# **RioTinto**

Sustainable development 2014

# Creating mutual value for the long term



#### Introduction

# Creating mutual value for the long term

Rio Tinto's vision is to be a company that is admired and respected for delivering superior business value and for being the industry's trusted partner. To earn this trust we must continually find safer, smarter, more sustainable ways to run our business. We are always looking for new answers to the complex global and local challenges we face, which include resource scarcity, climate change, community employment and regional economic development. We see these challenges as opportunities to advance our reputation and create value for our business, our shareholders and the people we are proud to work alongside. To achieve our sustainable development goals, we work hand-in-hand with our partners and communities on the ground, where it matters most.

# Sharing risk to deliver mutual value

We seek to create mutual value by managing our own business risks and interests alongside those of our investment partners and host communities. Our aim is to deliver the best possible outcomes for our business, our shareholders and our many stakeholders.

The partnerships we build with our host communities help to strengthen local economies. By aligning their interests and motivations with our own, we create value that endures beyond the life of our operations.

# Collaborating to create trust

We listen carefully to our stakeholders' needs and understand what drives them, so that we create long-lasting solutions to shared challenges.

We are always clear on our contributions, including leading our industry through our ongoing commitment to tax transparency. Our payments to governments, employees and suppliers can bring substantial benefits to the countries and regions in which we operate.

# Leading through innovation

Innovation creates safer, smarter, sustainable ways to grow our business and advance our industry. We leverage technology and innovative ways of thinking to improve productivity, and work in ways that are better for the environment and safer for our people.

As part of this, we are committed to improving how we design, manage and close our operations, ensuring that we take pride in what we leave behind and that host communities continue to realise value for generations to come.



www.riotinto.com/sd2014/ casestudies/ten-years-of-argyleparticipation-agreement



www.riotinto.com/sd2014/ casestudies/promotingtransparency-across-our-sector



www.riotinto.com/sd2014/ casestudies/fresh-start-forformer-smelter-site

Cover Image: Our community investment programme includes supporting education programmes at local schools to ensure we make a positive and lasting difference to the communities where we work and live. Wickham, the Pilbara, Australia.

# Contents

Strategy	1	Economic	
Chief executive's message	02	Economic contributions	02
Overview	04	Non-managed operations	
Our business	06	and joint ventures	05
Our products	09	Suppliers	07
Where we operate	11		
How we engage	14	Governance	
Our reporting approach	16	Business resilience	02
Sharing risk to deliver mutual value	19	Closure	04
Collaborating to create trust	24	Human rights	06
Leading through innovation	27	Integrity and compliance	08
		Internal controls	10
Social		Product stewardship	12
Safety	02		
Communities and regional development	05	Performance	0000
Health	10	Performance	02
People	18	Assurance	02
		Ethical indexes and awards	03
Environment		Goals and targets	04
	02	GRI	05
Air Diadivaraity	02	ICMM framework	05
Biodiversity	06 08	MDGs	06
Climate change	11	UNGC	06
Energy Land	14	Performance data	07
Waste	17		
Water	20	Glossary	A = Z



#### In this section

Chief executive's message	02	How we engage	14
Overview	04	Our reporting approach	16
Our business	06	Sharing risk to deliver mutual value	19
Our products	09	Collaborating to create trust	24
Where we operate	11	Leading through innovation	27

Image: Diavik Diamond Mine, Canada



# Chief executive's message



2014 was a year in which we again delivered strong results and made great progress as a business. And it was yet another year in which our world-class team of people worked with a strong commitment to contribute to sustainable development.



#### Chief executive's message

We face challenges on a daily basis: in the macro environment, in maximising productivity from our operations while managing their impacts, and in being the best partner we can be for our stakeholders. So I am proud to be able to visit our operations around the world and see the dedication our people show to safety, to making a difference in their local communities and host countries, and to managing our impact on the environment.

Their commitment to sustainable development helps secure our future. It provides real, long-term business value and is a source of competitive advantage. The standards we set ourselves are high, and the tasks can be tough – but the opportunities are great: for our business, for our shareholders, and for the stakeholders whose lives we touch.

#### Safety

There is nothing more important than safety. Not to me, personally, nor to 60,000 of us in Rio Tinto. So, there is no heavier burden for me or the organisation than the tragic loss of two of our colleagues in 2014: Darryl Manderson and Enrick Gagnon. We were further saddened by two fatalities at QIT Madagascar Minerals and at Zululand Anthracite Colliery in South Africa in early 2015. No matter how well we do on other dimensions of safety performance, we will not have succeeded until we are fatality free.

So, despite seeing our lowest ever injury rates, and being among the safety leaders in our industry, we are still not where we want to be. Eliminating fatalities is the core of our safety strategy. But we also want to do more than this. In 2015, injuries should be avoidable and we must remove catastrophic risks. Only then will we be able to call our workplaces safe. We know that improving only one of those three – fatalities, injuries and catastrophic risks – doesn't automatically improve them all. So, when we revisited and refreshed our safety strategy in 2014, we made sure to address all three.

We will continue to shape our practices by improving how we learn from incidents, and by studying industries whose performance is better than our own. We won't be satisfied until everyone goes home safe and healthy every day.

#### Performance

Everyone at Rio Tinto can be proud of the achievements we made during 2014. Among these, we reduced our total greenhouse gas emissions by 18 per cent compared with 2008 – currently beating our 2015 target.

We constantly improve our approach to sustainable development. As well as reviewing our safety strategy in 2014, we continued to develop our integrity and compliance programme. Our compliance training now includes an assessment that is more closely linked to the risks an individual may encounter in their role. It helps everyone in our business to understand the laws and regulations to which we must adhere, and to uphold our high ethical standards.

However, we have more work to do to deliver our diversity targets for 2015. This means increasing the representation of women in our senior management and graduate intake, and the representation in our workforce of graduates from regions where we are developing new businesses.

We also met our communities target. This means all our operations now have publicly-reported indicators in place that are consistent with the Millennium Development Goals.

#### Awards and milestones

We have earned external recognition for our focus on sustainable development during 2014. The CDP awarded Rio Tinto its leadership award for the largest absolute carbon reduction in the ASX 200 and we were proud to be awarded Silver Class in RobecoSAM's Metals and Mining Sustainability Leaders Group. RobecoSAM is the research branch of the Dow Jones Sustainability Index. We also retained our leading position in the FTSE4Good, and are ranked in the top one per cent of our sector.

# "We will keep working collaboratively to create solutions to the challenges we face."

For the third time in the past four years we won a Building Public Trust award for the transparency of our tax reporting. Rio Tinto College, our "virtual" learning centre for employees, garnered a number of awards in 2014 for learning strategy and the quality of our learning solution.

The past year also saw the tenth anniversary of the Argyle Participation Agreement, a formal, binding acknowledgement of Traditional Owners' rights and interests in the lease area for this Australian diamond mine. This action to give Indigenous communities a voice in mining decisions that affect their interests remains one of the most comprehensive agreements ever made in Australia.

#### **Driving motivation**

The knowledge that your job makes a positive contribution to the world is an important factor in motivating people at work. Our 2014 employee engagement survey showed that a very high percentage of employees understand the goals of their business and how their work contributes to them. Since our previous survey we've become seen as a more efficient, flexible employer that communicates more openly with employees. However at the same time we have work to do in improving the way we recognise performance and celebrate success.

#### Delivering mutual value

I am proud and honoured to lead this organisation and in particular to work alongside people who live our values every day. When I sent a note to all our employees around the world at the beginning of 2015, I asked that we focus our energies on a few fundamentally important things this year. One is safety. Another is our work on the environment and with communities. Knowing what our people are capable of, I have no doubt we will continue to find new and better ways of working.

What we do fuels economic growth. It helps lift people out of poverty, builds infrastructure, creates jobs and supports communities. So to ensure we continue delivering mutual value – for both shareholders and stakeholders – we will keep working collaboratively to create solutions to the challenges we face.

Our 2014 Sustainable development report will tell you more about how we are building a business that makes a positive contribution to the world as it grows. I invite you to engage with us on any of these important topics. I know our people would welcome hearing from you.



Sam Walsh AO Chief executive



### Overview

# Turning challenge into opportunity

Resourcing the rising aspirations and demands of a growing global population is a challenging task, yet our metals and minerals are fundamental to progress and development.

We operate in a complex and interconnected world where global and local factors bring both risk and opportunity to the design, development and management of our operations.

Managed well, our activities can create positive impact: for economic growth, for employment, for infrastructure and local business development in our host countries – and to allow us to deliver sustainable value for our shareholders.

But downside risk also exists: for our activities to have a negative impact on people, on the environment, on stability in host economies – threatening our reputation and our ability to continue operating.

As a leading business in our sector, with a position we intend to preserve and improve, the challenges are clear. And the potential opportunities are also great – for Rio Tinto and for our stakeholders.

It is our goal and our responsibility to turn challenge into opportunity through our commitment and contribution to sustainable development. This is how

#### The importance of trust

Sustainable development is central to our vision of being our industry's trusted partner. Our stakeholders' trust is essential for our business – their confidence in us helps secure our licence to operate and gives us stability. In turn, we thrive, and can return greater benefits to our stakeholders and host countries.

To earn this trust we must find ever-smarter answers to complex global and local issues such as resource scarcity, climate change, community employment and regional development. We see social, environmental and economic challenges like these as opportunities to build our reputation as a trusted partner and create more value for our business, our shareholders and the people we work alongside.

#### Our principles

We look for ways to deliver mutual value for our business, our shareholders and our many stakeholders. We set out to manage our business risks and interests so as to deliver the best possible results for all. In Australia, for instance, we have created a number of agreements with Traditional Owner groups that provide recognition of native title rights and interests, while also securing the future of our operations. These agreements also provide monetary and non-monetary benefits for local communities.

The way we collaborate with our stakeholders is essential to developing mutually beneficial partnerships. We listen carefully to their needs and understand what drives them, so that we create long-lasting solutions to shared challenges. For example, our exploration teams consult with host communities from an early stage to ensure that we understand each other's aims and concerns, and how we can best create value for all parties.

And we harness innovation to find safer, smarter, sustainable ways to grow our business and advance our industry. Launched in 2014, our state-of-the-art Processing Excellence Centre analyses real-time data from operations around the world to improve monitoring and optimise performance. It's one of the ways in which we are leveraging technology and innovative ways of thinking to improve productivity, and work in ways that are better for the environment and safer for our people.

#### Values and engagement

This approach begins with Rio Tinto's values: respect, integrity, teamwork and accountability. While other ways of working may produce short-term gains more easily, these strong values – and the commitment that our 60,000 people show to them – are the foundation for a long-term, sustainable business.

Our code of conduct, *The way we work*, is inspired by these values. It holds everyone at Rio Tinto – and its subsidiaries and related companies – to strict standards relating to the workplace, human rights, communities, the environment and business integrity.

In particular it places a strong emphasis on engagement with our stakeholders, who we consider to be anyone with an interest in our activities, from civil society and governments to investors, suppliers and customers. By listening carefully to our stakeholders' concerns, and consistently aiming to align their needs and our own, we work to create mutual value and develop more responsible ways of operating.

We take an active role in industry bodies and where we need extra expertise to help us resolve specific challenges, we work closely with people and organisations such as universities and NGOs. Over many years we have played a leading role in developing sustainable development standards for our sector through organisations such as the International Council on Mining and Metals. And we look to learn from other sectors where leading companies' performance can inform us and help us improve.

#### Tracking our performance

We aim to constantly improve our sustainability performance. All of our sites must meet a minimum set of performance standards for health, safety, environment, closure, community and social performance. These ensure we meet and in many cases go beyond our statutory and regulatory requirements.

To track our progress, we have set Group targets against established metrics in areas such as workplace safety, greenhouse gas emissions, water risks and social performance. More detail of these targets and our performance toward them can be found in the <u>Performance section</u>.



#### Sustainable development stories

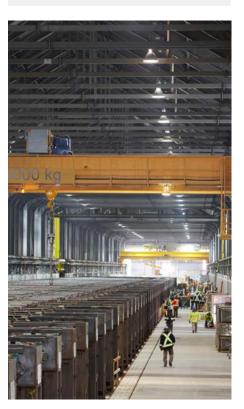
#### Empowering the local economy:

#### Kitimat, British Columbia

Maximising local employment and local spend has been an important focus of the modernisation of the Kitimat Aluminium smelter in British Columbia (BC), Canada. As well as requiring all contractors in the project to track their local spend and participation, we also provide resources to help local businesses succeed in getting work on the project. As of October 2014, the Kitimat Modernisation Project has had a BC business spend of C\$899 million, and more than 230 local suppliers have worked with the project since 2007.

>230

British Columbia suppliers have worked on the Kitimat Modernisation Project





# Supporting Indigenous employment:

#### Western Australia

Our Iron Ore group in Western Australia is committed to employing and developing Indigenous Australians, with a focus on Pilbara Aboriginal People, increasing Indigenous employees in professional and leadership roles across the business. Since our national Indigenous Cadetship Support programme began in 2000, Iron Ore has supported the development and employment of 17 cadets across various professional streams. Five of these start work with Iron Ore as graduates in 2015. Initiatives like this are integral in developing today's Indigenous graduates to become future leaders in our business.

# **ONE** of

the largest privatesector employers of Indigenous Australians



#### Tax transparency

Rio Tinto makes a significant contribution to public finances in the countries where we operate. We have supported the Extractive Industries Transparency Initiative since its inception, and we are committed to remaining transparent about the payments we make to governments, which we do through our annual Taxes Paid report. In December 2014, we won the PwC Building Public Trust award for best tax reporting in the FTSE 350 extractive sector for the third time.

times winner PwC Building Public Trust award



#### Our business

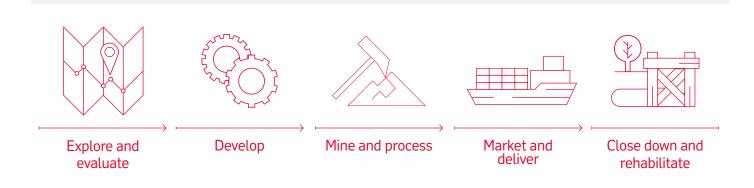
# Positive contributions

We find, mine and process many of the mineral resources that fulfil society's needs and raise living standards. What we do can have an impact on the communities and the land where we operate, often over many years. We work hard to ensure this impact is positive, throughout the life of our operations and beyond – bringing economic growth, jobs and infrastructure, and rehabilitating the land when our operations end.

As well as operating on a large scale, we work over long timescales. It can take ten to 20 years from initial exploration to productive mining and our mines may be productive for decades — or, as in the case of our Bingham Canyon mine in the US, over a century.

Because of the scale and scope of our operations, sustainability is embedded into our business model. At each stage we evaluate the opportunities and challenges that our work will create, and devise strategies to address them.

### How we create value



#### Explore and evaluate



We look for new resources all over the world, largely using an in-house team. This means we keep control over the safety, environmental and community aspects of exploration. Our exploration teams are often the first contact with people we may work alongside for decades, so we go to great lengths to establish trust and engage with communities from an early stage. In this way, exploration projects can benefit everyone involved.

In Saskatchewan, Canada, First Nation communities welcomed Rio Tinto's engagement around our Roughrider uranium exploration project, noting it as one of the rare occasions that a company has worked with the community at such an early stage.

Consultation with local Chiefs and Head Men in Zambia has helped ensure local employment opportunities are distributed fairly in our copper exploration programme. Our model is now considered locally to be one to which others should aspire.



Geologists from Rio Tinto Exploration are almost always the "first boots on the ground" in any project, sometimes arriving in greenfield locations where Rio Tinto is unknown.

### Develop



During this phase, we develop orebodies so that they deliver value over the long term. We work with customers to ensure our products meet their requirements and also engage closely with local communities and suppliers. In some cases we build infrastructure that brings permanent value to the regions in which we operate – and in developing regions we endeavour to work with local suppliers, contributing directly to local economies.

Our Iron Ore business in the Pilbara, Western Australia is in the midst of a major expansion and growth programme, having completed a first phase capacity increase to 290 million tonnes a year (Mt/a) and continuing phase two expansions towards 360 Mt/a.

The Iron Ore group is continuing to implement key participation agreements with Traditional Owners in the Pilbara, which secures land access for the life of mining operations. These agreements incorporate mutual obligations to deliver outcomes in employment, financial compensation, education and training, heritage surveys and practices, environmental care and land use.

In 2014, 63 per cent of Iron Ore's spend in the Pilbara was with Pilbara Aboriginal businesses and their joint venture partners, which saw millions of dollars reinvested into local economies. Iron Ore remains one of the largest private sector employers of Aboriginal people, with more than 1,100 workers in 2014.

Pilbara, Western Australia

63%

of Pilbara spend was with Aboriginal businesses

>1,100
Aboriginal Iron Ore employees

#### Mine and process



It is in the interests of Rio Tinto and our stakeholders to ensure that once under way, our mining and processing operations are carried out in the most efficient and sustainable manner possible. Our global operating model gives us access to standard processes and world-class technologies bring ongoing productivity benefits.

Inaugurated in January 2014, the US\$1.1 billion Arvida Aluminium Smelter in Quebec uses Rio Tinto's proprietary AP60 technology. Producing 40 per cent more aluminium per cell than the previous generation of AP technology, it is the most advanced aluminium smelter in the world.

In 2014, we launched the Processing Excellence Centre (PEC) in Brisbane, Australia. It is a world-first, state-of-the-art facility that enhances monitoring and operational performance by examining processing data from seven Rio Tinto operations spread across the globe in real time. An expert mineral processing team operating out of the PEC shares technical initiatives and solutions about how to maximise productivity and improve performance to colleagues at mine sites in Mongolia, the US and Australia.

#### Our innovative technology produces

**40**%

more aluminium than the previous generation

#### Market and deliver



We supply basic raw materials and refined products that are the building blocks of added-value goods, and in many cases we also deliver our products to customers. Our aim is to maximise efficiency with a careful focus on product stewardship.

In 2014, Rio Tinto's Aluminium group worked with supply chain partners Amcor and Novelis to supply Nespresso with a pilot batch of aluminium from its smelter in Dunkerque, France. Together they traced the batch's sustainability profile through the different transformation steps.

In the US, Rio Tinto Kennecott's gold refinery has achieved Responsible Jewellery Council (RJC) Chain-of-Custody (CoC) Standard. This certifies that gold produced by Kennecott is conflict-free and responsibly produced at each step of the supply chain. This is the first time the RJC CoC has been awarded to a mining company.

#### Close down and rehabilitate



Closure is an essential part of every Rio Tinto operation's lifecycle and we plan for it from the start. Our aim is to restore the land so it is compatible with the surrounding landscape and can be used by others. We recognise that good closure management enhances our reputation and enables us to gain community support for new projects.

At Flambeau, Wisconsin, in the US, we kept our pledge to rehabilitate the mine site in an environmentally and socially responsible manner. The reclaimed site is now a thriving mix of woodland, grassland and wetland. Tax contributions and other payments have benefited the local community.

A former mineral sands project site near Punakaiki, New Zealand, is now being restored into a corridor of native forest. Aiming to make a positive, lasting impact on the area's biodiversity, we are partnering with government and voluntary organisations to restore this unique ecosystem.



Our aim is restore the land so it is compatible with the surrounding landscape.



Find out more: riotinto.com/our-business

## Our products

# The raw materials of prosperity

In every home, every office, every town and every city, there are thousands of manufactured products that have their origins in a mine. Metals and minerals are essential ingredients for global development, creating the infrastructure and technologies that enable societies to advance.

Our products contribute directly to sustainable development – and we endeavour to extract, produce and distribute them in the most efficient way possible. Often, this leads to technological breakthroughs from which industry and society benefit.

Take a tour of some of the major products in our portfolio and you'll find our metals and minerals at every point in the development cycle.



#### Coal and uranium

Energy is the life force of an information society. We supply thermal coal for power generation, coking coal for steel production, and uranium, used for clean, stable electricity generation.

Coal is critical to global energy security, keeping the lights on worldwide with an affordable, reliable source of electricity generation. Rio Tinto supports technologies that will help this essential power source operate more efficiently. In the past 15 years, we have spent over US\$100 million on activities to develop carbon capture and storage (CCS) projects. The International Energy Agency estimates CCS could contribute 22 per cent of the global greenhouse gas emission reductions needed by 2050 to limit global warming.

With an energy density several million times that of coal, uranium is a vital energy source that produces electricity with no greenhouse gas emissions. The uranium we mine and produce in Australia and Namibia is used exclusively for power generation and subject to strict safeguards to ensure it is only used for peaceful purposes.

#### Iron ore

If energy is the force that powers society, iron ore forms its backbone, helping build the infrastructure on which cities and technological advances are built. In the Pilbara, Australia, we are fundamentally altering the way iron ore is extracted and delivered, expanding our production to epic proportions to fulfil customer demand while using automation and remote operation to improve productivity and reduce our environmental footprint.



Elsewhere in the world, our iron ore activities have the potential to stimulate economic growth, with effects that will be felt throughout local economies. For example the infrastructure and jobs planned by the Simandou project in Guinea will develop and stimulate other sectors of the country's economy including agriculture, stock breeding, forestry and trade.

#### Our products

#### **Aluminium**

Light, strong and infinitely recyclable, aluminium is a modern metal that makes possible a huge range of sophisticated and sustainable products. When used in a

car or light truck to replace heavier metals, for example, one kilogram of aluminium can save 20 kilograms of CO<sub>2</sub> over the vehicle's lifetime. Recycling aluminium uses only five per cent of the energy needed to produce primary metal.

Rio Tinto has one of the lowest carbon footprints in the aluminium industry, with almost 80 per cent of its power coming from non-fossil fuel based sources. We have a significant hydropower portfolio in Canada and the UK, and our AP Technology<sup>™</sup> solutions, which offer lower energy consumption and improved environmental performance, have become an industry benchmark. The new Arvida Aluminium Smelter, AP60 Technology Centre inaugurated in 2014 is the most technologically-advanced aluminium smelter in the world.



#### Diamonds and industrial minerals

Our diamonds and industrial minerals businesses create jobs and create the basis for products that are an essential part of modern life. Industrial minerals also help reduce energy use and environmental impact: borates, for example, reduce the energy needed to make insulation, and create longer-lasting glass for smartphones and TVs.



We are a founder member of the Responsible Jewellery Council (RJC), whose certification process aims to reinforce confidence that jewellery products have been sourced ethically. Rio Tinto is the first mining company to achieve RJC certification.

In India, a partnership with Rio Tinto Diamonds helped to support the growth of the country's diamond-cutting industry. Today, some 300,000 Indian workers are employed to cut and polish Rio Tinto diamonds and our Business Excellence Model has encouraged manufacturers to lift their workplace, social and environmental practices to global standards.

#### Copper

Green innovation – a new frontier in economic growth - relies on copper. It's an essential ingredient for wind turbines, hybrid and electric cars, solar panels and nuclear generation. And of course it transmits the power and the digital signals that society relies on today. Copper's antimicrobial properties are increasingly being harnessed in healthcare, public spaces and even in aquaculture, where its use in nets reduces the need for chemicals.

At Oyu Tolgoi in Mongolia, which began commercial operations in 2013, we are applying international best practices for health and safety and sustainable development. The biggest investment in the country's history, Oyu Tolgoi's workforce is more than 95 per cent Mongolian and our training programmes are developing a strong workforce for the country's minerals sector.



Learn more about our product portfolio: riotinto.com/our-business

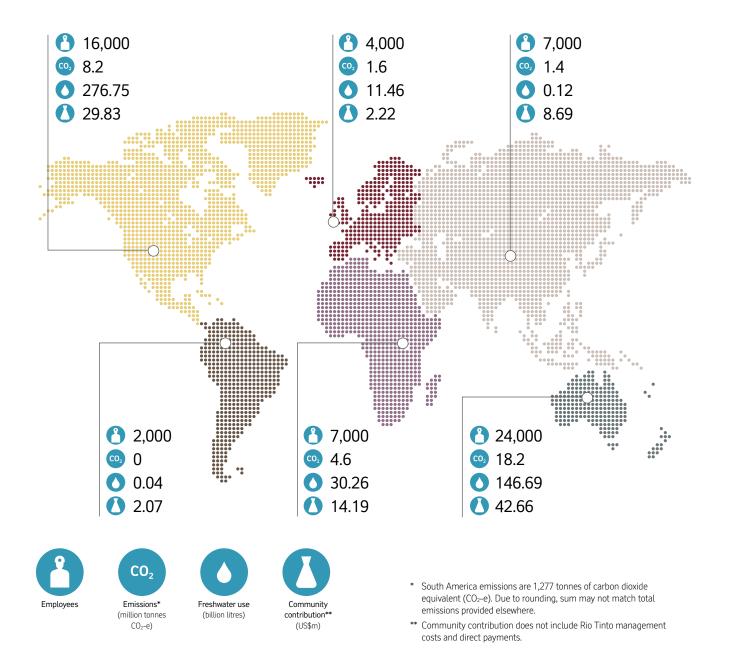
On 27 February 2015, Rio Tinto announced that it would be streamlining its world-class portfolio of assets into four product groups: Aluminium, Copper & Coal, Diamonds & Minerals and Iron Ore, with immediate effect. The coal assets of the former Energy product group became part of a new Copper & Coal product group, and the granium assets of the former Energy product group became part of the Diamonds & Minerals product group. In this Sustainable development report, references to Copper, Diamonds & Minerals and Energy refer to the product groups as they existed in 2014.



### Where we operate

# Making a difference, worldwide

We employ 60,000 people worldwide and in many cases we build infrastructure that's of lasting value to the countries in which we operate. We pioneer new, efficient production techniques and make a positive difference to communities.



Turn to the next page to see ways we contribute to sustainable development in some of the countries where we operate.





Australia

24,000

employees



Pioneering automated mining in the Pilbara, bringing safety, environmental and productivity benefits

**ONE** of

the largest private-sector employers of Indigenous Australians

7.5%

of Rio Tinto's permanent Australian workforce are Indigenous employees

India

300,000

people employed cutting Rio Tinto diamonds

**70**%

of employees from the Bunder diamond project are from neighbouring communities



Established Sustainable Mining Initiative with Federation of Indian Mineral Industries



>13,000

jobs

>C**\$1**bn

investment in Quebec in last decade by Rio Tinto Fer et Titane

C\$**899**m

spent with local businesses during Kitimat modernisation (to October 2014)

>C\$200m

payments in tax per year by the Iron Ore Company of Canada

Aluminium group: hydropower plants in Quebec and British Columbia

Diavik: world's most northern large-scale wind/diesel hybrid power system



**FIVE** 

partnership agreements with Aboriginal groups at Diavik



Guinea (Simandou)

**>95**%

Guinean workforce

>US\$100m

invested in public projects

US\$**3**br

per year additional economic activity potentially unlocked by the Southern Guinean Growth Corridor

**650**km

planned multi-use railway and new deep-water port

680,000



trees planted to compensate for land cleared in Simandou project

US

20,000

houses planned on post-mining land at Daybreak, Rio Tinto Kennecott

US\$**20**bn

tax revenues expected to be generated at Resolution

1,400

jobs over the lifetime of Resolution

Rio Tinto Kennecott is the largest private economic driver in Utah

In California, Rio Tinto Minerals donated land and lobbied to have Death Valley protected as a National Park



>95%

Mongolian workforce

80%

of water from operations recycled

1/3

of Mongolia's GDP is estimated to be generated at full production

Biggest single investment in education and training in Mongolia

Cultural Heritage Programme sets a new benchmark for companies in Mongolia

Peru (La Granja)

>200

projects supported by La Granja Social Fund



Environmental Monitoring Committees formed with local communities

Working with International Council on Mining & Metals on pilot climate change programme with local communities A snapshot of some of the ways we contribute to sustainable development, in a few of the countries where we work.

### How we engage

# Engaging with our stakeholders

# We engage with our stakeholders to identify opportunities for mutual value and to help us manage risks.

Engaging effectively with stakeholders is core to our business success and part of our everyday approach. We consider anyone who has an interest in our activities, whether they are an individual or a representative of a group or organisation, to be a stakeholder. This includes people who are affected by our decisions as well as people who influence our decisions.

Due to the nature of our business, we often operate and conduct our business in complex and challenging geographies and markets. This makes it even more important for us to be credible and listen to our stakeholders' views.

#### Our approach

Throughout project planning, development, operation and closure, we identify our stakeholders, and strive to understand their concerns and interests. We spend time sharing and explaining information about our activities. All these actions help us to improve our decision-making.

We are involved in a wide range of engagement activities, such as partnering with governments on education and training, working with communities on employment and heritage matters, engaging with investors and media on economic and social development, and working with non-governmental organisations on environmental and human rights issues. By listening to and working with others, we explore how, together, we might solve some of the global challenges we face.

We deal with all stakeholders ethically, honestly and constructively. We seek to understand their points of view so that we can adapt to changing expectations and generate long-term value for our shareholders.

#### Our stakeholders

Mining is a heavily regulated industry and our operations are directly affected by government legislation and policy, which is constantly evolving. To understand government views and aims, as well as to present our views to government on relevant legislation, policy and issues, we strive to develop constructive relationships and maintain regular dialogue with national, regional and local governments in all countries where we operate.

In dealing with governments, we conduct ourselves according to the highest ethical standards. We do not, directly or indirectly, participate in party politics, nor make payments to political parties or individual politicians. We provide useful and accurate information and share our experience to help governments develop sound and appropriate policy and legislation. For example we have been actively and constructively engaged in government consultation on the recently introduced EU Accounting Directive and how that directive will be translated into UK law.

We also engage actively with civil society organisations where common interests and concerns exist, whether these are broad issues of policy with a global or national reach, or local issues that affect smaller communities around our operations.

Our approach to engaging with civil society reflects the risks identified. In key risk areas, we develop deeper and targeted relationships and programmes with selected civil society organisations that have common interests and are willing to engage with us. These include environmental NGOs such as International Union for Conservation of Nature, BirdLife International and Fauna & Flora International. We also support academic institutions such as the Centre for Energy, Petroleum, Mineral Law and Policy at the University of Dundee and the African Leadership Institute's Archbishop Tutu Fellowship Programme.

We strive to build enduring relationships with communities where we operate to make sure we manage our operations in a way that is consistent with community expectations. Read more about our engagement with <u>communities</u> in the Social section.

#### **Building capacity**

Stakeholder engagement is core to the role of many of our employees. Enhancing our skills in stakeholder engagement is crucial to addressing the challenges we face in delivering growth and sustaining our social licence to operate. In 2011, we created our Stakeholder Engagement Academy, to help our people develop their capabilities in stakeholder engagement. It provides learning and development courses and resources for frontline project managers, leaders and stakeholder engagement professionals around the business. Both external academic providers and Rio Tinto practitioners are involved in delivering the courses. In 2014, seven residential courses were delivered by the Academy in seven countries, including the US, China, Madagascar and Australia. Around 250 employees attended the courses. In total we have delivered 28 courses in 12 countries, with 813 employees having completed the course.





Companies no longer see stakeholder engagement as a "nice to have" but as crucial to the success of future business. Through successful stakeholder engagement, we are able to strengthen and improve our relationships with those around us and deliver positive socio-economic outcomes in the communities and regions where we work.

To improve stakeholder engagement capability across our business, Rio Tinto has developed and delivered capability-building training courses through our Stakeholder Engagement Academy (SE Academy) since 2011. Courses delivered by the SE Academy cover topics which are key to maintaining our social licence to operate, including understanding stakeholders, sustainable agreements, communities and the political, social and economic dynamics of the mining industry. In 2014, training programmes were developed targeting specific needs of business units, including a four-day course held at QIT Madagascar Minerals (QMM) in Fort Dauphin, Madagascar.

The SE Academy team worked with QMM to identify its current stakeholder engagement challenges and incorporated the findings into the design of the training. Thirty-three employees attended the programme, including representatives from operations, community relations, finance, human resources and biodiversity. During the session, participants worked closely to examine the challenges and to identify solutions. Findings were presented to senior leaders at the end of the programme.

Through a course designed specifically for a business unit, employees had the opportunity to understand their stakeholder engagement responsibilities and to find out ways of addressing challenges in a collaborative and innovative manner.

"After the course, I had a better understanding that financial capability is not enough to implement a mining project. Without the social licence to operate, there is no mine."



For more case studies: riotinto.com/sd2014/case-studies

### Our reporting approach

# Reporting what matters

All of our sites have sustainability priorities that reflect locally specific challenges, such as water management, and issues common to all operations.

To ensure our reporting against these issues is transparent, we use a materiality process to identify which issues are most material to our stakeholders and our business.

Developed in line with <u>Global Reporting Initiative guidance</u>, this process is run each year to make sure we report the information that stakeholders want.

The process involves:

- Gathering information and opinion from stakeholders NGOs, suppliers, customers, partners, media
- Assessing the external impact of sustainable development issues and our compliance with policies and commitments
- Considering the importance of these issues for stakeholders in relation to our sustainable development performance
- Looking at their relevance to the mining and metals sector and other industries

 Evaluating the impact of sustainable development issues to our business – on our brand, relationships, production, ability to meet customer needs and the implications of non-compliance.

A materiality matrix is created that plots the level of concern to external stakeholders against the current or potential impact on our business. Each issue is given a rating of "low", "medium" or "high", from both internal and external perspectives. An impact can be either positive or negative.

We then carry out a three-step materiality assessment:

- 1. Identify material topics
- 2. Prioritise them in order of significance
- 3. Validate the completeness of our analysis

## Materiality matrix

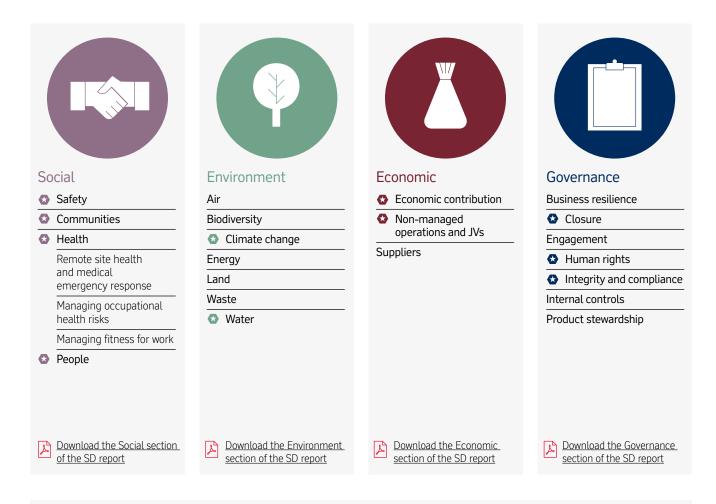
stakeholders	High			Issues of highest materiality reported in the Annual report
t	Medium		Issues reported on the sustainable development website	
Level of concern	Low	Issues addressed through direct communications, not reported in normal channels		
		Low	Medium	High

Current or potential impact on our business



# Material issues for 2014

We report issues that are of high importance to both us and our stakeholders in our Annual report, with topics of medium to high importance reported in this Sustainable development report.



ssues of highest materiality reported in the Annual report

# Water: a material issue around the world

In some locations it's a scarce resource. At others, we go to great lengths to hold it back or to harness its power. For many of our sites, water management is of paramount importance to the local community and environment, and the efficient running of our operations.

#### Conserving a precious resource

In the South Gobi province of Mongolia, home to the Rio Tinto-managed Oyu Tolgoi copper-gold mine, rainfall averages just 57mm per year. Oyu Tolgoi is designed to be one of the most water-efficient mines of its kind in the world. As well as only using water from a previously undiscovered deep and saline aquifer that is unconnected to surface water, the operation will continuously recycle 80 per cent of the water used in operations and all of the water used for domestic purposes.

#### Harnessing hydropower

Rio Tinto's Aluminium group has an unrivalled hydropower position, through its wholly-owned power plants in Canada and Scotland. This brings the group significant advantages in an energy-intensive industry and today's carbon-constrained world. In 2014, 72 per cent of the Aluminium group's total power needs came from hydropower.





#### Preserving a pristine lake

The Diavik Diamond Mine is located in one of the most remote and forbidding places in the world – 220 kilometres south of the Arctic Circle and on the bed of a vast lake, Lac de Gras. The construction of open pit and underground mining operations and related infrastructure are engineering feats on a grand scale. Open-pit mine construction included the building of rockfill dikes to hold the frigid waters of Lac de Gras at bay. Not only did the extremely harsh climatic conditions present significant construction challenges, but nothing was allowed to blemish the pristine waters of the lake during its building.



# Sharing risk to deliver mutual value



One of the world's largest suppliers of diamonds, the Argyle mine in Western Australia's remote East Kimberley region has been operating since 1983. A key priority from the outset has been to contribute to the local economy and the communities in which it operates. This has included initiatives in health, education, training, business development and supporting cultural events.

Image: Argyle's Traditional Owners, the Gija and Mirriuwung people, perform a traditional dance at the official opening of the Argyle underground mine in 2013.



#### Sharing risk to deliver mutual value

2014 saw the tenth anniversary of the landmark Argyle Participation Agreement with the Traditional Owners of the mine, the Gija and Mirriuwung people. When the Participation Agreement was signed a decade ago, it set a new benchmark in Australia for land use agreements between resource companies and Traditional Owners: it created not only income streams for future generations of local Aboriginal people, but also significant training, employment and business development opportunities and a voice for Aboriginal people in mining decisions affecting their interests. For example, during the negotiation of the Agreement, Argyle provided an undertaking that was probably unique in the history of the mining industry: Argyle would not proceed with its plans for an underground mine without the approval of the Traditional Owners.

#### A new type of community agreement

The "Good Neighbour Agreement" drawn up in the 1980s between Argyle and the Traditional Owners of the land, was considered at the time as leading practice in dealing with Indigenous communities. Although improvements were made to the agreement during the 20 years following, by the end of the century, it was no longer seen as leading practice. And so by 2000, Argyle began to discuss a new Participation Agreement in which local communities would become more engaged partners in the benefits of mining on their country.

After several years of relationship building and negotiation, these groups signed the Argyle Participation Agreement (APA) in September 2004 with Kimberley Land Council and Argyle. Building on the preceding Good Neighbour Agreement, under which Argyle makes annual payments to Indigenous communities in return for access to the mining lease area, the APA is a formal, binding acknowledgement of Traditional Owners' rights and interests in the mining lease area. It was registered as an Indigenous Land Use Agreement (ILUA) under the Native Title Act in April 2005.

In essence, the APA acknowledges that Traditional Owners are the traditional custodians for the mining lease, while they in turn recognise Argyle's right to mine. It also formally establishes a long-term relationship between Argyle and Traditional Owners, based on a shared desire to create a better future for Indigenous communities in the East Kimberley.



Traditional Owners, government representatives and employees gathered in celebration of the opening of the Argyle underground mine on 30 April 2013.

# Connected to the land

For Aboriginal people, land is part of them and they have traditional rights over it. They do not mark the land with fences in the traditional European sense, but divide it according to geographic features such as rivers, lakes and mountains.

The land at Barramundi Gap, where the Argyle Diamond Mine is situated, is sacred to Traditional Owners, holding burial sites, history, creation stories and hunting grounds. According to a Dreamtime or Ngarranggarni story, Argyle's diamonds are the multi-coloured scales shed by a barramundi fish escaping her captors.



Watch the Barramundi Dreaming video: riotinto.com/diamondsandminerals/aboriginal-heritage-10554.aspx



Traditional dance performances by Argyle's Traditional Owners at the ten year anniversary of the Argyle Participation Agreement event.



The bold and vivid paintings of the Aboriginal artists from the East Kimberley are helping to create a shared understanding of the richness of their culture and their country.

These artists have transformed the East Kimberley into one of the most important art-producing regions in Australia, receiving national and international recognition. For example, on the roof of the Musée du Quai Branly in Paris, Traditional Owner Lena Nyadbi's large-scale art installation depicts the Dreamtime story of the Argyle Diamond Mine, and can be seen from the Eiffel Tower.

In June 2014, "Country to Coast", the single largest exhibition of Aboriginal art solely from the Kimberley region, was celebrated in Europe. "Rio Tinto is delighted to support this exhibition which enhances considerably the continuing journey of reconciliation," said Alan Davies, Rio Tinto's chief executive, Diamonds & Minerals. "The Traditional Owners of the Argyle Diamond Mine are extraordinary Australian cultural leaders and it is through their sacred narratives that we can develop a deep understanding of their culture and their country."

"Rio Tinto is delighted to support this exhibition which enhances considerably the continuing journey of reconciliation."

Alan Davies, chief executive, Diamonds & Minerals.



For more case studies: riotinto.com/sd2014/case-studies

Image: Untitled Painting by Paddy Bedford, showcased at Country to Coast: Colours of the Kimberley. The Rio Tinto-supported exhibition, held at the AAMU Museum of Contemporary Aboriginal Art in the Netherlands, comprised artwork by some of Australia's most celebrated contemporary artists.



#### Sharing risk to deliver mutual value

#### Active participation

The APA is overseen by a Traditional Owner relationship committee, which comprises 26 Traditional Owner and four Argyle representatives. It meets four times a year to monitor the areas covered by the APA.

#### Land rights and access

Argyle holds the grazing lease on trust for Traditional Owners for the life of the mining operation, and will transfer it to them when operations cease. This means Traditional Owners will be able to lodge a claim for native title over the grazing lease area. Argyle recognises Traditional Owners' rights to visit the country and they can access fishing and hunting areas on the mine lease.

#### Income generation

Under the APA, some of the income from the agreement is allocated to community development initiatives and to individual Traditional Owners. This was carried over from the original Good Neighbour Agreement.

The majority of beneficiary payments are based on Argyle's earnings (EBITDA) and are split evenly between two Trusts, the Gelganyem Trust and Kilkayi Trust. Gelganyem is a Sustainability Trust which secures capital for future generations and creates funds to support law and culture, education and training and community development partnerships. The Kilkayi Trust is a special Purpose Trust with the funds supporting the immediate needs of the Traditional Owners in similar areas to the Gelganyem Trust.

The Argyle Participation Agreement is overseen by:

26

Traditional Owner representatives

4

Argyle representatives

Argyle provided an undertaking that was probably unique in the history of the mining industry: it would not proceed with its plans for an underground mine without the approval of the Traditional Owners

## Gender balance

The Argyle Diamond Mine itself is located on a sacred Aboriginal women's site and the senior Aboriginal women have had, and continue to have, a significant leadership role in the operation of the mine.

In the negotiations for the APA, thorough ethnography led to a formal acknowledgement of the Barramundi Gap's significance to women as well as men. The agreement provides funds as part of the Sustainability Trust that will provide equal support for women's and men's law and culture long after the mine finishes production.



For more case studies: riotinto.com/sd2014/case-studies

#### Sharing risk to deliver mutual value

#### Employment and contracting opportunities

The APA includes a joint commitment to give support and preference to local Indigenous people for employment and training. This includes training and employment programmes to ensure that Traditional Owners have the best opportunities to compete for site-based contracts.

#### Land management

With the APA, Traditional Owners can raise land or water management concerns at any time. To assist this process Argyle hosts an annual Traditional Owner tour of the operations and is committed to hosting other informative tours should they be required.

The Traditional Owners will be advised in advance of any proposals for decommissioning of major infrastructure or significant changes to water management processes. Part of the annual management plan payment made under the APA is available for the Traditional Owners to seek expert advice such that they can respond to the proposals and make additional proposals should they feel the need.

The Traditional Owners can also make other proposals on land management issues and Argyle will consider all proposals from the Traditional Owners and act upon them as required. Should a proposal from the Traditional Owners not be feasible then Argyle will advise them of the reasons why.

#### Aboriginal site protection

The Argyle lease covers over 50 Indigenous heritage sites, with a further 25 close to the lease boundary. Argyle recognises that the APA needs to provide the strongest possible protection for these sites. Traditional Owners have identified that Argyle's current operations need no further clearance from them.

For areas outside its existing operations, Argyle will submit a work programme to Traditional Owners before disturbing any ground. It has also agreed a way to discuss these issues in the field with Traditional Owners to make sure that proposed work does not interfere with aboriginal sites. This part of the APA is a high point in site protection agreements between Indigenous people and mining companies in Western Australia.

#### Unprecedented action

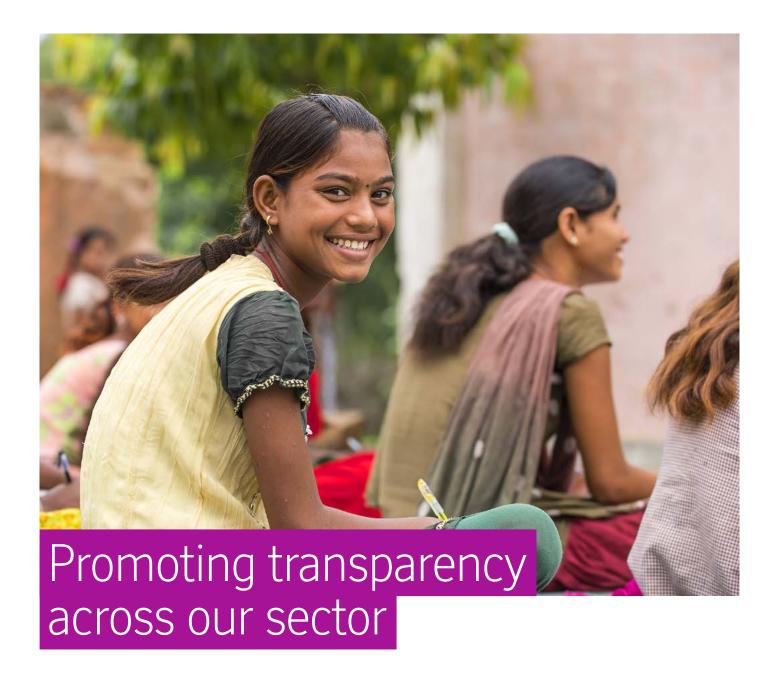
The APA's benefits extend beyond local Traditional Owners into the broader East Kimberley, forming a critical component of Argyle's localisation programme and its contribution to sustainable regional development. Overall, the APA was regarded as a landmark ILUA at the time of signing and is still regarded as such, particularly in the sense of partnership and engagement involved in the relationship between Argyle and the Traditional Owners. At a ceremony to celebrate the ten-year anniversary of the APA, Mirriuwung Traditional Owner and Chair of Gelganyem Trust Ted Hall highlighted the challenges faced by the Traditional Owners in the 1990s and the positive changes that he had witnessed in the local communities since the agreement was put in place.



The Argyle Participation Agreement ten-year anniversary event. The Argyle Participation Agreement remains one of the most comprehensive agreements ever made in Australia between a resource company and Traditional Owners and symbolises an unprecedented action in the history of mining companies in engaging Indigenous communities.



## Collaborating to create trust



Since its formation in 2003, Rio Tinto has played an active role in the Extractive Industries Transparency Initiative (EITI). This global coalition of governments, companies and civil society is dedicated to improving the accountable management of revenues from natural resources.

Image: The Bunder education initiative is aimed at improving employment and life style prospects for families in the villages surrounding our Bunder diamond project.



#### Collaborating to create trust

EITI's core belief is that the wealth derived from natural resources should be an important driver for sustainable economic growth, and contribute to sustainable development and poverty reduction. Conversely, if this wealth is not managed properly, negative economic and social impacts can ensue.

Openness about how a country manages its natural resources is essential to ensure that the resources benefit all citizens. Not disclosing information about this wealth can increase the risk of distrust, weak governance and conflict. Collaboration and transparent dialogue between the sector's stakeholders is key to maximising those mutual benefits.

#### Implementing the Standard

The EITI Standard sets out a framework for governments to disclose how much they receive from extractive companies (mining, oil and gas) operating in their country, and for these companies to disclose how much they pay. The information is published regularly in a country's EITI Report, which informs the public of what happens with its natural resources.

There are currently 48 countries implementing the EITI, of which there are 31 compliant countries, confirmed to have met all EITI requirements, and a further 17 candidate countries that are in the process of implementation. More than US\$1.3 trillion worth of government revenues from oil, gas and mining have so far been disclosed.

Implementing the EITI Standard improves government systems and signals commitment to the transparent management of a country's natural resources – thus enhancing citizens' trust.

It produces a level playing field for the industry, with all companies required to disclose the same information. Companies also benefit from having a more stable investment climate in which they can more effectively engage with citizens and civil society.

Citizens, meanwhile, receive reliable information about their country's natural resources, and can hold the government and companies to account.



worth of government revenue from oil, gas and mining disclosed under the EITI framework

# Transparency in tax reporting

Tax is a major subject of debate for all companies, governments and other stakeholders. Rio Tinto's tax strategy and payments are central to our approach to delivering sustainable development outcomes as a business, as a sector and as a global corporate citizen.

We've provided voluntary reporting of our tax and wider economic contributions for a number of years, and in 2010 we committed to increase the level of detailed reporting on tax payments.

2015 sees the publication of our fifth annual report on taxes paid. It brings together information on the payments we make to governments in each of the main countries in which we operate, as well as the taxes and net earnings of business units and other Group tax information.

Our report goes into greater detail than the statutory disclosures required for financial reporting, and builds on the framework of reporting developed under EITI. These disclosures ensure that we remain transparent about our payments to governments.

We're committed to showing leadership in tax transparency, and publish this report on a voluntary basis because we believe that transparency makes good business sense. Our approach has also brought us a number of external awards and commendations, including being a three-times winner of a PwC Building Public Trust award for tax reporting.



Explore our Taxes Paid report: riotinto.com/taxespaidin2014



#### Collaborating to create trust

#### Working collaboratively

Rio Tinto has supported EITI since its inception and we continue to engage with EITI processes, including in the drafting of the revised EITI Standard which was adopted in 2013.

Debra Valentine, Rio Tinto's Group executive, Legal & Regulatory Affairs, is on the board of EITI. She is one of two representatives of the mining industry on EITI's board, alongside representatives from oil and gas, investors, governments and civil society.

"The key to EITI's success is that it is a transparent, multi-stakeholder process," said Debra. There are more than 90 major extractives companies, a broad group of governments, civil society and international organisations committed to supporting the EITI, including 400 NGOs. "Rio Tinto is one cog in the EITI engine. We work collaboratively with other participants to promote EITI in the countries where we operate, to uphold its principles, and to ensure the implementation of the Standard."

Under the EITI process, an independent party reconciles what each extractive company pays to the government with what the government receives. "We believe this two-sided tracking is a very effective way to promote transparency around resource payments," Debra added. "It helps to prevent corruption and enhances citizens' ability to hold their governments to account and assess whether the revenues received are in fact used to reduce poverty or promote development."



Local businesses are supported through our new business initiative at our Bunder diamond project in Madhya Pradesh, India.

# Australia's EITI pilot

In 2011, the Australian Government announced that it would carry out a pilot to test the governance and transparency of Australia's financial reporting arrangements for the resources sector against the principles and criteria of the EITI. The aim would be to determine whether any enhancements of the EITI methodology might be appropriate for Australia, and to inform whether Australia should move to full implementation of the EITI.

Rio Tinto is one of the industry representatives in the multistakeholder group (MSG) that formed to oversee the pilot process and the production of the pilot report, which was submitted to the Government in 2014. The seven industry members represent diverse natural resources, and a broad spread of sizes of companies active in Australia's extractives industry. Also in the MSG are seven representatives of federal and state governments, and seven representatives of civil society. We are one of the companies providing financial information for the reporting period covered by the pilot programme. With our many years of experience in transparently disclosing payments to government, we were also able to help the MSG in developing recommendations for gathering data. We produced worked examples and case studies to demonstrate how the most material information could be most effectively collated and presented, in order to derive the most benefit for all stakeholders.



For more case studies: riotinto.com/sd2014/case-studies





With an area of around 700km<sup>2</sup>, the Isle of Anglesey is Wales's largest island and home to just under 70,000 people. About a third of Anglesey has been declared an Area of Outstanding Natural Beauty, and the island offers visitors stunning scenery, historical sites and outdoor pursuits.

Image: The AAM smelter operated from 1971 to 2009.



But despite holding many attractions for tourists, recent data from the Office for National Statistics showed that Anglesey had the lowest gross value added (GVA\*) per head in the UK. Through its work to generate redevelopment opportunities for a former aluminium smelter, Rio Tinto is among those determined to ensure a bright and sustainable future for Anglesey's people and economy.

#### End of an aluminium era

From 1971 to 2009, the Anglesey Aluminium Metals (AAM) smelter was one of the island's biggest employers. A Rio Tinto-managed joint venture with Kaiser Aluminium, the plant employed up to 570 staff and 70 full time contractors, and had a capacity of 145,000 tonnes per year of metal.

There were a number of reasons why the smelter site in Penrhos, near Holyhead, Anglesey's biggest town, was originally selected, back in the late 1960s. It was a large piece of land available for redevelopment in an area with high levels of unemployment. Its proximity to the Wylfa nuclear power station ensured a relatively economical electrical power supply, and the deep-water port provided a gateway for bringing in raw materials.

But in 2009, the power station was earmarked for closure. Despite the intense efforts of AAM and union and government representatives, the smelter was unable to secure another commercially viable power contract. In September 2009, smelting operations ceased, with the loss of 400 jobs. Part of the site went on to become a remelt facility, preserving jobs for almost 100 people, but this too was decommissioned in 2013 due to the cost of raw materials.

AAM was determined that it would pass on its land for redevelopment that would rejuvenate local communities, promote Anglesey's economy and create a sustainable legacy for generations to come. The company recognised that the site, with its extensive landholdings and picturesque coastal location, could attract diverse new investment to the island.

\* Data for 2013. GVA is a measure of the increase in value of the economy due to the production of goods and services.



AAM's deep-water jetty can accommodate the biggest cruise ships that come to Wales.

### Cruise control

Since 2009, cruise liners have been bringing tourists to Anglesey, berthing at the deep-water jetty that used to be the arrival point for the smelter's raw materials. The jetty is large enough to accommodate the biggest cruise ships that come to Wales. It's a tourism opportunity that wasn't possible when smelting was under way at AAM, but now around 13,000 cruise passengers call at the island every year, helping support the local economy.



For more case studies: riotinto.com/sd2014/case-studies



#### A bright future

As part of Rio Tinto's Regional Economic Development programme, the AAM team explored many options for new economic activity in the area over a number of years. Tourism, housing and manufacturing were identified as viable successors to the island's aluminium heritage.

A small team of AAM employees has stayed on site to manage the decommissioning process and facilitate the plans for development of the landholdings and regeneration of the area. Throughout, the team has worked closely with Welsh and local government, communities in Anglesey and the companies who have been proposing to redevelop the site and surrounding land.

"The closure announcement of the AAM plant was a significant blow to the community and economy of Holyhead and the island," said Richard Parry Jones, chief executive of Isle of Anglesey County Council.

But now, two distinct yet symbiotic projects are under way on the AAM landholdings, by developers Lateral Eco Parks and Land & Lakes. Together, the projects are likely to create up to 1,000 jobs and, when taken to full operation, will replace the economic benefits that were in place when AAM was in operation.

"This is not a 'quick fix' solution and has required commitment from all involved," he added.

"The projects will be hugely transformative for the area," said Brian King, general manager, AAM – who leads Rio Tinto's Legacy Management team in Anglesey. "They will be big employers not just for Anglesey, but in terms of the UK as a whole. Collectively they will create at least twice as many jobs as were made redundant from AAM."

"You kept your promise to ensure that the community here continues to benefit from the contribution made to the local economy and quality of life made by AAM. We look to the future now with much optimism."

Richard Parry Jones, chief executive, Isle of Anglesey County Council.

"It is a great pleasure to see a company honour its commitments in such a robust fashion."

Councillor John Owen, Mayor of Holyhead.

# Welding the community together

When smelting ceased, three former AAM employees – Martin Davies, Elwyn Ackerley and Wayne Pritchard – saw an opportunity to continue using their skills and the plant's facilities by setting up a new metalworking venture. They formed welding fabrication company PFS Ltd and since 2010 have leased AAM's old engineering workshop.

PFS now has 16 employees (around half of whom are ex-AAM) and two work experience students from the local college. The company works in various sectors including metals, food, marine and construction — at home and overseas.

"AAM have enabled us to grow and have championed our cause, which has helped generate skilled jobs and training for the local community. The workshop we lease has been, and still is, well maintained by AAM and has proved to be a very positive tool for selling our business."

Martin Davies, Former AAM employee

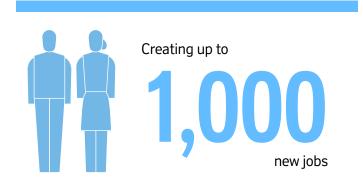


#### A powerful opportunity

The first of the two new projects – by developer Lateral Eco Parks – will occupy the old smelter site. At its heart will be a 299MWe biomass power station. Output from this plant will drive the rest of the development, which will include hydroponic and aquaculture facilities producing vegetables and over 8,000 tonnes of fish a year, and a plant producing compostable food packaging. A food processing centre will produce value-added products from food produced and packaged on site.

"We received excellent cooperation and input from the AAM team in expediting the complex process of transferring the site to Lateral Eco Parks," said Jon Hartley, Lateral's projects director.

"They were utterly focused on ensuring a viable, long-lasting and meaningful legacy for the local community. Suffice to say, this project would not be happening had it not been for their efforts."







#### Homes and holidays

The second developer, Land & Lakes, is planning a tourism, leisure and housing venture on a large portion of the outlying AAM land. This development will be in three separate components:

- East of the AAM site at Penrhos will be a holiday village, with up to 500 lodges and cottages accommodating up to 1,700 people, and a range of sports and leisure facilities.
- South of the AAM site at Cae Glas will be 315 lodges, initially to be used by construction workers during the building of a proposed new nuclear plant, 20 kilometres away. The accommodation will eventually be refurbished as an extension to the Penrhos holiday village.
- West of AAM will be a development of 320 houses, also initially for construction workers and then for open market sale. Half of these homes will be designated as affordable housing.

"The AAM legacy team has been invaluable in helping Land & Lakes to understand the communities of Anglesey and to make connections with local stakeholders"

Richard Sidi, chief executive Land & Lakes (Anglesey) Ltd



Designs for some of the 315 planned lodges at Cae Glas. Image courtesy of Land & Lakes (Anglesey) Ltd.





#### In this section

Safety	02	Health	10
Communities and regional development	05	People	18

Image: Argyle Diamond Mine, Western Australia



### Safety

# Striving to be fatality-free

Our commitment to safety is the foundation of how we operate. We are working to achieve our vision of everyone going home safe and healthy every day. We believe we can prevent all fatalities, injuries and illness by identifying and controlling risks in our business.

#### **Approach**

For us to achieve our safety goals, every person working at Rio Tinto must be fully engaged. To this end we are building a positive safety culture, where everyone contributes to improving our safety performance and has the confidence to stop work and ensure it is safe.

In 2014, we updated our safety strategy to confirm our focus on injury reduction and strengthen our emphasis on fatality elimination and catastrophic event prevention. This helps us drive effective risk management, identify critical risks, verify that we have controls in place and provide our people with appropriate training.



"We've made great progress but we cannot be satisfied with where we are, and we need to progress further. Rio Tinto has a unique safety culture; the community we have around safety will truly make a difference."

Watch Hugo Bague, Rio Tinto's Group executive,
Organisational Resources, talk about our refreshed
safety strategy:
www.youtube.com/watch?v=4\_JpQOc4nNA

#### Results

Regrettably, we did not meet our goal of zero fatalities in 2014. Two people lost their lives while working at Rio Tinto managed operations. Darryl Manderson died due to an equipment incident during maintenance activities at the Gove alumina refinery in Australia. Enrick Gagnon died in a train derailment incident at the Iron Ore Company of Canada. These are tragic events that affect families, friends and workmates. We provide support and counselling to those who have lost loved ones.

To achieve our target of zero fatalities it is essential we learn from both actual and potential significant incidents to prevent them happening again. We are strengthening our investigative process so that we improve our understanding of the factors that lead to fatalities, and the behavioural and process changes needed to eliminate them. We continue to collaborate industry-wide to share and apply best practice.

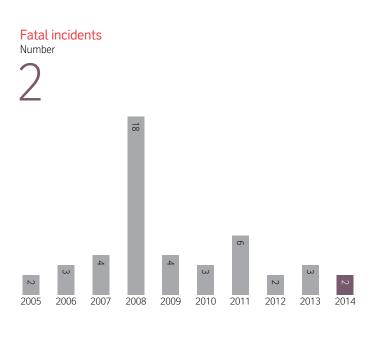
This focus on investigation and sharing lessons learned extends to our non-managed operations.

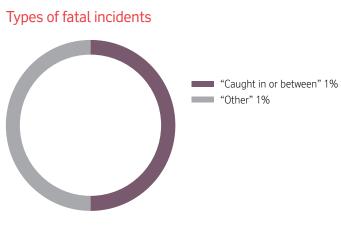
2014 proved to be our best year ever in terms of injury rate performance. Our all injury frequency rate (AIFR), which includes data for employees and contractors, is one of the key safety measures we consider in monitoring our performance. At the end of 2014, our AIFR was 0.59 per 200,000 hours worked. Over the last five years we have reduced our AIFR by 14.5 per cent. Our lost time injury frequency rate (LTIFR) was 0.37 per 200,000 hours worked in 2014. While our LTIFR compares favourably within the industry and across sectors, we are committed to making further improvements as we strive for our zero harm goal.



#### Safety

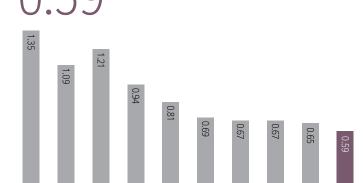
### Facts & figures





#### All injury frequency rate

Per 200,000 hours worked



See our performance in the interactive charts: riotinto.com/sd2014/interactive-charts





Rio Tinto Exploration was recognised as the most improved group in the annual Rio Tinto Chief Executive Safety Awards in 2014 for its efforts to reduce injuries and prevent fatalities.

Over the last two years, injury rates at Rio Tinto Exploration decreased by 75 per cent, underpinned by a dedicated programme to improve both safety and operational performance.

Called Improving Project Performance, or IPP, this holistic approach to improvement delivered positive results in not only safety, but also productivity, project planning and delivery and cost management. In particular, IPP prioritised high-quality planning, integrated and standardised risk management processes and post-project reviews to capture and share best practice.

Particularly impressive is that the improvement across a number of dimensions for Rio Tinto Exploration occurred despite the challenges of operating projects in over 18 countries, taking the team to remote and geographically diverse regions. Key contracting partners have also bought into the approach and committed to continuous improvement.

The result has been projects delivering better safety performance, better decision-making and better discoveries that ultimately safely deliver value for Rio Tinto.

**75**%

decrease in injury rates since 2012





## Strong partnerships for success

Good community relations are as necessary for our business success as the effective management of our operations. This belief is at the heart of our overall approach to our work with communities and it is why we strive to build good quality relationships with the people in the areas where we operate.

It is essential that we understand the social, environmental and economic implications of our activities so we can optimise the benefits and reduce negative impacts, both for local communities and for regional and national economies. We accept that we cannot meet everybody's concerns and expectations, but wherever we operate, we seek to do so with broad-based community support.

#### Our approach

The way we work, our global code of business conduct, provides the foundation of our Communities and Social Performance work, including resettlement. Our Communities policy and standard provide the

performance framework, while guidance notes describe preferred worksite practices. We refer to external policies such as the International Finance Corporation's (IFC) Performance Standards on Environmental and Social Sustainability and also support the International Council on Mining and Metals' position statement on Indigenous Peoples and Mining.

Our Communities target, adopted in 2009, requires all operations to have in place locally appropriate, publicly reported social performance indicators which demonstrate a positive contribution to the economic development of the communities and regions where we work, consistent with the UN Millennium Development Goals (MDGs).

#### Our approach to working with communities

#### Build knowledge

#### Baseline communities assessment

- Understand key social environmental and economic factors
- Gather data on demography, labour market, education profile and family and individual wellbeing
- Understand the current or potential impact of the business
- Identify potential risks and opportunities

#### Engage

#### Build relationships and partnerships

- Build relationships and partnerships with government agencies, community and non-government organisations, academics and other corporate entities
- Agree needs and ensure these are mutually understood and accepted
- Base partnerships on respective expertise and collaborative inputs

#### Develop

#### Develop communities programmes

- Programmes should reflect baseline assessments and consultation
- Programmes cover educational, health or livelihood initiatives and provide local employment, small business and contractor opportunities
- Programmes should build long-term local skills and knowledge
- Initiatives undertaken should encourage self-help and avoid dependency



We work from a common Communities and Social Performance framework of building knowledge, engaging with communities and developing programmes. Work on the ground varies according to the local context. However, some common themes are:

#### Cultural heritage

We recognise and respect the cultural heritage of all communities in which we operate, particularly that of Indigenous Traditional Owners who have customary connections to land. We consult closely with local people to ensure the protection of their cultural heritage sites and values.

In 2011, we published *Why cultural heritage matters* to help our managers, employees and contractors understand why we value cultural heritage in our operations and how to effectively manage it as part of their engagement with communities.

#### Community agreement-making

We seek to reach agreements, where appropriate, with land-connected host communities to gain access for exploration (land access agreements) and to develop mining operations (mine and regional development agreements). Most, but not all, of our community agreements are with local Indigenous communities. Recognition of and respect for mutual interests underpin our agreement-making. We make sure that the community groups entering into agreements have access to independent advice and expertise in negotiating with us. We apply a participatory process so that local community members understand our operations and what is proposed in the agreement. Agreements arising from this process are evidence of Free, Prior, and Informed Consent (FPIC) as defined in IFC Performance Standard 7, although we prefer to secure what we call broad-based, free, prior, and informed support.

#### Gender

Women in communities often disproportionately bear the burden of change brought about by mining and other developments, as well as the inevitable changes that occur as communities evolve. Recognising the importance of understanding the social dynamics of relationships between men and women, we have developed a comprehensive gender guide, *Why gender matters*. The guide is designed to help all of our people better manage the gender considerations of communities work.

#### Human rights and communities

In 2011, the UN published its Guiding Principles on Business and Human Rights. This is now the global standard for preventing and addressing the risk of adverse impacts on human rights linked to business activity. The Guiding Principles are based on shared responsibility between nation states' "duty to protect" and a corporate "responsibility to respect". To support this initiative and help our own people understand their responsibility, in 2013 we produced *Why human rights matter*, a resource guide for integrating human rights into communities and social performance work. The guide was translated into multiple languages and widely distributed both within Rio Tinto and to external stakeholders, and made available on the websites of Rio Tinto and its partners and stakeholders (including the Centre for Social Responsibility in Mining, University of Queensland the Danish Institute of Human Rights, and the Business and Human Rights Resource Centre).

#### Resettlement

We understand that the resettlement and economic displacement of people and communities can have significant impacts. Well-planned and well-executed resettlement and compensation can contribute to positive long-term relationships between Rio Tinto and our host communities.

We explore all viable alternative project designs in order to minimise the need to resettle individuals and communities. Only where it is unavoidable do we resettle people or displace existing economic activity.

We do not view resettlement as a short-term relocation activity: our goal is to improve the livelihoods of those resettled and their future generations over the long term. Our intention is that resettled people will be better off over time as a result of resettlement – according to their own assessment and external expert review.

Maintaining and rebuilding social capital (the economic value derived from being in a social group) is an important aspect of resettlement planning and implementation. We recognise the importance of social and family networks, and the cultural and religious fabric of societies.

We carry out early and ongoing consultation with those affected, and provide opportunities for the community to participate in planning and implementing resettlement programmes. We work with community representatives to establish a mutually agreed format for communication, consultation and engagement. Major social changes such as resettlement can impact women and children disproportionately so we involve women in the resettlement decision-making, planning and implementation.

Wherever possible, we resettle communities as groups in order to minimise cultural and social impacts. A complaints, disputes and grievance procedure is set up and complaints are sought to be resolved in a timely way.

We seek to provide compensation for economic displacement in a transparent, fair and publicly-declared manner. The compensation we provide is equal to what is required by law and we aim to reach agreement with host communities on the methodology for calculating compensation. Although compensating for the loss of social capital can be challenging, we consider it a key aspect of compensation. Where possible, we provide compensation in forms other than cash so that long-term goals and livelihood improvements can be achieved.



#### Results

In 2014, we met our MDG target and 100 per cent of operations have the indicators in place and have reported them publicly. During 2015 we will establish a new Group target, to apply from 2016, to indicate progress and the results of our Communities and Social Performance work in our businesses.

Rio Tinto businesses contributed to just under 2,200 socio-economic programmes covering a wide range of activities including health, education, business development, environmental protection, housing and agricultural development in 2014. We spent US\$261 million on community programmes. Of this sum, 38 per cent went directly to community programmes. A further 55 per cent were direct payments into benefits-receiving trusts associated with community agreements. Our management costs for these contributions were seven per cent. There was a decrease in overall community contributions of 21 per cent compared to 2013, which reflects prevailing market conditions, divestments and completion of key programmes at developing projects such as Oyu Tolgoi and La Granja.

Examples of our progress in Communities and Social Performance in 2014 included:

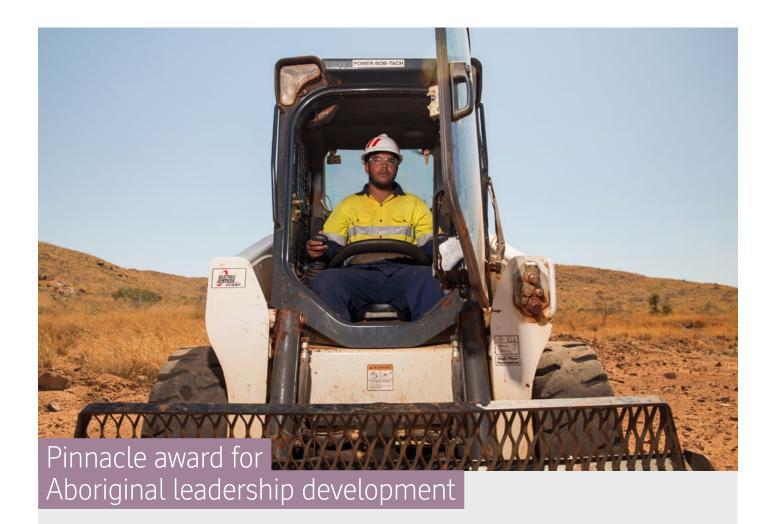
Rio Tinto Exploration (RTX) employees are frequently the first contact that a community has with the Rio Tinto Group, and sometimes with any mining company. RTX must get its community engagement right from the first meeting if it is to lay strong foundations for successful long-term relationships with local communities.

RTX's approach means good work is being done in the field around the world, following and potentially pioneering best practice. In Zambia, RTX is conducting an early-stage copper exploration programme with seven exploration licences all at different stages, and has already built strong and valuable relationships with local communities.

Rio Tinto Canada Uranium (RTCU) operated the Roughrider exploration project in northern Saskatchewan, which recently completed the environmental assessment process for an advanced exploration programme. Early engagement and consultation with neighbouring First Nations and Métis communities was a critical input into the programme design, including the location of facilities and treated water discharges. With the assistance of the communities, the proposed project received provincial approvals in a timely manner and with permit conditions, many of which were supported and advocated by the communities, stakeholders and Rio Tinto.

In 2014, a two-day workshop in Toronto brought together Rio Tinto communities practitioners from across Canada, the US, Australia and members of the global Communities and Social Performance team with representatives from Aboriginal communities of interest in Canada. The meeting was an opportunity to build connections and learn from one another through open dialogue on Rio Tinto's approach to working with host communities, engagement with Aboriginal communities, sustainable partnerships and agreement-making.





Rio Tinto has been awarded the 2014 AIM WA WestBusiness Pinnacle award for Aboriginal Leadership Development Excellence

The award recognises companies that demonstrate a commitment to excellence in developing Aboriginal leadership both within the organisation and in local communities.

Rio Tinto remains one of the leading employers of Indigenous Australians, and was one of the first companies in the country to lead the way in Aboriginal relations, employment and development. In 1995, then chief executive Leon Davis spoke publicly and passionately about a change of approach the mining industry needed to embrace, including greater and more effective Aboriginal engagement.

Rio Tinto is committed to supporting Aboriginal participation and leadership within our business and the broader community. It supports education and leadership programmes at every stage, from children's early years through high school and tertiary education to pre-employment and employment.

Among its leadership and employment programmes, Rio Tinto's Work Ready programme assists Aboriginal people, many with no previous work experience, to enter and remain in the workforce. Our Indigenous Participation programme is a 12-month rotation that enables Aboriginal people with minimal work experience to enter the business and gain meaningful skill development and training. And the Cultural Awareness programme educates and supports our workforce by providing industry-leading cross-cultural training by Traditional Owners, to ensure a supportive work environment for all.







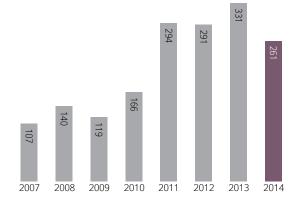
#### Community contributions by region



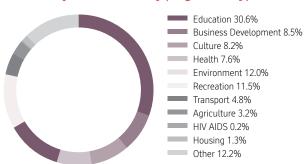
#### Community contributions

US\$ million

261



#### Community contributions by programme type



See our performance in the interactive charts: riotinto.com/sd2014/interactive-charts



#### Health

## Protecting the health of our people

Protecting, promoting and enhancing the health and wellbeing of our people is as vital as protecting their safety. We do this by identifying and managing the key occupational health risks to which they are exposed. This includes minimising occurrences of occupational illness, supporting our people to lead healthy lifestyles that contribute to their fitness for work, and helping them remain healthy as they travel and work at our more remote sites.

We operate in a number of countries where the prevalence of HIV/AIDS, tuberculosis (TB), malaria and other tropical diseases is high. As well as managing these diseases in the workplace, we are committed to helping establish health programmes for our local communities, and where appropriate, working closely with other stakeholders to do so.

As part of our commitment to continuous improvement, we report our performance against our new Group health targets, which include:

- A year-on-year improvement in the rate of new cases of occupational illness per 10,000 employees.
- The requirement that by 2015, all managed operation to have reviewed –
  and increased their focus on managing their health risks, through
  implementation of critical control management plans to address their
  specific material health risks.

During 2014 we revised our Health standards to simplify and integrate them more effectively with the Rio Tinto management system and sharpen our focus on material risks for the Group. Our aims were threefold:

- Encourage improved ownership of Health standards by leaders at our operations.
- Provide a consistent framework for managing health risks in an efficient and effective way.
- Ensure we are managing the potential impacts and risks related to our operations in order to make our workplaces safer.

The new standards come into effect on 1 April 2015, at which point our businesses will begin to implement them. We will begin to audit and report our performance against them from 1 July 2016. In the interim period our businesses can choose to be audited against either the current or the revised standards.

#### Health vision

#### Occupational health

Measuring and monitoring the work environment and our workers to control the occupational health risks in our businesses

Health vision

#### Fitness for work

Detecting and managing human conditions
(eg fatigue, mental disorders) and
non-communicable diseases
(eg diabetes, obesity, heart disease)
than can impact worker safety

#### Medical emergency response

Providing ongoing support for medical and pandemic preparedness for emergency response and/or evacuation

#### Vector-borne and infectious disease

Ongoing support to our businesses in the management of such diseases as malaria, dengue, HIV, TB



#### Health: Community health and medical emergency response

## Keeping healthy worldwide

Our health management approach goes beyond the workplace. At many of our sites, we have recognised the importance of establishing community health programmes (for example for HIV AIDS, malaria and tuberculosis). This is important for our local communities as well as our workforce, who are all exposed to the local health conditions. Travel health issues – including the availability of adequate emergency medical response – are also a concern as we expand our operations into less developed regions of the world.

#### Approach

Rio Tinto operates in a number of countries where the prevalence of HIV/AIDS, tuberculosis (TB), malaria and other tropical diseases is high.

We are committed to helping our communities enhance their capacity for managing these diseases. As part of this, we collaborate with government agencies and non-governmental organisations (NGOs), as well as relevant local organisations.

We have also worked with the International Council on Mining and Metals (ICMM) and other major mining associations to produce practical guidelines for the industry to improve the management of these diseases.

We will continue to pursue opportunities for private-public partnerships to expand our community health programmes into our communities.

Dealing with HIV/AIDS and tuberculosis in the workplace

The global epidemic of HIV/AIDS poses a serious threat to the health of employees, their families, and communities surrounding mining and minerals operations. We have had an HIV standard in place for several years, which has helped our workplaces to achieve HIV prevalence rates significantly lower than in surrounding communities. However, the success of our workplace programmes will ultimately be influenced by the ability of surrounding communities to develop effective prevention and treatment responses to the HIV epidemic.

We take our lead from the International Labour Organization Code of Practice on HIV/AIDS. We do not tolerate discrimination towards employees who are diagnosed with the disease. Nor do we screen for it during the recruitment process, or use screening as a condition of employment.

We have a global, risk-based standard that has four key workplace components:

- prevention, awareness and education
- voluntary counselling and testing
- wellbeing, counselling and treatment
- monitoring and evaluation, using ICMM's Good Practice Guideline on HIV/AIDS, TB & Malaria, which identifies key indicators that should be regularly measured



#### Health: Community health and medical emergency response

Where we have operations in regions with a generalised HIV epidemic (as defined by <u>UNAIDS</u>) we actively encourage all employees to know their HIV status through voluntary testing. In this way, each worker can take the necessary steps to remain infection-free if negative, or avoid spreading the infection and quickly access the appropriate support and treatment if positive.

Employees infected with the HIV virus have reduced immunity and are also at increased risk of developing TB, which often leads to death when no treatment is available. We are currently working to raise the profile of TB in high-prevalence areas and have included TB in our revised Health standards, which require employees to have access to an integrated HIV/AIDS and TB management programme.

#### Malaria and other tropical diseases

Malaria remains a significant problem in many developing countries, primarily in Sub-Saharan Africa (60 per cent of clinical cases and 80 per cent of global mortality), Latin America and Asia. Malaria is a significant health risk for employees based in affected regions and for those seconded or travelling to operations located in endemic areas.

We have included malaria in our revised Health standards and revised our Malaria Management Framework. A Malaria Hotline is available to all employees 24 hours per day/seven days per week. The hotline is intended to provide advice and support to identify the signs and symptoms of malaria as well as on general preventative initiatives or measures.

We continue to provide support to our businesses in developing effective malaria programmes and we communicate the Rio Tinto recommendation for expatriates and visitors to endemic malaria areas to take malaria prevention medication.

Travel health issues and medical emergency response International travel, particularly to developing countries, can pose significant health risks that have a very real possibility of resulting in illness and even death. In addition, serious health risks may arise in areas where accommodation is of poor quality, hygiene and sanitation are inadequate, medical services are not well developed, and clean water is unavailable. We have mandatory minimum requirements for emergency medical response provisions at our sites.

We have developed pre-travel medical checks, which are being offered to business travellers at most of our key locations since 2010. We have also developed and implemented a pre-assignment medical check programme for international assignees and their families, and have reviewed the medical emergency response capability of our high-risk sites. We maintain ongoing support for medical emergency response and evacuation.

In 2014 we updated and expanded the scope of our Pandemic Influenza Framework to include other diseases such as Ebola, integrated pre-employment medicals into the existing pre-assignment medical check programme, offered post-assignment medicals for assignees returning from high-risk locations, and continued to oversee the appropriateness and adequacy of on-site medical facilities for our remote sites.

#### Results

The number of medical emergency cases among business travellers and international assignees decreased by 40 per cent in 2014 compared with 2013 (319 cases in 2013 and 191 in 2014). The most common causes for a medical emergency among Rio Tinto business travellers and international assignees in 2014 were musculoskeletal injuries and gastrointestinal disorders, followed by cardiovascular conditions. There were eight emergency medical evacuation cases in 2014.

March 2015 marks one year since the World Health Organisation (WHO) was notified of an outbreak of Ebola in West Africa. In Guinea, where we haveoperations, 2,730 cases were reported and 1,739 deaths since the outbreak began. Responding to the outbreak, a Rio Tinto Business Resilience Team was established and a number of control measures have been implemented in partnership with the Guinean Government, WHO and other international organisations. We have put prevention measures in place both for our employees and the local Guinean communities. We have supported the Government and communities through awareness raising and providing logistics and food. As part of our efforts we have organised and conducted prevention and awareness campaigns, distributed hygiene kits and provided support to local hospitals with protective equipment and medical supplies. To date, none of our employees or their families in Guinea have been affected by the disease.





Malaria is a leading cause of death in Madagascar. As a developing country, Madagascar has very little public health infrastructure, which is hampering the fight against the disease.

Rio Tinto's QIT Madagascar Minerals operation (QMM) supports the local malaria control initiative, which is run by government departments, international NGOs and other stakeholders. The company's involvement has included supporting training programmes – for its workforce and the community – and providing mobile equipment and education materials.

This work has helped reduce the risk of malaria transmission, the number of mosquitoes, and the prevalence of the disease within the local population. The most vulnerable members of the population are children under the age of three and pregnant women. Young children constitute a significant percentage of the Malagasy population and focusing on them is critical.

In 2014, QMM supported a programme to help reduce the prevalence of malaria in the area around the local hospital, where most of the cases of the disease among QMM employees and their families were occurring.

The programme found that complicated cases of malaria were being treated in the hospital without the use of protective nets around the beds. Most of the mosquitoes in the area were therefore being infected, contributing to an elevated transmission rate.

A multi-pronged approach was put in place to help address this situation. QMM's Community Relations department collaborated in a sanitation campaign, to reduce the mosquito population in the area. In collaboration with the chief medical officer and a representative of Madagascar's Health Ministry, the company provided nets and the labour to install them on all beds in the hospital. Hospital management also committed to make the use of bed nets mandatory. QMM also collaborated with a local NGO to increase knowledge about malaria in the local population, providing awareness sessions every day at the beginning of the sanitation work.

As a result, the rate of malaria in communities surrounding the hospital is now relatively low compared to the first half of 2014.

QMM is working in partnership with its stakeholders to help tackle one of the country's most serious health risks





#### Health: Managing occupational health risks

## Minimising health risks at work

Like any responsible employer, we take steps to minimise illness that develops as a result of conditions and exposures in our workplaces. The nature of our business means we are especially vigilant about illnesses caused by exposure to excessive dust, fumes, noise, manual tasks and to all forms of radiation. Our goal is no new cases of occupational illness.

#### **Approach**

We treat an illness as "occupational" if conditions in our workplace are thought to be the cause or to worsen it. The workplace does not have to be the only cause of the illness.

In 2004, we introduced our Group-wide occupational <a href="health standards">health standards</a> to improve identification and management of health risks. These were revised in 2014 and are integrated with our custom-built and recently revised <a href="Rio Tinto management system">Rio Tinto management system</a> to ensure consistent Group-wide application, on an exposure risk basis. We audit implementation of our standards regularly and also benefit from sharing leading practices across the Group.

Some of our workers are more sensitive than others to contracting workplace-related illnesses. We emphasise prevention by specifically monitoring the individual's exposure to potentially hazardous agents in the workplace and any potential impacts of these on their health. We then seek to implement appropriate exposure controls where relevant.

We have set a new Group target that requires all managed operations to have reviewed – and increased their focus on managing – their health risks, through implementation of critical control management plans (CCMPs) to address their specific material health risks, by the end of 2015. These plans establish an approach for monitoring the performance of critical controls against material health risks at individual sites.

We have rolled out guidance and training in identifying and assessing critical health risks. We have also developed a formal process for identifying material health risks and critical controls. Critical control monitoring plans are then developed and implemented for these risks, in support of our post-2013 target.

Performance measures and targets are being established for each critical control. This approach will allow our businesses to direct their resources at the health risks that matter at their sites.

To support consistent data quality, management and analysis, we continue to roll out software for managing occupational/industrial hygiene and medical surveillance data. In 2015, we are reviewing our options to upgrade this software.

Lung diseases related to long-term dust exposure are now rare in our workforce, demonstrating the effectiveness of our dust and fume control programmes. We have also made significant strides in reducing the number of new cases of occupational asthma within our aluminium smelters.

Heavy equipment tends to be noisy, which is why noise-induced hearing loss (NIHL) is still a problem for us. While we recognise that further reductions in noise exposures for our employees will prove challenging, we are committed to continuing to improve our performance. We continue to develop engineering solutions and alternative ways of doing our work with reduced noise levels. We have a noise community of practice to share learnings and help develop more effective noise improvement strategies.

Musculoskeletal disorders remain a common form of new occupational illnesses, despite advances in technology rapidly reducing physical demands on our employees. We are continuing to seek ways of engineering out heavy lifting tasks and are reviewing available and proven ergonomic solutions to see if they can be applied more widely. We use a dedicated software package to improve the assessment and sharing of controls for manual handling risks.



#### Health: Managing occupational health risks

#### Results

In line with our standards, we continue to work on reducing radiation exposure to as low as reasonably practicable. Our monitoring has not recorded any employee above our 20 milliSievert (mSv) annual exposure limit for over a decade. Rio Tinto's exposure limit is well below the five-year 20mSv and annual 50mSv limits typically found in international protocols.

In recent years, while our rate of new cases of occupational illness at Rio Tinto operations has been decreasing, the rate of decrease has lessened. We are targeting a year-on-year reduction in the rate of new cases of occupational illness per 10,000 employees. The main types of occupational illnesses recorded since 2008 are related to musculoskeletal disorders, noise-induced hearing loss and stress. We exclude operations that were divested or flagged for divestment during 2013/14 from our target.

In 2014, we achieved a six per cent improvement in performance compared with 2013, with significant decreases in the number of reported cases of noise-induced hearing loss (77 per cent) and stress (seven per cent), traditionally among our largest contributors. This meets our target. Musculoskeletal disorder cases (49 per cent) dominated our illness cases for the year.

We will continue to target a year-on-year improvement in the rate of new cases of occupational illness per 10,000 employees annually. Ongoing reductions in new cases of occupational illnesses will require further improvements in the management of risks posed by manual handling and noise exposure, as well as managing fatigue and supporting healthy lifestyles through workplace wellbeing and stress management programmes, where these are considered material health risks.

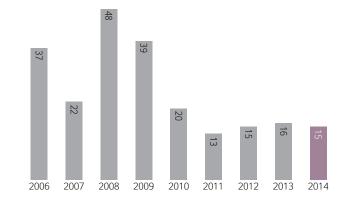
Our target of implementing critical control management plans to address material health risks is progressing well. Already 41 per cent of businesses have met the target, with the majority of the remaining businesses confident of meeting the target by the end of 2015.



#### New cases of occupational illness

Per 10,000 employees

15



See our performance in the interactive charts: riotinto.com/sd2014/interactive-charts





In occupational health risk assessments, a health professional typically identifies hazards, then monitors and reviews exposures. This long-accepted approach, whilst robust, has historically had limited input from employees.

Rio Tinto has therefore modified the process, basing it upon a semi-quantitative approach that it currently uses to understand its safety risks. This rigorous assessment now includes frontline employees in identifying causes and controls of occupational health risks in their working environment.

The controls being used are then analysed, to determine those that are critical to success, and to make sure that they are adequate. Using this information, a management plan is created to ensure these critical controls operate as designed. This improves the analysis of health risks and increases practical input from the workforce.

The method can also include actual exposure measurements and limits to produce a numerical rating that outlines the level of critical risk. It results in a better understanding of occupational health risk and its control by line management and the workforce across operations.

A new approach ensures employee input into occupational health risk assessments





#### Managing fitness for work

## Promoting healthy lifestyles

Protecting and promoting our employees' health and wellbeing is vital. We believe in supporting our people in leading healthy lifestyles, so that health-related risks such as fatigue, stress and obesity, and diseases such as HIV/AIDS and tuberculosis, will have less impact on their safety.

#### **Approach**

The nature of occupational illnesses is changing. Health conditions such as stress, fatigue and the normal results of ageing, such as reduced physical capacity, present different challenges from traditional mining health issues. We recognise that in some of the countries in which we operate, musculoskeletal conditions and heart disease are more prevalent due to an ageing workforce. Our health results also show that stress and fatigue are becoming more common, perhaps in part because we are becoming more effective at identifying, understanding and managing these factors in the workplace.

Across many industries, the potential for mental health problems to lead to short and long-term disability, employee turnover and occupational injuries is becoming better understood. In order to support our workers in this area, we have taken a closer look at what is currently being done both within and outside Rio Tinto.

We also recognise that fatigue contributes to many safety incidents. Fatigue management is a shared responsibility between the company and its personnel, and is also influenced by personal circumstances, behaviours and actions.

#### Results

In 2014, our health and wellbeing networks shared best practices. We identify lessons learned in the various businesses and share them within the region and beyond. Collaboration between the different businesses is encouraged when a common wellbeing issue is identified.

Having collected internal and external best practices, we are now finalising our mental health management framework. This will look broadly across the field, from responding effectively to someone in crisis, to demystifying mental health and ultimately improving wellbeing and resilience.

We also continued our focus on fatigue management, developing a risk assessment that will help identify, quantify and manage fatigue-related risks within operational and corporate activities.

Finally, our wellbeing programmes continued to have positive impacts on health participation behaviours, for example encouraging employees to visit a doctor for skin cancer and blood pressure screening. They have also helped identify cases where individuals are at high risk, prompting them to seek urgent medical advice on potentially life-threatening conditions.





At the Oyu Tolgoi mine in Mongolia, clinical data revealed a number of health concerns among employees: increasing weight, hypertension, elevated blood glucose levels, cardiovascular issues and a generally unhealthy population.

In response, throughout 2013 and 2014, the facility implemented a health and wellbeing programme to provide employees and contractors with opportunities to improve their health. It focused on three areas: health and wellbeing information, nutritional support and personalised fitness programmes.

Three departments worked together to put the programme in place: the health, safety and environment (HSE) team, International SOS (the facility's clinic and occupational health provider), and Catering International Services, which manages catering and nutrition and supports the recreational centre.

#### Initiatives included:

- Coordinating health improvement programmes with food services and seasonal wellness campaigns.
- Reducing oil and salt in kitchen meals and introducing a colour-coded labelling system (green, amber, red) that provided information on nutritional values.
- The Health passport wellness campaign, a three-step process reviewed every month for four months:

- Medical assessment with result entered into a health "passport", and any risks explained.
- 2. Optional referral to a nutritionist.
- Access to personal trainers helping with weight modification goals.

Over 1,300 people from a population of 2,800 participated in the first round of the passport launch, which has greatly increased knowledge of health issues at Oyu Tolgoi. Many individuals with hypertension and diabetes were identified and provided with help. Health topics now share the spotlight in the monthly HSE themes, and healthy meal choices have become a clear staple on site.

Oyu Tolgoi's HSE, health and catering departments jointly devised a programme to help employees improve their health and wellbeing

For more case studies:
riotinto.com/sd2014/case-studies



#### People

### Investing in our people

We consider our people and organisational requirements as carefully as we do our capital investments. We need to ensure that we meet the human capital needs of our business today and in the future. At the same time, we build the skills and capabilities of our people, so that they can contribute effectively to our organisational goals. Our People strategy guides how we attract, develop, engage and retain talented people, who are not only part of our organisation but also part of the communities in which we operate.

#### **Approach**

We invest in our people over the long term. We do this by fostering diversity, offering challenging and exciting work and development opportunities, rewarding good performance, and providing quality leadership at every level.

We recruit based on skills and experience and do not discriminate on grounds of age, ethnic or social origin, gender, sexual orientation, politics, religion or physical abilities. We do not employ forced, bonded or child labour. Rio Tinto actively favours employing local candidates where laws and job requirements allow. Where local capacity does not meet our employment standards we implement programmes to develop skill levels and work readiness in partnership with communities and government. We help Indigenous people engage in the local economy through various strategies, including direct employment.

Our employees' diversity of skills, ideas and experience helps to ensure that we can find innovative responses to the challenges our business faces. We encourage collaboration within and across our businesses, cultures and countries to build cohesiveness and raise performance.

We are focused on increasing the representation of women, and achieving a better balance of gender in the short term, and of ethnicity and nationality in the medium term. We are also focused on developing a more diverse leadership team, specifically to ensure that local nationals in emerging regions have the capability and experience to lead our operations.

Our Group diversity targets for 2015 are:

- Women to represent 20 per cent of our senior management.
- Women to represent 40 per cent of our graduate intake.
- Fifteen per cent of our graduate intake to be nationals from regions where we are developing new businesses.

Transparency is part of our everyday work ethic. We conduct and act on formal surveys that give our employees the opportunity to provide feedback on their experiences of the business and working environment.

We also have *Speak-OUT*, a confidential, free telephone line for our people to bring any concerns to the attention of senior management.

We continue to have a strong focus on development at all levels within the Group and offer an integrated and customised suite of development programmes. This is to make sure we have effective and comprehensive leadership in support of our business objectives. Our activities are based on an analysis of the technical, functional and leadership skills required for each role. *Leading at Rio Tinto*, our leadership framework, provides employees with the key competencies and behaviours we expect from our leaders.

Our Group-wide performance and remuneration systems support consistent and transparent assessment of talent across the company. They also drive a performance-focused culture by making clear linkages between performance and reward, and enable employees to articulate their career aspirations.

We offer our employees a rounded total rewards package, the principles of which are consistent across the Group. These principles are designed to be competitive, in compliance with all applicable laws and regulations, and appropriately balanced in favour of variable pay linked to performance. Our global banding structure supports equity in both base salary and variable pay systems. Each role within our organisation is banded using the global banding structure and each band has a target variable pay opportunity.



#### People

#### Results

In 2014, women represented 31.8 per cent of our graduate intake, 21.4 per cent of the board, 15.5 per cent of our senior management, and 18.7 per cent of our total workforce. In 2014, 17.8 per cent of our graduate intake comprised nationals from regions where we are developing new businesses.

Throughout 2014, we remained one of the largest private sector employers of Indigenous Australians, with over 1,650 full-time Indigenous employees, representing approximately 7.5 per cent of our permanent Australian workforce. In addition to our permanent Indigenous workforce we had over 550 Indigenous contractors working on our Australian mine sites. Our local employment commitments are often managed through directly negotiated agreements with Traditional Owners.

Approximately 627,000 attendances were recorded for training in leadership, technical and operational skills, and health, safety, and environment courses across the business in 2014.

In 2014, we employed 60,000 people, including the Group's share of joint arrangements and associates. Of these, approximately 31,000 were located in Australasia, 18,000 in the Americas, 7,000 in Africa, and 4,000 in Europe.

We conducted an employee survey in 2014 which showed that our people continue to report high levels of engagement, with employees feeling that safety, efficiency and flexibility have been improved since the last survey. They believe that we can do more to celebrate our successes and manage personal performance. Action planning has occurred across the Group, with improvement plans developed in partnership between leaders and employees. The implementation of these plans will continue throughout 2015.

As a result of our graduate talent strategy, we now have a Group graduate development framework in place. This provides the foundation for how our graduates will be developed over their two-year programme.

Good communication and open, honest dialogue are vital if we are to meet the expectations of our employees. Rio Tinto's culture of leader-led communication and engagement is supported by a number of communication tools. These include myRioTinto, a portal dedicated to employment needs, and keeping employees informed of Group updates, news and announcements.



Continuous learning is at the heart of our latest learning strategy, and was endorsed in 2013 as one of the key cultural attributes for Rio Tinto Group.

During July to October 2014, we interviewed each member of our Executive Committee to understand how our learning approach is meeting current and future business needs, and we also benchmarked our learning approach against best practice.

Our proposed direction builds on our original vision of "Developing people for growth". Rio Tinto aims to be known as an organisation that is continuously learning by developing its people and that transforms the way learning happens. This supports our efforts in attracting and retaining the best talent and improving and strengthening our business so we can deliver on our commitments.

During 2014 approximately 36,000 employees accessed Rio Tinto College, our virtual, worldwide training facility. Through the year the college gained a number of awards, including the LEARNX Asia Pacific award for best learning technology strategy. It was also a finalist in the Australian HR Awards and the global Chief Learning Officer Awards for best learning strategy. These awards recognise the reach and accessibility of our learning strategy for a globally dispersed workforce. In Rio Tinto's 2014 employee engagement survey results, learning and career development was one of three significant improvements on the 2011 engagement survey.

### A global strategy that helps strengthen our business







# Respect for the environment is central to our approach

#### In this section

Air	02	Land	14
Biodiversity	06	Waste	17
Climate change	08	Water	20
- Energy	11		

Image: Lac-Saint-Jean, Saguenay, Quebec, Canada



## Managing our atmospheric emissions

Our operations release gases and particulates into the atmosphere that may have an effect on people and the environment. These result from burning fossil fuels, moving ores and wastes, and smelting metals.

To avoid or minimise related health or environmental impacts, we constantly review our emissions, look for ways to improve our performance and apply controls. Our work is guided by our strict air quality control standards. We also monitor particulate gas and vapour exposure in the workplace, in line with our occupational health standards.

#### **Approach**

To minimise impacts to air quality, we seek to:

- Prevent breaches of applicable criteria under normal and reasonable worst-case operating and meteorological conditions, to protect human health and the environment.
- Control our air emissions at their source.
- Understand our contribution to local airsheds.

There are four major air emissions from our operations. We also report mercury air emissions at Group level.

#### SO.

Oxides of sulphur ( $SO_x$ ) emissions are mainly generated at our aluminium and copper smelters and our coal and fuel oil fired power stations:

- SO<sub>x</sub> emissions from our copper smelters result from separating metal from sulphur-rich materials in the raw ore we mine.
- SO<sub>x</sub> from our aluminium smelters is released during the production of carbon anodes which are an essential part of the smelting process.
- SO<sub>x</sub> emissions from our power stations are a result of the naturally occurring sulphur in the fuel source – coal or fuel oil.

 $SO_x$  emissions have been associated with effects on human lung function and on vegetation, and can also lead to acid rain under specific processes, though this has declined significantly in recent decades.

#### $NO_x$

Oxides of nitrogen ( $NO_x$ ) come from burning fossil fuels. They are associated with respiratory problems and contribute to the formation of fine particulates in the atmosphere.

#### Fluoride

Particulate and gaseous fluoride emissions are generated in aluminium smelters when converting alumina to aluminium, and to a lesser extent from processes that consume coke and coal. Fluoride has been associated with effects on human health. It can be taken up by plants, enter the food chain, and affect the strength of teeth and bones.

#### Particulate emissions

Particulate emissions are recognised as a general nuisance as well as a potential risk to health. Depending on the operation, dust can be generated by fuel combustion, the transfer of raw materials, windblown erosion of exposed areas and stockpiles, wheel-generated dust, and during blasting operations.

Particulates smaller than ten micrometres in diameter ( $PM_{10}$ ) can be retained in the lungs. The composition of  $PM_{10}$  has an important influence on potential health impacts.  $PM_{10}$  from fuel combustion is generally more harmful than  $PM_{10}$  from diffuse sources such as the windblown erosion of exposed areas and wheel-generated dust.

Particulate emissions are associated with increased respiratory symptoms, such as aggravation of asthma and some lung diseases.



#### Mercury

Mercury is a naturally occurring element that can be mobilised in the environment from natural sources and as a result of human activities, such as industrial combustion or other industrial processes.

Consistent with our commitment as a member of the International Council on Mining and Metals (ICMM), and its Mercury Risk Management position statement, we report mercury air emissions at the Group level. Many of our businesses already report such emissions at the national or local level through pollutant release inventories or other reporting frameworks. Air emissions of mercury are released from some of our alumina refining operations, other metal production processes, and our fossil fuel power generation.

#### Results

#### $SO_x$

Rio Tinto's sulphur dioxide ( $SO_2$ ) and sulphur trioxide ( $SO_3$ ) emissions are expressed as sulphur dioxide equivalents ( $SO_x$ ).

In 2014, our operations emitted 118.2 thousand tonnes of  $SO_x$  gases to the atmosphere, a decrease of 9.8 thousand tonnes compared to 2013. Most of this reduction resulted from the refinery curtailment at Gove Operations. Emissions from stationary sources such as smelters, refineries, roasters and concentrators (SRRC sources) and power stations continue to account for the majority of our emissions (86 per cent in 2014).

#### $NO_x$

Oxides of nitrogen ( $NO_x$ , a combination of NO and  $NO_2$ ) emissions are expressed as equivalent nitrogen dioxide emissions ( $NO_2$ ).

See 2014 NO<sub>x</sub> chart on Environment: 04

During 2014, total  $NO_x$  emissions were 75.0 thousand tonnes, a decrease of 3.5 thousand tonnes from 2013. This was the result of divestment of Rio Tinto Coal Mozambique in 2014 and reduced coal usage at Oyu Tolgoi. Emissions from stationary sources accounted for 20.448 thousand tonnes, with 54.5 thousand tonnes being emitted from mobile sources.

#### Fluoride

In 2014, our aluminium smelters contributed 99.2 per cent of our 3.2 thousand tonnes of fluoride emissions. This was an increase of 87 tonnes from 2013 due to degraded emission controls (collection issues) at one of our smelters.

#### Particulate emissions

Particulates less than ten micrometres in diameter ( $PM_{10}$ ) are released from our mining activities, metal manufacturing processes, and power stations.

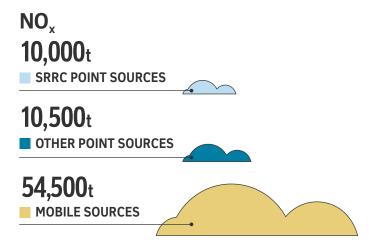
In 2014, we released 103.3 thousand tonnes of  $PM_{10}$ , a decrease of 9.7 thousand tonnes from 2013. Emissions in 2014 were:

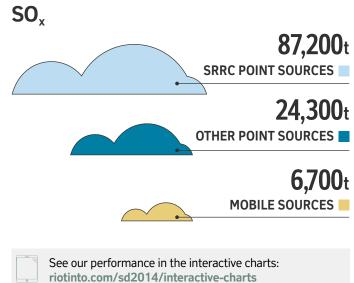
- 94.5 thousand tonnes from fugitive sources such as wind blowing on stockpiles, loading and unloading stockpiles, vehicles operating on unsealed roads and our blasting activities.
- 8.8 thousand tonnes from our smelting, roasting, refining, concentrating and other stationary sources.

#### Mercury

In 2014, total reported mercury air emissions from our metals processing and fossil fuel power generation was 326kg. This compares with 407kg reported in 2013 – the second year we publicly reported mercury emissions to air. The decrease in 2014 was due to the curtailment at Gove operations.







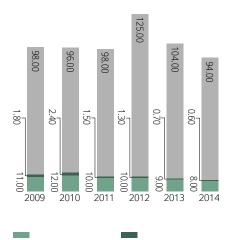


### Facts & figures



#### Particulate (PM<sub>10</sub>) emissions

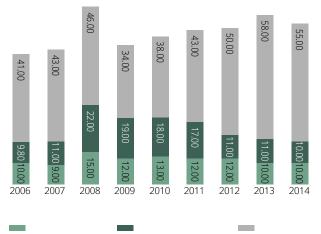
'000 tonnes



SRRC point sources Other point sources Fugitive sources

#### NO<sub>x</sub> emissions

'000 tonnes



SRRC point sources Other point sources

Mobile sources

Due to rounding, sum of data in the charts may not equal the total shown.





Richards Bay Minerals (RBM), in which Rio Tinto owns a 74 per cent stake, is the largest mineral sand producer and beneficiation company in South Africa. In October 2014, RBM's efforts to manage air quality were recognised when it won the Annual National Association of Clean Air Award for Industry.

RBM's operations release gases and particulates into the atmosphere as a result of burning fossil fuels, moving ores and wastes, and smelting metals. To minimise potential health and environmental impacts from its production processes, RBM constantly reviews its emissions and looks for ways to improve its performance through carefully applied controls.

Among its efforts, over the past five years RBM has rebuilt its furnaces ahead of their design lifespan to improve production efficiency and minimise air quality impact. The company monitors its dust fall-out on a continuous basis and is consistently below both residential and industrial limits. And RBM is currently improving its emissions abatement to achieve 2020 emissions limits in terms of South Africa's Air Quality Act.

RBM's general manager, Health, Safety and Environment, Dr Peter Eaglen, said that the award means RBM is heading in the right direction in terms of its duty of caring for the environment. "It does not mean that we have achieved all our goals, however, it emphasises the need for us as a business to continue implementing our Group standards on environmental management and the requirements of our air emission licence."

### Recognition for RBM's success in managing its emissions





#### Biodiversity

## Managing biodiversity

The rate of biodiversity loss remains a serious global concern as the human population grows and competes with habitats containing the world's remaining biodiversity. Our activities have the potential to adversely impact biodiversity and this generates significant interest with key stakeholders, including government, local communities and non-government organisations (NGOs).

Rio Tinto has long recognised the importance of sound biodiversity management and has had a biodiversity strategy since 2004. The strategy requires that all sites understand their biodiversity risk and impacts. Those sites deemed to pose high or very high risk to biodiversity must develop an action plan to help understand and minimise impacts, and, where appropriate, implement actions to achieve a net positive impact (NPI).

It's important that any strategy maintains its relevance, and in 2014 we undertook a review of our biodiversity strategy, taking into account our many years of implementation experience and the views of our stakeholders.

#### Approach

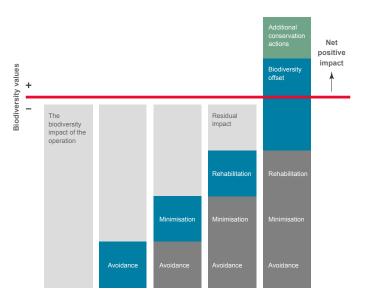
Our operations carry out assessments to determine the risk they may pose to biodiversity. This assessment provides consistency across the Group and serves as an important screening tool to assist in prioritising our efforts. Importantly, if a site is assigned a high or very high risk ranking, it does not necessarily mean the operation is causing significant impacts on biodiversity – just that further investigation is necessary. The nature of any impacts is determined through our action planning process.

Rio Tinto has a structured approach to the management of biodiversity risks and impacts. We first seek to avoid impacts on biodiversity and ecosystem services. When avoidance is not possible we identify measures aimed at minimising impacts, and implementing best practice rehabilitation programmes. If the predicted residual impacts are still considered significant, then offsetting measures are developed. We call this approach the mitigation hierarchy.

In 2014, 32 of our operations were ranked as very high (24) or high (eight) risk sites. Of these sites 21 have completed a biodiversity action plan.

In 2014, the review of our biodiversity strategy involved seeking detailed feedback from our site practitioners who are involved in implementing biodiversity programmes. We also sought the views of our corporate biodiversity partners – Fauna & Flora International, the International Union for Conservation of Nature and BirdLife International – and analysed regulatory trends. We formed a working group to consider the information and where necessary, identify areas of improvement, with the aim of delivering the best outcomes for biodiversity.

#### Mitigation hierarchy



For illustrative purposes only



#### **Biodiversity**

#### Results

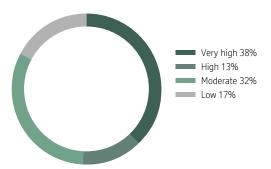
The strategy review highlighted a number of key principles and recommendations that will assist in delivering better biodiversity outcomes. These include:

- Emphasis on the application of the mitigation hierarchy and, for those operations with large rehabilitation requirements, ensuring works are conducted as soon as areas become available.
- Greater focus on materiality and directing our NPI efforts to those sites with significant residual impact(s).
- Increased flexibility in accounting methodologies for biodiversity losses and gains.
- Like-for-like land-based offsets may not always be practical and hence greater optionality is required in what may constitute an offset.
- Stakeholder participation is both critical and necessary to ensure transparent, credible and relevant programmes.
- There may be instances where it is sufficient to demonstrate an agreed NPI trajectory by the time of closure of the operation.
- Improved integration of biodiversity requirements into our normal business activities
- Developing an assurance programme to ensure common understanding and application of the requirements.

These recommendations will be used to update our guidance documentation, which will be rolled out in 2015. The revised guidance will better reflect the on-the-ground realities that occur across our diverse set of activities, geographies and regulatory settings. It will assist our operations in achieving better outcomes, faster.



#### Biodiversity values assessments





### Protecting habitats and species of high conservation value

The Mount Pleasant project is a planned open cut coal mine in Australia's Hunter Valley, New South Wales. The project is located within the Brigalow Belt South bioregion and contains the ecological communities known as Box Gum Grassy Woodlands and Derived Native Grassland. Both are considered to be of high conservation value and endangered on a regional scale.

There are a number of species of high conservation value within the project area, including the swift parrot, the regent honeyeater, the spotted-tail quoll, and the greater long-eared bat. A key challenge for the project is balancing the economic and social benefits it would bring with helping to ensure long-term protection of the biodiversity in the area.

Approval has been granted to clear a maximum of 2,591 hectares of native vegetation, comprising 572 hectares of woodland and 2,019 hectares of grassland. There are limited opportunities to apply the avoidance element of Rio Tinto's mitigation hierarchy as the bulk of the concession and coal deposit is covered by the high-value ecological communities. Therefore the focus is on reducing impacts and generating a net gain through a combination of minimisation, restoration and offsetting measures.

To offset predicted residual impacts, three sites have been selected, totalling more than 15,500 hectares. The offset sites will provide Australia's largest protected area of Box Gum Grassy Woodlands (>12,875 hectares) and will also protect more than 8,475 hectares of verifiable habitat for the swift parrot, the regent honeyeater, the spotted-tail quoll and the greater long-eared bat. Key management activities for these offset sites have been identified, based on the condition of the habitats and the threats faced. In addition, 677 hectares have been identified for re-vegetation, in order to increase habitat connectivity.





#### Climate change

## Managing climate risks and opportunities

We recognise the need to understand and adapt to the physical impacts of climate change, which will affect our operations, particularly through the availability of water and the occurrence of extreme weather events. We believe that global energy and climate challenges are best met by companies, governments and society working together. Our strategy is to maximise shareholder returns by making our assets more resilient against uncertain carbon and energy market risks.

#### **Approach**

The scale of the necessary emissions reductions and the need for adaptation, coupled with the world's increasing requirements for secure, affordable energy, create large challenges. Meeting these challenges will create risks and opportunities for Rio Tinto's businesses that will affect the value of a range of our assets, including those in our thermal coal business. We regularly review and assess these risks and opportunities. As part of these processes we engage with a range of stakeholders including governments, NGOs and other companies to better understand the risks and to share our own assessments.

Our climate change programme focuses on reducing the energy intensity of our operations, as well as the carbon intensity of our energy. This includes the use of renewable energy and reduction in emissions intensity from chemical processes.

Setting targets, and regularly reporting against them, is a priority and helps us to manage our performance. We recognise the long-term nature of the need to decarbonise our business and that our efforts to reduce emissions will need to increase over time.

#### Results

Reduction of our greenhouse gas (GHG) intensity index is one of our Group key performance indicators. In 2008 we set a target of ten per cent reduction in total greenhouse gas emissions intensity, to be achieved by 2015. We have reduced our total GHG emissions intensity by 18 per cent compared with 2008, currently beating our 2015 target.

A new target will be set in 2015 that extends the existing external target to 2020. This will focus on the challenge to increase energy efficiency. Targets will be developed in collaboration with Group businesses, and take into account their current circumstances and future plans.

Between 2008 and 2014, Rio Tinto's GHG emissions intensity had reduced 18 per cent, largely due to the 2009 divestment of the Ningxia aluminium smelter in China, closure of the Lynemouth aluminium smelter in 2012, divestment of the Sebree smelter in 2013 and improved measurement methodology for coal seam gas at our Australian coal mines.

In 2014, our total GHG emissions were 33.9 million tonnes of carbon dioxide equivalent ( $CO_2$ -e), a decrease of 3.5 million tonnes from 2013.

See GHG intensity chart on Environment: 09

See Sources of total GHG emissions chart on Environment: 09

See the Performance data section for a breakdown of greenhouse gas emissions by product group and country.

See Total GHG emissions chart on Environment: 09

Our business is inherently energy-intensive. The majority of our GHG emissions are generated from energy use (electricity, fuel) and chemical processes (anodes and reductants) during mining, milling and smelting activities at our sites. The majority (65 per cent) of the electricity we use is from hydro power.

Transportation, processing and use of our products also contribute significantly to GHG emissions. In 2014, the three most significant sources of indirect emissions associated with our products were:

- Approximately 5.3 million tonnes of  $CO_2$ -e associated with third-party transport of our products and raw materials.
- An estimated 129.6 million tonnes of CO<sub>2</sub>-e associated with customers using our coal in electricity generation and steel production.
- $-\,$  Approximately 459.4 million tonnes of CO $_2$ –e associated with customers using our iron ore to produce steel (these emissions are not all in addition to the coal-use emissions above, as some customers use both our iron ore and our coal to produce steel).

To assess how carbon policy and regulation will affect our businesses and our products in the future, we closely monitor national and international climate and energy policy developments and we advocate constructively for policies that are environmentally effective, economically efficient and equitable. We also assess the potential risks to the resilience of our operations from changing climate events.



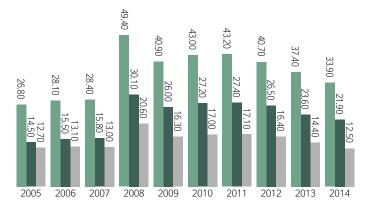
#### Climate change



#### Total greenhouse gas emissions

Million tonnes of carbon dioxide equivalent

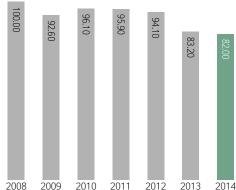
33.9



Greenhouse gas emissions intensity

Indexed relative to 2008

82.00



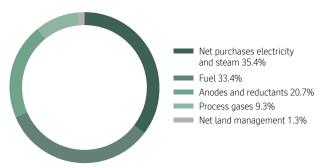
Total Emissions

Scope 1 Emissions

Scope 2 Emissions

See glossary for definitions.

#### Sources of total greenhouse gas emission



Due to rounding, sum may not total 100 per cent.



See our performance in the interactive charts: riotinto.com/sd2014/interactive-charts



#### Climate change



Climate change and variability has the potential to affect the social, economic and environmental wellbeing of communities and industry. Minimising threats from climate impacts, and taking advantage of any related opportunities, is central to sustainable development.

For Rio Tinto Minera Peru (RTMP), which operates in close proximity to communities and influences local socioeconomic and environmental conditions, its support of local livelihoods is important in securing a social licence to operate. The company's support needs to take into account the current and future climate risks that its local communities face, and how resilient they are against such risks.

Working with the International Council on Mining and Metals (ICMM), RTMP has implemented a pilot programme to assess the threats and opportunities associated with climate change that may affect the communities living near its La Granja copper project, as well as its own future activities. It is the first project of its kind that an ICMM member has carried out.

The pilot programme used a collaborative research process and a methodology developed by the International Institute for Sustainable Development known as CRISTAL ("Community-based Risk Screening Tool – Adaptation & Livelihoods"). Its aims were three-fold:

1. Strengthen local capacity to understand, prepare for and respond to climate change impacts.

- 2. Increase understanding of local experiences and priorities related to climate risk and resilience building.
- 3. Assess whether RTMP's local social development projects are consistent with or enhance local community climate change resilience.

Workshops took place in September 2014 in three communities in the La Granja project area. Participants from local communities and RTMP identified extreme weather events that had occurred in the past, the effects of climate on local livelihoods, and opportunities to enhance the communities' resilience to climate change.

The programme's outcomes are expected to help local communities and RTMP understand the potential impacts of climate change. If adopted, the pilot will also help ICMM member companies tailor their efforts to improve resilience to climate change among host communities.

Pilot programme at La Granja assesses climate change risks and opportunities





#### Energy

## Balancing the needs of energy security, cost and the environment

We believe global energy and climate challenges are best met by companies, governments and society working together. Meeting the growth in global energy demand will require increased energy efficiency, technological innovation and a mix of energy sources: fossil fuels, nuclear and renewable energy sources.

Together with our energy customers, we have to balance the competing objectives of maximising energy security while minimising supply costs and the environmental impact. Each of our sites where energy is used has unique opportunities and constraints. By working together, companies, governments and society can strike this balance.

#### Approach

Energy underpins the mining, refining, and transport activities of our operations and allows us to operate in some otherwise inhospitable places, like our Oyu Tolgoi mine in Mongolia where winter temperatures can drop to minus 30°C. A reliable and cost-effective energy supply is essential, and being efficient in our use of energy helps us to achieve this while reducing our impact on the environment.

Technology development is at the heart of improved energy solutions. The starting point is to understand our current and future energy use and emissions. To support this, we have developed a solid technical and economic understanding of current and future power generation technologies, including trials of new technologies. We continue to look for opportunities where technologies, cost and environmental benefit combine to develop commercial-scale renewable investments. An example of this is the 1.7 megawatt (MW) solar photovoltaic facility at our Weipa bauxite mine (see case study).

We also look at how we use energy and aim to reduce our energy intensity through our choices in technology and business improvement processes.

#### Results

Mining and refining mineral products is energy-intensive. In 2014, our operations used 450 petajoules of energy. The majority of the 34 petajoule decrease from 2013 was a result of operational changes at some of our Aluminium operations, but there were also contributions from operational efficiency gains at our Copper, Diamonds & Minerals and Energy operations. By comparison we supplied 2,703 petajoules to our customers and our energy supply was therefore over six times our own energy use.

In 2014, 48 per cent (217 petajoules) of the energy we used was electricity. Of that total, 124 petajoules was purchased from commercial networks and 113 petajoules was generated at our hydroelectric, natural gas, coal, diesel and fuel oil power stations. We exported 21 petajoules of the electricity we generated to remote communities near our operations or to commercial networks where our generation exceeded our needs.

Seventy-five per cent of our total electricity use was sourced from hydro, nuclear and other renewable power sources. We own significant hydropower generation facilities in Canada and Scotland.

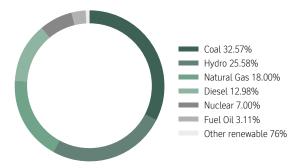
Energy efficiency continues to deliver opportunities to reduce cost and environmental impact. Our Australian operations have achieved annual energy savings of two per cent through projects such as fuel management, identifying and reducing non-essential demand, and using energy-efficient equipment in sustaining capital projects.



#### Energy

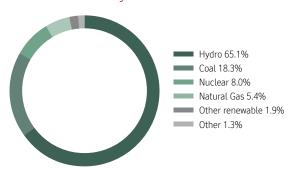


#### Primary sources of energy used



Due to rounding, sum may not total 100 per cent.

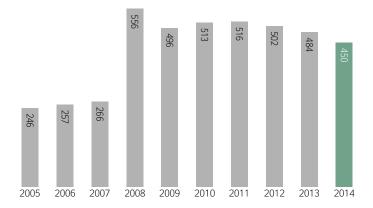
#### Sources of electricity used



#### Total energy use

Petajoules

450



See our performance in the interactive charts: riotinto.com/sd2014/interactive-charts



#### Energy



Developing renewable energy at remote sites is not an easy proposition – even where it is replacing expensive diesel generation. Until economic energy storage is available, renewable energy is simply replacing the use of diesel and the diesel generation capacity has to be retained as back-up. And the cost of building and maintaining renewable generation in remote locations is much greater than in urban locations.

Rio Tinto Alcan faced these challenges in developing renewable generation at its Weipa bauxite mine in northern Australia. In 2014, Rio Tinto Alcan, First Solar and the Australian Government renewable energy agency, ARENA, reached a joint agreement to develop a 1.7 MW solar photovoltaic (PV) facility at Weipa.

First Solar will construct and operate the facility with 18,000 solar panels that use their thin-film technology. ARENA is providing an initial commitment of A\$3.5 million for the 1.7 MW facility. Rio Tinto Alcan will purchase the electricity under a 15-year Power Purchase Agreement.

When commissioned in the first half of 2015, the PV facility will generate, on average, 2,620 MWh of electricity each year, saving up to 600,000 litres of diesel. In the middle of the day, electricity generated by the solar farm will offset up to 20 per cent of existing diesel-generated electricity.

Solar power at Weipa saves up to 600,000 litres of diesel each year





#### Land

## Ensuring sustainable stewardship of our land

Competition for land-based resources will continue to grow as the global population is forecast to exceed nine billion by 2050. An increasing population also presents competing demands between mining and other land uses, particularly food and fibre production. To address this issue, Rio Tinto has developed a land disturbance control and rehabilitation standard for use across our organisation.

The intent of this standard is that our operations seek to avoid then minimise impacts to land, biodiversity and ecosystem services. It calls for rehabilitation of mining areas to the extent practicable, consistent with planned final land use, and for the return of all other disturbed lands to beneficial post-operational use. The standard requires that rehabilitation begins as early as possible in the lifecycle of an operation.

#### Approach

Changing expectations around land use management and conservation have the potential to affect the delivery of our longer-term business objectives. Restriction on land access is a material risk for our organisation. This increasingly makes mining and processing activities the subject of greater scrutiny by regulators, local communities, investors, non-government organisations (NGOs) and employees. Communities, NGOs and regulators look for performance-based evidence to measure our commitment to land stewardship.

This evolving operating environment is not confined to the OECD countries. Increasingly strict regulations, for instance relating to project assessment requirements and offsets, are being imposed in non-OECD countries.

We encourage improvements in the quantity and the quality of rehabilitation and engage new projects and existing operations to improve their performance in land management. An important component of improving our land management and rehabilitation performance is integrating closure planning into operational activities through strong technical support and knowledge-sharing. Our approach involves ensuring that we are on track to deliver post-mining land uses and landforms that are aligned with community and regulatory expectations. And we aim to progressively rehabilitate as much land as possible before closure of an operation, by optimising areas that can be rehabilitated without compromising production.

#### Results

By the end of 2014, 26 per cent of our disturbed land (excluding land disturbed for hydroelectricity dams) had been rehabilitated. External stakeholders play an important role in determining the end-use of the land prior to rehabilitation. In most cases (83 per cent), land we disturbed is returned to native vegetation.

Rio Tinto works with a number of external organisations and research institutions such as the World Conservation Union (IUCN), Birdlife International and Fauna and Flora International. These relationships enable us to access the expertise needed to improve our rehabilitation performance. As a member of the International Council on Mining and Metals, we also help to develop industry policies and practices on protected areas and long-term access to land.



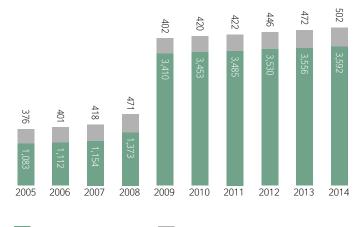
#### Land

### Facts & figures

#### Land footprint

Square kilometres

4,094



Rehabilitated

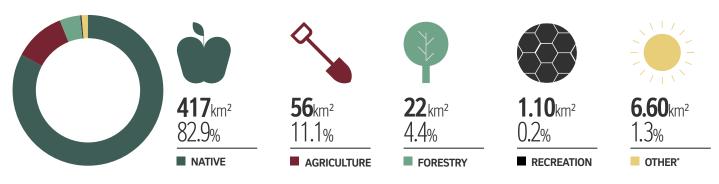
The increase between 2008 and 2009 is due to first time reporting by former Alcan operations.

#### Rehabilitated land usage

Disturbed

Total land rehabilitated 2014: 502 sq.km.

Totals are provided on the Performance data page.



<sup>\* &</sup>quot;Other" includes a variety of categories including waste management facilities, grasslands and unknown land types.

The sum of the categories may be slightly different to the Rio Tinto total due to rounding or incomplete classification of rehabilitation by type.

\*



## Kennecott introduces new long-term solution for rehabilitating waste material

At Rio Tinto Kennecott's Bingham Canyon Mine, waste rock piles storing nearly six billion tonnes of material are a prominent feature of the Salt Lake Valley skyline. In September 2013, an extreme rainfall event overwhelmed water and sediment control facilities at the base of a section of waste rock piles. Mine waste rock was carried into a local stream and onto adjacent agricultural areas. This was not the first time that extreme rains had washed material downstream.

Kennecott cleaned up native and agricultural areas following the 2013 event. In addition, Kennecott initiated a long-term solution to sustainably control waste rock material on site through accelerated rehabilitation of this section of waste piles.

In 2014, Kennecott took the first step toward rehabilitating the waste piles by completing new and expanded stormwater retention basins, then removing topsoil from native areas below this section of dumps to prepare the area for receiving new mine waste rock. Placing new rock in front of the historic piles creates a bench that allows improved management of stormwater on the slopes and cost-effective recontouring of the remaining slope above this bench. The new rock will be recontoured soon after placement, covered with the salvaged topsoil and seeded with native species.

Landowners and communities impacted by past waste rock run-off have been consulted as part of this effort and welcome the additional controls Kennecott is providing.





#### Waste

## Controlling chemical and physical hazards

During our mining and processing operations, we generate both mineral and non-mineral waste. We put controls in place to limit the negative environmental impact of our waste, and reduce our operating costs and risks.

These controls require us to characterise our waste, forecast how waste will behave over the long term, carry out monitoring, and – where waste is managed on site – close our waste facilities responsibly. We routinely audit the procedures and practices of third-party waste management providers to verify our wastes are properly managed.

One of our main focuses is chemically reactive waste, which requires careful planning and management to avoid creating long-term liabilities and minimise existing liabilities.

#### Approach

#### Waste management

#### Non-mineral waste

Non-mineral waste is primarily composed of the used materials that support our mining and mineral processing operations. This includes familiar materials such as used oil, tyres, batteries and office waste, as well as more specialised waste streams such as spent pot liners from aluminium smelters.

It is produced in much smaller volumes than mineral waste, and is most commonly managed through recycling, off-site treatment and disposal, or being placed in on-site engineered and licenced landfills. We promote reuse and recycling where possible and ensure responsible storage, treatment and disposal for the remaining waste.

#### Mineral waste

Mineral wastes include waste rock, tailings and slag:

- Waste rock is composed of rock that has uneconomic mineral content and must be removed to access ore during mining.
- Tailings are finely ground rock mixed with process water. This is what remains after the minerals of economic interest have been removed from the ore.
- Slag is generated by smelting operations and is a glassy material that remains after metals, such as copper, have been separated during the smelting process.

Mineral wastes are typically produced in large volumes. Handling and storing these wastes impacts the land and can lead to long-term impacts and liabilities if not managed effectively. Mineral wastes are generally stored permanently on site where they can be used as in-pit backfill or placed in engineered repositories. Most wastes are chemically inert, but some are chemically reactive and must be thoughtfully managed to avoid impacts on water quality or rehabilitation success.

We manage the potential environmental impacts of mineral waste by:

- comprehensively characterising the wastes
- segregating reactive from non-reactive mineral wastes
- designing the repositories to minimise environmental impacts
- monitoring groundwater and other media to verify performance and identify failures in design or practice at the outset
- undertaking progressive rehabilitation
- implementing risk assessment programmes
- networking externally and internally to share best practices and develop best practice control technologies

#### Mineral waste management plans

All operations that generate mineral waste are required to develop a mineral waste management plan. These are designed to ensure appropriate management that minimises environmental impacts and controls all chemical and physical hazards posed by the waste.



#### Waste

#### Acid rock drainage

Acid rock drainage (ARD) from reactive mineral waste is one of the most significant environmental risks for the mining industry. ARD is created when rocks that contain naturally-occurring sulphide minerals are disturbed and exposed to air and water. This accelerates the natural weathering process and may lead to the release of low pH (acidic) or neutral drainage water with elevated salinity and metals concentrations. If not responsibly managed, ARD can impact the revegetation of mining wastes, and degrade the quality of surface water and groundwater. Treatment of ARD can last a long time.

We are an active and founding member of The International Network for Acid Prevention (INAP). Through INAP, we continue to promote important research on ARD prediction and control. We promote knowledge-sharing within the mining industry on ARD management strategies, and support our commitment to responsible mineral waste management.

Internally, we have developed a number of programmes to improve mineral waste management and limit potential environmental impacts. Through these programmes, outlined below, we build awareness across the Group of the importance and value of strategic waste management, particularly where there are significant ARD risks.

#### Acid rock drainage management

To prevent or minimise potential environmental impacts of ARD, we have adopted leading practice in mine planning, operation and waste management. New projects are designed to ensure that the risk is minimised and that any low-quality drainage will be captured and treated or retained on site. We actively seek solutions for minimising long-term ARD management requirements at sites where reactive waste piles were created decades ago.

We use a number of techniques to prevent or control ARD. These include selective handling and encapsulation, sub-aqueous (under water cover) blending of waste materials, and using either synthetic or engineered earth covers.

We have developed an ARD hazard screening tool to identify high-risk projects, operations, mine expansions and acquisitions. All operations where ARD could occur must maintain a management plan that has to be reviewed every four years by an external expert. Our internal ARD risk reviews have been undertaken for all of our higher-risk operations. They are regarded as the industry benchmark in this important risk area, and include reviews by leading external and independent experts, notably in the field of geochemistry.

#### Results

#### Mineral waste and acid rock drainage management

All existing mines and advanced projects where ARD could pose a significant risk have been visited by the ARD risk review programme. Significant progress is being made to address the issues raised by the site visits. Given the long-term strategic nature of many of the ARD issues identified, and the long lead times to design and implement some of the studies and corrective actions, we anticipate that this work will continue for many years. All managed operations where an ARD risk review or mineral waste optimisation programme has been completed were in compliance with the relevant government regulations and permit conditions.

An estimated 1,742 million tonnes of mineral waste (predominantly waste rock and tailings) were disposed of or stored in 2014. About 46 per cent of this mineral waste was used as in-pit or underground backfill. This is an important use for our mineral waste as it ultimately allows open pits to be reclaimed and revegetated and enables safer disposal of certain reactive wastes.

Eighteen per cent of the mineral waste that we disposed of or stored in 2014 is considered to be geochemically reactive. Approximately 44 per cent of the land surface used for reactive mineral waste disposal has been covered or capped to preserve water quality and allow vegetation to be re-established.

We disposed of or stored 804,951 tonnes of non-mineral waste in 2014. Aluminium smelters contributed nine per cent of this total.

Aluminium smelters generate specialist wastes produced through the smelting process. These waste products include spent cell lining, bath, carbon fines and refractory bricks. Our largest managed copper operation, Kennecott Utah Copper, disposes of significant quantities of non-mineral wastes to landfill and other disposal locations.

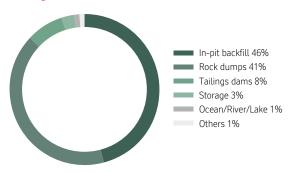
We found off-site opportunities for reuse or recycling of 512,787 tonnes of our non-mineral waste in 2014, including 111,955 tonnes of bulk processing materials from aluminium smelting and 86,152 tonnes of hazardous waste.

Our operations disposed of or stored 515,073 tonnes of hazardous non-mineral waste in 2014. Nine per cent of this total was from aluminium smelters (spent cell lining and kiln grade spar). At the end of 2014, four per cent of the hazardous waste generated during the year was placed in storage pending final disposal, recycling or reuse.

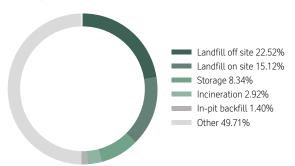


## Facts & figures

#### Management of mineral waste



#### Management of non-mineral waste



See o

See our performance in the interactive charts: riotinto.com/sd2014/interactive-charts



## Rio Tinto Alcan's programme to prevent environmental contamination

As part of its efforts to prevent environmental contamination, Rio Tinto Alcan has launched a "Zero Spill" initiative across all of its Canadian facilities that are located near waterways.

The business has invested C\$43 million, over four years, in constructing catchment basins and tailings dams, integrating monitoring equipment and installing large oil separators.

The programme is in line with Rio Tinto's standards regarding hazardous substances and contamination controls.

One example of the Zero Spill initiative in action is the reconstruction project at the Chûtes-des-Passes powerhouse's high voltage sub-station, to prevent transformer oil from contaminating the environment.

The power plant, which has 15 transformers, each containing 38,000 litres of insulating oil, is 130km north of the closest village, in the heart of the boreal forest. It's located near a major tributary of the St-Jean Lake which empties into the Saguenay Fjord, a brackish habitat rich in biodiversity.

Rio Tinto Alcan has installed an underground catchment basin beneath the high voltage sub-station to catch potential spills. It incorporates a hydrocarbon separator with a processing capacity of 189 litres per second.

In the four years since 2010, this initiative has delivered a 90 per cent reduction in spills compared to the preceding four years.



For more case studies: riotinto.com/sd2014/case-studies



#### Water

## Managing a vital resource

Water is a vital resource for communities and ecosystems and is essential to our operations. Our operations rely on the ability to obtain water of suitable quality and quantity, and are committed to using water responsibly. Our approach to water management is based on the identification, assessment and control of water-related risks.

Each operation has its own water challenges. Some are located in water-scarce environments. Others need to manage surplus water from storms or groundwater, or the quality of water we use and discharge to the environment. We work with neighbouring communities to manage our impacts, and look for opportunities to provide clean drinking water in countries where water is unsuitable or insufficient to meet community needs.

#### Approach

At Rio Tinto, we use water from different sources and of different qualities, such as groundwater, surface water (sourced from rivers, lakes, rain and snow), seawater or water from dams that we build on site. We focus on ways to minimise the amount of water we remove from the environment, reuse it whenever we can, and return it to the environment, meeting regulatory limits.

Where possible, we use recycled water. Some sites have been able to recycle up to 84 per cent of their water; others source it from external treatment plants. At many sites, we use poorer-quality water instead of drinking water to conserve local water supplies.

Water impacts are normally experienced locally, where our activities can affect the quantity or quality of nearby water resources. These impacts may pose risks to our production, water supplies, costs and business reputation. The way we manage water can affect our ability to operate. Changes to the regulation of water and environmental impacts affect our ability to access and use water for existing and future operations.

Rio Tinto has experienced production losses as a result of water-related impacts, for example when stormwater has flooded our mines. Climate change brings greater uncertainty to our water supplies and potentially impacts water management into the future.

We have developed a number of programmes to improve our performance, including:

- A Group water target for all managed operations with material water risk will have reviewed and improved their management of these material water risks, and will have achieved their approved local water performance targets, by 2018. These local targets aim to improve site-specific water performance under three defined areas: water supply, ecological impacts, and water surplus management. Each site has a target that is appropriate to its specific operational circumstances.
- A water standard that is audited and sets minimum performance expectations for each operation when managing water. As part of the standard, operations are required to measure water use, reduce potential impacts on water resources, and understand current and future water requirements of upstream and downstream stakeholders.

Successful water management depends on good working relationships with those directly or indirectly affected by our businesses. This includes Indigenous and other land owners, communities, governments, investors, the scientific and financial communities, and employees. We have worked with international organisations committed to sustainable water management, the International Council on Mining and Metals and governments to support the development of water policy.

We have used the World Business Council for Sustainable Development global water tool to identify which of our operations and projects are located in water-scarce environments. Approximately 34 per cent of our freshwater withdrawal is from 35 operations in water-scarce regions. The map on page 22 shows that our greatest exposure relates to many of our Australian operations.

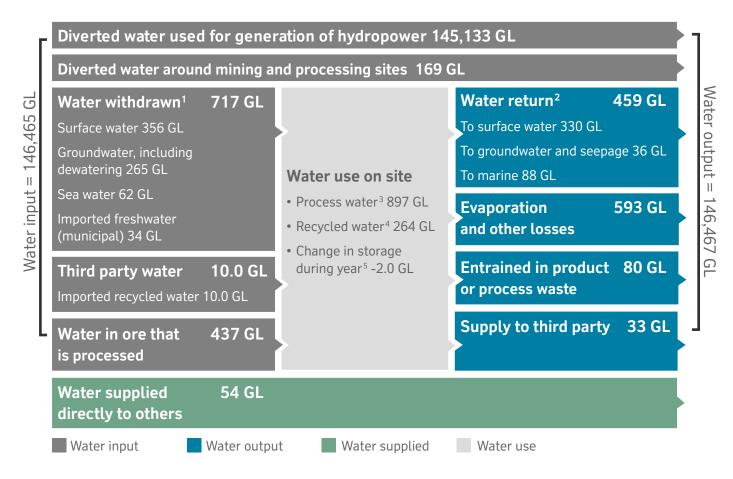


#### Water

#### Results

#### Water balance 2014

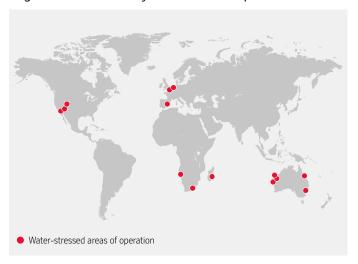
Rio Tinto measures and reports on all water inputs and outputs, as shown by our water balance:



- (1) Including onsite impounded/imported surface, onsite/impounded groundwater (including dewatering) and marine water.
- (2) Including process effluent and dewatering water discharged without use.
- $(3) \ \ Including \ mining \ (dewatering), \ milling, \ washing, \ power \ generation, \ dust \ suppression, \ etc.$
- (4) Tailings, sewage or water contaminated in process that has been treated for reuse.
- (5) The difference between total water input and total water output is "change in storage".
- 1GL = 1 gigalitre of water (1 billion litres).



#### Regions of water scarcity where we have operations



#### Our water performance

In 2014, our freshwater withdrawal increased by seven per cent to 555 billion litres. The increase in freshwater withdrawal is largely a result of having to manage water that is produced when we mine at depths below the water table. Some of this water is supplied to third parties for municipal and agricultural use. However, this metric does not accurately reflect the improvement in water efficiency at many sites.

Because water challenges and risks vary by region and site, we have redefined our Group water target to better reflect local and regional conditions. The target requires, by 2018, all managed operations with material water risk to have reviewed and improved their management of these material water risks, and have achieved their approved local water performance targets.

A site is identified as having a material water risk where there is potential for a high or critical impact on the business through consequences on the environment, production, community, compliance or reputation.

In 2014, 66 per cent of managed operations were on track to meet their approved local water performance targets. Sites that have not met their target trajectory in 2014 are being supported to ensure they take action to get back on track to meeting their 2018 targets. A managed operation is "on track" in the current reporting year if it can demonstrate that it has met the internal target trajectory that was set in the first year of the target performance period.

#### Water sources

#### Sources of water withdrawn

About nine per cent of our water withdrawn is marine water, primarily used as cooling water at our power stations. We also use significant quantities of water to generate hydroelectric power, mainly for our Canadian aluminium smelters.

#### Freshwater withdrawn

As there is generally a higher community and environmental demand for freshwater than for poor-quality water, we consider how much freshwater we withdraw to be one of the key indicators for our water performance. Through specific programmes, such as recycling, businesses improved their freshwater use. However, this metric does not accurately reflect the improvement in water efficiency at many sites, with the target impacted by production levels and extreme rainfall events unrelated to water efficiency.

#### Water used and recycled

Water use increased in 2014 as a result of some sites reaching full operation potential, recycling more water and recategorising some of our third-party water.



Rio Tinto subsidiary Richards Bay Minerals (RBM) is located on the east coast of South Africa in a water-scarce region that features valuable native ecosystems, including Lake Nhlabane, a coastal lake and estuary. RBM has put practices in place to minimise removal of water from the lake, including recycling of process water, recovery of landward-side seepage from stockpiles at the mine, recycling of treated effluent for use in mining operations, and use of alternative water sources.

To limit the amount of freshwater it needs, RBM captures and recycles approximately seven million cubic metres of process water, rainwater and run-off from our smelting and processing facilities each year. The process water is then pumped to a water treatment plant and reused up to five times by mining operations.

Replacing old infrastructure and increasing on-site water storage capacity at the smelting plants has allowed us to improve on our freshwater efficiency figures to date. Future plans include improvements to storm and process water capture, increasing capacity at our water treatment plant and addressing the water efficiency of tails stacking operations at the mining plants.

Efficiency measures at Richards Bay Minerals reduce freshwater abstraction in a water-scarce region



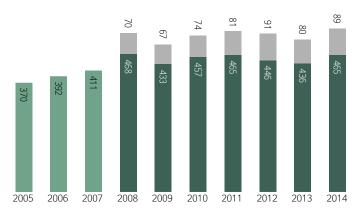


## Facts & figures

#### Freshwater withdrawn

Billion litres

555



Freshwater withdrawn freshwater withdrawn and used

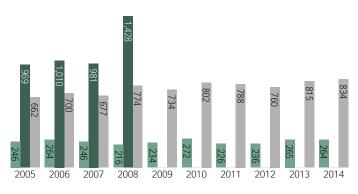
Freshwater withdrawn and discharged without use

The sum of the categories may be slightly different to the Rio Tinto total due to rounding. Totals are provided on the Performance data page.

#### Water used and recycled

Billion litres

834



Water recycled in process

Water use including marine water

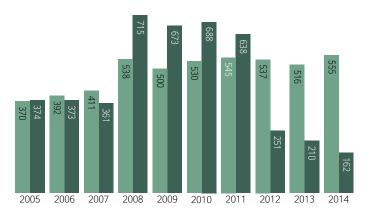
Water use

The definition of "water use" was changed in 2009 to exclude marine water.

#### Sources of water withdrawn

Billion litres

717



Fresh

Poor

The decrease in poor quality withdrawal in 2012, compared to previous years, is due to divestment of operations.



See our performance in the interactive charts: riotinto.com/sd2014/interactive-charts





#### In this section

Economic contributions	02	Suppliers	07
Non-managed operations and joint ventures	05		

Image: Oyu Tolgoi, Mongolia



### **Economic contributions**

## Helping to build economies

We assess our financial performance not only on our profits, but also by the economic contributions we make to the countries in which we operate. It is important to our shareholders, employees and many other stakeholders that we create a sustainable net benefit to local economies by providing employment opportunities, procurement, and the transparent payment of tax and dividends.

#### Approach

Our operations can make a substantial economic contribution to the regions and countries in which we operate through:

- Employment. We strive to hire locally where possible. We support a number of local education and training programmes with the aim of creating a stronger local workforce, which is then better positioned to participate in the opportunities that our operations create.
- Payments to suppliers. Where possible we buy goods and services locally, and provide small enterprises with technical support to help the local community take advantage of procurement opportunities.
- Government revenues. Through our tax contributions and the equity participation of some governments in Rio Tinto-operated mines, we contribute to government revenue. Our Taxes Paid report in 2014 ensures that the Group remains transparent about its payments to governments in a way that is consistent with our support for the principles of the Extractive Industries Transparency Initiative (EITI).
- Community investment. This includes investments in local programmes that support communities. Our programmes are the result of rigorous consultation and research and cover a wide range of activities: health, education, business development, housing, environmental protection and agricultural development. In addition, the infrastructure developed for a particular mine or processing plant can also greatly benefit local communities, businesses and governments.

Our approach helps us build a reputation as an organisation that facilitates economic growth. In turn, this helps us earn our social licence to operate.

#### Results

In 2014, Rio Tinto's global economic contribution was US\$51¹ billion. This comprises US\$21 billion of payments to suppliers, and US\$29 billion of "value added". This latter number is the value that the Group has added through its production processes. It has been calculated as the sum of payments to labour (wages), the government (taxes and royalties), and to capital (interest payments to debt providers, dividends to shareholders, and retained earnings).

Our 2014 economic contribution can be broken down as follows:

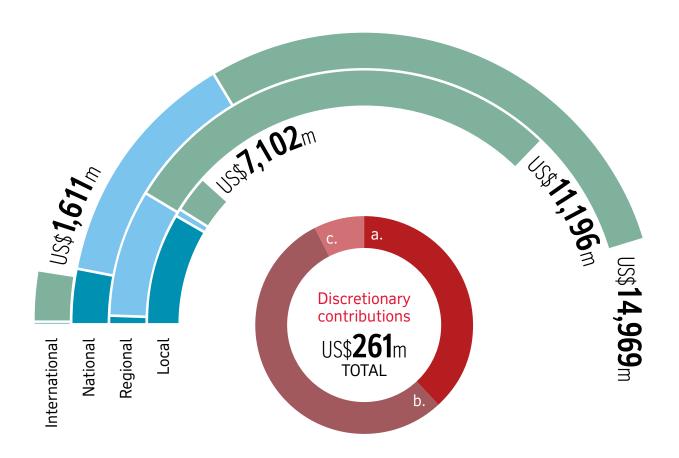
- Payments to suppliers US\$21,370 million (42 per cent)
- Taxes and royalties US\$7,410 million (15 per cent)
- Payments to employees US\$6,498 million (13 per cent)
- Dividends and interest US\$6,369 million (13 per cent)
- The remainder was reinvested.

Our business activity also generates indirect contributions to the economy. These include the effects of our workers spending their wages, governments distributing their tax revenues, shareholders spending profits, export revenues from the international sale of our products and investment in local infrastructure such as roads, power or telecommunications for our operations. We do not measure our indirect economic effect globally but it is important to keep this in mind when considering Rio Tinto's overall contribution to host economies.

(1) Due to rounding, sum does not equal the total shown.



## Economic contributions



Economic contribution	าร					Discretionary contributions*	
Salaries		Payable to gover	nments	Payments to suppliers		contributions	
(US\$m)		(US\$m)		(US\$m)		(US\$m)	
International	49	International	_	International	1,562	a. Direct community	
National	1,067	National	4,372	National	9,530	programmes	100
Regional	239	Regional	2,422	Regional	8,535	b. Benefit receiving trusts	143
Local	5,143	Local	217	Local	1,742	c. Management costs	19

 $<sup>\</sup>ensuremath{^{*}}$  Due to rounding, sum may not equal totals shown.

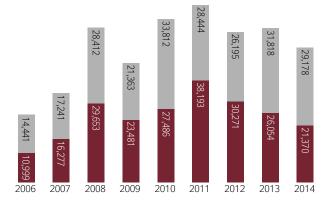




#### Economic contributions\*

US\$ million

50,547

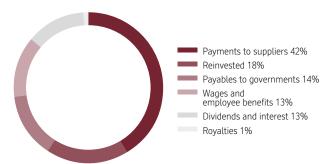


Payments to suppliers

Value added\*\*

- \* Due to rounding, sum may not equal total shown.
- \*Value add can be thought of as the value that a company has added to its inputs through its processes of production. It can be thought of as the sum of payments to labour (wages), the state (taxes and royalties), and to capital (interest payments to debt providers, dividends to shareholders, and retained earnings).

#### Distribution of economic contributions\*



\* The sum of the categories may be different due to rounding.

For futher information on the types of payments included see our <u>Taxes Paid in 2014 report</u>.



See our performance in the interactive charts: riotinto.com/sd2014/interactive-charts



For more case studies: riotinto.com/sd2014/case-studies



Simandou, a world-class integrated mine, rail and port project in Guinea, aims to develop one of the largest high-grade iron ore resources in the world. Although it is still in the development phase, the project has already made significant contributions to the Guinean economy:

- In addition to a US\$700 million payment as part of the 2011 Settlement Agreement, Simandou has contributed more than US\$40 million to the Guinean State in employment taxes and other charges.
- The project has spent US\$400 million in local currency purchases.
- It employed nearly 3,000 Guineans in mid-2014 (direct employees and contractors). Over 95 per cent of the direct workforce is Guinean.
- Over US\$100 million has been invested into public projects in Guinea. Since the outbreak of Ebola in West Africa, Rio Tinto has delivered programmes and given financial support of more than US\$3.4 million to help fight the disease.

Simandou has committed to multi-user access for its vast trans-Guinean railway and deep-water port to support broader economic development. Preliminary economic analysis suggests that this infrastructure could underpin a Southern Guinean Growth Corridor, which could unlock additional economic activity of at least US\$3 billion per year. The Corridor has been strongly endorsed by the Government of Guinea and was identified in Guinea's 2013 Poverty Reduction Strategy Paper as a key policy tool for promoting economic growth.

Further information can be found in the <u>2014 Simandou</u> economic impact report.

Even in its early stages, the Simandou iron ore project in Guinea is already making a major contribution to local economy



## Non-managed operations and joint ventures

# Engaging with our partners on the way we work

Rio Tinto holds interests in companies and joint ventures that it does not manage, including the Escondida copper mine in Chile and the Grasberg copper-gold mine in Indonesia. We actively engage with our partners around sustainable development through formal governance structures and technical exchanges. In this way we endeavour to ensure that the principles in *The way we work* are respected at all times and encourage them to embed a strong safety and security culture in their workforces.

#### **Approach**

Examples of our non-managed operations include the Escondida copper mine in Chile and the Grasberg copper-gold mine in Indonesia.

#### Escondida

Rio Tinto has a 30 per cent interest in Escondida, which is managed by BHP Billiton. Our seats on the Owners' Council ensure we have regular input on strategic and policy matters. In 2014, Escondida began construction of the Escondida Water Supply project to develop a new 2,500 litre per second seawater desalination facility. This project will ensure a continued water supply to sustain operations while minimising Escondida's need to use groundwater. Escondida is recognised as having a world-class process for managing significant health, safety and environmental risks. Rio Tinto is in the process of adopting the Escondida process to effectively manage critical fatality risk and has benefited from Escondida's guidance and willingness to openly share their learnings.

#### Grasberg

PT Freeport Indonesia (PTFI), a subsidiary of Freeport-McMoRan Inc., owns and operates the Grasberg mine in Papua, Indonesia. Rio Tinto has a joint venture interest attributable to the 1995 mine expansion, which entitles it to a 40 per cent share of production above specified levels until the end of 2021 and 40 per cent of all production after 2021. We engage with and influence PTFI through five formal channels: the Operating, Technical, Communities and Sustainable Development committees and the Tailings board.

Tragically, there were six industrial fatalities at PTFI in 2014: four at the surface mine involving a collision between a light vehicle and a haul truck; one due to a fall of ground in the underground operation; and one due to a roll-over involving a concrete mixer truck in the surface area of the operation. We have worked closely with, and continue to support, the PTFI leadership team in the investigations and in the post-investigation lesson implementation. In 2014 senior Rio Tinto leaders and technical specialists visited the site, shared our Group's knowledge and provided practical advice to support PTFI's actions to learn from, and avoid a recurrence of these tragic accidents. There was a further fatality at Grasberg in early 2015, as a result of an equipment/pedestrian interaction.

The operation employs controlled riverine tailings transport, a process that the World Bank does not consider as good industry practice, on the basis that it is contrary to the International Finance Corporation's 2007 Environmental, Health, and Safety Guidelines for mining. However, several independent expert reviews concluded that this method represents the best available option for this operation because of the extremely rugged topography, high rainfall and significant seismic activity. We continue to believe that this method is appropriate given these conditions, but have adopted the standard that riverine and shallow marine disposal of mining and processing mineral waste will not be used at new Rio Tinto managed operations.

Rio Tinto technical personnel review and provide guidance and oversight of the controlled riverine tailings management system with a focus on geotechnical, geochemical and environmental issues. There is an official multidisciplinary Technical Committee which addresses environmental issues along with technical issues related to geology, worker health and safety, mine planning, processing and tailings management. Rio Tinto is represented by a senior environmental manager on the PTFI Tailings Management board, which meets twice a year at Grasberg and includes third-party experts. The emphasis of Rio Tinto's involvement is to promote continuous improvements in the environmental performance of the existing tailings management system. Historic and ongoing improvements since Rio Tinto's involvement began include:

- construction, extension and maintenance of a levee system to limit the lowlands depositional footprint;
- diversion of the Ajkwa River system in the lowlands out of the permitted tailings deposition area;
- ongoing re-vegetation programmes in the deposition area;
- ongoing efforts to increase tailings retention within the deposition area; and
- ongoing efforts to ensure that the tailings remain geochemically benign and will therefore not pose an acid rock drainage risk.



#### Non-managed operations and joint ventures



Joint venture partners Rio Tinto Copper and Minera Escondida Limitada share a passion for fatality prevention and have shared best practices over the past five years. In 2010, we introduced Escondida to our Semi-Quantitative Risk Assessment (SQRA) process. Escondida refined and built upon SQRA, incorporating a disciplined process for managing fatality risk based on the relentless verification of critical controls, and reaching all levels of the workforce. This world-class process has resulted in the longest period in Escondida's history without a fatality.

Our Copper group's leadership decided to adopt the Escondida fatality risk management process, and benefited tremendously from Escondida's willingness to impart its knowledge, tools and learnings. Escondida has allowed several Rio Tinto visitors to observe the process in action and provided important support during a two-week workshop in 2014. At this workshop, Copper established the foundations for the roll-out of Critical Risk Management (CRM), patterned after the Escondida process.

CRM was successfully piloted at select Copper facilities in 2014 and will be implemented across the entire Copper group in 2015. CRM is also being piloted by other Rio Tinto product groups and is being recognised throughout Rio Tinto as a game-changer in our ability to prevent fatalities.

## Our Copper group is adopting Escondida's fatality risk management process



For more case studies: riotinto.com/sd2014/case-studies



## Suppliers

# Forming successful and sustainable relationships with our suppliers

2014 saw a significant shift in global commodity cycles. With commodities markets at the lowest levels for many years, Rio Tinto took a fresh look at its partnerships and the ways it works with its partners to reduce costs. Out of this effort, we promoted opportunities for emerging market and low-cost vendors to enter into sustainable and successful partnerships with us.

#### **Approach**

To address changes in the current marketplace, Rio Tinto has continued to focus on increased engagement with, and accountability from, its global supplier community. We have also continued to promote ethical supply chain practices.

#### Focus on suppliers

We have sought to create key partnerships, so as to become increasingly agile while ensuring sustainable value to our business. We worked to cultivate and adopt new support models with our existing supply chain partners that reflect this new environment. To manage the cyclical nature of the commodities market better, it is imperative that we continue to evolve to a scalable and variable cost model for our supply chain.

We have actively engaged with our supply chain and, together with our suppliers, generated new methods, policies, and innovations to achieve productivity dividends. With an expanding focus on working capital, those suppliers that bring supply chain advantages through their proximity and ability to hold stock on behalf of our operating sites also benefited.

As part of our commitment to national development we continue to help up-skill local suppliers. The challenges these suppliers face vary by region. We have encountered local suppliers whose commercial acumen, in areas such as safety, international marketplace dealings, and access to capital, varies in its degree of sophistication. These

variations mean we have created multi-faceted approaches to bring about the success of each supplier. We support them in leveraging their proximity to our operations, their generally lower cost base, and their understanding of local supply chains and labour practices, to become more competitive and successfully grow their businesses.

#### Promoting ethical supply chain practices

Rio Tinto's set out the expectations the Group has of its suppliers in relation to a wide range of issues, including safety, environment, business integrity and human rights. In line with the principles, we employ practices such as prequalification, contracting and capacity-building in our work with suppliers.

In 2014 Rio Tinto Procurement made it compulsory for all personnel to undertake human rights training. It also engaged with local and international NGOs around current issues facing industry such as the prevention of modern-day slavery.

#### Results

Rio Tinto continued its work with a procurement staff (in/outsourced) of 1,064, located in 39 sites and with 50,000 suppliers around the world. The 2,500 sourcing projects conducted and 1,800 procurement bids translated into 4,000 active contracts, and US\$13.4 billion contestable spend¹.

 Contestable spend is the annual operational spend that is available to be sourced by Rio Tinto Procurement. Excludes development capital.



#### **Suppliers**

Around the world, we spent US\$21,370 million on goods and services with 50,000 suppliers in 2014. The table below shows spend by Country.

Country	2014 spend (US\$ million)
Australia	12,828
Canada	1,852
France	151
Great Britain	253
Guinea	15
Iceland	0.17
India	49
Madagascar	57
Mongolia	664
Mozambique	0.26
Namibia	110
New Zealand	6
Norway	12
South Africa	429
US	2,537

The table below shows our major material purchases for 2014.

	Amount
Material	('000 tonnes)
Petroleum coke	1,500
Caustic soda	540
Diesel	1,424
Fuel oil	243
Sulphuric acid	603
Explosives*	535
Coal tar pitch	289
Aluminium fluoride	26.6
Lubricants and greases	25.1

<sup>\*</sup> Only bulk products included. Other initiating explosive items purchased in boxes or pieces excluded.

Most of the materials outlined above are globally procured. Most mine-related services are procured within the local areas, states, territories and provinces where we operate.



The Business Development Centre (BDC) launched by Rio Tinto's Richards Bay Minerals (RBM) operation in South Africa in September 2014 aims to create and develop sustainable micro, small and medium enterprises from its host communities.

RBM managing director Mpho Mothoa said: "No business operates separate from its environment. The health and sustainability of Richards Bay Minerals (RBM) is closely linked to the relationships the company has with the communities which host its operations. The development of local suppliers and host community enterprises is one of the most effective ways of ensuring that the benefits of RBM's mining activities are directed to its host communities."

One of the primary reasons that host community enterprises are often not successful in securing procurement opportunities is a lack of technical skills and a gap between the standards that are required as minimum by RBM, especially in the areas of health, safety, quality and compliance with stringent environmental standards.

The BDC offers a range of business services and manages programmes to fast-track the development of host community enterprises so that they are better placed to apply for business opportunities.

Through the BDC, RBM also engages a range of stakeholders and business links, such as banks and other financial institutions which provide value-added services such as funding, as well as relevant governmental departments.

Creating sustainable micro, small and medium enterprises in RBM's host communities



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#### In this section

Business resilience	02	Integrity and compliance	08
Closure	04	Internal controls	10
Human rights	06	Product stewardship	12

Image: Simandou project, Guinea, West Africa



### Business resilience

# Preparing for, and responding to, the risks we face

Rio Tinto's operations could face a range of incidents that may threaten our business. While it is impossible to predict every kind of incident we could face, we have adopted a Group-wide approach to business resilience and recovery. This brings together our collective experience to protect our people, the environment, our assets and our reputation. It is an essential part of our Health, Safety, Environment and Quality Management System, which aims to prevent or control risk and the consequences associated with these events.

#### **Approach**

Rio Tinto's Business Resilience and Recovery Programme (BRRP) elements are aligned to recognised good practice and well established standards:

- Management: Ensure an appropriate level of commitment and resourcing is allocated to business resilience and recovery.
- 2. Embedding business resilience: strategies and programmes are in place to ensure business resilience is integrated into day-to-day work.
- Analysis: Plans and arrangements are based on major or catastrophic risks that would have an unacceptable impact on safety and business.
- 4. Design: Ensure the right solutions are in place to support the required response.
- 5. Implementation: Every site has fit-for-purpose plans and arrangements.
- Validation: Confirms the business resilience and recovery programme at each site meets the business objectives and is fit for purpose.

The programme is externally audited as part of Rio Tinto's Health, Safety and Environment and Quality (HSEQ) Management System framework.

#### Results

Since 2010, Rio Tinto has taken an integrated approach to business resilience. This brings together the previously separate plans for emergency response, business continuity and information technology recovery into one streamlined Business Resilience and Recovery Programme.

The programme requires all our operations to allocate appropriate resources, including trained personnel, facilities and equipment, to effectively mitigate the impact of major incidents, control them and recover from them. We manage incidents in a consistent manner by using a common language, sharing best practices, eliminating overlaps and clarifying accountabilities.

Every Rio Tinto site, whether an office, mine, plant or project, has a Business Resilience and Recovery Programme with appropriate plans and teams to prepare for and respond to the risks they face. Our HSEQ Management System requires every team to exercise their plans on an annual basis. Time and time again it has been proved that the best responses to incidents are led by teams that have rehearsed using realistic and credible exercises. These are now routinely undertaken with increasing sophistication, giving the teams confidence that they will be able to meet the business's needs in a time of crisis.



#### Business resilience



In March 2014, the Business Resilience Team for Guinea formed in response to an outbreak of the Ebola virus. Over the next few months as Ebola spread, this team put in place control measures and detailed, resourced plans to prevent our employees and their families from catching this deadly disease.

To support the growing problem in West Africa, we also formed a Corporate Business Resilience Team to manage and support the wider business impacts of Ebola. This team also coordinated business resilience teams from Rio Tinto Alcan and Rio Tinto Marine that had formed to ensure the continued delivery of bauxite from the CBG mine site in the north of Guinea to smelters in Eastern Canada.

We recognised the economic challenges that Ebola has brought to the region, and the need to ensure the continued flow of money and services into West Africa. For this reason, we continued with our earlier decision to continue work where safe to do so. At the time of writing (December 2014) the Ebola virus continues to threaten West Africa. Rio Tinto continues to work together with all stakeholders involved to overcome the threat of Ebola and return to business as usual.

# Coordinated teams take action to protect health and manage business impacts



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### Closure

## Planning for post-mining land use

Closure planning is essential for every Rio Tinto operation. Good performance in legacy management and closure can enhance our reputation and enable us to maintain access to land, resources, people and capital – so we can continue establishing new projects with the support of local communities.

#### Approach

When production ceases at a mining operation, the land is rehabilitated so it can be used for a beneficial post-mining land use. When rehabilitation is complete, leases are relinquished or land that is owned by the company can be sold to a new private owner. Careful planning throughout the lives of our operations, and in consultation with local stakeholders, will make a significant difference to closure outcomes, minimising the social and economic impact on local communities and the surrounding region.

The Rio Tinto Closure standard requires that our businesses start planning for closure from the earliest stages of project development, to seek sustainable and beneficial future land uses when an operation eventually closes, if possible, and minimise financial, social and environmental risks.

Stakeholder consultation is a fundamental part of our closure planning. Our Closure and <u>Communities standards</u> require that our operations engage with stakeholders including employees, traditional landowners and local communities and governments to define closure objectives including potential post-closure land uses.

Closure planning is integrated into operational activities. For example, progressive rehabilitation and remediation of any contamination minimises the restoration work required at closure, and ensures final rehabilitation is efficient and effective.

We review and update closure plans regularly throughout an operation's life cycle, completing detailed engineering studies as operations approach closure. This makes sure that we identify key risks early and address them well before closure where necessary. Closure provisions are reviewed every six months with a formal update every year.

We use multi-disciplinary teams to develop, review and implement closure plans. These teams typically include experts in community relations, environmental management, human resources, finance and engineering. We also have a dedicated and experienced team managing our legacy sites.

#### Post-closure stewardship

In addition to those sites that we have owned and operated, we also manage a portfolio of non-operational sites that we have inherited through acquisitions and mergers, that are either no longer economically viable or that have been closed by their previous owners

and require further remediation before they can be sold. Some of these are mine sites, but the majority are industrial or brownfield sites such as former smelters, refineries, mills and manufacturing sites.

Regardless of these legacy sites' ownership history, it is in our interest to safely decommission and remediate them, making the land available for beneficial reuse as quickly as possible. Our reputation depends on our doing this responsibly and effectively. We seek opportunities for socio-economic and environmental regeneration, and have found that through careful management, applying innovative solutions where appropriate, and working in close collaboration with others, these sites can often be transformed into community assets.

Examples of good closure planning and implementation, identified through our internal reviews, external research collaborations and networking, are shared throughout Rio Tinto to improve our overall performance. We also continue to participate in initiatives to enhance closure planning guidance for our industry through recognised bodies such as the <a href="International Council on Mining and Metals">International Council on Mining and Metals</a> and the <a href="Minerals Council of Australia">Minerals Council of Australia</a>.

#### Results

Since the closure management plan review programme began in 2005 we have conducted 77 reviews. These ensure that our mine closure plans are current and aligned with stakeholders' expectations, and that adequate resources are available to meet the full cost of closure, including post-closure management and monitoring. In addition, we carried out a Group-wide review of closure and rehabilitation plans in 2014 to share best practice.

Eighty-one per cent of the Group's operations have closure management plans in place. New operations and businesses integrated into the Group through acquisition are progressively developing closure management plans to meet the requirements of our Closure standard.

Close-down and restoration costs include the dismantling or demolition of infrastructure, the removal of residual materials and the remediation of disturbed areas for mines and certain refineries and smelters. The costs are provided for in the accounting period when the obligation arising from the related disturbance occurs. The provisions are based on the net present value of the estimated future costs of restoration with, where appropriate, probability weighting of the different remediation and closure scenarios. These estimates are based on current restoration standards and techniques. Total closure and environmental provisions as at 31 December 2014 amounted to US\$8,630 million.





As part of its acquisition of Ashton Mining in 2000, Rio Tinto's Argyle Diamonds operation inherited land and buildings in Belmont, Western Australia, which were used as a minerals laboratory from the 1970s.

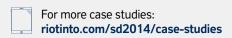
When the site was being prepared for demolition and sale in 2001, the drainage system beneath the laboratory was found to be leaking. Initial investigations revealed groundwater beneath the site and neighbouring properties was contaminated with a dense organic chemical and its breakdown products about which little was known. The source chemical was tetrabromoethane.

In addition to its potential impact on neighbouring properties, Argyle was concerned that chemicals could also be contaminating the Swan River. Little information was available at the time on the potential effects of these chemicals on human health or the environment. Clean-up of groundwater contaminated with these types of chemicals, was – and still is – considered to be challenging.

Argyle found itself breaking new ground and developing innovative research. Soil vapour extraction, groundwater recovery and treatment, and mass flux techniques have been carried out at the site and on neighbouring properties where required. Recent monitoring has indicated that the extent of the contaminated groundwater has decreased significantly and it is expected that it

will continue to decrease. Studies showed that the Swan River is unlikely to have been impacted. The aim now is to restore groundwater such that there are no restrictions on groundwater use on surrounding properties as a result of contamination from the site. To date, Argyle has spent approximately A\$10 million on this project.

In decommissioning an inherited laboratory in Western Australia, Argyle Diamonds developed new techniques to reduce groundwater contamination





## Human rights

## Building enduring relationships

Rio Tinto has diverse operations across more than 40 countries with very different social, economic, political and cultural landscapes. Respecting human rights is our responsibility and part of our company values. The actions we take in this field help us build enduring and active relationships with local communities, employees and business partners, which in turn help our business to succeed. Failing to respect human rights poses very real risks, which could include losing our social licence to operate.

#### **Approach**

Rio Tinto respects human rights wherever it operates. We support human rights in a way that is consistent with the <u>Universal Declaration</u> of Human Rights.

Our global code of business conduct *The way we work*, our human rights policy and voluntary commitments provide the framework for our approach which is consistent with the <u>UN Guiding Principles on Business and Human Rights</u> (UNGPs). In implementing our policies, we are subject to the local laws of the many countries in which we operate. We build on compliance with local laws and where our policy and procedures are more stringent, we operate to these standards.

We have made voluntary commitments to the <u>OECD Guidelines for Multinational Enterprises</u>, <u>UN Global Compact</u> and <u>Voluntary Principles on Security and Human Rights (VPSHR)</u>. To avoid human rights violations through our security arrangements, we provide training for security personnel and continue to conduct security and human rights assessments at all high-risk sites. We have developed practical guidelines on implementing the VPSHR, a Security and Human Rights Toolkit and training courses.

In line with the human rights due diligence process in the UNGPs, we look to understand our potential and actual human rights impacts, ensure we are managing them and communicate our performance.

While we respect all internationally-recognised human rights, there are some issues to which we pay particularly close attention because of our geographical and operating footprint. These include: security; land access and resettlement; environment including access to water and sanitation; cultural heritage including the rights of Indigenous peoples; labour rights; and in-migration related impacts on local communities, including access to health services.

We respect the land connection of Indigenous communities and seek mutually beneficial agreement with affected communities when we develop and carry out our operations. We strive to achieve the free, prior and informed consent of Indigenous communities as defined in the 2012 International Finance Corporation Performance Standard 7 and the 2013 ICMM Position Statement on Indigenous Peoples and Mining. This means that we work to obtain the consent of Indigenous communities for new projects (and changes to existing projects) that are likely to have significant adverse impacts on Indigenous peoples. We do this through a process which is based on good faith negotiation that strives to be consistent with traditional decision-making processes while reflecting internationally accepted human rights. We respect the law of the countries in which we operate, so we will also seek consent as defined in relevant jurisdictions and ensure agreement-making processes are consistent with such definitions.

Our whistleblowing service *Speak-OUT* is available to all employees as well as suppliers and contractors wishing to make a complaint, including in relation to human rights. Under our <u>Communities standard</u>, all businesses must have a complaints, disputes and grievance mechanism in line with the effectiveness criteria for operational-level grievance mechanisms in the UNGPs.



#### Human rights

#### Results

In 2014, we continued to communicate our human rights policy and roll out human rights training programmes across the company. We provide employees an on-line human rights training programme, it explains why respecting human rights is important, what human rights impacts we might have and internal resources and mechanisms to help manage them. Approximately 1,500 employees, a large proportion of which work in our Procurement function, completed this training. We also provide site-specific training and in 2014 developed a training package that sites can adapt to address their priority human rights issues.

We embed human rights considerations into existing corporate processes including our risk analysis, impact assessment, and our complaints, disputes and grievance processes. In high-risk locations we may conduct standalone human rights studies, incorporating the results into existing management processes. In 2014 we completed a standalone human rights impact assessment at one site and integrated human rights considerations into environmental and social impact assessments and social risk analysis at other sites. We also worked on guidance to explain how integrated assessments and analyses might be approached.

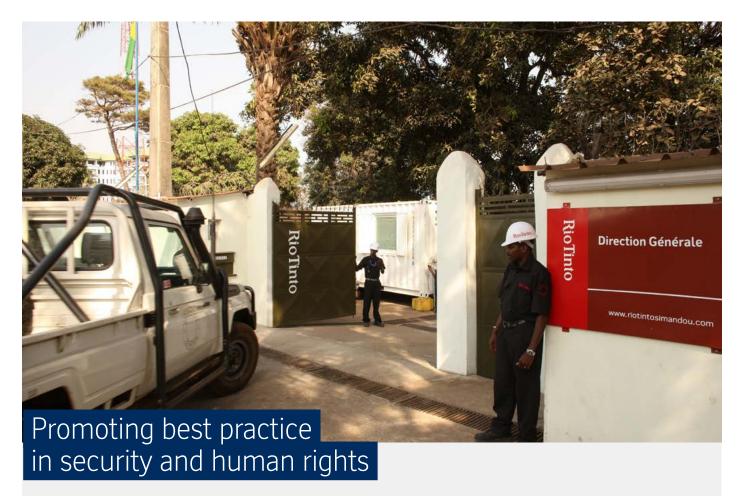
From January 2014 our online training on the VPSHR became mandatory for all security personnel at high-risk sites, and is strongly recommended for all other sites. We strive to provide training to relevant public and private security forces when a gap is identified between their current training and the VPSHR. In 2014, we conducted the in-person Rio Tinto VPSHR and Use of Force training for security guards at four sites in Africa. Both private and public security providers were present, including officers who were responsible for training and development for their organisations. In 2014, we also formed a partnership with academia and non-governmental organisations to conduct a research project on preventing conflict in the mining sector. We are developing a Use of Force, Weapon and Firearm Framework to ensure the strict control of these subjects globally.

We work to avoid our involvement in adverse human rights impacts through our business relationships. We also try to positively influence human rights through these relationships. *The way we work* applies to all suppliers and contractors in their dealings with or on behalf of Rio Tinto. Its guidance is reinforced in other key tools including the *Rio Tinto Procurement principles*. These principles reiterate that we oppose and prohibit forced, bonded or child labour. They highlight that suppliers should maintain policies that respect basic human rights. And they specify that suppliers should have a process to assure human rights compliance. Prequalification checks and ongoing monitoring help us to ensure that suppliers understand and follow these principles, adherence to which is embedded in commercial arrangements. In 2014 Rio Tinto Procurement also made our online human rights training compulsory for all employees, regardless of where they operate.

We actively participated in national and international business and human rights dialogues in 2014 including several global, thematic and regional events. These included those convened by the UN Working Group on Business and Human Rights. We also engaged with stakeholders such as governments, civil society and investors on our human rights approach including through publications, briefings and responses to general and specific queries.



#### Human rights



For Rio Tinto, security is one of the highest human rights risk areas – where our host communities and employees may interface with private and public security providers in charge of local protection.

Security personnel have the potential to impact the most critical of human rights, such as the right to life, liberty and security of person. Stakeholders increasingly recognise the need for mining companies to take a holistic approach to security management at conflict-prone sites and the most important element is prevention.

At Rio Tinto, we are consciously increasing our focus on prevention, and multi-stakeholder collaboration is essential to help us better manage the security risks associated with our activities in local communities.

In 2014 we entered into a three-year partnership to increase our efforts in this area, called "Global Actors and Community-Level Security: Developing Best Practices". Partners include the International Committee of the Red Cross, Geneva Centre for the Democratic Control of Armed Forces, Queen's University Centre for International and Defence Policy, Université de Montréal (UdeM) Centre for International Relations and McGill/UdeM Universities Centre for International Peace and Security Studies.

The partnership provides a framework for cross-sector discussion and research between companies, academia and non-governmental organisations, focusing on four areas:

- Human rights and security
- The role of private security companies
- Relations with local law enforcement and military
- Impact of corporate activities on regional stability

Rio Tinto's objective is to ensure that policies and tools to promote best practices are developed for conflict prevention, and security and human rights practices. This research project will allow Rio Tinto to refine its approach and implementation strategy according to the key findings. Research outcomes will also be disseminated to stakeholders including government, academia and the mining industry.

Find out more about <u>Global Actors and Community-Level Security:</u> Development of Best Practices

## Multi-stakeholder collaboration helps us better manage security risks



For more case studies: riotinto.com/sd2014/case-studies



## Integrity and compliance

# Behaving honestly and responsibly, wherever we operate

Strong governance structures and our commitment to integrity are the foundation on which we do business at Rio Tinto. They help to ensure we operate ethically as responsible corporate citizens wherever we are in the world, and keep us focused on doing business the right way.

The way we work, our global code of business conduct, sets out our overall commitment to integrity and compliance. It is supported by our Business integrity standard, which helps ensure we meet this obligation. This is reinforced in turn by our four core values: respect, integrity, teamwork and accountability.

#### Approach

How we do business is just as important as what we do. We operate in full compliance with all applicable laws and regulations and where needed further draw upon internationally recognised standards, including for social and environmental responsibility.

A key component of our Integrity and Compliance programme focuses on our employees acting with integrity and behaving honestly and responsibly wherever we operate. *The way we work* is core to our programme. It is supported by standards that cover key topics such as antitrust, anti-corruption, conflicts of interest, data privacy, fraud and third-party due diligence.

Staying aware of issues, and preventing misconduct before it occurs, is key for Rio Tinto and its employees. Through our training and guidelines, employees are made aware of their responsibility to work with integrity at all times. This further cements our commitment to, and understanding of, our code of conduct, company policies and local laws. In the event of any inconsistency between our policies and the local laws where we operate, we will comply with the higher standard.

Our Integrity and Compliance programme at Rio Tinto is supported by a team that reports to the global head of Compliance. Each Group business and function has its own compliance manager and support officers who work to ensure our programme is implemented within our businesses around the world.

#### Anti-corruption

At Rio Tinto, we have a strict and longstanding stance against bribery and corruption, which is prohibited in all forms. This is clearly stated in *The way we work* and in our Business integrity standard, which was revised with effect from 1 October 2014. Our Integrity and Compliance programme reflects the size and geographical spread of the Group as well as the diverse activities of our businesses, including making efforts to address concerns within our smaller localised communities. Whilst we are aware there is increased regulatory and legislative activity in this area, our approach is driven by our corporate values, particularly our commitment to undertaking business with integrity. Any Rio Tinto employee not complying with anti-bribery and anti-corruption laws may face disciplinary action, up to and including termination.

#### Transparency

Rio Tinto is committed, in principle and in practice, to maximum transparency and accountability, consistent with good governance and commercial confidentiality. Information on the Group's operational, financial and sustainable development performance is published in a timely manner through a number of channels including our Annual report.

We work with external organisations in furthering our commitment to transparency. Since its launch in 2002, we have actively supported the Extractive Industries Transparency Initiative (EITI), which aims to strengthen governance by improving transparency and accountability in the extractive sector. Our Group executive for Legal & Regulatory Affairs sits on the board of the EITI. (Find out more about the taxes and royalties we paid in 2014.)

We communicate views to governments and others on matters affecting our business interests. By furthering public dialogue, we contribute to the development of sound legislation and regulation that is relevant and appropriate to our business interests.

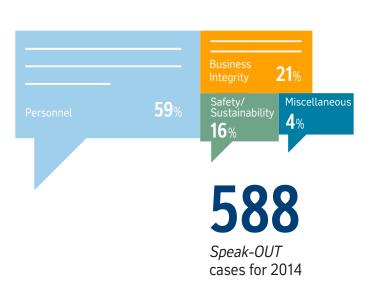


#### Integrity and compliance

#### Results

Speak-OUT, the Group's whistleblowing programme, is a confidential and independently operated service available to all employees as well as suppliers and contractors. It offers an avenue for reporting significant concerns about the business or behaviour of individuals, anonymously if desired, subject to local law. This could include suspicion of violations of safety or environmental procedures, human rights, financial reporting, or business integrity issues in general. We encourage employees to raise any concerns initially through internal channels, either through human resources or directly with management; Speak-OUT is always available as an alternative option.

Our case management tool for *Speak-OUT* provides for a single, secure repository for all case management and related investigations, including complete data analysis and reporting capabilities.



In 2014 there were 588 Speak-OUT cases, representing a slight decrease (approximately five per cent) from the number reported in 2013 and with an average incident rate of 9.7 per 1,000 employees. This rate is slightly lower compared to other industries in different sectors, and represents what we see as a fairly healthy willingness to report. The general substantiation rate, which represents allegations that have been investigated and proven to be valid, has fallen considerably to 40 per cent compared to last year. It is on par with the figures in other industries and significantly lower than the mining sector. Approximately 55 per cent of contacts elected to remain anonymous.

To ensure we provide practical and effective systems for reporting concerns and therefore create a culture of transparency and accountability, we continue to closely monitor the success of *Speak-OUT* and other internal reporting channels. We also try to ensure that any lessons arising from investigations are incorporated into our compliance programme and communicated throughout the organisation.





Compliance training at Rio Tinto was previously delivered through the conventional mouse-click method, with two 30-minute general modules followed by an assessment. Concerned that this may not have been sufficiently engaging for employees, the Compliance team looked to create a more relevant and time-efficient training approach that was also more effective. The result was "Risk to Role", a training methodology that maps relevant training to an individual's role at Rio Tinto. There are over 20 different training modules available, ranging from three to six minutes each in duration.

The results to date have been positive. Of some 3,000 learners who provided feedback:

- 85 per cent felt they had learned something new from the training modules completed.
- 95 per cent felt the training was relevant to their work.
- 91 per cent felt the training was engaging.

Examples of comments received from the voluntary feedback were:

- "Very engaging and learnt more than previous modules whereby you just had to click through and read a fair amount of text."
- "Great work; succinct, relevant, interesting, useful!"
- "A lot easier to understand than previous web modules. Now feel encouraged to take more courses."
- "Different and easy to navigate."
- "Engaging and easy to understand."

Overall, feedback indicates that the majority not only learned something, but also enjoyed the experience. And in a survey of participants six to eight weeks after taking training, it was also clear that message recall had also been greatly improved. We will continue to use feedback surveys to listen to our audience and improve the training we deliver.

With new role-specific training, employees retain compliance messages more effectively



### Internal controls

# A robust system for doing business the right way

The way we work, our global code of business conduct, applies to everything we do, wherever we are in the world.

It sets out the four core values which drive our reputation, and define the essence of who we are and who we want to be:

- Respect care for each other's wellbeing and recognise the contribution of others
- Integrity be transparent and honest
- Teamwork trust others and work collaboratively
- Accountability take ownership of our actions

Together with our commitment to integrity and compliance, these values provide the basis for our Group internal controls and assurance over the reliability of our reporting. This includes our financial, operational and compliance controls and risk management procedures. A robust system of internal controls is essential as it supports us in meeting the increasing number of challenges posed by the external environment in which we operate.

Our code of conduct is consistent with our corporate values and is expressed through the principles and standards set out within it. The way in which we conduct ourselves influences how we perform and how we are perceived. *The way we work* is our conscience. It helps us do business the right way, with integrity.

#### Approach

Rio Tinto places a high value on transparency, externally and internally. Maintaining adequate internal controls and keeping accurate and complete records are fundamental to operating a successful company and help support the sustainability reporting process. Our reports, financial statements and non-financial records are prepared to give a true and fair view of our affairs. We use appropriate accounting and reporting practices, which are applied and supported by reasonable and prudent judgments.

Our Compliance standard sets out the processes through which our businesses implement the Group's Integrity and Compliance programme. These include:

- Establishing audit forums for Group businesses and key functions.
- Monitoring compliance with internal and external material obligations.
- Maintaining relevant records.
- Providing regular reporting on integrity and compliance matters.



#### Internal controls

Quarterly audit forums are now well established by each of our Group businesses to monitor and oversee the implementation and health of their respective Integrity and Compliance programmes. They act as a key channel for management to report and discuss any significant trends, developments, issues or gaps within their businesses so that these can be promptly and effectively managed.

Rio Tinto businesses must consider and address their business integrity risks in conjunction with their periodic risk management exercises. Particularly, Group businesses must address corruption risks whenever they undertake a new project or a new activity in a high corruption risk country. They must also assess the risks before working with third parties. Employees with high exposure to corruption risk have access to additional training.

In conjunction with the Group Audit & Assurance function, we conduct periodic reviews of key operations and locations to assess the control environments with respect to our compliance standards.

Rio Tinto's global head of Compliance provides periodic reports to the Rio Tinto Audit and Sustainability Committees on the effectiveness of the Group's Integrity and Compliance programme and the *Speak-OUT* whistleblowing programme. These control processes are subject to internal and external audits. Our Group Audit & Assurance function provides reasonable assurance to our directors that the systems for risk management, internal control and governance are adequate and effective, and are regularly reviewed and updated. Group Audit & Assurance operates independently of management under a mandate approved by the board Audit Committee and the board Sustainability Committee.

#### Results

Our Integrity and Compliance programme comprises seven core elements:

- commitment and accountability for compliance
- compliance obligations and risks
- implement compliance risk management
- detect and respond to compliance incidents
- monitor
- review and improve
- report

To ensure it stays relevant and continues to address the challenges we face, we will review the framework of our programme in the near term.

During 2014, we launched a revised "Risk to Role" training methodology that maps relevant compliance training to an employee's specific role. Modules range from three to six minutes each in duration and are significantly more engaging, relevant and effective than previous training. We also launched new face-to-face anti-corruption training, targeting roles and functions that have higher exposure to bribery and corruption risks. This has been well received by the business.



On 1 October 2014, we launched a revised Business integrity standard, which has been developed in consultation with Compliance managers from across our businesses. It consolidates our four previous standards on antibribery, anti-corruption, conflicts of interest and fraud into a single standard. More risk-based, the new standard relies on key principles, which enables employees to use their judgment in day-to-day activities. We have also outlined thresholds on permissible benefits above which managerial approvals are required.

The launch included a new central online register to facilitate the approval and recording of benefits, making it easier to monitor transactions closely. We have also simplified and enhanced the existing conflicts of interest register.

The standard is supported by a manual, which is a practical "how to" guide for the business featuring explanations of procedures, examples, scenarios and tips. The standard is available in ten languages.

Initial feedback has been encouraging for this new standard, which we are currently rolling out across the business.

New risk-based integrity standard makes it easier for individuals to use their judgment in daily activities



For more case studies: riotinto.com/sd2014/case-studies



# Supporting societal goals across product life cycles

Successful markets for minerals and metals have always been based on price, reliability and quality of supply. Today, many aspects of the products' health, environmental, physical and chemical characteristics are scrutinised and regulated, and these factors have come to influence market access. As a result, product stewardship has evolved. It is the dominant HSEC (health, safety, environment and communities) issue for sales and marketing teams.

Product stewardship recognises the need for products to be produced, used and managed to the end of their life to support societal goals. Product regulation is an important aspect of product stewardship and is expanding to cover more elements of a product's life.

#### Approach

At Rio Tinto, product stewardship is about understanding the health, environmental, and social impacts of our metals and minerals across their life cycles. This includes the time during mining and processing, when we are directly involved, and also after the products have left our mine gates. It covers transportation to our customers, consumer product manufacturing and use, and post-consumer disposal and recycling. Our goal is to obtain preferred supplier status and recognition for our commitment to the safe, socially and environmentally responsible production, transport and use of our products.

Product stewardship requires us to understand the properties of our products, and how these lead to opportunities or threats in the marketplace. It entails anticipating how the regulatory and customer environment is changing, and staying ahead of the game.

We therefore see product stewardship as about maintaining and growing our access to markets. Our product stewardship programme builds upon the principles and standards outlined in *The way we work* and *Rio Tinto Procurement principles*. It supports Rio Tinto businesses in market access and support.

#### Market access

Product characterisation, labelling, transportation and information supply requirements are all subject to increasing regulation. Failure to address this could restrict our access to markets through increased product handling requirements, reduced marketing opportunities, shipping delays, onerous administration and fines or penalties.

We have a systematic approach to ensure compliance with existing regulation. In 2014, we increased our product compliance focus on China, Korea and Japan – countries with rapidly changing requirements. We also participate in various scientific, regulatory and policy arenas to contribute to the development of regulation. We base our support for new product regulation upon solid science that will lead to sound outcomes for all.

#### Market support

Customers and consumers want to know the sustainability credentials of the products they manufacture and use. Our procurement and operating practices all contribute to these. To meet expectations, we have developed life cycle assessments for our key products that are aligned with international standards.

We are also tracking the development of environmental footprinting and product traceability requirements. The European Union is trialling a methodology to assess the environmental footprint of companies and products with the intention of fully introducing it by 2020.



#### Results

#### Market access

Examples of where we participated in scientific and regulatory arenas include:

- Rio Tinto completed its first conflict minerals filing with the United States Securities and Exchange Commission and in 2015 will further improve due diligence on our supply chain at impacted businesses.
- We commissioned our first four Safety Data Sheet business websites so our customers and the public can access the latest health, safety and environmental information on our products.
- Rio Tinto became an associate member of the Association of International Chemical Manufacturers in China and has been active in reviewing Chinese regulatory developments, providing input for emerging legislation related to product stewardship.
- Rio Tinto submitted moisture management plans for cargoes classified under international and national maritime transport regulatory authorities' definitions as being "liable to liquefy". Such cargoes, if not properly managed, could cause vessel instability. These plans cover sampling, testing and moisture control procedures at ports for some alumina, coal, iron and titanium products. For coal, a modified test was developed and approved by the Australian Maritime Safety Authority.
- Rio Tinto worked with the World Coal Association (WCA) on a comprehensive evaluation of the physical and chemical properties of coal of relevance to the Globally Harmonised System (GHS) of classification criteria. This work was required to assist in compliance with national and international transportation requirements and was supported by a WCA-developed, compliance-focused guidance and roadmap for coal producers.

#### Market support

We encourage our businesses to implement product stewardship programmes aligned with our Health, Safety, Environment and Quality management system. In 2014, 88 per cent of businesses had a formal product stewardship programme or had started the process.

As an example of product stewardship market support undertaken in 2014, Rio Tinto's Aluminium group worked with supply chain partners Amcor and Novelis to supply Nespresso with a pilot batch of responsible aluminium from its Dunkerque smelter in France. Together they traced the batch's sustainability and corporate social responsibility profiles through the different transformation stages.

In 2014, our businesses reported life cycle assessments for 78 per cent of key products across the Group.

#### Rio Tinto life cycle assessments

Product group	Cradle-to- customer gate	Cradle-to-gate	Partial
Aluminium		Aluminium <u>bauxite, alumina</u>	
Copper		Copper cathode, silver, gold, sulphuric acid, molybdenum oxide copper	Vermiculite
Diamonds & Minerals		Diamonds, zirsill, ilmenite, RTCS (Rio Tinto chloride slag), steel powder, iron powder, Sorelflux, Sorelmetal, Sorelsteel, Sorelslag, UGS (upgraded slag), borates, salt, rutile, titania slag, zircon product	
Energy	Uranium oxide, coking coal, thermal coal		
Iron Ore	Retread tyres, iron ore fines, iron ore lump		Iron ore pellet – acid Iron ore pellet – flux

Of those life cycle assessments, 78 per cent have been either internally or externally reviewed since 2010.

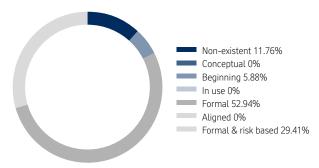
#### Material reuse and recycling

In 2014, our operations used diverse options for the off-site reuse of mineral and non-mineral bulk processing wastes. Uses included civil works, agriculture and fertiliser. These uses diverted the material from non-productive disposal and substituted for new materials.



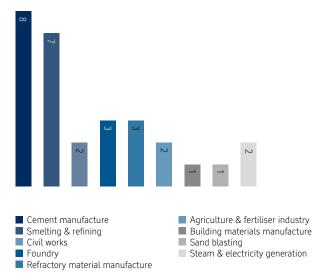


#### Implementation of product stewardship programmes

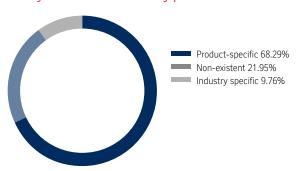


## Off-site reuse/recycle end-use activities for mineral materials

Number of operations

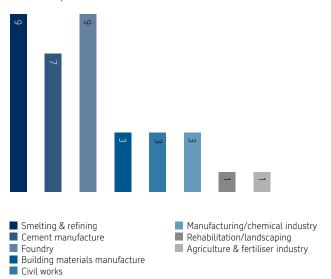


#### Life cycle assessment for key products



## Off-site reuse/recycle end-use activities for non-mineral bulk processing materials

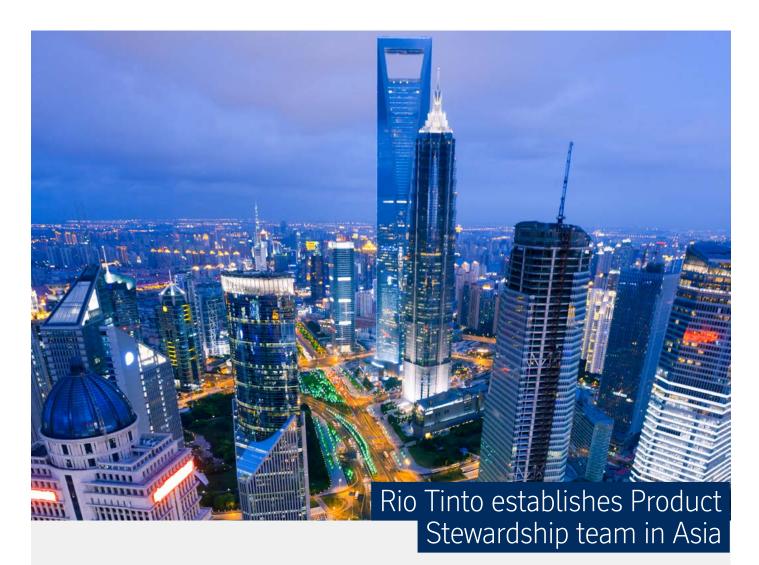
Number of operations





See our performance in the interactive charts: riotinto.com/sd2014/interactive-charts





China is a key market for many of Rio Tinto's products, and a country where product legislation is evolving rapidly. Compliance with product legislation in China can be challenging for foreign companies. Hazardous chemicals are regulated in China through a complex network of legislations, which are generally only available in Chinese. Dedicated resources are required to ensure compliance.

Rio Tinto has therefore set up a dedicated multilingual Product Stewardship team in Asia. This team ensures that local legal requirements related to product legislation are identified, clarified and complied with. The local presence of these qualified experts is also necessary to prevent duplication of test work and to ensure that data on environmental, health and physical hazards of our products are:

- developed to comply with product legislation in other countries
- used consistently in China and other Asian countries.

This team is part of a global group that interacts on a regular basis to ensure compliance at a global level, to identify and remove inconsistencies and to ensure that product regulations are based on sound science.

Multilingual experts ensure consistency and compliance with evolving legislation

For more case studies: riotinto.com/sd2014/case-studies





#### In this section

Performance	02 10
Assurance	03 N
Ethical indexes and awards	03 L
Goals and targets	04 P
GRI	05

ICMM tramework	05
MDGs	06
UNGC	06
Performance data	07

Image: Maintenance on a haul truck at our Hunter Valley operations, New South Wales, Australia



#### Performance

## Committed to transparent reporting

Every year, we report on our sustainable development performance through a number of channels. In addition to the performance highlights in our Annual report, we publish information on our programmes and performance data in this Sustainable development report.

We also report under other voluntary commitments, including:

- Global Reporting Initiative
- International Council on Mining and Metals (ICMM) Sustainable Development Framework
- Millennium Development Goals
- United Nations Global Compact
- Carbon Disclosure Project
- Carbon Disclosure Project Water Disclosure
- Dow Jones Sustainability Index
- FTSE4Good

#### Reporting at a Group level

The way we work, our global code of business conduct, outlines our commitment for maximum transparency consistent with good governance and commercial confidentiality. It also outlines our approach to internal controls and Group records management to ensure the sustainable development section of our Annual report gives a true and fair view of our affairs.

Our sustainable development data are reported for calendar years and, unless otherwise stated, represent 100 per cent of the parameter at each managed operation, even though Rio Tinto may have only partial ownership. We report in line with the <a href="Global Reporting Initiative">Global Reporting Initiative</a> (GRI) G3 guidelines. Accordingly, we use a <a href="materiality">materiality</a> assessment to help us focus this report on those issues that are most important to our internal and external stakeholders. Omission from the material issues covered in our report does not mean that the issue is not managed by the company.

We have implemented <u>ICMM's sustainable development framework</u> and disclosed the alignment of our policies, strategies, standards and practices with ICMM's principles and position statements.

We collect health, safety, environment and community data using industry standard techniques consistent with Rio Tinto standards. Our standards are applicable to all Rio Tinto business units and managed operations, including new acquisitions, administration/corporate offices and research facilities located off-site at all stages of their lifecycle.

We apply global <u>definitions</u> and guidance to ensure consistency and comparability between operations. We store data, which is queried and aggregated to the Group level, in a central database to avoid manual intervention. In line with Rio Tinto standards our calculations use formulae from relevant industry protocols (for example the GRI, the International Organization for Standardisation and the International Panel on Climate Change (IPCC)) where available.

The most accurate practical measurements of input data are used in our calculations: for example, invoiced quantities with stockpile adjustments or measurements from equipment located at the point of use or abstraction. Where measurement equipment is not in place, input data is determined using reasonable estimates.

The most accurate and practically available emission factors and calorific values are used in our calculations. For example, where we do not examine the composition of fuels ourselves, we use (in order of priority) factors provided by our suppliers, regional sources or reporting schemes, the IPCC or the International Energy Agency.

Data reported in previous years may be modified if business or Group verification processes detect material errors, or if changes are required to historic data to ensure comparability with current year data (eg updating emission factor assumptions).

Wherever possible, data for operations acquired prior to 1 October during the reporting period are collected for inclusion in Rio Tinto datasets. Divested operations are included in our data collection processes up until the transfer of management control.

Descriptions of the systems and approaches we use to manage sustainable development issues have been reviewed for factual accuracy by internal subject matter experts.

Our business units produce their own <u>local sustainable development reports</u>.



#### Assurance

## Assurance aligns with ICMM and GRI procedures

We engaged an independent external assurance organisation, PricewaterhouseCoopers (PwC), to provide the board of directors of Rio Tinto plc and Rio Tinto Limited with assurance on selected sustainable development subject matters, as explained in the independent limited assurance report.

The rules we use to define how we report data at the Group level can be found in the Performance overview and the definitions of the subject matter selected for assurance can be found in our <u>Glossary</u>.

PwC's assurance statement satisfies the requirements of subject matters 1 to 4 of the ICMM assurance procedure. Rio Tinto has satisfied subject matter 5 of the ICMM assurance procedure through the Global Reporting Initiative's check of our GRI report

Download our independent limited assurance report.

### **Ethical indexes and awards**

## External recognition for our approach

Investors are increasingly considering the environmental, social and ethical impacts of their investments. As a result, there is now greater emphasis on providing material information on companies' non-financial performance in a comparable format.

Some examples of corporate responsibility indexes that we participate in are outlined here:

- The <u>Dow Jones Sustainability Indexes</u> (DJSI) track the financial performance of the leading sustainability-driven companies. Of the largest 2,500 firms worldwide, only the top ten per cent, in terms of economic, environmental and social criteria, qualify for the DJSI World Index. The DJSI Europe and the DJSI Asia Pacific Indexes track performance of the best 20 per cent of the largest 600 companies in the European or Asia Pacific markets as listed on the Dow Jones Global Total Stock Market Index. Rio Tinto has been included in the DJSI series since 2002 and is included in the 2014 DJSI World, DJSI European and DJSI Asia Pacific and Australia indexes. We improved our position on the index and were awarded Silver Class in RobecoSAM's Metals and Mining Sustainability Leaders Group in 2014.
- The <u>FTSE4Good Index</u> has been designed to measure the performance of companies that meet globally-recognised corporate responsibility standards, and to facilitate investment in those companies. We have been a constituent member of the FTSE4Good Index since becoming eligible for assessment in 2007. In 2014, we retained our leading position on the index and are ranked in the top one per cent of our sector.



#### **Awards**

For the third time in the past four years Rio Tinto has won a Building Public Trust award for its industry-leading Taxes Paid report.

The <u>Taxes Paid report</u>, which is compiled on a voluntary basis, shows the details of all individual payments over US\$1 million made to governments in the countries where Rio Tinto operates.

Rio Tinto College, our "virtual" learning centre for employees, garnered a number of awards in 2014 for learning strategy and the quality of our learning solution.

The CDP awarded Rio Tinto its leadership award for the largest absolute carbon reduction in the ASX 200 and we were recognised as having good practice on human rights reporting in line with the UN Guiding Principles on Business and Human Rights.



## Goals and targets

## Helping us drive performance improvement

As part of our commitment to continuous improvement, we have set Group targets for a range of sustainable development metrics. These help us drive performance improvement and manage risk.

Our targets are designed using the following principles:

- They focus on internal performance, while considering external drivers.
- They must be relevant to the nature of our business.
- They need to be measurable and transparent, consistent with other Rio Tinto objectives.
- They must include a degree of stretch, while being realistically achievable with appropriate management.

Our board endorses our sustainable development targets and receives regular updates on our progress and the key issues affecting performance.

Targets	Performance to date
Our goal is zero harm, including, above all, the elimination of	2 fatalities at managed operations in 2014.
workplace fatalities.	9 per cent reduction in our all injury frequency rate compared with 2013.
Performance against this goal is measured by the number of fatalities and a year-on-year improvement in our all injury frequency rate (AIFR) per 200,000 hours worked.	
A year-on-year improvement in the rate of new cases of occupational illness per 10,000 employees annually.	6 per cent reduction in the rate of new cases of occupational illness compared with 2013.
All managed operations will have reviewed – and increased their focus on managing – their health risks, through implementation of critical control management plans (CCMPs) to address their specific material health risks, by the end of 2015.	41 per cent of managed operations have identified their critical health risks and implemented CCMPs.
Ten per cent reduction in total greenhouse gas emissions intensity between 2008 and 2015.	18 per cent reduction in our total greenhouse gas emissions intensity compared with 2008, currently beating our 2015 target.
All managed operations with material water risk will have achieved their approved local water performance targets, by 2018.	66 per cent of managed operations are on track to meet their recently approved local water performance targets.
Our diversity goal is to employ people, based on job requirements, that represent the diversity of our surrounding communities.	
We are targeting:	
<ul> <li>Women to represent 20 per cent of our senior management by 2015.</li> </ul>	- Women represented 15.5 per cent of our senior management in 2014.
<ul> <li>Women to represent 40 per cent of our 2015 graduate intake.</li> </ul>	<ul> <li>Women represented 31.8 per cent of our 2014 graduate intake.</li> </ul>
<ul> <li>15 per cent of our 2015 graduate intake to be nationals from regions where we are developing new businesses.</li> </ul>	<ul> <li>17.8 per cent of our 2014 graduate intake were nationals from regions where we are developing new businesses.</li> </ul>
By 2015, all operations have in place locally-appropriate, publicly-reported social performance indicators that demonstrate a positive contribution to the economic development of the communities and regions where we work, consistent with the Millennium Development Goals.	We met our target and all operations have locally-appropriate, publicly-reported indicators in place.



## Reporting in line with the GRI

We report our sustainable development performance in line with the <u>Global Reporting Initiative</u> (GRI) G3 guidelines and the GRI Mining & Metals sector supplement at Application level A+. Accordingly, we use a <u>materiality</u> assessment to select what information should be included in our reports.

This checklist includes responses to all GRI G3 strategy and profile disclosures, our disclosure on our management approach, and responses to the core G3 and Mining & Metals sector supplement performance indicators.

We have engaged an independent external <u>assurance</u> organisation to provide assurance over selected sustainable development topics within our <u>Annual report</u>. Rio Tinto's 2014 Annual report is currently undergoing a GRI check.

#### Strategy and profile

- Strategy and analysis
- Profile
- Parameters
- Governance, commitments and engagement

#### Disclosure on management approach

Management approach

#### Performance indicators

- Economic
- Environmental
- Labour practices and decent work
- Human rights
- Society
- Product responsibility

Download our GRI checklist.

In 2015, we will begin reporting in accordance with the GRI G4 guidelines.

## ICMM framework

## External recognition for our approach

As members of the International Council on Mining and Metals (ICMM), Rio Tinto has committed to implementing the <u>ICMM Sustainable Development</u> Framework.

The ICMM was established in 2001 to improve sustainable development performance in the mining and metals industry. Today, it brings together 21 mining and metals companies as well as 35 national and regional mining associations and global commodity associations. Visit ICMM's website to find more information on how leading companies are working together and with others to strengthen the contribution of mining, minerals and metals to sustainable development.

There are three elements to the Sustainable development framework which are mandatory for corporate members to meet:

 Principles – implement the ten ICMM Sustainable Development Principles and any mandatory requirements set out in ICMM position statements throughout the business

- 2. Reporting report in line with the Global Reporting Initiative (GRI) G3 framework
- Assurance provide independent assurance that the ICMM commitments are met

ICMM conducts an annual assessment of the progress that each member company is making against these performance commitments. The resulting <u>annual member performance assessment</u> is published in ICMM's Annual Review.

Find out more about how these requirements are embedded in our business.

Download our ICMM sustainable development framework



#### **MDGs**

## Helping us drive performance improvement

Rio Tinto is committed to playing its part in the achievement of the <u>United Nations Millennium Development Goals</u> (MDGs). Since 2009 our global communities target has been pegged explicitly off the MDGs. The target states: all operations to have locally-appropriate, publicly-reported social performance indicators that demonstrate a positive contribution to the economic development of the communities and regions where we work, consistent with the MDGs, by 2015. In 2014, we met our target and all operations have locally-appropriate, publicly-reported indicators in place.

This target is specifically aimed at economic development and increasing people's access to livelihoods, supply chains and economic resiliency. Rio Tinto businesses supported just under 2,200 socio-economic programmes covering a wide range of activities such as health, education, business development, housing, environmental protection and agricultural development during 2014. We spent an estimated US\$261 million on community assistance programmes and payments into trusts set up in directly-negotiated community impact benefit agreements, but it is the direct and multiplier economic effects that demonstrate our real contribution and commitment to meeting the MDGs.

The resource sector can provide a strong base for the economic growth of a local area, a region, or a nation. Rio Tinto focuses on the ways in which it can bring sustainable socioeconomic benefits to the areas in which it operates.

We use case studies, stories and examples set within the MDG framework to communicate our approach to sustainable development and to explain our community target-setting in line with the MDGs. Sustainable development is commonly defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". As with the MDGs, sustainable development cannot be achieved by one organisation, government or community on its own. We believe that our business can make an important contribution to the ongoing, global transition to sustainable development and to that end meaningfully contribute to the MDGs

Read more about our contribution to meeting the MDGs

## **UNGC**

## Committed to the UNGC's ten principles

The <u>United Nations Global Compact</u> (UNGC) is a voluntary commitment by businesses to endorse, observe and promote a set of core values in the areas of human rights, labour standards, environmental practice and anti-corruption. These values are reflected in the <u>ten principles</u>.

#### Rio Tinto and the UN Global Compact

Rio Tinto became a signatory when the Global Compact was founded in 2000. More than a decade on we remain committed to the ten principles and to promoting the Global Compact wherever we operate.

The ten principles on human rights, labour standards, environment and anti-corruption are fully reflected in our policy, standards and guidance. We report our implementation of the ten principles in our annual Communication on Progress (COP). Our COP is widely available to stakeholders and is reported at the GC Advanced level which is the UN's higher standard for corporate sustainability performance and disclosure.

We are actively involved in the UNGC Local Networks and participate in the Advisory Groups such as in the UK and Australia. We are also a member of the Global Compact's Human Rights Working Group, an expert advisory group.

Download our Communication on Progress



## Performance data

## Reporting our progress

Rio Tinto's sustainable development data are reported for calendar years and, unless otherwise stated, represent 100 per cent of the parameters at each managed operation, even though Rio Tinto may have only partial ownership. You can also see detailed performance data of selected parameters (highlighted below) broken down by product and location. Please see the Glossary for further information on the terms used.

#### Environment

	2014	2013	2012	2011	2010
Significant environmental incidents	12	15	7	11	18
Fines and prosecutions – environment (US\$ '000)	319.5	190.3	47.1	236.4	540.3
Energy use (petajoules)	450	484*	502	516	513
Greenhouse gas emissions – Scope 1 (million tonnes CO <sub>2</sub> equivalent)	21.9	23.6*	26.5	27.4	27.2
Greenhouse gas emissions – Scope 2 (million tonnes CO <sub>2</sub> equivalent)	12.5	14.4	16.4	17.1	17.0
Greenhouse gas emissions – total (million tonnes CO <sub>2</sub> equivalent)	33.9	37.4*	40.7	43.2	43.0
Freshwater withdrawal (billion litres)	555	516	537*	545	530
Freshwater use (billion litres)	465	436*	446	465	457
Land footprint – disturbed (square kilometres)	3,592	3,556	3,530	3,485	3,453
Land footprint – rehabilitated (square kilometres)	502	472	446	422	420
Mineral waste disposed or stored (million tonnes)**	1,742	1,950*	1,853	1,535	1,483
Non-mineral waste disposed or stored (million tonnes)**	0.80	0.53*	1.04	0.58	0.37
SO <sub>x</sub> emissions (thousand tonnes)	118	128*	153	184	193
NO <sub>x</sub> emissions (thousand tonnes)	75	78	73	72	69
Total fluoride emissions (thousand tonnes)	3.2	3.1	3.28	4.03	3.98
Particulate (PM <sub>10</sub> ) emissions (thousand tonnes)	103	113*	136	109	110

<sup>\*</sup> Numbers corrected from those published in previous year following data verification.

#### Social

	2014	2013	2012	2011	2010
Employees (average)	60,000	66,000	71,000	68,000	77,000
Fatalities at managed operations from safety incidents	2	3	2	6**	3
Fatalities at managed operations from health incidents	_	_	1	_	_
All injury frequency rate (AIFR) (per 200,000 hours worked)	0.59	0.65	0.67	0.67	0.69
Lost time injury frequency rate (LTIFR) (per 200,000 hours worked)	0.37	0.42	0.37	0.37	0.38
Fines and prosecutions – safety (US\$ '000)	95	145.5	536.1	18.3	92.3
New cases of occupational illness (per 10,000 employees)	15	16	15	13	20
Fines and prosecutions – health (US\$ '000)	0.0	0.0	23.2	0.0	0.46

 $<sup>^{\</sup>ast}$   $\,$  Numbers corrected from those published in previous year following data verification.



<sup>\*\*</sup> Mineral and non-mineral waste data excludes material that has been reused.

 $<sup>^{**}\,</sup>$  Six fatalities at Rio Tinto managed operations or operations held for divestment in 2011.

#### Performance data

#### **Economic**

	2014	2013	2012	2011	2010
Gross sales revenue (US\$ million)	50,041	54,575	55,597	65,298	59,008
Net cash generated from operating activities (US\$ million) <sup>(a)</sup>	14,286	15,078	9,430	20,235	18,277
Underlying earnings (US\$ million)	9,305	10,217	9,269	15,572	13,987
Underlying earnings per share (US cents)	503.4	553.1	501.3	809.7	713.3
Profit/(loss) after tax for the year (US\$ million)	6,499	1,079	(3,027)	6,790	15,098
Net debt (US\$ million)	12,495	18,055	19,192	8,342	4,071
Capital expenditure (US\$ million) <sup>(b)</sup>	8,162	13,001	17,615	12,573	4,591
Employment costs (US\$ million)	6,659	7,568	8,671	7,140	6,406*
Payments to governments (US\$ million) <sup>(c)</sup>	8,938	9,414	11,625	12,587**	9,014**
Total value added (US\$ million)	29,178	31,818	26,195	38,193	33,812
Payments to suppliers (US\$ million)	21,370	26,054	30,271	28,444	27,486
Community contributions (US\$ million)	261	331	291	294	166

<sup>\*</sup> Numbers corrected from those published in previous year following data verification.

(c) Total payments to governments include:

Amounts paid by Rio Tinto (US\$ million)	7,099	7,470	9,708	10,958	7,515
Amounts paid by Rio Tinto on behalf of its employees (US\$ million)	1,839	1,944	1,917	1,629	1,499

#### Governance

No current data on the site.

#### Detailed performance data

## 2014 greenhouse gas emissions by location

(million tonnes of CO<sub>2</sub> equivalent)

Location	Scope 1 greenhouse gas emissions	Total greenhouse gas emissions
Australia	10.0	17.5
Canada	6.1	6.1
France	0.6	1.0
South Africa	0.8	3.2
United Kingdom	0.1	0.1
United States	1.6	2.1
Other: Rest of Africa	1.3	1.4
Other: Rest of Europe	0.5	0.5
Other: Asia, New Zealand, Central America, South America	0.9	2.1
Rio Tinto total	21.9	33.9

Note: Due to rounding, sum may not equal the total shown.



<sup>\*\* 2011</sup> and 2010 payments to governments have been restated to exclude refunds of sales taxes/excise duties/fuel taxes.

<sup>(</sup>a) Data includes dividends from equity accounted units, and is after payments of interest, taxes, and dividends to non-controlling interests in subsidiaries.

<sup>(</sup>b) Capital expenditures is presented gross, before taking into account any disposals of property, plant and equipment.

#### Performance data

#### 2014 greenhouse gas emissions by product group

(million tonnes of CO<sub>2</sub> equivalent)

Product group	Scope 1 greenhouse gas emissions	Total greenhouse gas emissions
Aluminium*	11.5	18.8
Copper	1.4	3.1
Diamonds & Minerals	2.4	4.7
Energy	2.6	3.3
Iron Ore	4.1	4.0
Other**	0.0	0.0
Rio Tinto total	21.9	33.9

<sup>\*</sup> Aluminium includes Rio Tinto Alcan, Pacific Aluminium (PacAl) and Gove.

Note: Due to rounding, sum may not equal the total shown.

#### 2014 water withdrawal by product group

(billion litres)

Product group	Marine	Surface water	Groundwater	Municipal water	Total
Aluminium*	56	48	31	15	151
Copper	0	15	45	0.3	61
Diamonds & Minerals	2.9	74	14	7.7	99
Energy	0	27	3.7	7.3	38
Iron Ore	3	191	170	4.1	368
Other**	0	0	0	0	0
Rio Tinto total	62	356	265	34	717

<sup>\*</sup> Aluminium includes Rio Tinto Alcan, Pacific Aluminium (PacAl) and Gove.

Note: Values greater than 10 billion litres are nearest billion.

Note: Due to rounding, sum may not equal the total shown

#### 2014 water withdrawal by location

(billion litres)

Location	Marine	Surface water	Groundwater	Municipal water	Total
Australia	58.49	48.51	181.34	19.17	307.50
Canada	0.7	267	21	5.5	294
France	0	0.5	0.9	0.3	2
South Africa	0	12	0.1	5.2	17
United Kingdom	3	0.4	0	0	3.4
United States	0	15.04	34	1	50.13
Other: Rest of Africa	0	12	2.9	2.8	18
Other: Rest of Europe	0	0	10	0.1	11
Other: Asia, New Zealand, Central America, South America	0	0.2	13.9	0	14.1
Rio Tinto total	62	356	265	34	717

Note: Values greater than 10 billion litres are nearest billion.

Note: Due to rounding, sum may not equal the total shown.



 $<sup>\</sup>ensuremath{^{**}}$  Other includes Exploration, Technology & Innovation, Corporate offices, etc.

<sup>\*\*</sup> Other includes Exploration, Corporate offices, etc.

## Performance data

## 2014 workforce by product group

Product group	Employees
Aluminium*	17,000
Copper	9,900
Diamonds & Minerals	8,600
Energy	5,300
Iron Ore	14,600
Other**	4,600
Rio Tinto total	60,000

<sup>\*</sup> Aluminium includes Rio Tinto Alcan and Pacific Aluminium.

#### 2014 workforce by location

Location	Employees
Australasia	31,000
North America	16,000
Europe	4,000
Africa	7,000
Other*	2,000
Rio Tinto total	60,000

 $<sup>^{</sup>st}$  Other includes, Central and South America.



 $<sup>\</sup>ensuremath{^{**}}$  Other includes Exploration, Technology & Innovation, Corporate offices, etc.

General	
Term GRI	Definition  The Global Reporting Initiative (GRI) provides the generally accepted framework for reporting on an organisation's economic, environmental and social performance. The framework contains general and sector specific content that has been agreed by a wide range of stakeholders.
GRI application level A+	GRI reports intended to qualify for application level A+ must contain the following:
	<ul> <li>All GRI G3 profile disclosures</li> </ul>
	<ul> <li>Management approach disclosures for each indicator category:</li> </ul>
	<ul> <li>Respond to each core G3 and Sector supplement indicator with due regard to the materiality principle by either a) reporting on the indicator, or b) explaining the reason for its omission</li> </ul>
	<ul> <li>External assurance on the report</li> </ul>
	For a report to be recognised as GRI based, self declaration of a level is required.
HSEQ management system	The Rio Tinto Health, Safety, Environment and Quality management system supports standardisation of corporate and business HSEQ management processes. The system is designed on the principles of continuous improvement and generally follows the layout of common international standards such as ISO14001:2004, ISO9001:2001 and the Plan, Do, Check and Review cycle.
Materiality assessment	The information in a sustainable development report should cover topics and indicators that reflect the organisation's significant economic, environmental, and social impacts or that would substantially influence the assessment and decisions of stakeholders.
	Materiality is the threshold at which an issue or indicator becomes sufficiently important that it should be reported. Beyond this threshold, not all material topics will be of equal importance and the emphasis should reflect the relative priority of these material topics and indicators. In defining material topics, we take into account external factors, including:
	<ul> <li>The main sustainability interests/topics and indicators raised by stakeholders;</li> </ul>
	<ul> <li>The main topics and future challenges for the sector reported by peers and competitors;</li> </ul>
	<ul> <li>Relevant laws, regulations, international agreements, or voluntary agreements with strategic significance to the organisation and its stakeholders; and</li> </ul>
	<ul> <li>Reasonably estimable sustainability impacts, risks, or opportunities (eg global warming, HIV/AIDS, poverty) identified through sound investigation by people with recognised expertise, or by expert bodies with recognised credentials in the field.</li> </ul>
	In defining material topics, we take into account internal factors, including:
	<ul> <li>Key organisational values, policies, strategies, operational management systems, goals, and targets;</li> </ul>
	<ul> <li>The interests and expectations of stakeholders specifically invested in the success of the organisation (eg employees, shareholders, and suppliers);</li> </ul>
	<ul> <li>Significant risks to the organisation;</li> </ul>
	<ul> <li>Critical factors for enabling organisational success; and</li> </ul>
	<ul> <li>The core competencies of the organisation and the manner in which they can or could contribute to sustainable development.</li> </ul>
Sustainable development	Sustainable development is commonly defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."
	Rio Tinto has made a commitment that its businesses, projects, operations and products should contribute constructively to the global transition to sustainable development.
	(1) Our Common Future, Report of the World Commission on Environment and Development, World Commission on Environment and Development, 1987. Published as Annex to General Assembly document A/42/427, Development and International Co-operation: Environment August 2, 1987. Available at: <a href="https://www.undocuments.net/wced-ocf.htm">www.undocuments.net/wced-ocf.htm</a>



## Operations and products

operations and products	
Term	Definition
Brownfield exploration	Exploration directed at sustaining or growing existing Group business units. With processing infrastructure already in place, capital expenditure requirements for developing brownfield orebodies are usually lower than in a greenfield setting.
Cradle to gate life cycle assessment	An LCA covering all life cycle phases from production to that business's gate and not beyond.
Cradle to customer gate life cycle assessment	An LCA covering all life cycle phases from production to customer gate, and therefore including transport to customer. Cradle to (customer) gate assessments are sometimes the basis for environmental product declarations (EPD).
Greenfield exploration	Exploration which aims to establish completely new operating business units, involving geographic or commodity diversification away from existing Group operations.
Industry level life cycle assessment	A LCA compiled by an industry or commodity association or related body for a generic product based on aggregated data collected from industry sources (ie not company specific).
Key products	Products from which major business revenue is obtained (>10% of revenue per product). This would include major products sold by businesses from which >10% net revenue is gained and/ or waste or by-products from which major revenue is gained. Examples of key products include iron lump, iron fines, copper cathode, gold, borates, uranium oxide, steel powder, and molybdenum oxide.
Life cycle assessment (LCA)	A technical analytical procedure or method that includes the collation of the environmental inputs and outputs related to a production process (life cycle inventory), followed by a scientific assessment of the potential environmental impacts of a product (life cycle impact assessment LCIA). Described by ISO 14040 series.
Managed operation	A managed operation is defined as an operation where:
	<ul> <li>Rio Tinto wholly owns the operation; or</li> </ul>
	<ul> <li>A management agreement is in place which names Rio Tinto as the manager; or</li> </ul>
	<ul> <li>Rio Tinto HSEC systems and processes are fully implemented.</li> </ul>
Partial life cycle assessment	An analytical procedure to compile and evaluate the environmental inputs and outputs and the potential environmental impacts of a product where the scope has been limited to address a specific impact category (for example global warming potential or ecotoxicity) or a life cycle phase.
Product specific life cycle assessment	A life cycle assessment completed in-house for a specific product produced by the business.
Tier 1 resources	Low-cost, expandable resources that are profitable at all parts of the natural price cycle and deliver a sustainable competitive advantage.



## Environmental

Term	Definition
Biodiversity	Biodiversity refers to the variety of life on earth the different animals, plants and micro-organisms, their genes and the ecosystems of which they are a part.
Ecosystems system services	Ecosystems services are the benefits we obtain from ecosystems. The UN Millennium Ecosystem Assessment grouped these into four categories: provisioning (production of food and water), regulating (control of climate and disease), supporting (nutrient cycles and crop pollination), and cultural (spiritual and recreational benefits).
Emission (air)	Applies to an environmental incident in which material and/or energy is ejected in an uncontrolled manner to the atmosphere, or emissions that are not compliant with agreed licences, including: dust, noise, vibration and blasting incidents.
Energy use	Energy use includes energy associated with the combustion of fuels and use of electricity and other energy sources such as steam and hydro power. Energy use for anodes and reductants is evaluated from a carbon balance used to evaluate the resultant carbon dioxide emissions.
	Under Rio Tinto's reporting guidelines, any individual operation that is not expected to consume 40,000 gigajoules (GJ) of energy in any year over the next three years can be excluded from our data collection processes. It is recognised that reporting trivial quantities of fuels and emissions may result in a significant workload. Thus operations may omit or estimate individual emission or energy sources from their inventories subject to the following rules:
	<ul> <li>For non-Australian operations: Individual sources that can be excluded should be less than 10,000 GJ. The total of these excluded sources should be less than five per cent of the operation's complete inventory</li> </ul>
	<ul> <li>For Australian operations: The National Greenhouse and Energy Reporting (NGER)         Act 2007 requires all sources to be included. However, some incidental sources can         be estimated. An incidental source is any source that is less than 0.5 per cent of         the facility's energy use or energy produced and is less than 15,000 GJ. The total of         these incidental sources must be less than two per cent of the facility's inventory         and less than 60,000 GJ</li> </ul>
Environment	The surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation.
Freshwater	Potable water or good quality raw water with total dissolved solids less than 1,500 milligrams per litre, pH 5-9, and individual dissolved constituents (metals, anions, etc) at concentrations suitable for agricultural, livestock or irrigation use (based on local, regional or national guidelines).
Freshwater use efficiency	The amount of freshwater used per tonne of product.
	Rio Tinto's freshwater use efficiency target is evaluated as the per cent difference between freshwater use efficiency in the target year for all operations managed at the end of the target year and the equivalent freshwater use efficiency in the baseline year. We use 2008 as the baseline year for our target.
	Any business or operation, such as Rio Tinto Exploration, that does not produce a saleable product is excluded from the target assessment. Developing operations are included in the assessment once production exceeds 60 per cent of nameplate production within a reporting year.



## Environmental continued

Term	Definition
Freshwater withdrawn	Freshwater withdrawn includes:
	<ul> <li>Imported surface water (water provided by a third party for Rio Tinto use)</li> </ul>
	<ul> <li>On-site impounded water used in process applications</li> </ul>
	– Imported groundwater
	<ul><li>On-site groundwater</li></ul>
	<ul> <li>Freshwater withdrawn for use as cooling water, that is chemically, physically or biologically modified at the final point of discharge and / or is returned to the environment with a temperature change of greater than five degrees.</li> </ul>
	Freshwater withdrawn does not include:
	<ul> <li>Poor quality water</li> </ul>
	<ul> <li>Overflow of water in heavy rain conditions from impoundments that has not had the quality significantly altered by inputs and seepage</li> </ul>
	<ul> <li>Water diverted to avoid contamination but not subsequently withdrawn or intercepted for use</li> </ul>
	<ul> <li>Water withdrawn and directly supplied to others, eg (i) for use in agricultural or pastoral properties; (ii) for export to third parties or (iii) for town use</li> </ul>
	<ul> <li>Freshwater withdrawn and used for hydropower generation.</li> </ul>
Freshwater withdrawn and not used	Freshwater withdrawn and not used includes:
	<ul> <li>On-site groundwater which is extracted for ground control (dewatering) and discharged without use in the process.</li> </ul>
Freshwater withdrawn and used	Freshwater withdrawn and used includes
	<ul> <li>Imported surface water (water provided by a third party for Rio Tinto use):</li> </ul>
	<ul> <li>On-site impounded water used in process applications</li> </ul>
	<ul> <li>Imported groundwater</li> </ul>
	<ul> <li>On-site groundwater, except that which is extracted for ground control (dewatering) and discharged without use</li> </ul>
	<ul> <li>Freshwater withdrawn for use as cooling water, that is chemically, physically or biologically modified at the final point of discharge and / or is returned to the environment with a temperature change of greater than five degrees and / or is returned to the environment with a temperature change of greater than five degrees.</li> </ul>
Greenhouse gas emissions	Rio Tinto reports emissions of all six groups of greenhouse gases included in the Kyoto Protocol: carbon dioxide, hydrofluorocarbons, methane, nitrous oxide, perfluorinated carbon compounds and sulphur hexafluoride.
	Under Rio Tinto's reporting guidelines, individual operations that are not expected to exceed 3,000 tonnes of carbon dioxide equivalent (t $\rm CO_2$ -e) emissions in any year over the next three years can be excluded from our data collection processes. It is recognised that reporting trivial quantities of fuels and emissions may result in a significant workload. Thus operations may omit or estimate individual emission sources from their inventories subject to the following rules:
	For non-Australian operations: Individual sources that can be excluded should be less than 1,000t $\rm CO_2$ -e. The total of these excluded sources should be less than five per cent of the operation's complete inventory.
	For Australian operations: the National Greenhouse Energy Reporting (NGER) Act 2007 requires all sources to be included. However, some incidental sources can be estimated. An incidental source is any source that is less than 0.5 per cent of the facility's emissions (scope 1 plus scope 2 emissions) and is less than 3,000t $\rm CO_2$ -e. The total of these incidental sources must be less than two per cent of the facility's inventory and less than 12,000t $\rm CO_2$ -e.
Managed operations with material water risk	Managed operations with material water risks were identified and finalized in the first year of the current 2014-2018 performance target period. Performance in progressing towards and meeting their approved local water performance targets will be assessed for these managed operations throughout the performance target period up until the transfer of management  control when Rio Tinto divests an operation or ceases to manage the operation.



## Environmental continued

Term	Definition
Material water risk	A water-related risk that has the potential to have a high or critical impact on the business — through consequences on production, conformance/compliance, reputation, community or environment. Material water risks require proactive management by the specific business.
Mineral waste	Mineral wastes include waste rock, tailings and slag:
	<ul> <li>Waste rock is composed of soils or bedrock that must be removed to uncover or access ore during mining.</li> </ul>
	<ul> <li>Tailings consist of ground up rock mixed with process water that remains after the minerals of economic interest have been removed from the ore.</li> </ul>
	<ul> <li>Slag is generated by smelting operations and is the glassy material that remains after metals, such as copper, have been removed from the ore concentrate.</li> </ul>
	Mineral wastes are typically produced in very large volumes. Their handling and storage can directly impact the land. Mineral waste is usually permanently stored on site where it is used as in pit backfill or held in engineered repositories. Most mineral wastes are inert, but some are chemically reactive and must be appropriately handled to protect people, wildlife and water quality.
Mobile sources	Emission release points that move, such as haul trucks. Compare with "stationary sources".
Non-mineral waste	Non-mineral waste is primarily composed of the auxiliary materials that support our mining and mineral processing operations. This includes familiar materials such as used oil, tyres, old batteries and office waste, as well as more specialised waste streams such as spent pot liners from aluminium smelters. Non-mineral waste is produced in much smaller volumes than mineral waste, and is most commonly managed through recycling, off-site treatment and disposal, or placement in on-site engineered landfills.
On-site greenhouse gas emissions	Scope 1 greenhouse gas emissions, ie direct greenhouse gas emissions that are owned or controlled by the company and include fuel use, on-site electricity generation, anode and reductant use, process emissions, land management and livestock.
Operational land holdings	Our operational land holdings fall into two categories:
	<ul> <li>All land disturbed for mining, processing and related activities, including rehabilitated land. This is known as our operational footprint.</li> </ul>
	<ul> <li>Land outside our operational footprint area, which may be used in the future for mining, processing and related activities as well as other land uses. This is known as our land holding balance.</li> </ul>
Process	The activities associated with the process of mining or refining. This includes mining, milling, slurrying, washing ore, dust suppression, wastewater / sewerage treatment, power generation, bathhouse, camp, canteen, offices, irrigating rehabilitated land and wash down.
Scope 1 greenhouse gas emissions	The World Resource Institute/World Business Council for Sustainable Development Greenhouse Gas Protocol: A Carbon Reporting and Accounting Standard, March 2004 defines three scopes of greenhouse gas emissions for reporting purposes.
	Scope 1 emissions are direct greenhouse gas emissions that are owned or controlled by the company and include fuel use, on-site electricity generation, anode and reductant use, process emissions, land management and livestock (on-site emissions).
Scope 2 greenhouse gas emissions	Scope 2 emissions are greenhouse gas emissions from the imports of electricity, heat or steam from third parties (indirect emissions).
Scope 3 greenhouse gas emissions	Scope 3 emissions are other indirect greenhouse gas emissions.
Stationary sources	Emission release points that do not move, such as power stations, smelters,
	refineries and concentrators. Compare with "mobile sources".
Total greenhouse gas emissions	Scope 1 emissions plus Scope 2 emissions minus emissions associated with electricity and steam exported to others minus net carbon credits voluntarily purchased from, or sold to, recognised sources.



## Environmental continued

Term	Definition
Total greenhouse gas emissions intensity index	An indexed measure of the change in emissions per unit of product compared to a baseline intensity, evaluated for each of our commodities.
	Commodities are products sold to the market from operations of comparable scope. Examples include bauxite mined, smelter grade alumina refined from bauxite, primary aluminium smelted from alumina, copper concentrate from mine to concentrator, and copper cathode from mine to refinery.
	Rio Tinto's total greenhouse gas emissions intensity target is evaluated as the per cent difference between actual total greenhouse gas emissions in the target year and the equivalent emissions expected from the target year production at the baseline year emissions intensity for each commodity.
	Any business or operation, such as Rio Tinto Exploration, that does not produce a saleable product is excluded from the target assessment.
	Developing operations are included in the assessment once production exceeds 60 per cent of nameplate production within a reporting year. We index our performance relative to 2008 as a baseline year.
Water target performance tracking	A managed operation is "on track" to meet its 2014-2018 approved local water performance target if it can demonstrate that it has met its' internal water milestone or target trajectories, set in the initial year of the target performance period, in the current reporting year.



## Social

Term	Definition
All injuries	The sum of lost time injuries and medical treatment cases.
Antiretroviral drugs	Medications for the treatment of infection by retroviruses, primarily HIV.
Biometric assessment	A part of health risk assessment, involving the measurement of such parameters as height, weight, body mass index, blood pressure, heart rate, waist girth, etc.
Contractor	A person or organisation providing services to an employer at the employer's workplace in accordance with agreed specifications, terms and conditions. For the purposes of Rio Tinto's health, safety and environmental standards, contractors have been classified into three categories:
	<ul> <li>Category 1: Individuals engaged on temporary contracts to work within existing operations</li> </ul>
	<ul> <li>Category 2: Companies or individuals engaged for a discrete project which will be carried out in a designated area separate from existing operations</li> </ul>
	<ul> <li>Category 3: Companies or individuals engaged under contract to carry out specific tasks or provide specified services within existing operations areas.</li> </ul>
Employee	A person in full or part time employment at a Rio Tinto business and listed on the payroll of a business.
Fatal injury or occupational illness	When one or more person(s) die as a result of a work-related injury or occupational illness occurring during their employment. Lost and restricted days are not calculated for fatalities.
Frequency rates	The measures of performance for each of the metrics of injury or illness, eg:
	<ul> <li>All injury frequency rate (AIFR) = number of all injuries x 200,000/hours of exposure</li> </ul>
	<ul> <li>Rate of new cases of occupational illness = number of new cases of occupational illnesses x 10,000/number of employees (based on average monthly statistics)</li> </ul>
	<ul> <li>Rate of employee exposure to noise = number of employees exposed to more than 85dB(A) noise x 10,000/number of employees (based on average monthly statistics)</li> </ul>
	Rio Tinto uses AIFR to assess performance against the goal of zero injuries and zero fatalities. This assessment includes employees and all categories of contractors.
	Rio Tinto's health targets (rate of new cases of occupational illness and rate of employee exposure to noise) are evaluated using employee data only. Whilst diagnosed occupational illnesses are recorded for contractors, this data is not included in the evaluation of performance against our health targets. Developing operations that were not part of the target baseline and operations acquired during the target period are excluded when assessing performance against these targets. Divested or closed operations are removed from the baseline when assessing performance against these targets.
Generalised HIV epidemic	Where HIV prevalence has passed the one per cent mark in the general population, based on national estimates of HIV prevalence using data generated by surveillance systems that focus on pregnant women who attend a selected number of sentinel antenatal clinics, and in an increasing number of countries on nationally representative sero-surveys.
HIV/AIDS	Acquired immune deficiency syndrome or acquired immunodeficiency syndrome (AIDS) is a disease of the human immune system caused by the human immunodeficiency virus (HIV).
Hours of exposure	The total number of hours worked by employees and contractors at a facility where one or more employees/contractors are working or are present as a condition of their employment and are carrying out activities related to their employment duties.
	<ul> <li>For employees: This can be determined by either "Planned time + overtime all absences" or actual time (collected via gate pass or timesheet systems) or represent reasonable estimates made by a Rio Tinto company supervisor.</li> </ul>
	<ul> <li>For contractors: Hours worked are provided by either the vendor or represent reasonable estimates made by a Rio Tinto company supervisor. These hours are recorded by month, vendor, work area and organisation unit, they reflect the total time spent by contractors on Rio Tinto sites.</li> </ul>



## Social continued

Term	Definition
Injury	Any injury such as a cut, fracture, sprain, amputation, etc, which results from a work related event during a single shift. All occupational injuries are to be reported as safety incidents with safety impact. All occupational injuries must be recorded for employees and contractors regardless of contractor category.
Incident	A single event or continuous/repetitive series of events that results in, or could have resulted in, one or more of the following impacts:
	<ul> <li>An occupational injury or illness</li> </ul>
	<ul> <li>Damage to physical assets (eg plant and equipment), the environment, process, product, or reputation</li> </ul>
	<ul> <li>Disruption to a community</li> </ul>
	<ul> <li>Exposure to legal liability</li> </ul>
	<ul> <li>Security threat</li> </ul>
Lost day injury or occupational illness	An injury or occupational illness that results in one or more days/shifts away from work, excluding the day of the incident.
Lost time injury or occupational illness	The sum of fatal, lost day and restricted work day injuries or illnesses.
Medical treatment case injury or occupational illness	An injury or occupational illness which is not classified as lost time, but which results in loss of consciousness or medical treatment other than first aid.
	Medical treatment includes, but is not limited to:
	<ul> <li>Administration of prescription medication</li> </ul>
	<ul> <li>Use of wound closing devices such as sutures, staples, or wound adhesives (glue).</li> <li>Where glue is used to protect a wound (that does not require sutures) as a precaution against infection in wet environments and in place of an adhesive dressing, this may be considered a first aid treatment if supported in writing by a doctor or registered nurse</li> </ul>
	<ul> <li>Use of devices with rigid stays or other systems designed to immobilise parts of the body</li> </ul>
	<ul> <li>Use of eye patches (except for use as a precautionary measure, and not extending into the next shift)</li> </ul>
	Medical treatment does not include:
	<ul> <li>Visits to a physician or other licensed health care professional solely for observation or counselling, or conduct of diagnostic procedures, such as x-rays, blood tests, and the administration of prescription medications used solely for diagnostic purposes (eg eye drops to dilate pupils) or as a single dose administered on first visit for a minor injury or discomfort</li> </ul>
	<ul> <li>Injuries where the original or first treating doctor used sutures but is prepared to document that sutures were not necessary to treat the injury. This might occur, for instance, if steri-strips or butterfly bandages were not available.</li> </ul>
Musculo-skeletal illnesses	A case is reportable where a medical practitioner diagnoses musculo-skeletal disease that meets defined diagnostic criteria, and it is due to repeated workplace exposure (other than due to vibration) and it results in medical treatment, restricted work days, lost days or permanent damage. Includes recurring musculo-skeletal conditions. Recurring musculo-skeletal conditions are counted as a new case and reported only if the medical practitioner considers that the worker had fully recovered from the previous condition. Can include repetitive strain injuries, also known as occupational overuse syndrome.
	Purely subjective symptoms without limitation of movement or physical or laboratory signs are not reportable. Contractors of category 2 or 3 are not included. Occupational injury cases are excluded – defined as arising from a work related event of less than one shift in duration.
New case / recurrence	An injury or illness is considered as a new case if the employee has not previously experienced an injury or illness of the same type, or the employee has completely recovered from the previous case and a new incident has caused the condition to reappear. If not then additional time lost is linked back to the original injury or illness and is considered a recurrence of the original injury or illness.



## Social continued

Term	Definition
Noise induced hearing loss (NIHL)	To be diagnosed as being related to noise exposure requires evidence of a hearing loss on a technically satisfactory audiogram at 4 or 6kHz, preferably with recovery of hearing at 6 or 8kHz. A loss without recovery plus a history of noise exposure is also regarded as NIHL. For cases meeting these criteria the following steps are required to determine whether or not a case of NIHL meets Rio Tinto's reporting criteria:
	1. Occupationally exposed to noise >85dBA time weighted average; and
	2. Has sustained a standard threshold shift; and
	<ol><li>Average hearing loss over 1, 2 and 3KHz after age adjustment of the audiogram of &gt;25dBA as compared to audiometric zero.</li></ol>
	Hearing loss due to age, disease or a one time exposure is excluded. The latter is considered an injury. Contractors of category 2 or 3 are not included.
Occupational asthma	A case is reportable if a medical practitioner following the International Council on Mining & Metals (ICMM) / International Aluminium Institute (IAI) occupational asthma definition diagnoses the patient as an asthmatic due to the occupational exposures such as those in aluminium smelting, resulting in medical treatment, restricted work days, lost days or permanent damage. Contractors of category 2 or 3 are not included.
Occupational exposure	Exposure to chemical, physical, biological or ergonomic hazards under controlled conditions, in the course of and intrinsic to the nature of their work, of a population consisting of adults who are trained or informed to be aware of potential risks and to take appropriate precautions. The duration of occupational exposure is limited to the duration of the working day or duty shift per 24 hours and the duration of the working lifetime.
Occupational exposure limit (OEL)	The level of an agent in workplace air, which it is believed is low enough to protect nearly all workers from adverse health effects over a series of eight-hour shifts for a working lifetime. Rio Tinto has defined a number of OELs that apply across all of its operations.
Occupational illness	An illness or disease is distinct from an injury. One event cannot be both. An occupational illness or disease results from a workplace related exposure of more than one shift; ie noise induced hearing loss (NIHL), carpal tunnel syndrome, etc. A person is only diagnosed once with the same occupational illness or disease unless there has been a complete recovery from the original case. All occupational illnesses are reported as health incidents with health impact.
	All diagnosed occupational illnesses must be recorded for employees and Category 1 contractors, regardless of whether they are labour, executive, hourly, salary, part-time, seasonal or migrant workers. Diagnosed occupational illnesses affecting Category 2 and Category 3 contractors do not need to be recorded (unless required by local legislative or regulatory requirements), and are not reportable to Rio Tinto.
Permanent damage injury or illness	Is a measure of the severity of an injury or occupational illness from which:
	1. there has not been, or is not expected to be, full recovery after two years; and/or 2. there has been substantial negative consequences for the individual, that is prolonged hospitalisation, prolonged inability to work, loss of ability to continue normal social and home life, major damage to body or body function (eg paraplegia, lung disease, blindness or amputations of limbs above tip of toes/fingers); and/or
	3. the person is unable to work and has been retired.
	Lost or restricted shifts and calendar days are counted until either of the following occur:
	1. the person returns in a full time unrestricted capacity to their pre-injury role; or
	2. the person is permanently redeployed into another role; or
	3. two years have passed from the date of the injury; or
	4. the person leaves the service of the company.



## Social continued

Term	Definition
Restricted work day injury or occupational illness	Occupational injury or illness where, as a result the employee:
	<ul> <li>Was assigned to another job on a temporary basis, or</li> </ul>
	<ul> <li>Worked at a permanent job less than full time, or</li> </ul>
	<ul> <li>Worked at his or her permanently assigned job but could not perform all the duties normally connected with it.</li> </ul>
	A restricted work activity occurs when the employee, because of the job-related injury/ illness, is physically or mentally unable to perform all or any part of his or her normal assignment during all or any part of the normal workday or shift, after which the injury/illness occurs.
Similar exposure group (SEG)	Employee/contractor groups who have similar responsibilities, common hazards and similar exposure profiles that are identified by similar substance and exposure factors. Rio Tinto uses SEGs as the basis for assessing workplace exposure to hazardous agents with chronic effect.
UNAIDS	Joint United Nations programme on HIV/AIDS
Voluntary counselling and testing	With regard to HIV/AIDS programmes, voluntary counselling and testing (VCT) is the process by which an individual undergoes confidential counselling to enable the individual to make an informed choice about learning his or her HIV status and to take appropriate action. If the individual decides to take the HIV test, VCT enables confidential HIV testing. Counselling for VCT consists of pre-test, post-test and follow up counselling.
Wellbeing / Wellness programme	A proactive, preventive approach of helping people change their lifestyle to move toward a state of optimal health, a balance of physical, emotional, social, spiritual, and intellectual health. It is an active process of enhancing awareness and skills, changing behaviour and values, and creating an environment that supports good health practices and increase a person's ability to enjoy a balanced and fulfilling life.
Economic	
Term	Definition
Direct economic contribution	The total value of all sales made to third parties during the year.
Value added	The value that a business adds to the materials and services it has bought. It is equivalent to the sum of all labour payments, payments to governments, plus all returns to capital — including interest payments, profits paid out to shareholders, and money retained in the business for future investment and to replace depreciated assets.

