Iron Ore Western Australia

Sustainable development report 2013
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Sustainable development context

This report provides a summary of the sustainable development performance of our Iron Ore business in Western Australia during the 2013 calendar year.

Our approach to sustainable development follows our global code of business conduct, *The way we work*¹. This commitment is also reinforced by our policies on sustainable development, human rights, environment, transparency and business integrity.

Our commitment is further defined in our ten sustainable development principles, which are:

- Deliver economic value from our assets and resources
- Ensure our communities benefit from the value generated by our operations
- Contribute to the creation of resilient communities
- Protect the health, safety and wellbeing of our employees, contractors, customers and host communities
- Attract, develop and retain people with diverse backgrounds and skills
- Respect the cultures, customs, beliefs and values of our employee, contractors, customers and host communities
- Demonstrate responsible biodiversity stewardship in the regions in which we operate
- Improve energy efficiency and contribute to a reduction in greenhouse gas intensity over our product lifecycle
- Responsibly manage our water resources
- Minimise all forms of environmental harm

We use a range of tools, procedures and management systems to ensure our projects, operations and expansions are appropriately planned and implemented to deliver on our sustainable development commitments.

**About this report**

This report provides performance results and a snapshot of key activities undertaken by our iron ore operations in the Pilbara region of Western Australia during the 2013 calendar year.

This information was initially launched as integrated content on our website² which is updated every calendar year. Our sustainable development commitment is also demonstrated through case studies and feature stories on our website³.

¹ [http://www.riotinto.com/documents/The_way_we_work.pdf](http://www.riotinto.com/documents/The_way_we_work.pdf)
All performance data presented is considered to be a true and accurate record at the date of reporting. Changes may occur from time to time that may impact on the accuracy of this data in future years. Some of the indicators included in this summary have targets we have set as a five year performance measure, which have also been included in the charts.

Internal data verification systems are in place to meet our obligations under various reporting requirements, including external assurance of relevant data at the Rio Tinto Group and product group level.

**Feedback**

We welcome your feedback on our sustainable development performance.

Contact us via email on [CommunicationsExternalRelationsWA@riotinto.com](mailto:CommunicationsExternalRelationsWA@riotinto.com).
Air quality

Dust management is a key consideration at our port operations. Real time data is collected by our air quality monitoring network covering the local communities of Dampier, Karratha, Roebourne, Wickham and Point Samson.

Visit the Pilbara Iron website[^4] for air quality monitoring for coastal sites.

**Verification**

Raw data collected by the network is verified by a third party before being submitted to government for reporting purposes. Our maintenance programme for the monitoring network complies with Australian Standards.

**2013 performance**

During 2013 we undertook a range of activities to reduce dust impacts from our port operations, including:

- A successful dust suppression trial in large open areas at Dampier port, which is now incorporated into the site’s dust control strategy to control fugitive dust emissions from unused open areas. The application of a non-hazardous liquid blend of wetting and binding agents provides a semi-permanent, rain resistant, flexible surface crust that reduces dust risk and removes the need for water carts in these areas. This helps to conserve water and reduce water demand on the West Pilbara Supply Scheme.
- A trial at Dampier Port involving optimisation of the bulking strategy to reduce the double handling of material, thereby reducing dust emissions from ore handling.
- Development of monitoring and performance metrics for dust collection systems at Cape Lambert.
- The continuation of our Coastal Community Environmental Forum to ensure ongoing engagement between Dampier and Cape Lambert operations, the community, government and key stakeholders on environmental matters such as dust management.

[^4]: http://www.pilbarairon.com/dustmonitoring/
During 2013 there were four exceedances of the 24 hour PM10 target which were reportable to government, with two exceedances attributable to Dampier and two to Cape Lambert operations. These exceedances were recorded in November and December.

During the summer months westerly winds and high regional background dust levels contribute to a higher risk of exceedances. Regionally higher dust levels can be attributed to high evaporation rates due to higher maximum daily temperatures, creating dry soil conditions.
Biodiversity and closure

Our Pilbara operations are situated in a unique environment that holds important biodiversity, cultural and spiritual values. We seek to minimise biodiversity loss and land disturbance, while seeking to constantly improve methods for effective rehabilitation and closure planning.

2013 performance
During 2013 our biodiversity and closure performance included the following highlights:

- Implementation of our weed strategy continued across the Pilbara to manage threats to regional biodiversity and to stabilise important ecosystems. The declared weed control programme for our pastoral stations, which was previously conducted at Yarraloola station only, was extended to include both Karratha and Yalleen stations.
- Research of and adaptive management on the ecological impacts associated with dewatering and surplus water management progressed, including the development of new site-specific trigger values for discharged surplus water.
- Our commitment to environmental stewardship was recognised in the 2013 Golden Gecko awards with two Pilbara projects being named as finalists; the artificial reef and coral translocation project at Dampier, and environmental management and monitoring for the Cape Lambert Port B dredging project.
- We established an expert advisory panel to develop a Rio Tinto threatened species offset plan aimed to better protect and conserve the Northern Quoll and Pilbara Olive Python.
- A native pivot trial was established on Hamersley Station, as part of the Hamersley Agriculture Project, utilising mine dewater to grow local Pilbara native vegetation under irrigation for the production of seed. The trial is important for determining the viability of producing local native seeds for use in our rehabilitation activities and to assist in mitigating any long term seed deficit.
- Our priority flora species research project commenced, with 13 priority species selected to be established in our rehabilitation programme at Brockman 4, Channar and Hope Downs 4.
- We developed a guidance note detailing the process for identifying and managing closure issues associated with mine pit voids, to ensure socially acceptable, environmentally responsible and cost effective closure objectives can be achieved.
- We achieved our 2014 target of having current closure plans for 100 per cent of our Pilbara operations.
Communities

We strive to develop enduring relationships with those communities in and around where we work and live, built on mutual respect, active partnerships and long-term commitment.

2013 performance
During 2013 our communities’ performance included the following highlights:

- As part of our ongoing Community Infrastructure and Services Partnership with the Shire of Roebourne and Shire of Ashburton we completed several key regional projects during the year, including:
  - Contributing funds toward the development of the Karratha Leisureplex.
  - Dampier Community Hub concept plans were finalised and approved.
  - In partnership with the Pilbara Development Commission, Department for Sport and Recreation and the Shire of Ashburton, we made a $3.75 million commitment to the construction of the Clem Thompson Memorial Oval and Pavilion in Tom Price. It is anticipated that the sporting complex will be utilised by up to 5000 people every year for training nights, game days and events.

- The Wickham Accommodation Expansion project saw the first houses in the Wickham South subdivision delivered and occupied by new residents. The new central facilities building, Juluthamdu Maya, was also completed and officially opened.

- Construction of the new Cajuput Villas fly in fly out complex in Wickham was completed. The state-of-the-art facility sets a new benchmark in permanent, architecturally designed fly in fly out accommodation.

- For the second consecutive year, no incidents impacting heritage sites occurred during 2013.

- Sixty-seven per cent of our operations staff completed cultural awareness training, delivered by local Pilbara Aboriginal people, within their first twelve months of employment.

- A cultural awareness immersion course was provided for our Rio Tinto business leaders, with Aboriginal Elders introducing their traditional country and Aboriginal customs in an overnight camp environment.
Community investment

Our aim is to make a positive and lasting difference to the communities surrounding our operations and in and around where we work and live. At the heart of our community investment approach, is a commitment for our business to do the right thing. We work with partners who share our values and goals of creating meaningful, sustainable partnerships underpinned by respect and cultural understanding.

Our commitment to supporting Aboriginal Western Australians to create a brighter future for their families, communities and future generations is central to our operating principles. Just as importantly, we are determined that our growth projects will have a positive impact on our host communities and will contribute to their sustainability.

In 2013 we contributed $33.3 million in financial and $8.2 million in in-kind support to community initiatives across Western Australia.

Our investment outcomes are:

- Establishing closer ties with our local communities and regional neighbours to make a positive and lasting difference
- Supporting Aboriginal Western Australians to create a brighter future for their families, communities and future generations
- Ensuring the sustainability of programmes beyond Rio Tinto funding
- Creating opportunities for employees to participate in our community investment activity
- Engaging key stakeholders outside our daily business
- Working collectively with other sectors to bring about identified positive social change

Our support is provided across five key priority areas: education, health, culture, environment and regional sustainability.

Find out more about the community investment activities for Western Australia iron ore operations by visiting the community investment microsite.

5 http://www.communityinvestmentwa.riotinto.com/
Employee diversity

We aim to be an employer of choice. We recognise the importance of attracting, developing and retaining people with diverse backgrounds in our business, and realise the benefits of developing the skills of others.

2013 performance
During 2013 our employee diversity performance included the following highlights:

- Increasing Indigenous employee numbers from 959 in 2012 to 1,108 in 2013.
- Increasing participation rate among frontline leaders in our Leading Aboriginal People programme from 61 in 2012 to 203 in 2013. This initiative supports the employment and retention of Aboriginal people by providing practical tools on Pilbara Aboriginal culture, obligations and communication required to more effectively lead Aboriginal team members.
- The redesign of our on-boarding programme for new starters, Iron Ore Essentials, strengthened our commitment to safety, local communities, Pilbara Aboriginal people and sustainable development, to better prepare our employees for a life in mining.
- Thirteen Rio Tinto women, including four from Iron Ore in Western Australia, were profiled in the Women in Mining UK’s (WIMUK) inaugural 100 Global Inspirational Women in Mining publication, from a total of five hundred nominations received globally.

Total number of employees

![Graph showing the total number of employees from 2009 to 2013](chart.png)
Moderate employee growth occurred during 2013, as expansion projects transitioned to operations and we continued the focus on cost management.
Support roles, which typically enjoy higher rates of female participation, were consolidated as part of organisational structure reviews and this is reflected in the reduced proportion of females from 22.6 per cent in 2012 to 21.1 per cent in 2013.

An increase in the number of frontline operational roles, which historically represent successful entry points and ongoing career paths for Indigenous employees, has contributed to the increase in Indigenous employee numbers from 959 in 2012 to 1,108 in 2013. This upward trend in Indigenous employment is expected to continue through a targeted employment strategy and renewed focus on retention and career development initiatives.

Our indigenous employment strategy is now committed to increasing the actual number of indigenous employees year on year, rather than focusing on percentage-based business targets.
Energy efficiency and climate change

We are committed to improving our energy and greenhouse gas performance through identifying and implementing cost effective initiatives.

2013 performance
Our energy efficiency performance included the following highlights:

- Energy efficiency assessments were completed for all Pilbara operations and several expansion studies, identifying over one hundred energy efficiency opportunities.
- A range of energy efficiency improvements implemented during the year, including:
  - reducing friction in gearboxes by substituting mineral-based lubrication oil with synthetic oil at Cape Lambert and Yandicoogina operations;
  - avoiding unnecessary operation of fans in dust collectors by linking these to the presence of a train at Cape Lambert operations
  - reducing the recirculating loads in the crushing circuit at West Angelas;
  - reducing diesel consumption through in pit waste dumping and the realignment of haul routes at West Angelas
  - eliminating unnecessary trips for water trucks by installing water tank level monitoring at filling points to indicate water availability at West Angelas
  - reducing diesel consumption in locomotives by switching off one of the three train engines on the return trip at our Rail operations
  - avoiding the need for mining shovels to travel back to the workshop for maintenance by constructing in-pit maintenance areas at West Angelas; and
  - modifying internal engineering design standards to include energy efficiency criteria such as high efficiency motors and more efficient conveyor belts.
- We commenced a study to explore the feasibility of constructing a large scale solar photovoltaic plant in the Pilbara to reduce greenhouse gas intensity of our electricity supply.
Greenhouse gas emissions intensity increased by 4.9 per cent in 2013 from 9.05 to 9.49 tonnes carbon dioxide equivalent per kilotonne of shipped product (tCO2-e/kt shipped product). This increase is attributed to higher emissions from increased waste material movement and rehandle at mines.

Our five-year performance is tracking as expected, with our 2013 target of 9.45 tCO2-e/kt shipped product marginally exceeded by 0.4 per cent.
Health

Our health and hygiene programmes seek to address both the acute and long term impacts of health risk across our operations, support our goal of zero harm and prevent new cases of occupational illness.

2013 performance
During 2013 our health performance included the following highlights:

- We continued our musculoskeletal improvement project to develop strategies for the identification, evaluation and control of musculoskeletal risk.
- We expanded the use of our computer based Ergoanalyst musculoskeletal risk assessment tool, which assists in the analysis and control of manual handling and repetitive use risks, and sharing of associated knowledge across our sites.
- We continued our focus on strategies to identify and prevent noise induced hearing loss cases.
- Execution of periodic medicals and the wellness programme continued across the business to optimise employee fitness for work and wellbeing. Periodic medicals targeted safety critical roles to ensure those risk factors that could impair fitness for work and result in significant injury or fatality, are identified and managed.
- We continued implementing initiatives that support our mental health framework:
  - signing a Memorandum of Understanding with the Western Australian Mental Health Commission in support of collaboration and knowledge sharing;
  - implementing our Peer Support Programme across five divisions, training volunteer employees to assist their workmates deal with stress relating to work and personal issues; and
  - promoting a culture of open discussion and awareness in conjunction with mental health week through a film featuring our employees sharing their mental health stories, and high profile speakers, Heath Black and Glen Mitchell, visiting several Pilbara sites to share their experience.
- An occupational illness case rate of 10.6 was recorded for the year. Occupational illnesses are those that result from workplace-related exposure (of more than one shift) to certain elements.
Since 2009 the rate of occupational illness cases has reduced. The majority of occupational illnesses recorded in 2013 relate to repeated musculoskeletal trauma, such as conditions generally caused by prolonged exposure to factors such as awkward postures, heavy lifting and repetitive movements.
Heritage and culture

In the Pilbara region of Western Australia, our Aboriginal heritage programme meets our obligations for identification, assessment, protection and management of Aboriginal heritage sites. As part of the programme, our heritage team works closely with Aboriginal Traditional Owners to effectively manage activities around cultural heritage sites.

Our heritage team is one of the largest and most experienced of its kind in the resources industry. Our professionals including qualified archaeologists, specialists in cultural heritage management, Geographical Information Systems (GIS), information management and community liaison, all of whom collectively facilitate the management of Aboriginal cultural heritage across our iron ore tenements in Western Australia.

Our comprehensive Cultural Heritage Management System (CHMS) ensures appropriate protection and management of Aboriginal heritage through engagement with Aboriginal Traditional Owners. The Rio Tinto Iron Ore Approvals Coordination System regulates ground disturbance activities to ensure that significant Aboriginal and environmental sites are not disturbed without authorisation.

Culturally appropriate programmes for the research and analysis of significant sites are also sponsored by the heritage programme. This research has included archaeological excavations in rock shelters in the inland Pilbara which have revealed evidence of occupation by Aboriginal people over 30,000 years. Furthermore, Rio Tinto, the Murajuga Aboriginal Corporation and the University of Western Australia run an annual field school on the Burrup Peninsula near Dampier to train students and Aboriginal rangers in the identification, recording and management of the significant rock art in this area.

Participation of the Aboriginal Traditional Owners in managing their cultural heritage is essential so we offer an archaeological assistants' training course to equip participants with the necessary skills.

We also offer an Aboriginal scholarship and cadetship programme across Australia and provide cultural awareness training for our employees delivered by Traditional Owners.
2013 performance

**Number of heritage incidents**

- 2009: 3
- 2010: 10
- 2011: 2
- 2012: 0
- 2013: 0

**Number of heritage survey days**

- 2009: 4,787
- 2010: 5,669
- 2011: 7,051
- 2012: 18,374
- 2013: 8,064

*Note: Graph shows the number of person field days including Traditional Owners, consultants and Iron Ore representatives.*

**Area covered by heritage survey**

* (square kilometres)

- 2009: 254
- 2010: 283
- 2011: 474
- 2012: 572
- 2013: 383
For the second consecutive year, no heritage incidents occurred during 2013. We attribute this to measures implemented for managing heritage sites, such as establishing buffers around every heritage site and applying standardised fencing procedures.

After a peak in heritage surveys experienced during 2012 associated with our expansion programme, heritage work completed in 2013 returned to pre-2012 levels. Work was also completed with greater efficiency, learning from the heavy workload of 2012 and utilising a heritage survey roster system. The roster system also enabled Aboriginal businesses to develop their capabilities in managing heritage survey requirements for their respective country.

The expected decreased in the total area surveyed in 2013 correlates to both the decline in survey days and heritage approvals required for large scale greenfield projects.

**Agreements**

We have engaged in agreement making with Traditional Owner groups in the Pilbara for more than 16 years. This has led to “claim wide” or “country wide” agreements covering the traditional country of the Eastern Guruma, Kuruma Mathudunera, Ngarlawangga, Ngarluma, Njiyaparli, Puutu Kunti Kurruma and Pinikura, Yinhawangka and Yindjibarndi traditional owner groups. There is one remaining country wide agreement still under negotiation with the Banjima traditional owner group.

Agreements provide recognition of native title rights and interests of traditional owner groups while securing the ongoing operations and expansion of our iron ore business in Western Australia. They also provide monetary and non-monetary intergenerational benefits for local communities and Traditional Owner groups.

**Regional Framework Deed (RFD)**

Since 2011, groups that execute land use agreements with Iron Ore can also choose to participate in a Regional Framework Deed that contains a suite of non-monetary benefits based on mutual commitments in the following areas:

- Aboriginal employment and training
- Aboriginal business development and contracting
- Cultural heritage protection
- Environmental management
- Life of mine planning
- Land access
- Cultural awareness

**Agreement outcomes**

Achievements reached in partnership with Pilbara Aboriginal people over the past year include:

- The employment of more than 1,000 Aboriginal people in our iron ore business
- Approximately 50 per cent of Pilbara expenditure with Pilbara Aboriginal business
- More than 8,930 employees having completed industry-leading cultural awareness training - fostering greater understanding and respect for traditional culture
Safety

We are committed to a fatality, incident and injury free workplace, with a goal of zero harm. Maintaining the safety of our people is the highest priority for our business.

2013 performance
During 2013 our safety performance included the following highlights:

- We implemented our ‘Make a Difference’ programme which supports employees and contractors to identify and remove or mitigate workplace hazards. The programme involves employees and contractors being recognised for implementing simple and creative solutions in the workplace.
- We continued our focus on reducing the severity of injuries and management of critical risk to prevent critical incidents occurring.
- Simplification of our HSEQ (Health, Safety, Environment and Quality) Management System commenced.
- A new working at heights scaffold guideline was developed to promote the safe erection, modification, use and dismantling of scaffolding across our operations and projects.
- An all injury frequency rate of 0.74 was recorded for the year.

![All Injury Frequency Rate](chart.png)

*Note: Historical data has been recalculated based on the current organisational structure therefore data may be different to that presented in previous reporting years.*
Water management

Responsible water management continues to be a key focus. We use water to facilitate mine processing, manage dust emissions, and supply drinking water and wastewater services to our operations, Pilbara towns and fly in fly out villages. We also manage surplus water resulting from dewatering activities at our below water table operations.

2013 performance
During 2013 our water management performance included the following highlights:

- Construction of the Coastal Water Supply project in the Pilbara was completed and we commenced testing the transfer of water from the inland Bungaroo borefield to the West Pilbara Water Supply Scheme at Millstream, for use at our port operations and coastal towns.
- A Water Steering Group, chaired by the managing director of our Pilbara Mines, was established to coordinate activities associated with the management of water across our Pilbara business.
- We won three industry awards for improving water efficiency at our port and rail operations as part of the Water Corporation's Water Efficiency Management Programme.
- The Marandoo water management scheme was commissioned, supplying surplus water from mine dewatering to Tom Price town and mine, the Hamersley Agriculture Project and other users.
- The Hamersley Agriculture Project is now in operation and has successfully harvested its first crop of Rhodes Grass.
- We commissioned the Paraburdoo operational water balance to improve the understanding and communication of site water management requirements, and to focus attention on water use.
- We have achieved our 2013 target of 230 litres for freshwater used per tonne railed from our Pilbara operations.
Our water use increased during 2013 in conjunction with increasing production and construction activities associated with our expansion programme.

Construction activities at Hope Downs 4, Brockman 2/Nammuldi and Cape Lambert increased their overall water usage during 2013, but this is expected to fall during 2014 as the sites transition from construction to production.

The amount of freshwater discharged to the environment is a result of an increase in below water table mining during 2013. This trend is expected to continue as the proportion of below water table mining increases across our inland operations.
Operations

Our Pilbara operations delivered record annual production in 2013, of 251 million tonnes, driven by productivity improvements and continued ramp-up of recent mine expansions.

Sales from the Pilbara in 2013 also set a new record, partly driven by the completion of our first phase expansion to 290 million tonnes a year.

These record sales volumes, together with a focus on cost savings and slightly higher iron ore prices, contributed to a seven per cent increase in underlying earnings in 2013 across our Pilbara and Canadian iron ore operations.

We have a long and successful history in the Pilbara and we are proud of the long term contributions we make to Western Australia's economy and communities.

Iron ore shipments continued to increase following the completion of debottlenecking expansion work and productivity improvements, and increased capacity through the completion of infrastructure for our expansion to 290 million tonnes per annum (Mt/a).

In May we announced our 290 Mt/a system run rate had been achieved. This was based on our system performance during April, where the Pilbara mines, rail and ports system collectively reached the 290 Mt/a run rate, which in turn contributed to a strong monthly performance.

As we move forward there is likely to be some run rate variability as we complete the 360 Mt/a expansion and realise the integration of AutoHaul®, the world's first automated heavy-haul rail system.
Over the past five years total revenue increased substantially from US$11 billion in 2009 to US$23.6 billion in 2013. Higher production volumes and strong iron ore prices contributed to this positive result underpinned by significant growth in global demand and increased efficiencies at our Pilbara operations.

Total payments to government decreased from 2012 due to smaller tax instalments paid in 2013.

Pastoral stations
We hold six pastoral stations in the Pilbara - Karratha, Hamersley, Rocklea, Juna, Yalleen and Yarraloola. Karratha, Hamersley, Rocklea and Juna are owned by Hamersley Iron Pty. Ltd; Yarraloola is owned by the Robe River Iron Associates joint venture through the Yarraloola Pastoral Company, all of which we manage. Yalleen is owned by Robe River Iron Associates and sub-leased to Williamby Station (WA) Pty. Ltd.
We hold pastoral leases and operate them as functioning grazing leases. The stations are managed as operational pastoral properties under the Land Administration Act, Western Australia. The stations run about 24,000 head of cattle making us the largest owners of cattle in Western Australia.

**Agriculture**

Our first agriculture project commenced in 2012 and comprises 17 centre pivot irrigators. Known as the Hamersley Agricultural Project, it represents an innovative use for excess water from the nearby Marandoo mine as it is developed below the water table. Covering 750 hectares of land, the water supply is used to grow hay for cattle stations across the Pilbara. The agriculture project is situated on Hamersley Station adjacent to Karijini National Park and will operate for approximately 20 years until the mine is eventually closed.

**Pilbara towns**

Our iron ore operations span the Pilbara, including the towns of Dampier, Karratha, Wickham, Point Samson, Roebourne, Pannawonica, Paraburdoo and Tom Price and we play an important role in revitalising Pilbara towns that support our operations.

**Fly-in, fly-out**

Fly-in, fly-out (FIFO) provides choices for people - from the type of job they want, to the company they work for and importantly, where they live.

Today, there are direct flights to our Pilbara operations from Albany, Broome, Busselton, Carnarvon, Derby, Exmouth, Geraldton and Perth, in addition to drive-in, drive-out (DIDO) from Meekatharra. In 2013, our regional FIFO workers make up 11 per cent of our FIFO workforce.