

Mining now and in the future

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St Barbara's Day, WA Mining Club**

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Good afternoon everyone.

I would like to start by acknowledging the Traditional Owners of this land, the Whadjuk people of the Noongar nation, and pay my respects to their elders, past, present and emerging.

I would also like to acknowledge the Traditional Owners across the Pilbara on whose land our operations are based.

And thank you to all of you.

I was proud to be invited to speak here today.

I have come to learn that the WA Mining Club's St Barbara's Day lunch is an institution here in Western Australia, and I'd like to pass on my appreciation to everyone on the committee for continuing its fine tradition.

St. Barbara's Day is an important day for our industry, and for me personally.

It's a day to pause, and to reflect on those who came to work, and didn't return home at the end of their shift.

We knew these people.

They were our friends, neighbours, co-workers and in some cases, brothers, husbands, sisters, and fathers.

There were too many of them, more than 350 people over the past 50 years from our industry alone in Western Australia.

Today is a day we pledge to remember their lives and their legacy.

I have been a miner for more than 30 years.

And I am deeply saddened to say that, two employees have died on my watch.

Paul Strong died 15 years ago, at Mount Thorley Warkworth Mine (MTW), an open cut coal mine in the Hunter Valley, after an incident involving a truck tyre. I was General Manager Operations of the site.

In August this year, Daniel Patterson a truck operator was fatally injured at our Paraburdoo Iron Ore mine.

I think of Paul and Daniel often, and I think too of their families they left behind...

It is hard talking about those we have lost. It's hard for me right now, to be honest, a fatality leaves a scar that will never heal.

But we have to do it because we cannot – let ourselves forget.

And because the best way to honour their memory, is to do everything in our personal and collective power, to make sure it never happens again.

At Rio Tinto, safety is our number one priority.

We are focused on managing critical risks, and increase the use of engineering controls to implement fatality risk controls. We must maintain our vigilance. We are seeing a deeper understanding of fatality risks and critical controls at the front line, however our recent fatality shows that we still clearly have a long way to go.

You have heard me say I've been in this business for over three decades.

I joined Rio Tinto in 1988 as a graduate metallurgist in Rio's Aluminium business – fresh from my traineeship as a metallurgical engineer at an integrated steelworks - and the rest, as they say, is history.

I still remember my first day and being impressed that for the first 3 days all I did was safety inductions. Being taught about all the ways people die in the resources industry and what I need to do to protect my personal safety and that of my colleagues.

As some of you may know,

146 years ago, the Rio Tinto Company was born on the banks of the “red” river Rio Tinto, in Andalusia, Spain – an area mined since the time of the Phoenicians and prized by the Greeks and Romans.

The world has always needed mines, and of course miners.

By the late 1800s, Rio Tinto had become the world's leading copper producer.

And then we grew further.

Our partnership with Australia began in 1905, with the creation of the Zinc Corporation and, in the 1950s, the extensive bauxite deposits at Weipa, in northern Queensland, heralded our entry into aluminium.

And Rio Tinto's first shipment of iron ore from the Pilbara landed in Japan in 1966, more than 50 years ago.

I mention all this because our company has a long, proud history – a legacy created by generations of Rio Tinto pioneers.

But as proud as I am of this history, my job these days is to think of the next 50 years, and how to make our future as strong as our past.

Of course, to do that, our company – and if I may say so, many others in the room today, including myself – need to change and adapt.

To disrupt our current status quo.

This means we need to make better use of technology, and data.

We need to become more nimble, and agile – move fast, learn and adapt.

We need to focus on our customers and their needs, not only our own.

And finally, as my boss is always saying, in an industry that is built on the goodwill and trust of governments and communities, we need to positively engage with our neighbours and the broader community to tell our story better.

When you put all these things together, and as much as it pains me to say it, many people don't trust our industry.

Across many parts of the population in Australia, people are not aware of the contribution we make.

They think we're not giving back as much as we should, or can.

They think we don't care about the environment, and don't know how hard we actually work to minimise our impact.

They think – and here I have to say I agree with them – that we need to be a more diverse, inclusive and progressive industry.

And they want us to be part of the solution, not part of the problem.

So, how are we doing?

First, on our contribution and giving back.

It might interest people to know that last year, Rio Tinto alone contributed AUD \$42.7 billion to the GDP of Australia – that's 2.5% of the entire economy!

In Western Australia alone, last year, Rio Tinto's operations contributed over AUD \$27 billion to the state's economy – about equivalent to 12% of the state's gross product.

Again, that's just Rio.

Across Australia, we paid nearly AUD \$5 billion in tax and royalties in 2017.

And also last year, we spent AUD \$13.2 billion with 9,000 Australian businesses – over 2,500 of these are in Western Australia, in the communities where we operate, and where our employees live and work.

In fact, our Local Procurement Programme is designed to make it easier for local businesses to work with Rio Tinto and our major suppliers.

We have a Local Procurement Portal, set up a local procurement team, raised awareness of local opportunities, help local businesses put their best foot forward in order to win work, and adjusted our payment terms for small businesses.

This has already started to yield positive results, with local suppliers awarded 90% of the work published on our Local Procurement Portal.

Businesses like Pindan, a Perth based construction company that was recently awarded a \$45 million contract to build a 780-room construction camp at our new Koodaideri iron ore mine.

We're also the first mining company to be accredited as a White Ribbon company recognising our work to prevent domestic violence and in supporting our employees who are impacted. This is about protecting our employees at work, and at home, in the communities in which we operate.

And finally, last year, our operations employed around 21,000 people in Australia; and in my business, iron ore, nearly 1000 of our employees are Indigenous.

And that's just Rio Tinto!

So do we give back? I'd say so.

But I think we could go one step further.

We could probably do a better job connecting our communities to the work we do.

That's one reason why, just a few weeks ago, Rio Tinto released our Economic Contribution report.

It has a lot of big numbers in it, but behind every number there's a human story – people employed, new opportunities given, and taken, businesses launched, and communities helped.

My challenge to all of us here today – what are we doing to tell those stories?

What can we do better?

And how can we do it together?

Moving to sustainability.

This year we announced a partnership with Alcoa, supported by Apple and the Canadian and Quebec governments, to bring direct emissions-free smelting technology to market.

And soon, you will be able to enjoy your morning coffee even more as Nespresso's famous coffee pods will be made with the world's first certified responsible aluminium, produced by Rio Tinto.

We are committed to doing what we can, in partnership with our industry, the Australian government and other partners.

Now a few words on technology.

Today Rio Tinto hires many data scientists, mechatronic engineers and software engineers - as well as of course traditional mining engineers.

Why?

Well, we run the world's largest robot, a 2.4 km long train in the Pilbara reaching more than 1 million kilometres travelled in full autonomous mode.

We have mined more than 1 billion tonnes of material with autonomous haul trucks.

We have drilled over 7 million metres with our autonomous drill system and just last week we approved the capital to construct the world's first intelligent mine - Koodaideri.

Koodaideri sits on a massive orebody and is a truly tier one asset – high quality, long life, low cost and expandable.

Koodaideri will have all our assets networked together and be capable of making decisions themselves – in microseconds.

It will bring together everything we've learned from our decade-old Mine of the Future programme, along with a lot of new technology.

One initiative we've introduced at Koodaideri is digital twinning.

This involves building a replica digital plant that collects all the data on the plant from design, build, commissioning and operation.

By creating a mine simulation, we can quickly test a range of different scenarios, without safety risks or downtime.

And it is real time – providing data to our employees in the field to empower them to make better decisions – to be safer, more productive and enhance efficiency.

We hope to further improve safety as well: employees won't be required in the pit, because most activities will be automated.

In fact, our complete logistics chain is being revolutionised through automation – including automated trucks, drills and trains and, for the first time, systems connecting all data right across the value chain.

We are advancing towards a networked future where machines can talk to machines, reducing variability through the system, with the aim of improving our safety performance and productivity.

We're pretty excited – and as you can tell I'm pretty excited personally.

The key to any technology, though, is our people.

Yes we are using data analytics to drive productivity.

Yes we use automation on our drill rigs, trucks and trains.

Yes we use drones for field surveys and for maintaining equipment.

But each of these need highly skilled men and women to design and manage how to deploy, operate, optimise, integrate and maintain.

For some of our people, this shift will mean changing from one role to another – a truck driver from the Pilbara now monitors a fleet of autonomous trucks from the Operations Centre; a fitter now flies a drone to inspect an operating excavator.

As you can imagine, at an individual level, this takes considerable learning and re-training. Even if the fitter remains a fitter, they are likely to be reaching for a tablet as often as a spanner.

At a business and indeed, at the resources sector level, an overall shift in core competencies is required.

The new mining engineers will be as specialised, if not more so, in data analytics and AI as they will be in ore body knowledge.

We are already investing in a lot of our people, so that they can stay ahead of the knowledge curve.

As one example, we recently partnered with the WA Government and the South Metropolitan TAFE to pioneer a new vocational curriculum on robotics, data analytics and digital techniques.

Our friends across the industry are also supporting this initiative, which is great.

So all in all, I would say the industry isn't perfect. We've made mistakes, and we've learned from those.

But we are trying – Rio is trying – in every way, to do the right thing.

We know our responsibility goes beyond the good times, beyond the mine gate to a lasting, sustained commitment that helps improve the skills and capacity of the local

workforce – and has a direct and positive impact on the financial and environmental wellbeing of every community we serve.

And we aren't stopping there.

To the point about being more nimble, more agile.

At Rio Tinto, we don't want to just react – even if it's react well – to what's happening in the market.

As a company of pioneers, we want to drive that.

We know we can't be the Facebook of tomorrow, and we don't want to be – for me our purpose, careers and contribution is much more compelling.

We don't know what mining will look like 50 years from now.

But we do want to – and need to – innovate and invent.

So just last month, we launched a pioneering lab in Brisbane. The “job” of this lab is to come up with big, blue sky ideas that will help Rio Tinto 4.0, and ultimately, our industry, be better. Faster. More efficient. And more effective than ever before at driving human progress.

We are excited to see what the best minds at Rio Tinto turn up!

So let me end by saying that I think the future of this industry is bright.

As long as people need smartphones, cars, trains, airplanes, automobiles and buildings, our industry will continue to be a critical part of our world and our economy.

Our challenge is now.

First to become the industry we want to be in the future – to change, to adapt, to innovate.

And then second, to tell our story better.

And finally, and most importantly, make sure we bring people along with us.

Thirty years ago, people used to say about mining - it's a dirty, dangerous industry, full of slightly overweight middle-aged men wearing hard hats.

Thirty years from now, what do we want them to say?

On this, St Barbara's Day, let's pledge to write that answer ourselves, together.

Thank you again for having me here today.