RIO TINTO PLC
Form 20-F
March 15, 2013
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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, DC 20549

FORM 20-F

(Mark One)

¨ **REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR 12(g) OF THE SECURITIES EXCHANGE ACT OF 1934**

or

x **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended: 31 December 2012

or

¨ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from: to

or

¨ **SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
Date of event requiring this shell company report

Commission file number: 1-10533

Rio Tinto plc

Commission file number: 001-34121

Rio Tinto Limited

ABN 96 004 458 404

(Exact Name of Registrant as Specified in Its Charter)	(Exact Name of Registrant as Specified in Its Charter)
England and Wales **(Jurisdiction of Incorporation or Organisation)**	**Victoria, Australia** **(Jurisdiction of Incorporation or Organisation)**
2 Eastbourne Terrace **London, W2 6LG, United Kingdom** **(Address of Principal Executive Offices)**	**Level 33, 120 Collins Street** **Melbourne, Victoria 3000, Australia** **(Address of Principal Executive Offices)**

Julie Parent, T: 514-848-8519, E: julie.parent@riotinto.com

(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

	Name of Each Exchange		**Name of Each Exchange**
Title of Each Class	**On Which Registered**	**Title of Each Class**	**On Which Registered**
American Depositary Shares*	New York Stock Exchange		
Ordinary Shares of 10p each**	New York Stock Exchange		
6.500% Notes due 2018	New York Stock Exchange	6.500% Notes due 2018	New York Stock Exchange
7.125% Notes due 2028	New York Stock Exchange	7.125% Notes due 2028	New York Stock Exchange
1.875% Notes due 2015	New York Stock Exchange	1.875% Notes due 2015	New York Stock Exchange
3.500% Notes due 2020	New York Stock Exchange	3.500% Notes due 2020	New York Stock Exchange
5.200% Notes due 2040	New York Stock Exchange	5.200% Notes due 2040	New York Stock Exchange
8.950% Notes due 2014	New York Stock Exchange	8.950% Notes due 2014	New York Stock Exchange
9.000% Notes due 2019	New York Stock Exchange	9.000% Notes due 2019	New York Stock Exchange
2.500% Notes due 2016	New York Stock Exchange	2.500% Notes due 2016	New York Stock Exchange
4.125% Notes due 2021	New York Stock Exchange	4.125% Notes due 2021	New York Stock Exchange
1.125% Notes due 2015	New York Stock Exchange	1.125% Notes due 2015	New York Stock Exchange
2.000% Notes due 2017	New York Stock Exchange	2.000% Notes due 2017	New York Stock Exchange
3.500% Notes due 2022	New York Stock Exchange	3.500% Notes due 2022	New York Stock Exchange
4.750% Notes due 2042	New York Stock Exchange	4.750% Notes due 2042	New York Stock Exchange
1.625% Notes due 2017	New York Stock Exchange	1.625% Notes due 2017	New York Stock Exchange
2.875% Notes due 2022	New York Stock Exchange	2.875% Notes due 2022	New York Stock Exchange
4.125% Notes due 2042	New York Stock Exchange	4.125% Notes due 2042	New York Stock Exchange
2.250% Notes due 2016	New York Stock Exchange	2.250% Notes due 2042	New York Stock Exchange
3.750% Notes due 2021	New York Stock Exchange	3.750% Notes due 2042	New York Stock Exchange

* Evidenced by American Depositary Receipts. Each American Depositary Share Represents one Rio Tinto plc Ordinary Share of 10p each.

** Not for trading, but only in connection with the listing of American Depositary Shares, pursuant to the requirements of the Securities and Exchange Commission

Securities registered or to be registered pursuant to Section 12(g) of the Act:

Title of Class	**Title of Class Shares**
None	

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:

None	None

Indicate the number of outstanding shares of each of the issuer s classes of capital or common stock as of the close of the period covered by the annual report:

Title of each class	Number	Number	Title of each class
Ordinary Shares of 10p each	1,425,375,466	435,758,720	Shares
DLC Dividend Share of 10p	1	1	DLC Dividend Share
Special Voting Share of 10p	1	1	Special Voting Share

Indicate by check mark if the registrants are well-known seasoned issuers, as defined in rule 405 of the Securities Act. Yes x No ¨

If this report is an annual or transition report, indicate by check mark if the registrants are not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. Yes ¨ No x

Note Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 from their obligations under those Sections.

Indicate by check mark whether the registrants: (1) have filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrants were required to file such reports), and (2) have been subject to such filing requirements for the past 90 days: Yes x No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).* Yes x No ¨

* This requirement does not apply to the registrant until its fiscal year ending December 31, 2012.

Indicate by check mark whether the registrants are large accelerated filers, accelerated filers, or non-accelerated filers. See definition of accelerated filer and large accelerated filer in Rule 12b-2 of the Exchange Act. (Check one):

Large Accelerated Filer x Accelerated Filer ¨ Non-Accelerated Filer ¨

Indicate by check mark which basis of accounting the registrants have used to prepare the financial statements included in this filing:

US GAAP ¨ International Financial Reporting Standards as issued by the International Accounting Standards Board x Other ¨

If Other has been checked in response to the previous question, indicate by check mark which financial statement item the registrants have elected to follow: Item 17 ¨ Item 18 ¨

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ¨ No x

This document comprises the annual report on Form 20-F and the annual report to shareholders for the year ended December 31, 2012 of Rio Tinto plc and Rio Tinto Limited (the 2012 Form 20-F). Reference is made to the cross reference to Form 20-F table on pages i to iii hereof (the Form 20-F Cross reference table). Only (i) the information in this document that is referenced in the Form 20-F Cross reference table, (ii) the cautionary statement concerning forward-looking statements on page v and (iii) the Exhibits, shall be deemed to be filed with the Securities and Exchange Commission for any purpose, including incorporation by reference into the Registration Statement on Form F-3 File No. 333-175037, and Registration Statements on Form S-8 File Nos. 333-184397, 33-46865, 333-8270, 33-64380, 333-7328, 333-10156, 333-13988, 333-147914 and 333-156093 and any other documents, including documents filed by Rio Tinto plc and Rio Tinto Limited pursuant to the Securities Act of 1933, as amended, which purport to incorporate by reference the 2012 Form 20-F. Any information herein which is not referenced in the Form 20-F Cross reference table, or the Exhibits themselves, shall not be deemed to be so incorporated by reference.

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2012 Annual report

Overview

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Production, reserves and operations

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2012 Annual report

This report forms part of our 2012 corporate reporting suite.

You can view our Annual report, Annual review and Sustainable development report online at:

riotinto.com/reportingcentre2012

Annual review: Highlights from around our business, including a summary of our 2012 performance

Sustainable development report: Our sustainable development strategy and performance, and our approach in action

Scan this code to view the reporting

Performance highlights

2012 financial results

Our underlying financial results reflect record iron ore production and shipments and a second half recovery in copper volumes. This was in the context of lower average market prices in 2012 which reduced underlying earnings by US$5.3 billion compared with 2011:

- Underlying earnings of US$9.3 billion.
- Net loss of US$3.0 billion after impairments of US$14.4 billion, primarily relating to aluminium businesses as well as coal assets in Mozambique.
- 15 per cent increase in full year dividend to 167 US cents per share.

12 months to 31 December

(All amounts are US$ millions unless otherwise stated)		**2012**	2011	Change
Underlying earnings[1]		**9,303**	15,549	-40%
Net (loss)/earnings[1]		**(2,990)**	5,826	-151%
Cash flows from operations		**16,450**	27,388	-40%
Capital expenditure		**17,418**	12,298	+42%
Underlying earnings per share	US cents	**503.1**	808.5	-38%
Basic (loss)/earnings per share from continuing operations	US cents	**(161.3)**	303.5	-153%
Ordinary dividends per share	US cents	**167.0**	145.0	+15%

The financial results are prepared in accordance with IFRS.

1. Underlying earnings is the key financial performance indicator which management uses internally to assess performance. It is presented here to provide greater understanding of the underlying business performance of the Group s operations attributable to the owners of Rio Tinto. Net earnings and underlying earnings relate to profit attributable to owners of Rio Tinto. Underlying earnings is defined and reconciled to net earnings in note 2 on page 162.

centre on your mobile or tablet

This Annual report complies with Australian and UK reporting requirements.

Copies of Rio Tinto s shareholder documents are available on the website at riotinto.com. They can also be obtained free of charge from the Company. Some shareholders may prefer to receive the Annual review which contains summary financial statements for 2012, although shareholders should note that it does not allow as full an understanding of the Group as the Annual report.

Cautionary statement about forward-looking statements

This document contains certain forward-looking statements with respect to the financial condition, results of operations and business of the Rio Tinto Group. These statements are forward-looking statements within the meaning of Section 27A of the US Securities Act of 1933, and Section 21E of the US Securities Exchange Act of 1934. The words intend , aim , project , anticipate , estimate , plan , believes , may , should , will , or similar expressions, commonly identify such forward-looking statements.

Examples of forward-looking statements in this Annual report include those regarding estimated ore reserves, anticipated production or construction dates, costs, outputs and productive lives of assets or similar factors. Forward-looking statements involve known and unknown risks, uncertainties, assumptions and other factors set forth in this document that are beyond the Group s control. For example, future ore reserves will be based in part on market prices that may vary significantly from current levels. These may materially affect the timing and feasibility of particular developments. Other factors include the ability to produce and transport products profitably, demand for our products, changes to the assumptions regarding the recoverable value of our tangible and intangible assets, the effect of foreign currency exchange rates on market prices and operating costs, and activities by governmental authorities, such as changes

in taxation or regulation, and political uncertainty.

In light of these risks, uncertainties and assumptions, actual results could be materially different from projected future results expressed or implied by these forward-looking statements which speak only as to the date of this Annual report. Except as required by applicable regulations or by law, the Group does not undertake any obligation to publicly update or revise any forward-looking statements, whether as a result of new information or future events. The Group cannot guarantee that its forward-looking statements will not differ materially from actual results.

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Chairman s letter

Our business performed well in 2012, generating strong cash flows and underlying earnings of US$9.3 billion. Although lower than last year, principally due to lower commodity prices and higher costs, these results demonstrate the quality of our assets and the sustainable cash-generating abilities of our underlying businesses.

However, as foreshadowed at the beginning of the year, we recorded impairments of US$14.4 billion, resulting in the Group reporting a net loss of US$3 billion for 2012. These write-downs are deeply disappointing. In particular the substantial impairment of our Mozambique coal business is unacceptable.

Following these impairments, Tom Albanese stood down from the board by mutual agreement, recognising his accountability as chief executive for these impairments. On behalf of the board, I would like to acknowledge Tom s contribution and dedication to the company over his 30 years of service.

The board s objective is to ensure that the business delivers sustainable growth in value to you, our shareholders. Your directors are confident that Sam Walsh, who succeeded Tom Albanese as chief executive, will lead a renewed and focused organisation to do just this and we are working closely together with this objective in mind.

Disciplined capital management

Your board aims to unlock greater value for our shareholders through investing in the best opportunities to deliver attractive returns that are well above our cost of capital.

Recent events demonstrate that there is a need for greater discipline across our business, particularly in the way we manage and allocate capital. Under Sam s leadership, we will be simplifying and strengthening our systems in this area, and seeking greater accountability for decision-making across the organisation.

Your board regularly evaluates opportunities put forward by the business against all competing uses for cash, striving to achieve the right balance between disciplined investment, strengthening our balance sheet and returning cash to investors.

Our commitment to a strong balance sheet, ensures discipline and flexibility in our investment approach, helping us to build a robust and strongly performing business over the long term.

Our confidence is reflected in the 15 per cent increase in our annual dividend in 2012. Our cash returns to shareholders totalled US$4.5 billion in 2012, including completion of the Group s US$7 billion share buy-back programme as well as the ordinary dividend payment.

Focus of the board

One of the primary roles of Rio Tinto s board is to provide oversight of strategy development and delivery, while maintaining the highest standards of corporate governance.

The board conducted its annual strategy review with the executive team in September, reaffirming our commitment to invest in and operate large, long-term, expandable, low-cost mines and businesses. The board also took the opportunity in 2012 to visit a number of the Group s operations in Australia and Southern Africa to gain a deeper

understanding of the strategic issues at play.

Amidst continuing volatility in the global economy and major structural shifts affecting the sector, improvements need to be made in how we execute this strategy. The board has tasked Sam Walsh and his executive team with ensuring we improve capital allocation, deliver our growth projects and improve productivity at all of our sites, while building on our industry leading capabilities in areas such as stakeholder engagement and sustainable development.

As geopolitical risks continue, we have continued to look for new ways to form more effective relationships and partnerships around the world. Rio Tinto has always taken its role as a responsible business very seriously.

We believe earning the trust of our host communities and governments is vital in creating sustainable shareholder value. As the company enters its 140th year of operation this year, we recognise we wouldn t still be in business without the support of our many stakeholders.

In 2012, considerable time was spent engaging with investors on issues ranging from our capital allocation methodology to executive remuneration. More recently, we undertook an assessment of board effectiveness and, for the first time, the board s annual evaluation was conducted by an independent expert. Considerable attention will be given to the outcomes of our shareholder engagement and this evaluation exercise in the year to come.

In my letter last year, I commented on the importance of succession planning. My goal is to make sure the board combines a broad set of skills and international experience. Rio Tinto s board should be diverse in the widest sense with the best blend of appropriately skilled and experienced people from our industry, but also outside of it.

We announced last year that Guy Elliott will step down from the board at the end of 2013. I would like to thank Guy for his invaluable contribution over 33 years with the company. Chris Lynch, who joined the board as a non-executive director in 2011, will formally succeed Guy as chief financial officer on 18 April at the conclusion of the Rio Tinto plc annual general meeting. We are fortunate to have appointed someone so well-qualified to take over from Guy.

As well as succession planning, the board committees have always played an important oversight role, freeing the board to focus on strategic matters. All of our committees have been very active this year and have dealt with a number of challenges. I would like to record my personal appreciation to all of the directors who have been unstinting in their considerable support in a challenging year.

Our Remuneration Committee has taken a fresh look at our reward structures to ensure we recruit, motivate and retain the best talent, but not at any cost. I believe our approach to rewarding our people must balance the company s priorities of driving financial performance, meeting our expectations as a corporate citizen and creating greater value for our shareholders.

Looking ahead

The wider world did not stand still in 2012. The macroeconomic environment remained volatile, and prices for our products were generally lower than the year before. However, the global economy ended the year in a healthier state than forecast, with a recovery in China, and greater confidence in a recovery in the Organisation for Economic Co-operation and Development (OECD) countries.

We remain very positive about the long-term future of our business. As billions of people move from rural to urban areas over the coming decades, there will be increased demand for the metals and minerals we produce.

This is a great company, pursuing a consistent strategy with a renewed executive team and excellent people. I thank you and all of our employees for your continued support. When I report back to you on Rio Tinto s progress at this point next year, I am sure I will be reporting on an even stronger and safer organisation focused on delivering value

for each of you, our shareholders.

Jan du Plessis

Chairman

6 March 2013

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Group overview

Introduction to Rio Tinto

Rio Tinto is a leading international mining group that focuses on finding, mining and processing the Earth s mineral resources in order to maximise shareholder value. We have a diverse portfolio and a global presence: our 71,000 people work in more than 40 countries.

To deliver superior returns to shareholders over time, we take a long-term and responsible approach to our activities. This means concentrating on developing first-class orebodies into large, long-life and efficient low-cost operations, capable of providing competitive returns through business cycles.

Sustainable development is integrated into everything we do. Our operations give us the opportunity to bring long-lasting positive change to the communities, regions and countries in which we work, and our metals and minerals are transformed into end products that contribute to higher living standards.

Our responsible approach to mineral development ensures we gain and maintain our licence to operate. It means we provide confidence to our stakeholders, and improve our access to the mineral resources, people and capital we need. Our five product groups summarised below are supported by our Exploration and Technology & Innovation groups (also see pages 22 to 31).

Aluminium product group

Building on more than a century of experience and expertise, Rio Tinto Alcan is a global leader in the aluminium industry. Our fully-integrated facilities include high-quality bauxite mines, large-scale alumina refineries, and some of the world s lowest-cost, most technologically-advanced primary aluminium smelters.

Bauxite production (2012 vs 2011)

+11%

Products

Bauxite

Bauxite is the natural ore used to make aluminium. It is refined into alumina which is smelted into aluminium metal. Our wholly-owned and joint venture bauxite mines are located in Australia, Brazil and Guinea.

Alumina

Alumina (aluminium oxide) is extracted from bauxite via a refining process. Approximately four tonnes of bauxite are required to produce two tonnes of alumina, which in turn makes one tonne of aluminium metal. Our wholly-owned

and joint venture alumina refineries are located in Australia, Brazil and Canada.

Aluminium

Aluminium is a unique and versatile modern metal. Light, strong, flexible, non-corrosive and infinitely recyclable, aluminium is one of the most widely-used metals. Its largest markets are transportation, machinery and construction. Our smelters are mainly concentrated in Canada. We also have plants in France, Cameroon, Iceland, Norway, the UK and the Middle East.

Key strengths

- Access to the largest and best-quality bauxite reserves in the industry.
- Industry-benchmark smelting technology.
- Enviable hydropower position, which delivers significant cost and other advantages in today s carbon-constrained world.
- Industry-leading cost position for aluminium smelting, and moving into the second quartile of the cost curve for alumina refining.
- Lowest-cost quartile for bauxite production.

Key production locations

- Canada
- Europe
- Australia

Key sales destinations

- Asia
- Americas
- Europe

Full operating review on page 22.

Copper product group

Rio Tinto s Copper group has a global presence and holdings in some of the world s largest copper mines. We are among the world s largest producers of copper, gold and molybdenum, and are uniquely positioned to deliver exceptional long-term value due to our high-quality assets, leading technology and a keen focus on managing costs and improving efficiency.

Mined copper production (2012 vs 2011)

+6%

Products

Copper

The world uses more than 19 million tonnes of copper every year. Copper s malleability, strength and conductivity make it useful in a broad range of building, construction and electrical applications. Copper is found in nearly every home and vehicle and is a critical element of today s industrialised world.

Gold

Gold s conductivity and non-corrosive properties make it a vital fabrication material in technology, electronics, jewellery, space exploration and dentistry. Rio Tinto is currently one of the top 15 gold producers in the world, and the largest among the diversified miners. We have interests in two of the largest gold resources, at Oyu Tolgoi and Grasberg. The latter contains the largest gold reserves in the world.

Silver

Silver has very good electrical and thermal properties. It is used in many electrical and electronic applications, such as photovoltaic cells, and is the principal ingredient of x-ray film. Silver is also regarded as a precious metal used as an investment and to make jewellery.

Molybdenum

Molybdenum is a metallic element frequently used to produce stainless steel and other metal alloys. It enhances the metal s toughness, high temperature strength and corrosion resistance.

Key strengths

- Participation in and ownership of high-quality, low-cost assets with meaningful opportunities for expansion and efficiencies.
- Management of the Oyu Tolgoi project, scheduled to be a top five copper producer and a significant gold producer.
- Investment in substantial growth projects.
- Industry-leading technology and innovation.

Key production locations

- US
- Chile
- Mongolia

Key sales destinations

- US
- China
- Japan

Full operating review on page 24.

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Diamonds & Minerals product group

The Diamonds & Minerals group comprises mining, refining and marketing operations across four sectors. Rio Tinto Diamonds is one of the world s leading diamond producers, active in mining, sales and marketing. Rio Tinto Minerals is a world leader in borates, with mines, processing plants, commercial and research facilities. Dampier Salt is one of the world s largest producers of seaborne salt. Rio Tinto Iron & Titanium is an industry leader in high grade titanium dioxide feedstocks. The Diamonds & Minerals group also includes the Simandou iron ore project in Guinea.

Titanium dioxide production (2012 vs 2011)

+11%

Products

Diamonds

Diamonds share a role with gold as an important component in jewellery that ranges from top-end jewellery through to more affordable diamond jewellery accessories. Rio Tinto is able to service both established and emerging markets as it produces the full range of diamonds in terms of size, quality and colour distribution.

Borates

Refined borates are used in hundreds of products and processes. They are a vital ingredient of many home and automotive applications, and are essential nutrients for crops. They are commonly used in glass and ceramic applications including fibreglass, television screens, floor and wall tiles, and heat-resistant glass.

Salt

Salt is one of the basic raw materials for the chemicals industry and is indispensable to a wide array of automotive, construction and electronic products, as well as for water treatment, food and healthcare.

Titanium dioxide

The minerals ilmenite and rutile, together with titanium dioxide slag, can be transformed into a white titanium dioxide pigment or titanium metal. The white pigment is a key component in paints, plastics, paper, inks, textiles, food, sunscreen and cosmetics. Titanium metal s key properties of light weight, chemical inertness and high strength make it ideal for use in medical applications and in the aerospace industry.

Other products include high purity iron, metal powders, zircon and rutile.

Key strengths

- Poised to benefit from late-cycle demand growth.

- Substantial brownfield and greenfield development pipeline including the Simandou project in Guinea.

Key production locations

- North America
- Australia
- South Africa

Key sales destinations

- North America
- China
- Japan

Full operating review on page 26.

Energy product group

We are a leading seaborne supplier of thermal and coking coal to Asian customers and are one of the world s largest uranium producers, serving electric power utilities worldwide. The Rio Tinto Energy product group has operations, exploration and development projects in Australia, southern Africa and Canada.

Thermal coal production (2012 vs 2011)

+16%

Products

Coal

Coal is abundant, relatively inexpensive and safe and easy to transport. We are a large supplier to the export thermal coal market. Thermal coal is used for electricity generation in power stations. We also produce higher-value coking, or metallurgical, coal which, when mixed in furnaces with iron ore, produces steel.

Uranium

Uranium is one of the most powerful natural energy sources known, used in the production of clean, stable, base-load electricity. After uranium ore is mined, it is milled into uranium oxide the mine product that is sold for processing into fuel rods for use in nuclear power stations.

Key strengths

- Strong customer relationships and high-quality assets located in close proximity to growing Asian markets.
- Success in operating long-life, cost-competitive mines and businesses.
- World-class growth opportunities including brownfield expansions at our existing coal operations in Australia and greenfield uranium exploration opportunities in the Athabasca Basin in Canada.
- Strong product stewardship strategy including investment in technologies to reduce emissions from our products.

Key production locations

Key sales destinations

- Australia
- Namibia
- Mozambique

- Japan
- South Korea
- Europe

Full operating review on page 28.

Iron Ore product group

We are the second-largest producer supplying the global seaborne iron ore trade. After a decade of rapid expansion in Australia, and more recent growth in Canada, we are well positioned to benefit from the continuing strong demand in China and other Asian markets. We are driving performance through effective project management and value-adding operational efficiencies.

Iron ore production (2012 vs 2011)

+4%

Products

Iron ore

Iron is the key ingredient in the production of steel, one of the most fundamental and durable products for modern-day living, with uses from railways to paperclips. Our iron ore mines are located in Australia and Canada.

Key strengths

- Proximity of the expanded Pilbara operations in Australia to the world s largest and fastest growing markets.
- Success in increasing operational efficiency and controlling costs.
- Vast potential of brownfield developments near existing infrastructure.
- Proven success in implementing large-scale and complex, value-generating major projects on time and budget without significant impact on operational efficiency.

Key production locations

- Australia
- Canada

Key sales destinations

- China
- Japan
- South Korea

Full operating review on page 30.

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Chief executive s statement

I am proud to be leading your company and am committed to building a stronger business focused on pursuing greater value for you, our shareholders.

My more than 20 years experience with Rio Tinto, including as a member of the board for the past four years, has shown me that we have great assets, outstanding people and the right strategy. We will now have a single-minded focus on how we deliver this strategy in every market in which we operate, everywhere around the world.

I place the highest importance on upholding our values and ensuring safety is paramount in everything we do.

In 2012, while we did experience safety improvements, there were two fatalities at our managed operations and, earlier this year, a fatality at our La Granja project in Peru. I will never let up in my constant efforts to improve safety, to reinforce our strong safety culture, and to ensure that every employee and contractor plays their part in making our workplaces safer.

Highlights of 2012

The pattern of market uncertainty and volatility we have seen since the global financial crisis continued in 2012. Yet despite this, our underlying financial results were solid, indicating the fundamental strength of our businesses.

This was mainly driven by a strong operational performance from some of our businesses. Our iron ore business delivered record production and shipments, and our copper business showed a second half recovery in copper volumes.

We also experienced production increases in bauxite, alumina, thermal coal and titanium dioxide feedstock.

The mining sector has experienced unacceptable levels of cost increases over the past five years. During 2012 all of our management teams were focused on improving productivity to ensure our assets are at the lower end of the total cost curve.

We are continuing to see the benefits of cost savings from our aluminium transformation programme and through the review of support and service costs across the business but clearly much more remains to be done.

We are taking a more aggressive approach to assets in our portfolio that no longer fit our strategy. We achieved further cash proceeds from our divestment programme in 2012, with the sale of several non-core businesses including Lynemouth Power Station, the North American and Chinese portions of the Alcan Cable business, our Specialty Alumina division, and we secured a binding agreement to sell our interest in Palabora. We also made good progress on exploring options for our Pacific Aluminium and Diamonds businesses. This focus will continue in 2013.

Growth programme

Our total capital expenditure for 2012 was US$17.4 billion, reflecting investment in the high value growth of our business, in particular our world-leading iron ore operations in the Pilbara and the greenfield copper-gold project, Oyu Tolgoi, in Mongolia.

We also continued to invest in a number of other growth projects throughout 2012, such as our iron ore project in Guinea, our aluminium smelting project in Kitimat, and a project to extend the life of the Group s Kennecott Utah Copper mine.

2012 was our peak capital expenditure year and, given our commitment to greater capital discipline, we are reviewing all capital commitments in 2013.

Delivering our strategy

Under my watch, our strategy will not change but how we deliver it will. We will consistently execute our strategy in all of our markets with a focus in three key areas in 2013:

1. Strengthen capital allocation and discipline.

Prioritise our capital expenditure on the highest quality projects and improve the way we manage capital. In addition, we are taking a more aggressive portfolio approach to divest assets that no longer fit our strategy.

2. Reduce costs and improve performance at our existing operations.

Our immediate priority is to improve performance at our existing businesses by unlocking productivity improvements, aggressively reducing operating and support costs, controlling sustaining capital spend and leveraging our expertise across all stages of our operations. We are targeting cumulative cash cost savings of over US$5 billion over the next two years, which will see an annual run rate improvement of US$3 billion by the end of 2014.

3. Deliver our approved growth projects.

During 2013, we continue to focus on delivering our two significant growth projects our Iron Ore business in Australia and our Oyu Tolgoi copper-gold project in Mongolia in a risk-managed, value-enhancing manner. See page 6 for more detail on what you can expect from us in 2013. In my drive to increase accountability, I have made some changes to my executive team. I welcome two new members Jean-Sébastien Jacques and Chris Lynch and congratulate Andrew Harding on his move to head our iron ore business. I have also announced some further streamlining of my executive team, reducing my direct reports from 11 to nine.

Ongoing commitment

We expect market uncertainty and price volatility to persist in 2013, but there are positive signs emerging. In China specifically, momentum is growing under its new leadership, and we expect to see Chinese GDP growth above eight per cent in 2013.

China will remain important to us, but I also expect to see strong demand growth from India, Indonesia and other South East Asian countries as they also urbanise and industrialise. It is this outlook that gives us confidence to invest in high-value growth projects, and underpins our expectation of strong future cash generation.

The company has a renewed and strong leadership team, supported by outstanding people. I would like to thank our 71,000 employees around the world for their dedication and resilience. In many parts of our operations we faced some testing times and there will be more to come.

I remain fully confident in the long-term prospects of the business. We have the right strategy to deliver sustainable growth over the long term to meet the world s resourcing needs. In the short term, I am certain of what needs to be done and we are taking decisive steps with a clear plan to build a stronger, more accountable business.

Finally, I would like to thank you, our shareholders, for your continued support. I am committed to making a real difference building on Rio Tinto s strong foundations to put us firmly on the path of delivering greater shareholder value.

Sam Walsh

Chief executive

6 March 2013

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Strategic context

Global economy

The global economy continues to deal with the aftermath of the global financial crisis (GFC) and associated volatility. European policymakers held successive summits during 2012 to tackle tensions from excessive sovereign debt levels in the eurozone, and debate the balance between austerity and growth policies.

In the US, employment remained below 2008 levels, forcing the Federal Reserve to launch a third round of quantitative easing to further stimulate a recovery.

In contrast, the Chinese government maintained policies to control inflation and other effects from the 2009 stimulus and excess liquidity. This led to a sharper slowdown than expected during the third quarter of 2012 in China, contributing to fears that the global economy was heading for a new recession.

Political leadership transition in China added to the perception of uncertainty in 2012, forcing markets towards greater risk aversion. This was felt strongly in commodity markets, with prices for some metals and minerals experiencing large fluctuations during the year. On average, prices for most commodities were ten to 20 per cent lower than in 2011, although they remained at high levels in the longer historical context. Cost escalations, project delays and other supply constraints continued, in many cases, to offset a weaker and more uncertain demand growth environment.

Towards the end of 2012, several encouraging developments started to emerge. In Europe, action from the European Central Bank, combined with the release of bailout funds for Greece, reduced the likelihood of a Greek departure from the eurozone in 2013. It also provided European governments with more time to work towards further integration and greater resilience.

Economic activity started to pick-up again in China in the final quarter of 2012, alleviating fears of a hard-landing. Although liquidity controls in China are expected to remain in place, we would expect positive momentum to be carried into 2013, with Chinese GDP growth for the year moving back to just above eight per cent.

There remain many risks that could derail a stabilisation and improvement in global activity, including continued tensions in the Middle East. We expect volatility to remain a feature of our markets in 2013.

Our belief in the underlying and longer-term trend of rising prosperity in Asia remains unchanged. This will ultimately contribute to support and sustain an elevated level of global economic growth over the next couple of decades. While recognising that the commodity-intensive growth in China is maturing, the industrialisation and urbanisation forces associated with the economic development of emerging countries will continue to support demand for commodities.

Commodity markets

Commodity markets started 2012 relatively positively, with prices for most metals and minerals making a continued recovery from the declines experienced in the second half of 2011. However, prices largely peaked during the first quarter of 2012, sliding downwards throughout the rest of the year, with a sharp correction in the third quarter in the iron ore market. The price trends and volatility reflected the OECD macro-uncertainties described above and concerns from the market that China s slowdown was signalling the end of investment-led, steel-intensive growth.

China is entering an important and necessary transition phase to rebalance its economy towards consumption-led growth. The near-term reform agenda remains unclear and is likely to generate volatility and uncertainty. Reforms and a rebalancing of the economy will ultimately be a positive development for the sustainability of growth in China. Overall, we expect a falling level of demand intensity for early development phase commodities, but absolute demand growth should remain strong over the next two decades and new opportunities will arise for late-cycle

commodities such as titanium dioxide and other industrial minerals. Our view remains that China s steel demand will peak at around one billion tonnes per annum towards 2030. Over this timeframe, India and countries in South East Asia are expected to become increasingly important sources of demand for commodities, including steel.

Increasing capital intensity for mining projects was a persistent trend in 2012. This was a reflection of continued real labour cost escalation, declining resource grades and increased mining projects complexity. Through 2012 the mining industry also continued to face increased stakeholder pressures, highlighting the importance of proactive stakeholder engagement and good track records in sustainable development. Nevertheless, rising threats of resource nationalism, greater rent extraction by governments, or simply increased uncertainty, have implications for the economics and feasibility of projects across the industry.

Combined with significant price volatility and stronger calls from investors for near-term returns over long-dated options, these supply challenges are resulting in further investment delays and deferrals. Iron ore and copper projects are being particularly impacted.

Largely due to the supply-side challenges, copper prices remained at levels equivalent to pre-GFC prices throughout 2012. This is in sharp contrast with the aluminium market, where capacity and production in China continue to match the rapid pace of demand. Even so, physical market premia for aluminium reached new records in 2012. The availability of profitable financing deals continued to lock in access to surplus metal. Thermal coal was another market with less favourable supply and demand dynamics in 2012. Prices came under constant pressure throughout the first half of the year. Finally, following continued strong upward momentum at the start of 2012, rutile and zircon prices faced heavy downward pressures during the second half of the year from reduced Chinese buying.

Lower prices and continued cost escalations have put increasing pressure on margins across the mining industry. This is particularly true in Australia where the dollar has remained resilient to falling commodity prices. The country has attracted money-flows from investors reallocating funds away from Europe. The industry in general is starting to respond to the squeeze on margins through a renewed focus on productivity.

Outlook

As the world economy returns to the trend rate of growth, rising incomes and increased prosperity in developing countries with associated industrialisation and urbanisation will continue to drive demand for commodities. Looking to the future, our view remains that there will be high average demand growth in our markets while cost escalations and stakeholder pressures remain key challenges to grow future supply.

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Group strategy and business model

Pursuing greater value for shareholders

The global economic outlook remains uncertain and volatile. This requires us to have a clear and consistent strategy designed to support a single commitment: the pursuit of greater value for our shareholders. To achieve this we are building an even stronger, more focused, and more accountable organisation.	**Objective** Maximising total shareholder return by sustainably finding, developing, mining and processing natural resources.	**Strategy** Investing in and operating large, long-term, expandable, low-cost mines and businesses, driven by the quality of each opportunity in the most attractive industry sectors.

Shared value

Pursuing greater value for our shareholders means delivering superior returns for the people who own and invest in our company. We will do this while maintaining a focus on safety and by staying true to our core values, wherever we operate.

Delivering superior shareholder value brings with it the opportunity to share our success with many of our other stakeholders. For host governments and communities, it means ensuring widespread and lasting economic benefits. For our customers, it means delivering what they need to be successful. And for our employees, it means creating opportunities to learn and grow in a world-class business.

We will apply a disciplined and rigorous investment process to ensure that capital is invested only in assets that, after prudent assessment, offer attractive returns, well above our cost of capital. Our approach balances investment to grow the value of the business and returns to shareholders, while aiming to maintain a strong balance sheet.

Our strategy is underpinned by our leading capabilities across the value chain and we intend to deepen our expertise and leadership in these areas.

Industry-leading capabilities

A consistent strategy

As we continue to face short-term uncertainty and pricing volatility in many of our markets, our strategy remains the right one: to invest in and operate large, long-term, expandable, low-cost mines and businesses. This strategy has served us well over many years and we have full confidence that it will continue to do so in the future.

The opportunities we pursue are driven by quality and will be in the most attractive industry sectors. We are convinced of the benefits of owning a diversified asset portfolio, provided this is achieved in a way that maximises value for our shareholders. We look for high-quality assets in the right industry sectors that provide superior returns throughout the economic cycle with options for growth when the time is right. And we will realise value by divesting businesses that are no longer in line with our strategy.

We have been in business for 140 years. During this time, we have built a deep understanding and expertise in industry-leading capabilities such as sustainable development, technology and innovation, exploration, marketing and operational excellence. We believe these capabilities will support us in our renewed focus on delivering greater value for our shareholders.

We have world-class businesses, such as our industry-leading iron ore operations in Australia, and we are developers and owners of what will be a top-five copper and gold mine in the Gobi desert of Mongolia.

We have pioneered several world-leading mining and processing technologies. We are the owner of the world s largest fleet of driverless trucks, which are operated from a control centre some 1,500km away. We are using our expertise in technology and innovation to drive safety and productivity improvements across all of our businesses.

Business model

We create and preserve value through investing in and operating large-scale, long-term, low-cost mines and businesses. The nature of our business means that the life of an orebody may span many decades. Throughout the life of a business, from initial exploration to final closure and restoration, we commit to the highest standards of sustainable development

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We also have long experience of building and maintaining relationships wherever we operate. The success of our business is underpinned by doing things the right way and by staying true to our values. Our outstanding people live these values day in and day out wherever we operate around the world.

Even so, we know there is more we can do and we will be reinforcing discipline and accountability throughout the organisation. Simply put, our leaders and employees will have clear targets and be held accountable for their individual performance, which will be rewarded with career growth and development opportunities. Our people must run the business as owners, not managers.

In parallel, we will also strengthen our management and approval systems bringing greater rigour to investment decisions, and implementing effective checks and balances with clearer lines of sight to critical business issues.

What you can expect from us this year

Consistent execution of our strategy in every market, in all of our businesses, is how we will deliver value this year. In 2013, we will reduce costs, deliver our approved growth projects, reshape the portfolio, and build a more accountable business.

This year, our efforts will be focused in three key areas:

1. Reinforcing capital allocation and discipline.

2. Reducing costs and improving performance at our existing operations.

3. Delivering our approved growth projects.

Reinforcing capital allocation and discipline

We will prioritise our capital expenditure on the highest-quality projects and improve the way we manage capital. In addition, we are taking a more aggressive portfolio approach to assets that no longer fit our strategy. We will:

Simplify and strengthen our process for allocating capital.

Review capital expenditure plans across all of our businesses, as we do every year.

Streamline our portfolio through divestments targeting significant cash proceeds in 2013.

Invest only in new projects that provide attractive returns, well above cost of capital, and which compare favourably to other uses of capital.

Reducing costs and improving performance in our businesses

Our immediate priority is to improve performance at our existing businesses by unlocking productivity improvements, aggressively reducing operating and support costs, controlling sustaining capital spend and leveraging our expertise across all stages of our operations. We will:

- Improve our safety performance in 2013.
- Deliver our cumulative US$5 billion cash cost-reduction target by the end of 2014.
- Reduce exploration and evaluation spending by US$750 million (pre-tax) in 2013 compared with 2012.
- Achieve targeted reductions of US$1 billion in our sustaining capital expenditure compared with 2012.

Delivering approved growth projects

During 2013, we are committed to delivering our two significant growth projects: in our Iron Ore business in Australia and in our copper-gold project in Mongolia in a risk-managed, value-enhancing manner. We will draw upon our leadership capability in stakeholder engagement to help us build enduring relationships with our host governments and communities.

- Pilbara 290 first production accelerated to the third quarter of 2013.
- Oyu Tolgoi scheduled for first production in 2013. Discussions with the Government of Mongolia regarding the continuing implementation of the Investment Agreement are ongoing.

Achievement of our strategy is measured by a mixture of financial and non-financial performance indicators, some of which we link to executive remuneration. See page 8.

Explore and evaluate

Our experienced, in-house exploration team has a proven track record of discovering large, long-life orebodies. The team creates further value from its identification of opportunities for the brownfield expansion of our existing assets. Our orebody knowledge allows us to innovate value-enhancing approaches to developing, operating and expanding our resources and positioning our products in the market.

Develop

We develop orebodies with long-term value delivery in mind. We allocate investment only to assets that, after prudent assessment, offer attractive returns that are well above our cost of capital. During this phase, we plan the optimal

configuration for developing the orebody and for getting our products to market. We work closely with our customers to create demand in the market for the grade of product that enables us to maximise the value of the orebody over its lifecycle. Once the value of the resource is confirmed, and internal and external approvals are received, the project moves into implementation and construction.

Mine and process

We create value by safely and efficiently operating assets that fit with our Group strategy. Our global presence and management structure allow us to implement standard operating and maintenance practices across the Group. This reduces our use of consumables, increases the life of our equipment

and optimises the extraction of ore. In turn, we enjoy higher production, reduced costs and value maximisation. We use world-class technologies during mining and processing to increase our efficiency and productivity, and to produce material that is tailored to our customers needs.

Market and deliver

The majority of our customers are industrial companies that further process our products to supply numerous industries construction and infrastructure, automotive, industrial machinery and equipment, energy and consumer goods markets. We invest in long-term partnerships and innovate and improve our products and services to maximise product value to customers. We are constantly adding to our significant knowledge of our markets and value chain, allowing us to improve our investment decision-making process. In many cases, we are responsible for delivering product to our customers. We do this in a variety of ways, but always efficiently, reliably and cost-effectively.

Close down and rehabilitate

We integrate closure planning throughout an asset s lifecycle, from the earliest stages of project development. When a resource reaches the end of its life, we are committed to high standards of close-down and reclamation. This helps us to maintain a positive reputation for sustainable development and ensures we meet the expectations of our current and future stakeholders.

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Key performance indicators

Our key performance indicators (KPIs) give us a means by which to measure our financial and sustainable development performance. Their relevance to our strategy, and our performance against these measures in 2012, are explained below.

Indicator	All injury frequency rate (AIFR) Per 200,000 hours worked	Underlying earnings[a][b] US$ millions	Operating cash flow[a] US$ millions Dividends from equity accounted units Cash flow from consolidated operations
Relevance to strategy	Safety is one of our core priorities. We have a relentless focus on pursuing zero harm, reinforcing our strong safety culture, and improving safety leadership. The AIFR is a leading indicator of management performance.	This is the key financial performance indicator used across the Group. It gives insight to cost management, production growth and performance efficiency. We are focused on aggressively reducing our costs and increasing productivity to improve earnings and deliver greater value for shareholders.	Operating cash flow is a complementary measure to underlying earnings. It also provides insight to how we are managing costs and increasing efficiency and productivity across the business.
Performance	Our AIFR has improved 29 per cent over the last five years. We have maintained our AIFR of 0.67 for 2012.	Underlying earnings have fallen by US$6,246 million compared with 2011. This reflects lower average market prices for the Group commodities during the year, an overall fall in volumes sold, and industry-wide cost inflation pressures.	Operating cash flows of US$16,450 million, which include US$522 million of dividends from equity accounted units, are 40 per cent lower than in 2011, primarily as the result of lower prices.

Definition	AIFR is calculated based on the number of injuries per 200,000 hours worked. This includes medical treatment cases, restricted work-day and lost-day injuries for employees and contractors.	Items excluded from net earnings to arrive at underlying earnings are explained in note 2 of the 2012 financial statements.	Operating cash flow represents the cash generated by the Group s consolidated operations, before payment of interest, taxes, capital expenditure and cash flows relating to financing activities. From 2011, product group operating cash flows on pages 22 to 30 have been adjusted to exclude funding of defined benefit pension deficits; comparative figures have been modified accordingly.
More information	**page 14**	**page 219**	**page 141**

Notes

(a) The accounting information in these charts is drawn up in accordance with IFRS.

(b) Underlying earnings is the key financial performance indicator which management uses internally to assess performance. It is presented here as a measure of earnings to provide greater understanding of the underlying business performance of the Group s operations. Items excluded from net earnings to arrive at underlying earnings are explained in note 2 to the 2012 financial statements. Both net earnings and underlying earnings deal with amounts attributable to the owners of Rio Tinto. However, IFRS requires that the profit for the year reported in the income statement should also include earnings attributable to non-controlling interests in subsidiaries.

(c) Amounts include 100 per cent of subsidiaries capital expenditures.

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KPI trend data

The Group s performance against each KPI is covered in more detail in later sections of this Annual report. Explanations of the actions taken by management to maintain and improve performance against each KPI support the data.

Some KPIs are used as a measure in the long-term incentive arrangements for remuneration of executives. These are identified with this symbol:

See the Remuneration report on page 92

Total shareholder return (TSR)

%

Our strategy is to maximise total shareholder return. This KPI measures performance in terms of shareholder wealth generation. We also monitor our relative TSR performance against peers.

Rio Tinto s TSR performance over the five-year period from 2008 to 2012 was driven by increasing volatility in world stock markets and commodity prices. Total dividends paid during 2012 were 163.5 US cents

Net debt[a]

US$ millions

Net debt is a measure of how we are managing our balance sheet and capital structure. We constantly evaluate and balance the alternative uses for our cash between disciplined investment, strengthening our balance sheet, and returning cash to investors.

Net debt increased from US$8,451 million at 31 December 2011 to US$19,261 million at 31 December 2012 as operating cash inflows were offset by outflows relating to capital expenditure, acquisitions, an increase in the dividend

Capital expenditure[a][c]

US$ millions

We are prioritising investment in the highest returning projects in the most attractive sectors. We are committed to a disciplined and rigorous investment process investing capital only in assets that, after prudent assessment, offer attractive returns that are well above our cost of capital.

Capital expenditure of US$17,418 million has risen by US$5,120 million compared with 2011. This is due mainly to continued expansion and construction across the Group, including Pilbara Iron Ore mines, Oyu Tolgoi mine and

Greenhouse gas (GHG) emissions intensity

Indexed relative to 2008

Our GHG performance is important in upholding and extending our licence to operate. We are focusing on reducing the energy intensity of our operations as well as the carbon intensity of our energy, including through the development and implementation of innovative technologies.

We have reduced our total GHG emissions intensity by 5.1 per cent between 2008 and 2012. This is largely a result of the Ningxia aluminium smelter divestment in 2009 and the closure of the Lynemouth smelter in 2012.

per share, an increase of 40 per cent over 2011. Investor sentiment improved in the fourth quarter of 2012 with the share price ending 2012 closer to its highs for the year. This resulted in a positive TSR of 14.7 per cent for 2012.	payment, and the share buy-back programme.	concentrator, Kitimat aluminium smelter, Kestrel coking coal underground mine, and the Argyle underground diamond mine.	
TSR combines share price appreciation and dividends paid to show the total return to the shareholder.	Net debt is calculated as: the net borrowings after adjusting for amounts due to equity accounted units originally funded by Rio Tinto, cash and cash equivalents, other liquid resources and derivatives related to net debt. This is further explained in note 25 Consolidated net debt of the 2012 financial statements.	Capital expenditure comprises the net cash outflow on purchases less disposals of property, plant and equipment, capitalised evaluation costs and purchases less disposals of other intangible assets.	Our GHG emissions intensity measure is the change in total GHG emissions per unit of commodity production relative to a base year. Total GHG emissions are direct emissions plus emissions from imports of electricity and steam minus electricity and steam exports and net carbon credits purchased from, or sold to, recognised sources.
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Risk factors

Principal risks and uncertainties

Rio Tinto s business units and functions assess the potential economic and non-economic consequences of their respective risks using the framework defined by the Group s Risk policy and standard. Principal risks and uncertainties are identified when the Risk Management Committee, business unit or function determines that the potential consequences are material at a Group level or where the risk is connected and may trigger a succession of events that, in aggregate, become material to the Group. Once identified, each principal risk or uncertainty is reviewed by the relevant internal experts and by the Risk Management Committee.

The following describes all known principal risks and uncertainties that could materially affect Rio Tinto. There may be additional risks unknown to Rio Tinto and other risks, currently believed to be immaterial, which could turn out to be material. The risk factors outlined below omit the management detail on how each is managed and mitigated.

For further information about our approach to risk management, please see page 80. Risks may materialise individually, simultaneously or in combination and could significantly affect the Group s:

- short, medium and long-term business and prospects;
- earnings, cash flow and financial position;
- overall financial results and product demand;
- current asset values;
- future asset values and growth potential;
- safety record and the long, medium and short-term health of its employees;
- environmental effects; or
- Group or business unit reputation.

The principal risks and uncertainties should be considered in connection with any forward-looking statements in this document and the cautionary statement on the inside front cover.

External risks

Factor	Nature
Commodity prices and global demand for the Group s products are expected to remain uncertain.	Commodity prices and demand are volatile and strongly influenced by world economic conditions. The Group s normal policy is to sell its products at prevailing market prices and not to enter into price hedging arrangements. Recent volatility in commodity prices and demand may continue, which could adversely affect the Group s earnings, cash flow and reserves.
Past strong demand for the Group s products in China could be affected by future developments in that country.	The Group is heavily reliant on the Chinese market and if China experiences an economic downturn, or if Chinese customers source products from elsewhere, this could adversely affect demand and pricing for the Group s products. Furthermore, the basis on which the Group prices iron ore in Asia is evolving and to the extent this results in prices or pricing mechanisms that are less favourable to the Group, its earnings and cash flow could be adversely affected.
Rio Tinto is exposed to fluctuations in exchange rates.	The great majority of the Group s sales are denominated in US dollars, which is also the currency used for holding surplus cash, financing operations, and presenting external and internal results. Although many costs are incurred in US dollars, a significant portion is influenced by the local currencies of the countries where the Group operates, principally the Australian dollar and Canadian dollar. The Group s normal policy is to avoid hedging of foreign exchange rates and so the Group may be adversely affected by appreciation in the value of other currencies against the US dollar, or to prolonged periods of exchange rate volatility. These fluctuations may negatively impact the Group s profitability.
Political, legal and commercial changes in the places where the Group operates.	The Group has operations in jurisdictions where governments and communities are seeking a greater share of mineral wealth. In some jurisdictions commercial instability can arise from a culture of bribery and corruption. Some operations are conducted under specific agreements with respective governments and associated acts of relevant legislative bodies. In several countries, land title and rights to land and resources (including Indigenous title) may be unclear. Political and administrative change, policy reform, and changes in law or government regulation can result in expropriation, or nationalisation of the Group s rights or assets.

In its operations and development projects, Rio Tinto is exposed to:

- renegotiation, unilateral variation or nullification of existing agreements, leases and permits;
- changes in government ownership of operations;

significant restoration and environmental clean-up costs;

currency and foreign investment restrictions;

changes in taxation rates, regimes or international tax agreements;

limitations to power, water, energy and infrastructure access; and

general increases in regulation, including compliance costs.

Political instability and uncertainty or government changes to terms applicable to the Group s operations may result in increased costs for the Group, may curtail or negatively impact existing operations and prevent the Group from making future investments.

Community disputes in the countries and territories in which the Group operates.

Some of the Group s current and potential operations are located in or near communities that may regard these operations as being detrimental to them. Community expectations are typically complex with the potential for multiple inconsistent stakeholder views that may be difficult to resolve. Stakeholder opinion and community acceptance can be subject to many influences, for example, related industries, operations of other groups, or local, regional or national events in other places where we operate. These disputes can disrupt our operations and may increase our costs, thereby potentially impacting our revenue and profitability. In the extreme, our operations may be a focus for civil unrest or criminal activity, which can impact our operational and financial performance, as well as our reputation.

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Factor	Nature
Increased regulation of greenhouse gas emissions could adversely affect the Group s cost of operations.	Rio Tinto s operations are energy-intensive and depend on fossil fuels. Worldwide, there is increasing regulation of greenhouse gas emissions, tighter emission reduction targets and progressive introduction of carbon pricing mechanisms. These are likely to raise significantly worldwide energy, production and transport costs over the medium to long terms, which will increase the Group s cost base and, potentially, negatively impact the Group s profitability.
Regulations, standards and stakeholder expectations regarding health, safety, environment and community evolve over time and unforeseen changes could have an adverse effect on the Group s business and reputation.	The resources sector is subject to extensive health, safety and environmental laws, regulations and standards alongside community and stakeholder expectations. Evolving regulation, standards and stakeholder expectations could result in increased costs, litigation or, in extreme cases, threaten the viability of an operation.
Strategic risks	
The Group s exploration and development of new projects might be unsuccessful, expenditures may not be fully recovered and depleted ore reserves may not be replaced.	Rio Tinto identifies new orebodies and mining properties through its exploration programme, and develops or expands other operations as a means of generating shareholder value. Exploration is not always successful and there is a high degree of competition to develop world-class orebodies. The Group may also not be able to source or maintain adequate project financing, or may be unable to find willing and suitable joint venture partners to share the cost of developing large projects.
Rio Tinto may fail to make or successfully integrate acquisitions, or to complete divestment agreements.	Business combinations entail a number of risks including the cost of effectively integrating acquisitions to realise synergies, significant write-offs or restructuring charges, and unanticipated costs and liabilities. The Group may also be liable for the past acts, omissions or liabilities it has acquired that are unforeseen or greater than anticipated. The Group may also retain unforeseen liabilities for divested entities if the buyer fails to honour all commitments or the Group agrees to retain certain liabilities.
Financial risks	
The Group s reported results could be adversely affected by the impairment of assets and goodwill.	The Group may be required to record impairment charges as a result of adverse developments in the recoverable values of its assets (including goodwill). Significant assumptions in the determination of recoverable value include, but are not limited to: pricing of the Group s commodities and products, reserves and mineralised material, infrastructure availability, discount and exchange rates, operating cost projections, and timing of expenditure on major projects. In addition, the occurrence of unexpected events or events beyond the Group s control that adversely impact its business may have an impact on the assumptions underlying the recoverable value of its assets. The foregoing items are not exhaustive and impairments may be caused by factors currently unknown to the Group. To the extent that the recoverable value of an asset is impaired, such impairment may negatively impact the Group s profitability during the relevant period.
The Group s liquidity and cash flow expectations may not be realised, inhibiting planned expenditure.	The Group s ability to fund planned expenditure such as capital growth, mergers and acquisitions, innovation and other obligations may falter if its cash position proves inadequate. Our ability to weather a major economic

shock for example, in the eurozone could be compromised by insufficient cash reserves, a reduction in the value of existing reserves, or restricted access to these and other sources of cash, including the international capital markets.

General cost inflation in the resources sector is affecting both operations and projects, resulting in significant pressure on capital and operating costs.

Input costs in the resources sector have risen at a disproportionate rate, adversely affecting the economics of current operations and increasing the cost of our capital expansion projects. Many of these input costs are linked to commodity prices and in the case of capital expansion projects the time lag between incurring project costs and receiving revenue can result in additional exposure to commodity markets. Failure to contain costs may have an adverse impact on our operating margins and the viability of our capital expansion projects.

Operational risks

Estimates of ore reserves are based on uncertain assumptions that, if changed, could result in the need to restate ore reserves.

There are numerous uncertainties inherent in estimating ore reserves, including subjective judgments and determinations that are based on available geological, technical, contract and economic information. Previously valid assumptions may change significantly with new information, which may result in changes to the economic viability of some reserves and the need for them to be restated.

Labour disputes could lead to lost production and/or increased costs.

Some of the Group s employees, including employees in non-managed operations, are represented by labour unions under various collective labour agreements. The Group may not be able satisfactorily to renegotiate agreements when they expire and may face difficult negotiations or higher wage demands. In addition, labour agreements may not prevent a strike or work stoppage.

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Risk factors continued

Operational risks continued

Factor	Nature
Some of the Group s technologies are unproven and failures could adversely impact costs and/or productivity.	The Group has invested in and implemented new technologies in both information systems and operational initiatives, some of which are unproven and their eventual viability cannot be assessed with certainty. The actual benefits of these technologies may differ materially from expectations.
The Group may be exposed to major failures in the supply chain for specialist equipment and materials.	Rio Tinto operates within a complex supply chain depending on suppliers of materials, services, equipment, and infrastructure, and on providers of logistics. Supply chain failures, or significantly increased costs within the supply chain, for whatever reason, could have an adverse effect on the Group s business.
Joint ventures, strategic partnerships or non-managed operations may not be successful and may not comply with the Group s standards.	The Group participates in several joint venture and partnership arrangements, and it may enter into others, all of which necessarily involve risk. Whether or not the Group holds majority interests or maintains operational control in its joint ventures, its partners may: have economic or business interests or goals that are inconsistent with, or opposed to, those of the Group; exercise veto rights to block actions that the Group believes are in its or the joint venture s best interests; or be unable or unwilling to fulfil their obligations under the joint venture or other agreements, such as contributing capital to expansion or maintenance projects. Where these joint ventures are controlled and managed by others, the Group may provide expertise and advice but has limited control over compliance with its standards and objectives, such that partners may take action contrary to the Group s interests or policies with respect to its investment.
The Group s operations are vulnerable to a range of interruptions, not all of which are covered fully by insurance.	**1. Natural disasters and events** Mining, smelting, refining and infrastructure installations are vulnerable to natural events including earthquakes, drought, flood, fire, storm and the possible effects of climate change. **2. Sustained operational difficulties** Operating difficulties are many and various, ranging from unexpected geological variations that could result in significant ground or containment failure to breakdown of key capital equipment. Reliable roads, rail networks, ports, power generation and transmission, and water supplies are required to access and conduct our operations. Limitations, or interruptions in transport infrastructure, including as a result of third parties gaining access to our integrated facilities, could impede its ability to deliver products.

3. Information technology and cyber security
The Group relies heavily on information technology and process control systems to support our business. In common with most large, global companies, the Group has experienced cyber attacks and is faced with ongoing threats to the confidentiality, integrity and availability of such systems. Whilst no material losses related to cyber security breaches have been discovered, given the increasing sophistication and evolving nature of this threat, we cannot rule out the possibility of them occurring in the future. An extended failure of critical system components, caused by accidental, or malicious actions, including those resulting from a cyber security attack, could result in a significant environmental incident, commercial loss or interruption to operations.

4. Major operational failure
The Group s operations involve chemicals and other substances stored under high temperature and pressure, with the potential for fire, explosion or other loss of control of the process, leading to a release of hazardous materials. This could occur by accident or a breach of operating standards, and could result in a significant incident.

The Group s insurance does not cover every potential loss associated with its operations and adequate coverage at reasonable rates is not always obtainable. In addition, insurance provision may not fully cover its liability or the consequences of any business interruption. Any occurrence not fully covered by insurance could have an adverse effect on the Group s business.

The Group depends on the continued services of key personnel.

The Group s ability to maintain its competitive position is dependent on the services of a wide range of highly skilled and experienced personnel available in the locations where they are needed. Failure to recruit and retain key staff, and the inability to deploy staff worldwide, where they are most needed, could affect the Group s business. Similar constraints may be felt by the Group s key consultants, contractors and suppliers, thereby impacting the Group s expansion plans.

The Group s costs of close-down, reclamation, and rehabilitation could be higher than expected.

Close-down and reclamation works to return operating sites to the community can be extensive and costly. Estimated costs are provided for, and updated annually, over the life of each operation but the provisions might prove to be inadequate due to changes in legislation, standards and the emergence of new reclamation techniques. In addition, the expected timing of expenditure could change significantly due to changes in the business environment that might vary the life of an operation.

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Performance

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* Detailed financial information on the product groups can be found within the Financial review on pages 34 to 41.

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Sustainable development

Performance data

Our sustainable development performance data are reported for calendar years and, unless stated otherwise, represent 100 per cent of the parameters at each managed operation, even though Rio Tinto may have only partial ownership.

Data reported in previous years may be modified if verification processes detect material errors, or if changes are required to ensure comparability over time.

Wherever possible, data for operations acquired prior to 1 October of the reporting period are included. Divested operations are included in data collection processes up until the transfer of management control.

We report in line with the GRI G3 guidelines at Application level A+ and have implemented the International Council on Mining and Metals (ICMM) sustainable development framework (www.icmm.com).

Safety

We are committed to achieving our goal of zero harm. This is supported by our management system which provides the framework for incorporating hazard identification, risk assessment and risk management into all aspects of the operations. Safe operations that protect our people are a priority and we work systematically to mitigate risks that are critical to operating safely.

Regrettably, two people lost their lives due to safety incidents while working at Rio Tinto managed operations in 2012. The events were a rail incident at Rio Tinto Alcan Roberval-Saguenay in Canada and an incident during maintenance work on a crusher at Palabora in South Africa. We provided support and counselling to the families and colleagues affected by these events. We conducted in-depth investigations of the causes of these incidents and ensured that the conclusions were communicated across the Group. We are determined to learn from all incidents to prevent similar events from recurring in the future.

We measure progress toward our goal of zero harm through the all injury frequency rate (AIFR), which includes data for employees and contractors. At the end of 2012, our AIFR was 0.67. Over the last five years we have reduced our AIFR by 29 per cent.

The Group-wide safety risk management programme focuses equally on personal and process safety, and material safety hazards. The identification of higher-consequence, lower-probability safety risks are managed through targeted process safety management and the use of a Semi Quantitative Risk Assessment (SQRA™) process. Risk reduction resulting from the SQRA™ process, along with critical risk controls, is used as a Group-wide leading indicator for safety performance.

We focus on building a sustainable safety culture at our operations, based around strong leadership and workforce engagement. We recognise that a slightly different approach is needed at projects where activity and thus risk levels change rapidly. We have benchmarked our approach externally, and we are piloting new methodologies that focus particularly on improving contractor alignment to our approach, and the quality of frontline leadership.

Rio Tinto has required disclosures relating to mine safety violations or other regulatory matters in accordance with Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act that are included in Exhibit 99.1 to this filing.

Greenhouse gas emissions

Rio Tinto recognises the reality and scale of the challenges posed by increasing demand for reliable and secure forms of energy, coupled with the need for urgent action to reduce global emissions of greenhouse gases (GHGs). We believe global energy and climate challenges are best met by companies, governments and society working together on a global solution. Until that is in place we recognise that it will be important for individual jurisdictions to take action.

As a capital-intensive business, changing our emissions profile and the transition to low-carbon assets and products is a long-term challenge. We are seeking a substantial decarbonisation of the business by 2050. Following the creation of Pacific Aluminium, the majority of the energy used in Rio Tinto Alcan s smelters is from low-carbon sources.

We have reduced our total greenhouse gas emissions intensity by 5.1 per cent between 2008 and 2012. Our total GHG emissions were 41 million tonnes of carbon dioxide equivalent (CO_2-e) in 2012, 2.2 million tonnes lower than in 2011.

The majority of Rio Tinto s GHG emissions are generated as a result of energy use (electricity, fuel and anodes and reductants) during mining, milling and smelting activities at our sites.

We recognise that there are also significant GHG emissions associated with the transportation, processing and use of our products. In 2012, the three most significant sources of indirect emissions associated with our products were:

- Approximately 5.4 million tonnes of CO_2-e associated with third-party transport of our products and raw materials.
- An estimated 141 million tonnes of CO_2-e associated with customers using our coal in electricity generation and steel production.
- Approximately 374 million tonnes of CO_2-e associated with customers using our iron ore to produce steel (these emissions are not in addition to the coal-use emissions above, as some customers use both our iron ore and our coal to produce steel).

We face costs associated with greenhouse gas emissions in Europe, Australia, New Zealand, various US states and Canadian provinces. As a result, over two thirds of emissions from our operations are covered by market-based carbon regulation.

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Aluminium

Financial performance

	2012	2011
	US$ million	US$ million
Revenue	**10,105**	12,159
Operating cash flow	**522**	1,216
Underlying earnings	**3**	442
Capital expenditure	**2,550**	1,957
Net operating assets	**19,606**	26,204

Figures above exclude aluminium assets identified for divestment or closure and that are now managed by the Business Support & Operations group.

Strategy and strategic priorities

The aluminium industry is likely to continue facing challenging market conditions for some years, as a structural shift has occurred, driven by the decoupling of the supply chain for bauxite, alumina and aluminium and the continued growth of the Chinese smelting industry. Against this backdrop, Rio Tinto Alcan is focused on a transformation strategy to improve the performance of the product group. This strategy has delivered improvements, but much more needs to be done in this market environment of depressed prices. Further action will be required to reduce costs, improve the productivity of the assets, and the returns that are generated on capital invested.

Rio Tinto Alcan is committed to achieving further significant performance improvements by delivering over US$1.6 billion of EBITDA improvement by the end of 2015 from both strategic investments and business improvement initiatives. This will incorporate the Aluminium group s contribution to Rio Tinto s sustainable cost reduction targets by 2014. The annual run rate from sustainable business improvement initiatives is now exceeding US$460 million, with US$250 million delivered in 2012, as planned. Key elements of this ongoing second phase of Rio Tinto Alcan s transformation include:

Widespread business improvement initiatives, including accelerated cost reduction and productivity enhancement efforts designed to provide a leaner and more efficient structure.

Stringent focus on high-return production creep and modernisation projects.

Optimisation of the product mix.

Disciplined portfolio management, including the divestment of assets no longer aligned with the product group s core strategy.

- Maximising the benefit of industry-leading positions in bauxite and energy.
- Modernising and expanding long-life Tier 1 assets.
- Strictly limiting growth in line with market conditions.

Safety

In 2012, the Aluminium product group s all injury frequency rate deteriorated to 0.72, from 0.58 in 2011. Regrettably, in January there was one fatality, which resulted from an incident on the Roberval-Saguenay railway in Quebec, Canada. The product group s ongoing priority is to implement the Zero Harm by Choice programme, as well as to continue deploying Rio Tinto HSE performance standards and risk management practices, to reach Rio Tinto Alcan s ultimate goal of zero incidents. Process safety management has made significant progress, with reporting, investigation and analysis of significant potential incidents and completion of corrective actions as a main focus.

The Grande-Baie aluminium smelter in Quebec jointly won the 2012 Chief Executive Safety Award. Three Aluminium sites were recognised in other categories:

- Most Improved Site: Yarwun, Queensland, Australia
- Best Project: Shipshaw, Quebec, Canada
- Small Business: Anglesey, Wales, UK

Greenhouse gas emissions

Rio Tinto Alcan accounted for 20 per cent of Rio Tinto s total greenhouse gas emissions (GHG) in 2012, compared to 19 per cent in 2011. At year end, total GHG intensity was 24 per cent lower than 2008 baseline performance. The realised reductions made a significant contribution to the Rio Tinto Group s overall total GHG intensity improvements. This sizeable reduction in emissions over the past several years is mainly related to the divestment or closure of non-core assets, as well as ongoing operational improvements that have combined to give Rio Tinto Alcan the lowest carbon footprint in the aluminium industry. Taking into account recent portfolio changes, 96 per cent of Rio Tinto Alcan s power supply is carbon-free and falls into the lowest-cost quartile for energy. Aluminium produced using hydroelectricity which currently represents some 83 per cent of the Aluminium product group s power supply has the lowest footprint with respect to primary energy consumption and climate change in lifecycle analysis studies.

Rio Tinto Alcan works closely with stakeholders to address sustainability concerns and help identify ways to foster greater transparency and sustainability throughout the aluminium industry.

During 2012, the Aluminium product group played a lead role as a co-founder of the Aluminium Stewardship Initiative (ASI), along with the International Union for Conservation of Nature and several other founding members. The mission of ASI is to define and deliver the first comprehensive global standard for the responsible production, use and re-use of aluminium. Rio Tinto Alcan also agreed to participate in Empreinte Carbone Québec, a pilot project launched by Quebec s Ministry of Economic Development, Innovation and Export to develop a method for calculating carbon footprint.

Review of operations

Rio Tinto Alcan s underlying earnings of US$3 million were US$439 million lower than in 2011, primarily from a significant deterioration in market conditions and the impact of the lock-out at the Alma smelter in Quebec. The combined impact of movements in prices and exchange rates, inflation and increasing prices for coke, pitch and caustic reduced underlying earnings by US$569 million year-on-year and lowered EBITDA margins by 11 per cent. This market impact was partially offset by controllable cash cost improvement initiatives which had a net positive impact of nearly four per cent on margins. The absence of the abnormal weather events that occurred in 2011 was outweighed by the impact of reduced operations from the lock-out at Alma.

Further deterioration in aluminium market conditions in 2012, together with strong currencies in certain regions and higher raw material costs, has had a negative impact on current market values in the aluminium industry. The annual impairment review for Rio Tinto Alcan and other aluminium businesses (including Pacific Aluminium)$_{(a)}$ resulted in a post-tax impairment charge of US$11.0 billion, which includes goodwill impairment of US$6.0 billion.

The average aluminium market price in 2012 was US$2,018 per tonne, a decrease of 16 per cent from 2011. Rio Tinto Alcan s average realised price for primary metal products in 2012 was US$2,383 per tonne, 12 per cent lower than US$2,715 in 2011.

Gross sales revenue for Rio Tinto Alcan decreased by 17 per cent compared with 2011. This was due to the combined effects of lower market prices across the product range and reduced production at Alma, offset by the Yarwun refinery expansion in Queensland, Australia.

Aluminium production decreased by nine per cent to 2.2 million tonnes in 2012. This was partly due to the lock-out at Alma resolved through the signing of a new labour agreement. Two thirds of the smelter s capacity was curtailed throughout the first half of the year. Alma was progressively returned to full production by January 2013. The new organisational design implemented after the negotiated labour agreement will enable productivity improvements and lower total operating costs. This new organisational design is now being deployed in other facilities and will contribute to further cost reductions in 2013.

(a) In 2011, Pacific Aluminium and certain of the Aluminium operations were transferred to the Business Support & Operations group.

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Rio Tinto Alcan s bauxite production was 31.4 million tonnes in 2012, 11 per cent higher than in 2011. Record production levels were achieved at Weipa in Queensland, Australia, as well as in Guinea. The increase in output was driven by production creep initiatives to supply requirements from the expanded Yarwun refinery, and increased third-party demand.

Alumina production increased 19 per cent to 7.0 million tonnes during 2012, as expanded refining capacity at Yarwun came on line. First bauxite was injected into the expanded Yarwun plant in July 2012. By September, the expanded refinery was operating at 90 per cent of its nameplate capacity of 3.4 million tonnes per annum. The ramp-up is on schedule to reach full capacity by the third quarter of 2013. Yarwun is moving the product group s alumina production into the second quartile of the industry cost curve.

Development projects

Rio Tinto Alcan s development pipeline is focused on developing its long-life Tier 1 assets, while strictly limiting growth in line with market conditions. Project characteristics include a low carbon footprint, low operating costs and attractive forecast returns on capital.

Feasibility and environmental impact studies are currently being completed for the South of Embley project. This would extend the life of the Weipa bauxite mine in Queensland, Australia by approximately 40 years, depending on production rates. The expansion would facilitate staged increases in production of up to 36 million dry product tonnes a year, from the current level of 23 million tonnes. It would enable the continuity of supply to Rio Tinto Alcan s two Gladstone alumina refineries and capitalise on the rapidly-growing third-party market for seaborne bauxite.

Two major smelting projects under way in Canada are designed to leverage Rio Tinto Alcan s clean, self-generated hydroelectricity and generate advantages from the latest AP smelting technology. In Quebec, the construction of the AP60 smelter is complete and is now in the commissioning phase. This 60,000 tonne plant is the first commercial-scale implementation of Rio Tinto Alcan s newest smelting technology platform. Operating at an unprecedented 600 kiloamperes, the energy-efficient AP60 is designed to deliver a US$60 to US$90 per tonne full economic cost advantage over the existing benchmark. First metal at the AP60 smelter is expected in the first half 2013. Subsequent phases will be delayed until the aluminium market shows clear signs of recovery.

The Kitimat Modernisation Project in British Columbia will increase the smelter s current production capacity by more than 49 per cent, to approximately 420,000 tonnes per year. The modernised aluminium smelter will be powered by self-generated hydroelectricity and use advanced AP40 technology to cut GHG emissions intensity by more than 50 per cent. Once completed at the end of 2014, Kitimat will be one of the lowest-cost smelters in the world, strategically located to supply key emerging markets in the Pacific Rim.

The modernisation of the ISAL aluminium smelter in Iceland is expected to increase production from 190,000 tonnes to 230,000 tonnes and includes a leading-edge casting facility to produce value-added billet. The new casting facility produced its first billet in the second quarter of 2012.

Outlook

Macroeconomic sentiment remains uncertain and continues to impact the group s product prices particularly for aluminium.

With a number of regional economies expected to improve, total primary demand for aluminium is forecast to increase by nearly six per cent in 2013. However, inventories are still high and warehousing transactions, driven by

forward pricing estimates and low interest rates, remain attractive. Medium-term supply growth is currently forecast to match or exceed demand growth, resulting in a global market surplus for the industry in the near term.

Smelter grade alumina demand is underpinned by aluminium production, so alumina demand over the long term is directly tied to aluminium demand estimates.

Of Rio Tinto Alcan s three core commodities, bauxite presents the best opportunities for attractive returns in the near term, given strong Chinese demand and supply uncertainty. The current focus of the traded bauxite market is on China s sharply increased demand for imported product. Although shipments from a traditional key supplier in Indonesia have been recovering in the wake of bauxite export restrictions introduced in May 2012, the fundamentals for traded bauxite continue to look strong going forward.

On balance, while higher regional market premiums have helped partially offset prevailing low aluminium prices, the short-term outlook for aluminium markets remains challenging, with lingering economic uncertainty and continuing price volatility. This underscores the importance of the ongoing drive to transform Rio Tinto Alcan into a leaner, highly-efficient aluminium producer capable of generating solid returns throughout the economic cycle.

The longer-term outlook for aluminium remains robust and Rio Tinto Alcan believes strong returns will be available in the future for the well-positioned, low-cost operator.

Rio Tinto Alcan anticipates strong future demand in key sectors like transportation, infrastructure and consumer goods, spurred by the continued move to urbanisation and the growth of megacities, particularly in China and other emerging Asia-Pacific economies. A measure of the enormous potential is that per capita consumption of aluminium is currently just one kilogram in India and five kilograms in Brazil, well below the average of more than 20 kilograms per capita in industrialised countries.

Mature markets will also require significantly increased volumes of aluminium. A good example is the automotive industry, currently among the top-performing sectors in the economies of both the US and Germany.

The global demand picture outlined above would translate into a need for around 40 million tonnes of modernised aluminium production (net of inventory reductions) between now and 2025, along with 75 million additional tonnes of alumina and, very importantly, around 230 million additional tonnes of bauxite. Despite this positive outlook for demand, it is ultimately supply growth that will determine whether, or when, the aluminium industry returns to a more balanced market in the long term.

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Copper

Financial performance

	2012 US$ million	2011 US$ million
Revenue	**6,661**	7,634
Operating cash flow	**492**	3,136
Underlying earnings	**1,092**	1,932
Capital expenditure	**4,347**	3,784
Net operating assets	**12,682**	12,094

Strategy and strategic priorities

The Copper product group s strategy is to maximise shareholder returns by delivering superior margins and growth from high-quality assets. This strategy will be realised by:

- Continuing progress toward zero harm and risk mitigation across the business.
- Prioritising investment and retaining development optionality on high-quality assets.
- Optimising current assets through operational performance and disciplined cost management.
- Delivering a notable reduction in overhead costs and maintaining strong EBITDA margins.
- Developing a strong pipeline of value-generating greenfield projects.
- Using technological innovations such as processing and rapid underground development to deliver operational efficiency and reduce costs.
- Collaborating with local governments and communities to contribute to sustainable development.
- Developing leadership and managing talent to deliver our business strategy.

Safety

In 2012, the Copper product group s all injury frequency rate was 0.50, compared to 0.56 in 2011. The Copper product group regrettably suffered a fatality at its Palabora operation in South Africa and two industrial fatalities occurred at the non-managed Grasberg mine in Indonesia.

The Copper product group is committed to managing the risks inherent in its business and providing a workplace where there is a culture of zero harm. To that end, the group is developing enhanced programmes and procedures to manage process safety, underground safety and contractor management activities. In addition, the group is embedding the need for all leaders and employees to focus on personal safety and work collaboratively toward the goal of zero harm.

Greenhouse gas emissions

The Copper product group s 2012 greenhouse gas (GHG) emissions were 10.66 tonnes of carbon dioxide equivalent per tonne of copper cathode produced, compared with 8.15 tonnes in 2011. The decline in efficiency resulted from the smelter shutdown at Kennecott Utah Copper and decreased production at Palabora. The Copper product group represented 6.8 per cent of Rio Tinto s total emissions.

Review of operations

The Copper product group portfolio is made up of large, long-life, low-cost operations that present meaningful opportunities to grow and improve productivity. In 2012, the group produced 549 thousand tonnes of mined copper (Rio Tinto share), making Rio Tinto the world s sixth largest supplier. The product group also produced 294 thousand ounces of mined gold, 3,657 thousand ounces of mined silver and 9.4 thousand tonnes of molybdenum as by-products of its copper operations.

Kennecott Utah Copper (Rio Tinto: 100 per cent)

Kennecott Utah Copper, adjacent to Salt Lake City, produces about 17 per cent of US copper supply. In 2012, Kennecott produced 163 thousand tonnes of refined copper, 279 thousand ounces of refined gold, and 9.4 thousand tonnes of molybdenum. Refined metal production was higher

during the second half of the year due to improved mine production and processing of inventories built up during a maintenance shutdown of the smelter in the second quarter, which was planned to coincide with the period of lower grades.

Escondida (Rio Tinto: 30 per cent)

Operated by BHP Billiton, Escondida is the world s largest copper mine. Located in Chile s Atacama Desert, it represents five per cent of global production and 16 per cent of all copper production from Chile. In 2012, Escondida produced 1,047 thousand tonnes of copper (100 per cent basis). Production was higher than 2011 due to higher grades and an increase in ore delivered to the concentrator owing to improved material handling.

Grasberg (a joint venture that gives Rio Tinto a 40 per cent share of production above specified levels until the end of 2021 and 40 per cent of all production after 2021)

Grasberg is owned and operated by PT Freeport Indonesia, a subsidiary of US-based Freeport-McMoRan Copper & Gold Inc. Located in the province of Papua in Indonesia, it is one of the world s largest copper mines. Production in 2012 did not reach the specified level, so Rio Tinto did not receive a share of production for the year.

Northparkes (Rio Tinto: 80 per cent)

Located in New South Wales, Australia, Northparkes is a joint venture with the Sumitomo Group. Northparkes produced 53.8 thousand tonnes of copper and 72 thousand ounces of gold in 2012 (100 per cent basis). The mine is the site of an innovative tunnel boring trial that has the potential to increase the rate of tunnel development underground. The site is also home to a state-of-the-art underground training facility.

Palabora (Rio Tinto: 57.7 per cent)

Palabora Mining Company is a South African company listed on the Johannesburg Stock Exchange. The mine produced 40.9 thousand tonnes of refined copper in 2012 (100 per cent basis). In December 2012, Rio Tinto announced an agreement to sell its interest in Palabora for consideration totalling US$373 million. While South Africa remains an important and prospective region for Rio Tinto, and Palabora is a good business, it is no longer a natural fit within Rio Tinto s portfolio.

Development projects

Extending mine life

The Copper product group is pursuing several promising projects to extend the life of existing operations in its portfolio.

In June 2012, Rio Tinto approved a US$660 million investment to extend the life of Kennecott Utah Copper s Bingham Canyon mine from 2018 to 2029. The project, known as Cornerstone, involves pushing back the south wall of Bingham Canyon to gain access to 515 million tonnes of 0.79 per cent copper equivalent ore. Work continues on evaluating projects to expand and upgrade the power plant to natural gas and expand the tailings impoundment.

At Escondida in northern Chile, the Ore Access and Laguna Seca Debottlenecking projects were completed in the second half of 2012, with significant production improvements already realised, in particular with the material handling process.

Escondida s Organic Growth project costing US$3.8 billion (Rio Tinto share: US$1.2 billion) was 26 per cent complete at year end. This project involves constructing a new, 152,000 tonnes per day concentrator to replace the Los Colorados concentrator and allow access to high-grade ore located under the existing facilities. The additional Oxide Leach Area project will cost US$721 million (Rio Tinto share: US$216 million) and involves the construction of a new dynamic leach pad that will maintain current levels of oxide leaching after the existing heap leach has been fully exhausted. Construction of the project is expected to be completed in 2014.

In Indonesia, the Grasberg mine is continuing its transition from primarily an open pit to a fully underground operation. The Grasberg underground

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block cave project will come on line in 2017, when the current open pit mine will be depleted, and is expected to ramp up to full capacity by 2022, reaching 160,000 tonnes of ore produced per day. In addition, Grasberg has begun construction on the Deep Mill Level Zone block cave mine, which will produce an additional 80,000 tonnes of ore per day at full capacity, expected in 2021. Together, these two projects will supply ore to the mill at 240,000 tonnes per day by 2022.

Technological innovations

Technology continues to be a primary lever to improve productivity and cost performance by increasing recoveries, enabling the processing of low-grade material, as well as optimising underground and capital development.

In 2014, Kennecott will commission its Moly Autoclave Process (MAP), which will process lower grade molybdenum concentrate more efficiently than conventional roasters and will improve recovery rates by eight per cent.

Kennecott has also completed construction and commissioning of a pilot ore sorting facility. The new technology, Copper NuWaveTM, has the potential to upgrade marginal ore and waste material by rejecting barren material from the mill pebble recycle stream.

Northparkes began commissioning of a new tunnel boring technology in October 2012. This technology is one pathway to reduce up-front capital costs and decrease construction time for underground operations. Initial tests have demonstrated a 40 per cent increase in the speed at which tunnelling occurs. Additionally, in August 2012, the Rio Tinto Block Cave Knowledge Centre officially opened at the Northparkes mine, providing employees from across the Group with the highest standard of technical and safety training for underground block caving operations.

Greenfield projects

Rio Tinto is focused on developing greenfield projects that can deliver the highest potential returns. The Group approaches each project with world-class environmental standards, and with a goal of creating sustainable economic benefits for all stakeholders.

Oyu Tolgoi (Rio Tinto: 51 per cent interest in Turquoise Hill Resources)

In a span of 34 months, the Oyu Tolgoi copper and gold mine in Mongolia has gone from the planning stage to near completion as a world-class operation and is the flagship of the Copper product group s growth portfolio. At the end of 2012, the project was 99 per cent complete for the open pit, and the group has signed a binding agreement with a Chinese power company for the supply of electricity.

Commercial production of copper concentrate is expected in 2013, and Oyu Tolgoi is set to be a top five copper producer once fully developed. Over its life, it will deliver an average annual production of 425,000 tonnes of copper and 460,000 ounces of gold, and will have net unit cash costs in the first quartile of the industry cost curve.

Oyu Tolgoi contains a 1.5 billion tonne reserve and substantial additional copper mineralisation. The deposit provides opportunities for further expansions that could see production continuing for more than 50 years. In addition, Oyu Tolgoi is in a highly prospective region with further exploration potential.

La Granja (Rio Tinto: 100 per cent)

The La Granja project in northern Peru has the potential to be one of the Group s highest value opportunities. La Granja could be the largest undeveloped greenfield copper project in Latin America, and has the potential to be a very large, long-life operation.

In 2012, Rio Tinto launched a prefeasibility study to mine copper from an open pit, with low technical risk, and using a leaching process to maximise recovery of copper. To date, 168,000 metres of drilling has been completed and further drilling will be ongoing during 2013.

The current plan is to develop the project using a staged, three-phase approach, in which the group will develop an initial leach operation, expand the operation and then construct a concentrator on site. Employing this phased approach will defer significant capital investment until after production begins, with operating cash flows supporting further expansions. Rio Tinto s knowledge of La Granja s orebody and of the broader region continues to evolve. Developing La Granja will provide access to an attractive orebody and will allow the Group to establish a positive presence in a part of the world with significant mineral potential.

Eagle (Rio Tinto: 100 per cent)

Located in Michigan, US, the Eagle copper/nickel mine is scheduled to begin operation in 2014. The mine will produce an average of 16 thousand tonnes and 13 thousand tonnes per year of nickel and copper metal respectively over seven years. Eagle Mine is also located in a highly prospective region where Rio Tinto currently holds significant tenements.

Resolution Copper (Rio Tinto: 55 per cent)

The Resolution Copper project, located in Arizona, US, is ranked among the top ten undeveloped copper assets in the world, and is expected to be a major underground block cave operation.

Resolution Copper has mining tenements covering the identified orebody. However, to realise the full potential of the project, Resolution Copper requires access to public land where mining is currently prohibited. Resolution Copper continues to seek legislative approval in the US Congress to acquire full legal title to all needed land including the adjacent public land. In exchange for that title, the project would give the public more than 2,400 hectares of high-quality Arizona conservation lands. Permitting of the project will start in 2013 with submission of the General Plan of Operations (GPoO) to the United States Forest Service, a Federal Government agency. Submission of the GPoO will initiate the process of assessing the project s environmental impacts and applying appropriate mitigation. This will be done through the generation of an Environmental Impact Statement (EIS), written by the Federal Government, per the National Environmental Policy Act (NEPA). In parallel, work continues on the prefeasibility study, with a timeline that has been extended to allow for a more complete evaluation of mining and processing options and to determine the optimal path forward.

Outlook

Rio Tinto is confident in the fundamentals of the industry and the long-term future of the copper market. While the Group expects continued volatility in the short term, the copper market s robust long-term fundamentals remain intact.

With roughly 60 per cent of copper used as an electrical conductor, the electrification and urbanisation of emerging markets, primarily China, followed by India and South East Asia, will drive copper demand growth through the next several decades. While new mine supply is due to come on line in 2013 as a result of higher prices in the past few years, Rio Tinto has exceptional copper assets and is well positioned to make the most of these market conditions.

The Copper product group is keenly focused on managing costs across its business, and maximising the technological innovations that can lower the cost of developing new mines and improving the productivity of existing operations.

Through a strategic approach of carefully prioritising work and organising key projects into phases, the Copper product group will continue to be flexible and focused on making investments that create the most value.

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Diamonds & Minerals

Financial performance

	2012	2011
	US$ million	US$ million
Revenue	**4,056**	3,654
Operating cash flow	**238**	4
Underlying earnings/(loss)	**119**	(162)
Underlying earnings excluding Simandou	**381**	251
Capital expenditure	**1,785**	1,392
Net operating assets	**8,049**	5,407

Following changes to Rio Tinto s management announced in July 2012, the Simandou iron ore project is now reported within Diamonds & Minerals to reflect management responsibility. Prior year comparatives have been restated.

Strategy and strategic priorities

Demand growth for diamonds and industrial minerals typically follows peak requirements for commodities such as iron ore and copper. The Diamonds & Minerals product group intends to capitalise on this trend by strengthening its portfolio and securing opportunities for valuable growth. The product group strategy is to:

- Improve its existing businesses operational and commercial performance.
- Build value by executing growth projects within its existing asset base.
- Grow its portfolio through value accretive exploration and acquisitions in existing and complementary sectors.

Safety

The product group continues to focus on fostering a culture of accountability and awareness among employees and improving contractor safety. The product group s all injury frequency rate (AIFR) increased slightly to 0.57 in 2012 from 0.55 in 2011.

The product group faces some unique challenges in health and safety. The workforce spans multiple nationalities, ethnicities, languages and cultures in developing countries. In response, management is employing innovative strategies and visible safety leadership to educate the workforce. The product group is committed to eliminating risks of fatalities and permanent injuries, particularly in the large development projects under way. At Diavik, where the transition to underground mining was recently completed, the mine rescue team came third at the 8th International Mine Rescue Competition held in Donetsk, Ukraine, a significant achievement at the highest possible skill level.

Greenhouse gas emissions

Overall greenhouse gas (GHG) emission intensity improved across the product group due to higher production levels and the implementation of more efficient equipment and technology. GHG emissions per tonne of product were marginally higher at Rio Tinto Minerals in 2012 as a result of lower production, and intensity decreased by 8.4 per cent across Rio Tinto Iron & Titanium s operations, reflecting efficiencies associated with higher production levels and new technology. GHG emission intensities improved across all Rio Tinto Diamonds operations. In 2012 Diavik commissioned its wind farm which will reduce diesel consumption by approximately ten per cent and lower greenhouse gas emissions by approximately six per cent. The Diavik wind farm is the largest wind diesel hybrid system in the world and the first wind generation facility for Rio Tinto.

Review of operations

Diamonds & Minerals underlying earnings of US$119 million include evaluation costs in respect of Simandou of US$262 million. Excluding Simandou expenditure, underlying earnings of US$381 million were 52 per cent higher than in 2011. The group benefited from higher prices for titanium dioxide feedstocks and borates. The acquisition of BHP Billiton s interests in Richards Bay Minerals also contributed to the increase in earnings. This was offset by lower prices for diamonds and higher depreciation at Diavik following an impairment reversal in 2011.

Rio Tinto Minerals (RTM)

RTM (100 per cent interest) supplies over 30 per cent of the world s refined borates from its world-class deposit in Boron, California. RTM also has borates refineries and shipping facilities in China, France, Malaysia, the Netherlands, Spain and the US.

Borates production of 463,000 tonnes boric oxide equivalent was eight per cent lower than in 2011, reflecting current global economic market conditions. The sale of Borax Argentina which historically contributed around four per cent of RTM s borates production completed in August 2012. Despite a weakening in demand during the year, RTM achieved a one per cent improvement in refined borates revenues. Earnings of US$140 million were six per cent higher than 2011, excluding the contribution from talc in the prior period.

Rio Tinto Iron & Titanium (RTIT)

RTIT is the largest producer of titanium dioxide feedstocks. RTIT mines ilmenite at its wholly-owned Rio Tinto Fer et Titane (RTFT) operation in Quebec; its managed operation Richards Bay Minerals (RBM) in South Africa (74 per cent interest); and its QIT Madagascar Minerals (QMM) operation (80 per cent interest). RTIT produces high-quality titanium dioxide feedstocks at its world-class metallurgical complexes as well as co-products including high purity iron, steel, metallic powders, zircon and rutile.

In September 2012, Rio Tinto doubled its holding in Richards Bay Minerals to 74 per cent following the acquisition of BHP Billiton s entire interests. The purchase price paid by Rio Tinto on completion was US$1.7 billion. The acquisition was triggered in February 2012 by BHP Billiton exercising a put option agreed with Rio Tinto as part of RBM s restructuring in 2009. The price was determined through a previously-agreed expert valuation process.

In 2012, titanium dioxide feedstock production increased by 11 per cent year-on-year to 1.6 million tonnes. This reflects higher production at RTFT which completed a furnace rebuild in 2011 and an increase in attributable volumes at RBM resulting from Rio Tinto doubling its stake in September. Production was negatively impacted by the furnace rebuild at RBM that commenced in May 2012.

RTIT increased its revenues by 41 per cent due to higher prices for titanium dioxide feedstocks and the RBM transaction. RTIT continued to replace its multi-year sales contracts with alternative pricing mechanisms, increasing the exposure to current market prices. The impact of improved pricing more than offset increased input costs resulting in a 163 per cent increase in year-on-year earnings to US$397 million, including the higher contribution from RBM.

Rio Tinto Diamonds (RTD)

RTD is a leading producer of rough diamonds with a product portfolio that provides a presence in all major markets. Rio Tinto s diamond assets currently comprise the Argyle Diamond Mine in Australia (Rio Tinto: 100 per cent), the Diavik Diamond Mine in Canada (60 per cent), Murowa Diamonds in Zimbabwe (78 per cent) and the Bunder diamond project in India (100 per cent). RTD sells its share of production through its centralised marketing office in Belgium and has a niche cutting and polishing factory in Australia, where it cuts and polishes the high-end pink diamonds from the Argyle mine, and sells them to an international customer base.

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In March 2012, Rio Tinto announced a strategic review of its diamond business that includes exploring a range of options for the potential divestment of its diamonds interests.

RTD produced 13.1 million carats in 2012, a 12 per cent increase from 2011 that reflected increased grades, higher ore throughput and the absence of adverse weather interruptions which impacted 2011. Revenue in 2012 was two per cent higher than in 2011, as the effect of higher volumes was largely offset by lower prices. RTD reported a loss of US$43 million in 2012, compared to earnings of US$10 million in 2011, reflecting lower prices and higher depreciation.

A post-tax impairment of US$460 million was recognised relating to the Argyle diamond mine. An impairment review of Argyle was triggered by the announcement of the Diamonds strategic review as well as changes to the forecast ramp-up date for the underground mine. This is not included in underlying earnings.

Construction of the Argyle underground mine is proceeding and production is scheduled to commence in the first half of 2013, with ramp up to full operation to be completed by 2015, extending the life of mine until at least 2020. Production from Diavik s underground mine commenced in early 2010 in parallel with open pit operations. The transition to a fully underground operation was completed in 2012 and will sustain Diavik production well past 2020.

Dampier Salt (DSL)

Dampier Salt Limited, the world s largest salt exporter, produces industrial salt by solar evaporation of sea water at Dampier and Port Hedland, and from underground brine at Lake MacLeod, all in Western Australia. Salt is sold principally to the base chemical industry markets in Asia. During the year, DSL moved within the Diamonds & Minerals organisational structure. Salt production of 6.8 million tonnes (Rio Tinto share) increased three per cent year-on-year.

Development projects

In 2011, Diamonds & Minerals re-entered the potash business through an exploration joint venture with North Atlantic Potash Inc. a subsidiary of JSC Acron. Acron is a world leader in fertiliser production and holds multiple potash exploration permits in Saskatchewan, Canada, home to about half the world s potash reserves. Drilling results indicate encouraging potash grade and thickness. Higher nutritional standards, population growth and limited arable land make potash a critical factor in maintaining global food security, and a natural complement to RTM s existing borate fertiliser business.

Large diameter drilling was conducted and resource assessment and planning also progressed at the group s Jadar lithium-borate deposit in Serbia. If developed, the deposit has the potential to supply more than 20 per cent of global lithium demand. Lithium carbonate s fastest-growing application is in batteries that provide clean power to industrial systems and electric and hybrid cars.

Good progress was made on RTIT s TIO4 project aimed at expanding its mining and smelting capabilities in Canada and Africa. However, in January 2013, against a backdrop of weaker market conditions for its products and the need to manage and reduce its costs, RTIT has reviewed the economic viability of the project and suspended prefeasibility studies in Canada and Madagascar. The Zulti South mine expansion at RBM and exploration programme in Mozambique continue.

Following the announcement in 2011 of TiO_{2050} a proposed investment of C$800 million over five years to enhance mining and processing operations RTFT commenced investment in 2012 to upgrade its water filtration system at its steel plant, acquire a new crusher at its mining operation and begin a furnace rebuild.

The Bunder diamond project is currently more than halfway through its prefeasibility studies, which began in July 2010. These studies have confirmed the economic potential of the orebody and work is well under way to define the best development option. In January 2012, Rio Tinto

received a Letter of Intent from the Government of Madhya Pradesh to issue the mining lease for Bunder, following approval in principle from the Government of India.

During 2012, the Simandou iron ore project in Guinea also moved within Diamonds & Minerals, as it remains the responsibility of the group s new chief executive, Alan Davies, appointed in September. Simandou is a key pillar in Rio Tinto s long-term growth strategy, involving one of the largest known undeveloped iron ore resources in the world. The concession will enable the development of the largest mine and infrastructure project ever undertaken in Africa. This will include the progressive development of a 95 million tonne per annum mine, a 650-kilometre trans-Guinean railway and a new deep-water port.

The project is adopting a stage gate approval process allowing for studies to be finalised in parallel with early works, and for investment to be made in line with Government of Guinea approvals and financing processes.

The year saw significant progress, with Rio Tinto and Chinalco s listed subsidiary, Chalco, completing the formation of the Simandou Joint Venture for the development and operation of the project. In June, the project committed a further investment of US$1 billion (Rio Tinto share: US$501 million) for detailed design studies, and early works and long-lead items, primarily for developing the rail and port infrastructure.

Rio Tinto, with the support of Soguipami, the State Mining Company, submitted the Social and Environmental Impact Assessment to the Government of Guinea for review and approval. The Republic of Guinea also issued a presidential decree declaring the Simandou infrastructure a Project of National Interest (PIN) in October 2012, protecting the area of land needed to develop the rail and port infrastructure from any acquisition or development by third parties.

Outlook

Diamonds & Minerals businesses serve a range of different industries, but are linked through their track record of creating and defining new and profitable markets for their products. Demand softened in these markets in 2012 in response to broader economic trends, and the outlook for 2013 remains uncertain. However, the medium- to long-term outlook continues to be positive across all products as urbanisation and rising standards of living drive higher levels of demand.

In the borates marketplace, RTM will seek to capture profitable growth in emerging economies and maintain its position in its established markets. Planned supply chain improvements will facilitate speed and flexibility in shifting supply to promising sectors and regions. RTM will focus on increasing refined borates capacity to meet higher than GDP demand growth while achieving world-class safety performance and improving its cost position.

Demand for titanium dioxide feedstock is expected to continue to grow in the medium- to long-term, in line with improving global economic conditions, urbanisation and demand growth in emerging markets. In response to current weak demand and in order to reduce operating costs, RTIT is taking action at a number of its operations. RBM will place its zircon and rutile processing operations on care and maintenance, while maintaining production at the core ilmenite mining and smelting operations. RTFT is taking its upgraded slag (UGS) production facility temporarily offline.

The medium- to long-term fundamentals for the diamond industry are positive and expected to support sustainable future price growth. The global mineral reserve base is steadily declining, compounded by limited exploration investment and success, and expected reductions in supply over the medium to longer-term. Demand in India and China is expected to continue to grow, and to represent nearly 50 per cent of global diamond consumption by 2020.

Demand in mature markets is expected to grow in line with GDP.

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Energy

Financial performance

	2012 US$ million	2011 US$ million
Revenue	**5,783**	7,003
Operating cash flow	**724**	2,019
Underlying earnings	**283**	1,074
Capital expenditure	**1,819**	1,327
Net operating assets	**6,996**	8,164

Strategy and strategic priorities

The Energy product group has a mix of assets in its portfolio and remains focused on safely supplying the world s growing energy needs through the sustainable development and operation of large-scale, long-life, low-cost mines.

In light of market conditions for coal and uranium, the high-cost operating environment in eastern Australia and infrastructure constraints in Mozambique, the Energy group is undertaking a review of the optimal growth profile for all its business units.

The Energy product group is focused on:

- Remaining flexible to respond to the impacts of external factors such as global economic volatility and commodity price fluctuations.
- Increasing productivity and operational performance in all business units, as well as reducing costs, to increase profitability in the near-term, while positioning the group to meet forecast long-term demand for coal and uranium.
- Maintaining strong relations with customers in expanding energy export markets, particularly in Asia.

Safety

The Energy product group aims to achieve the goal of zero harm by fostering a culture where employees and contractors have the knowledge, skills and desire to work safely at all times. In 2012, this commitment was demonstrated with Mount Thorley Warkworth named joint winner of the Rio Tinto Chief Executive Safety Award. Mount Thorley Warkworth was recognised for the passion of its senior leaders to build a safe and highly engaged workforce including seamless inclusion of contractors within the site s safety culture and the rigour with which Rio Tinto s safety systems and standards are applied. In 2012, Energy s all injury frequency rate was 0.66 compared with 0.80 in 2011, which was reflective of lower injury rates across all its business units. In addition, core fatality prevention processes including thorough investigation of significant potential incidents and active management of critical operational risks were further entrenched in the way the group works.

Greenhouse gas emissions

To date, Rio Tinto has spent more than US$100 million on research and development into technologies that will reduce emissions from coal-fired industries. This investment is necessary because all forecasts point to coal continuing to play a significant role in the global energy mix, but in an increasingly carbon-constrained environment. In 2012, the Energy group launched a three-year, A$6 million sponsorship of The Otway Project in Victoria, Australia s first industrial-scale demonstration of geological carbon dioxide storage and research. Combined with work at the University of Melbourne, the Energy group is helping to create a world-class hub for research into this important technology. In 2012, Energy s Australian coal operations implemented a new industry methodology at its New South Wales mines to more accurately estimate fugitive emissions from coal extraction, instead of using the default emission factor. In 2012, greenhouse gas emissions for the Energy group remained steady at approximately 4.3 million tonnes of carbon dioxide equivalent.

Review of operations

After a period of robust earnings following the global financial crisis, the performance of the Energy product group declined in 2012 due to lower prices for coal and uranium, a strong Australian dollar and escalating input costs.

All Energy businesses reacted swiftly to this challenging economic environment by implementing plans to address declining productivity and the sharp rise in operational costs. An impairment charge of US$2.86 billion post-tax was also recognised relating to Energy s coal business in Mozambique (refer to next page for explanation).

Rio Tinto Coal Australia (Rio Tinto: 100 per cent)

Rio Tinto Coal Australia (RTCA) manages the group s Australian coal interests. These include the Blair Athol (Rio Tinto: 71.2 per cent), Clermont (Rio Tinto: 50.1 per cent), Hail Creek (Rio Tinto: 82 per cent) and Kestrel (Rio Tinto: 80 per cent) coal mines in Queensland. RTCA also manages the Energy product group s coal mines in New South Wales, which are Hunter Valley Operations (Rio Tinto: 80 per cent), Bengalla (Rio Tinto: 32 per cent), Mount Thorley (Rio Tinto: 64 per cent) and Warkworth (Rio Tinto: 44.5 per cent).

Coal & Allied is 80 per cent owned by the Rio Tinto Group and 20 per cent owned by Mitsubishi Development. Coal & Allied also has a 36.5 per cent interest in Port Waratah Coal Services which operates the Kooragang and Carrington coal port terminals.

Australian coal production increased by eight per cent in 2012 compared to 2011 due to the completion of brownfield expansions in the Hunter Valley and the continued ramp-up of the Clermont Mine in Queensland. This was achieved despite the impacts of wet weather in eastern Australia in the first half of 2012, and carry-over effects from a shortage of explosives in New South Wales in the fourth quarter of 2011. Net earnings of US$402 million represent a 68 per cent decrease from 2011, due largely to lower prices for all coal types, the continuing strength of the Australian dollar, and higher input costs.

Coal production is forecast to increase again in 2013 through the realisation of benefits from the business-wide debottlenecking and asset management programme, the ongoing ramp-up of the Clermont Mine and first coal from the Kestrel Mine Extension. The production increase through these activities is forecast to more than offset the impact of closure of the Blair Athol Mine in central Queensland which produced its last coal in November 2012. Over nearly three decades, Blair Athol Mine produced close to 250 million tonnes of thermal coal, and at its peak was Australia s largest exporter of thermal coal. Its infrastructure facilities are now being used by the nearby RTCA-managed Clermont Mine, which opened in 2010.

In response to increased community concern regarding impacts from mining in the Hunter Valley, RTCA has made significant improvements to both operational and rehabilitation practices. Key initiatives include purchasing

noise-attenuated heavy mobile equipment and retrofitting existing fleet, and the use of real-time monitoring to modify operations in response to environmental conditions.

Energy Resources of Australia (Rio Tinto: 68.39 per cent)

Energy Resources of Australia (ERA) is a publicly listed company. Since 1981, ERA has mined ore and produced uranium oxide at its Ranger open pit mine, 260km east of Darwin in the Northern Territory.

ERA also holds title to the adjacent Jabiluka mineral lease, which is under a long-term care and maintenance agreement. Ranger and Jabiluka are surrounded by, but remain separate from, the World Heritage listed Kakadu National Park. ERA s operations are subject to stringent environmental requirements and governmental oversight.

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Ranger mine finished open-cut mining in December 2012 after 31 years. Uranium production will continue by processing previously stockpiled lower grade material while studies proceed to assess the feasibility of underground operations at Ranger.

In January 2013, a suite of agreements covering the Ranger Project Area were executed by ERA, the Mirarr Traditional Owners, the Northern Land Council and the Commonwealth Government.

Key features of the agreements include the Mirarr Traditional Owners receiving an increased share of the financial benefits from the Ranger mine, the creation of a regional Sustainability Trust which will deliver social initiatives in the local region, and an agreed approach to increasing opportunities for local Aboriginal participation in business development, training and employment.

The finalisation of these agreements is a significant achievement and reflects a strengthening in the relationship between ERA and the Gundjeihmi Aboriginal Corporation representing the Mirarr Traditional Owners.

Rio Tinto Coal Mozambique (Rio Tinto: 100 per cent)

Rio Tinto Coal Mozambique (RTCM) manages the Zambeze Project (100 per cent); Tete East Project (100 per cent); Benga Mine (65 per cent); and the Zululand Anthracite Colliery (74 per cent).

RTCM holds mining and exploration licences in the Moatize Basin in the Tete province of Mozambique. The Benga Mine was officially opened in May 2012 with first coal exported in June 2012. An impairment charge of US$2.86 billion post-tax was recognised relating to Energy s coal business in Mozambique. The development of infrastructure in Mozambique to support the undeveloped coal asset is more challenging than initially anticipated which, combined with a downward revision to estimates of recoverable coking coal volumes, has led to a reassessment of the overall scale and ramp up schedule of RTCM and consequently to the assessment of its fair value less costs to sell (FVLCS).

Benga Mine commercial production in 2012 was 460 thousand tonnes. Near-term sales volumes will reflect the availability of rail and port capacity.

Rössing Uranium (Rio Tinto: 68.58 per cent)

Rössing Mine is located near Arandis in Namibia s Erongo Region. Improving costs and efficiencies continued to be a focus at Rössing in 2012. Benefits from the business improvement strategies that were initiated in 2011 are now being realised and this work will continue in 2013. Rössing is evaluating options to expand operations and extend the mine life beyond 2023.

Rio Tinto acquired its interest in Namibia-based Rössing Uranium Limited (Rössing) in 1970. The Iranian Foreign Investments Company (IFIC) acquired its original minority shareholding in Rössing in 1975. IFIC s interest predates the establishment of the Islamic Republic of Iran and the U.S. economic sanctions targeting Iran s nuclear, energy and ballistic missile programs. IFIC acquired and continues to own a minority shareholding in Rössing in accordance with Namibian law.

Rössing is neither a business partnership nor joint venture between Rio Tinto and IFIC. Rössing is a Namibian limited liability company with a large number of shareholders, including Rio Tinto with 68.7 per cent, IFIC with 15.3 per cent, the Industrial Development Corporation of South Africa with 10 per cent, local individual shareholders with a combined interest of 3 per cent and the Government of the Republic of Namibia with 3 per cent but with an additional 51 per cent vote at a general meeting of Rössing on matters of national interest.

As a shareholder in Rössing, Rio Tinto has no power or authority to divest IFIC s holding in Rössing. However, Rössing and the Namibian Government have taken several recent steps to limit IFIC s future involvement in Rössing.

On 1 October 2010, Namibia reported to the United Nations, pursuant to Article 31 of the United Nations Security Council Resolution 1929 (UN SCR 1929), that it had reached an agreement with the Islamic Republic of Iran that IFIC will not participate in any future investments nor will it acquire any further shares in Rössing. It was also agreed that the Government of Iran will not acquire interests in any commercial activity in Namibia involving uranium mining, production, or use of nuclear materials and technology, as required under UN SCR1929, until such time as the United Nations Security Council determines that the objectives of the Resolution have been met.

The Rössing board also took steps in 2012 to terminate IFIC s involvement in the governance of Rössing. As a shareholder in Rössing, IFIC was entitled under Namibian law to attend general meetings of Rössing. IFIC was previously represented on the board of Rössing by two directors. While this level of board representation did not provide IFIC with the ability to influence the conduct of Rössing s business on its own, the Rössing board nonetheless determined that, in light of international economic sanctions, it would be in the best interest of Rössing to terminate IFIC s involvement in board activity. Therefore, on 4 June 2012, at the annual general meeting of Rössing, the shareholders of the company, including Rio Tinto, voted not to re-elect the two IFIC board members. This ended IFIC s participation in Rössing board activities. IFIC accordingly is not represented on the Rössing board, nor does it have the right to attend board meetings or receive any board information

Dividends:

While IFIC is entitled to its pro rata share of any dividend that the majority of the board may declare for all shareholders in Rössing, IFIC has not received such monies since early 2008. Simply by maintaining its own shareholding in Rössing, Rio Tinto is not engaging in any activity intended or designed to confer any direct or indirect financial support for IFIC. Further, the Rössing board determined no dividends will be paid for the year 2012.

Uranium off-take and technology:

Rössing is the world s third largest uranium mine. It sells approximately 40 percent of its uranium to U.S. power companies and most of the remainder to Canada and other key U.S. trading partners in Europe and Asia. As a minority shareholder, IFIC has no uranium product off-take rights. Neither IFIC nor other Government of Iran entities have any supply contracts in place with Rössing and receive no uranium from Rössing. IFIC also does not have access to any technology through its investment in Rössing or rights to such technology.

While Rio Tinto does not view itself as actively transacting or entering into business dealings with an instrumentality of the Government of Iran, this information has been provided to ensure transparency regarding the passive, minority shareholding in Rössing currently held by the IFIC. Rio Tinto has disclosed the IFIC shareholding matter to the United States Government and has periodically updated the U.S. Department of State as to the same.

Development projects

Rio Tinto completed the acquisition of Hathor Exploration, a junior Canadian uranium exploration company with assets in the Athabasca Basin region of Saskatchewan, in January 2012. The new entity was renamed Rio Tinto Canada Uranium (RTCU).

Its assets give the Energy product group access to a significant high-grade uranium deposit and further highly prospective exploration tenements in an area of Canada that currently supplies approximately 20 per cent of global uranium. RTCU s Roughrider Project is located in an area that hosts all of Canada s producing uranium mines.

Rio Tinto has commenced an environmental baseline programme for the Roughrider Project and engagement with local communities and stakeholders is also well under way. Rio Tinto is continuing to work with the governments of Saskatchewan and Canada to promote the growth of the uranium mining industry.

In Queensland, RTCA s Kestrel Mine Extension project is well advanced and scheduled to start production in mid-2013. The project will incrementally increase production by one million tonnes per annum, extend the life of the current mine to 2032 and reduce unit operating costs.

In Mozambique, work to refresh the development strategy is being expedited in light of the non-cash impairments announced in January 2013. The Energy product group continues to engage with the Government of Mozambique on a range of transport infrastructure options, the success of which remains the key to unlocking the full value of coal tenements in the Moatize Basin.

At ERA, the Ranger 3 Deeps orebody contains an estimated 34,000 tonnes of uranium oxide making it one of the most significant recent uranium discoveries anywhere in the world. Construction of a A$120 million exploration decline started in May 2012 with exploration drilling expected to commence in Q2 2013.

Following a successful exploration programme, Rössing Uranium is considering mining the Z20 orebody. In order to access the orebody, an infrastructure corridor would need to be established linking Z20 to the existing Rössing mine.

Outlook

With European and American economies continuing to experience low-growth conditions, subdued prices for coal and uranium are expected to continue in the short to medium term. Notwithstanding the near-term outlook, long-term demand for coal and uranium is expected to remain strong.

Under even the most ambitious climate change policy scenarios, Rio Tinto expects demand for energy to increase significantly with future global growth dominated by Asia. The International Energy Agency s most recent scenario shows China alone representing 43 per cent of global energy growth over the period 2010 to 2020. In the same scenario in the period 2010 to 2035, Asia accounts for 67 per cent of global growth, with India and other countries accelerating as China s growth profile starts to flatten.

Many countries seek a diversified energy mix to safeguard energy security, while looking to minimise costs and manage the various environmental impacts of energy use including carbon emissions. This challenging three-way balance means that coal will continue to be an important baseload fuel for decades to come and nuclear power will provide additional energy security with low emissions. Similarly, global steel demand is expected to grow at two per cent per annum to 2050, underpinning the demand for high-quality metallurgical coal.

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Iron Ore

Financial performance

	2012 US$ million	2011 US$ million
Revenue	**24,279**	29,475
Operating cash flow	**15,827**	21,778
Underlying earnings	**9,242**	13,267
Capital expenditure	**7,149**	4,004
Net operating assets	**21,068**	12,531

Strategy and strategic priorities

The Iron Ore product group s strategy is to:

- Create and protect shareholder value by maximising the return from existing assets and building value through appropriate project developments.
- Implement value-generating major expansion programmes while maintaining production at nameplate capacity.
- Maintain close control of capital and operating costs to protect margins, achieving savings through more efficient processes and reducing support and services costs.
- Continue to develop, and benefit from, technology and innovation to deliver supply chain efficiencies, reduce or maintain costs, and maximise underlying profit.
- Capitalise on its position as the leading iron ore supplier close to the world s largest, fastest-growing markets.
- Maximise shareholder returns by applying a value-in-use focus to its portfolio marketing strategy across its suite of products.

Safety

Following the three fatalities that regrettably occurred in 2011, a comprehensive examination of Iron Ore s approach to safety was launched. This resulted in key safety improvement initiatives that were implemented in 2012. Integral to improved performance will be the strong commitment to safety improvement at all levels of the organisation and a focus on critical risk management, safety leadership, employee development, hazard awareness and safety systems

simplification.

Critical risk monitoring programmes continue to be enhanced, and include increasing leadership capability and accountability. Initiatives designed to comprehensively reduce Iron Ore s overall risk profile included the phased introduction of a safer 5-star ANCAP

(Australasian New Car Assessment Program) rated light vehicle fleet and the implementation of the Nine Lifesaving Commitments hazard awareness programme.

Iron Ore maintained a major focus on health issues, particularly emerging issues impacting on the mental health of its workforce. This included embedding a mental health strategy with a focus on depression.

In 2012, the Iron Ore group s all injury frequency rate was 0.74, compared with 0.65 in 2011. Several significant potential incidents were also recorded in 2012. These shortcomings highlighted the need to embed better safety programmes and improvement initiatives throughout 2013.

Greenhouse gas emissions

A number of measures were implemented during the year to ensure that Rio Tinto s iron ore business applied best practice to its environmental performance. From a regulatory perspective, several programmes produced greenhouse gas (GHG) improvements. All federal government requirements for the National Greenhouse and Energy Reporting System and Energy Efficiency Opportunities Act were met. Pilbara operations also produced savings of 479 TJoules (1.4 per cent of the total energy footprint for the iron ore business). The Iron Ore group s total greenhouse gas emission intensity has improved 4.1 per cent from 2008.

Review of operations

Iron Ore achieved its stated production target of 250 million tonnes in 2012, overcoming volatile weather and market challenges along with a fast-tracked expansion schedule to increase overall group production to 253 million tonnes. Rio Tinto s share of production was 198.9 million tonnes, a 3.7 per cent increase over the previous year.

This evidenced a great recovery from what was a particularly difficult first quarter, when the seasonal weather conditions in the Pilbara produced three tropical cyclones. However, satisfactory operating performance was maintained, with inland mining and in-load facilities continuing to operate in a limited but functional capacity throughout the events.

The second half in particular demonstrated the integrated Pilbara system s enhanced operational efficiency, with operational capacity re-rated at 237 million tonnes per year (Mt/a) in November with minimal capital investment. The business set, and met, the challenge of reaching a 260Mt/a run-rate towards the end of the year.

As in 2011, a volatile iron ore market produced wide and rapid swings in spot prices, across which most contract prices were based, highlighting the sales and marketing team s sustained achievement in placing tonnes to the best effect. Relevant index prices reached higher than US$150 per tonne and as low as around US$80 per tonne, before settling in the US$120-130 range through the fourth quarter as demand recovered and stabilised. The dynamic nature of the market was highlighted with broad variations in customers responses to peaks and lows in demand, resulting in fragmented price referencing models across major markets.

Marketing strategy remained focused on achieving high recognition for the superior value-in-use of Rio Tinto s iron ore products, matching them with particular markets where optimal value could be realised. Despite the volatile conditions, sales increased each quarter through the year.

Operational improvement throughout the year was directed to achieving productivity gains, particularly through minimising or eliminating bottlenecks across the Pilbara rail network. Additional sidings were constructed to reduce delays.

A US$518 million investment (Rio Tinto share US$478 million) was announced to reinstate Iron Ore s AutoHaul automated train programme. Scheduled for completion in 2015, this will result in the world s first automated long-distance heavy-haul rail network. AutoHaul will enable Rio Tinto to expand capacity without making a substantial investment in additional trains. The programme involves a number of safety initiatives to ensure current safety levels are not compromised.

The year s operational efficiency gains often involved small but valuable improvements in asset deployment. For example, two additional ore cars were added to all 234-car trains, increasing annual ore throughput capacity by approximately 500,000 tonnes.

Rio Tinto s longstanding commitment to the Mine of the Future programme was reflected in a number of decisions, leading towards the first fully autonomous large-scale mining operation in the Pilbara. The Operations Centre (OC) in Perth has become the nerve centre for the Pilbara business. Most management and oversight functions formerly based in the Pilbara have been brought into the OC. Construction began on Stage 3 of the OC, which will enable more roles and responsibilities to be based there in 2013.

The five original Autonomous Haulage System (AHS) driverless trucks were transferred from West Angelas mine to Yandicoogina, where they were joined by five new autonomous trucks. They now comprise the entire fleet in the Junction South East pit, hauling about 30 million tonnes of high-grade ore a year. They will be progressively joined by 150 more AHS trucks over the next three to four years, to be initially deployed at the expanded Nammuldi mine and the new Hope Downs 4 mine.

The 40-year-old Cape Lambert power station was decommissioned during 2012 and dismantling commenced. The HIsmelt® plant in Kwinana has also been decommissioned and preparation for dismantling and potential sale of some equipment has begun.

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The ongoing challenge to recruit the workforce of the future was met with a number of activities including commencement and consolidation of regional fly-in fly-out (FIFO) hubs, introduction of the national FIFO programme, recruitment of record numbers of apprentices and graduates, utilisation of five dedicated regional training facilities, and the funding of 43 mining-related scholarships to the University of Western Australia.

Negotiations for participation agreements with Traditional Owners continued, augmenting the five agreements reached in 2011. This featured a strong commitment to finalising regional standards, incorporating mutual obligations to deliver commitments on employment, financial compensation, education and training, heritage surveys and practices, environmental care and land use.

Aboriginal employment remained a key priority of the Pilbara business, and the year saw a steady improvement in workforce numbers, boosted by the significant addition of contractors associated with the expansion programme. At the end of the year, total Aboriginal employment in the Western Australian iron ore business stood at more than 1,660 workers. The commitment to fostering Aboriginal business produced outstanding achievements. In the last three years more than A$1.6 billion in Pilbara contracts has been awarded to Aboriginal joint venture and direct contracts.

A number of regulatory and administrative arrangements were also resolved including the government approval of stage two for the Wickham residential sub-division supporting the Cape Lambert expansion.

Brockman 4 phase 2 expansion was successfully commissioned, lifting mine annual capacity to 40 million tonnes, as was the Hamersley Agricultural Project, using surplus water from the Marandoo mine extension to develop a year-round crop-growing capability.

In September, the High Court of Australia overturned earlier decisions by the Federal Court not to declare the Hamersley and Robe rail lines open for third-party access. The Australian Competition Tribunal reconsidered the matter, and, in February 2013, ruled that the lines not be opened up for other users.

The Iron Ore Company of Canada (IOC, Rio Tinto share 58.7 per cent) enjoyed a solid year, recovering from a difficult first few months to produce 9.7 million tonnes of pellets and 4.4 million tonnes of concentrate for sale. Sales were 9.9 million and 4.2 million tonnes respectively. During the year a number of improvements helped achieve efficiency gains, notably in the mobile equipment and operations sectors. A number of challenges remain as a result of the Concentrate Expansion Project (CEP) first stage, still in commissioning, which impacted concentrate production. Pellet production was stable through the year.

In March, IOC successfully secured a six-year labour contract with its unions without disruption. This agreement will enable IOC to be competitive, attract the necessary skills, and reward, attract and retain the right people to generate greater value.

During the year, the Dampier Salt business moved within the Diamonds & Minerals organisational structure, and is reported on page 27.

Development projects

A number of incremental improvements to the Pilbara integrated network, largely involving debottlenecking, resulted in a re-rating of the system s current annual capacity in November 2012 to 237 million tonnes with minimal capital investment.

The expansion of Pilbara annual capacity to the revised target of 360 million tonnes remained on track in 2012, following a two-staged investment process and a successful year of project execution. All approvals for the expansion to 290 million tonnes capacity are in place, and all rail and port approvals for the 360 million tonne stage are completed except for immediate rail links to new mine developments still in study phase.

In February, a US$3.4 billion (Rio Tinto share US$2.9 billion) investment was approved, comprising US$2.2 billion to extend the life of the Nammuldi iron ore mine by 14 years and US$1.2 billion for early works

at Cape Lambert port and rail expansions. These early works include replacing an ageing car dumper with a new dual car dumper, increasing the port s annual capacity by 20 million tonnes by 2015, and aligning in-loading capacity with current ship-loading capacity.

This was followed in June with a US$3.5 billion investment (Rio Tinto share US$2.0 billion), providing for an additional two berths and significantly increased rail capacity to support it.

Investment of US$570 million was allocated to construct a new energy-efficient gas-fired power station at Cape Lambert, producing significantly lower carbon emissions than its decommissioned predecessor.

A further US$1.7 billion (Rio Tinto share 100 per cent) of largely sustaining capital expenditure was approved to extend the life of the Yandicoogina mine to 2021 and boost nameplate capacity from 53Mt/a to 56Mt/a. A wet processing plant will also be added in order to maintain product specification levels and provide a platform for future potential expansion.

This is the largest integrated mining project in Australian history, and is on track to complete the announced schedule:

1. 225Mt/a by Q1 2011 Dampier port debottlenecking (complete)
2. 230Mt/a by end Q1 2012 Dampier port incremental (complete, re-rated to 237Mt/a in November 2012)
3. 290Mt/a by Q3 2013 Cape Lambert 53Mt/a increment (in implementation)
4. 360Mt/a in H1 2015 Cape Lambert 50Mt/a increment and car dumper replacement 20Mt/a increment (infrastructure approved)

The milestone of 290Mt/a capacity was brought forward to Q3 2013, delivering greater shareholder value more quickly.

The planned installation of a wet plant at Brockman 4 was removed, saving US$1 billion in capital expenditure. Through such measures, capital intensity has been kept at the mid-US$150s per tonne, despite rising costs and currency movements.

In response to the increased demand for iron ore from traditional and new markets, IOC re-launched the CEP that will increase capacity from 18 million tonnes of iron ore concentrate per year to 23 million tonnes. The first stage of the CEP, comprising the construction of a new primary ore crusher, a 6km overland conveyor and a fourth autogenous grinding line to increase primary processing capacity, is being commissioned and will ramp up towards full production in 2013.

The second stage involves the addition of two new spiral lines to the gravity separation circuit which was being delivered to operations from late 2012. This is planned to be followed by the installation of a new magnetite grinding and processing circuit scheduled for commissioning by the end of 2013.

Further proposed expansions are being progressed through study stages.

During 2012, the Simandou iron ore project in Guinea (covered on page 27) moved within Diamonds & Minerals, as it remains the responsibility of that group s chief executive, Alan Davies, appointed in September.

Outlook

Market softening since 2011 was a result of destocking following lower than expected Chinese steel demand, which in turn led to the final quarter rebound to levels above US$120 per tonne, moving higher into the new year. With European and American economies still suffering poor growth conditions, the market will continue to show volatility in the short to medium term.

Notwithstanding this volatility, Rio Tinto is confident of the strength of the long-term demand outlook for iron ore. Increasing global wealth is leading to billions of people moving through steel intensive phases of development. Global steel demand is expected to grow at two per cent per annum to 2050, driven by China out to 2030, with India and other South East Asian countries offsetting a potential flattening in Chinese demand growth thereafter.

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Business Support & Operations

At the end of 2012*, the Business Support & Operations (BS&O) group comprised Rio Tinto s Exploration business (see below), as well as Business Evaluation, Economics & Markets, Group Risk, Global Business Services (Information Systems & Technology, Procurement, Shared Services and Group Property), Rio Tinto Japan and Rio Tinto Singapore Holdings. From an administrative point of view, the Group Audit & Assurance function sat within BS&O, but operates independently of management under a mandate approved by the Audit and Sustainability committees. (see pages 75 and 77).

Pacific Aluminium and Other Aluminium were also part of BS&O; these comprise non-core bauxite, alumina and aluminium assets that, in 2011, Rio Tinto announced its intention to divest or close. In March 2012, the Lynemouth aluminium smelter in the UK was closed and is currently being decommissioned. In December, Lynemouth Power Station was sold to German energy company RWE. During 2012, Rio Tinto sold the Specialty Alumina business (four plants in France and Germany) to funds affiliated to H.I.G., and Alcan Cable which has operations in North America and China to General Cable.

In 2012, BS&O contributed 41 per cent of Rio Tinto s total greenhouse gas (GHG) emissions, compared with 44 per cent in 2011. Pacific Aluminium accounted for 29 per cent of the Group s total GHG emissions in 2012, and Other Aluminium accounted for 11 per cent. BS&O s all injury frequency rate improved to 0.60 in 2012, from 0.69 in 2011.

Exploration

The Group has had a sustained commitment to exploration since 1946 and considers exploration to be one of its leading capabilities. Fundamental to the exploration strategy is a focus on Tier 1 resources: the largest, lowest-cost resources that are profitable at all parts of the commodity cycle. Established Group operations, such as Weipa, the Pilbara and Rössing, were Tier 1 greenfield discoveries by Rio Tinto where value is still being realised after more than 40 years of production.

The Exploration group conducts both greenfield and brownfield exploration programmes and also supports business development groups in evaluating merger and acquisition opportunities. Greenfield exploration aims to establish new operating business units, involving geographic or commodity diversification away from existing Group operations. Brownfield exploration is directed at sustaining or growing existing Group businesses.

This table shows Exploration s Tier 1 discoveries since 2002:

Year	Discovery	Commodity	Location
2002	Resolution	Copper	US
2004	Simandou	Iron ore	Guinea
2005	La Granja	Copper	Peru
2005	Caliwingina	Iron ore	Australia
2008	Sulawesi	Nickel	Indonesia
2008	Mutamba	Titanium	Mozambique
2009	Jadar	Lithium/ borates	Serbia

2011	Amargosa	Bauxite	Brazil

At the end of 2012, the Exploration group was active in 20 countries and assessing opportunities in several others for a range of commodities including iron ore, copper, bauxite, coking coal, nickel, potash, uranium and mineral sands. Exploration activities in China were conducted through CRTX, a newly established joint venture between Chinalco and Rio Tinto. Responsibility for diamond exploration projects in Africa, Canada and India was handed over to the Diamonds & Minerals group late in 2012.

Strategy and strategic priorities

The goal of Exploration is to create value for Rio Tinto through the discovery or acquisition of Tier 1 resources that can increase future value. To pass modern community, sustainability and investment hurdles, the exploration process can take ten to 20 years from target generation to development decisions. Exploration programmes are therefore prioritised

on a global basis so that only the most attractive opportunities are pursued. Priorities are determined in consultation with the product groups, with decisions driven not by location or choice of commodity but by the quality of each opportunity.

The Exploration group is organised geographically into regional multi-commodity teams, with head offices in London, Salt Lake City, Brisbane, Beijing and Singapore. This structure provides a global reach and a local presence that allows for effective community engagement and development of Rio Tinto s social licence to operate.

Safety

The Exploration group s all injury frequency rate improved from 1.52 at the end of 2011 to 1.41 at the end of 2012. Work to improve safety performance includes an ongoing safety diagnostic process to drive operational performance improvements through 2013.

Performance

An Order of Magnitude resource study programme over the Saskatchewan potash project in Canada (a joint venture with North Atlantic Potash Inc., a subsidiary of JSC Acron) neared completion. This phase of the resource study programme will be finalised during 2013, and accountability for the project will be handed over to the Diamonds & Minerals product group.

In the US an extensive drilling programme at Tamarack, Minnesota, has indicated potential for a major nickel-copper-precious metal resource. This will advance to an Order of Magnitude study in 2013.

Drilling at the Roughrider uranium project in Saskatchewan, Canada, has outlined extensions to the known mineralisation at the Far East Resource and ongoing exploration has identified new targets for follow-up.

In the brownfield environment, Exploration is close to completing Order of Magnitude studies over coking coal projects at Mt Robert, Elphinstone and Valeria in the Bowen Basin, Australia. Drilling at Goethite Bay and Carol Lake in the orbit of the Iron Ore Company of Canada identified potentially significant iron ore mineralisation with favourable metallurgical characteristics. In Namibia, a uranium mineralisation has been identified at Z20 on the Rössing mine lease and is being drilled out in greater detail.

Progress continued on the development of the VK1 airborne gravity gradiometer, with further test flying undertaken in 2012.

Gross cash expenditure on exploration and evaluation across all of Rio Tinto in 2012 was US$1,970 million, representing a US$533 million increase over 2011 gross expenditure of US$1,437 million (due to an increased share of evaluation costs at Oyu Tolgoi and ramp-up of a number of other evaluation projects). Gross expenditure was offset by US$494 million (pre-tax) proceeds from divestment of unrequired exploration assets. Of the 2012 total spend, US$234 million related to global Exploration group activity covering nine commodities across a range of greenfield and brownfield environments.

Outlook

In 2013, the Exploration group will be active in at least 20 countries exploring for a range of commodities in a variety of greenfield and brownfield environments. Maintaining a robust exploration pipeline by identifying and securing access to the best-quality opportunities will be a key enabler of long-term success and there will be particular focus on project generation in a number of key environments.

For 2013 the list of projects moving towards potential discovery includes:

Project	Commodity	Country	Stage
Bowen Basin	Coking coal	Australia	Order of Magnitude
Saskatchewan	Potash	Canada	Order of Magnitude
Amargosa orbit	Bauxite	Brazil	Project of Merit
Sanxai	Bauxite	Laos	Project of Merit
Tamarack	Nickel	US	Order of Magnitude

* As at 1 March 2013, BS&O was restructured, and its constituent businesses and functions now report into the chief financial officer, and the Organisational Resources and Legal, External & Regulatory Affairs functions.

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Technology & Innovation

Rio Tinto s Technology & Innovation group (T&I) collectively seeks to maximise total shareholder value by partnering with the business to provide technical insights in operational improvements, technical assurance, project delivery, and innovation. T&I s focus is on creating sustainable value by embedding fundamental changes in the way Rio Tinto operates.

T&I s gross cost in 2012 was US$415 million, compared with US$343 million in 2011 and US$213 million in 2010.

The total number of employees in T&I increased from 925 at year end 2011 to 1,031 at year end 2012.

Strategy and strategic priorities

T&I s strategy is to:

- Maintain and promote a safe working environment.
- Continue to embed operational improvements in business units.
- Maximise the contribution of technology to the Group s strategy of maximising shareholder value.
- Deploy technology solutions that increase value.
- Design and build valuable new investment projects.
- Position the Group to unlock orebodies that require innovative mining solutions.

Safety

T&I is committed to the safe operation of its facilities and to employee safety. The all injury frequency rate for T&I in 2012 was 1.57 compared to 2.57 in 2011. The improvement in the rate was primarily attributed to improvements in existing safety efforts as well as the addition of the Rio Tinto Alcan Major Projects group to T&I Project Development and Implementation.

Performance

Innovation

Innovation is the research and development group within T&I. Its focus is on developing radically innovative technologies that can address the significant challenges facing the mining industry and drive increased production,

efficiency and safety.

While Rio Tinto as a whole looks at continuous improvement, Innovation is focused on step-change technologies, including the Mine of the Future™ programme. The Mine of the Future™ programme is not a single mine site; it is an approach used across Rio Tinto to find advanced ways to find, extract, and process minerals from deep within the Earth while reducing environmental impacts and further improving safety.

The wealth of technical and project expertise within Innovation is leveraged through a network of key partnerships with organisations and institutions around the world providing a vast and interconnected group of world-class experts to generate solutions.

The output of this work is protected by an intense focus on competitive advantage and developing tailored intellectual property protection strategies for each programme of work.

Mineral Technology Services

Mineral Technology Services (MTS) comprises a team of technology professionals based in seven offices in North America, Australia, South Africa and the UK, who partner with Rio Tinto s business units in the delivery of large, measureable increases in earnings and value. MTS provides technical service in the areas of geology, mining, mineral processing, geotechnics, hydrometallurgy, process control and environmental management.

A key area of focus for MTS continues to be the Improving Performance Together programme launched in 2005. In 2012 the focus was aligning the work in processing, asset management and mining to provide support across the entire value chain with a focus on targeting the highest priorities for throughput, recovery and operating performance.

Mining and Asset Management Centre

The Asset Management Centre provides strategic direction on the effective selection and utilisation of the Group s equipment for mining and processing. Working with businesses, the centre supports asset improvement initiatives through the use of global metrics and benchmarking, standards and guidelines. The work also includes developing capability through competency frameworks and formal training to support sustainable improvement and standard business processes with fit-for-purpose technical operating systems.

The focus of the Surface Mining team is to establish leading practice and develop, share and implement Group-wide solutions in core mining production processes. Other Surface Mining initiatives include payload management, load and haul efficiency improvements, increased orebody recovery, improved stockpile management, drill and blast, and off-road tyre demand reduction.

Mining Technology also includes a Strategic Production Planning (SPP) team that works with business units to develop comprehensive plans and valuations of strategic development options. Results from SPP provide a logical resource development framework for more detailed studies and investment decision-making.

Project Development & Implementation

Project Development & Implementation (PDI) is responsible for the implementation and delivery of major capital projects. PDI is made up of a centralised Project Management Office (PMO) and Project Delivery Hubs which are aligned by geographic location or commodity. The PMO is responsible for developing, promoting and supporting the implementation of the processes, standards and tools to achieve repeatable project success. The hubs are responsible for the delivery of major capital projects in partnership with product groups and business units.

PDI is delivering a significant proportion of Rio Tinto s major projects within a newly developed Capital Projects Framework which is shaped around four key elements project portfolio planning and reporting, project governance, practices, and people.

Technical Evaluation Group

The Technical Evaluation Group (TEG) is a team of internal professionals responsible for rigorously reviewing all major project proposals to ensure Rio Tinto s Investment Committee is provided with independent technical assessments to support its decision-making.

Underground Technology Centre

The objective of the Underground Technology Centre is to create and develop a world-class team in technical aspects of underground mining that will provide Rio Tinto with a competitive advantage. The centre partners with the product groups on the technical aspects of design, construction and operation, including the delivery of fit-for-purpose technology.

Outlook

T&I will continue to maintain a culture that makes safety and safety improvements the highest priority. To support the business where technical expertise and external networks will have the largest benefit to Rio Tinto and its shareholders, T&I s focus in 2013 will be on four main areas: partnering with product groups and functions on operational improvement, the safe and efficient development and implementation of projects, the pursuit of the Mine of the Future™ programme and the development of innovative alliances and relationships, and technical assurance all of which will create competitive advantage for the Group. T&I is reviewing the Group s approach to due diligence and technical assurance processes.

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Financial review

2012 financial performance compared with 2011

In order to provide additional insight into the performance of our business, Rio Tinto presents underlying earnings.

2012 underlying earnings of US$9,303 million and net loss of US$2,990 million were US$6,246 million below and US$8,816 million below the comparable measures for 2011. The principal factors explaining the movements are set out in the table below.

Changes from 2011 to 2012	US$m	Underlying earnings US$m	Net earnings US$m
2011		15,549	5,826
Prices	(5,315)		
Exchange rates	154		
Volume increases	634		
Volume declines	(943)		
General inflation and energy	(270)		
Other cash costs	(304)		
Exploration and evaluation costs (including disposals of undeveloped projects)	80		
Non cash/interest/tax/other	(282)		
Total changes in underlying earnings[(a)]		(6,246)	(6,246)
Increase in impairment charges			(5,070)
Movement in gains and losses on consolidation and disposal of interests in businesses			660
Movement in exchange differences and gains on derivatives			610
Recognition of deferred tax asset following introduction of MRRT			1,130
Other movements			100
2012		9,303	(2,990)

(a) See note 2 on page 160 of the 2012 financial statements for a reconciliation of underlying earnings to net earnings.

Prices

The effect of price movements on all major commodities in 2012 was to decrease underlying earnings by US$5,315 million compared with 2011. Average prices declined from record highs experienced in 2011 for nearly all of Rio Tinto s major commodities, with the exception of gold which was up six per cent on 2011, and minerals (mainly borates and titanium dioxide feedstocks).

The average Platts price for 62 per cent Pilbara fines declined by 24 per cent compared with 2011. Copper prices were down ten per cent, aluminium prices averaged 16 per cent lower and molybdenum was 17 per cent lower.

Commodity prices and other drivers of sales revenue of individual product groups are discussed further in the section on pages 37 to 38.

Exchange rates

Compared with 2011, on average, the US dollar depreciated by one per cent against the Australian dollar but strengthened by one per cent against the Canadian dollar, by seven per cent against the euro and by 14 per cent against the South African Rand. The effect of all currency movements was to increase underlying earnings relative to 2011 by US$154 million.

Volumes

Volume increases enhanced earnings by US$634 million compared with 2011. These were achieved primarily in iron ore, where sales volumes rose three per cent due to increased capacity at the Pilbara ports, and at Escondida in line with higher ore grades. Volume declines lowered earnings by US$943 million compared with 2011, reflecting lower mill throughput and gold grades at Kennecott Utah Copper and no metal share from Grasberg.

Energy, other cash costs and exploration

Industry-wide cost pressures continued during 2012, in particular at some of the mining hotspots where Rio Tinto has significant operations, such as New South Wales, Queensland and the Pilbara region of Western Australia. Rio Tinto has a clear focus on cost control and is targeting more than US$5 billion of cumulative cash cost savings over the next two years.

Higher energy costs across the Group lowered underlying earnings by US$23 million compared with 2011. In 2012, many operations were impacted by higher fuel, diesel and power rates.

Higher other cash costs during 2012 decreased underlying earnings by US$304 million compared with 2011 due to a combination of fixed production cost inefficiencies associated with lower volumes due to grade, higher maintenance costs and, costs associated with operational readiness for the Pilbara expansion of iron ore production.

In 2012, evaluation work progressed at many of the Group s projects including the Resolution and La Granja copper projects and the Simandou iron ore project. Development costs relating to Simandou have been capitalised from 1 April 2012. During 2012, Rio Tinto divested various exploration properties, including interests in Extract Resources and Kalahari Minerals, resulting in net gains after tax on disposal of US$342 million for the Group. The impact from movements in exploration and evaluation expenditure net of gains realised from divestments was to increase underlying earnings by US$80 million compared with 2011.

Finance costs, tax, other

The effective corporate income tax rate on underlying earnings, excluding equity accounted units, was 30 per cent, unchanged from 2011. As in 2011, the effective corporate tax on net earnings, excluding equity accounted units, is significantly impacted by the impairment of goodwill, which is non-deductible for tax purposes.

Group net finance charges were US$124 million lower than in 2011, mainly reflecting an increase in capitalised interest.

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2011 financial performance compared with 2010

2011 underlying earnings of US$15,549 million and net earnings of US$5,826 million were US$1,562 million above and US$8,412 million below the comparable measures for 2010. The principal factors explaining the movements are set out in the table below.

Changes from 2010 to 2011	US$m	Underlying earnings US$m	Net earnings US$m
2010		13,987	14,238
Prices	6,675		
Exchange rates	(998)		
Volumes	(502)		
General inflation	(376)		
Energy	(249)		
Other cash costs	(2,096)		
Exploration and evaluation costs (including disposals of undeveloped projects)	(796)		
Non cash/interest/tax/other	(96)		
Total changes in underlying earnings[(a)]		1,562	1,562
Increase in impairment charges			(8,551)
Absence of gain on consolidation of Oyu Tolgoi LLC			(445)
Lower profits on disposal of interests in businesses			(7)
Lower loss after tax from discontinued operations			87
Deferred tax asset write-off			(342)
Movements in exchange differences and gain on derivatives			(486)
Other movements			(230)
2011		15,549	5,826

(a) See note 2 on page 160 of the 2012 financial statements for a reconciliation of underlying earnings to net earnings.

Prices

The effect of price movements on all major commodities in 2011 was to increase underlying earnings by US$6,675 million compared with 2010. Prices improved for nearly all of Rio Tinto s major commodities: copper prices were up 18 per cent and gold prices were up 29 per cent. Although aluminium prices averaged ten per cent higher than 2010 they fell back sharply in the last quarter of the year. Spot iron ore prices traded 15 per cent above 2010 levels but ended the year 25 per cent below where they started, given price weakness in the fourth quarter driven by Chinese destocking.

Exchange rates

There was significant movement in the US dollar in 2011 relative to the currencies in which Rio Tinto incurs the majority of its costs. Compared with 2010, on average, the US dollar weakened by 12 per cent against the Australian dollar and by four per cent against the Canadian dollar. The effect of all currency movements was to decrease underlying earnings relative to 2010 by US$998 million.

Volumes

Lower volumes were primarily driven by lower copper and gold grades at Kennecott Utah Copper, Escondida and Grasberg. This was partly offset by higher iron ore volumes in line with the Group s increased capacity at its Pilbara ports, despite the adverse weather conditions in the first half of the year. The net impact of volume movements was a decrease in underlying earnings of US$502 million relative to 2010.

Energy, other cash costs and exploration

Higher energy costs across the Group reduced underlying earnings by US$249 million compared with 2010. 2011 was impacted by the higher fuel, diesel and power rates affecting most operations. In 2010, Aluminium operations in the Saguenay were impacted by low snow and rainfall leading to reduced power generation and the need to purchase additional power from the provincial utility.

Higher other cash costs during 2011 decreased underlying earnings by US$2,096 million compared with 2010 due to a combination of higher input prices, fixed production cost inefficiencies associated with lower volumes due to weather events and grade, higher maintenance costs and costs associated with operational readiness.

Rising raw material and input prices decreased underlying earnings by US$514 million compared with 2010, particularly relating to coke, pitch and caustic prices in the aluminium businesses. In addition, underlying earnings were impacted by unit cost increases due to lower volumes caused by severe weather conditions (US$261 million) and lower grades (US$445 million), notably in the copper business. Additional costs of US$546 million were associated with a full year of operations at new mines and operational readiness preparations particularly in the Pilbara and Coal Australia. Other production and one-off costs lowered earnings by a further US$330 million.

In 2011, evaluation work progressed at many of the Group s projects, including the Resolution and La Granja copper projects and the Simandou iron ore project. Two undeveloped coal properties were divested in 2010 resulting in a US$229 million gain on disposal. The impact from higher exploration and evaluation expenditure combined with lower gains realised from divestments was to lower underlying earnings by US$796 million compared with 2010.

Finance costs, tax, other

The effective corporate income tax rate on underlying earnings, excluding equity accounted units, was 30.0 per cent compared with 27.9 per cent in 2010. The effective corporate income tax rate on net earnings, excluding equity accounted units was 49.1 per cent compared with 27.3 per cent in 2010. The increase was due to the goodwill impairment charge being non-deductible for tax purposes.

Group net finance charges were US$245 million lower than in 2010, mainly reflecting an increase in capitalised interest in 2011.

Exclusions from underlying earnings 2010-2012

Earnings contributions from Group businesses and business segments are based on underlying earnings. Amounts excluded from net earnings in arriving at underlying earnings are summarised in the discussion of year-on-year results below.

	2012	2011	2010
	US$m	US$m	US$m
Impairment charges net of reversal	**(14,360)**	(9,290)	(739)

Gains and losses on consolidation and disposal of interests in businesses	**827**	167	619
Loss after tax from discontinued operations	**(7)**	(10)	(97)
Exchange differences and gains/ (losses) on derivatives	**553**	(57)	429
Deferred tax asset write-off	**(134)**	(342)	
MRRT	**1,130**		
Other exclusions	**(302)**	(191)	39
Total excluded in arriving at underlying earnings	**(12,293)**	(9,723)	251

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Financial review continued

2012

A pre-tax impairment charge of US$17,194 million, US$14,360 million post-tax, was recognised in 2012, of which US$12,643 million pre-tax, US$11,000 million post-tax, related to the Group s aluminium businesses (including Pacific Aluminium). The valuation of Rio Tinto s aluminium businesses for impairment testing is based on the Group s assessment of fair value less costs to sell (FVLCS). During 2012, aluminium prices deteriorated further with strong Australian and Canadian currencies, high energy and raw material costs, and high volumes of London Metal Exchange (LME) inventory continuing to exert pressure on current market values in the industry. As in 2011, given the prevailing conditions in the aluminium market, FVLCS does not include the full value of the Group s planned improvements in cash margins from its value enhancement programmes.

A post-tax impairment charge of US$2,860 million was also recognised relating to Rio Tinto Coal Mozambique (RTCM). The development of infrastructure in Mozambique to support the undeveloped coal asset is more challenging than initially anticipated which, combined with a downward revision to estimates of recoverable coking coal volumes, has led to a reassessment of the overall scale and ramp-up schedule of RTCM and consequently to the assessment of its FVLCS.

In addition, there were net post-tax impairments of US$460 million relating to the Group s Argyle diamond mine and US$40 million in other net impairments. An impairment review of Argyle was triggered by the announcement during the year of the Diamonds strategic review as well as changes to the forecast ramp-up date for the underground mine.

Movements in gains and losses on consolidation and disposal of interests in businesses relate primarily to a gain of US$965 million arising on consolidation of Richards Bay Minerals (RBM) and a US$167 million loss on consolidation of Turquoise Hill Resources Ltd.

A deferred tax asset of US$1,043 million was recognised in the first half of 2012 following introduction of the Minerals Resource Rent Tax (MRRT) on 1 July 2012. At 31 December 2012, this amount was US$1,130 million. The legislation, which applies to companies with iron ore and coal operations in Australia, allows a deduction against future MRRT liability based on the market value of past investments in these mining assets as at 1 May 2010. Accordingly, a deferred tax asset has been recognised to reflect the deductibility for MRRT purposes of the market value of these mining assets to the extent recovery is probable.

2011

A post-tax impairment charge of US$9,290 million was recognised in 2011, of which US$8,855 million related to the Group s aluminium businesses. Valuation of Rio Tinto s aluminium businesses for impairment testing was based on an assessment of FVLCS derived from discounted future cash flows. The impairment was largely a result of the economic environment and related market volatility in aluminium prices in the second half of 2011 leading to declines in market values for aluminium assets.

In addition, there were net post-tax impairments of US$344 million relating to the Group s diamond business and US$91 million in other net impairments.

Profits on the disposal of businesses in 2011 related principally to the sale of the Group s talc business and Colowyo mine.

The deferred tax asset write-off in 2011 of US$342 million followed a change in French legislation which restricted the utilisation of tax losses.

2010

Rio Tinto consolidated Oyu Tolgoi LLC on 15 December 2010 following the signing of a new agreement with Ivanhoe Mines. The US$445 million gain arising on consolidation represented the excess of the fair value ascribed to the Group s indirect share of the assets and liabilities of Oyu Tolgoi LLC over the historic cost of acquiring that share through its investment in Ivanhoe Mines.

The 2010 post-tax impairment charge of US$739 million related mainly to the Alcan Engineered Products businesses. The Group completed the divestment of 61 per cent of Alcan Engineered Products to Apollo Global Management, LLC and the Fonds Stratégique d Investissement on 4 January 2011.

Profits on the disposal of businesses in 2010 relate primarily to the sale of the Group s remaining 48 per cent interest in Cloud Peak Energy Inc.

Loss after tax from discontinued operations of US$97 million (inclusive of divestment costs) related to the completion of the disposal of Alcan Packaging global Pharmaceuticals, global Tobacco, Food Europe and Food Asia divisions to Amcor on 1 February 2010, and the Alcan Packaging Food Americas division to Bemis Company Inc. on 1 March 2010.

Net earnings and underlying earnings

Both net earnings and underlying earnings deal with amounts attributable to the owners of Rio Tinto. However, IFRS requires that the profit for the period reported in the income statement should also include earnings attributable to non-controlling interests in subsidiaries. The profit for the period is reconciled to net earnings and to underlying earnings as follows:

	2012 US$m	2011 US$m	2010 US$m
(Loss)/profit from continuing operations	**(2,997)**	6,775	15,195
Loss after tax from discontinued operations	**(7)**	(10)	(97)
(Loss)/profit for the year	**(3,004)**	6,765	15,098
Attributable to non-controlling interests	**14**	(939)	(860)
Attributable to owners of			
Rio Tinto (net (loss)/earnings)	**(2,990)**	5,826	14,238
Exclusions from underlying earnings	**12,293**	9,723	(251)
Underlying earnings attributable to owners of Rio Tinto	**9,303**	15,549	13,987

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Group financial results by product group 2012-2010

	2012 US$m	Restated[a] 2011 US$m	Restated[a] 2010 US$m
Iron Ore	**9,242**	13,267	10,313
Aluminium	**3**	442	611
Copper	**1,092**	1,932	2,530
Energy	**283**	1,074	1,187
Diamonds & Minerals	**119**	(162)	204
Other operations	**(528)**	(120)	237
Inter-segment transactions	**(8)**	40	(15)
Other items	**(698)**	(593)	(554)
Exploration and evaluation	**(97)**	(102)	(52)
Net interest	**(105)**	(229)	(474)
Group underlying earnings	**9,303**	15,549	13,987
Exclusions from underlying earnings	**(12,293)**	(9,723)	251
Net (loss)/earnings	**(2,990)**	5,826	14,238

(a) Following changes to Rio Tinto s management announced in July 2012, the Simandou iron ore project and Dampier Salt operations, previously reported within Iron Ore, are now reported within Diamonds & Minerals to reflect management responsibility. Amounts in prior periods have been reclassified accordingly.

Sales revenue

Prices

Commodity	Source	Unit	2012 US$	2011 US$	2010 US$
Average prices					
Iron ore 62% Fines FOB	Platts/Baltic Exchange Freight Rate	dmtu[a]	**1.96**	2.57	2.18
Aluminium	LME[b]	Tonne	**2,018**	2,395	2,173
Copper	LME	Pound	**3.61**	4.00	3.40
Gold	LBMA	Ounce	**1,669**	1,571	1,222
Molybdenum	Metals Week: quote for dealer oxide price	Pound	**14**	16	16
Closing prices (quoted commodities only)					

Aluminium	Tonne	**2,041**	1,970	2,459
Copper	Pound	**3.65**	3.43	4.44
Gold	Ounce	**1,675**	1,575	1,410
Molybdenum	Pound	**13**	16	16

(a) Dry metric tonne unit.
(b) LME cash price.
The above table shows published prices for Rio Tinto s commodities for the last three years where these are publicly available, and where there is a reasonable degree of correlation between the published prices and Rio Tinto s realised prices. The prices set out in the table are the averages for each of the calendar years 2010, 2011 and 2012.

The Group s sales revenue will not necessarily move in line with these published prices for a number of reasons which are discussed below.

The discussion of revenues below relates to the Group s gross revenue from sales of commodities, including its share of the revenue of equity accounted units (after adjusting for sales to subsidiaries), as included in the financial information by business unit.

Iron Ore

2012 sales revenue compared with 2011

Gross sales revenue for the Iron Ore group decreased by 18 per cent in 2012 compared with 2011 reflecting lower iron ore prices partly offset by higher volumes. Sales increased quarter-on-quarter throughout 2012, resulting in record annual sales volumes despite significant volatility in the marketplace.

In 2012, the Group continued to transition its sales portfolio to pricing periods that more closely reflect the market at the time of shipment. Approximately 30 per cent of sales were priced with reference to a quarterly average index set at the prior quarter s average lagged by one month. The remainder was sold via pricing mechanisms priced closer to the index price at the time of shipment such as current quarter average, current month average or spot index prices. Index prices are adjusted for product characteristics and iron and moisture content.

2011 sales revenue compared with 2010

Gross sales revenue for the Iron Ore group increased by 25 per cent in 2011 compared with 2010, reflecting higher prices and increased volumes. In 2011, Rio Tinto s Pilbara ports operated at above annualised capacity rates and shipped record volumes of 225 million tonnes for the full year.

For the first three quarters of 2011, Rio Tinto priced its iron ore contracts on a quarterly basis with a four-month lag. From 1 October 2011, the Group transitioned to a more diversified sales contract portfolio. In the fourth quarter, approximately 40 per cent of sales were priced with a four-month lag. The remainder was sold on a shorter-term price basis. Index prices are adjusted for product characteristics and iron and moisture content.

Aluminium

2012 sales revenue compared with 2011

The Aluminium group s sales revenues are from aluminium and related products such as alumina and bauxite. Gross sales revenue for Rio Tinto Alcan decreased by 17 per cent compared with 2011, due to the combined effects of lower market prices and reduced production at Alma, offset by the Yarwun refinery expansion.

The 2012 cash LME aluminium price averaged US$2,018 per tonne, a decrease of 16 per cent on 2011. The impact of lower prices on Group sales revenue is partially offset by higher market premia as a significant portion of aluminium inventories remain locked in financing deals and are therefore unavailable for physical delivery. As a result, regional premia for physical delivery of aluminium were at record levels and on average higher than in 2011.

2011 sales revenue compared with 2010

Gross sales revenue in 2011 for the group increased by seven per cent compared with 2010, driven by higher exchange-traded aluminium prices offset by the effects of adverse weather conditions in the early part of 2011, mainly in Queensland, Australia.

The 2011 average aluminium price was US$2,395 per tonne, an increase of ten per cent on 2010. In the second half, macroeconomic concerns took hold, particularly the unfolding debt crisis in Europe, thereby reducing prices to below US$2,000 per tonne towards the end of 2011.

Copper

2012 sales revenue compared with 2011

Gross sales revenue for the Copper group decreased by 13 per cent in 2012 compared with 2011. This reflected the impact of lower prices and decreased volumes following lower mill throughput and an anticipated period of lower gold grades at Kennecott Utah Copper, and no metal share from Grasberg.

This was partly offset by increasing volumes from Escondida due to higher grades and improvements to the crushing and conveying circuit, and from Northparkes in line with a recovery in ore grades.

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Financial review continued

The Copper group also produces gold, silver and molybdenum as significant by-products. The average copper price in 2012 declined ten per cent compared with 2011 to 361 US cents per pound, gold increased six per cent to US$1,669 per ounce and molybdenum declined 17 per cent to US$13.60 per pound.

At 31 December 2012, the Group had an estimated 249 million pounds of copper sales that were provisionally priced at 360 US cents per pound. The final price of these sales will be determined during the first half of 2013.

2011 sales revenue compared with 2010

Gross sales revenue for the Copper group decreased by two per cent in 2011 compared with 2010. This was a reflection of reduced volumes due to lower grades at Kennecott Utah Copper, Escondida and Grasberg. A work stoppage which halted operations for 15 days at Escondida and industrial action at Grasberg also impacted 2011 production levels.

The average copper price increased 18 per cent to 400 US cents per pound, gold increased 29 per cent to US$1,571 per ounce and molybdenum was flat year-on-year.

At the end of 2011, the Group had an estimated 181 million pounds of copper sales that were provisionally priced at 344 US cents per pound.

Energy

2012 sales revenue compared with 2011

Gross sales revenue in 2012 for the Energy group decreased by 17 per cent compared with 2011 as a result of lower prices.

2012 was a difficult year in coal and uranium markets as supply and demand fundamentals struggled to balance in the face of global economic uncertainty, with prices declining across most of the year. The coking coal spot price reached a low of US$140 per tonne in the third quarter of 2012 after peaking at US$366 per tonne in early 2011. Similarly, the thermal coal spot price reached a low of US$80 per tonne in the third quarter of 2012 after peaking at US$130 per tonne in early 2011. The uranium spot price reached a low of US$42 per pound in October 2012, down US$10 from the same time in 2011.

A significant proportion of Rio Tinto s coal production is sold under long-term contracts. In Australia, the prices applying to sales under the long-term contracts are generally renegotiated annually for thermal coal; but prices are fixed at different times of the year and on a variety of bases. Coking coal prices for 2012 have been negotiated on a quarterly basis. For these reasons, average realised prices will not necessarily reflect the movements in any of the publicly-quoted prices. Moreover, there are significant product specification differences between mines. Sales volumes will vary during the year and the timing of shipments will also result in differences between average realised prices and published prices.

2011 sales revenue compared with 2010

Gross sales revenue in 2011 for the Energy group increased by 30 per cent compared with 2010 as a result of an improved global pricing environment, partially offset by lower volumes following adverse weather conditions in the first half of 2011.

After achieving near-record prices for thermal coal in January 2011, following Indonesian and Australian supply side disruptions, global markets for thermal and coking coal experienced broad price declines throughout the remainder of 2011. This decline reflected weaker global economic activity and strong supply growth. However, prices remained well supported.

Uranium declined 38 per cent year-on-year with substantially lower production at both Energy Resources of Australia and Rössing Uranium in Namibia.

Diamonds & Minerals

2012 sales revenue compared with 2011

Gross sales revenue increased by 11 per cent in 2012 compared with 2011. This reflects higher prices for titanium dioxide feedstocks and the increase in ownership of RBM, partially offset by the divestment of the talc business on 1 August 2011.

Revenues for Rio Tinto Iron & Titanium (RTIT) increased 41 per cent year-on-year due to higher prices for titanium dioxide feedstocks and the RBM transaction in September 2012. The market for both titanium dioxide and zircon started the year strongly, although demand subsequently softened in the second half. RTIT continued to replace its multi-year sales contracts with alternative pricing mechanisms in 2012, increasing the exposure to market prices.

Despite weakening demand during the year, Rio Tinto Minerals achieved a one per cent improvement in refined borates revenues. In 2011, talc revenues of US$250 million were included in Rio Tinto Minerals.

Diamonds revenue was two per cent higher than 2011, as the effect of higher volumes was largely offset by lower prices.

Diamond prices realised by Rio Tinto depend on the size and quality of diamonds in the product mix.

2011 sales revenue compared with 2010

Gross sales revenue increased by five per cent in 2011 compared with 2010. The group benefited from higher prices due to improved market conditions across all products. This was offset by lower volumes primarily in the diamond business, following the transition to underground mining at Argyle and severe weather conditions.

Revenues for RTIT increased by 19 per cent compared with 2010 due to increasing titanium dioxide feedstock, zircon and metallic co-product prices and demand growth associated with urbanisation trends.

Rio Tinto Minerals achieved a five per cent improvement in refined borate revenues in 2011 through strong prices, product mix and steady Asian demand growth.

Rough diamond prices improved strongly in the first eight months of 2011 due to restocking in the US and continued growth in Chinese and Indian consumer markets. Despite some softening towards the end of the year, global rough diamond prices improved 24 per cent year-on-year, as a result of which Rio Tinto Diamonds revenue increased by seven per cent year-on-year, notwithstanding the impact of lower production volumes.

Cash flow

2012 compared with 2011

A full consolidated cash flow statement is contained in the 2012 financial statements.

Cash flows from operations, including dividends from equity accounted units, were US$16.5 billion, 40 per cent lower than 2011, primarily as a consequence of lower prices.

Purchase of property, plant and equipment and intangible assets rose to US$17.4 billion, an increase of US$5.1 billion from 2011. This included the continued expansion of the Pilbara iron ore mines and infrastructure to 290Mt/a in Western Australia, the construction of the Oyu Tolgoi copper-gold mine and concentrator in Mongolia, the modernisation of the Kitimat aluminium smelter in British Columbia, the extension and expansion of the Kestrel coking coal mine in Queensland and the continued underground development of the Argyle diamond mine in Western Australia.

Capital expenditure in 2012 included the impact of financial accounting reclassification for a number of items at Oyu Tolgoi from operating to capital expenditure. This had no impact on the overall project cost, which remains on target at US$6.2 billion. In addition, some spend in the Pilbara was brought forward, enabling the acceleration of first production from the expansion to the third quarter of 2013, without any increase to the overall project spend.

During 2012, the Group doubled its holding in RBM to 74 per cent through the acquisition of BHP Billiton s entire interests for US$1.7 billion.

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The Group received US$1.35 billion following completion of the agreement with Chalco to develop and operate the Simandou iron ore project in Guinea and US$0.9 billion from the Turquoise Hill Resources rights offering. These amounts have been recognised as proceeds from issue of equity to non-controlling interests in the cash flow statement.

Cash returns to shareholders totalled US$4.5 billion in 2012, comprising US$1.5 billion in share buy-backs with the completion of the Group s US$7 billion share buy-back programme in March 2012, and dividends of US$3.0 billion.

Dividend payments were US$0.8 billion higher than in 2011, reflecting a 34 per cent increase in the 2011 total dividend.

2011 compared with 2010

Cash flows from operations, including dividends from equity accounted units, were US$27.4 billion, 16 per cent higher than 2010, primarily as a consequence of higher prices. Tax paid in 2011 increased by 51 per cent to US$6.2 billion in line with higher taxable profits.

Purchase of property, plant and equipment and intangible assets accelerated in 2011 to US$12.3 billion, an increase of US$7.7 billion from 2010. This included the continued expansion of the Pilbara iron ore mines, development of the Oyu Tolgoi copper-gold project in Mongolia, expansion of the Yarwun alumina refinery in Queensland, extension and expansion of the Kestrel coking coal mine in Queensland, and the underground development of the Argyle diamond mine in Western Australia. A US$700 million payment to the Government of Guinea following signing of the agreement for the Simandou iron ore project was recognised as capital expenditure.

In addition, the Group invested a total of US$6.4 billion (net of cash acquired) in acquiring and increasing interests in businesses. The Group completed the acquisition of a 100 per cent interest in Riversdale Mining Limited for a total of US$3.7 billion and, in 2011, paid US$0.5 billion to acquire an 88 per cent interest in Hathor Exploration Limited. Rio Tinto increased its interest in Ivanhoe Mines from 40.3 per cent to 49 per cent and participated in Ivanhoe s rights offering for a total consideration of US$1.9 billion.

During 2011, the Group bought back 91 million Rio Tinto plc shares at a total cost of US$5.5 billion.

Dividends paid in 2011 of US$2.2 billion were 27 per cent higher than 2010 reflecting the increase in the 2010 final dividend and the subsequent 2011 interim dividend.

Statement of financial position

Net debt increased from US$8.5 billion at 31 December 2011 to US$19.3 billion at 31 December 2012 as operating cash inflows were offset by outflows relating to capital expenditure, acquisitions, the increase in the dividend and the share buy-back programme. Net debt to total capital was 25 per cent at 31 December 2012 (2011: 12 per cent) and interest cover was 13 times (2011: 27 times).

Adjusted total borrowings at 31 December 2012 were US$26.3 billion. The weighted average maturity of total borrowings was around nine years with the maximum nominal amount maturing in any one calendar year currently US$2.7 billion. At 31 December 2012, approximately two thirds of Rio Tinto s adjusted total borrowings were at fixed interest rates. In 2012, Rio Tinto issued US$7.9 billion of fixed rate bonds in US dollars, euros and sterling, with maturities ranging from three to 30 years, a weighted average USD fixed rate equivalent coupon of approximately 3.6 per cent and a weighted average maturity of around 12 years. Cash and cash equivalents at 31 December 2012 were US$7.1 billion.

Group net debt is stated net of the impact of certain funding arrangements relating to equity accounted units (EAU) and partially-owned subsidiaries (EAU funded balances). This avoids showing borrowings twice in the net debt disclosure, where funding has been provided to an EAU by the Group and subsequently loaned by the EAU to a consolidated Group subsidiary.

Total provisions have decreased by US$2.6 billion; this is largely the result of a Group-wide review of estimated liabilities for close down, restoration and environmental remediation. The review included a re-evaluation of the methodology for estimating risk free discount rates in light of the impact of fiscal intervention and, where appropriate, probability weighting for the different remediation or closure outcomes which could realistically arise. Net pension provisions have increased by approximately US$244 million compared to 2011.

Financial instruments and risk management

The Group s policies with regard to financial instruments and risk management are clearly defined and consistently applied. They are a fundamental part of the Group s long-term strategy covering areas such as foreign exchange risk, interest rate risk, commodity price risk, credit risk, liquidity risk and capital management. Further details of our financial instruments and risk management are disclosed in note 31 Financial instruments and risk management to the 2012 financial statements.

The Group s 2012 Annual report and financial statements show the full extent of its financial commitments, including debt. The risk factor to which the Group is subject are summarised on pages 10 to 12. The effectiveness of internal control procedures continues to be a high priority in the Rio Tinto Group. The board s statement on internal control is set out in the Risk management section.

Dividend

The 2012 interim dividend was 72.50 US cents (2011: 54.00 US cents) and the final dividend is determined as 94.50 US cents (2011: 91.00 US cents). Dividends paid on Rio Tinto plc and Rio Tinto Limited shares are equalised on a net cash basis; that is without taking into account any associated tax credits. Dividends are determined in US dollars. Rio Tinto plc dividends are paid and declared in pounds sterling and Rio Tinto Limited dividends are declared and paid in Australian dollars, converted at exchange rates on 12 February 2013. Details relating to the dividend policy, determination and payment of dividends in sterling, Australian dollars and other currencies and on the payment of dividends to holders of American Depositary Receipts (ADRs) are included in the Shareholder information section.

Capital and liquidity risk management

The Group s total capital is defined as equity attributable to owners of Rio Tinto plus equity attributable to non-controlling interests and net debt, as shown below:

Total capital

	2012	2011
	US$m	US$m
Equity attributable to owners of Rio Tinto	**46,865**	52,539
Equity attributable to non-controlling interests	**11,156**	6,669
Net debt (note 25)	**19,261**	8,451
Total capital	**77,282**	67,659

The board s overriding objective when managing capital is to safeguard the business as a going concern whilst maximising returns for the Group s shareholders. In practice, this involves regular reviews by the board and senior management. These reviews take into account the Group s strategic priorities, economic and business conditions and opportunities that are identified to invest across all points of the commodities cycle, and the focus on its progressive dividend policy. The resulting capital structure provides the Group with a high degree of financial flexibility at a low cost of capital.

The Group s major capital and evaluation projects are listed in the Capital projects section on page 44.

Net debt at 31 December 2012 was made up principally from adjusted total borrowings of US$26.3 billion, offset by US$7.1 billion in cash and cash equivalents. As part of the Group s capital management programme, a share buy-back of US$7 billion was completed by 31 March 2012.

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Financial review continued

We expect that contractual commitments for expenditure, together with other expenditure and liquidity requirements will be met from internal cash flow and, to the extent necessary, from the existing facilities described in note 31 Financial instruments and risk management , part (v) to the 2012 financial statements. This note also provides further details of our liquidity and capital risk management.

Treasury management and financial instruments

Details of our Treasury management and financial instruments are contained within the introductory paragraphs of note 31 Financial instruments and risk management , to the 2012 financial statements.

Foreign exchange

The following sensitivities give the estimated effect on net and underlying earnings assuming that each exchange rate moved in isolation. The relationship between currencies and commodity prices is a complex one and movements in exchange rates can cause movements in commodity prices and vice versa. Where the functional currency of an operation is that of a country for which production of commodities is an important feature of the economy, such as the Australian dollar, there is a certain degree of natural protection against cyclical fluctuations, in that the currency tends to be weak, reducing costs in US dollar terms, when commodity prices are low, and vice versa.

Earnings sensitivities exchange rates

	Average exchange rate for 2012	Effect on net and underlying earnings of 10% change in full year average +/- US$m
	US cents	
Australian dollar	**104**	892
Canadian dollar	**100**	272
Euro	**129**	17
Chilean peso	**US$1= 486 pesos**	27
New Zealand dollar	**81**	27
South African rand	**12**	78
UK sterling	**158**	

The exchange rate sensitivities quoted above include the effect on net operating costs of movements in exchange rates but exclude the effect of the revaluation of foreign currency financial assets and liabilities. They should therefore be used with caution.

Further details of our exposure to foreign currency fluctuations and currency derivatives, and our approach to currency hedging, are contained within note 31 Financial risk management , part A(b)(i), to the 2012 financial statements.

Interest rates

Details of our exposure to interest rate fluctuations are contained within note 31 Financial risk management , to the 2012 financial statements.

Commodity prices

The approximate effect on the Group s underlying and net earnings of a ten per cent change from the full year average market price in 2012 for the following products would be:

Earnings sensitivities commodity prices

	Unit	**Average market price for 2012 US$**	Effect on underlying and net earnings of 10% change in full year average +/- US$m
Iron ore	dmtu		1,573
Aluminium[a][b]	Tonne	**2,018**	384
Copper[a]	Pound	**3.61**	270
Gold	Ounce	**1,669**	42
Molybdenum	Pound	**14**	36
Coal	Tonne		59

(a) Excludes the impact of commodity derivatives.

(b) Excludes any impact on the non-core aluminium assets included in Other operations.

The sensitivities give the estimated impact on net earnings of changes in prices assuming that all other variables remain constant. These should be used with caution. As noted previously, the relationship between currencies and commodity prices is a complex one and changes in exchange rates can influence commodity prices and vice versa.

Further details of our exposure to commodity price fluctuations are contained within note 31 Financial instruments and risk management , to the 2012 financial statements.

Credit risks

Details of our exposure to credit risks relating to receivables, financial instruments and cash deposits, are contained within note 31 Financial instruments and risk management , to the 2012 financial statements.

Disposals and acquisitions

Information regarding disposals and acquisitions is provided in note 38 Purchases and sales of subsidiaries, joint ventures, associates and other interests in businesses , to the 2012 financial statements.

Critical accounting policies and estimates

Many of the amounts included in the financial statements involve the use of judgments and/or estimates. These judgments and estimates are based on management s best knowledge of the relevant facts and circumstances, having regard to previous experience, but actual results may differ from the amounts included in the financial statements.

Information about such judgments and estimates is contained in note 1 Principal accounting policies to the 2012 financial statements, and/or the other notes to the 2012 financial statements. The key areas are listed below.

Dual listed company reporting

Asset carrying values and the recoverability of goodwill

Asset lives

Ore reserve estimates

Close-down, restoration and clean-up obligations

Overburden removal costs

Deferred tax on fair value adjustments

Capitalisation of exploration and evaluation costs

Functional currency

Post-retirement benefits

Recoverability of potential deferred tax assets

Contingencies

Basis of consolidation

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Off balance sheet arrangements and contractual commitments

The table above presents information in relation to our material off balance sheet arrangements, principally contingent liabilities, commitments for capital expenditure and other expenditure, and commitments under operating leases at 31 December 2012. Information regarding the Group s pension commitments and funding arrangements is provided in note 46 Post retirement benefits to the 2012 financial statements. Information regarding the Group s close-down and restoration obligations is provided in note 27 Provisions including post retirement benefits to the 2012 financial statements.

We expect that these contractual commitments for expenditure, together with other expenditure and liquidity requirements, will be met from internal cash flow and, to the extent necessary, from the existing facilities.

At 31 December 2012	< 1 yr US$m	1-3 yrs US$m	3-5 yrs US$m	> 5 yrs US$m	**Total US$m**
Expenditure commitments in relation to:					
Operating leases	415	690	555	852	**2,512**
Other (capital commitments)	11,487	1,399	127	38	**13,051**
	11,902	2,089	682	890	**15,563**
Long-term debt and other financial obligations:					
Debt	2,199	4,425	3,396	16,328	**26,348**
Interest payments	1,072	1,848	1,668	6,891	**11,479**
Unconditional purchase obligations	2,700	4,749	4,279	12,822	**24,550**
Other	40	103	(8)	(62)	**73**
	6,011	11,125	9,335	35,979	**62,450**
Total	17,913	13,214	10,017	36,869	**78,013**

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Five year review

Selected financial data

The selected consolidated financial information below has been derived from the historical audited consolidated financial statements of the Rio Tinto Group. The selected consolidated financial data should be read in conjunction with, and qualified in their entirety by reference to, the 2012 financial statements and notes thereto. The financial statements as included on pages 139 to 223 have been prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board (IFRS) and conform to IFRS as adopted by the EU (EU IFRS).

Rio Tinto Group

Income Statement Data

For the years ending 31 December	**2012**	2011	2010	2009	2008
Amounts in accordance with IFRS	**US$m**	US$m	US$m	US$m	US$m
Consolidated sales revenue	**50,967**	60,537	55,171	40,262	52,861
Group operating (loss)/profit[a]	**(1,153)**	13,940	19,608	7,506	10,194
(Loss)/profit for the year from continuing operations	**(2,997)**	6,775	15,195	5,784	5,436
Loss after tax from discontinued operations	**(7)**	(10)	(97)	(449)	(827)
(Loss)/profit for the year	**(3,004)**	6,765	15,098	5,335	4,609
Basic (losses)/earnings per share[b]					
(Loss)/profit from continuing operations (US cents)	**(161.3)**	303.5	731.0	301.7	286.8
Loss after tax from discontinued operations (US cents)	**(0.4)**	(0.5)	(4.9)	(25.5)	(52.7)
(Loss)/profit for the year per share (US cents)	**(161.7)**	303.0	726.1	276.2	234.1
Diluted (losses)/earnings per share[b]					
(Loss)/profit from continuing operations (US cents)	**(161.3)**	301.5	726.7	300.7	285.5
Loss after tax from discontinued operations (US cents)	**(0.4)**	(0.5)	(4.9)	(25.4)	(52.4)
(Loss)/profit for the year per share (US cents)	**(161.7)**	301.0	721.8	275.3	233.1

Dividends per share

	2012	2011	2010	2009	2008
Dividends declared during the year[b]					
US cents					
interim	**72.5**	54.0	45.0		55.6
final	**94.5**	91.0	63.0	45.0	55.6
UK pence					
interim	**46.4**	33.1	28.2		29.6
final	**60.3**	57.3	39.1	28.8	37.9
Australian cents					
interim	**68.5**	49.8	49.3		63.3
final	**91.7**	84.2	61.9	51.6	83.0

Dividends paid during the year (US cents)[b]						
ordinary		**163.5**	117.0	90.0	55.6	124.3
Weighted average number of shares	basic (millions)[b]	**1,849.1**	1,923.1	1,961.0	1,763.6	1,570.1
Weighted average number of shares	diluted (millions)[b]	**1,849.1**	1,935.5	1,972.6	1,769.6	1,577.3

Statement of financial position data

at 31 December					
	2012	2011	2010	2009	2008
Amounts in accordance with IFRS	**US$m**	US$m	US$m	US$m	US$m
Total assets	**117,573**	119,545	112,773	97,236	89,616
Share capital/premium	**10,189**	10,024	10,105	9,344	5,826
Total equity/Net assets	**58,021**	59,208	64,512	45,925	22,461
Equity attributable to owners of Rio Tinto	**46,865**	52,539	58,247	43,831	20,638

Notes

(a) Group operating loss or profit under IFRS includes the effects of charges and reversals resulting from impairments (other than impairments of equity accounted units) and profit and loss on disposals of interests in businesses. Group operating loss or profit amounts shown above exclude equity accounted operations, finance items, tax and discontinued operations.

(b) The rights issues completed in July 2009 were at a discount to the then market price. Accordingly, earnings per share and dividends per share for all periods up to the date on which the shares were issued were adjusted for the bonus element of the issue. The bonus factor for Rio Tinto plc was 1.2105 and for Rio Tinto Limited was 1.2679. In accordance with IAS 33 2 Earnings per share , the effects of anti-dilutive potential have not been included when calculating diluted loss per share for the year ended 31 December 2012.

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Acquisitions and divestments

Acquisitions

Asset	Cost US$m	Status
Acquired in 2012		
Copper Turquoise Hill Resources Ltd (formerly Ivanhoe Mines Limited)	307	Purchase of additional shares increasing the Group s holdings to 51 per cent.
Minerals Richards Bay Minerals	1,700	Acquisition of BHP Billiton s entire interests in Richards Bay Minerals, doubling the Group s holding to 74 per cent.
Acquired in 2011		
Copper Ivanhoe Mines	1,860	Participation in the strategic rights offering, exercise of outstanding share warrants, exercise of subscription rights granted in 2010 and purchase of additional shares, in aggregate increasing the Group s holding to 49 per cent.
Energy Riversdale	4,168	Staged acquisition of shares in Riversdale Mining Limited; acquisition of a controlling interest of 52.6 per cent on 8 April 2011, increasing to 100 per cent by 1 August 2011, and renamed as Rio Tinto Coal Mozambique
Energy Hathor	550	Purchase of shares in Hathor Exploration resulting in an aggregate of a 70.2 per cent controlling interest being reached on 30 November 2011, increasing to 88 per cent by 31 December 2011 and completed on 12 January 2012.
Acquired in 2010		
Copper Ivanhoe Mines	1,590	Purchases of additional shares, maturing of convertible debt facility and exercise of Series A and B warrants increasing the Group s holding to 40.3 per cent as at 31 December 2010. Rio Tinto consolidated Oyu Tolgoi LLC on 15 December 2010 following the signing of a new agreement with Ivanhoe Mines.

Divestments

Asset	Proceeds US$m	Status
Divested in 2012		
Alcan Cable	229	Sold to General Cable Corporation
Specialty Alumina businesses	Undisclosed	Sold to H.I.G.
Lynemouth Power Station	Undisclosed	Sold to RWE

Energy	**Extract Resources Ltd/ Kalahari Minerals plc**	429	Equity investment sold to Taurus Mineral Limited
Divested in 2011			
Alcan Engineered Products		Undisclosed	Sold 61 per cent to investment funds affiliated with Apollo Global Management, LLC (Apollo) and the Fonds Stratégique d Investissement (FSI)
Minerals	talc	340[(a)]	Sold to Imerys SA
Energy	Colowyo	Undisclosed	Sold to Western Fuels-Colorado LLC
Exploration	sundry assets	52	Sale of projects including Altai Nuurs coking coal deposit and Sari Gunay gold deposit
Divested in 2010			
Energy	Cloud Peak	573	Secondary public offering
Alcan Packaging	Beauty	Undisclosed	Sold to Sun European Partners LLP
Alcan Packaging	Medical Flexibles	66	Sold to Amcor
Alcan Packaging	Food Americas	1,200	Sold to Bemis Company Inc.
Energy	Maules Creek (Rio Tinto: 75.7%)	427	Sold to Aston Resources
Energy	Vickery (Rio Tinto: 75.7%)	28	Sold to Whitehaven Coal
Alcan Packaging	global Pharmaceuticals, global Tobacco, Food Europe and Food Asia	1,948	Sold to Amcor
Sundry asset sales		57	Sale of assets including Ghana Bauxite Company, Brockville Specialty Alumina Plant and Rawhide Mine

(a) Enterprise value

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Capital projects

Project (Rio Tinto 100% owned unless otherwise stated)	Total approved capital cost (100%) US$	Status/milestones
Completed in 2012		
Iron ore second debottlenecking of Dampier port to expand the Pilbara capacity by 5 million tonnes to 230Mt/a. Pilbara capacity was re-rated to 237Mt/a in November 2012.	$0.3bn	The project was completed on budget and commissioning commenced on time by the end of the first quarter of 2012.
Iron ore two-phased expansion of Iron Ore Company of Canada (IOC) (Rio Tinto 58.7%) from 18 to 22Mt/a and then to 23.3Mt/a.	$0.8bn	Phase one commissioning is now complete. Phase two is progressing with first production expected in the first quarter of 2013.
Alumina expansion of the Yarwun refinery in Queensland, Australia from 1.4 to 3.4Mt/a.	$2.3bn	Approved in July 2007, commissioning is proceeding on schedule with first bauxite processed on 5 July 2012. The refinery is expected to reach full production capacity in the third quarter of 2013.
Aluminium construction of a new 225MW turbine at the Shipshaw power station in Quebec, Canada.	$0.3bn	The power station was completed on time and was commissioned in October 2012.
Thermal coal 6Mt/a expansion of Hunter Valley Operations (Rio Tinto 80%) and Mount Thorley Warkworth mine (Rio Tinto 51%) and 2 million tonne expansion at Bengalla (Rio Tinto 32%), New South Wales, Australia.	$0.5bn	The three thermal coal expansions were completed in the first half of 2012 and are currently ramping up.
Coking and thermal coal development of the greenfield Benga mine in Mozambique (Rio Tinto 65%).	$0.6bn	First production was processed through the wash plant in February 2012 with the first shipment of premium hard coking coal in June 2012.
Ongoing and approved		
Iron Ore		
Expansion of the Pilbara mines, ports and railways from 237Mt/a to 290Mt/a. Rio Tinto s share of total approved capex is $8.4 bn.	$9.8bn	Completion of the phase one expansion to 290Mt/a has been brought forward to the third quarter of 2013. Dredging and piling at Cape Lambert is complete.
Expansion of the Pilbara port and rail capacity to 360Mt/a. Rio Tinto s share of total approved capex is $3.5 bn.	$5.9bn	The phase two expansion to 360Mt/a is expected to come onstream in the first half of 2015. This includes the port and rail elements which are now fully

		approved and an investment in autonomous trains. The key component of the project still requiring approval is further mine production capacity.
Development of Hope Downs 4 mine in the Pilbara (Rio Tinto 50%) to sustain production at 237Mt/a.	$2.1bn	Approved in August 2010, first production is expected in 2013. The new mine is anticipated to have a capacity of 15Mt/a and a capital cost of $1.6 billion (Rio Tinto share $0.8 billion). Rio Tinto is funding the $0.5 billion for the rail spur, rolling stock and power infrastructure.
Phase two of the Marandoo mine expansion in the Pilbara to sustain production at 237Mt/a.	$1.1bn	Approved in February 2011, the mine will extend Marandoo at 15Mt/a by 16 years to 2030.
Investment to extend the life of the Yandicoogina mine in the Pilbara to 2021 and expand its nameplate capacity from 52Mt/a to 56Mt/a.	$1.7bn	Approved in June 2012, the investment includes a wet processing plant to maintain product specification levels and provide a platform for future potential expansion.
Aluminium		
Modernisation of ISAL aluminium smelter in Iceland.	$0.5bn	Approved in September 2010, the project is expected to increase production from 190kt to 230kt and includes a leading-edge casting facility to produce value-added billet. The new casting facility produced its first billet in the second quarter of 2012. Project costs and completion schedules are under review.
AP60 plant (60kt per annum) in Quebec, Canada.	$1.1bn	Approved in December 2010, first hot metal is expected in the first half of 2013.
Modernisation and expansion of Kitimat smelter in British Columbia, Canada.	$3.3bn	Approved in December 2011, the modernisation will increase capacity from 280ktpa to 420ktpa. The pace of the project has been slowed in response to increasingly challenging market conditions. First production is now expected at the end of 2014.

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Project (Rio Tinto 100% owned unless otherwise stated)	Total approved capital cost (100%) US$	Status/milestones
Copper		
Investment in the Moly Autoclave Process (MAP) in Utah, US to enable lower-grade molybdenum concentrate to be processed more efficiently than conventional roasters and allow improved recoveries.	$0.6bn	The facility is due to come onstream by mid-2014 followed by a 12 month period to reach full capacity.
Construction of the Eagle nickel and copper mine in Michigan, US.	$0.5bn	Approved in June 2010, first production is expected in 2014. The mine will produce an average of 16kt and 13kt per year of nickel and copper metal respectively over seven years.
Development of Organic Growth Project 1 (OGP1) and the Oxide Leach Area Project (OLAP) at Escondida (Rio Tinto 30%), Chile.	$1.4bn (Rio Tinto share)	Approved in February 2012, OGP1 primarily relates to replacing the Los Colorados concentrator with a new 152kt per day plant, allowing access to high grade ore. Initial production is expected in the first half of 2015. OLAP maintains oxide leaching capacity.
Construction of phase one of Oyu Tolgoi copper and gold mine in Mongolia.	$6.2bn	Commissioning of the ore-processing equipment commenced in mid-November 2012 with first copper-gold concentrate produced in January 2013. Commercial production is scheduled for June 2013.
Grasberg project funding for 2012 to 2016.	$0.9bn (Rio Tinto share)	Investment to continue the pre-production construction of the Grasberg Block Cave, the Deep Mill Level Zone underground mines, and the associated common infrastructure. Rio Tinto s final share of capital expenditure will in part be influenced by its share of production over the 2012 to 2016 period.
Investment over next seven years to extend mine life at Kennecott Utah Copper, US from 2018 to 2029.	$0.7bn	The project was approved in June 2012. Ore from the south wall push back will be processed through existing mill facilities. The investment will enable production at an average of 180kt of copper, 185koz of gold and 13.8kt of molybdenum a year from 2019 through 2029.
Energy		
20-year extension and expansion from 4.3Mt/a to 5.7Mt/a at Kestrel (Rio Tinto 80%),	$2.0bn	The investment will extend the life of the mine to 2032 and is expected to

Queensland, Australia.		come on-stream in the second quarter of 2013 with full production in 2014.
Diamonds & Minerals		
Argyle Diamond mine underground project, extending the mine life to at least 2020. (Originally approved in 2005, the project was slowed in 2009 and restarted in September 2010.)	$2.2bn	Production is expected to commence in the first half of 2013 with ramp up to full capacity by 2015.
Investment in detailed design studies, early works and long-lead items at the Simandou iron ore project in Guinea, West Africa. Rio Tinto s share of total approved capex is $501m.	$1.0bn	Approved in June 2012, the investment is primarily for rail and port infrastructure. Timing of the ramp up and first commercial production is dependent on receiving necessary approvals from the Government of Guinea and on the Government of Guinea progressing and finalising its financing strategy.

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Production, reserves and operations

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Metals & minerals production

	Rio Tinto % share[a]	2012 Production Total	2012 Production Rio Tinto share	2011 Production Total	2011 Production Rio Tinto share	2010 Production Total	2010 Production Rio Tinto share
ALUMINA (000 tonnes)							
Rio Tinto Alcan							
Jonquière (Vaudreuil) (Canada)[b]	100.0	**1,397**	**1,397**	1,363	1,363	1,301	1,301
Queensland Alumina (Australia)	80.0	**3,693**	**2,954**	3,360	2,688	3,821	3,057
São Luis (Alumar) (Brazil)	10.0	**3,409**	**341**	3,385	339	2,507	251
Yarwun (Australia)	100.0	**2,175**	**2,175**	1,349	1,349	1,377	1,377
Specialty plants (Canada)[c]	100.0	**101**	**101**	108	108	123	123
			6,968		5,846		6,109
Pacific Aluminium							
Gove (Australia)	100.0	**2,742**	**2,742**	2,549	2,549	2,473	2,473
Other Aluminium							
Specialty plants (France/Germany)[d]		**331**	**331**	552	552	507	507
Rio Tinto total			**10,041**		8,947		9,089
ALUMINIUM (000 tonnes)							
Rio Tinto Alcan							
Alma (Canada)	100.0	**208**	**208**	434	434	434	434
Alouette (Sept-Îles) (Canada)	40.0	**593**	**237**	582	233	569	228
Alucam (Edéa) (Cameroon)	46.7	**52**	**24**	69	32	76	35
Arvida (Canada)	100.0	**177**	**177**	176	176	174	174
Bécancour (Canada)	25.1	**429**	**107**	414	104	417	104
Dunkerque (France)	100.0	**256**	**256**	235	235	260	260
Grande-Baie (Canada)	100.0	**223**	**223**	223	223	218	218
ISAL (Reykjavik) (Iceland)	100.0	**190**	**190**	185	185	190	190
Kitimat (Canada)	100.0	**182**	**182**	168	168	184	184
Laterrière (Canada)	100.0	**233**	**233**	234	234	212	212
Lochaber (UK)	100.0	**45**	**45**	45	45	41	41
Saint-Jean-de-Maurienne (France)	100.0	**93**	**93**	99	99	96	96
Shawinigan (Canada)	100.0	**81**	**81**	97	97	100	100
Sohar (Oman)	20.0	**360**	**72**	373	75	367	73
SØRAL (Husnes) (Norway)	50.0	**92**	**46**	89	45	88	44
			2,174		2,386		2,395
Pacific Aluminium							
Bell Bay (Australia)	100.0	**185**	**185**	181	181	177	177
Boyne Island (Australia)	59.4	**569**	**338**	558	331	558	332
Tiwai Point (New Zealand)	79.4	**325**	**258**	357	283	344	273
Tomago (Australia)	51.6	**546**	**281**	539	278	528	272
			1,063		1,073		1,054
Other Aluminium							

Lynemouth (UK)[e]	100.0	**15**	**15**	168	168	145	145
Sebree (US)	100.0	**205**	**205**	197	197	196	196
			220		365		341
Rio Tinto total			**3,456**		3,824		3,790

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Metals & minerals production continued

	Rio Tinto % share[a]	2012 Production Total	2012 Production Rio Tinto share	2011 Production Total	2011 Production Rio Tinto share	2010 Production Total	2010 Production Rio Tinto share
BAUXITE (000 tonnes)							
Rio Tinto Alcan							
Awaso (Ghana)[f]						39	31
Porto Trombetas (MRN) (Brazil)	12.0	**15,512**	**1,861**	15,224	1,827	15,435	1,852
Sangaredi (Guinea)	[g]	**14,001**	**6,301**	12,517	5,633	12,041	5,418
Weipa (Australia)	100.0	**23,257**	**23,257**	20,732	20,732	18,591	18,591
			31,419		28,192		25,892
Pacific Aluminium							
Gove (Australia)	100.0	**7,944**	**7,944**	7,246	7,246	7,190	7,190
Rio Tinto total			**39,363**		35,437		33,082
BORATES (000 tonnes)[h]							
Rio Tinto Minerals Boron (US)	100.0	**453**	**453**	486	486	483	483
Rio Tinto Minerals Tincalayu (Argentina)[i]		**9**	**9**	18	18	18	18
Rio Tinto total			**463**		504		500
COAL (hard coking) (000 tonnes)							
Rio Tinto Coal Australia							
Hail Creek Coal (Australia)	82.0	**7,174**	**5,882**	7,291	5,979	7,183	5,890
Kestrel Coal (Australia)	80.0	**2,468**	**1,974**	3,545	2,836	3,846	3,076
Total Australian hard coking coal			**7,857**		8,815		8,967
Rio Tinto Coal Mozambique							
Benga[j]	65.0	**289**	**188**				
Rio Tinto total hard coking coal			**8,044**		8,815		8,967
COAL (semi-soft coking) (000 tonnes)							
Rio Tinto Coal Australia							
Hunter Valley (Australia)[k]	80.0	**2,119**	**1,695**	1,906	1,450	2,469	1,869
Mount Thorley (Australia)[k]	64.0	**1,584**	**1,014**	1,922	1,159	1,460	884
Warkworth (Australia)[k]	44.5	**1,296**	**576**	594	250	764	321
Rio Tinto total semi-soft coking coal			**3,286**		2,859		3,075
COAL (thermal) (000 tonnes)							
Rio Tinto Coal Australia							
Bengalla (Australia)[k]	32.0	**7,026**	**2,248**	5,368	1,629	5,477	1,659
Blair Athol (Australia)	71.2	**2,587**	**1,843**	2,885	2,055	6,803	4,846
Clermont (Australia)[l]	50.1	**8,189**	**4,103**	5,790	2,901	3,770	1,889
Hunter Valley (Australia)[k]	80.0	**9,836**	**7,869**	10,332	7,839	8,442	6,391
Kestrel Coal (Australia)	80.0	**350**	**280**	326	261	713	571
Mount Thorley (Australia)[k]	64.0	**2,497**	**1,598**	1,319	801	1,518	920
Warkworth (Australia)[k]	44.5	**5,477**	**2,435**	5,454	2,304	5,120	2,154
Total Australian thermal coal			**20,376**		17,791		18,430

Rio Tinto Coal Mozambique							
Benga[j]	65.0	**419**	**272**				
US Coal							
Antelope (US)[m]						31,156	15,043
Colowyo (US)[n]				1,939	1,939	2,371	2,371
Cordero Rojo (US)[m]						33,518	16,184
Decker (US)[m]						2,521	609
Spring Creek (US)[m]						16,726	8,076
Total US thermal coal					1,939		42,283
Rio Tinto total thermal coal			**20,648**		19,729		60,713

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	Rio Tinto % share[a]	2012 Production Total	2012 Production Rio Tinto share	2011 Production Total	2011 Production Rio Tinto share	2010 Production Total	2010 Production Rio Tinto share
COPPER (mined) (000 tonnes)							
Bingham Canyon (US)	100.0	**163.2**	**163.2**	195.0	195.0	249.8	249.8
Escondida (Chile)	30.0	**1,047.4**	**314.2**	759.1	227.7	1,011.0	303.3
Grasberg Joint Venture (Indonesia)[o]	40.0	**0.0**	**0.0**	42.1	16.9	126.8	50.7
Northparkes (Australia)	80.0	**53.8**	**43.1**	50.4	40.3	39.0	31.2
Palabora (South Africa)[p]	57.7	**49.1**	**28.3**	69.1	39.9	74.6	43.0
Rio Tinto total			**548.8**		519.7		678.1
COPPER (refined) (000 tonnes)							
Escondida (Chile)	30.0	**310.3**	**93.1**	283.5	85.0	300.1	90.0
Kennecott Utah Copper (US)	100.0	**162.7**	**162.7**	215.3	215.3	269.3	269.3
Palabora (South Africa)[p]	57.7	**40.9**	**23.6**	59.0	34.0	58.0	33.4
Rio Tinto total			**279.4**		334.4		392.8
DIAMONDS (000 carats)							
Argyle (Australia)	100.0	**8,471**	**8,471**	7,441	7,441	9,804	9,804
Diavik (Canada)	60.0	**7,230**	**4,338**	6,677	4,006	6,500	3,900
Murowa (Zimbabwe)	77.8	**403**	**313**	367	285	178	139
Rio Tinto total			**13,122**		11,733		13,843
GOLD (mined) (000 ounces)							
Barneys Canyon (US)	100.0	**1**	**1**	2	2	2	2
Bingham Canyon (US)	100.0	**200**	**200**	384	384	466	466
Escondida (Chile)	30.0	**98**	**29**	122	37	174	52
Grasberg Joint Venture (Indonesia)[o]	40.0	**0**	**0**	444	178	458	183
Northparkes (Australia)	80.0	**72**	**58**	76	61	65	52
Palabora (South Africa)[p]	57.7	**11**	**6**	13	8	13	7
Rawhide (US)[q]						9	9
Rio Tinto total			**294**		669		772
GOLD (refined) (000 ounces)							
Kennecott Utah Copper (US)	100.0	**279**	**279**	379	379	596	596
IRON ORE (000 tonnes)							
Hamersley Iron six wholly owned mines (Australia)	100.0	**126,630**	**126,630**	121,525	121,525	112,706	112,706
Hamersley Channar (Australia)	60.0	**10,947**	**6,568**	11,015	6,609	11,016	6,610
Hamersley Eastern Range (Australia)	(r)	**9,303**	**9,303**	9,385	9,385	9,206	9,206
Hope Downs (Australia)	50.0	**30,793**	**15,396**	31,740	15,870	31,720	15,860
Iron Ore Company of Canada (Canada)	58.7	**14,079**	**8,267**	13,457	7,902	14,710	8,638
Robe River (Australia)	53.0	**61,707**	**32,705**	57,502	30,476	59,641	31,610
Rio Tinto total			**198,869**		191,767		184,629
MOLYBDENUM (000 tonnes)							

Bingham Canyon (US)	100.0	**9.4**	**9.4**	13.6	13.6	12.9	12.9
SALT (000 tonnes)							
Dampier Salt (Australia)	68.4	**9,996**	**6,833**	9,666	6,608	7,589	5,188
SILVER (mined) (000 ounces)							
Bingham Canyon (US)	100.0	**2,086**	**2,086**	2,976	2,976	3,754	3,754
Escondida (Chile)	30.0	**3,501**	**1,050**	4,327	1,298	6,140	1,842
Grasberg Joint Venture (Indonesia)[o]	40.0	**0**	**0**	208	83	1,721	688
Others		**685**	**521**	766	566	752	577
Rio Tinto total			**3,657**		4,924		6,862

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Metals & minerals production continued

	Rio Tinto % share[a]	2012 Production Total	2012 Production Rio Tinto share	2011 Production Total	2011 Production Rio Tinto share	2010 Production Total	2010 Production Rio Tinto share
SILVER (refined) (000 ounces)							
Kennecott Utah Copper (US)	100.0	**2,451**	**2,451**	3,189	3,189	4,732	4,732
TALC (000 tonnes)							
Rio Tinto Minerals talc (Australia/Europe/North America)[s]				592	592	1,000	1,000
TITANIUM DIOXIDE FEEDSTOCK (000 tonnes)							
Rio Tinto Iron & Titanium (Canada/South Africa)[t][u]	100.0	**1,594**	**1,594**	1,443	1,443	1,392	1,392
URANIUM (000 lbs U_3O_8)							
Energy Resources of Australia (Australia)	68.4	**8,304**	**5,679**	5,571	3,810	8,614	5,891
Rössing (Namibia)	68.6	**5,950**	**4,081**	4,736	3,248	7,999	5,485
Rio Tinto total			**9,760**		7,058		11,377

Production data notes:

Mine production figures for metals refer to the total quantity of metal produced in concentrates, leach liquor or doré bullion irrespective of whether these products are then refined onsite, except for the data for bauxite and iron ore which represent production of marketable quantities of ore.

(a) Rio Tinto percentage share, shown above, is as at the end of 2012. Where this shareholding has changed over the period 2010-2012, the weighted average ownership has been used. The footnotes below include all ownership changes over the three years. The Rio Tinto share varies at individual mines and refineries in the others category and thus no value is shown.

(b) Jonquière s (Vaudreuil s) production shows smelter grade alumina only and excludes hydrate produced and used for specialty alumina.

(c) Rio Tinto sold its 100 per cent interest in the Brockville specialty alumina plant with an effective date of 20 September 2010. Production data are shown up to that date. Production continues from the Jonquière specialty alumina plant.

(d) Rio Tinto sold its interest in these specialty alumina assets with an effective date of 1 August 2012. Production is shown up to that date.

(e) Rio Tinto closed the Lynemouth aluminium smelter on 29 March 2012.

(f) Rio Tinto Alcan had an 80 per cent interest in the Awaso mine but purchased the additional 20 per cent of production. Rio Tinto Alcan sold its interest in Ghana Bauxite Company, owner of the Awaso mine, with an effective date of 1 February 2010.

(g) Rio Tinto has a 22.95 per cent shareholding in the Sangaredi mine but benefits from 45 per cent of production.

(h) Borate quantities are expressed as B2O3.

(i) Rio Tinto sold its interest in Borax Argentina with an effective date of 21 August 2012. Production is included up to that date.

(j) Benga moved to commercial production during the third quarter of 2012.

(k) Rio Tinto s interest in these mines is held through Coal & Allied Industries Ltd; Rio Tinto increased its interest in Coal & Allied from 75.7 per cent to 80.0 per cent with effect from 16 December 2011. Production data reflect the increased shareholding from that date.

(l) Production commenced at Clermont in the second quarter of 2010.

(m) As a result of the initial public offering of Cloud Peak Energy Inc. on 20 November 2009, Rio Tinto held a 48.3 per cent interest in the Antelope, Cordero Rojo and Spring Creek mines and a 24.1 per cent interest in the Decker mine. These interests were formerly reported under Rio Tinto Energy America but are now managed by Cloud Peak Energy. Following a secondary public offering in December 2010, Rio Tinto completed the divestment of its entire interest in Cloud Peak Energy Inc. with an effective date of 15 December 2010. Production data are shown up to that date.

(n) Rio Tinto sold its 100 per cent interest in Colowyo with an effective date of 1 December 2011. Production data are shown up to that date.

(o) Through a joint venture agreement with Freeport-McMoRan Copper & Gold (FCX), Rio Tinto is entitled to 40 per cent of additional material mined as a consequence of expansions and developments of the Grasberg facilities since 1998. Total production reflects the quantities attributable to the joint venture. The 2012 production from Grasberg did not exceed the metal attributable to PT Freeport Indonesia per the joint venture agreement for the year. Accordingly, Rio Tinto s share of joint venture production was zero for the year 2012.

(p) In December 2012, Rio Tinto announced that it had signed a binding agreement to sell its 57.7 per cent effective interest in the Palabora Mining Company.

(q) Rio Tinto sold its 100 per cent interest in the Rawhide mine with an effective date of 25 June 2010. Production data are shown up to that date.

(r) Rio Tinto s share of production includes 100 per cent of the production from the Eastern Range mine. Under the terms of the joint venture agreement (Rio Tinto 54 per cent), Hamersley Iron manages the operation and is obliged to purchase all mine production from the joint venture.

(s) Rio Tinto sold its 100 per cent interest in the talc business with an effective date of 1 August 2011. Production data are shown up to that date.

(t) On 7 September 2012, Rio Tinto increased its stake in Richards Bay Minerals (RBM) from 37 per cent to 74 per cent through the acquisition of BHP Billiton s interest in RBM.

(u) Quantities comprise 100 per cent of Rio Tinto Fer et Titane and Rio Tinto s share of Richards Bay Minerals production. Ilmenite mined in Madagascar is being processed in Canada.

Production figures are sometimes more precise than the rounded numbers shown, hence an apparent small difference may result where the Rio Tinto share is totalled.

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Ore reserves (under industry guide 7)

For the purposes of this combined Annual report on Form 20-F estimates of ore reserves have been prepared in accordance with the SEC s Industry Guide 7 under the United States Securities Act of 1933 and the following definitions:

An Ore Reserve means that part of a mineral deposit that can be economically and legally extracted or produced at the time of the reserves determination. To establish this, studies appropriate to the type of mineral deposit involved have been carried out to estimate the quantity, grade and value of the ore mineral(s) present. In addition, technical studies have been completed to determine realistic assumptions for the extraction of the minerals including estimates of mining, processing, economic, marketing, legal, environmental, social and governmental factors. The degree of these studies is sufficient to demonstrate the technical and economic feasibility of the project and depends on whether or not the project is an extension of an existing project or operation. The estimates of minerals to be produced include allowances for ore losses and the treatment of unmineralised materials which may occur as part of the mining and processing activities. Ore Reserves are sub-divided in order of increasing confidence into Probable Ore Reserves and Proven Ore Reserves as defined below.

The term economically , as used in the definition of reserves, implies that profitable extraction or production under defined investment assumptions has been established through the creation of a mining plan, processing plan and cash flow model. The assumptions made must be reasonable, including costs and operating conditions that will prevail during the life of the project.

Ore reserves presented in accordance with SEC Industry Guide 7 do not exceed the quantities that, it is estimated, could be extracted economically if future prices were to be in line with the average of historical prices for the three years to 30 June 2012, or contracted prices where applicable. For this purpose, contracted prices are applied only to future sales volumes for which the price is predetermined by an existing contract; and the average of historical prices is applied to expected sales volumes in excess of such amounts. Moreover, reported ore reserve estimates have not been increased above the levels expected to be economic based on Rio Tinto s own long term price assumptions.

The term legally , as used in the definition of reserves, does not imply that all permits needed for mining and processing have been obtained or that other legal issues have been completely resolved. However, for reserves to exist, there is reasonable assurance of the issuance of these permits or resolution of legal issues. Reasonable assurance means that, based on applicable laws and regulations, the issuance of permits or resolution of legal issues necessary for mining and processing at a particular deposit will be accomplished in the ordinary course and in a timeframe consistent with the Company s current mine plans.

The term proven reserves means reserves for which (a) quantity is computed from dimensions revealed in outcrops, trenches, workings or drill holes; grade and/or quality are computed from the results of detailed sampling; and (b) the sites for inspection, sampling and measurement are spaced so closely and the geologic character is so well defined that size, shape, depth and mineral content of reserves are well established. Proven reserves represent that part of an orebody for which there exists the highest level of confidence in data regarding its geology, physical

characteristics, chemical composition and probable processing requirements.

The term probable reserves means reserves for which quantity and grade and/or quality are computed from information similar to that used for proven reserves, but the sites for inspection, sampling and measurement are farther apart or are otherwise less adequately spaced. The degree of assurance, although lower than that for proven reserves, is high enough to assume continuity between points of observation. This means that probable reserves generally have a wider drill hole spacing than for proven reserves.

The amount of proven and probable reserves shown below does not necessarily represent the amount of material currently scheduled for extraction, because the amount scheduled for extraction may be derived from a life of mine plan predicated on prices and other assumptions which are different to those used in the life of mine plan prepared in accordance with Industry Guide 7.

The estimated ore reserve figures in the following tables are as of 31 December 2012. Metric units are used throughout. The figures used to calculate Rio Tinto s share of reserves are often more precise than the rounded numbers shown in the tables, hence small differences might result if the calculations are repeated using the tabulated figures. Commodity price information is given in footnote (a).

Where operations are not managed by Rio Tinto the reserves are published as received from the managing company.

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Ore reserves (under industry guide 7) continued

	Type of mine (b)	Total ore reserves at end 2012 Tonnage	Grade	Rio Tinto share Interest %	Recoverable mineral millions of tonnes
BAUXITE (c)		millions of tonnes	% Al_2O_3		
Reserves at operating mines					
Rio Tinto Alcan					
Porto Trombetas (MRN) (Brazil) (d)	O/P	**63**	**50.9**	12.0	**8**
Sangaredi (Guinea) (e)	O/P	**320**	**49.6**	23.0	**73**
Weipa (Australia)	O/P	**1,533**	**52.8**	100.0	**1,533**
Pacific Aluminium					
Gove (Australia)	O/P	**155**	**49.5**	100.0	**155**
Rio Tinto total					**1,769**

		Total ore reserves at end 2012 millions of tonnes		Recoverable mineral millions of tonnes
BORATES (f)				
Reserves at operating mine				
Rio Tinto Minerals Boron (US) mine	O/P	**22**	100.0	**22**
stockpiles (g)		**3.1**	100.0	**3**
Rio Tinto total				**26**

		Marketable coal				
	Coal type (i)	Marketable reserves millions of tonnes	quality (j) Calorific value	Sulphur content	Interest %	Marketable reserves millions of tonnes
COAL (h)			MJ/kg	%		
Reserves at operating mines						
Rio Tinto Coal Australia						

Bengalla	O/C	SC	**128**	**27.86**	**0.48**	32.0	**41**
Clermont	O/C	SC	**165**	**27.90**	**0.33**	50.1	**82**
Hail Creek	O/C	MC	**66**	**32.20**	**0.35**	82.0	**54**
Hunter Valley Operations	O/C	SC + MC	**217**	**28.99**	**0.58**	80.0	**173**
Kestrel Coal	U/G	MC	**116**	**31.60**	**0.59**	80.0	**93**
Mouth Thorley Operations	O/C	SC + MC	**25**	**29.80**	**0.45**	64.0	**16**
Warkworth	O/C	SC + MC	**242**	**29.80**	**0.45**	44.5	**108**
Rio Tinto total reserves at Australian operating mines							**567**
Rio Tinto Coal Mozambique							
Benga (k)	O/C	SC + MC	**119**	**26.40**	**0.89**	65.0	**77**
Rio Tinto total reserves at operating mines							**644**
Undeveloped reserves (l)							
Rio Tinto Coal Australia							
Mount Pleasant	O/C	SC	**326**	**26.92**	**0.48**	80.0	**261**

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	Type of mine (b)	Total ore reserves at end 2012				Rio Tinto share
		Tonnage	Grade	Average mill recovery %	Interest %	Recoverable metal millions
COPPER		millions of tonnes	% Cu			of tonnes
Reserves at operating mines						
Bingham Canyon (US)						
mine (m)	O/P	**704**	**0.49**	85	100.0	**2.940**
stockpiles (g) (n)		**80**	**0.28**	85	100.0	**0.191**
Escondida (Chile)						
sulphide mine (o)	O/P	**4,883**	**0.70**	84	30.0	**8.669**
sulphide leach mine (p)	O/P	**1,888**	**0.46**	36	30.0	**0.936**
oxide mine	O/P	**73**	**1.03**	69	30.0	**0.156**
sulphide stockpiles (g)		**1.2**	**1.21**	75	30.0	**0.003**
sulphide leach stockpiles (g)		**37**	**0.63**	25	30.0	**0.018**
oxide stockpiles (g) (q)		**18**	**0.49**	65	30.0	**0.017**
Grasberg (Indonesia)	O/P + U/G	**2,424**	**1.00**	89	(r)	**6.905**
Northparkes (Australia)						
mine	U/G	**66**	**0.80**	89	80.0	**0.377**
stockpiles (g)		**8.2**	**0.40**	86	80.0	**0.022**
Oyu Tolgoi (Mongolia)						
South Oyu mine (s)	O/P	**1,040**	**0.46**	82	33.5	**1.304**
South Oyu stockpiles (g) (t)		**9.0**	**0.44**	85	33.5	**0.011**
Palabora (South Africa) (u)	U/G	**35**	**0.54**	84	57.7	**0.093**
Rio Tinto total reserves at operating mines						**21.642**
Undeveloped reserves (l)						
Eagle (US) (v)	U/G	**5.2**	**2.49**	97	100.0	**0.126**
Oyu Tolgoi (Mongolia)						
Hugo Dummett North (w)	U/G	**460**	**1.80**	92	33.5	**2.550**
Hugo Dummett North Extension (x)	U/G	**31**	**1.73**	92	30.5	**0.151**
Rio Tinto total undeveloped reserves						**2.826**
						Recoverable diamonds millions
DIAMONDS (c)		**millions of tonnes**	**carats per tonne**			**of carats**
Reserves at operating mines						
Argyle (Australia)						

AK1 pipe mine	O/P + U/G	**66**	**2.1**		100.0	**139.4**
AK1 pipe stockpiles (g)		**0.5**	**1.0**		100.0	**0.5**
Diavik (Canada)						
mine	U/G	**18**	**2.9**		60.0	**31.5**
stockpiles (g)		**0.3**	**2.9**		60.0	**0.6**
Rio Tinto total						**172.0**
GOLD		**millions of tonnes**	**grammes per tonne**			**Recoverable metal millions of ounces**
Reserves at operating mines						
Bingham Canyon (US)						
mine (m)	O/P	**704**	**0.20**	64	100.0	**2.875**
stockpiles (g)		**80**	**0.14**	64	100.0	**0.232**
Grasberg (Indonesia)	O/P + U/G	**2,424**	**0.83**	68	(r)	**12.227**
Northparkes (Australia)						
mine	U/G	**66**	**0.28**	68	80.0	**0.328**
stockpiles (g)		**8.2**	**0.24**	67	80.0	**0.035**
Oyu Tolgoi (Mongolia)						
South Oyu mine (s) (y)	O/P	**1,040**	**0.31**	74	33.5	**2.581**
South Oyu stockpiles (g) (t)		**9.0**	**0.33**	74	33.5	**0.024**
Rio Tinto total reserves at operating mines						**18.301**
Undeveloped reserves (l)						
Eagle (US) (v)	U/G	**5.2**	**0.25**	55	100.0	**0.023**
Oyu Tolgoi (Mongolia)						
Hugo Dummett North (w)	U/G	**460**	**0.37**	83	33.5	**1.544**
Hugo Dummett North Extension (x)	U/G	**31**	**0.62**	83	30.5	**0.159**
Rio Tinto total undeveloped reserves						**1.726**

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Ore reserves (under industry guide 7) continued

	Type of mine (b)	Total ore reserves at end 2012			Rio Tinto share	
		Tonnage	Grade	Average mill recovery %	Interest %	Marketable product millions of tonnes
IRON ORE (c) (z)		millions of tonnes	% Fe			
Reserves at operating mines						
Hamersley Iron (Australia)						
Brockman 2 (Brockman ore) (aa)	O/P	**44**	**62.0**		100.0	**44**
Brockman 4 (Brockman ore)	O/P	**561**	**62.0**		100.0	**561**
Marandoo (Marra Mamba ore)	O/P	**211**	**63.2**		100.0	**211**
Mt Tom Price (Brockman ore)						
mine (bb)	O/P	**52**	**63.7**		100.0	**52**
stockpiles (g)		**8**	**62.4**		100.0	**8**
Mt Tom Price (Marra Mamba ore) (cc)	O/P	**11**	**60.9**		100.0	**11**
Nammuldi (Marra Mamba ore)	O/P	**166**	**62.6**		100.0	**166**
Paraburdoo (Brockman ore) (dd)	O/P	**13**	**63.4**		100.0	**13**
Western Turner Syncline (Brockman ore)						
mine (ee)	O/P	**331**	**62.1**		100.0	**331**
stockpiles (g)		**5**	**58.9**		100.0	**5**
Yandicoogina (Pisolite ore HG)						
mine	O/P	**209**	**58.6**		100.0	**209**
stockpiles (g)		**0.4**	**56.9**		100.0	
Yandicoogina (Process Product) (ff)	O/P	**115**	**58.6**		100.0	**115**
Channar JV (Australia)						
Brockman ore (gg)	O/P	**42**	**62.9**		60.0	**25**
Eastern Range JV (Australia)						
Brockman ore (hh)	O/P	**49**	**62.7**		54.0	**27**
Hope Downs JV						
Hope Downs 1 (Marra Mamba ore) (ii)	O/P	**250**	**61.6**		50.0	**125**
Hope Downs 4 (Brockman ore)	O/P	**130**	**63.1**		50.0	**65**
Iron Ore Company of Canada (Canada) (jj)	O/P	**555**	**65.0**		58.7	**326**
Palabora (South Africa) (u)	U/G	**7.4**	**55.1**		57.7	**4**
Robe River JV (Australia)						
Pannawonica (Pisolite ore)						

mine	O/P	**266**	**57.2**		53.0	**141**
stockpiles (g)		**8**	**56.4**		53.0	**4**
West Angelas (Marra Mamba ore)						
mine (kk)	O/P	**226**	**61.8**		53.0	**120**
stockpiles (g)		**2**	**61.2**		53.0	**1**
Rio Tinto total reserves at operating mines						**2,563**
Undeveloped reserves (l)						
Silvergrass East (Marra Mamba ore) (ll)	O/P	**99**	**62.1**		100.0	**99**
Simandou (Guinea) (mm)	O/P	**1,844**	**65.5**		50.4	**928**
Turee Central (Brockman ore)	O/P	**78**	**61.9**		100.0	**78**
Rio Tinto total undeveloped reserves						**1,106**
						Recoverable metal millions
MOLYBDENUM		**millions of tonnes**	**% Mo**			**of tonnes**
Reserves at operating mines						
Bingham Canyon (US)						
mine (nn) (m)	O/P	**704**	**0.046**	69	100.0	**0.224**
stockpiles (nn) (g)		**80**	**0.029**	69	100.0	**0.016**
Rio Tinto total						**0.240**
						Recoverable metal millions
NICKEL		**millions of tonnes**	**% Ni**			**of tonnes**
Undeveloped reserves (l)						
Eagle (US) (v)	U/G	**5.2**	**2.93**	84	100.0	**0.128**

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	Type of mine (b)	Total ore reserves at end 2012				
		Tonnage	Grade	Average mill recovery %	Rio Tinto share	
					Interest %	Recoverable metal
SILVER		millions of tonnes	grammes per tonne			millions of ounces
Reserves at operating mines						
Bingham Canyon (US)						
mine (m)	O/P	**704**	**2.14**	65	100.0	**31.304**
stockpiles (g)		**80**	**1.84**	65	100.0	**3.071**
Grasberg (Indonesia)	O/P + U/G	**2,424**	**4.24**	70	(r)	**78.650**
Rio Tinto total						**113.024**
URANIUM		millions of tonnes	% U_3O_8			Recoverable metal millions of tonnes
Reserves at operating mines						
Energy Resources of Australia (Australia)						
Ranger #3 stockpiles (oo) (g)		**7.3**	**0.132**	86	68.4	**0.006**
Rössing (Namibia)						
mine (pp)	O/P	**127**	**0.035**	84	68.6	**0.025**
stockpiles (g)		**3.8**	**0.019**	82	68.6	**0.0004**
Rio Tinto total						**0.032**

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Ore reserves (under industry guide 7) continued

	Type of mine (b)	Proven ore reserves at end 2012 Tonnage millions of tonnes	Grade % Al_2O_3	Drill hole spacing (qq)	Probable ore reserves at end 2012 Tonnage millions of tonnes	Grade % Al_2O_3	Drill hole spacing (qq)
BAUXITE (c)							
Reserves at operating mines							
Rio Tinto Alcan							
Porto Trombetas (Brazil) (d)	O/P	47	51.0	200m × 200m	16	50.5	400m × 400m
Sangaredi (Guinea) (e)	O/P	135	50.7	38m × 38m	185	48.9	75m × 75m
Weipa (Australia)	O/P	524	52.5	150m × 150m	1,010	53.0	300m × 300m
Pacific Aluminium							
Gove (Australia)	O/P	142	49.5	50-100m × 50-100m	13	49.4	200-400m × 200-400m

		Proven ore reserves at end 2012 millions of tonnes			Probable ore reserves at end 2012 millions of tonnes		
BORATES (f)							
Reserves at operating mine							
Rio Tinto Minerals Boron (US)							
mine stockpiles (g)	O/P	13		0-130m × 0-130m	9.0 3.1		130-488m × 130-488m

	Type of mine (b)	Recoverable reserves millions	% Yield to give marketable total reserves	Proven millions of tonnes	Marketable reserves Drill hole spacing (qq)	Probable millions of tonnes	Drill hole spacing (qq)
COAL (h)							

		of tonnes					
Reserves at operating mines							
Rio Tinto Coal Australia							
Bengalla	O/C	171	75	121	100-450m × 100-450m	7.2	300-1000m × 300-1000m
Clermont	O/C	172	96	160	300m × 300m	4.2	600m × 600m
Hail Creek	O/C	128	52	43	100-500m × 100-500m	23	200-1000m × 200-1000m
Hunter Valley Operations	O/C	317	68	184	125-500m × 125-500m	33	400-1000m × 400-1000m
Kestrel	U/G	140	83	37	500m × 500m	79	1000m × 1000m
Mount Thorley Operations	O/C	38	66	20	125-500m × 125-500m	4.7	400-1000m × 400-1000m
Warkworth	O/C	372	65	141	125-500m × 125-500m	101	400-1000m × 400-1000m
Rio Tinto Coal Mozambique							
Benga (k)	O/C	277	46	64	0-500m × 0-500m	55	500-1000m × 500-1000m
Undeveloped reserves (l)							
Rio Tinto Coal Australia							
Mount Pleasant	O/C	399	82			326	350-1000m × 350-1000m

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	Type of mine (b)	Proven ore reserves at end 2012 Tonnage millions of tonnes	Grade % Cu	Drill hole spacing (qq)	Probable ore reserves at end 2012 Tonnage millions of tonnes	Grade % Cu	Drill hole spacing (qq)
COPPER							
Reserves at operating mines							
Bingham Canyon (US)							
mine (m)	O/P	417	0.53	85m x 85m	287	0.44	131m x 131m
stockpiles (g)		40	0.22		41	0.34	
Escondida (Chile)							
sulphide mine (o)	O/P	2,738	0.79	50m x 50m	2,145	0.59	90m x 90m
sulphide leach mine (p)	O/P	1,066	0.49	60m x 60m	822	0.44	115m x 115m
oxide mine (q)	O/P	35	1.19	35m x 35m	38	0.88	45m x 45m
sulphide stockpiles (g)		1.2	1.21				
sulphide leach stockpiles (g)		37	0.63				
oxide stockpiles (g)		18	0.49				
Grasberg (Indonesia)	O/P + U/G	800	1.15	0-60m x 0-60m	1,624	0.93	7-358m x 7-358m
Northparkes (Australia)							
mine	U/G				66	0.80	30-50m x 30-50m
stockpiles (g)		8.2	0.40				
Oyu Tolgoi (Mongolia)							
South Oyu mine (s)	O/P	426	0.54	30m x 50m	614	0.40	70m x 70m
South Oyu stockpiles (g) (t)		9.0	0.44				
Palabora (South Africa) (u)	U/G				35	0.54	76m x 76m
Undeveloped reserves							
Eagle (US) (v)	U/G				5.2	2.49	1-25m x 1-25m
Oyu Tolgoi (Mongolia)							
Hugo Dummett North (w)	U/G				460	1.80	50-70m x 100-125m
Hugo Dummett North Extension (x)	U/G				31	1.73	50-70m x 100-125m
DIAMONDS (c)		millions	carats		millions of tonnes	carats	

		of tonnes	**per tonne**			**per tonne**	
Reserves at operating mines							
Argyle (Australia)							
AK1 pipe mine	O/P + U/G	3.7	1.1	0-50m x 0-50m	63	2.2	50m x 50m
AK1 pipe stockpiles (g)		0.3	1.0		0.2	0.9	
Diavik (Canada)							
mine	U/G	10	3.2	2-39m x 2-62m	7.7	2.6	8-63m x 5-74m
stockpiles (g)		0.3	2.9				
		millions of tonnes	**grammes per tonne**		**millions of tonnes**	**grammes per tonne**	
GOLD							
Reserves at operating mines							
Bingham Canyon (US)							
mine (m)	O/P	417	0.21	85m x 85m	287	0.18	131m x 131m
stockpiles (g)		40	0.14		41	0.14	
Grasberg (Indonesia)	O/P + U/G	800	1.03	1-60m x 1-60m	1,624	0.74	7-358m x 7-358m
Northparkes (Australia)							
mine	U/G				66	0.28	30-50m x 30-50m
stockpiles (g)		8.2	0.24				
Oyu Tolgoi (Mongolia)							
South Oyu mine (s)	O/P	426	0.42	30m x 50m	614	0.24	70m x 70m
South Oyu stockpiles (g) (t)		9.0	0.33				
Undeveloped reserves (l)							
Eagle (US) (v)	U/G				5.2	0.25	1-25m x 1-25m
Oyu Tolgoi (Mongolia)							
Hugo Dummett North (w)	U/G				460	0.37	50-70m x 100-125m
Hugo Dummett North Extension (x)	U/G				31	0.62	50-70m x 100-125m

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Ore reserves (under industry guide 7) continued

	Type of mine (b)	Proven ore reserves at end 2012 Tonnage millions of tonnes	Grade % Fe	Drill hole spacing (qq)	Probable ore reserves at end 2012 Tonnage millions of tonnes	Grade % Fe	Drill hole spacing (qq)
IRON ORE (c) (z)							
Reserves at operating mines							
Hamersley Iron (Australia)							
Brockman 2 (Brockman ore) (aa)	O/P	18	62.9	50m x 50m	26	61.4	50m x 50m
Brockman 4 (Brockman ore)	O/P	422	62.3	50m x 50m	139	61.3	50 100m x 50m
Marandoo (Marra Mamba ore)	O/P	188	63.5	75m x 75m	23	61.2	75m x 75m
Mt Tom Price (Brockman ore)							
mine (bb)	O/P	16	64.0	30-120m x 30-60m	37	63.6	30-120m x 30-60m
stockpiles (g)					8	62.4	
Mt Tom Price (Marra Mamba ore) (cc)	O/P	10	61.1	60m x 30m	0.7	59.0	60m x 30m
Nammuldi (Marra Mamba ore)	O/P	74	62.8	25-50m x 25-50m	92	62.4	25-200m x 25-50m
Paraburdoo (Brockman ore) (dd)	O/P	6	62.9	30-60m x 30-60m	7	63.9	30-60m x 30-60m
Western Turner Syncline (Brockman ore)							
mine (ee)	O/P	262	62.3	60m x 60m	69	61.1	60m x 60m
stockpiles (g)					5	58.9	
Yandicoogina (Pisolite ore HG)							
mine	O/P	209	58.6	100m x 50m			
stockpiles (g)					0.4	56.9	
Yandicoogina (Process product)	O/P	115	58.6	100m x 50m			

(ff)							
Channar JV (Australia)							
Brockman ore (gg)	O/P	24	63.1	30-60m x 30-60m	18	62.7	30-120m x 30-120m
Eastern Range JV (Australia)							
Brockman ore (hh)	O/P	40	62.7	30-60m x 30-60m	9	62.7	30-120m x 30-120m
Hope Downs JV (Australia)							
Hope Downs 1 (Marra Mamba ore) (ii)	O/P	9	61.3	25-50m x 50m	241	61.6	25-100m x 50m
Hope Downs 4 (Brockman ore)	O/P	76	62.9	63-125m x 50-100m	55	63.3	63-125m x 50-100m
Iron Ore Company of Canada (Canada) (jj)	O/P	320	65.0	61-122m x 30-61m	235	65.0	122m x 61-122m
Palabora (South Africa) (u)	U/G				7.4	55.1	76m x 76m
Robe River JV (Australia)							
Pannawonica (Pisolite ore)							
mine	O/P	174	57.3	50-70m x 50-70m	92	57.1	50-100m x 50-100m
stockpiles (g)		1	56.8		7	56.3	
West Angelas (Marra Mamba ore)							
mine (kk)	O/P	160	62.2	25-100m x 25-50m	66	60.9	50-200m x 25-50m
stockpiles (g)		1	62.6		1	59.9	
Undeveloped reserves (l)							
Silvergrass East (Marra Mamba ore) (ll)	O/P	61	62.7	50m x 50m	38	61.3	200m x 100m
Simandou (Guinea) (mm)	O/P				1,844	65.5	30-125m x 30-125m
Turee Central (Brockman ore)	O/P	72	62.0	60-120m x 60-120m	6.1	61.4	60-120m x 60-120m
MOLYBDENUM		**millions of tonnes**	**% Mo**		**millions of tonnes**	**% Mo**	
Reserves at operating mine							
Bingham Canyon (US)							
mine (nn) (m)	O/P	417	0.046	85m x 85m	287	0.046	131m x 131m
stockpiles (nn) (g)		40	0.044		41	0.015	

NICKEL		millions of tonnes	% Ni	millions of tonnes	% Ni	
Undeveloped reserves						
Eagle (US) (v)	U/G			5.2	2.93	1-25m x 1-25m

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	Type of mine (b)	Proven ore reserves at end 2012 Tonnage millions of tonnes	Grade grammes per tonne	Drill hole spacing (qq)	Probable ore reserves at end 2012 Tonnage millions of tonnes	Grade grammes per tonne	Drill hole spacing (qq)
SILVER							
Reserves at operating mines							
Bingham Canyon (US)							
mine (m)	O/P	417	2.22	85m x 85m	287	2.01	131m x 131m
stockpiles (g)		40	1.74		41	1.94	
Grasberg (Indonesia)	O/P + U/G	800	4.43	0-60m x 0-60m	1,624	4.14	7-358m x 7-358m
		millions of tonnes	**% U_3O_8**		**millions of tonnes**	**% U_3O_8**	
URANIUM							
Reserves at operating mines							
Energy Resources of Australia (Australia)							
Ranger #3 stockpiles (oo) (g)					7.3	0.132	
Rössing (Namibia)							
mine (pp)	O/P	25	0.033	4-7m x 4-9m	102	0.035	20-120m x 20-120m
stockpiles (g)		3.8	0.019				

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Ore reserves (under industry guide 7) continued

Notes

(a) Commodity prices (based on a three year average historical price to 30 June, 2012) used to test whether the reported reserve estimates could be economically extracted, include the following benchmark prices :

Ore reserve	Unit	US$
Aluminium	pound	0.99
Copper	pound	3.56
Gold	ounce	1,378
Iron ore		
Australian benchmark (fines fob)	dmtu**	133.10
Molybdenum	pound	14.80
Nickel	pound	945.00
Silver	ounce	26.20

** dry metric tonne unit

(b) Type of mine: O/P = open pit, O/C = open cut, U/G = underground
(c) Reserves of iron ore, bauxite and diamonds are shown as recoverable reserves of marketable product after accounting for all mining and processing losses. Mill recoveries are therefore not shown.
(d) Reserves at Trombetas (MRN) decreased following production.
(e) The reserves increased at Sangaredi following continued exploration, technical and economic studies supporting a reduced cut-off grade.
(f) Reserves of industrial minerals are expressed in terms of marketable product, ie after all mining and processing losses. In the case of borates, the marketable product is B_2O_3 .
(g) Stockpile components of reserves are shown for all operations at the relevant mine.
(h) For coal, the yield factors shown reflect the impact of further processing, where necessary, to provide marketable coal.
(i) Coal type: SC: steam/thermal coal, MC: metallurgical/coking coal.
(j) Coals from Australia have been analysed on an Air Dried moisture basis in accordance with Australian Standards. Marketable reserve tonnages are reported at product moisture.
(k) Benga reserves are reported under operating mines for the first time following commencement of mining. The decrease in reserve tonnes is a result of production and technical studies.
(l) The term undeveloped reserves is used here to describe material that is economically viable on the basis of technical and economic studies but for which mining and processing permits may have yet to be requested or obtained. There is a reasonable, but not absolute, certainty that the necessary permits will be issued and that mining can proceed when required.
(m) Bingham Canyon open pit reserve tonnes decreased after updated technical studies including re-assessment of geotechnical and processing parameters.
(n) Bingham Canyon stockpile reserve grades increased following re-assessment of processing options.
(o) Escondida sulphide reserve tonnes increased and grade decreased following economic studies and improved metallurgical recoveries.
(p) Escondida sulphide leach reserve tonnes decreased following economic studies and re-allocation of tonnes to the mill.

(q) The Escondida oxide stockpile reserve tonnes decrease follows processing of stockpiled ore.
(r) Under the terms of a joint venture agreement between Rio Tinto and FCX, Rio Tinto is entitled to a direct 40 per cent share in reserves discovered after 31 December 1994 and it is this entitlement that is shown.
(s) South Oyu reserves are reported under operating mines for the first time following commencement of mining. Rio Tinto increased its interest in South Oyu from 32.3 per cent to 33.5 per cent during 2012.
(t) South Oyu stockpiles reserves are reported for the first time following commencement of mining.
(u) In December 2012, Rio Tinto announced that it has signed a binding agreement to sell its 57.7 per cent effective interest in the Palabora Mining Company. The decrease in reported tonnage reflects production as well as anticipated metal recovery rates based on reconciliation results.
(v) Eagle reserve tonnes increased after additional drilling and some stope redesign.
(w) Hugo Dummett North reserves increased following updated economic studies. Rio Tinto increased its interest in Hugo Dummett North from 32.3 per cent to 33.5 per cent during 2012.
(x) Hugo Dummett North Extension reserve tonnes increased and gold grade decreased following technical and economic studies. Rio Tinto increased its interest in Hugo Dummett North Extension from 29.5 per cent to 30.5 per cent during 2012.
(y) Updated technical studies have resulted in a decrease in South Oyu open pit reserve gold grade.
(z) All Pilbara Iron reserves tonnes reported below are on a dry weight basis.
(aa) The Brockman 2 (Brockman ore) reserves increase follows technical and economic studies.
(bb) The decrease in Mt Tom Price (Brockman ore) reserves results from production and technical and economic studies.
(cc) The decrease in Mt Tom Price (Marra Mamba ore) reserves reflects production and technical and economic studies.
(dd) The increase in Paraburdoo (Brockman ore) reserves follows technical and economic studies.
(ee) Western Turner Syncline (Brockman ore) reserves increased after updating technical and economic studies.
(ff) The Yandicoogina (Process Product) reserves decrease reflects production and updated technical and economic studies.
(gg) The Hamersley Channar (Brockman ore) reserves decrease reflects production and updated technical and economic studies.
(hh) The Hamersley Eastern Range (Brockman ore) reserves increase follows technical and economic studies.
(ii) Hope Downs 1 (Marra Mamba ore) reserves reduction reflects production and updated technical studies.
(jj) Reserves at Iron Ore Company of Canada are reported as marketable product (55 per cent pellets and 45 per cent concentrate for sale), at a natural moisture content of two per cent using process upgrade factors derived from current IOC concentrating and pellet operations. The marketable product is obtained from mined material comprising 763 million dry tonnes at 37.9 per cent iron (proven) and 557 million dry tonnes at 37.5 per cent iron (probable).
(kk) West Angelas (Marra Mamba) reserve tonnes reduced following production and updated technical and economic studies.
(ll) Silvergrass East (Marra Mamba ore) reserves are reported for the first time as a result of technical and economic studies.
(mm) Rio Tinto s interest in the Simandou joint venture (JV) has reduced from 95 per cent to 50.35 per cent . The remaining JV share is Chalco with 44.65 per cent and the IFC with 5 per cent. Arrangements entered into between the JV and the Government of Guinea (the Settlement Agreement) provide for the Government of Guinea to acquire an interest in the JV. The JV has completed a Definitive Engineering Study that supports the first publication of Ore Reserves for the Simandou Project. Ore Reserves cut-offs are Fe>=58 per cent and Al_2O_3<3 per cent for reporting.
(nn) Molybdenum grades interpolated from exploration drilling assays have been factored based on a long reconciliation history to blasthole and mill samples.
(oo) Following completion of open cut mining, Ranger #3 reserves are reported as stockpiles only with reduced tonnes and grade.
(pp) Rössing reserve tonnes reduced following production and an updated block model.
(qq)

Drill hole spacings are either average distances, a specified grid distance (a regular pattern of drill holes - the distance between the drill holes along the two axes of the grid will be aligned to test the size, shape and continuity of the mineral deposit; as such there may be different distances between the drill holes along the two axes of a grid) or the maximum drill hole spacing that is sufficient to determine the reserve category for a particular deposit. As the continuity of mineralisation varies from deposit to deposit, the drill hole spacing required to categorise a reserve varies between and within deposit types.

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Mines and production facilities

Group mines as at 31 December 2012

(Rio Tinto s interest 100 per cent unless otherwise shown)

Mine	Location	Access	Title/lease
Bauxite			
Rio Tinto Alcan			
CBG Sangaredi (22.95%)	Kamsar, Guinea	Road, air and port	Lease expires in 2038.
MRN Porto Trombetas (12%)	Porto Trombetas, Para, Brazil	Air or port	Mineral rights granted for undetermined period.
Weipa/Ely	Weipa, Queensland, Australia	Road, air and port	The Queensland Government Comalco (ML704) lease expires in 2041 with an option of a 21-year extension, then two years notice of termination; the Ely Alcan Queensland Pty. Limited Agreement Act 1965 (ML7301) expires in 2048 with a 21-year right of renewal with a two-year notice period.
Pacific Aluminium			
Gove	Gove, Northern Territory, Australia	Road, air and port	All leases were renewed in 2011 for a further period of 42 years. The residue disposal area is leased from the Arnhem Land Aboriginal Land Trust. The Northern Territory government is the lessor of the balance of the leases; however, on expiry of the 42-year renewed term, the land subject of the balances of the leases will all vest to the Arnhem Land Aboriginal Land Trust.
Copper			
Escondida (30%)	Atacama Desert, Chile	Pipeline and road to deep sea port at Coloso; road and rail	Rights conferred by Government under Chilean Mining Code.
Grasberg joint venture (40% of production)	Papua, Indonesia	Pipeline, road and port	Indonesian Government Contracts of Work expire in 2021 with option of two ten-year extensions.
Kennecott Utah Copper	Near Salt Lake City, Utah, US	Pipeline, road and rail	Owned
Bingham Canyon		Road and rail	

Northparkes (80%)	Goonumbla, New South Wales, Australia		Hold three State Government mining leases of which two are pending renewal after lodgement in 2011 and remain in effect until renewal approval as per relevant legislation. Third lease expires 2031. Development consent approved in 2009 for extension of mine life to 2025.
Oyu Tolgoi (51% of Turquoise Hill Resources which owns 66% of Oyu Tolgoi)	Gobi Desert, Mongolia	Air and road	Three mining licences are held by Oyu Tolgoi LLC and two further licences are held in joint venture with Entrée Gold LLC. The licence term under the Minerals Law of Mongolia is 30 years with two 20-year extensions. First renewals are due in 2033 and 2039 for the Oyu Tolgoi and Entrée Gold licences respectively.
Palabora (57.7%)	Phalaborwa, Limpopo Province, South Africa	Rail and road	Lease from South African Government until deposits depleted. Base metal claims owned by Palabora.
Diamonds & Minerals			
Diamonds			
Argyle Diamonds	Kimberley Ranges, Western Australia	Road and air	Mining tenement held under Diamond (Argyle Diamond Mines Joint Venture) Agreement Act 1981-1983; lease extended for 21 years from 2004.
Diavik (60%)	Northwest Territories, Canada	Air, ice road in winter	Mining leases from Canadian Federal Government expiring in 2017 and 2018 with options to renew.
Murowa (77.8%)	Zvishavane, Zimbabwe	Road and air	Claims and mining leases
Industrial minerals			
Dampier Salt (68.4%)	Dampier, Lake MacLeod and Port Hedland, Western Australia	Road and port	State agreements (mining leases) expiring in 2013 at Dampier, 2018 at Port Hedland and 2021 at Lake MacLeod with options to renew in each case.
Rio Tinto Minerals Boron	California, US	Road and rail	Owned
Rio Tinto Fer et Titane Lac Tio	Havre-Saint-Pierre, Quebec, Canada	Rail and port (St Lawrence River)	Mining covered by two concessions granted by State in 1949 and 1951 which, subject to certain Mining Act restrictions, confer rights and obligations of an owner.

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History	Type of mine	Power source
Bauxite mining commenced in 1973. Shareholders are 51% Halco and 49% Government of Guinea. Rio Tinto Alcan has held 45% of Halco since 2004. Current annual capacity is 13.6 million tonnes. Rio Tinto Alcan has a 45 per cent interest in the mine s production.	Open cut	On-site generation (fuel oil)
Mineral extraction commenced in April 1979. Initial production capacity 3.4 million tonnes annually. From October 2003, production capacity up to 16.3 million tonnes per year on a dry basis. Capital structure currently: Vale (40%), BHP Billiton (14.8%), Rio Tinto Alcan (12%), CBA (10%), Alcoa/Abalco (18.2%) and Norsk Hydro (5%).	Open cut	On-site generation (heavy oil, diesel)
Bauxite mining commenced in 1961 at Weipa. Major upgrade completed at Weipa in 1998. Rio Tinto interest increased from 72.4% to 100% in 2000. In 1997, Ely Bauxite Mining Project Agreement signed with local Aboriginal land owners. Bauxite Mining and Exchange Agreement signed in 1998 with Comalco to allow for extraction of ore at Ely. The Western Cape Communities Co-Existence Agreement, an Indigenous Land Use Agreement, was signed in 2001. In 2004 a mine expansion was completed at Weipa that lifted annual capacity to 21.5 million tonnes. Mining commenced on the adjacent Ely mining lease in 2006, in accordance with the 1998 agreement with Alcan (first ore extracted at Ely in 2007). A second shiploader that increases the shipping capability was commissioned in 2006 at Weipa.	Open cut	On-site generation; new power station commissioned in 2006
Bauxite mining commenced in 1970 feeding both the Gove refinery and export market capped at two million tonnes per annum. Bauxite export ceased in 2006 with feed intended for the expanded Gove refinery. Bauxite exports recommenced in 2008. Current production capacity about ten million tonnes per annum with mine life estimated to 2030.	Open cut	Central power station located at the Gove refinery
Production started in 1990 and expanded in phases to 2002 when the new concentrator was completed; production from Norte started in 2005 and the sulphide leach produced the first cathode during 2006.	Open pit	Supplied from SING grid under various contracts with local generating companies
Joint venture interest acquired 1995. Capacity expanded to over 200,000 tonnes of ore per day in 1998. Addition of underground production of more than 35,000 tonnes per day in 2003. Expansion to 50,000 tonnes per day in mid-2007 and to 80,000 tonnes in 2010.	Open pit and underground	Long-term contract with US-Indonesian consortium operated purpose-built coal-fired generating station
Interest acquired in 1989. Modernisation includes smelter complex and expanded tailings dam.	Open pit	On-site generation supplemented by long-term contracts with Rocky Mountain Power
Production started in 1995; interest acquired in 2000.		

	Open pit and underground	Supplied from State grid
Oyu Tolgoi was first discovered in 1996. Construction began in late 2009 and in early 2011 a new zone of shallow copper-molybdenum-gold mineralisation was discovered in southern Mongolia. The discovery, known as Ulaan Khud North, extends the known strike length of the Oyu Tolgoi mineralised system by an additional three kilometres to the north, to more than 23 kilometres.	Open pit and underground	On site diesel generation in addition to grid power from China
Development of 20-year underground mine commenced in 1996 with open pit closure in 2003.	Underground	Supplied by ESKOM via grid network
Interest increased from 59.7% following purchase of Ashton Mining in 2000. Underground mine project approved in 2005 to extend mine life to 2020.	Open pit to underground in future	Long-term contract with Ord Hydro Consortium and on-site generation
Deposits discovered 1994-1995. Construction approved 2000. Diamond production started 2003. Second dike closed off in 2005 for mining of additional orebody. The underground mine started production in 2010, ramping up to full production in 2013.	Open pit to underground in future	On-site diesel generators; installed capacity 44MW and 9.2MW of wind capacity
Discovered in 1997. Small-scale production started in 2004.	Open pit	Supplied by ZESA with diesel generator back-up
Construction of the Dampier field started in 1969; first shipment in 1972. Lake MacLeod was acquired in 1978 as an operating field. Port Hedland was acquired in 2001 as an operating field.	Solar evaporation of seawater (Dampier and Port Hedland) and underground brine (Lake MacLeod); dredging of gypsum from surface of Lake MacLeod	Dampier supply from Hamersley Iron Pty Ltd; Lake MacLeod from Western Power and on-site generation units; Port Hedland from Western Power
Deposit discovered in 1925 and acquired by Rio Tinto in 1967.	Open pit	On-site co-generation units and local power grid
Production started 1950; interest acquired in 1989.	Open pit	Long-term contract with Hydro-Québec

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Mines and production facilities continued

Group mines as at 31 December 2012 continued (Rio Tinto s interest 100 per cent unless otherwise shown)

Mine	Location	Access	Title/lease
Industrial minerals continued			
QIT Madagascar Minerals (80%)	Fort-Dauphin, Madagascar	Road and port	Mining lease granted by central government.
Richards Bay Minerals (74%)	Richards Bay, KwaZulu-Natal, South Africa	Rail, road and port	Mineral rights for Reserve 4 and Reserve 10 issued by state and converted to new order mining rights on 7 May 2012. Mining rights run until 8 May 2041 for both lease areas.
Energy			
Energy Resources of Australia (68.4%)	Northern Territory, Australia	Road	Mining tenure granted by Federal Government.
Ranger			
Rio Tinto Coal Australia* Bengalla (32%)	New South Wales and Queensland, Australia	Road, rail, conveyor and port	Leases granted by state.
Clermont Mine (50.1%)			
Hail Creek (82%)			
Hunter Valley Operations (80%)			
Kestrel (80%)			
Mount Thorley Operations (64%)			
Warkworth (44.46%)			
Rio Tinto Coal Mozambique	Tete, Mozambique	Road and rail	Mining concession granted by state.
Benga (65%)			
Rössing Uranium (68.6%)	Namib Desert, Namibia	Rail, road and port	National government grant.
Iron Ore			
Hamersley Iron	Hamersley Ranges, Western	Railway and port (owned	Agreements for life of mine with Government of Western Australia.

Brockman 2 Brockman 4 Marandoo Mount Tom Price Nammuldi Paraburdoo Western Turner Syncline Yandicoogina	Australia	by Hamersley Iron and operated by Pilbara Iron)	
Channar (60%) Eastern Range (54%)			
Hope Downs 1 (50% mine, 100% infrastructure)	Pilbara region, Western Australia	Railway owned and operated by Rio Tinto	Agreements for life of mine with Government of Western Australia.
Iron Ore Company of Canada (IOC) (58.7%)	Labrador City, Province of Labrador and Newfoundland	Railway and port facilities in Sept-Îles, Quebec (owned and operated by IOC)	Sublease with the Labrador Iron Ore Royalty Corporation which has lease agreements with the Government of Newfoundland and Labrador that are due to be renewed in 2020 and 2022.
Robe River Iron Associates (53%) Mesa J Mesa A West Angelas	Pilbara region, Western Australia	Railway and port (owned by Robe River and operated by Pilbara Iron)	Agreements for life of mine with Government of Western Australia.

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History	Type of mine	Power source
Exploration project started in 1986; construction approved 2005. Ilmenite and zirsil production started at the end of 2008. QMM intends to extract ilmenite and zirsil from heavy mineral sands over an area of about 6,000 hectares along the coast over the next 40 years.	Mineral sand dredging	On-site diesel generators
Production started 1977; initial interest acquired 1989. Fifth mining plant commissioned in 2000. One mining plant decommissioned in 2008. In September 2012, Rio Tinto doubled its holding in Richards Bay Minerals to 74 per cent following the acquisition of BHP Billiton s entire interests.	Dune sand dredging	Contract with ESKOM
Mining commenced 1981. Interest acquired through acquisition of North 2000. Open pit mining ended December 2012.	Stockpile	On-site diesel/steam power generation
Kestrel was acquired and recommissioned in 1999. Hail Creek started in 2003. Clermont Mine commenced production in 2010. Rio Tinto completed the privatisation of Coal & Allied during 2011, which is now owned 80/20 with Mitsubishi Development, and which Rio Tinto continues to manage. Successive acquisitions of surrounding assets results in the current portfolio. Blair Athol Mine ceased operations in 2012.	Open cut and underground (Kestrel)	State-owned grid
Interest acquired in 2011. Production began in 2012.	Open pit	Mozambican national grid and diesel generators
Production began in 1976.	Open pit	Supplied by NamPower via grid network
Annual capacity increased to 68 million tonnes during 1990s. Yandicoogina first ore shipped in 1999 and port capacity increased. Eastern Range started 2004.	Open pit	Supplied through the integrated Hamersley and Robe power network operated by Pilbara Iron
Joint venture between Rio Tinto and Hancock Prospecting. Construction of Stage 1 to 22 million tonnes per annum commenced April 2006 and first production occurred November 2007. Stage 2 to 30 million tonnes per annum completed 2009.	Open pit	Supplied through the integrated Hamersley and Robe power network operated by Pilbara Iron
Interest acquired in 2000 through North. Current operation began in 1962 and has processed over one billion tonnes of crude ore since. Annual capacity 17.5 million tonnes of concentrate of which 13.5 million tonnes can be pelletised.	Open pit	Supplied by Newfoundland Hydro under long-term contract
First shipment in 1972. Annual sales reached 30 million tonnes in late 1990s. Interest acquired in 2000 through North. West Angelas first ore shipped in 2002 and mine expanded in 2005. Current capacity approximately 50 million tonnes per year.	Open pit	Supplied through the integrated Hamersley and Robe power network operated by Pilbara Iron

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Mines and production facilities continued

Group smelters and refineries

(Rio Tinto s interest 100 per cent unless otherwise shown)

Smelter/refinery	Location	Title/lease	Plant type/product	Capacity as of 31 December 2012 (based on 100% ownership)
Aluminium				
Rio Tinto Alcan				
Alma	Alma, Quebec, Canada	100% freehold	Aluminium smelter producing aluminium rod, t-foundry, molten metal, high purity, remelt, busbars	438,000 tonnes per year aluminium
Alouette (40%)	Sept-Îles, Quebec, Canada	100% freehold	Aluminium smelter producing aluminium high purity, remelt	597,000 tonnes per year aluminium
Alucam (46.7%)	Edéa, Cameroon	100% freehold	Aluminium smelter producing aluminium slab, remelt	100,000 tonnes per year aluminium
Arvida	Saguenay, Quebec, Canada	100% freehold	Aluminium smelter producing aluminium billet, molten metal, remelt	176,000 tonnes per year aluminium
Bécancour (25.1%)	Bécancour, Quebec, Canada	100% freehold	Aluminium smelter producing aluminium slab, billet, t-foundry, remelt, molten metal	433,000 tonnes per year aluminium

Dunkerque	Dunkerque, France	100% freehold	Aluminium smelter producing aluminium slab, small form foundry, remelt	262,000 tonnes per year aluminium
Grande-Baie	Saguenay, Quebec, Canada	100% freehold	Aluminium smelter producing aluminium slab, molten metal, high purity, remelt	224,000 tonnes per year aluminium
ISAL	Reykjavik, Iceland	100% freehold	Aluminium smelter producing aluminium slab, remelt, billet	191,000 tonnes per year aluminium
Jonquière (Vaudreuil)	Jonquière, Quebec, Canada	100% freehold	Refinery producing specialty aluminas and smelter grade aluminas	1,500,000 tonnes per year alumina
Kitimat[(a)]	Kitimat, British Columbia, Canada	100% freehold	Aluminium smelter producing aluminium billet, slab, remelt	187,000 tonnes per year aluminium
Laterrière	Saguenay, Quebec, Canada	100% freehold	Aluminium smelter producing aluminium slab, remelt, molten metal	239,000 tonnes per year aluminium
Lochaber	Fort William, Scotland, UK	100% freehold	Aluminium smelter producing aluminium slab, remelt	47,000 tonnes per year aluminium
Queensland Alumina (80%)	Gladstone, Queensland, Australia	73.3% freehold; 26.7% leasehold (of which more than 80% expires in 2026 and after)	Refinery producing alumina	3,950,000 tonnes per year alumina
Saint-Jean-de-Maurienne	Saint-Jean-de-Maurienne, France	100% freehold	Aluminium smelter producing aluminium rod, remelt	142,000 tonnes per year aluminium
São Luis (Alumar) (10%)		100% freehold		

	São Luis, Maranhão, Brazil		Refinery producing alumina	3,500,000 tonnes per year alumina
Shawinigan	Shawinigan, Quebec, Canada	100% freehold	Aluminium smelter producing aluminium billet, remelt	102,000 tonnes per year aluminium
Sohar (20%)	Sohar, Oman	100% leasehold (expiring 2039)	Aluminium smelter producing aluminium, high purity, remelt	372,000 tonnes per year aluminium
SØRAL (50%)	Husnes, Norway	100% freehold	Aluminium smelter producing aluminium billet, remelt	184,000 tonnes per year aluminium
Yarwun	Gladstone, Queensland, Australia	97% freehold. 3% leasehold (expiring 2101 and after)	Refinery producing alumina	3,400,000 tonnes per year alumina
Pacific Aluminium				
Bell Bay	Bell Bay, Northern Tasmania, Australia	100% freehold	Aluminium smelter producing aluminium slab, molten metal, small form and t-foundry, remelt	180,000 tonnes per year aluminium
Boyne Smelters (59.4%)	Boyne Island, Queensland, Australia	100% freehold	Aluminium smelter producing aluminium billet, EC grade, small form and t-foundry, remelt	560,000 tonnes per year aluminium
Gove	Gove, Northern Territory, Australia	100% leasehold. All leases were renewed in 2011 for a further period of 42 years. The residue disposal area is leased from the Arnhem Land Aboriginal Land Trust. The Northern Territory government is the	Refinery producing alumina	2,650,000 tonnes per year alumina

		lessor of the balance of the leases; however, on expiry of the 42-year renewed term, the land subject of the balances of the leases will all vest to the Arnhem Land Aboriginal Land Trust.		
Tiwai Point (New Zealand Aluminium Smelters) (79.4%)	Invercargill, Southland, New Zealand	19.6% freehold; 80.4% leasehold (expiring in 2029 and use of certain Crown land)	Aluminium smelter producing aluminium billet, slab, small form foundry, high purity, remelt	350,000 tonnes per year aluminium
Tomago (51.6%)	Tomago, New South Wales, Australia	100% freehold	Aluminium smelter producing aluminium billet, slab, remelt	530,000 tonnes per year aluminium

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Smelter/refinery	Location	Title/lease	Plant type/product	Capacity as of 31 December 2012 (based on 100% ownership)
Other Aluminium				
Sebree	Robards, Kentucky, US	100% freehold	Aluminium smelter producing aluminium billet, t-foundry, remelt	200,000 tonnes per year aluminium
Copper				
Kennecott Utah Copper	Magna, Salt Lake City, Utah, US	100% freehold	Flash smelting furnace/Flash convertor furnace copper refinery	335,000 tonnes per year refined copper
Palabora (57.7%)	Phalaborwa, South Africa	100% freehold	Reverberatory Pierce Smith copper refinery	90,000 tonnes per year refined copper
Diamonds & Minerals				
Boron	California, US	100% freehold	Borates refinery	576,000 tonnes per year boric oxide
Rio Tinto Fer et Titane **Sorel Plant**	Sorel-Tracy, Quebec, Canada	100% freehold	Ilmenite smelter	1,300,000 tonnes per year titanium dioxide slag, 1,000,000 tonnes per year iron
Richards Bay Minerals (74%)	Richards Bay, South Africa	100% freehold	Ilmenite smelter	1,030,000 tonnes per year titanium dioxide slag, 550,000 tonnes per year iron
Iron Ore				
IOC Pellet Plant (59%)	Labrador City, Newfoundland and Labrador, Canada	100% leaseholds (expiring in 2020, 2022 and 2025 with rights of renewal for further terms of 30 years)	Pellet induration furnaces producing multiple iron ore pellet types	13,500,000 tonnes per year pellet

Notes:

[a] Capacity as at 31 December 2012 reflects the closures of two potlines in preparation for the Kitimat modernisation project. The nameplate capacity of the Kitimat smelter remains at 282,000 tonnes per year.

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Mines and production facilities continued

Information on Group power plants

(Rio Tinto s interest 100 per cent unless otherwise shown)

Power plant	Location	Title/lease	Plant type/product	Capacity as of 31 December 2012 (based on 100% ownership)
Aluminium				
Rio Tinto Alcan				
Highlands power stations	Lochaber, Kinlochleven, UK	100% freehold	Hydroelectric power	109MW
Kemano power station	Kemano, British Columbia, Canada	100% freehold	Hydroelectric power	896MW
Quebec power stations	Saguenay, Quebec, Canada (Chute-à-Caron, Chute-à-la-Savane, Chutes-des-Passes, Chute-du-Diable, Isle-Maligne, Shipshaw)	100% freehold (except Péribonka lease to 2058)	Hydroelectric power	3,147MW
Vigelands power station	Nr Kristiansand, Norway	100% freehold	Hydroelectric power	26MW
Yarwun alumina refinery co-generation plant	Gladstone, Queensland, Australia	100% freehold	Gas turbine and heat recovery steam generator	160MW
Weipa power stations	Lorim Point, Andoom, Queensland, Australia	100% leasehold	On-site generation (diesel)	36MW
Pacific Aluminium				
Gladstone power station (42%)	Gladstone, Queensland, Australia	100% freehold	Thermal power station	1,680MW
Gove power station	Nhulunbuy, Northern Territory, Australia	100% leasehold	Heavy oil fired thermal power station	180MW
Copper				
Phalaborwa power station	Phalaborwa, Limpopo Province, South Africa	100% freehold	Steam turbine running off waste	9.27MW

(57.7%)			heat boilers at the copper smelter	
Puncakjaya Power (22.12%)	Grasberg, Papua, Indonesia	Lease	Diesel power plant	193MW
Kennecott Utah Copper Power Stations	Salt Lake City, Utah, US	100% freehold	Thermal power plant Thermal power station Steam turbine running off waste heat boilers at the copper smelter Combined heat and power plant supplying steam to the copper refinery	175MW 31.8MW 6.2MW

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Power plant	Location	Title/lease	Plant type/product	Capacity as of 31 December 2012 (based on 100% ownership)
Diamonds & Minerals				
Boron co-generation plant	Boron, California, US	100% freehold	Co-generation uses natural gas to generate steam and electricity, used to run Boron s refining operations	48MW
Energy				
Energy Resources of Australia (Rio Tinto: 68.4%)	Ranger mine, Jabiru, Northern Territory, Australia	Lease	Five diesel generator sets rated at 5.1MW; 1 diesel generator rated at 1.9MW	27.4MW
Iron Ore				
IOC power station	Sept Îles, Quebec, Canada	100% freehold	Hydroelectric power	22MW
Paraburdoo power station	Paraburdoo, Western Australia, Australia	Lease	LM6000 PC gas fired turbines	153MW
Yurralyi Maya power station (Rio Tinto: 58%)	Dampier, Western Australia, Australia	Lease	LM6000 PD gas fired turbines	180MW

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Governance

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Letter from the chairman

Dear Shareholder,

In our pursuit of greater shareholder value, we must maintain the highest standards of corporate governance. In the section that follows, we focus on our corporate governance framework and practice, provide you with further details about the board and explain how it carries out its responsibilities to safeguard the Group s assets. We acknowledge that the level of write-downs across our coal and aluminium businesses is deeply disappointing. Under Sam Walsh s leadership, there is greater focus, discipline and accountability throughout the organisation. This is underpinned by your board s oversight of the robust corporate governance framework to support our business and strategic delivery.

Strategy and risk management

My role as chairman is to lead the board and to ensure it is focused on its oversight of management and the delivery of our strategy. Sam Walsh s role as chief executive is to focus on sustained operational excellence and growth of the business and to do so with safety as the utmost priority. Our roles are complementary but distinct. The separation of executive and non-executive accountabilities is essential to good governance: the executives, under Sam s leadership, have an operational role, whereas the non-executives have an oversight role, ensuring accountability and exercising strong and deliberate challenge through the board decision-making process to ensure appropriate control mechanisms are in place to safely implement our strategy and plans.

Your board devotes much of its time to reviewing, debating and challenging proposals for investment from management, as well as dealing with a wide range of other issues including safety and the Group s strategic direction, monitoring business performance, optimising capital allocation and expenditure whilst carefully evaluating the wide range of risks facing the business.

Board composition

The board places great emphasis on succession planning, both non-executive and executive. Even though we were successful in bringing forward new talent to the executive team in 2012, the impairments which we booked in early 2013 led to the departure of Tom Albanese and Doug Ritchie. The board is grateful to Tom and Doug for their significant contributions to Rio Tinto over their many years with the Group, and was pleased to appoint Sam Walsh as chief executive. Sam s many years of experience with the Company will ensure a rapid and effective transition towards building a stronger business. The board has also appointed Chris Lynch as chief financial officer-designate. He has a wealth of experience, both within and outside the sector, and will be a great asset to the Executive Committee. The board was also pleased to announce the promotion of Jean-Sébastien Jacques as chief executive, Copper, following Andrew Harding s move to lead the Iron Ore group.

Our efforts continue to focus on ensuring that the profile, skill sets, diversity and individual qualities of our executives and non-executives can serve the current and future needs of the business and the ever-changing environment in which we operate.

We are a balanced and diverse board, comprising myself as chairman, three executive directors and eight independent non-executive directors, all of whom meet strict independence criteria. The directors bring with them truly international experience from a wide range of professional, business and public office backgrounds. For Rio Tinto, diversity embraces a range of different measures, including, of course, gender diversity. We have adopted a diversity

and inclusion policy and set measurable objectives for achieving diversity across the Company, including on the board.

We provide new board members with a detailed induction programme and extensive ongoing training, including site visits. In 2012, we visited our mineral sand and coal operations in Southern Africa. We also visited our alumina refineries in Queensland and our underground copper mine in Northparkes, New South Wales, Australia.

Board evaluation

For the first time in 2012, the board s annual performance evaluation was facilitated by an independent external expert, and the board will devote considerable attention to the outcomes of this exercise, when the outcomes are shared in the first half of 2013. I remain happy with the overall effectiveness of the board and the contribution each member of the board is making, while recognising the need for continuous improvement and a focus on accountability, values, strong governance and prudent management of risk in the delivery of our strategy.

We want to ensure we have people on your board for whom corporate governance is not simply a set of rules: we need those who embrace it and appreciate that we want to manage the Group in the interests of all our stakeholders. Good governance is at the heart of everything we do. As you will read in the sections that follow, the board committees, under the effective leadership of their respective chairs, carry out important and demanding roles on the board s behalf and facilitate the embedding of effective governance across the organisation.

Yours sincerely,

Jan du Plessis

Chairman

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Corporate governance

Rio Tinto takes a unified approach to corporate governance to comply with the regulatory obligations associated with its three principal stock exchange listings in the UK, Australia and the US.

Statement of compliance with governance codes and standards in 2012

In compiling this report, the directors have referred to the June 2010 edition of the UK Corporate Governance Code (the Code), the Australian Securities Exchange (ASX) Corporate Governance Principles and Recommendations (the ASX Principles), and the New York Stock Exchange (NYSE) Corporate Governance Standards (the NYSE Standards).

Throughout 2012, and at the date of this report, the Group applied the principles of, and was compliant with the provisions of, the Code and with the ASX Principles.

Rio Tinto plc, as a foreign issuer with American Depositary Shares listed on the NYSE, is obliged by the NYSE Standards to disclose any significant ways in which its practices of corporate governance differ from the NYSE Standards.

The Company has reviewed the NYSE Standards and believes that its practices are broadly consistent with them, with one exception. The NYSE Standards state that companies must have a nominating/ corporate governance committee composed entirely of independent directors which, in addition to identifying individuals qualified to become board members, develops and recommends to the board a set of corporate governance principles applicable to the Company.

Rio Tinto has a Nominations Committee, information about which is set out on page 77. This committee does not develop corporate governance principles for the board s approval. The board itself performs this task and approves the Group s overall system of governance and internal controls.

Further information about the corporate governance framework is available in the Shareholders section of Rio Tinto s website.

The board

Rio Tinto plc and Rio Tinto Limited have a common board of directors. The directors are responsible for the success of the Group and, through the independent oversight of management, are accountable to shareholders for the performance of the business.

Role and responsibilities

The principal role of the board is to set the Group s strategy and to regularly review its strategic direction. In doing this, the board also has responsibility for corporate governance and oversees management s control and accountability framework.

A formal schedule of matters reserved by the board has been established by the directors. This covers areas such as the Group s strategy, major investments, acquisitions and divestments and oversight of risk. It is available on the website.

Responsibility for day-to-day management of the business is delegated to the chief executive and the Executive Committee. In turn, authorities are also delegated to individual members of the Executive Committee, all within an agreed financial control framework. As part of the annual financial planning process, the board sets annual performance targets, which include personal and business performance measures, under the Group s short-term incentive plan (detailed on page 97). These performance targets are determined by the Remuneration Committee on behalf of the board for the chief executive based upon his proposals and objectives for the year. The chief executive establishes targets for the other members of his Executive Committee which are then cascaded throughout management teams. Further details of the performance evaluation of the executive directors and other senior executives is discussed in the Remuneration report.

Board balance and independence

Board composition

The names, skills and experience of each director together with their terms in office are shown in the biographical details on pages 83 to 85. Details of changes to the board during 2012 and in the year to date are set out in the Directors report on page 89.

Director independence

The tests of independence of a non-executive director vary between the jurisdictions where Rio Tinto has listings. The board has adopted a formal policy for the determination of the independence of its non-executive directors which is available on the Group s website. Applying the criteria of the independence policy, the board is satisfied that all of its non-executive directors are independent.

Among the key criteria of the independence policy are independence from management and the absence of any business relationship which could materially interfere with the director s independence of judgment and ability to provide a strong, valuable contribution to the board s deliberations, or which could interfere with the director s ability to act in the best interests of the Group. Where contracts in the ordinary course of business exist between Rio Tinto and a company in which a director has declared an interest, these are reviewed for materiality to both the Group, and the other party to the contract. Material is defined in the policy as being where the relationship accounts for more than two per cent of either party s consolidated gross revenue per annum, although the test also takes other circumstances

into account. The chairman was considered independent upon his appointment under the Code, and in the board s view he continues to satisfy the tests for independence under the ASX Principles and the NYSE Standards.

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Executive directors other directorships

Executive directors may be invited to become non-executive directors of other companies. The Nominations Committee, on behalf of the board operates a procedure under which approval may be given to accept such invitations recognising the benefit to be derived to the individual and to Rio Tinto from such appointments. For further information see page 101.

Election and re-election

The directors may appoint additional members to join the board during the year. Directors appointed in this way will be subject to election by shareholders at the first annual general meetings after their appointment. In subsequent years, the directors are expected to submit themselves for re-election at the annual general meetings each year.

Non-executive directors are normally expected to serve at least six years and, except in special circumstances, would not normally serve more than nine years.

Lord Kerr has been a non-executive director since 2003 and has therefore already served for nine years.

Given the recent executive changes, he has agreed to stand for re-election to the boards at the AGMs. The board considers that Lord Kerr will provide continuity given his significant knowledge of the business and has confirmed that he continues to be independent in carrying out his role.

Governance processes

In 2012, there were eight scheduled board meetings and one board meeting convened and held at short notice. Details of the directors attendance at all of the board and committee meetings held in 2012 are set out on the following page.

The board has regular discussions with the executives on the Group s strategy. These discussions will typically include strategy presentations that are given by product group chief executives, or other members of management. An annual two-day strategy-setting meeting with the Executive Committee is held which includes broader, detailed review sessions on the Group s strategic direction. The outputs from this event help underpin the board s annual financial planning exercise and provide strategic direction and focus to the executive team through effective allocation of the Group s resources.

Directors receive timely, regular and appropriate information to enable them to fulfil their duties. They also have direct access to the advice and services of the company secretaries. The directors are also able to obtain independent professional advice at the Group s expense.

In addition, the directors are in regular informal communication with members of the Executive Committee and other members of management. This helps to foster an open and regular exchange of knowledge and experience.

All new non-executive directors undertake a formal induction programme. In addition, they are routinely provided with training and development opportunities. The directors are also encouraged to participate in site visits to the Group s operations around the world and to meet with local employees. In 2012, the board visited our bauxite and alumina operations in Gladstone, Queensland, our copper mine at Northparkes, New South Wales, our mineral sand operations in Richards Bay, South Africa and our coal business in Mozambique.

Board performance evaluation

An annual exercise is undertaken to evaluate the effectiveness of the board, board committees and individual directors.

For 2012, the board evaluation process was facilitated by Independent Board Evaluation, an independent external consultancy with no other connection with the Company, engaged by the chairman and co-ordinated by the company secretary.

A comprehensive brief was provided to Independent Board Evaluation. The evaluation process involved the consultant attending board and committee meetings in an observer capacity. This was supported by detailed interviews conducted with every board member and members of the Executive Committee and the company secretary.

Based on these interviews, the senior independent non-executive director received a report on the chairman, and feedback on his performance has been provided to him.

The chairman appraised the performance of non-executive directors and provided feedback on each individual s performance and contribution.

A similar process was followed for the board committees. Independent Board Evaluation provided feedback to each of the committee chairs on the performance of each committee. In turn, this will be discussed and any actions agreed by each committee later this year.

Following the conclusion of this evaluation exercise, the board plans to hold a dedicated session at one of its scheduled meetings to discuss the output from the performance evaluation and to consider what actions to put into effect during the remainder of 2013.

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Corporate governance continued

Directors membership of and attendance at board and Committee meetings during 2012

	Board scheduled[f]	Board short notice[f]	Audit Committee[f]	Remuneration Committee[f]	Sustainability Committee[f]	Nominations Committee[f]	Chairman s Committee[f]
Jan du Plessi[a]	7/8	1/1		7/7		4/4	19/19
Tom Albanese[b]	8/8	1/1					18/19
Guy Elliott	8/8	1/1					16/19
Sam Walsh[c]	8/8	1/1					
Robert Brown	8/8	1/1			5/5	4/4	
Vivienne Cox	8/8	1/1			5/5	4/4	
Michael Fitzpatrick	8/8	1/1	6/6	9/9		4/4	
Ann Godbehere	8/8	1/1	6/6			4/4	
Richard Goodmanson	8/8	1/1		9/9	5/5	4/4	
Andrew Gould[d]	2/3	1/1		3/4		1/2	
Lord Kerr	8/8	1/1	6/6		5/5	4/4	
Chris Lynch[e]	8/8	1/1	4/4			4/4	
Paul Tellier	8/8	1/1	6/6	9/9		4/4	
John Varley	7/8	1/1		9/9		4/4	

(a) Appointed to the Remuneration Committee on 7 February 2012
(b) Stood down from the board on 17 January 2013
(c) Appointed chief executive on 17 January 2013
(d) Retired from the board on 10 May 2012
(e) Appointed to the Audit Committee 1 June 2012. Appointed chief financial officer-designate on 1 March 2013, at which time Chris Lynch resigned from the Committee.
(f) Number of meetings attended/maximum the director could have attended

Governance structure

The board has established formal committees which are responsible for audit, remuneration, sustainability and matters relating to executive and non-executive succession. In addition, a Chairman s Committee operates under delegated authority between scheduled board meetings. These support the board in ensuring that high standards of corporate governance are maintained across the Group.

The committees are governed by terms of reference, set and approved by the board, which are reviewed annually and can be viewed on the corporate governance section of the website.

The chief executive is assisted by the Executive Committee in monitoring performance and delivering Rio Tinto s strategy.

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Progress against our priorities

What we said

Review financial and non-financial performance metrics to retain a strong balance sheet;

Review executive succession planning under the leadership of the Nominations Committee; and

Deliver year-on-year improvement in safety performance.

What we have achieved

Carried out the annual strategy session at which we reconfirmed through optimising our asset allocation strategy to balance capital management/dividend versus growth focus on the pursuit of greater shareholder value;

Continued focus on succession planning, including changes to the Executive Committee implemented in September 2012 and February 2013;

Hosted two governance round-table meetings with key Australian and UK investors covering the role and accountabilities of the board and committees; and

Continued focus on safety improvement and simplifying performance assessment so as to be based upon safety measures rather than programmes to drive performance.

What are our priorities

Strategy

We invest in and operate large, long-life, low-cost mines and businesses in the most favourable industry sectors.

We pursue greater value for shareholders and optimise future capital allocation by prioritising and investing in only the highest returning projects.

We continue to focus on retaining a strong balance sheet.

Succession and diversity

Maintain a focus on executive and non-executive succession planning, taking into account the Group's diversity and inclusion policy.

Performance

Delivering on existing commitments and growth projects.

Enhance performance at existing businesses by unlocking substantial productivity improvements, aggressively reducing costs and improved management of our sustaining capital.

Target cumulative cash cost savings of over US$5 billion by the end of 2014.

Strengthen existing management systems; instilling greater rigour to internal review processes; introducing greater clarity and accountability to decision-making; and clearer line of sight to critical business issues.

Continue focus on improved safety performance.

Board committees

Audit Committee

Members of the Committee are Ann Godbehere (chair), Mike Fitzpatrick, John Kerr and Paul Tellier. Chris Lynch was appointed to the Committee on 1 June 2012 and stood down upon his appointment as chief financial officer-designate on 1 March 2013.

Key responsibilities

The primary function of the Audit Committee is to assist the board in fulfilling its responsibilities by monitoring the integrity of financial reporting, internal control, risk management and compliance systems.

The Audit Committee s main responsibilities include the review of accounting principles, policies and practices adopted in the preparation of public financial information, review with management of procedures relating to financial controls, including internal audit plans and reports, review with external auditors of the scope and results of their audit, review and approval of the auditors fees, the nomination of auditors for appointment by shareholders, and the review of and recommendation to the board for approval of risk management policies and processes. It also oversees the whistleblowing programme.

In carrying out its responsibilities the Committee has full authority to investigate all matters that fall within its terms of reference. Accordingly, the Committee may:

- obtain independent professional advice in the satisfaction of its duties at the cost of the Group; and
- have direct access to the resources of the Group as it may reasonably require including the external and internal auditors.

Governance processes

The Committee met six times in 2012. The chairman, chief executive, chief financial officer, other senior management and external and internal auditors regularly attend its meetings.

The members of the Committee are independent and free of any relationship that would affect their impartiality in carrying out their responsibilities. The members meet the independence requirements of the Code, the ASX Principles and the NYSE Standards. The Committee meets the composition, operation and responsibility requirements of the ASX Principles.

The Committee is also bound by SEC requirements for audit committees financial experts and the Code and ASX Principles requirement that at least one Committee member should have recent and relevant financial qualifications and experience. Ann Godbehere, chairman of the Committee, is considered by the board to have recent and relevant financial experience, and financial qualifications, and has been designated the Committee s financial expert. All other members of the Committee are, in the opinion of the Committee, deemed to be financially literate by virtue of their business experience.

The Committee applies policies for the pre-approval of permitted services provided by the Group s external auditors PricewaterhouseCoopers LLP (PwC). All of the engagements for services provided by them were either within the pre-approval policies or approved by the Committee. The Committee members are satisfied that the provision of non-audit services by PwC in accordance with this procedure is compatible with the general standard of independence for auditors imposed by relevant regulations, including the Australian Corporations Act 2001 and US legislation.

The Committee considered reports from PwC and Group Audit & Assurance on the activities undertaken in reviewing and auditing the control environment in order to assess the quality and effectiveness of the internal control system. This included an evaluation of the effectiveness of the Group s internal controls over financial reporting and the Group s disclosure controls and procedures in accordance with sections 404 and 302 of the Sarbanes Oxley Act 2002. A review of the scope and the outputs from the annual Internal Control Questionnaire, a key element of Rio Tinto s internal control framework, was also evaluated.