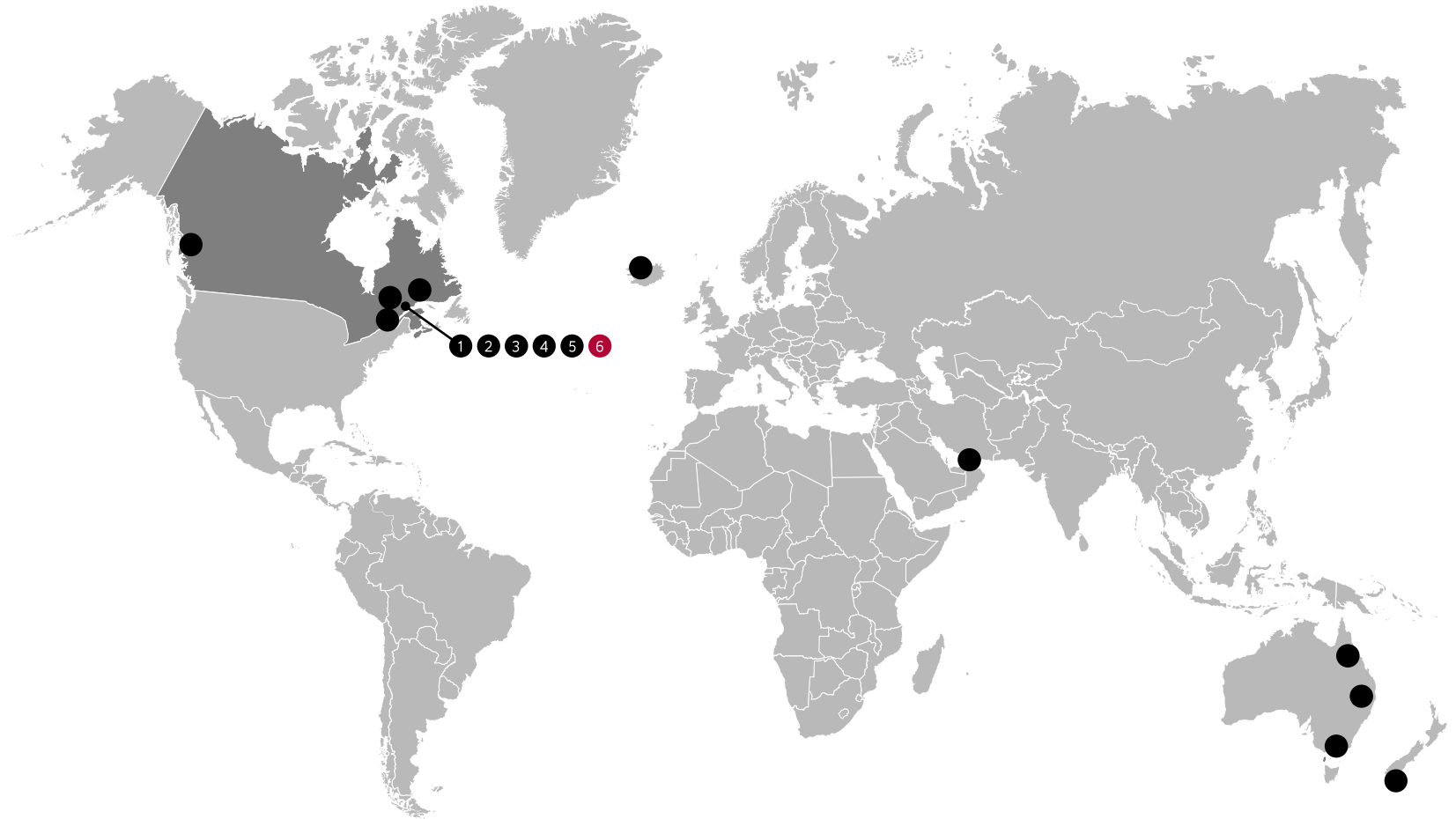
Rio Tinto production*: 50,000 tonnes

Products: Specialty products: lithium, busbar

*Production as of December 31, 2018



3.2 million tonnes
delivered annually





A broad network of smelters



Grande-Baie smelter

La Baie, Canada

Rio Tinto production*: 233,000 tonnes

Products: aluminium slab, molten metal, high purity, remelt

*Production as of December 31, 2018



3.2 million tonnes
delivered annually





A broad network of smelters



ISAL smelter

Reykjavik, Iceland

Rio Tinto production*: 212,000 tonnes

Products: aluminium remelt, billet

*Production as of December 31, 2018



3.2 million tonnes

delivered annually





A broad network of smelters



Kitimat smelter

Kitimat, Canada

Rio Tinto production*: 436,000 tonnes
Products: aluminium slab, remelt, high purity

*Production as of December 31, 2018



3.2 million tonnes
delivered annually





A broad network of smelters



Laterrière smelter

Arvida, Canada

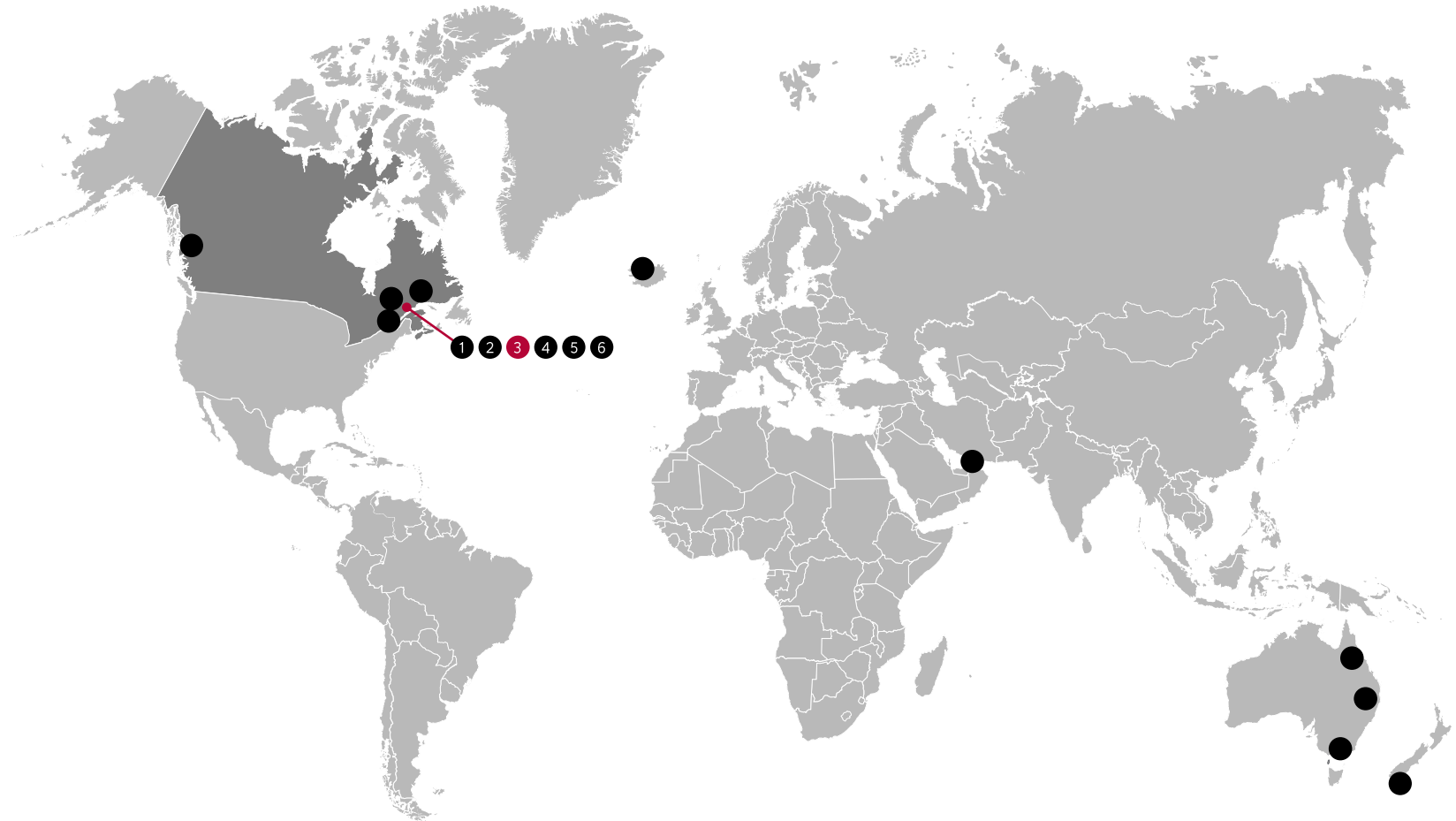
Rio Tinto production*: 257,000 tonnes

Products: aluminium slab, remelt,
molten metal

*Production as of December 31, 2018



3.2 million tonnes
delivered annually





A broad network of smelters



Sohar smelter

Sohar, Oman

Rio Tinto production*: 76,000 tonnes

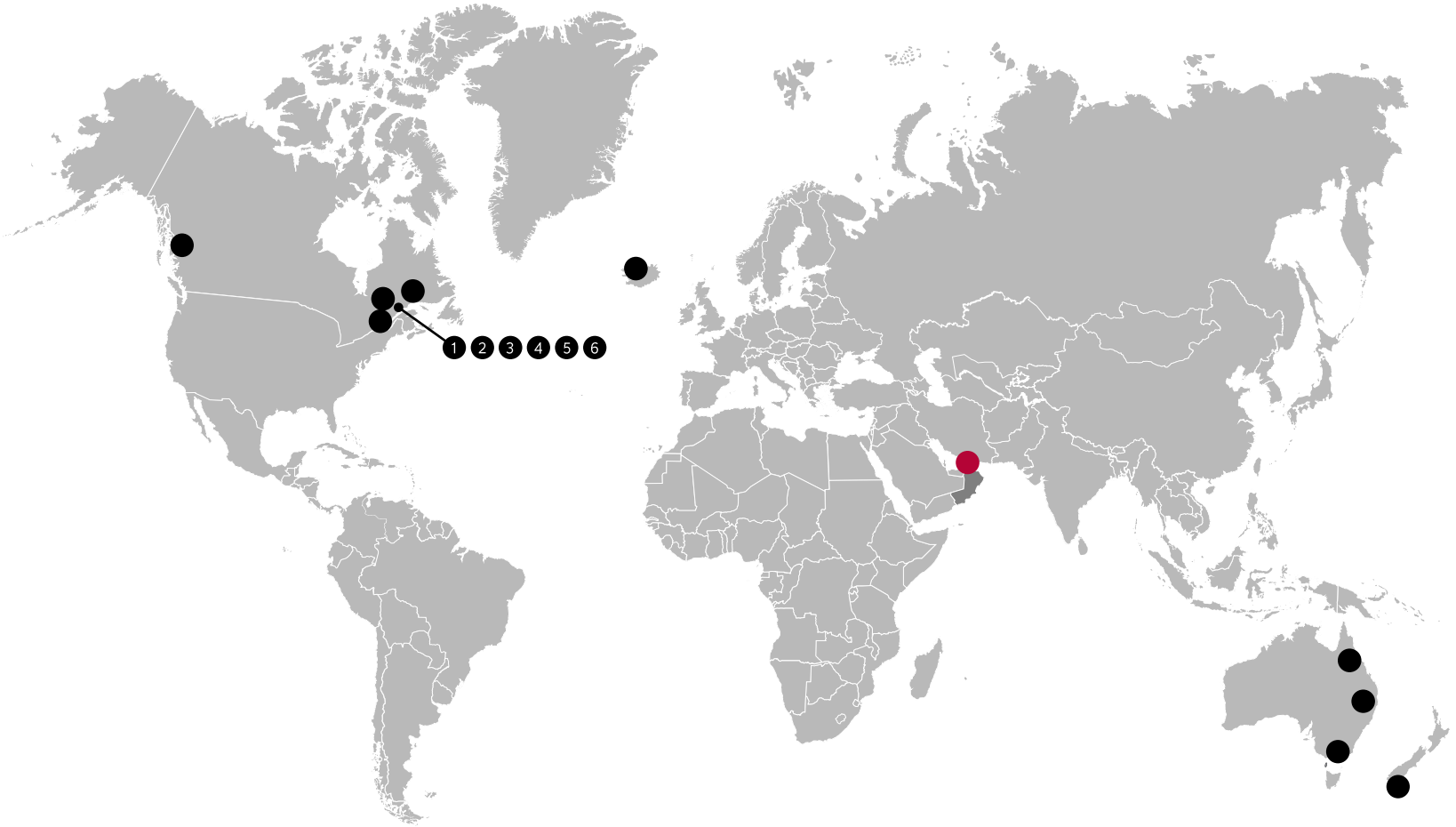
Products: high purity, remelt

*Production as of December 31, 2018



3.2 million tonnes

delivered annually





A broad network of smelters



Tiwai Point smelter Invercargill, New Zealand

Rio Tinto production*: 270,000 tonnes
Products: aluminium billet, slab, small form foundry, high purity, remelt

*Production as of December 31, 2018



3.2 million tonnes

delivered annually





A broad network of smelters



Tomago smelter

Tomago, Australia

Rio Tinto production*: 305,000 tonnes

Products: aluminium billet, slab, remelt

*Production as of December 31, 2018



3.2 million tonnes
delivered annually





Integrated supply chain

Reliable from mine to market



50 million tonnes
of bauxite



from **4** mines

8 million tonnes
of alumina



from **4** refineries

8 power
stations



Sustainable and
secure power

3.2 million tonnes
of aluminium produced



at **18** aluminium
casthouses

550
customers



in more than
50 countries



A responsible partnership

Recycling is not enough...That's why we created RenewAl™



RenewAl™ is a comprehensive package of a certified CO₂ content of 4tCO₂/tAL or below and customised services.

Find out how RenewAl™ offers a cleaner start to your product lifecycle

Click to find out more



RioTinto



Certification

We are a co-founder of the Aluminium Stewardship Initiative (ASI). The only aluminium in the world independently certified to be produced and sold, in a way that treats people fairly, manages waste properly and reduces impacts on the environment.



Click to find out more

Partnership

Joining forces with Alcoa, supported by Apple and the governments of Canada and Quebec, to develop the world's first carbon-free smelting process.



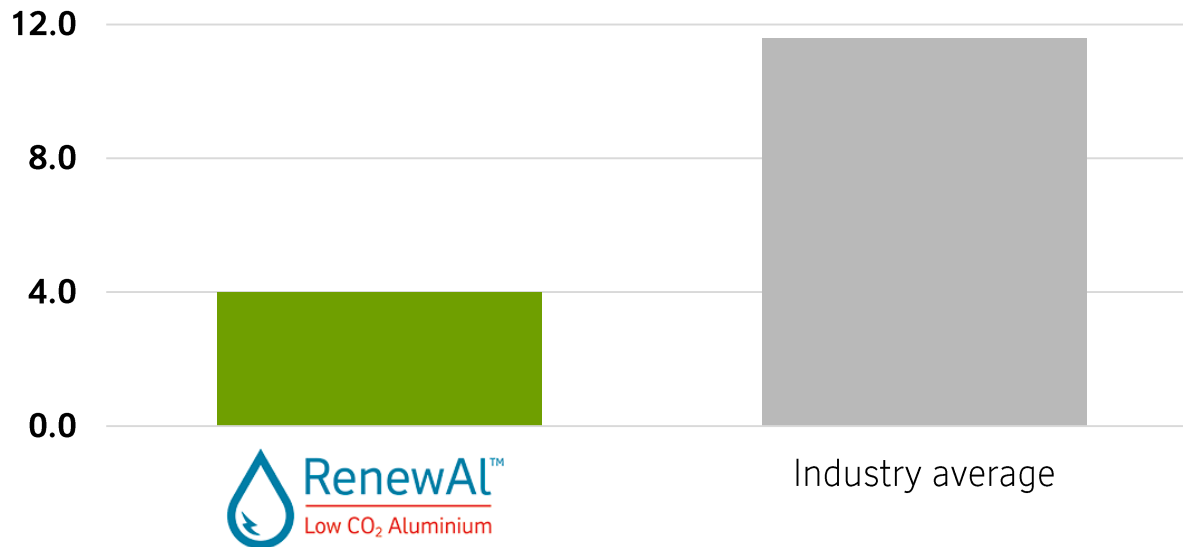
Click to find out more



RenewAl™ is a comprehensive package that includes:

Certified CO₂ content 4tCO₂/tAl or below

Tonnes of CO₂ emitted per tonne of aluminium produced (Scope 1&2)



Customised services



Certification Third party certified CO₂ emissions (Scope 1&2)



Technical expertise Assistance in leveraging low CO₂ aluminium



Traceability Product tracked from mine to metal



CO₂ reduction strategies Support to optimise your low CO₂ sources



Life cycle analysis Contribution to specific calculation on lifecycle



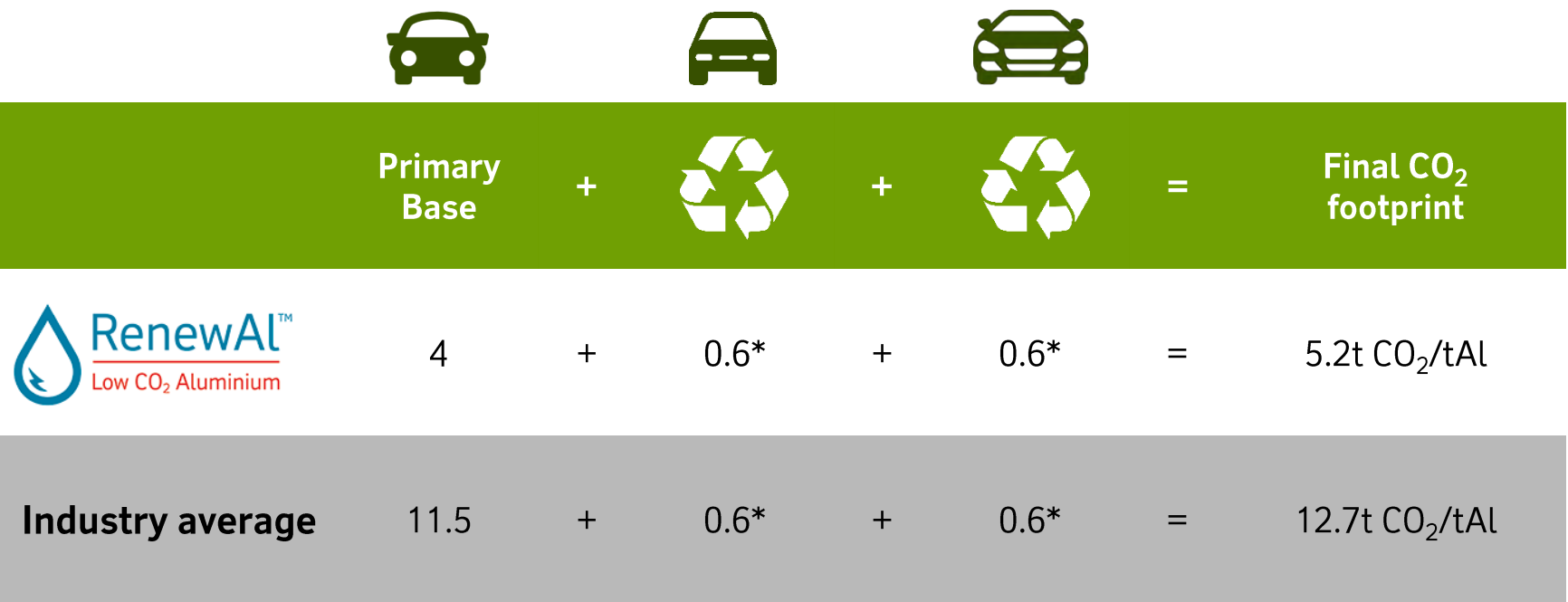
Co-branding Unique partnerships with RenewAl™

Click here to find out why RenewAl™ is a cleaner start to the product lifecycle'





Recycling is not enough, RenewAl™ is a cleaner start to the product lifecycle



*At every recycle process the CO₂ footprint is 0.6, calculated from 0.4 transformation +0.2 transportation

Aluminium made with recycled material takes only 5% of the energy to produce, however the primary base impacts in CO₂ footprint. For example, after recycling an automobile twice, the CO₂/tAl is 5.2, compared to the industry average of 12.7t CO₂/tAl.

That's three times lower with RenewAl™



Consistent high-quality products

Click to
enlarge table



2,000+ alloys



Robust
quality control

RioTinto



Our products

Rolling slab

Alloys 1xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx series

Thickness

300mm-762mm (12in-30in)

Width

860mm-2,514mm (34in-99in)

Lengths

Up to 9,600mm (378in). More than 100 rolling slab formats available. Customisation possible upon request.

Extrusion billet

Alloys 1xxx, 3xxx, 6xxx and some 7xxx series

Diameters available

81-355 mm (3.2in-14in)

Lengths

305-8,000mm (12in-315in)

Foundry (ingot and T-bar)

206 series, 242.2, 319.2, 354.2, 355 series, 356 series, 357 series, 359 series, 360, 365.1, 374.1, 375.1, 390.2, A390.1, 413 series, 5xx and 7xx series alloys

Small form ingot weight

8-24 kg (18-53 lbs)

T-bar weight

327-907 kg (720-2,000lbs)

Rod

Alloys 1080, 1120, 1188, 1350, 1370, 4043, 4047, 5005, 6101, 6201, 8030, 8176, Al-Zr

Diameters available

9.53mm, 12.0mm, 12.72mm

Coil dimensions

Width 915mm

Inner diameter 775mm

Outer diameter

in

60.4

71.4

73.8

mm

1,533

1,815

1,874

Coil weight

lbs

5,292

8,157

8,818

kg

2,400

3,700

4,000

High purity ingot

Grades from 99.90% to 99.98% purities

T-ingot weight

625 -750kg

Small form ingot weight

23.4kg

Remelt ingot

T-ingot weight

625-750kg

Sow ingot weight

600-750kg

Small form ingot weight

12-24kg

Specialty products

Busbar, Metal Matrix Composites

Our busbars, anode beams and anode studs enhance current efficiency and cell stability, helping drive down energy consumption.

DURALCAN®, BORALCAN™



Rolling slab Alloys 1xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx series	Thickness 300mm-762mm (12in-30in) Width 860mm-2,514mm (34in-99in)	Lengths Up to 9,600mm (378in). More than 100 rolling slab formats available. Customisation possible upon request.			
Extrusion billet Alloys 1xxx, 3xxx, 6xxx and some 7xxx series	Diameters available 81-355 mm (3.2in-14in)	Lengths 305-8,000 mm (12in-315in)			
Foundry (ingot and T-bar) 206 series, 242.2, 319.2, 354.2, 355 series, 356 series, 357 series, 359 series, 360, 365.1, 374.1, 375.1, 390.2, A390.1, 413 series, 5xx and 7xx series alloys	Small form ingot weight 8-24 kg (18-53 lbs) T-bar weight 327-907 kg (720-2,000lbs)				
Rod Alloys 1080,1120, 1188, 1350, 1370, 4043, 4047, 5005, 6101, 6201, 8030, 8176, Al-Zr	Diameters available 9.5 mm, 12.0mm, 12.7 mm	Outer diameter		Coil weight	
	Coil dimensions Width 915mm Inner diameter 775mm	in	mm	lbs	kg
		60.4	1,533	5,292	2,400
		71.4	1,815	8,157	3,700
		73.8	1,874	8,818	4,000
High purity ingot Grades from 99.90% to 99.98% purities	T-ingot weight 625 -750kg	Small form ingot weight 23.4kg			
Remelt ingot	T-ingot weight 625-750kg Sow ingot weight 600-750kg	Small form ingot weight 12-24kg			
Specialty products Busbar, Metal Matrix Composites	Our busbars, anode beams and anode studs enhance current efficiency and cell stability, helping drive down energy consumption. DURALCAN®, BORALCAN™				



Our experts develop solutions to meet your needs

Click a section
to learn more



Downstream
expertise



Alloy
development



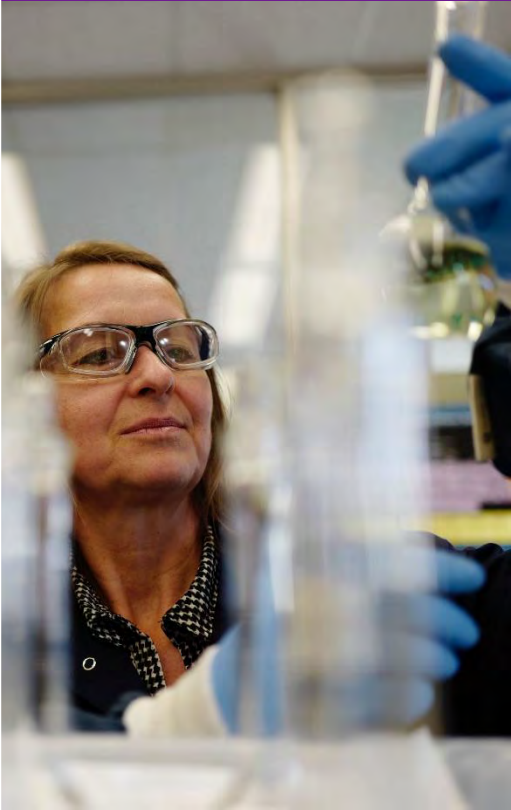
Technical training
and seminar



Process
improvement



Cutting-edge
research





Our experts develop solutions to meet your needs

Click a section
to learn more



Downstream expertise

We pioneer innovative technologies and products for industries including the automotive and building and construction sectors.

Find out more about our automotive expertise.

Alloy development



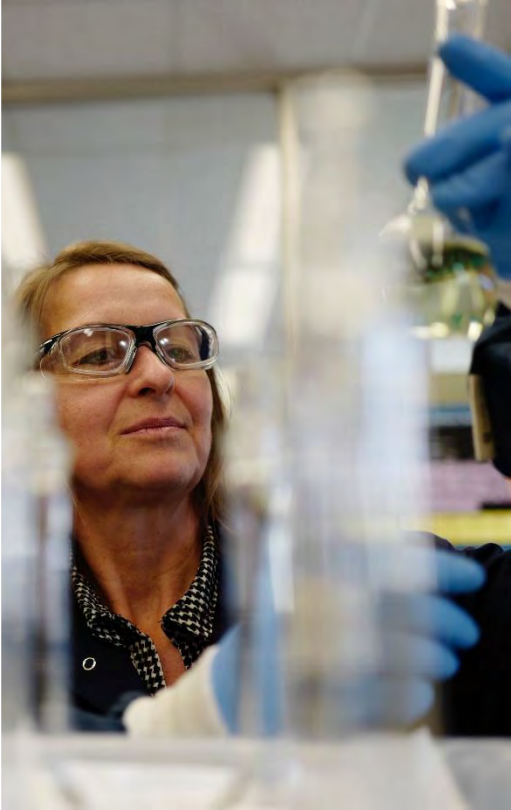
Technical training and seminar



Process improvement



Cutting-edge research





Our experts develop solutions to meet your needs

Click a section
to learn more



Downstream expertise



Alloy development

We've tailored dozens of new alloys that give you an edge in a growing and dynamic market.

Contact us to talk about finding the alloy for your needs.

See **business case**

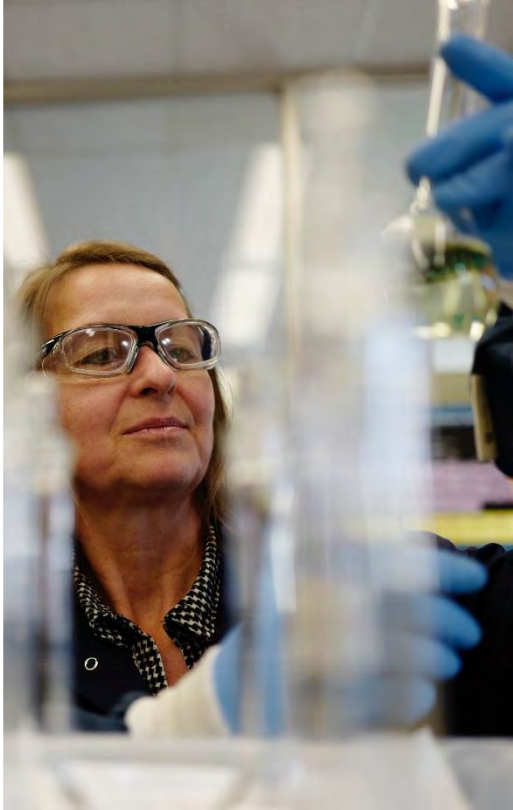
Technical training and seminar



Process improvement



Cutting-edge research





Our experts develop solutions to meet your needs

Click a section
to learn more



Downstream expertise



RioTinto

Alloy development



Technical training and seminar

We offer training and can also assess your processes and recommend solutions to enhance your productivity.

Need training or technical support?

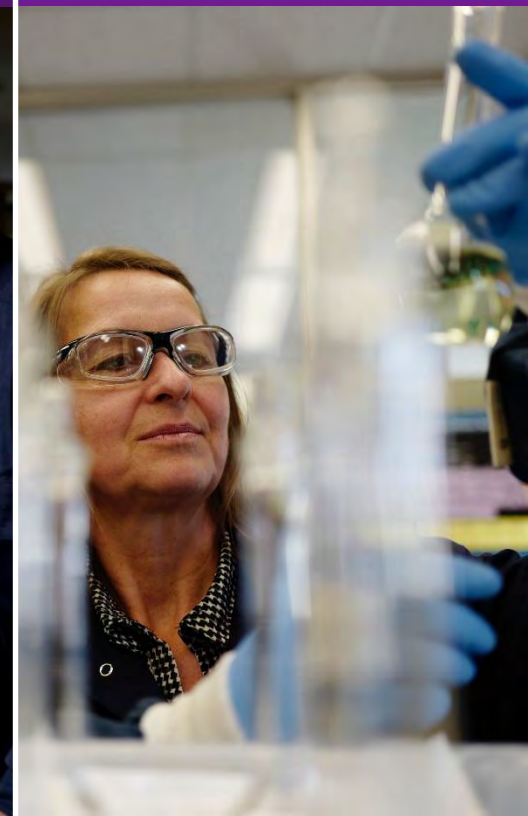
Please contact
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jerome.fourmann@riotinto.com

Process improvement



Cutting-edge research





Our experts develop solutions to meet your needs

Click a section
to learn more



Downstream
expertise



RioTinto

Alloy
development



Technical training
and seminar

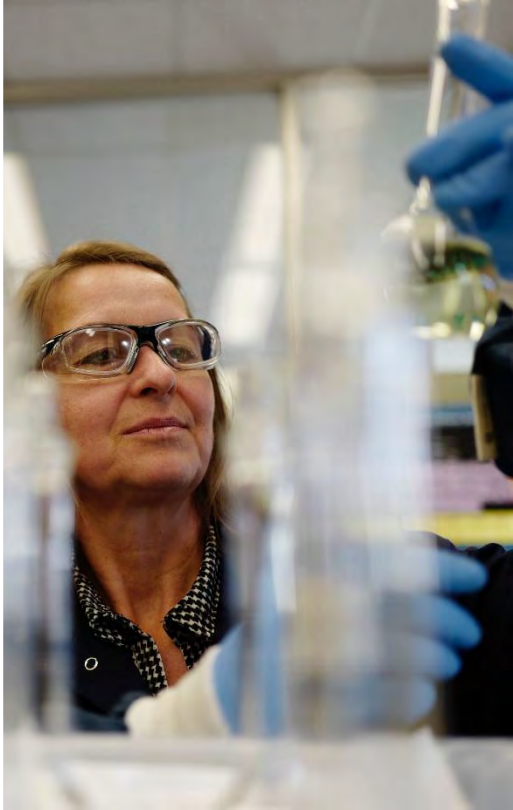


Process
improvement

We continuously improve our customer products and processes. It's one of the ways we boost your productivity and drive down your costs.

See example

Cutting-edge
research





Our experts develop solutions to meet your needs

Click a section
to learn more



Downstream
expertise



Alloy
development



Technical training
and seminar



Process
improvement



Cutting-edge
research

We invest in research
to develop new
technologies and
specialised alloys



Alloy development



Our cutting edge alloys

Automotive

Automotive customers use our innovative Aural™ foundry alloy in applications such as shock towers, node and battery boxes.

We've also developed a heat-treatment-free alloy for structural castings.

Automotive cast wheel can now benefit from a recent alloy development allowing a 7-10% weight reduction.

Heating, ventilation and air-conditioning (HVAC)

Our 31104 long life™ extrusion alloy is a corrosion resistance industry benchmark for automotive and for HVAC transfer applications.

Building and construction

We've developed the Superflow™ alloy series for the building and construction sector. These versatile alloys combine high extrudability, high finish response and a wide range of properties suitable to many requirements.



BMW X5 Shock Tower in Aural™ 2





Process improvement



Rio Tinto wins Novelis award

We worked with Novelis to boost their on-time-in-full orders by 40% within a year. This enabled them to improve their on-time delivery and gain new customers.

RioTinto



“

The work that the team has done over the past years is truly amazing! Thanks again and looking forward to continuing a great partnership. ”

Henning Hahn,
Director of supply chain, Novelis





Best in class technology and industry leading expertise



RioTinto



AP60 redefined the industry



The world's
most advanced
smelter
technology



Step change
in efficiency to
produce highest
quality alloys



Lower
emissions

Over **95%**



of our energy is secured for **the long term**



You can count on us

We're investing in our operations to ensure we can provide quality product over the long term

Foundry small form

From 2014 to 2022, we'll increase our foundry small form capacity by 150%. This will mean we can offer a multi-sourced supply delivered anytime, anywhere.

Cast cut project

Our new cast cut product will be available in 2019 to meet your business needs.

Billet

We're continuously growing our production capacity to meet our customers' needs. Billet is one product we're investing in to meet growing demand.

Slab

We want our customers to benefit from an endless supply of products. That's why we plan to grow our slab capacity, so your business can grow too.