RIO TINTO PLC
Form 20-F
March 16, 2012
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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 2011

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		
5.875% Notes due 2013	New York Stock Exchange	5.875% Notes due 2013	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 New York Stock Exchange New York Stock Exchange	9.000% Notes due 2019	New York Stock Exchange New York Stock Exchange New York Stock Exchange
2.500% Notes due 2016		2.500% Notes due 2016	
4.125% Notes due 2021		4.125% Notes due 2021	
2.250% Notes due 2016	New York Stock Exchange	2.250% Notes due 2016	New York Stock Exchange
3.750% Notes due 2021	New York Stock Exchange	3.750% Notes due 2021	New York Stock Exchange

* Evidenced by American Depositary Receipts. Each American Depositary Share Represents one Rio Tinto plc Ordinary Shares 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	1,453,399,376	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 ¨ No ¨

* This requirement does not apply to the registrant until its fiscal year ending December 31, 2011.

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, 2011 of Rio Tinto plc and Rio Tinto Limited (the 2011 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. 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 2011 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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2011 Annual report

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Performance highlights

Record underlying earnings[a] of US$15.5 billion, 11 per cent above 2010.

Net earnings[a] of US$5.8 billion, 59 per cent below 2010, primarily as a result of an impairment charge of US$8.9 billion related to the Group s aluminium businesses.

Record underlying EBITDA[a] of US$28.5 billion, ten per cent above 2010.

Record cash flows from operations up 16 per cent to US$27.4 billion.

Capital expenditure of US$12.3 billion in 2011, compared with US$4.6 billion in 2010. Total capital expenditure for 2012 projects approved at date of this report and sustaining capital is expected to be US$16 billion. Further project approvals, mainly in the Pilbara, are likely to increase this level of investment as the growth programme continues.

Pilbara iron ore expansion to 283 million tonnes per annum (mtpa) now fully approved and on track to be in operation by end of 2013: second planned phase expansion of Pilbara capacity enhanced to 353 mtpa and completion brought forward by six months to first half of 2015.

Growth options enhanced in Mongolia, Mozambique and South Africa: Rio Tinto moves to majority stake in Ivanhoe, completes Riversdale acquisition providing entry to an emerging major coking coal resource and announces doubling of stake in Richards Bay Minerals.

34 per cent increase to full year dividend to 145 US cents per share, reflecting confidence in long-term outlook.

US$7 billion share buy-back programme on track for completion by end of the first quarter 2012.

Twelve months to 31 December

(All amounts are US$ millions unless otherwise stated)	2011	2010	Change
Underlying EBITDA[a]	**28,521**	25,978	10%
Underlying earnings[a]	**15,549**	13,987	11%
Net earnings[a]	**5,826**	14,238	(59%)
Cash flows from operations	**27,388**	23,530	16%
Underlying earnings per share US cents	**808.5**	713.3	13%
Basic earnings per share from continuing operations US cents	**303.5**	731.0	(58%)
Ordinary dividends per share US cents	**145.0**	108.0	34%

The financial results are prepared in accordance with IFRS and EU IFRS.

(a)

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 to the 2011 financial statements. EBITDA is defined on page 212. Underlying EBITDA excludes the same items that are excluded from underlying earnings and is reconciled to the Income Statement in note 2 on page 154.

This *Annual report* and *Auditors report* comply with Australian and UK reporting requirements.

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

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 Securities Act of 1933, and Section 21E of the Securities Exchange Act of 1934. The words intend , aim , project , anticipate , estimate , plan , believes , expects , may , should , will , or similar expressions, commonly ide 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, 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 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

Despite continuing global economic uncertainty and volatility, Rio Tinto has had a record year. We have also strengthened the Group to meet anticipated challenges including those of growth and expansion.

Our overall safety performance indicators improved in 2011, although I was deeply saddened by the six fatalities at our managed operations and operations held for divestment.

Our underlying EBITDA rose ten per cent on 2010 to US$28.5 billion reflecting, in particular, higher prices and strong iron ore sales despite production being adversely affected by the weather in the early part of the year. We also achieved record underlying earnings of US$15.5 billion, up 11 per cent on 2010. However, our net earnings were US$5.8 billion, a fall of 59 per cent reflecting a US$8.9 billion impairment of some of our aluminium businesses.

Efficient capital management

Your board believes that the creation of long-term, sustainable shareholder value requires a prudent approach to investing in growth and returning excess capital to shareholders. We aim to do this by maintaining a strong balance sheet.

The board continues to see attractive and significant growth opportunities around the world, against a backdrop of short-term uncertainty in the financial markets, particularly in the eurozone. The anticipated doubling of demand over the next two decades will require unprecedented levels of investment across the mining and metals industry. With these prospects will come choices. Your board will dedicate a great deal of effort to screening opportunities. This will ensure we identify and progress the growth projects with the greatest potential to create value for shareholders over the longer term. However, the increasing capital intensity of growth projects is affecting the way we look at future projects and expansion.

We continue to balance the strategic driver of growth, wherever those opportunities may arise, with the equally important driver of financial and operational excellence investing in the business and returning excess capital to shareholders. Therefore, whilst we are committed to a capital expenditure programme in 2012 of US$16 billion, during 2011 we returned a total of US$7.7 billion to shareholders through the progressive dividend and share buy-back programme. Our confidence in our long-term prospects is reflected in the 34 per cent dividend increase to 145 cents a share.

Global economic uncertainty

The world continues to face uncertainty and we believe this will contribute to ongoing volatility. The unresolved sovereign debt crisis in Europe has not only weakened demand there, it has the potential for contagion in other markets. The pace of recovery in the US is slow but there have been some signs that the situation is improving.

Growth in China is not accelerating at the same pace as we have seen in recent years, but the rate is still favourable in comparison to the growth in global gross domestic product of around 3.3 per cent.

In recent years we have strengthened our balance sheet. This will serve as a buttress for us in more volatile times ahead.

Focus for the board in 2011

Managing the risks in our markets was a priority for the board last year. In addition to experiencing high degrees of global volatility, we have been assessing our increased exposure to non-OECD countries and the challenges presented by escalating resource nationalism and sovereign risk in the sector.

We have today published a comprehensive analysis of the US$10 billion in taxes we have paid worldwide during 2011. In recognition of our tax transparency initiative which we started in 2010, Rio Tinto was awarded the 2011 *PwC Building Public Trust* award for Tax Reporting in the FTSE100.

We have also retained our strong commitment to sustainable development which we believe gives us a competitive advantage. Not only does it reduce our environmental and community impact, but it helps us to attract high calibre individuals and ultimately deliver a better return to our shareholders.

As chairman of the board I have consistently felt it important to provide continuity through succession planning by ensuring the board is refreshed with new skills and greater diversity.

During the year, John Varley and Chris Lynch joined the board. We welcome the extensive experience they bring to board proceedings. John will succeed Andrew Gould as the senior independent non-executive director upon Andrew s retirement from the board at the conclusion of the Rio Tinto Limited annual general meeting in May. John has become chairman of the Remuneration committee, which I have also recently joined as a member. I would also like to take this opportunity to thank Andrew for his invaluable support provided to Rio Tinto since 2002.

Outlook

We believe the long-term outlook is strong. We have invested heavily, and continue to invest to meet the needs of emerging economies.

Despite the current volatility we are preserving our investment trajectory to meet the growing global demand for our metals and minerals. Our organic growth continues and we will make value-enhancing acquisitions as the opportunities arise. Where necessary we will refocus our activities to fit our strategic objectives of running large, low-cost operations.

During 2011, our people have again excelled. Their contribution to improvements in our operational and financial efficiency has made our record results possible and, on behalf of the board, I would like to thank them.

I would also like to thank our shareholders for their continued support. I extend my gratitude to the countries and communities that host our operations and for the opportunities they create for us to demonstrate our commitment to growing prosperity and operating sustainably.

Jan du Plessis

Chairman

5 March 2012

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Chief executive s statement

We have achieved record results in challenging markets during 2011. We made good progress during market volatility despite our Australian operations being disrupted by severe flooding. It is to the credit of our people that, as well as helping their communities in the crisis, they brought production back on line safely and met or exceeded output targets.

Our record underlying earnings, mainly driven by an outstanding year for our Iron Ore business, have put us in a strong position to navigate the uncertain environment we face. As Jan has said in his letter, this focus has demonstrated our commitment to financial and operational excellence whilst pursuing growth opportunities consistent with our strategy to create long-term, sustainable returns for shareholders.

During 2011, we approved a number of major growth projects. These include a substantial expansion of our Pilbara operations, investment in some of the most exciting mining projects in the world, and a commitment to transform some of our existing assets.

Although our all injury frequency rate continued to improve with a two per cent reduction in 2011, the achievement is significantly overshadowed by the six fatalities at our managed sites (and operations held for divestment) during the year. In a period of prolonged growth within the sector, these tragedies remind us of the importance of maintaining safety as a primary focus at all times, particularly during expansion.

We will be placing even greater emphasis in 2012 on simplifying systems, identifying and managing critical safety risks and engaging frontline leaders more in communicating safety messages to their teams.

Strategy

We remain committed to our vision to be the leading global mining and metals company through a strategy of developing long-life, cost-competitive, expandable assets. To achieve this we focus on a portfolio of Tier 1 assets diversified by commodity, market and geography. Please see page 6 for more information on our strategy and business model.

We are a long-term business and our strategy has consistently served us well over the years and will continue to do so in the challenging times ahead. In 2011, to support our strategy, we concentrated on five strategic drivers: financial and operational excellence, globalising the business, technology and innovation, licence to operate, and growth. We made significant progress in all of these areas.

Globalising and growing the business

Through a combination of growing the business and expanding our current operations, we will soon start to harvest the fruits of our long-term growth trajectory: the first copper from the Oyu Tolgoi mine in Mongolia is part of our contribution to the 2012 London Olympic and Paralympic Games where we take great pride in supplying the metals for the winners medals. We have increased our holding in Oyu Tolgoi by raising our stake in Ivanhoe, its major shareholder, to 51 per cent in January 2012: first commercial production is due in 2013.

The first coal from our Mozambican coalfields, acquired in 2011, will also be exported this year and our Simandou iron ore project is laying a path for sustainable, long-term growth. In buying the uranium exploration company Hathor and the proposal announced in February 2012 to double our stake in Richards Bay Minerals we have focused on acquisitions that add value and enhance our growth pipeline.

Our organic growth is also progressing: our iron ore capacity in the Pilbara, in Western Australia will increase to 230 million tonnes a year in the first quarter of 2012. Expansion plans to raise that to 283 mtpa have been approved and we have accelerated the target of 353 mtpa by six months to the first half of 2015, subject to board approval.

Licence to operate

While rising resource nationalism is creating investment uncertainty, we continue to believe that our strategy of improving our stakeholder engagement, transparency in tax payments and a focus on sustainable

development can assist us in gaining and maintaining our access to resources. Our aim is to be the developer of choice in an increasingly competitive environment.

When I meet with leaders around the world to discuss the challenges of resource nationalism and the opportunity presented by responsible mining, I convey to them how we earn our licence to operate through Rio Tinto s knowledge; the skills we can offer and our experience in both mining and marketing all of which can help bring prosperity to their regions. I also highlight the considerable contribution that we make to build the social and economic fabric in the communities where we operate and how we engage in environmental protection throughout our activities and regeneration when our mining is done.

Innovation and technology

Innovative technologies are making a substantial contribution to safety, operational and environmental efficiency and financial performance. For example, our Mine of the Future has brought us the Operations Centre in Perth controlling train, truck and shipping movements in the Pilbara, our autonomous truck programme and our recently announced AutoHaul™ automated train programme. Although innovation is not confined to technology: there are many parts of our business where innovative management plans, processes and work practices are also improving safety and efficiency.

Costs

As an industry, we are facing a period of historic cost inflation. Higher input costs and the strength of the Canadian and Australian dollars currencies in which we incur many of our costs are putting pressure on our margins.

Rising costs of exploration, development and extraction are, in part, a consequence of the lower ore grades that our industry faces. They also stem from the increasing remoteness of resources, difficult geographies, and increased social and economic commitments such as the Australian Minerals Resource Rent Tax and Australian carbon taxes.

The year ahead

During 2012 we have a clear objective to focus on controlling costs and improving productivity. We will achieve this whilst continuing to work on the transformation of the aluminium business through the disposal of assets that do not fit with our core strategy and continuing our efficiency measures. We will adapt our portfolio to concentrate on delivering our projects. We will also develop our marketing capability, improving our ability to react quickly and flexibly to our customers requirements.

Our people

As a global company we have the opportunity to develop and rely on the skills and cultures of our international workforce. We are committed to engaging with our people to foster diversity and leadership; providing them with the best opportunities to learn and develop with an industry leader.

I express my appreciation to our employees for the contributions they have made during the course of 2011, to our shareholders for their ongoing support and to the communities and countries who host our operations.

I believe that with Rio Tinto s financial strength, its committed workforce and our long-term projects and operations, we have set the scene for exciting achievements in 2012 and beyond.

Tom Albanese

Chief executive

5 March 2012

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Group overview

Aluminium product group

We are 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.

Products

Bauxite

Bauxite is the natural ore used to make aluminium. It is refined into alumina which is smelted into aluminium metal.

Alumina

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

Aluminium

Aluminium is light, strong, flexible, non-corrosive and infinitely recyclable. Aluminium is one of the most widely used metals and its largest markets are transportation, building and construction.

Key strengths

Largest bauxite producer in the industry.

Tier 1 operations across the value chain, from bauxite to alumina to aluminium.

The vast majority of Rio Tinto Alcan s operations draw on clean, renewable hydroelectric power.

Industry leading technologies including our proprietary AP Technology .

Full operating review on page 20.

Copper product group

With diverse assets and leading technology, our Copper group is uniquely positioned to supply growing global demand. In 2011, we produced 520 thousand tonnes of mined copper (Rio Tinto share), making us the world s seventh largest supplier. We also produced 669 thousand ounces of gold, 4,924 thousand ounces of silver and 14 thousand tonnes of molybdenum as by-products of our copper operations.

Products

Copper

The world uses more than 20 million tonnes of copper every year. Copper is found in nearly every home and vehicle, and in parts and appliances used in numerous aspects of infrastructure and technology. Copper s malleability, strength and resistance to corrosion make it useful in a broad range of building, construction and electrical applications.

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. Rio Tinto produces gold as a by-product of its copper production.

Silver

Silver is a good conductor of electricity and has non-corrosive 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 a metal of beauty, used to make lasting products for the home and person. Rio Tinto produces silver as a by-product of its copper production.

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. We produce molybdenum as a by-product of our copper operations.

Key strengths

Participation in and ownership of several world-class operating assets. Management of the Oyu Tolgoi project, scheduled to be a top ten copper producer and a significant gold producer.

Investment in substantial growth projects.

Industry leading technology and innovation.

Full operating review on page 22.

Diamonds & Minerals product group

The Diamonds & Minerals group comprises mining, refining and marketing operations across three 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. Rio Tinto Iron & Titanium is an industry leader in high grade titanium dioxide.

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 gem 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.

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 rutite.

Key strengths

Poised to benefit from late-cycle demand growth.

Substantial brownfield and greenfield development pipeline.

Full operating review on page 24.

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Group overview continued

Energy product group

We are a leading supplier of thermal and coking coal to the Asian seaborne market 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, Africa and Canada.

Products

Coal

Coal is abundant, relatively inexpensive, and safe and easy to transport. We are a large producer in 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 treated into coke, is used in furnaces with iron ore to produce 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 sent away for further processing into fuel rods for 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 expansion opportunities at our existing coal operations in Australia and recent acquisitions like Hathor Exploration in Canada.
- Strong product stewardship strategy to ensure we contribute to the global solutions for the challenges our products raise.

Full operating review on page 26.

Iron Ore product group

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

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 mines are located in Australia and Canada with a major project under way in Guinea in West Africa.

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.

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.

Full operating review on page 28.

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Strategic context

Global economy

During the past year we have witnessed significant change and volatility in the global economy as economic and political events increased the risk of a derailment by crisis for short periods of time; a pattern we continue to call the saw-tooth economy . At any other time, the Japanese tsunami, the Arab Spring , and the US fiscal crisis and credit rating downgrade would have been major events, but when combined with the eurozone debt crisis, they provided a challenging environment for commodity markets. Despite these setbacks, during 2011 commodity prices generally averaged higher than in 2010. This was due to a combination of factors including: ongoing strong demand from China; commodity supply constraints coupled with weather and environmental disruption; and low interest rates facilitating direct investment in commodities.

Demand for commodities in 2012 will be supported by an improvement in global growth, although we cannot rule out periods of volatility similar to those in 2011. Consensus forecasts of economic growth around the world have moderated in recent months although global GDP is still forecast to grow at a rate of around 3.3 per cent in 2012. We expect Chinese economic growth to remain above eight per cent for 2012, while growth in other emerging markets is expected to remain relatively robust, albeit with weaker rates of growth than seen in recent years. It will be important to watch developments in the US where improvements in the labour market, manufacturing activity and equity markets are indicative of a strengthening recovery. The key concern for the global outlook continues to stem from the European sovereign debt crisis and the ability of the rest of the world to minimise contagion threats. However, central banks are vigilant to these risks and we believe they will continue to provide substantial liquidity to support the global financial system.

Over the longer term, global growth is expected to remain elevated as fast-growing emerging markets take up larger shares of the world economy. Our belief is that increasing prosperity in these countries, including China and India, with associated industrialisation and urbanisation, will continue to drive underlying growth in demand for commodities.

Commodity markets

Commodity prices generally averaged higher in 2011 than in 2010 although most prices peaked in the first quarter and troughed in the fourth, with prices finishing the year lower than they started. Commodity price movements can be broadly attributed to a slowing in demand, particularly in China, ongoing supply constraints and rising costs, expansionary monetary policy facilitating indirect investment demand for commodities, and finally, the sovereign debt crisis in Europe and a concern about global financial sector stability. Against this background of falling prices, operating margins have tightened due to rising costs of key raw materials and equipment and adverse exchange rate movements. Operating costs are on the rise partly due to a scarcity of key inputs such as labour and capital equipment and a noticeable deterioration in productivity. Moreover, the availability of capital is imposing constraints across some sectors of the industry.

A key feature of commodity markets in 2011 was the continued tightness in supply. Across many commodities, a range of factors have limited the growth in mine production. In general, the industry continued to face the challenges of declining grades, a lack of infrastructure in new jurisdictions, delays to expansion programmes and temporary disruptions from strikes, adverse weather conditions and environmental concerns.

Global copper mine production struggled to grow in 2011 despite several years of elevated prices. Secondary supply was also weak, particularly towards the end of the year, as Western world economic activity slowed. With a further market deficit recorded in 2011 end-users continue to investigate the potential substitution of copper for other materials such as aluminium. However, in the absence of new end-use technologies, significant replacements appear limited in the short-term.

In iron ore, supply disruptions in Australia, Brazil and India in the first half of the year proved to be temporary. Production increased in the second half of the year with a strong rise in Brazilian supply and record output from Australia. Despite this new supply, high iron ore prices were required to support increased levels of high-cost Chinese domestic production in 2011. A similar picture emerged in the thermal coal market, with production increasing by varying degrees, in Australia, Indonesia, Colombia and South Africa and new supply from the Illinois Basin supporting US East Coast exports. In the metallurgical coal market, supply was severely disrupted following flooding in Queensland. The resulting higher prices encouraged US suppliers to enter the seaborne market. 2011 also marked the significant entry of Mongolia to the market.

Apart from commodity specific constraints, our industry is facing increased demands from governments which will increase the cost, timing and uncertainty surrounding the operation of current projects and development of new capacity. By impacting investment, it will also affect supply which will lead to fewer projects coming on-stream and in an environment of high demand, will therefore result in higher prices. While recognising the right of governments to raise revenues from taxes and royalties, the growing trend of increased fiscal imposts on existing projects, mandated government shares, often as free carried options, on new projects and a raft of regulatory and infrastructure requirements is impacting on the ability of the industry to increase supply through new investment. Such measures have the potential to delay economic and social development in those countries.

Outlook

The outlook for global commodities remains robust, supported by a rising standard of living for the majority of the world s population. But the outlook also will be characterised by elevated volatility and scope for discontinuities. We expect a high average demand growth setting across our major commodities. Given the constraints on current and future supply growth, we expect to see higher real long-run prices than in the decade preceding the most recent six year period. However, the extent to which the industry is able to maintain existing margins will depend on trends in costs, productivity and the ability to limit the escalating capital costs of new developments.

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Group strategy

Vision

To be the leading global mining and metals company.

Strategy

To invest in and operate large, long-term, cost-competitive mines and businesses, driven not by choice of commodity but by the quality of each opportunity.

Strategic drivers

Five strategic drivers are helping us deliver our strategy and achieve our vision: financial and operational excellence, growth, licence to operate, globalising the business, technology and innovation.

Our strategic vision

Our vision is to be the leading global mining and metals company. We aim to maximise total shareholder return by sustainably finding, developing, mining, processing and marketing the Earth s natural resources.

We seek to achieve this leadership by working according to our values and to sustain long-term business success by building and leveraging effective relationships with relevant stakeholders, including governments and local communities.

The benefits of sector leadership to our stakeholders mean:

- Delivering superior returns to our shareholders through excellent operating, development and investment performance.
- Ensuring widespread and lasting economic benefits to host country communities.
- Positioning us to respond to our customers needs.
- Providing our employees with leading training and career development opportunities and appropriate financial rewards.

Strong fundamentals position us well to achieve our vision: our portfolio includes some of the world s best assets, many of which set the standard for performance in their commodity sectors. Our strong balance sheet allows us financial flexibility and agility. Our people are highly capable and we are reaping the benefits of our increasingly diverse workforce that reflects our global reach. We are recognised as a responsible developer and operator of mining and refining operations around the world. This track record is built on the strong values defined in *The way we work and* the approach we have to the integration of sustainable development practices in everything we do.

Our strategy

Our investment in and operation of large, long-term, expandable, cost-competitive mines and businesses (also referred to as Tier 1 assets) define our path to sector leadership. Our choice of assets provides strong cash returns across the commodity cycle. Their expandability means we are well-placed to meet anticipated growth in demand as emerging economies urbanise and industrialise.

We pursue opportunities driven not by choice of commodity, but by the quality of each opportunity. We maximise the opportunities we identify by being in a position to choose between organic growth and value-focused acquisitions taking into account timing and market conditions. We target opportunities of sufficient magnitude and potential to meaningfully grow shareholder value. These investment decisions are subject to rigorous analysis of potential returns.

We are versatile in the way in which we develop and operate our assets. Operating across multiple jurisdictions we adhere to our commitment to safety, ethical conduct and environmental stewardship. We recognise the potential of partnerships with those who share similar values and whose specialist skills can add value to our projects.

We believe value-creating investment is the first and best use for the cash generated by our businesses. We maintain the strength of our balance sheet to take advantage of the opportunities capital and commodity market volatility present. Beyond these aims, we return cash to our shareholders.

Our strategic focus

Industry leaders aspire to excel not only in their business performance but in the way they conduct themselves. For Rio Tinto, this means a focus on distinctive performance in five fundamental areas: financial and operational performance; growth; licence to operate; globalising the business; and technology and innovation.

Our strategic focus requires a combination of the talents of people throughout our organisation from individual mining and processing operations across the globe to shared functions that span our activities. Sharing common standards of best practice enables us to adapt to changing economic, market and political circumstances while achieving our performance goals. In every aspect of our strategy and our work we aim to create the processes and culture that puts safety in the forefront of our minds.

Financial and operational excellence

In acquiring and divesting our assets and in marketing our commodities we apply our deep industry knowledge and experience to identify and capitalise on opportunities. We acquire quality assets at prices that will reward operational improvement under our ownership. We also seek the acquisition of assets that capital markets temporarily undervalue. Through prudent divestments we capture value from assets that no longer fit with our strategic direction.

We seek to maximise the value of the commodities we produce though effective marketing that ensures we respond to our customers needs in terms of quality, blend, timing, delivery and appropriate pricing and contractual arrangements.

Our work in improving performance across all our operations is focused on achieving market-leading EBITDA margins and hence returns to our shareholders.

We constantly seek to enhance capital productivity in the operation of existing assets, as well as when we design expansions. We continuously identify and capitalise on latent system capacity so that we can safely deliver increased output volumes.

There is no area of our business in which we compromise on safety. We aim for the highest threshold to ensure safety of our employees and others who work with us. We engage in constant vigilance to protect our employees but also to embed the culture that makes safety a forethought rather than an afterthought.

We aim for world-class cost competitiveness and productivity in the operation and management of our assets. Even assets that are already among the lowest cost in their industries are expected to improve incrementally. These improvements are directed at enhancing margins, quickly and efficiently expanding production and positioning us to respond with greater effectiveness to marketing opportunities.

Growth

We explore for and develop new and existing Tier 1 assets. Our objective is to develop these orebodies so as to deliver their greatest potential. We will do so in a way that delivers lasting benefits for our business and host economies and communities.

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Business model

Key performance indicators

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

We seek to protect and improve the value of resources through developing a diverse range of stakeholder relationships. We seek to achieve this through rapid organic growth at industry-leading capital and operating costs, without compromising our existing high safety and reliability levels.

Our objective is identiflying and accessing major new projects through exploration and establishing lasting and community-oriented presence in resource-rich regions. In Mozambique, Mongolia and Guinea, we have developed comprehensive agreements that will create effective partnerships between the host governments and Rio Tinto. These will deliver value for investors through long-term benefits in operating cost, capital cost and licence to operate and value for the communities in terms of taxes, investment, cost-effective local sourcing and employment.

Licence to operate

External stakeholders are increasing their expectations of us in terms of our transparency in matters such as the taxes we pay but also in the way we engage with governments and the communities that host our operations. This is to ensure they benefit from the prosperity our operations will bring, that we protect the environment and leave a positive legacy when our mining is done. Our work in the area of stakeholder engagement is essential in building and maintaining our licence to operate.

Our approach to sustainable development should enable us to be seen as the industry partner of choice. On the environmental front we monitor and report the levels of greenhouse gases we emit and the volumes of water we consume, we seek to use low carbon energy sources and we engage with environmental agencies and NGOs to protect vulnerable environments.

Globalising the business

Globalising the business gives us many advantages. We have been able to achieve global standards, systems and processes that help us streamline the way we do things. It has encouraged and allowed us to become more agile and efficient as an organisation. Globalisation introduces us to a stimulating range of diversity that we are harnessing. On the one hand it ensures our approaches are appropriate at the local level, on the other the cross-pollination of ideas helps improve many aspects of the way we do business.

Technology and innovation

We apply technology and innovation to improve the way we do things. In particular it helps us to achieve greater safety as well as improving capital efficiency and enhancing productivity. We have adopted an innovative mindset not only by taking advantage of new science and technology, but innovations in our management and processes to find more efficient and effective ways to leverage our existing strengths. We employ innovative scientists and engineers find new ways in which we can protect the environment and improve the lives of those who live in communities surrounding our operations.

Enabling our strategy

Rio Tinto applies an organisation-wide effort to deploy the capabilities and skills required to achieve top performance in all areas. Where needed, we will accelerate and target training and leadership development programmes to ensure all of our people have the opportunity to contribute to achieving distinctiveness in each area.

We create and preserve value through investing in and operating large-scale, long-term, cost-competitive mines and businesses. The nature of our business means that the life of an orebody may be for 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.

Investing

Explore and evaluate

Rio Tinto has a knowledgeable and experienced in-house exploration team with a proven track record for discovering of Tier 1 orebodies. In addition to exploration, we create value through expansions and extensions of existing assets. Rio Tinto s orebody knowledge process allows us to evaluate value-enhancing approaches to developing, operating and expanding our resources and positioning our products in the market.

Develop

Rio Tinto develops orebodies with long-term value delivery in mind. Following the discovery of a resource, it must be thoroughly studied to identify the optimal configuration for development of the orebody and delivery of the product to the market. In some cases, we need to work closely with our customers to develop and prepare the market to take the type or grade of product that would enable us to maximise the value of resource over its lifecycle, for example by extending the life of the mine. As studies are undertaken, economic modelling confirms value. Once we have obtained internal and external approvals, the project moves to implementation and construction.

Operating

Rio Tinto creates value through safely and efficiently operating large, long-term, cost-competitive assets and the use of standard operating and maintenance practices across the Group, investing in our world-class assets throughout their lifecycles. An efficient process reduces the use of consumables, increases equipment operating time and optimises the extraction of ore all of which results in higher production levels, reduced costs and optimisation of value.

Mine

We move millions of tonnes of material every day. We use world-class technologies and processes to plan, operate and maintain our equipment and activities. We invest and apply innovations to optimise productivity.

Process

Our leading proprietary technologies, such as that for aluminium smelting, ensure that recoveries are maximised and our processes are as efficient as possible. We produce material that is of the right quality for our customers.

Market

The majority of our customers are industrial companies who process our products into a wide range of applications supplied to end-users in the construction and infrastructure, automotive, industrial machinery and equipment, energy and consumer goods markets. We invest in long-term partnerships and constantly innovate and improve our products and services to maximise product value to customers. We then leverage our intimate knowledge of the market and the value chain to support our investment decision-making.

Deliver

In many cases, Rio Tinto is responsible for delivering product to our customers. We do this in a variety of ways, efficiently, reliably and cost effectively.

Close-down and restore

When a resource reaches the end of its life, we are committed to high standards of close-down and restoration. Integrating closure planning in the early stages of project development and through an asset s lifecycle helps us to leave a positive legacy of sustainable development, minimise financial impacts and ensure stakeholder expectations are met.

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Key performance indicators

Our key performance indicators (KPIs) give us a means to measure our financial and sustainable development performance. Their relevance to our strategic drivers, and our performance against these measures in 2011, are explained on these pages.

Our strategic drivers are: Financial and operating excellence; Growth; Licence to operate; Globalising the business; Technology and innovation.

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.

KPIs used as a key measure in the remuneration of executives are identified with this symbol:

See the Remuneration report on page 86

All injury frequency rate (AIFR)

Per 200,000 hours worked

Including former Alcan

More information on page 14

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.

Relevance to strategy

Our commitment to zero harm means that the AIFR is one of the Group s most important non-financial KPIs. Safety is a leading indicator of management performance. It is central to our focus on operational excellence and our licence to operate. A reputation for being a safe employer and neighbour helps us to gain access to the people and resources we need.

Underlying earnings[a] [b]

US$ millions

Definition

Items excluded from net earnings to arrive at underlying earnings are explained in note 2 of the 2011 financial statements.

More information on page 209

Relevance to strategy

Underlying earnings is a measure that provides insight into the underlying business performance of the Group s operations and is the key financial performance indicator used across the Group. This KPI provides insight to cost management, performance efficiency and production growth. It is therefore an indicator of financial and operational excellence and growth.

Total shareholder return (TSR)

%

Definition

TSR combines share price appreciation and dividends paid to show the total return to the shareholder.

More information on page 99

Relevance to strategy

TSR measures the Group s performance in terms of shareholder wealth generation through dividends and changes in the share price. As a measure of how we maximise shareholder return, this KPI measures our performance against our strategy as a whole. Relative TSR is also monitored, which gives insight into our performance against our peers.

Net debt[(a)]

US$ millions

Definition

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 2011 financial statements.

More information on page 169

Relevance to strategy

A strong balance sheet gives us resilience in a volatile global economy. Net debt is a measure of how we are managing our balance sheet and capital structure, and is closely linked to our financial and operational excellence strategic driver.

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Capital expenditure[a][c]

US$ millions

More information on page 211

Definition

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.

Relevance to strategy

Our capital expenditure KPI connects to our growth strategic driver. It measures our level of investment in protecting and maintaining our existing assets, as well as our investment in the growth projects that will be our future Tier 1 operating assets. The geographic distribution of our capital expenditure is also a measure of how we are globalising the business.

Operating cash flows[a]

US$ millions

Dividends from equity accounted units

Cash flow from consolidated operations

More information on page 133

Definition

Operating cash flows represents the cash generated by the Group s consolidated operations, before payment of interest, taxes, capital expenditure and cash flows relating to financing activities. The measure is equivalent to cash flow from consolidated operations in the Group cash flow statement. In 2011, product group operating cash flows reported on pages 20 to 28 have been adjusted to exclude funding of defined benefit pension deficits; comparative figures have been modified accordingly.

Relevance to strategy

Operating cash flow is a complementary measure to underlying earnings. It is employed as a measure of business performance and links to two of

our strategic drivers: growth, and financial and operational excellence.

Greenhouse gas emissions intensity

Indexed relative to 2008

Excluding former Alcan

More information on page 17

*2008 intensity is shown both excluding former

Alcan, and including former Alcan indexed to 100.

Definition

Our greenhouse gas (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 minus electricity and steam exports and net carbon credits purchased from, or sold to, recognised sources.

Relevance to strategy

We use GHG emissions intensity as a KPI because of the urgent need for climate action, and because it is one of the most widely recognised environmental issues. The KPI links to our licence to operate and our technology and innovation work, which are key drivers of our strategy.

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 2011 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 and Rio Tinto s share of the capital expenditure of equity accounted units.

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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 materially significant 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 and 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, or how some risks could result in either a positive (upside) or negative (downside)

impact. Risks may materialise individually, simultaneously or in combination and could significantly affect the Group s:

- Short, medium and long-term business and prospects;
- Earnings and cash flow;
- Overall financial results and product demand;
- Current asset values;
- Future asset values and growth potential;
- Safety plus long, medium and short-term health;
- 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

Commodity prices and global demand for the Group s products are expected to remain uncertain.

Commodity prices and demand are cyclical 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. Persistent economic imbalances that have led to recent volatility in commodity prices and demand may continue.

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 China market and a major economic downturn in China, or if Chinese customers source products from elsewhere, would have effects across all of the Group s products. The basis on which the Group prices iron ore in Asia is evolving and sales to other iron ore customers may be influenced by any changes.

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, significant costs are influenced by the local currencies of the countries where the Group operates, principally the Australian dollar, Canadian dollar and euro. The normal policy is to avoid hedging of foreign exchange rates and so the Group is vulnerable to appreciation in the value of other currencies against the US dollar, or to prolonged periods of exchange rate volatility.

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 in 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 parliament. 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.

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.

General increases in regulation.

Political instability and uncertainty or government changes to the fiscal terms covering the Group s operations may discourage 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 the operation as being detrimental to their circumstances. 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, local, regional or national events in other places where we operate. In the extreme, our operations may be a focus for civil unrest or criminal activity.

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Strategic risks	
The Group may be unable to maintain the planned rate of growth due to possible constraints on the rate of capital expenditure.	Rio Tinto has embarked on a substantial growth programme of capital investment in greenfield and brownfield projects to bring on new capacity and to extend the life of existing operations. These projects form a portfolio that is actively managed. However, the ability to achieve the expected growth schedule and objectives is dependent on many interconnected elements. Should some of our plans fail to materialise as expected, the planned rate of capital expenditure may not be achieved.
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. Some competitors, who have access to significant resources, may be motivated by political or other non-economic factors. The Group may 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 effective integration of acquisitions to realise synergies, significant one-time 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.
Financial risks	
The Group s reported results could be adversely affected by the impairment of assets and goodwill.	An asset impairment charge may result from the occurrence of unexpected events or changed expectations about the future. In accordance with IFRS, the Group does not amortise goodwill or indefinite life intangible assets but tests it annually for impairment; such impairments cannot be reversed.
The Group s liquidity and cash flow expectations may not be realised as expected, 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 our cash reserves.
General cost inflation in the resources sector is affecting both operations and projects, resulting in significant pressure on capital and operating costs.	Recently, many 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 key 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 tougher negotiations or higher wage demands. In addition, labour agreements may not prevent a strike or work stoppage.

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, infrastructure, and on providers of logistics. Significant supply chain failures 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.

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 policies with respect to its investment.

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Risk factors

Operational risks continued

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.

The Group transports a large proportion of its products by sea. 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. An extensive information technology infrastructure forms the backbone of many operations.

An extended failure of critical system components or malicious actions, including resulting from a cyber-security attack, could result in significant environmental incident, commercial loss or interruption to operations.

3. Major operational failure

The Group s operations involve chemicals and other substances 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.
Sustainable development risks	
Increased regulation of greenhouse gas emissions could adversely affect the Group s cost of operations.	Rio Tinto s operations are energy intensive and depend heavily 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 worldwide energy, production and transport costs over the next few decades.
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 with effects on its 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.
Regulations, standards and stakeholder expectations in 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 litigation or, in extreme cases, threaten the viability of an operation even where the underlying dispute is not material to the Group.

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Performance

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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 basis 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 vision of zero harm. Our safety strategy prioritises eliminating workplace fatalities and permanent damage injuries or illnesses. Leadership remains a crucial factor in achieving these priorities and creating a culture that will eliminate all injuries from the workplace over time. Our management system provides the framework for hazard identification, risk analysis and risk management into all aspects of our activities.

Regrettably, six people lost their lives whilst working at Rio Tinto managed operations and operations held for divestment in 2011. The events were an electric shock incident at the Iron Ore Company of Canada, two people drowning at Oyu Tolgoi in Mongolia, a drowning and a crush incident at Rio Tinto Iron Ore in Australia and a crush incident at Zululand Anthracite Colliery in South Africa (identified for divestment). We provided support and counselling to the families and workmates affected by these events. In addition, after each of these incidents, as is the custom at Rio Tinto, we conducted in-depth investigations of the causes of these incidents and ensured that the conclusions were communicated across the Group to prevent similar events from recurring.

We measure progress toward our goal of zero injuries through the all injury frequency rate (AIFR), which includes data for employees and contractors. At the end of 2011 our AIFR was 0.67, an improvement of two per cent over the last year.

The Group-wide safety risk management programme focuses equally on personal safety, process safety and major safety hazards, and we have processes in place to manage each of these areas. This includes the application of a Semi Quantitative Risk Assessment (SQRA™) process which applies a structured approach to the identification and evaluation of higher consequence/lower frequency hazards. The risk reduction resulting from the SQRA™ process, along with the monitoring of critical controls, is used as a Group-wide leading indicator for safety performance.

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 and energy use

We accept the need for climate change action and recognise that this is a great challenge and also an opportunity. We support government policies to deliver comprehensive, long-term responses that are efficient, effective and equitable but seek to maintain business competitiveness during a period of global policy transition. We seek to lower the greenhouse gas emissions footprint of our products.

Our climate change programme is focused on reducing our emissions, understanding and developing low emission product pathways and engaging with governments and stakeholders to advocate sound domestic and international policies.

We have reduced our total greenhouse gas (GHG) emissions intensity by 3.8 per cent between 2008 and 2011. Our total GHG emissions were 43.4 million tonnes of carbon dioxide equivalent in 2011, 0.3 million tonnes higher than in 2010.

Rio Tinto is both an energy user and producer. Our operations use hydroelectricity, nuclear and fossil-fuel based power, coal, oil, diesel and gas. This year our energy use increased by 0.6 per cent to 516 petajoules.

Two thirds of our energy use in 2011 came from low greenhouse gas emitting hydro, nuclear and other renewable power sources. Our hydroelectric power facilities in Canada, Scotland and Norway have a capacity of 3,972 MW.

To drive improvements in energy efficiency our businesses have set a range of local efficiency targets that cover nearly three quarters of the Group s energy use. Our programmes focus on energy innovation at the early stages of project planning and building the capacity to identify, engineer and implement meaningful energy efficiency projects. We remain a world leader in aluminium smelting technology development and are building our knowledge of renewable technologies. Through our coal and uranium sales, we supplied 3,556 petajoules of world energy demand, seven times more than our energy use.

We face costs associated with greenhouse gas emissions or renewable energy obligations in Europe, Australia, New Zealand, various US states and Canadian provinces. As a result, over 85 per cent of our operations are covered by existing or legislated carbon pricing legislation.

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Aluminium

Financial performance

	2011 US$ million	2010 US$ million
Revenue	12,159	11,313
Operating cash flow	1,216	1,225
Underlying earnings	442	611
Capital expenditure	1,957	963
Net operating assets	26,204	30,815

Figures for 2011 and restated figures for 2010 exclude assets identified for divestment or closure. These assets are now managed by the Rio Tinto Business Support & Operations group.

Strategy

Second stage of transformation, already in progress, to deliver another US$1 billion of sustainable, incremental EBITDA and increase long-term margins to 40 per cent.

Targets to be achieved through a combination of disciplined portfolio management, business improvement initiatives, and investment in modernisation and expansion of Tier 1 assets.

Combination of growth and portfolio management to increase the group s long position in both bauxite and alumina, and help supply China s growing raw material needs.

Commitment to shareholder value and harnessing the group s crucial competitive advantages such as proprietary AP Technology and clean, low-cost hydroelectricity.

Capitalise on the group s interests in some of the largest bauxite mines in the world and to access many of the industry s best reserves and mineralised materials.

Continue supporting the group s global commercial presence and reliably deliver to customers at all stages of the supply chain, from sales of bauxite through to value-added aluminium products and technology sales.

Safety

The group decreased its all injury frequency rate by 16 per cent to 0.59 in 2011[(a)]. Rio Tinto Alcan experienced no fatalities at its managed sites. Regrettably, there were two fatalities at its non-managed MRN joint venture alumina operation in Brazil (Rio Tinto Alcan share 12 per cent) during a truck roll-over accident.

A key priority has been the implementation of Rio Tinto HSE performance standards and risk management practices. Process safety management has progressed significantly, 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, Canada was awarded the 2011 Chief Executive Safety Award. Grande-Baie has implemented structured training programmes which include an induction that starts six weeks before employees begin work. Its personnel show genuine ownership of safety across the operation and there is visible celebration of safety successes as well as a focus on learning from incidents. Rio Tinto Alcan s Carbone Savoie business also earned recognition

and received the 2011 Chief Executive Most Improved Safety Performance Award.

Greenhouse gas emissions

Rio Tinto Alcan contributed 19 per cent of Rio Tinto s total greenhouse gas emissions (GHG) in 2011. The group s reduced proportion of the company s overall emissions levels is a result of the announcement in October to divest 13 non-core operations[(b)]. Realised reductions contributed significantly to the Rio Tinto Group s overall intensity improvements.

Total GHG intensity at Rio Tinto Alcan was reduced by 49 per cent in 2011 from 2008 baseline performance, which is attributable to portfolio changes and operational improvements. Furthermore, the expansion and modernisation projects are expected to further solidify Rio Tinto Alcan s position as having the lowest carbon footprint in the industry and will help deliver on Group GHG commitments. In addition to Rio Tinto Alcan s

significant hydroelectric advantages for aluminium smelting, the implementation of co-generation at the Yarwun alumina refinery will contribute to improving its GHG emission intensity.

Rio Tinto Alcan has worked closely with various regional governments during development of climate change policies and regulations, and participates in numerous community programmes aimed at addressing climate change concerns where it operates. The group has developed adaption strategies and integrated potential impacts of climate change into its risk management processes.

Review of operations for the year

In 2011, Rio Tinto Alcan s contribution to the Group s underlying earnings was US$442 million, a decrease of US$169 million from 2010. Higher exchange traded aluminium prices increased earnings by US$574 million compared to 2010. This was offset by adverse currency movements of US$282 million, mainly from the strengthening of the Canadian and Australian dollars against the US dollar, and higher costs from increased input prices for caustic, coke and pitch, as well as adverse weather impacts. Transformation benefits realised in 2011 offset some of the cost pressures from current market conditions resulting in a full year EBITDA margin of 20 per cent.

In October 2011, Rio Tinto announced the intention to divest or close 13 non-core operations including specialty alumina plants in Europe, the Gardanne refinery in France, the Lynemouth smelter and power station in the UK, the Sebree smelter in the US, and Pacific Aluminium operations (see page 30).

The annual impairment review resulted in a goodwill impairment charge of US$6.6 billion for Rio Tinto Alcan. The impairment was largely a result of the current economic environment and related market volatility in aluminium prices in the second half of 2011 leading to declines in market values for aluminium assets.

The average aluminium market price in 2011 was US$2,395 per tonne compared with US$2,173 per tonne in 2010. Rio Tinto Alcan s average realised price for ingot products in 2011 was US$2,715 per tonne compared with US$2,457 in 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.

In 2011, Rio Tinto Alcan s annual bauxite production was 28.2 million tonnes, up from 25.9 million tonnes in 2010 and driven by increased third-party demand.

Alumina production decreased to 5.8 million tonnes in 2011 from 6.1 million tonnes in 2010, mainly due to abnormally heavy rains in Australia in early 2011 that impacted Queensland Alumina.

Aluminium production was broadly consistent year on year. Higher production at the Laterrière smelter in Quebec following a transformer failure in July 2010 was offset by a loss of production following two transformer incidents at the Dunkerque smelter in France in May and August 2011, and lower production at the Kitimat smelter in Canada in preparation for the modernisation project.

Gross sales revenue for Rio Tinto Alcan increased by seven per cent compared with 2010. The group s casthouses continue delivery of value added products and improved performance by implementing LEAN manufacturing processes. Rio Tinto Alcan continues to develop its value-added product capabilities in existing plants with strategies to meet future needs in the billet, slab, rod, high purity, foundry and remelt markets.

Growth and innovation

Rio Tinto Alcan made progress with its priority projects, including several initiatives towards increasing its long position in both bauxite and alumina.

The group is completing feasibility and environmental impact studies for the South of Embley bauxite extension at the current Weipa mine

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operations in Australia. This project would allow for staged increases in production to as much as 36 million dry product tonnes per year and provide quality bauxite to the group s regional refineries and export markets. Approval to proceed with the project is expected in 2012, depending on regulatory and internal conditions.

Also in Australia, the Yarwun alumina refinery expansion in Queensland is over 90 per cent complete and is expected to more than double production to 3.4 million tonnes per year, with start-up planned for the second half of 2012.

The group s aluminium growth strategy focuses on high-return production capacity increases and modernisation projects that leverage renewable, low-cost hydroelectric power. The Aluminium group s portfolio was restructured in October 2011, resulting in the creation of Pacific Aluminium. The assets comprising Pacific Aluminium have been identified for divestment. Almost 85 per cent of the group s energy is hydroelectric and in the lowest-cost quartile for power. Furthermore, its technological capabilities continue to create value from sales, faster operational improvements (eg production capacity creep), and lower full economic costs on capital projects.

The modernisation project for the Kitimat smelter in British Columbia, Canada received final approval in December 2011. This project will increase production capacity to approximately 420 thousand tonnes per year. The modernised smelter will be powered exclusively by self-generated hydroelectricity and use AP40 technology to cut total emissions intensity by about half. Once completed, Kitimat will be one of the lowest-cost smelters in the world, with one of the lowest carbon footprints in the aluminium industry. Completion of the US$3.3 billion project is expected in 2014.

The replacement of high-cost capacity at the Arvida smelter with the AP60 plant, phase one of which is currently under construction in the Saguenay-Lac-Saint-Jean region in Quebec, as well as the ISAL smelter modernisation and expansion of the casting centre in Iceland, are also designed to help move Rio Tinto Alcan further down the cost curve. Common objectives among all our selected projects include a low carbon footprint, low operating costs and attractive projected returns on capital.

Outlook

Uncertain macroeconomic conditions, together with stronger currencies in some regions and high raw material costs, have unfavourably impacted the aluminium industry. Growth in demand for aluminium remains strong but the industry has been running surpluses for the past five years, and the short-term economic outlook remains volatile. Rio Tinto Alcan therefore continues to improve its performance and refocus on its core assets, in particular its world-class bauxite resources, industry-leading technologies and a modern portfolio of large-scale, long-life, hydroelectricity-based smelters.

In the longer term, Rio Tinto Alcan believes that the fundamentals of its industry remain strong, with aluminium demand forecast to grow by almost six per cent per year through to 2020. The robust growth is expected to be underpinned by emerging economies and a growing appreciation among end users in developed markets of aluminium s advantageous physical properties most notably its lightness and its infinite recyclability. The underlying factors that are driving strong demand growth for structural commodities remain intact, as continued urbanisation and industrialisation in large, populous nations such as China and India drive base metal demand.

The group expects to see ongoing development of new applications in the construction, aerospace and automotive sectors as pressure on fuel consumption increases, along with increased substitution of aluminium in place of more expensive alternatives in areas such as power generation.

Growth in aluminium capacity will increase demand for bauxite and alumina. Official bauxite reserves suggest that China may not have sufficient bauxite to fully meet increasing alumina production demand.

The dramatic upsurge in bauxite imports into China over the last five years supports this scenario.

Securing access to bauxite supplies will remain an issue as uncertainty surrounding value add requirements and mining legislation in key jurisdictions adds complexity for the industry.

Global aluminium supply is expected to continue tracking demand, with increased production coming primarily from north-western China, the Middle East and India. There is credible rationale for a continued steepening of the industry cost curve, with costs for crucial inputs such as bauxite and electricity on the rise. This is especially the case in China where producers are also impacted by the appreciation of the renminbi.

As demand grows, Rio Tinto Alcan expects to benefit from its low-cost structure, sustainable transformation improvements, and its position as an integrated producer throughout the value chain and moving to a longer position in bauxite and alumina.

Rio Tinto Alcan s industry-leading growth pipeline includes attractive Tier 1 opportunities for the long-term with a mixture of greenfield and brownfield options throughout the world. Projects in various stages of study and development include the future expansion options for the AP60 plant, and aluminium and hydropower projects in Cameroon, and will be paced with market needs.

(a) Safety

The aluminium assets identified for divestment or closure and now managed by Business Support & Operations (Pacific Aluminium and Other aluminium) had an all injury frequency rate of 0.70 in 2011, an improvement of 11 per cent from 2010.

(b) GHG

Pacific Aluminium accounted for 28 per cent of Rio Tinto s total GHG emissions in 2011, and Other aluminium accounted for 16 per cent of total GHG emissions.

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Copper

Financial performance

	2011 US$ million	2010 US$ million
Revenue	**7,634**	7,797
Operating cash flow	**3,134**	4,125
Underlying earnings	**1,932**	2,530
Capital expenditure	**3,784**	990
Net operating assets	**12,094**	7,718

Strategy

The Copper group s strategy is to deliver shareholder value by:

- Optimising operating assets with meaningful improvements in safety and productivity, and through investment in innovative technologies.
- Progressing the group s high-quality growth projects.
- Collaborating with local governments and communities to contribute to sustainable development.
- Developing the leadership and talent needed to deliver growth.

Safety

In 2011, the Copper group s all injury frequency rate was 0.56, versus 0.57 in 2010. The group recorded 81 lost-time injuries including, regrettably, two fatalities at its Oyu Tolgoi project in Mongolia.

The Copper group is committed to providing a workplace where zero harm is possible. 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 a goal of zero harm.

Greenhouse gas emissions

The Copper group s 2011 greenhouse gas (GHG) emissions were 8.14 tonnes of CO_2e per tonne of copper cathode produced, compared with 8.75 in 2010, as Kennecott Utah Copper, which accounts for 54 per cent of the Copper group s total GHG emissions, reduced generation at its main power plant in response to lower electricity prices.

To reduce greenhouse gas emissions, Kennecott is testing alternative fuel vehicles, best-in-class lighting technologies, equipment optimisation projects, and adoption of other developing technologies.

Review of operations for the year

The Copper group portfolio is made up of large, long-life operations, including:

Kennecott Utah Copper (Rio Tinto: 100 per cent)

Kennecott Utah Copper, adjacent to Salt Lake City, produces about 25 per cent of US copper and molybdenum supply and provides more than 17 per cent of US refined copper requirements. In 2011, Kennecott produced 215 thousand tonnes of refined copper, 379 thousand ounces of refined gold, and 30 million pounds of molybdenum.

Escondida (Rio Tinto: 30 per cent)

Operated by BHP Billiton, Escondida is the world s largest copper-producing mine. Located in Chile s Atacama Desert, it represents eight per cent of global production and 33 per cent of all copper production from Chile. In 2011, Escondida produced 759 thousand tonnes of mined copper (100 per cent basis).

Grasberg (a joint venture gives Rio Tinto a 40 per cent share of production above specified levels until 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. In 2011, Rio Tinto s share of production from Grasberg was 17 thousand tonnes of mined copper and 178 thousand ounces of mined gold.

Northparkes (Rio Tinto: 80 per cent)

Based in New South Wales, Australia, Northparkes is a joint venture with the Sumitomo Group. Northparkes produced 50 thousand tonnes of mined copper and 76 thousand ounces of mined gold in 2011, (100 per cent basis).

Palabora (Rio Tinto: 57.7 per cent)

Palabora Mining Company is a South African company (listed on the Johannesburg Stock Exchange) based in Limpopo Province. Palabora produced 59 thousand tonnes of refined copper in 2011 (100 per cent basis). In September 2011, Rio Tinto announced plans to divest its interest in Palabora and a commercial process to do so is under way.

Growth and innovation

During the next three years, the Copper group will invest more than US$4.5 billion of capital in its existing operations.

In the first half of 2011, the group began a US$238 million feasibility study to extend the mine life at Kennecott Utah Copper s Bingham Canyon mine. With this expansion, Bingham Canyon will mine an additional 974 million tonnes of ore and recover 3.7 million tonnes of copper, 4.1 million ounces of gold and 584 million pounds of molybdenum. Total capital expenditure for the mine expansion project is expected to be between US$2 billion and US$3 billion.

Rio Tinto has also approved a US$165 million investment to conduct pre-feasibility studies for the North Rim Skarn, a proposed underground operation that would operate in parallel with the Bingham Canyon open pit and produce an estimated 50 thousand tonnes of copper per year, with gold and silver by-products, at grades significantly higher than the current open pit reserves.

In 2012, the Copper group will complete construction of a Molybdenum Autoclave Process at Kennecott Utah Copper, which will improve recovery rates by seven per cent. Phase one will begin commissioning towards the end of 2012, with an initial capacity of 30 million pounds, increasing to 60 million pounds in early 2015.

Escondida is constructing a new 152 thousand tonnes per day concentrator that is expected to increase production by 2015. Construction of a new dynamic oxide leaching pad will maintain current processing capacity following the completion of the existing heap leach in 2014. The current sulphide leach pad is also being expanded. Moving crushing and conveying systems in the pit will provide access to high-grade ore and a fourth ball mill will be added to the Laguna Seca concentrator.

In Indonesia, Grasberg continues its transition to underground block cave mining. Grasberg s US$3.7 billion underground project will ultimately produce 160 thousand tonnes of ore per day and is expected to come on line in 2016, when the current open pit mine will be depleted. In addition, construction has begun on the Deep Mill Level Zone block cave mine, which is expected to begin production in 2015. This US$2 billion project will produce an additional 80 thousand tonnes of ore per day at full capacity.

At the Northparkes mine, the group continues to evaluate a step change expansion that will increase metal production threefold, add more than 20 years to the life of the mine. The pre-feasibility phase of the project is expected to be complete in late 2012, with construction beginning in 2013.

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Oyu Tolgoi (2012 Rio Tinto: 51 per cent interest in Ivanhoe Mines Limited)

The Oyu Tolgoi project in Mongolia has the potential to be a top ten copper producer and one of the world s largest producers of gold. During 2011, Rio Tinto increased its holding in Ivanhoe Mines Limited (which holds a 66 per cent interest in Oyu Tolgoi) from 40.3 per cent to 49 per cent and fully participated in Ivanhoe s rights offering. Consideration for these transactions totalled US$1.9 billion. Following expiry of the standstill agreement on 24 January 2012, Rio Tinto moved to a majority stake in Ivanhoe, having purchased shares that take it to 51 per cent interest.

Rio Tinto is the manager of the Oyu Tolgoi project, which is on track for first commercial production in 2013. Phase one includes the development of an open pit mine and a 100 thousand tonne per day concentrator. Total capital expenditure for the first phase is approximately US$6 billion.

Rio Tinto expects phase two of Oyu Tolgoi, which includes developing an underground mine and expanding the mill to 160 thousand tonnes per day, to begin production in 2015. Oyu Tolgoi s underground reserve grades are nearly four times those of the open pit.

La Granja (Rio Tinto: 100 per cent)

La Granja, in Peru, is wholly owned by Rio Tinto, and is currently the world s seventh-largest undeveloped copper resource. In the fourth quarter of 2011, Rio Tinto approved funding to begin pre-feasibility work on the project, which would be developed over a nine-year timeframe using a staged development approach. La Granja s initial leaching operation envisions production of up to 100 thousand tonnes of copper per year, with the potential to expand to 250 thousand tonnes. The subsequent addition of a concentrator could add another 250 thousand tonnes of copper production, bringing total copper production to 500 thousand tonnes per year.

Resolution Copper (Rio Tinto: 55 per cent)

The Resolution Copper project, located in the US state of Arizona, is the third-largest undeveloped copper resource in the world. Rio Tinto expects to complete pre-feasibility studies in 2012, with the aim of production starting in the next ten years. With grades at around 1.5 per cent, Resolution currently plans to produce in excess of 600 thousand tonnes of copper per year at peak production, with significant amounts of molybdenum as a by-product.

To realise the full potential of the project, Resolution Copper needs access to public land where mining is currently prohibited. In exchange, the project would give the public more than 2,400 hectares of high-quality conservation lands. A bill outlining the parameters of this exchange has been pending before the US Congress since 2005. In October 2011 the US House of Representatives voted to approve the bill, which now awaits consideration by the Senate.

Technology and innovation

The Copper group continues to invest in advanced mining technologies designed to give access to more copper, sooner and with greater efficiencies.

In 2012, the Copper group will commission a tunnel boring system at Northparkes, that it is developing with Aker Wirth. The group is also evaluating full-scale prototype trials of additional tunnel boring machines and a shaft boring system. When used in combination, these two boring systems have the potential to decrease the time it takes to construct an underground mine by 40 per cent, compared to conventional methods.

At Kennecott Utah Copper, the Copper group has begun construction of a pilot plant facility to test its CopperNuWave recovery technology, that upgrades marginal ore or waste material, reduces energy consumption and more efficiently uses concentrator capacity. The group expects to commission the facility in the second quarter of 2012.

Outlook

In the short term, Rio Tinto sees ongoing volatility in the market.

Supply continues to be challenged a result of decreasing grades and disruptions at existing mines, while new discoveries are increasingly located at depth and in developing regions with higher sovereign risks, and the need for increased levels of stakeholder engagement. This will favour organisations with strong social, environmental, operating, and technical mining skills, such as Rio Tinto s Copper group.

The long-term demand picture has not changed and growth will remain robust and continue to be driven by urbanisation, electrification and industrialisation in China and other emerging markets. In addition, increased focus on renewable sources of energy and energy efficiency will be beneficial for copper in the long term.

In 2011, Rio Tinto experienced a dip in copper ore grades, although gold and molybdenum grades have remained strong. The Group expects to see improving grades in the second half of 2012 and into 2013. Production from the existing mines will be supplemented with Oyu Tolgoi s first commercial production in 2013, and the Copper group s growth pipeline contains a number of promising projects.

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Diamonds & Minerals

Financial performance

	2011 US$ million	2010 US$ million
Revenue	**3,220**	3,035
Operating cash flow	**333**	598
Underlying earnings	**252**	328
Capital expenditure	**639**	300
Net operating assets	**3,605**	4,580

Strategy

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

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

Safety

Diamonds & Minerals continues to focus on fosterng a culture of accountability and awareness among employees and improving contractor safety. The product group s all injury frequency rate (AIFR) rose slightly to 0.56 in 2011 compared to 0.51 in 2010.

Rio Tinto Minerals (RTM) operations achieved an AIFR of 0.36 in 2011, down from 0.65 in 2010. RTM also led National Mining Association efforts to improve safety standards among US mining companies.

Rio Tinto Iron & Titanium (RTIT) operations reported a slight increase in injury rates to an AIFR of 0.57 in 2011 from 0.52 in 2010. A concerted effort to improve employee engagement at the front lines is helping to build a stronger safety culture throughout the business.

Rio Tinto Diamonds (RTD s) safety performance across its sites in 2011 was mixed. In a year that saw a transition from open pit mining to underground operations at two of its sites, RTD s safety performance declined with an AIFR of 0.66 in 2011, up from 0.36 in 2010. All RTD businesses have renewed their efforts to improve overall safety performance. On the upside Murowa achieved the best safety performance in the product group and Diavik s underground mine rescue team was recognised as the best in the western region of North America.

Greenhouse gas emissions

Overall greenhouse gas (GHG) emission intensity declined slightly across the product group due to higher production levels and more efficient equipment and technology. Improvements included shorter-haul routes and recycling programmes to extract ore from tailings.

GHG emissions per tonne of product improved slightly at RTM in 2011, and intensity decreased by two per cent across RTIT s operations, reflecting efficiencies associated with higher production levels and new technology.

GHG emission intensities improved at Diavik and Murowa but increased at Argyle due to lower production.

Diavik began construction of a wind energy system which will reduce diesel consumption by approximately ten per cent and lower greenhouse gas emissions by approximately six per cent.

Review of operations for the year

Diamonds & Minerals underlying earnings of US$252 million were 23 per cent lower than 2010. Excluding the effects of a US$79 million tax benefit in 2010, underlying earnings were slightly higher than the prior year. The group benefited from higher prices from improved market conditions across all products. This was offset by lower volumes and increased costs, primarily in the diamonds business, due to the transition to underground mining at Argyle and severe weather conditions.

A net impairment charge of US$344 million after tax was recognised on the diamonds assets to reduce their carrying value to an estimated recoverable amount. This is excluded from underlying earnings.

Rio Tinto Minerals

Borates are essential nutrients for plants and are used in fertilisers to increase crop yield and quality. They are key ingredients in building materials such as fibreglass, wood preservatives and ceramics; heat-resistant glass used in flat screen TVs and computers.

RTM (100 per cent interest) supplies nearly 40 per cent of the world s refined borates from its world-class deposit in Boron, California. Its operation footprint also includes borate refineries and shipping facilities in China, France, Malaysia, the Netherlands, Spain and the US. RTM completed the divestment of its talc business on 1 August 2011 for an enterprise value of US$340 million.

Production rose slightly to 504 thousand tonnes boric oxide equivalent up from 500 thousand tonnes in 2010 despite significant rainfall events in the US that curtailed production and led to a declaration of force majeure for sodium borates in the beginning of the year.

RTM achieved a five per cent improvement in refined borates revenues through strong prices, product mix and steady Asian demand growth. Eliminating the effects of the talc divestment and a US$79 million tax benefit in 2010, revenue and cost improvements increased earnings by 31 per cent in 2011.

Rio Tinto Iron & Titanium

Titanium dioxide is a white, opaque compound that is an important pigment used in paint, plastics and paper. 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 (37 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 2011, titanium dioxide feedstock production (Rio Tinto share) increased by four per cent, despite a furnace rebuild at RTFT, due to strong second half performance at RTFT and production increases at QMM through new dry mining operations and at RBM s new tailings treatment plant.

RTIT grew its revenues by 19 per cent due to price increases for titanium dioxide feedstocks, zircon and metallic co-products, in line with demand growth associated with global urbanisation trends. The impact of improved pricing more than offset increased input costs resulting in a 104 per cent increase in year-on-year earnings. RTIT continued to replace its multi-year sales contracts with alternative pricing mechanisms, increasing the exposure to current market prices.

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Rio Tinto Diamonds

Rio Tinto 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. RTD also 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.

RTD produced 11.7 million carats in 2011, a 15 per cent reduction from 2010 that reflected adverse weather conditions, maintenance shutdowns in the processing plant and a transition to underground mining at Argyle. Construction of the underground mine is scheduled to be completed at the end of 2013 and the investment will extend mine life until at least 2019. Three diamond-bearing kimberlite pipes are mined at Diavik using open pit and underground methods. The open pit is expected to be depleted by 2012, but underground operations will extend Diavik s mine life past 2020.

RTD revenue increased by seven per cent reflecting improved market conditions in the US and continued demand growth in China and India. This was more than offset by higher costs and lower production volumes at Argyle and higher depreciation following a 2010 impairment reversal at Diavik, leading to an 86 per cent drop in overall earnings.

Growth and innovation

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 has commenced to confirm an economically viable potash resource. 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.

Development 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. New investment will fund the collection of bulk ore samples. These will be refined at RTM s pilot processing facilities into boric acid and battery-grade lithium carbonate, and tested in the marketplace. Lithium carbonate s fastest-growing application is in batteries that provide clean power to industrial systems and electric and hybrid cars.

In 2011, RTIT commenced studies to identify, pursue and realise the best opportunities for organic expansions of its titanium dioxide mining and smelting capacity. Demand for titanium dioxide feedstocks is expected to climb significantly and the industry has invested very little in new mine or smelting capacity in the last two decades. RTIT is taking a progressive approach to evaluating and executing its best options for long-term organic growth. To date, US$63 million has been approved to conduct Order of Magnitude studies.

Rio Tinto Fer et Titane announced its TiO_{2050} project in May 2011, a proposed investment of C$800 million over the next five years to enhance mining and processing operations. Through this investment, mine life will be extended to 2050 and equipment at the operation s metallurgical complex will be upgraded to improve efficiency and environmental performance.

In February 2012, Rio Tinto announced that it would double its stake in RBM to 74 per cent through the acquisition of BHP Billiton s 37 per cent interest.

Pre-feasibility studies are continuing at the Bunder diamonds project in Madhya Pradesh, India. Rio Tinto has received a Letter of Intent to issue a mining lease for the project from the Government of Madhya Pradesh, following approval in principle from the Government of India. This is a critical milestone which allows Rio Tinto to commence a detailed mining plan and progress the environmental approvals required for further development.

In December 2011, a further US$0.5 billion of capital was approved for the Argyle Underground project. This increase reflected project development delays primarily caused by a record 2010/2011 wet season and adverse exchange rate movements. The underground mine will be complete at the end of 2013, with targeted production of 20 million carats per year when fully operational.

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. Following a solid performance in 2011, the outlook continues to be positive across all products as urbanisation and rising standards of living drive higher levels of demand.

In the borate 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 borate 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 line with improving global economic conditions, urbanisation and demand growth in emerging markets. This is expected to have a positive impact on prices. RTIT is well placed to benefit from improved market conditions through its marketing strategy and expansion plans.

The medium to long-term fundamentals for the diamond industry are positive and expected to support 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 some 20 per cent of global diamond consumption by 2012 and 40 per cent of global diamond jewellery consumption by 2020. Demand in mature markets is expected to grow in line with GDP.

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Energy

Financial performance

	2011	2010
	US$ million	US$ million
Revenue	7,327	5,652
Operating cash flow	2,019	2,463
Underlying earnings	1,074	1,187
Capital expenditure	1,327	685
Net operating assets	8,164	3,694

Strategy

The Energy group is focused on safely supplying the world s growing energy needs through the sustainable development and operation of large-scale, long-life, cost-competitive mines.

It aims to be a sector leader in the development and operation of the world s coal and uranium resources, and to build strong customer relationships while maximising revenues.

The Energy group is pursuing opportunities for growth to meet expanding long-term global energy demand, while continuing to focus on operational excellence, community engagement and environmental performance to ensure it is the developer of first choice.

Safety

Regrettably a fatality occurred in the Energy group during 2011 due to a crush incident at Zululand Anthracite Colliery in South Africa, an operation identified for divestment. The group s all injury frequency rate (AIFR) was 0.79 in 2011 as compared with 0.73 in 2010. The Energy group s AIFR increased during 2011, due in part to a rise in the number of incidents involving hand injuries and contractors at RTCA. Programmes have been implemented to address these core areas in 2012. Safety highlights for 2011 included zero recordable injuries at Colowyo up to the point of divestiture of that business on 1 December 2011, and an AIFR of 0.57 at ERA down from 0.71 in 2010. All of Rio Tinto s Energy business units remain focused on achieving the goal of zero harm through optimisation of Rio Tinto safety systems and continued strengthening of safety culture in the workplace.

Greenhouse gas emissions

The Energy group is committed to a future where energy is about sustainable practices that will minimise global carbon emissions. Initiatives and projects at each operation are helping to reduce energy use and greenhouse gas (GHG) emissions, and the group continues to dedicate resources to the development of low-emissions coal technology. GHG for the Energy group totalled approximately 4.3 million tonnes of carbon dioxide equivalent in 2011, compared with 4.0 million tonnes in 2010. Rio Tinto Coal Australia completed drilling at New South Wales sites to measure coal seam methane content, and also contributed to the development of an industry methodology to improve estimation of coal seam methane emissions from mining.

Review of operations for the year

Rio Tinto s Energy business faced a number of challenges in 2011 in particular severe wet weather in Australia which constrained supply of uranium and coal, and the Japanese tsunami which impacted demand for uranium.

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

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 provides management services to Coal & Allied Industries (Rio Tinto: 80 per cent) for operation of its four mines located in the Hunter Valley in New South Wales. Coal & Allied wholly owns Hunter Valley Operations, has an 80 per cent interest in Mount Thorley Operations, a 55.6 per cent interest in the contiguous Warkworth mine, and a 40 per cent interest in the Bengalla mine adjacent to its wholly owned Mount Pleasant project. Coal & Allied also has a

36.5 per cent interest in Port Waratah Coal Services (PWCS) which operates the Kooragang and Carrington coal port terminals in Newcastle.

The group s Australian coal operations were impacted by severe weather events which saw all four Queensland mines declare force majeure in December 2010.

Favourable prices through the first part of 2011 for all coal types have contributed to underlying earnings of US$1.2 billion, a 32 per cent increase from 2010. Constraints in explosives supplies to New South Wales sites in late 2011 will impact production in the first half of 2012. However, coal production is forecast to increase in 2012. This will be achieved through the realisation of brownfield expansions across all New South Wales operations, the ongoing ramp-up of the Clermont Mine and productivity benefits flowing from the implementation of a significant business improvement programme during 2011. Rio Tinto completed the privatisation of Coal & Allied during 2011, which is now owned 80/20 with Mitsubishi Development. Rio Tinto continues to manage Coal & Allied.

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

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 Australia s Northern Territory. ERA also holds title to the adjacent Jabiluka mineral lease. 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.

In 2011, ERA was severely impacted by the third highest wet season on record, which triggered a proactive shutdown of ERA s processing operations from January to June 2011. ERA made an adjustment to its reserves statement in August 2011 following the decision not to proceed with construction of the Ranger heap leach facility project. ERA also raised A$500 million via an accelerated renounceable entitlement offer to progress strategic projects around exploration and water management.

Rössing Uranium (Rio Tinto: 68.58 per cent)

Our Rössing Mine is located near the town of Arandis, 70 km inland from the coastal town of Swakopmund in Namibia s Erongo Region. In 2011, the Rössing mine announced a reduction in reserves following an update of the mine design.

A major business improvement diagnostic was completed and execution of a range of initiatives commenced in 2011, with a view to improving reliability and increasing production.

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

Zambeze Project (100 per cent); Tete East Project (100 per cent); Benga Project (65 per cent); Zululand Anthracite Colliery (74 per cent).

Rio Tinto s acquisition of Riversdale, renamed as Rio Tinto Coal Mozambique, was completed in August 2011. Its first operation, the Benga project, is due to start exports around the end of March.

In this report, the reserves figures for our Mozambique coal assets are published for the first time since Riversdale was acquired by Rio Tinto. The magnitude of the reserves figures is consistent with our original estimates that were calculated during our due diligence studies.

Rio Tinto is planning to divest its stake in the Zululand Anthracite Colliery which was acquired as part of the Riversdale purchase.

Growth and innovation

Each of the Energy group s coal and uranium operations in Australia and Africa are progressing expansion projects, in either execution or evaluation phase.

Rio Tinto Coal Australia s large, cost-competitive resource base positions us favourably to capture ongoing demand for seaborne thermal and coking coal. Existing growth plans at Australian coal operations are expected to

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see production increase by around 50 per cent over the coming years to around 73 million tonnes a year in 2015. This includes the Mount Pleasant Project in the Hunter Valley, which is expected to be considered for investment approval during 2012, and the Kestrel Mine Extension project, which is due to be completed in 2013. 2012 will also see an increase in exploration activities and studies to support planning for further options.

The Moatize basin in Mozambique is home to one of the best undeveloped coking coal resources in the world. Rio Tinto has the largest licence holding in that region and owns Tier 1 resources which are long life, will be cost competitive and will have substantial expansion options. Rio Tinto plans to significantly grow these assets and sees this region providing a development opportunity that is long term and will achieve sustainable growth over a 50-year-plus timeframe. Whilst saleable production will initially be constrained by existing rail and port infrastructure, feasibility studies into infrastructure solutions and mine expansions at Benga and the adjacent Zambeze Project are continuing in 2012.

The Ranger 3 Deeps exploration decline was approved in August 2011, with construction commencing in 2012. This will enable ERA to conduct close-spaced underground exploration drilling and explore areas adjacent to the Ranger 3 Deeps mineralisation. ERA will also invest a total of A$220 million to construct a brine concentrator to reduce process water inventories and underpin our approach to mine closure obligations.

Work is progressing on expansion studies to extend the Rössing mine life beyond 2023. Pre-feasibility work on upgrades to the processing facilities at Rössing is ongoing.

In early 2012, Rio Tinto completed a friendly takeover bid for Canadian uranium exploration company Hathor Exploration. The mineralisation at Hathor is being evaluated. In late 2011 Rio Tinto finalised the sale of Colowyo, its last remaining thermal coal mine in the US, in order to focus on growing energy demand in the Asia region.

Outlook

Increasing prosperity, urbanisation and industrialisation in large developing countries, such as China and India, will continue to drive global demand growth for energy in the coming decades.

Under even the most ambitious climate change policy scenarios, the International Energy Agency (IEA) predicts demand for energy will increase by more than 20 per cent by 2035. Future growth will be dominated by Asia; the IEA forecasts that China alone represents 44 per cent of global energy growth over the period 2008 to 2020.

The Energy group s strategy is to target expanding export markets, particularly in the Asia Pacific region.

While uranium as a source of energy is currently much smaller than coal, it remains significant in the global energy mix, and there are expectations demand will rise in a carbon-constrained future. The 2011 tsunami in Japan and its impact on the Fukushima plant had a negative effect on the short to medium term outlook for uranium. Operations at Japan s nuclear power plants continue to be limited by political action, while Germany reacted by declaring a total phase-out of nuclear energy over the course of the decade. These events are not expected to have a significant effect on the long-term growth in uranium demand. This is primarily due to China s ambitious nuclear programme, of more than 100 new reactors over the next ten years.

Korea, India and the UAE are also building new nuclear power plants, and investment in new capacity continues in the more mature markets of the US and Europe.

For many countries, energy diversification is the key to their energy security. Coal will continue to be an important base load fuel for decades to come, and nuclear energy also provides large-scale energy security with the added benefit of no greenhouse gas emissions. For this reason, Rio Tinto s Energy group continues to be positive about the demand outlook for both coal and uranium.

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Iron Ore

Financial performance

	2011	2010
	US$ million	US$ million
Revenue	29,909	24,024
Operating cash flow	21,486	15,976
Underlying earnings	12,853	10,189
Capital expenditure	4,757	1,716
Net operating assets	13,368	11,628

Strategy

The Iron Ore group s strategy is to:

- Create shareholder value by maximising the return from existing assets and building value through expansions and greenfield developments.
- Maintain close control of capital and operating costs to protect margins, with particular emphasis on improving unit costs as the business expands rapidly.
- Implement major expansion programmes while maintaining at-nameplate capacity production.
- Continue to develop and benefit from technology and innovation to deliver supply chain efficiencies, reducing costs and maximising underlying profit.
- Capitalise on its position as the leading iron ore supplier close to the world s largest, fastest-growing markets.
- Achieve a portfolio of alternative contract methodologies across different markets and customer segments in order to ensure full off-take and maximise revenue in an increasingly segmented market.

Safety

Safety performance in 2011 was tragically marred by three fatalities, including two fatalities at the Group s Pilbara operations, the first such events in eight years. In April, a subcontractor was fatally electrocuted at the Iron Ore Company of Canada s (IOC) Labrador City facility during the commissioning of a new overhead power line. IOC is committed to improving safety performance and achieving a zero-harm safety culture across all its operations.

In June a man working on scaffolding on East Intercourse Island jetty at Dampier died when the scaffolding collapsed into the water, and in August a man died carrying out maintenance on a front-end loader in the workshop at Brockman 2 mine, 60 kilometres from Tom Price in the Pilbara region.

In addition to the specific investigations into each incident, the fatalities led to an independent safety diagnostic assessment to examine all aspects of the Western Australian business s workplace practices and cultural factors that may have impacted on safety performance. That review was finalised in November and its recommendations will be implemented with the highest priority.

Separate to the fatalities, overall safety performance was assisted by increased tracking of indicators such as near-miss incidents. Emphasis on improved lifestyle as a health and safety factor, such as improved diet and better management of fatigue, was also accelerated during the year. In 2011 the Iron Ore group s all injury

frequency rate (AIFR) was 0.63, compared with 0.71 in 2010.

Greenhouse gas emissions

The focus was maintained on achieving greater fuel and energy efficiencies, highlighted by a US$833 million investment in improved power and gas projects, and in operational decisions such as the planned deployment of more than 150 of the more efficient Autonomous Haulage System (AHS) driverless trucks across the Pilbara region. Within Expansion Projects an energy and greenhouse gas (GHG) assessment tool was developed to assist with monitoring and evaluation of projects. All requirements for the National Greenhouse & Energy Reporting System and the Energy Efficiency Opportunities Act were met.

IOC has undertaken a major study on air pollution abatement for its Labrador City facility the Air Quality Improvement Program (AQIP). This involves monitoring, stack testing, modelling, analysing and engineering solutions to mitigate when necessary our environmental effects in the communities where we work and live. The Iron Ore group s total GHG emission intensity has improved 7.8 per cent since 2008.

Review of operations for the year

Iron Ore achieved a record performance in 2011, meeting ambitious production targets of more than 240 million tonnes despite a very challenging first half of the year, when difficult weather conditions significantly impacted operating performance.

A volatile iron ore market produced first major increases and then decreases in spot prices, as well as forcing significant structural changes to the way iron ore as a commodity is marketed and sold. As the bulk of Rio Tinto s supply contracts were linked to that spot price, volatility fed through to revenues.

Overall the strong result reflected the fact that the global economy continued its slow recovery from the global financial crisis, notwithstanding the continued instability in the eurozone. The positive result highlighted Rio Tinto s significant exposure to China and the better performing East Asian economies.

Weather-related incidents severely affected operations into the second quarter of the year. Tropical cyclones and associated widespread flooding led to a derailment and the suspension of all deliveries from mines to Dampier port for nine days. System efficiency was impaired for months after restoration. The effects of poor weather were mitigated by the Operations Centre s success in optimising throughput.

Production, rail and shipping in the second half of the year was greatly improved, with the system able to operate consistently at above-nameplate capacity.

In February 2011, Rio Tinto approved a US$933 million investment in the Marandoo Mine in the Pilbara, extending its current capacity of 15 million tonnes a year until 2030. Key cost initiatives over the year included extracting increased synergies from improved contractor utilisation and management, improved management of component overhauls and refinements to maintenance plans, optimisation of mine plans, and benefits from improvements in asset health through condition monitoring and application of relevant technologies.

The multi-staged expansion of Pilbara operational capacity proceeded on schedule. Debottlenecking of the Parker Point circuit at Dampier port increased annual capacity to 225 million tonnes, and this will rise to 230 million tonnes in early 2012.

The major expansion programme at Cape Lambert port was accelerated during the year, following the approval in June of a US$676 million investment to fund early works and procurement. As a result, capacity expansion in the Pilbara to 353 million tonnes a year is scheduled to be reached in the first half of 2015, six months earlier than planned. Advancing the earlier engineering work can be achieved without increasing the overall cost of the expansion programme.

In November Rio Tinto confirmed it would add a further 20 million tonnes capacity to this target by replacing the original car dumper at Cape Lambert. This would align the in-load annual capacity at the port up to the existing 100 million tonne outload potential of the jetty. Due for final approval in 2012, it would bring overall system capacity to 353 million tonnes in the first half of 2015.

Supporting the expansion, in September an investment of US$310 million was approved to assure a sustainable water supply for the Pilbara operations. Rio Tinto also approved an investment of US$833 million (Rio Tinto share US$706 million) in major power and fuel supply projects.

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In addition to the major capital works approved or planned, a number of regulatory and administrative arrangements were resolved including those relating to rail and port operations, land tenure and union agreements.

In a very challenging recruitment market, the Iron Ore group adopted innovative methods to augment its workforce beyond the current total of approximately 11,000. Flexible talent recruitment and retention strategies were developed to allow more lifestyle arrangements for those living in or commuting to the Pilbara and elsewhere. The Iron Ore group reconfigured its apprenticeship arrangements to improve recruitment and a new training centre was opened in Perth mid-year to handle the huge increase in apprentices and trainees expected to enter the Pilbara iron ore industry over the next decade.

In Canada, IOC experienced a challenging first quarter attributable to poor weather conditions, low mobile equipment availability and major repairs which impacted production. However, performance improved significantly over the remainder of the year, reinstating capacity. Also, in the second half of the year, production flexibility enabled IOC to capture higher concentrate spot sales by reducing pellet production in favour of higher concentrate production.

Rio Tinto s deployment of a global production platform continued.

IOC s Concentrate Expansion Project (CEP) made good progress and remains on track for completion by 2013, when annual capacity will be 26 million tonnes. The third and final stage of the CEP is in its final study phase. In August IOC announced preliminary studies to increase annual production capacity to 50 million tonnes from 2016, as well as consider the pathway for further expansions beyond this capacity, capitalising on the significant reserve base. The integrated study will consider multiple alternatives for the expansion, which may include new concentrators, mining pits and related mine, rail, stock handling, and port infrastructure.

In April the proposed development of the Simandou iron ore mining project was endorsed with a new Settlement Agreement with the Government of Guinea, confirming Rio Tinto s tenure. Rio Tinto paid US$700 million to resolve all outstanding issues with the Government, which will be able to take up to 35 per cent equity in the project.

Rio Tinto is working with the Government of Guinea to have relevant provisions of the Settlement Agreement ratified as law, as contemplated and required by the Settlement Agreement.

In October Rio Tinto approved the investment of US$1.1 billion of funding for commitments for early works and procurement of long-lead items and a further US$211 million for additional studies. This funding will allow the project to move forward towards first shipment of ore by mid-2015, as set out in the Settlement Agreement. Work progressed through 2011 on finalising the required regulatory approvals with project venture partner Chalco, and finalising of the infrastructure investment framework.

The closure phase for the HIsmelt plant at Kwinana, south of Perth, was being finalised at year s end. The HIsmelt technology business continued to progress, with an agreement signed in August with the India-based Jindal Group to incorporate the HIsmelt process in its steel-making plant.

Dampier Salt s various operations were significantly impacted by cyclones and rain during the first half of the year, with record rainfall challenging salt production and requiring significant risk management. Despite the conditions, Dampier Salt achieved record annual sales with deliveries of 10.3 million tonnes of salt into the Asian and European markets. In October the business achieved record monthly sales of 1.3 million tonnes shipped.

Growth and innovation

The Pilbara 353 million tonne capacity expansion and the Iron Ore Company of Canada CEP projects are the principal drivers of organic growth. Progressing the Simandou project towards its 2015 production commitment is the key greenfield expansion focus. The Pilbara programme is on track to deliver an additional 133 million tonnes of annual capacity by 2015. All individual projects required to deliver the interim target of 283 million tonnes capacity have been approved. Work has commenced at Cape Lambert port, rail infrastructure and mines (Brockman 4 Phase II and Western Turner Syncline). The US$2.2 billion extension of the Nammuldi mine expansion was approved in February 2012.

Mine options for the next 50 million tonne phase include a further expansion of Nammuldi and Brockman 4, and the development of the greenfield Koodaideri deposit. Studies are all well under way. All mines in the expansion programme adhere to the defined strategy of being close to existing infrastructure and fully Rio Tinto-owned. There are multiple port expansion options beyond the current programme under preliminary study. The proposed new car dumper at Cape Lambert would boost capacity to 353 million tonnes.

Introduction of innovative technology to the group s Pilbara operations through the Mine of the Future programme has also been a key feature in 2011. The two-year trial at the West Angelas mine of the Autonomous Haulage System (AHS) proved successful and as a result a significant proportion of the Yandicoogina mine will now be converted to fully autonomous operation. In November a memorandum of understanding with Komatsu (subject to binding terms of supply being negotiated) was concluded for the supply of at least 150 AHS haul trucks to be used in the Pilbara inland mining operations. Progress is also being made

towards gaining innovative efficiencies in the group s ports and rail divisions, including the deployment of a driver-assist system in rail operations and vacuum moorings at ports. In February 2012 a US$518 million investment was approved to introduce the AutoHaul driverless trains on the Pilbara network from 2014.

Rio Tinto Marine

In 2011 freight volumes increased slightly to 164 Mt of dry bulk cargo. The freight market exhibited high volatility over the year with average levels reflecting the current oversupply of new vessels, particularly in the Capesize segment. Rio Tinto Marine continues to support Rio Tinto businesses in providing competitive freight solutions in markets that are increasingly moving to shorter-term, CFR index prices. Safety performance continued to show general improvement. Marine has 15 vessels on order at shipyards in Asia and these are on schedule for delivery between 2012 and 2014 to meet specific trade requirements, enhancing Rio Tinto Marine s portfolio of long-term, low-cost freight. The existing fleet of five post-Panamax bauxite carriers continue to provide competitive and reliable delivery of bauxite from Weipa to refineries at Gladstone.

Outlook

The iron ore market outlook remains strong overall and positive, though significant volatility will continue to reflect macro-economic instability in major economies.

The Iron Ore group continued to ship at full capacity through the second half of the year, notwithstanding the eurozone challenges and softening in steel markets.

There remains great confidence in the long-term fundamentals of major markets, particularly in China, and the significant expansion programmes in the Pilbara and Guinea are based on that premise. Global supply has struggled to keep pace with increased demand, which reinforces Rio Tinto s growth strategy. Challenges will come from higher input prices, particularly increased manning, and a stronger Australian dollar. Developing high-productivity mines and adopting step-change technologies will help offset rising operational and higher native title costs.

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Business Support & Operations

Exploration

The Group has had a sustained commitment to exploration since 1946 and considers exploration to be one of its core competencies. A fundamental element of the Group s business strategy is a focus on finding and mining only the largest, lowest-cost resources that are profitable at all parts of the commodity cycle. We refer to these as Tier 1 resources. Mature Group operations, such as Weipa, the Pilbara and Rössing, were Tier 1 greenfield discoveries by Rio Tinto. The value of these discoveries is still being realised after more than 40 years of mine production.

The Exploration group is accountable for greenfield exploration programmes, provides technical assistance to business units on brownfield exploration, and supports business development groups in the evaluation of merger and acquisition opportunities. Greenfield exploration aims to establish completely 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.

The evolution of a project from target generation to investment approval, implementation and commissioning involves a series of study stages that aim to deliver a progressive increase in confidence in the technical and economic parameters of the project. These exploration and evaluation studies can take ten to 20 years, with sustainable development criteria applied throughout the project development cycle.

Target generation and testing involves the progression of a project from concept to demonstration of mineralisation and declaration as A Project of Merit. Where mineralisation is identified through drilling to be of a grade and quantity sufficient to be of economic interest to the relevant Rio Tinto product group, projects are progressed to Order of Magnitude Study. This involves an assessment of a range of options to establish economic viability of the project, and determine whether its potential value is sufficient to justify committing significant resources to detailed evaluation. A successful Order of Magnitude Study results in the declaration of a discovery, and the transfer of project management accountability to the relevant Rio Tinto product group.

The following table shows the Exploration group s Tier 1 discoveries since 2001:

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

At the end of 2011, the Exploration group was actively exploring in 18 countries, and assessing opportunities in a further six countries, for a broad range of commodities including bauxite, copper, coking coal, diamonds, iron ore, nickel, potash and uranium.

Strategy

The purpose of Exploration is to add value to the Group by discovering or acquiring resources that can increase future cash flows. Exploration programmes are prioritised on a global basis so that only the most attractive opportunities are pursued. Priorities are determined in consultation with the product groups, with investment decisions being driven not by location or choice of commodity but rather 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 and Brisbane. This structure provides a balance of global reach and local presence.

Exploration teams frequently present the first face of Rio Tinto in a community and lay the groundwork for what could become a multi-decade relationship. We place a high priority on effective community engagement

and consider our commitment to sustainable development as fundamental to securing our social licence to operate.

Safety

The Exploration group s all injury frequency rate has deteriorated from 1.18 at the end of 2010 to 1.52 at the end of 2011. Access to experienced employees and contractors remains a challenge in light of rapid expansion across the industry. The Exploration group continues to focus on implementing critical controls around high-risk activities such as aviation, drilling, vehicles and driving.

Performance

An Order of Magnitude project at Amargosa in Brazil delivered the Tier 1 bauxite deposit to Rio Tinto Alcan for pre-feasibility study. Ongoing exploration in the Amargosa orbit identified multiple bauxite occurrences for resource definition in 2012.

Drilling in the Orientale Province of the Democratic Republic of Congo, in joint venture with Delrand Resources and Kilo Goldmines, returned intersections of high-grade iron ore at Mount Asonga and Zatua.

An option to joint venture was entered into with North Atlantic Potash Inc., a subsidiary of JSC Acron, to explore for potash on nine permitted areas in Saskatchewan, Canada. A Project of Merit has been initiated based on initial drill results.

In the brownfield environment, Exploration handed over the Bourne Highway project in the Pilbara, Australia, to Rio Tinto s Iron Ore group. Drill testing of targets in the orbit of Iron Ore Company of Canada operations returned multiple mineralised intercepts for assessment in 2012. In Mozambique, exploration commenced on licences acquired under the Riversdale acquisition and adjacent tenement secured under option agreement. Order of Magnitude studies were initiated at Lake Elphinstone, Mount Robert and Valeria in the Bowen Basin, Australia. On the Rössing mine lease in Namibia, evaluation of the Z20 prospect continued.

The Altai Nuurs coking coal deposit in Mongolia and the Sari Gunay gold deposit in Iran were divested. Exploration projects in Jordan and Guyana were terminated due to poor results.

Several test flight programmes of the VK1 airborne gravity gradiometer were conducted in Western Australia throughout the year, including the first flights of a second improved system. Production flying is anticipated in 2012.

Gross cash expenditure on exploration and evaluation in 2011 was US$1,437 million, representing a US$843 million increase over 2010 gross expenditure of US$594 million (due to ramp-up of evaluation project activities). Gross expenditure was offset by US$89 million (pre-tax) proceeds from divestment of Tier 2 exploration assets.

Outlook

The Exploration group will explore for a range of commodities across at least 18 countries in 2012. Early stage target generation will be a key enabler of sustained exploration success. The next crop of potential discoveries includes:

Project	Commodity	**Country**	Stage
Amargosa Orbit	Bauxite	Brazil	Project of Merit
Saskatchewan Potash	Potash	Canada	Project of Merit
Bafwasende	Iron ore	Democratic Republic of Congo	Project of Merit

Other Business Support & Operations

In addition to Exploration, the following parts of the Group are included in Business Support & Operations: Business Evaluation; Corporate Assurance; Economics & Markets; Group Risk; Global Business Services; Rio Tinto Japan; Rio Tinto Singapore Holdings; Cable; Pacific Aluminium and Other Aluminium (Sebree and Lynemouth aluminium operations, three specialty alumina plants and the Gardanne refinery).

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Technology & Innovation

Technology & Innovation (T&I) consists of a central team of technology professionals and centres. These develop leading practice and promote improvements in technology, mining, processing, asset management, strategic production planning, and project development, execution and evaluation. Emphasis is given to shared and visible measures of operational effectiveness, the improvement of analytical tools, development of staff capabilities, and implementation of technology step changes that will confer competitive advantage in development of orebodies likely to be available to the Group in the future.

The total number of employees in T&I increased from 538 at year end 2010 to 925 at year end 2011 primarily due to an increase of demand for the design and build of major projects on behalf of the Group s business units.

The T&I gross cost in 2011 was US$343 million, compared with US$213 million in 2010 and US$134 million in 2009.

Strategy

T&I s strategy is to:

- Maintain and promote a safe working environment.
- Continue to embed operational excellence in business units.
- Maximise the contribution of technology to the Group s vision of industry leadership.
- Deploy technology solutions that increase earnings.
- Design and build valuable, new growth projects.
- Position the Group to unlock orebodies that require innovative solutions.

Safety

T&I is committed to the safe operation of its facilities and to the safe deployment of its personnel. The all injury frequency rate for T&I and projects in 2011 is 2.57 compared with 1.54 in 2010, driven largely by poor performance at the Argyle Diamond underground project.

An extensive range of actions is being taken to correct this poor performance including changes to and strengthening of the project leadership team, increased oversight of safety performance and application of Rio Tinto s Site Safety Acceleration Process.

Performance

Innovation

Innovation is the research and development group within T&I. Its focus is on developing radically new and innovative technologies that can address the significant challenges facing the mining industry. With unprecedented global demand for natural resources, a move from mature open pit orebodies to deeper underground mining with more complex mineralisation, tightening environmental and energy constraints, these challenges are significant.

The wealth of technical and project expertise is leveraged through a network of key partnerships with organisations and institutions around the world. The work is protected by an intense focus on competitive advantage.

Examples of initiatives and programmes:

- The Mine of the Future programme; the interlinking of a number of initiatives that will deliver improvements in productivity, cost, product quality and safety.
- Technologies to support the safe, rapid development of large underground block cave mines.
- In situ orebody knowledge to guide the mining and processing of an ore block.
- The development and deployment of autonomous blast hole drilling technologies.
- Ore recovery through significant advancements in mineral recovery and sorting technologies.
- Innovative research into technologies to reduce Rio Tinto s carbon footprint.

During 2011 a number of projects continued on target, or were accelerated, to deliver significant value to Rio Tinto through technological advancement.

Mineral Technology Services

The Mineral Technology Services Centre comprises a team of professionals deployed from seven regional offices in North America, Australia, the UK, and South Africa. The team works with operating sites to deliver substantial increases in value; with project teams to determine the optimum value-adding project plan; and with the broader Group to understand and manage major technical risks. The team provides support in the areas of geology, geotechnics, mining, mineral processing, hydrometallurgy, process control, asset management, environment and business analysis.

The Improving Performance Together (IPT) engagements continue to work with operating sites on operating improvements.

The Centre is responsible for implementing IPT processing, a methodology designed to increase the value delivered by Rio Tinto s processing operations. IPT processing includes focused data analysis to understand and address the constraints and variability which inhibit process performance.

Asset Management

The Asset Management Centre focuses on the effective selection and deployment of the Group s equipment for mining and processing. Work includes improvements in the reliability and performance of these physical assets, utilising asset management standards and guidelines, as well as standard business processes and fit-for-purpose technical operating systems, work practices, training and global metrics to monitor the performance of fixed plant and heavy mobile equipment.

Mining Technology

The focus of the Mining Technology Centre is to establish leading practice and develop, share and implement Group-wide solutions in the core mining production processes of surface mining, strategic resource development, underground mining, orebody knowledge, geotechnical and mine planning. The Centre also oversees the Group s reserves estimation and reporting process, reserves audit process and core technical systems.

IPT mining initiatives in 2011 included payload management, load and haul improvement, drill and blast and off-road tyre demand reduction.

The Mining Technology Centre also includes a Strategic Production Planning (SPP) team, which focuses on developing and establishing leading practice. SPP teams co-operate with business units to develop comprehensive plans and valuations of strategic resource development options. Results from SPP provide a logical resource development framework for more detailed studies and investment decision making. SPP engagements completed during the year increased the life of mine valuation of a number of existing mining businesses and supported expansion-based investment proposals.

Project Development & Implementation

The Project Development & Implementation Centre (PDI) provides guidance, support and training for all aspects of capital projects, performs a governance function by conducting project reviews, manages feasibility studies, and executes capital projects on behalf of the business units. During 2011, PDI continued the implementation of a global operating model in preparation for implementation of projects in nearly all continents and on behalf of most product groups. The model provides for a Project Management support function as well as Implementation Hubs focused on supporting the product groups.

Technical Evaluation Group

The Technical Evaluation Group (TEG) ensures that Rio Tinto s investment decisions are based on independent, technical review and evaluation. TEG also provides advice on the adequacy of risk identification and management at key points in the project approvals process.

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Financial review

2011 financial performance compared with 2010

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

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	Restated[a] 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 properties)	(796)		
Non cash/interest/tax/other	(96)		
Total changes in underlying earnings[b]		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) The financial statements for the year ended 31 December 2010 have been restated in accordance with IFRS 3 Business Combinations (Revised), following reclassification of certain balances relating to the Consolidation of Oyu Tolgoi LLC.

(b) See note 2 on page 154 of the 2011 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.

Commodity prices and other drivers of sales revenue of individual product groups are discussed further in the section on pages 34 to 36.

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 the Aluminium operations in the Saguenay were impacted by low snow and rainfall leading to low 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 higher 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.

2010 financial performance compared with 2009

2010 underlying earnings of US$13,987 million and restated net earnings of US$14,238 million were US$7,689 million above and US$9,366 million above the comparable measures for 2009. The principal factors explaining the movements are set out in the table on page 33.

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Changes from 2009 to 2010	US$m	Underlying earnings US$m	Restated net earnings US$m
2009		**6,298**	**4,872**
Prices	9,505		
Exchange rates	(1,171)		
Volumes	782		
General inflation	(253)		
Energy	(232)		
Other cash costs	(445)		
Exploration and evaluation costs (including disposals of undeveloped properties)	(690)		
Non cash/interest/tax/other	193		
		7,689	7,689
Gain on consolidation of Oyu Tolgoi LLC			445
Profits less losses on disposal of interests in business			(325)
Net impairment charges			716
Exchange differences and derivatives			401
Chinalco break fee			182
Restructuring/severance costs from global headcount reduction			231
Other			27
2010		**13,987**	**14,238**

(a) See note 2 on page 152 of the 2011 financial statements for a reconciliation of underlying earnings to net earnings.

Prices

The effect of price movements on all major commodities in 2010 was to increase underlying earnings by US$9,505 million compared with 2009. Average annual prices improved for nearly all of Rio Tinto s major commodities: copper prices were up 47 per cent, molybdenum prices were up 45 per cent, gold prices were up 26 per cent and aluminium prices were 31 per cent higher than 2009. Demand and prices for diamonds and minerals improved significantly as the worldwide economy emerged from the global financial recession.

Exchange rates

There was significant movement in the US dollar in 2010 relative to the currencies in which Rio Tinto incurs the majority of its costs. Compared with 2009, on average, the US dollar weakened by 16 per cent against the Australian dollar and by ten per cent against the Canadian dollar. The effect of all currency movements was to decrease underlying earnings relative to 2009 by US$1,171 million.

Volumes

Higher sales volumes were primarily generated from the expanded iron ore operations in the Pilbara region of Western Australia running at above nameplate capacity and an increased proportion of higher-margin pellet sales at IOC. The Aluminium business benefited from higher sales of value-added aluminium products. Increased volumes of hard coking coal following new investment in heavy mobile equipment at the Queensland mines, higher volumes of refined gold and molybdenum at Kennecott Utah Copper and a significant recovery in diamonds and minerals market demand also contributed to the positive variance. These increases offset lower copper and gold volumes at Grasberg which were impacted by lower ore grades and lower mill throughput. The overall impact of volume movements was an increase in underlying earnings of US$782 million relative to 2009.

Energy, other cash costs and exploration

Higher energy costs across the Group, in particular for the Aluminium business, reduced underlying earnings by US$232 million. This primarily reflected low snow and rainfall levels in the Saguenay-Lac-Saint-Jean region of Quebec during the first half of 2010 which led to reduced power generation, resulting in the need to purchase additional power under a specially negotiated power block from the provincial utility over a 12 month period.

Higher other cash costs during 2010 decreased underlying earnings by US$445 million compared with 2009. Higher unit cash costs in the Copper group were the result of the planned smelter shutdown at Kennecott Utah Copper and lower copper production following lower grades at most of the operations. Adverse weather conditions and higher stripping rates impacted costs at the Energy group. These were partly offset by lower costs in the Aluminium business, which benefited from

lower prices for caustic, pitch and coke.

In 2010, evaluation work accelerated 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, compared with a gain of US$797 million in 2009 from the disposal of two undeveloped potash properties. The impact from higher exploration and evaluation expenditure combined with lower gains realised from divestments was to lower underlying earnings by US$690 million compared with 2009.

Finance costs, tax, other

The effective corporate income tax rate on underlying earnings, excluding equity accounted units, was 27.9 per cent compared with 24.8 per cent in 2009. The effective corporate income tax rate on net earnings excluding equity accounted units was 27.3 per cent compared with 29.3 per cent in 2009. A significant proportion of the increase related to the one-off non-taxable profit on disposal of the potash assets which was recognised in 2009. The Group s net finance charge was US$110 million lower than in 2009, mainly reflecting lower debt in 2010 following completion of the rights issues and divestments.

Exclusions from underlying earnings 2009-2011

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.

	2011 US$m	Restated 2010 US$m	2009 US$m
Impairment charges net of reversal	**(9,290)**	(739)	(1,103)
Profits on disposal of interests in businesses	**167**	174	499
Gain on consolidation of Oyu Tolgoi LLC		445	
Loss after tax from discontinued operations	**(10)**	(97)	(449)
Exchange differences and gains/(losses) on derivatives	**(57)**	429	28
Deferred tax asset write off	**(342)**		
Chinalco break fee			(182)
Restructuring/severance costs from global headcount reduction			(231)
Other exclusions	**(191)**	39	12
Total excluded in arriving at underlying earnings	**(9,723)**	251	(1,426)

2011

An impairment charge of US$9,290 million was recognised in 2011, of which US$8,855 million related to the Group s aluminium businesses. The valuation of Rio Tinto s aluminium businesses for impairment testing is based on our assessment of fair market value less costs to sell (FVLCS) derived from discounted future cash flows. In the current market environment, costs are substantially higher due to continued strength in the Australian and Canadian dollars against the US dollar and an increase in input prices. These factors, combined with rising LME inventory, are delaying the aluminium industry s investment in growth projects for new capacity. Under these conditions, FVLCS does not include the full value of our planned improvements in cash margins from existing operations and from the successful implementation of our growth projects. The impairment was therefore largely a result of the current economic

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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 impairments of US$344 million relating to the Group s diamond business and US$91 million in other net impairments. The impairment to the Group s diamond business was caused by a change in assumptions about future capital costs required to complete the Argyle underground project. This was partly offset by a recovery in prices, which resulted in a reversal of impairment at Diavik of US$112 million.

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 represents 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 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.

2009

In 2009, the Group completed the divestments of its interests in the Ningxia aluminium smelter, the Corumbá iron ore operation, the Jacobs Ranch coal mine, Alcan Composites and the sale of 52 per cent of the Group s interest in Cloud Peak Energy Resources LLC. Net gains on these transactions totalling US$0.5 billion were excluded from underlying earnings as divestments of interests in businesses are considered to be outside the underlying activities of the Group.

Of the Group s total post-tax impairment charge of US$1,103 million, US$500 million related to Alcan Engineered Products, US$212 million related to the Group s aluminium businesses and US$348 million related to the Group s diamond businesses.

An impairment of US$318 million relating to the Alcan Packaging businesses was recognised during the year, and was included within loss after tax of discontinued operations .

All impairments were measured based upon an assessment of fair value less costs to sell. These impairments were caused by continued weakness in the economic environment.

In 2009, Rio Tinto paid a break fee of US$195 million (US$182 million post-tax) to Chinalco which was excluded from underlying earnings.

During 2009, the Group incurred restructuring and severance costs of US$231 million associated with its global headcount reduction programme.

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:

	2011 US$m	Restated 2010 US$m	2009 US$m
Profit from continuing operations	**6,775**	15,195	5,784
Loss after tax from discontinued operations	**(10)**	(97)	(449)
Profit for the year	**6,765**	15,098	5,335
Less: attributable to non-controlling interests	**(939)**	(860)	(463)
Attributable to owners of Rio Tinto (net earnings)	**5,826**	14,238	4,872
Exclusions from underlying earnings	**9,723**	(251)	1,426
Underlying earnings attributable to owners of Rio Tinto	**15,549**	13,987	6,298

Group financial results by product group 2011-2009

	2011 US$m	Restated 2010 US$m	2009 US$m
Iron Ore	**12,853**	10,189	4,126
Aluminium	**442**	611	(260)
Copper	**1,932**	2,530	1,874
Energy	**1,074**	1,187	1,167
Diamonds & Minerals	**252**	328	800
Other operations	**(120)**	237	(232)
Inter-segment transactions	**40**	(15)	(21)
Other items	**(593)**	(554)	(577)
Exploration and evaluation	**(102)**	(52)	5
Net interest	**(229)**	(474)	(584)
Group underlying earnings	**15,549**	13,987	6,298
Exclusions from underlying earnings	**(9,723)**	251	(1,426)
Net earnings	**5,826**	14,238	4,872

Sales revenue

Prices

Commodity	Source	Unit	2011 US$	2010 US$	2009 US$
Average prices					
Iron ore	Australian fines	dmtu (a)	**2.60**	1.84	1.09
Aluminium	LME(b)	Tonne	**2,395**	2,173	1,665
Copper	LME	Pound	**4.00**	3.40	2.32
Gold	LBMA	Ounce	**1,571**	1,222	970
Molybdenum	Metals Week: quote for dealer oxide price	Pound	**16**	16	11
Closing prices (quoted commodities only)					
Aluminium		Tonne	**1,970**	2,459	2,207
Copper		Pound	**3.43**	4.44	3.33
Gold		Ounce	**1,575**	1,410	1,104
Molybdenum		Pound	**16**	16	11

(a) Dry metric tonne unit. The quoted price for 2011 is based on contract sales under a quarterly long pricing mechanism.

(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 2009, 2010 and 2011.

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

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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

2011 sales revenue compared with 2010

Gross sales revenue for the Iron Ore group increased by 24 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.

Rio Tinto priced its iron ore contracts on a quarterly basis with a four month lag for the first three quarters of 2011. 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 reference to a quarterly average index set at the prior quarter s average lagged by one month. The remainder was sold on a shorter term price basis linked to current quarter average, current month average or spot index prices. Index prices are adjusted for product characteristics and iron and moisture content.

2010 sales revenue compared with 2009

Gross sales revenue for the Iron Ore group increased by 91 per cent in 2010 compared with 2009 driven by strong prices and a nine per cent increase in global production. During 2010, iron ore pricing moved to quarterly contracts, reflecting the structural shift away from annual benchmark pricing. Sales volumes increased in response to growing demand in major markets stimulated by improving economic conditions and delays in capacity from other suppliers.

Aluminium

2011 sales revenue compared with 2010

The Aluminium group s sales revenues are from aluminium and related products such as alumina and bauxite. 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.

Following the Group s streamlining announcement on 17 October 2011, 13 non-core assets have been transferred into Other operations. These assets are now managed and reported separately from Rio Tinto Alcan while the Group progresses divestment options.

2010 sales revenue compared with 2009

Gross sales revenue in 2010 for the Aluminium group increased by 30 per cent compared with 2009. The 2010 exchange traded aluminium price averaged US$2,173 per tonne, an increase of 31 per cent on 2009. This increase reflected the combination of a robust recovery in end use demand in developed economies and the continued rollover of inventory financing positions amidst a prolonged period of low interest rates.

Copper

2011 sales revenue compared with 2010

The Copper group also produces gold and molybdenum as significant by-products. 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. Copper increased 18 per cent to 400 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 US 344 cents per pound. The final price of these sales will be determined during the first half of 2012.

2010 sales revenue compared with 2009

Gross sales revenue for the Copper group increased by 25 per cent in 2010 compared with 2009. The Copper group benefited from higher average prices for its major products in 2010. Copper increased 47 per cent to 340 cents per pound, gold increased 26 per cent to US$1,222 per ounce and molybdenum increased 45 per cent to US$16 per pound. The benefit from higher prices in 2010 was partly offset by lower volumes, notably from Grasberg.

At the end of 2010, the group had an estimated 270 million pounds of copper sales that were provisionally priced at US 428 cents per pound.

Energy

2011 sales revenue compared with 2010

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 2011 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.

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 operations. The processing plant at Energy Resources of Australia was shut from late January to mid June as a proactive strategy to manage processed water levels in the tailings dam following a sustained period of above-average rainfall. Lower grades, lower milled tonnes and lower extraction rates were experienced at Rössing as the mine continues with its major pre-strip programme which will allow access to higher grade, lower strip ratio reserves.

2010 sales revenue compared with 2009

Gross sales revenue for the Energy group increased by 16 per cent in 2010. Overall average coal prices were lower than in 2009 due to the absence of higher carry over prices from 2008. 2010 saw continuing strength in the seaborne market for Australian coal. Demand for thermal coal continued to be robust from South Korea, India, Taiwan and China. Global steel demand improved in all markets in the first half of the year and led to strong demand for semi-soft coking coal. The market for premium quality hard coking coal remained steady in 2010.

Uranium spot markets were relatively weak early in 2010 but strengthened in the second half of the year, mainly driven by strong demand from China. Long-term prices remained consistent with some small increases in the latter part of the year.

Diamonds & Minerals

2011 sales revenue compared with 2010

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

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Financial review continued

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. Diamond prices realised by Rio Tinto depend on the size and quality of diamonds in the product mix. Rio Tinto Diamonds revenues increased by seven per cent year-on-year, despite the impact of lower production volumes.

Revenues for Rio Tinto Iron & Titanium (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. RTIT continued to replace its multi-year sales contracts with alternative pricing mechanisms in 2011, increasing the exposure to market prices.

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.

2010 sales revenue compared with 2009

Gross sales revenue increased by 16 per cent in 2010 compared with 2009. Sustained demand from emerging markets, which largely offset the slower recovery from the established markets of the US and Europe was reflected in higher prices and increased sales volumes for the Diamonds & Minerals group.

Rough diamond prices demonstrated a robust recovery throughout 2010 as demand from emerging markets, notably India and China, accelerated. Demand for titanium dioxide feedstocks, talc and borates in 2010 continued to demonstrate a healthy recovery in line with improving global economic conditions.

Cash flow

2011 compared with 2010

A full consolidated cash flow statement is contained in the 2011 financial statements.

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 and infrastructure to 283 Mt/a in Western Australia, the development of the Oyu Tolgoi copper-gold project in Mongolia, the expansion of the Yarwun alumina refinery in Queensland, the extension and expansion of the Kestrel coking coal mine in Queensland and the underground development of the Argyle diamond mine in Western Australia. The US$700 million payment to the Government of Guinea following the signing of the agreement for the Simandou iron ore project was recognised as capital expenditure.

In addition, during 2011 the Group spent a total of US$6.4 billion (net of cash acquired) on acquisitions 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, which completed on 12 January 2012. 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. On 24 January 2012, Rio Tinto moved to a majority stake in Ivanhoe, taking its interest to 51 per cent.

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.

2010 compared with 2009

Cash flows from operations, including dividends from equity accounted units, were US$23.5 billion, 70 per cent higher than 2009, primarily as a consequence of higher prices.

Tax paid for 2010 increased to US$4.1 billion, US$1.024 billion higher than 2009 largely due to the increase in taxable profits. Net interest paid of US$696 million for 2010 was US$440 million lower than 2009, largely due to lower amounts of debt, following a US$8.5 billion repayment of Alcan acquisition facility D at the beginning of 2010.

Purchase of property, plant and equipment and intangible assets was US$4.6 billion in 2010, a decrease of US$0.8 billion from 2009. This included the Brockman 4 iron ore mine development in Western Australia, the expansion of the Yarwun alumina refinery, the commissioning of the Clermont thermal coal mine and the extension and expansion of the Kestrel coking coal mine.

Net cash proceeds from disposals and acquisitions in 2010 were US$2.9 billion, and related to the disposal of Alcan Packaging businesses and the remainder of Cloud Peak Energy Inc; partly offset by the payments to acquire an additional 20.62 per cent in Ivanhoe Mines.

Dividends paid in 2010 of US$1.8 billion compared with US$0.9 billion in 2009 reflected the suspension of the 2009 interim dividend.

Statement of financial position

Net debt increased from US$4.1 billion (restated) at 31 December 2010 to US$8.5 billion at 31 December 2011 as strong 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 12 per cent at 31 December 2011 and interest cover was 27 times.

In 2011, Rio Tinto issued US$4 billion of fixed rate bonds, with maturities of five, ten and 30 years. The weighted average maturity was around 12 years and the weighted average coupon was less than 3.7 per cent. At 31 December 2011, 60 per cent of Rio Tinto s adjusted total borrowings of US$18.1 billion were at fixed interest rates.

As disclosed at the 2011 half year, the Group has revised its definition of net debt, such that it is stated net of the impact of certain funding arrangements relating to equity accounted units (EAU) and partially-owned subsidiaries (EAU funded balances). This modification is required in order to avoid 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. Comparative figures have been adjusted accordingly. This primarily impacted the consolidation of the net debt of Ivanhoe (an EAU) and Oyu Tolgoi (a subsidiary). Adjusted total borrowings have been similarly adjusted.

Provisions have risen by US$4.7 billion due to increases of approximately US$3 billion to the estimate of closure obligations, following revisions to cost estimates (including the impact of mine and infrastructure expansions), combined with changes to the rate used to discount these obligations to their present value. Net pension provisions have increased by approximately US$1.5 billion due to falling discount rates and lower than expected fund returns.

Financial risk management

The Group s policies with regard to financial 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 risk management are disclosed in note 31 Financial risk management to the 2011 financial statements.

The Group s *2011 Annual report* and financial statements show the full extent of its financial commitments, including debt. The principal risks and uncertainties to which the Group is subject are summarised on pages 10 to 12. The effectiveness of internal control procedures continues to be a high

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priority in the Rio Tinto Group. The board s statement on internal control is set out in the Risk management section.

Capital risk management and dividend

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

	2011	Restated 2010
	US$m	US$m
Equity attributable to owners of Rio Tinto	**52,539**	58,247
Equity attributable to non-controlling interests	**6,669**	6,265
Net debt (note 25)	**8,451**	4,071
Total capital	**67,659**	68,583

The board s overriding objective when managing capital is to safeguard the business as a going concern whilst maximising returns for the companies shareholders. In practice, this involves regular reviews by the board of the Group s capital structure. 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, whilst also striving to maintain the Group s overall credit rating. The resulting capital structure provides the Group with a high degree of financial flexibility at a low cost of capital.

Net debt increased from US$4.1 billion (restated) to US$8.5 billion at 31 December 2011 as strong 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 at 31 December 2011 was made up principally from adjusted total borrowings of US$18.12 billion, offset by US$9.67 billion in cash and cash equivalents. The proportion of net debt to total capital stood at 12 per cent at 31 December 2011 compared with six per cent at 31 December 2010. As part of the Group s capital management programme, a share buy-back of US$7 billion is on track for completion by 31 March 2012.

Rio Tinto has a progressive dividend policy which aims to increase the US dollar value of ordinary dividends over time, taking into account the results of the past year and the outlook. Under the dividend policy, the interim dividend is set at one half of the total ordinary dividend for the previous year and the final ordinary dividend is expected to be at least equal to the previous interim dividend.

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 declared and paid in pounds sterling and Rio Tinto Limited dividends are declared and paid in Australian dollars, converted at exchange rates applicable on 7 February 2012. Details relating to the 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.

The Group s major capital and evaluation projects are listed in the Capital projects section on page 41.

Liquidity and capital resources

Details of our Liquidity and Capital risk management are contained within note 31 Financial risk management , part (v), to the 2011 financial statements.

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 risk management , part (v), to the 2011 financial statements.

Treasury management and financial instruments

Details of our Treasury management and financial instruments are contained within the introductory paragraphs of note 31 Financial risk management , to the 2011 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 2011	Effect on net and underlying earnings of 10% change in full year average +/-
	US cents	US$m
Australian dollar	**103**	910
Canadian dollar	**101**	300
Euro	**139**	8
Chilean peso	**US$1 = 483 pesos**	24
New Zealand dollar	**79**	25
South African rand	**14**	51
UK sterling	**160**	17

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 care.

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 (i), to the 2011 financial statements.

Interest rates

Details of our exposure to interest rate fluctuations are contained within note 31 Financial risk management , part (ii), to the 2011 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 2011 for the following products would be:

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Financial review continued

Earnings sensitivities commodity prices

	Unit	Average market price for 2011 US$	Effect on underlying and net earnings of 10% change in full year average +/- US$m
Iron ore	dmtu		1,720
Aluminium [a][b]	Tonne	2,395	510
Copper [a]	Pound	4.00	340
Gold	Ounce	1,571	70
Molybdenum	Pound	16	55
Thermal and coking coal	Tonne		280

(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 care. 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 risk management , part (iii), to the 2011 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 risk management , part (iv), to the 2011 financial statements.

Disposals and acquisitions

Information regarding disposals and acquisitions is provided in note 39 Purchases and sales of subsidiaries, joint ventures, associates and other interests in businesses , to the 2011 financial statements on page 190.

Australian Minerals Resource Rent Tax

On 23 November 2011, the Australian Minerals Resource Rent Tax (MRRT) passed through the Australian lower house. The MRRT is a proposed tax on 30 per cent of the super profits from the mining of iron ore and coal in Australia, increasing the tax burden on these mines and hence the Group.

The bill is scheduled to be debated at the Senate in 2012. Whilst it is proposed to be effective from 1 July 2012, this is dependent on the bill being supported and passed through parliament. Once passed the legislation will be considered substantively enacted and the Group will be required to account for the deferred tax consequences under IAS 12 Income taxes from the substantive enactment date.

Deductible expenditure will include a starting base allowance that is proposed to be based on the value of the mining assets at 1 May 2010, depreciated over the life of the mines. Projects will also be eligible for a 25 per cent extraction allowance which reduces the effective statutory tax rate to 22.5 per cent of the super profits.

State royalties will be creditable for MRRT purposes, and MRRT payments will be deductible for company income tax purposes. The deferred tax consequences will have no current cash flow implications but may be significant. However, given the complexity of the MRRT, quantification remains in progress.

Critical accounting policies and estimates

Many of the amounts included in the financial statements involve the use of judgment 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 2011 financial statements, and/or the other notes to the 2011 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
- Exploration and evaluation
- Functional currency
- Post retirement benefits
- Recoverability of potential deferred tax assets
- Contingencies
- Basis of consolidation
- Acquisition accounting

Off balance sheet arrangements and contractual commitments

The table below 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 2011. Information regarding the Group s pension commitments and funding arrangements is provided in note 47 Post retirement benefits to the 2011 financial statements. Information regarding the Group s closedown and restoration obligations is provided in note 27 Provisions (not including taxation) to the 2011 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 2011	< 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	523	766	564	1,052	**2,905**
Other (capital commitments)	9,700	3,300	41		**13,041**
	10,223	4,066	605	1,052	**15,946**
Long-term debt and other financial obligations:					
Debt	1,264	3,922	2,289	13,492	**20,967**
Interest payments	1,093	1,543	1,236	4,794	**8,666**
Unconditional purchase obligations	2,578	3,828	3,211	12,303	**21,920**
Other	1,646	256	42	20	**1,964**
	6,581	9,549	6,778	30,609	**53,517**
Total	16,804	13,615	7,383	31,661	**69,463**

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Five year review

Selected financial data

The selected consolidated financial data 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 2011 financial statements and notes thereto. The financial statements as included on pages 131 to 215 have been prepared in accordance with International Financial Reporting Standards both as adopted by the EU (EU IFRS) and as issued by the International Accounting Standards Board (IFRS).

Rio Tinto Group

Income statement data		Restated (a)			
For the years ending 31 December	**2011**	2010	2009	2008	2007
Amounts in accordance with IFRS	**US$m**	US$m	US$m	US$m	US$m
Consolidated revenue	**60,537**	55,171	40,262	52,861	29,700
Group operating profit [b]	**13,940**	19,608	7,506	10,194	8,571
Profit for the year from continuing operations	**6,775**	15,195	5,784	5,436	7,746
Loss after tax from discontinued operations	**(10)**	(97)	(449)	(827)	
Profit for the year	**6,765**	15,098	5,335	4,609	7,746
Basic earnings per share [c]					
Profit from continuing operations (US cents)	**303.5**	731.0	301.7	286.8	464.9
Loss after tax from discontinued operations (US cents)	**(0.5)**	(4.9)	(25.5)	(52.7)	
Profit for the year per share (US cents)	**303.0**	726.1	276.2	234.1	464.9
Diluted earnings per share [c]					
Profit from continuing operations (US cents)	**301.5**	726.7	300.7	285.5	462.9
Loss after tax from discontinued operations (US cents)	**(0.5)**	(4.9)	(25.4)	(52.4)	
Profit for the year per share (US cents)	**301.0**	721.8	275.3	233.1	462.9

Dividends per share	**2011**	2010	2009	2008	2007
Dividends declared during the year [c]					
US cents					
- interim	**54.0**	45.0		55.6	42.5
- final and special	**91.0**	63.0	45.0	55.6	68.7
UK pence					
- interim	**33.1**	28.2		29.6	20.9
- final and special	**57.3**	39.1	28.8	37.9	35.3
Australian cents					
- interim	**49.8**	49.3		63.3	49.6
- final and special	**84.2**	61.9	51.6	83.0	76.1
Dividends paid during the year (US cents) [c]					
- ordinary and special	**117.0**	90.0	55.6	124.3	94.8
Weighted average number of shares basic (millions)[c]	**1,923.1**	1,961.0	1,763.6	1,570.1	1,572.9
Weighted average number of shares diluted (millions)[c]	**1,935.5**	1,972.6	1,769.6	1,577.3	1,579.6

Statement of financial position data		(a) Restated			(d) Restated
at 31 December	**2011**	2010	2009	2008	2007
Amounts in accordance with IFRS	**US$m**	US$m	US$m	US$m	US$m
Total assets	**119,545**	112,773	97,236	89,616	101,091
Share capital/premium	**10,024**	10,105	9,344	5,826	3,323

Total equity/net assets	**59,208**	64,512	45,925	22,461	26,293
Equity attributable to Rio Tinto shareholders	**52,539**	58,247	43,831	20,638	24,772

Notes

(a) The financial statements for the year ended 31 December 2010 have been restated in accordance with IFRS 3 Business Combinations (Revised), following reclassification of certain balances relating to the consolidation of Oyu Tolgoi LLC.

(b) Group operating 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 profit amounts shown above exclude equity accounted operations, finance items, tax and discontinued operations.

(c) 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.

(d) The 31 December 2007 balance sheet has been restated for the revisions to Alcan s fair value accounting which were finalised in 2008.

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Acquisitions and divestments

Acquisitions

Asset	Cost US$m	Status
Acquired in 2012		
Copper Ivanhoe Mines	308	Purchase of additional shares increasing the Group s holding to 51 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, with renaming 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
Acquired in 2009		
Copper Ivanhoe Mines	388	The purchase of an additional 9.8 per cent interest increasing the Group s total holding to 19.7 per cent

Divestments

Asset	Proceeds US$m	Status
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
Divested in 2009		
Energy Jacobs Ranch	764	Sold to Arch Coal, Inc
Iron Ore Corumbá mine	814	Sold to Vale
Diamonds & Minerals Exploration projects in Argentina and Canada	850	Sold to Vale
Aluminium Ningxia smelter (Rio Tinto: 50%)	125	Sold to Qingtongxia Aluminium Group
Exploration sundry assets	68	Sold to multiple parties
Energy Cloud Peak	741	IPO and connected debt offering
Alcan Engineered Products composites	349	Sold to Schweiter Technologies

(a) Enterprise value

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Capital projects

Project	Approved capital cost (100%) US$	Status
Iron ore expansion of Iron Ore Company of Canada (Rio Tinto 58.7%) from 18 to 22mtpa	$486m	Recommenced in May 2010 and is currently being commissioned as planned.
Iron ore preparation for the expansion of the Pilbara to 283mtpa and beyond (Rio Tinto share $649m)	$990m	Approved in July and August 2010, the funding allowed long lead items to be ordered as part of early works on the expansion of the Cape Lambert port to 133mtpa capacity.
Iron ore development of Hope Downs 4 mine in the Pilbara (Rio Tinto 50%)	$2.1bn	Approved in August 2010, first production is expected in 2013. The new mine will have a capacity of 15mtpa and a capital cost of $1.6 billion (Rio Tinto share $0.8bn). Rio Tinto is funding the $0.5 billion for the infrastructure.
Iron ore debottlenecking of Dampier port.	$284m	Approved in September 2010, the project will add 5 million tonnes of annual capacity at the Dampier port by Q1 2012, taking the Pilbara capacity to 230mtpa.
Iron ore expansion of Pilbara infrastructure to 283mtpa	$4.1bn	Approved in October 2010, the investment will increase infrastructure capacity by 53 million tonnes to 283mtpa by the end of 2013. Further investments in mine expansions will be required.
Iron ore expansion of Brockman 4 mine (from 22mtpa to 40mtpa) and Western Turner Syncline mine (from 6mtpa to 15mtpa) in the Pilbara.	$1.4bn	Approved in December 2010, the two projects represent the first two of three mine developments to expand mine capacity to an anticipated 283mtpa by the end of 2013.
Iron ore phase two expansion of IOC s concentrate capacity to 23.3mtpa (Rio Tinto 58.7%)	$277m	Approved in February 2011, phase two is expected to be complete by 2013 (Rio Tinto share $163 million).
Iron ore phase two of the Marandoo mine expansion to sustain production at 230mtpa	$1.1bn	Approved in February 2011, the mine will extend Marandoo at 15mtpa by 16 years to 2030.
Iron ore funding for early works and procurement as part of the programme to increase capacity in the Pilbara to 353mtpa	$676m	Approved in June 2011, the funding (Rio Tinto share $350 million) will be used to bring forward engineering work for the longest lead-time components of Cape Lambert port development and rail infrastructure. As a result, capacity expansion to 353mtpa will now be reached in the first half of 2015, six months earlier than planned.
Iron ore coastal water project in the Pilbara	$310m	Approved in September 2011, the investment will assure a sustainable water supply for its iron ore operations in the Pilbara.
Iron ore investment in power and fuel supply in the Pilbara	$833m	Approved in September 2011, the investment (Rio Tinto share $706 million) in major power and fuel supply projects is part of its drive to substantially increase iron ore production capacity in Western Australia.
Iron ore development of Nammuldi mine in the Pilbara	$2.2bn	Approved in February 2012, the project represents the third mine development to expand mine capacity to an anticipated 283mtpa by the end of 2013.
Iron ore Cape Lambert port and rail early works for the proposed capacity expansion to 353mtpa	$1.2bn	Approved in February 2012, the $1.2 billion funding (Rio Tinto share $0.7 billion) follows other early works investments approved in June 2011.
Iron ore investment in autonomous trains in the Pilbara	$518m	Approved in February 2012, the project (Rio Tinto share $478 million) will drive productivity improvements, with the first driverless train to be launched in 2014, and the AutoHaul™ automated train programme scheduled for completion a year later.
Alumina expansion of the Yarwun refinery in Queensland, Australia from 1.4mtpa to 3.4mtpa	$2.3bn	Approved in July 2007, the co-generation plant and shiploader were commissioned in 2010 and the calciners were commissioned in the fourth quarter of 2011. The project is expected to commence operation in the third quarter of 2012 with first bauxite to be processed through the expanded plant a few months prior.
Aluminium construction of a new 225MW turbine at the Shipshaw power station in Quebec, Canada	$268m	Approved in October 2008, the project remains on track and is expected to be completed in December 2012. An additional $40 million was approved in 2011 due to currency impacts and scope changes.
Aluminium modernisation of ISAL smelter in Iceland	$487m	Approved in September 2010, the project is expected to increase production from 190 thousand tonnes (kt) to 230kt between April 2012 and July 2014. The project includes a leading-edge casting facility to produce value-added billet.
Aluminium 60kt per annum AP60 plant in Quebec, Canada	$1.1bn	Approved in December 2010, first hot metal is expected in February 2013.
Aluminium modernisation and expansion of Kitimat smelter in British Columbia, Canada	$3.3bn	A further amount of $2.7bn was approved in December 2011. This was in addition to the cumulative spend of $550m. It will increase capacity from 280ktpa to 420ktpa. Expected to come on-stream in first half of 2014.

Molybdenum moly autoclave project in Utah, US Phase 1: 30mlbs, phase 2: 60mlbs	$340m	Approval given to restart in April 2010. Phase 1 by Q4 2012, capacity by Q4 2013. Phase 2 complete in Q1 2015.
Nickel construction of the Eagle nickel and copper mine in Michigan, US	$469m	Approved in June 2010, first production is expected in late 2013. The mine will produce an average of 17.3kt and 13.2kt per year of nickel and copper metal over six years.
Copper construction of phase one of Oyu Tolgoi copper and gold mine in Mongolia. On 24 January 2012, Rio Tinto increased its stake in Ivanhoe Mines to 51%. Ivanhoe owns 66% of the Oyu Tolgoi copper/gold project.	$5.9bn	Rio Tinto consolidated Oyu Tolgoi LLC from 15 December 2010 following the signing of a new agreement with Ivanhoe Mines. First commercial production is expected in the first half of 2013.
Copper development of Organic Growth Project 1 and the Oxide Leach Area Project at Escondida (Rio Tinto share 30%)	$1.4bn (Rio Tinto share)	Approved in February 2012, the expenditure primarily relates to replacing the Los Colorados concentrator with a new 152,000 tonnes per day plant, allowing access to high grade ore located underneath the existing facilities. Construction of the new plant will be complete within three years.

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Capital projects continued

Project	Approved capital cost (100%) US$	Status
Coking coal 20 year extension and expansion from 4.3mtpa to 5.7mtpa at Kestrel (Rio Tinto 80%), Queensland, Australia	$2.0bn	The investment will extend the life of the mine to 2031 and is expected to come on-stream in Q2 2013. Capital cost increased from $1.1bn: 50% of the increase relates to exchange rates, 20% from higher inflation and 30% due to delays and scope changes.
Thermal coal 6mtpa expansion of Hunter Valley Operations (Rio Tinto 80%) and Mount Thorley Warkworth mine (Rio Tinto 51%)	$260m	Approved in July 2010, the two thermal coal expansions are expected to reach the full run rate by mid-2012.
Thermal coal expansion of thermal coal capacity at Bengalla, New South Wales, Australia by 2.1 million tonnes to 7.5 mtpa (Rio Tinto 32%)	$184m	Approved in November 2010, the expansion will include the upgrading of infrastructure and the purchase of additional mining equipment. A feasibility study for a second stage expansion to increase production to 8.5mtpa is under way.
Coking coal development of the greenfield Benga coking and thermal coal mine in Mozambique (Rio Tinto 65%)	$516m	Acquired as part of the Riversdale acquisition, Benga is expected to commence production around the end of the first quarter of 2012. Production from phase one is expected to ramp up to a rate of 1.6 mtpa of coking coal and 0.8 mtpa of thermal coal by the end of 2012.
Diamonds Argyle Diamond Mine underground project (originally approved in 2005, project was slowed in 2009)	$2.1bn	In December 2011, a further $0.5 billion of capital was approved for the Argyle underground project. This increase primarily reflected the impact of a record 2010/2011 wet season on project development and adverse exchange rate movements. The project is expected to be complete by the end of 2013 with full production in 2014.

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Production, reserves and operations

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Production, reserves and operations

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Metals and minerals production

	Rio Tinto % share[a]	2011 Production Total	2011 Production Rio Tinto share	2010 Production Total	2010 Production Rio Tinto share	2009 Production Total	2009 Production Rio Tinto share
ALUMINA (000 tonnes) (b)							
Rio Tinto Alcan							
Jonquière (Vaudreuil) (Canada) (c)	100.0	**1,363**	**1,363**	1,301	1,301	1,125	1,125
Queensland Alumina (Australia)	80.0	**3,360**	**2,688**	3,821	3,057	3,959	3,167
São Luis (Alumar) (Brazil)	10.0	**3,385**	**339**	2,507	251	1,657	166
Yarwun (Australia)	100.0	**1,349**	**1,349**	1,377	1,377	1,347	1,347
Specialty plants (Canada) (d)	100.0	**108**	**108**	123	123	125	125
			5,846		6,109		5,929
Pacific Aluminium							
Gove (Australia)	100.0	**2,549**	**2,549**	2,473	2,473	2,519	2,519
Other Aluminium							
Specialty plants (France/Germany) (e)	100.0	**552**	**552**	507	507	367	367
Rio Tinto total			**8,947**		9,089		8,815
ALUMINIUM (000 tonnes) (b)							
Rio Tinto Alcan							
Alma (Canada)	100.0	**434**	**434**	434	434	435	435
Alouette (Sept-Îles) (Canada)	40.0	**582**	**233**	569	228	573	229
Alucam (Edéa) (Cameroon)	46.7	**69**	**32**	76	35	73	34
Anglesey (UK) (f)	51.0					106	54
Arvida (Canada)	100.0	**176**	**176**	174	174	171	171
Beauharnois (Canada) (g)	100.0					11	11
Bécancour (Canada)	25.1	**414**	**104**	417	104	420	105
Dunkerque (France)	100.0	**235**	**235**	260	260	244	244
Grande-Baie (Canada)	100.0	**223**	**223**	218	218	215	215
ISAL (Reykjavik) (Iceland)	100.0	**185**	**185**	190	190	190	190
Kitimat (Canada)	100.0	**168**	**168**	184	184	224	224
Laterrière (Canada)	100.0	**234**	**234**	212	212	235	235
Lochaber (UK)	100.0	**45**	**45**	41	41	38	38
Ningxia (Qingtongxia) (China) (h)						10	5
Saint-Jean-de-Maurienne (France)	100.0	**99**	**99**	96	96	101	101
Shawinigan (Canada)	100.0	**97**	**97**	100	100	99	99
Sohar (Oman)	20.0	**373**	**75**	367	73	351	70
SØRAL (Husnes) (Norway)	50.0	**89**	**45**	88	44	98	49
			2,386		2,395		2,511
Pacific Aluminium							
Bell Bay (Australia)	100.0	**181**	**181**	177	177	177	177
Boyne Island (Australia)	59.4	**558**	**331**	558	332	556	331
Tiwai Point (New Zealand)	79.4	**357**	**283**	344	273	271	215
Tomago (Australia)	51.6	**539**	**278**	528	272	528	272
			1,073		1,054		995
Other Aluminium							
Lynemouth (UK)	100.0	**168**	**168**	145	145	109	109
Sebree (US)	100.0	**197**	**197**	196	196	193	193
			365		341		303
Rio Tinto total			**3,824**		3,790		3,808
BAUXITE (000 tonnes) (b)							
Rio Tinto Alcan							
Awaso (Ghana) (i) (j)				39	31	401	321
Porto Trombetas (MRN) (Brazil) (j)	12.0	**15,224**	**1,827**	15,435	1,852	14,117	1,694
Sangaredi (Guinea) (j)	(k)	**12,517**	**5,633**	12,041	5,418	10,869	4,891
Weipa (Australia)	100.0	**20,732**	**20,732**	18,591	18,591	16,235	16,235
		48,473	**28,192**	46,105	25,892	41,621	23,141

Pacific Aluminium							
Gove (Australia)	100.0	**7,246**	**7,246**	7,190	7,190	7,185	7,185
Rio Tinto total			**35,437**		33,082		30,325
BORATES (000 tonnes) (l)							
Rio Tinto Minerals Boron (US)	100.0	**486**	**486**	483	483	411	411
Rio Tinto Minerals Tincalayu (Argentina)	100.0	**18**	**18**	18	18	13	13
Rio Tinto total			**504**		500		424

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	Rio Tinto % share[a]	2011 Production Total	2011 Production Rio Tinto share	2010 Production Total	2010 Production Rio Tinto share	2009 Production Total	2009 Production Rio Tinto share
COAL (hard coking) (000 tonnes)							
Rio Tinto Coal Australia							
Hail Creek Coal (Australia)	82.0	**7,291**	**5,979**	7,183	5,890	6,308	5,173
Kestrel Coal (Australia)	80.0	**3,545**	**2,836**	3,846	3,076	2,868	2,294
Rio Tinto total hard coking coal			**8,815**		8,967		7,467
COAL (semi-soft coking) (000 tonnes)							
Rio Tinto Coal Australia							
Hunter Valley (Australia) (m)	80.0	**1,906**	**1,450**	2,469	1,869	2,626	1,988
Mount Thorley (Australia) (m)	64.0	**1,922**	**1,159**	1,460	884	1,112	674
Warkworth (Australia) (m)	44.5	**594**	**250**	764	321	530	223
Rio Tinto total semi-soft coking coal			**2,859**		3,075		2,885
COAL (thermal) (000 tonnes)							
Rio Tinto Coal Australia							
Bengalla (Australia) (m)	32.0	**5,368**	**1,629**	5,477	1,659	5,466	1,655
Blair Athol (Australia)	71.2	**2,885**	**2,055**	6,803	4,846	11,325	8,068
Clermont (Australia) (n)	50.1	**5,790**	**2,901**	3,770	1,889		
Hunter Valley (Australia) (m)	80.0	**10,332**	**7,839**	8,442	6,391	8,606	6,515
Kestrel Coal (Australia)	80.0	**326**	**261**	713	571	849	679
Mount Thorley (Australia) (m)	64.0	**1,319**	**801**	1,518	920	2,230	1,351
Warkworth (Australia) (m)	44.5	**5,454**	**2,304**	5,120	2,154	4,632	1,949
Total Australian thermal coal			**17,791**		18,430		20,217
US Coal							
Antelope (US) (o)				31,156	15,043	30,865	29,031
Colowyo (US) (p)		**1,939**	**1,939**	2,371	2,371	3,214	3,214
Cordero Rojo (US) (o)				33,518	16,184	35,687	33,361
Decker (US) (o)				2,521	609	4,161	2,017
Jacobs Ranch (US) (q)						26,537	26,537
Spring Creek (US) (o)				16,726	8,076	16,035	15,360
Total US thermal coal			**1,939**		42,283		109,520
Rio Tinto total thermal coal			**19,729**		60,713		129,738
COPPER (mined) (000 tonnes)							
Bingham Canyon (US)	100.0	**195.0**	**195.0**	249.8	249.8	303.5	303.5
Escondida (Chile)	30.0	**759.1**	**227.7**	1,011.0	303.3	1,061.2	318.3
Grasberg Joint Venture (Indonesia) (r)	40.0	**42.1**	**16.9**	126.8	50.7	269.3	107.7
Northparkes (Australia)	80.0	**50.4**	**40.3**	39.0	31.2	34.3	27.4
Palabora (South Africa)	57.7	**69.1**	**39.9**	74.6	43.0	82.6	47.6
Rio Tinto total			**519.7**		678.1		804.7
COPPER (refined) (000 tonnes)							
Escondida (Chile)	30.0	**283.5**	**85.0**	300.1	90.0	327.2	98.2
Kennecott Utah Copper (US)	100.0	**215.3**	**215.3**	269.3	269.3	274.2	274.2
Palabora (South Africa)	57.7	**59.0**	**34.0**	58.0	33.4	69.4	40.0
Rio Tinto total			**334.4**		392.8		412.4
DIAMONDS (000 carats)							
Argyle (Australia)	100.0	**7,441**	**7,441**	9,804	9,804	10,591	10,591
Diavik (Canada)	60.0	**6,677**	**4,006**	6,500	3,900	5,565	3,339
Murowa (Zimbabwe)	77.8	**367**	**285**	178	139	124	97
Rio Tinto total			**11,733**		13,843		14,026

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Metals and minerals production continued

	Rio Tinto % share[a]	2011 Production Total	2011 Production Rio Tinto share	2010 Production Total	2010 Production Rio Tinto share	2009 Production Total	2009 Production Rio Tinto share
GOLD (mined) (000 ounces)							
Barneys Canyon (US)	100.0	**2**	**2**	2	2	2	2
Bingham Canyon (US)	100.0	**384**	**384**	466	466	582	582
Escondida (Chile)	30.0	**122**	**37**	174	52	144	43
Grasberg Joint Venture (Indonesia) (r)	40.0	**444**	**178**	458	183	1,072	429
Northparkes (Australia)	80.0	**76**	**61**	65	52	34	27
Palabora (South Africa)	57.7	**13**	**8**	13	7	13	8
Rawhide (US) (s)				9	9	19	19
Rio Tinto total			**669**		772		1,111
GOLD (refined) (000 ounces)							
Kennecott Utah Copper (US)	100.0	**379**	**379**	596	596	479	479
IRON ORE (000 tonnes)							
Corumbá (Brazil) (t)						1,509	1,509
Hamersley Iron six wholly owned mines (Australia)	100.0	**121,525**	**121,525**	112,706	112,706	106,808	106,808
Hamersley Channar (Australia)	60.0	**11,015**	**6,609**	11,016	6,610	11,041	6,625
Hamersley Eastern Range (Australia)	(u)	**9,385**	**9,385**	9,206	9,206	9,318	9,318
Hope Downs (Australia)	50.0	**31,740**	**15,870**	31,720	15,860	20,634	10,317
Iron Ore Company of Canada (Canada)	58.7	**13,457**	**7,902**	14,710	8,638	13,844	8,129
Robe River (Australia) (v)	53.0	**57,502**	**30,476**	59,641	31,610	54,417	28,841
Rio Tinto total			**191,767**		184,629		171,547
MOLYBDENUM (000 tonnes)							
Bingham Canyon (US)	100.0	**13.6**	**13.6**	12.9	12.9	11.3	11.3
SALT (000 tonnes)							
Dampier Salt (Australia)	68.4	**9,666**	**6,608**	7,589	5,188	8,555	5,848
SILVER (mined) (000 ounces)							
Bingham Canyon (US)	100.0	**2,976**	**2,976**	3,754	3,754	4,871	4,871
Escondida (Chile)	30.0	**4,327**	**1,298**	6,140	1,842	5,424	1,627
Grasberg Joint Venture (Indonesia) (r)	40.0	**208**	**83**	1,721	688	3,685	1,474
Others		**766**	**566**	752	577	757	596
Rio Tinto total			**4,924**		6,862		8,569
SILVER (refined) (000 ounces)							
Kennecott Utah Copper (US)	100.0	**3,189**	**3,189**	4,732	4,732	4,050	4,050
TALC (000 tonnes)							
Rio Tinto Minerals talc (Australia/Europe/North America) (w)		**592**	**592**	1,000	1,000	888	888

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	Rio Tinto % share[a]	2011 Production Total	2011 Production Rio Tinto share	2010 Production Total	2010 Production Rio Tinto share	2009 Production Total	2009 Production Rio Tinto share
TITANIUM DIOXIDE FEEDSTOCK (000 tonnes)							
Rio Tinto Iron & Titanium (Canada/South Africa) (x) (y)	100.0	**1,443**	**1,443**	1,392	1,392	1,147	1,147
URANIUM (000 lbs U_3O_8)							
Energy Resources of Australia (Australia)	68.4	**5,571**	**3,810**	8,614	5,891	11,500	7,865
Rössing (Namibia)	68.6	**4,736**	**3,248**	7,999	5,485	9,150	6,275
Rio Tinto total			**7,058**		11,377		14,140

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 2011. Where this shareholding has changed over the period 2009-2011, the weighted average ownership has been used. The footnotes below indicate 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) On 17 October 2011, Rio Tinto announced a reorganisation of its aluminium assets into three business units, Rio Tinto Alcan, Pacific Aluminium and Other Aluminium.
(c) Jonquière s (Vaudreuil s) production shows smelter grade alumina only and excludes hydrate produced and used for specialty alumina.
(d) 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.
(e) Production of smelter grade alumina at Gardanne ceased at the end of 2008. Production of specialty alumina continues from the Gardanne refinery.
(f) The Anglesey smelter ceased smelting operations at the end of the third quarter of 2009. Casting operations continue.
(g) The Beauharnois smelter ceased smelting operations in the second quarter of 2009. Casting operations continue.
(h) Rio Tinto sold its 50 per cent interest in the Ningxia aluminium smelter with an effective date of 26 January 2009. Production data are shown up to that date.
(i) 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.
(j) Bauxite production at non-managed mines has been restated from a wet to a dry tonne basis, in line with the tonnes shown for Rio Tinto managed operations.
(k) Rio Tinto has a 22.95 per cent shareholding in the Sangaredi mine but receives 45.0 per cent of production under the partnership agreement.
(l) Borate quantities are expressed as B_2O_3.
(m) 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.
(n) Production commenced at Clermont in the second quarter of 2010.

(o) 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.
(p) 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.
(q) Rio Tinto completed the sale of its 100 per cent interest in the Jacobs Ranch mine on 1 October 2009. Production data are shown up to that date.
(r) 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.
(s) On 28 October 2008, Rio Tinto increased its shareholding in the Rawhide Joint Venture from 51 per cent to 100 per cent. The previous joint venture shareholder continued to be entitled to 49 per cent of production until 31 December 2008; thereafter Rio Tinto was entitled to 100 per cent. 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.
(t) Rio Tinto completed the sale of its 100 per cent interest in the Corumbá mine, effective 18 September 2009.
(u) 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.
(v) Production at the Mesa A mine commenced in the first quarter of 2010.
(w) 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.
(x) Quantities comprise 100 per cent of Rio Tinto Fer et Titane and 50 per cent of Richards Bay Minerals (RBM) production until late 2009 when RBM concluded a Broad Based Black Economic Empowerment transaction. Rio Tinto Iron & Titanium s share of RBM production reflects a decrease from 50 to 37 per cent interest with effect from 9 December 2009. In February 2012, Rio Tinto announced that it would be increasing its interest in RBM from 37 per cent to 74 per cent.
(y) Ilmenite mined in Madagascar is being processed in Canada with effect from June 2009.

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 2011, 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 2011. 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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	Type of mine (b)		Total ore reserves at end 2011 Tonnage millions of tonnes	Grade % Al_2O_3		Interest %	Rio Tinto share Recoverable mineral millions of tonnes
BAUXITE (c)							
Reserves at operating mines							
Rio Tinto Alcan							
Porto Trombetas (MRN) (Brazil) (d)	O/P		**82**	**50.8**		12.0	10
Sangaredi (Guinea) (e)	O/P		**221**	**50.6**		23.0	51
Weipa (Australia)	O/P		**1,554**	**52.8**		100.0	1,554
Sub-total							1,615
Pacific Aluminium							
Gove (Australia) (f)	O/P		**170**	**49.4**		100.0	170
Rio Tinto total							1,784
			millions of tonnes				Marketable product millions of tonnes
BORATES (g)							
Reserves at operating mine							
Rio Tinto Minerals Boron (US)							
mine	O/P		**21**			100.0	21
stockpiles (h)			**2.5**			100.0	3
Rio Tinto total							24

		Coal type (j)	Marketable reserves millions of tonnes	Marketable coal quality (k) Calorific value MJ/kg	Sulphur content %		Marketable reserves millions of tonnes
COAL (i)							
Reserves at operating mines							
Rio Tinto Coal Australia							
Bengalla (l)	O/C	SC + MC	**135**	**27.86**	**0.48**	32.0	43
Blair Athol (m)	O/C	SC	**7.0**	**25.63**	**0.31**	71.2	5
Clermont	O/C	SC	**177**	**27.90**	**0.33**	50.1	89
Hail Creek (n)	O/C	MC	**72**	**32.20**	**0.35**	82.0	59
Hunter Valley Operations (l) (o)	O/C	SC + MC	**227**	**28.99**	**0.58**	80.0	182
Kestrel Coal	U/G	SC + MC	**122**	**31.60**	**0.59**	80.0	98
Mount Thorley Operations (l)	O/C	SC + MC	**23**	**29.41**	**0.43**	64.0	15
Warkworth (l)	O/C	SC + MC	**253**	**30.68**	**0.44**	44.5	112
Rio Tinto total reserves at operating mines							603
Undeveloped reserves (p)							
Rio Tinto Coal Australia							
Mount Pleasant (l)	O/C	SC	**326**	**26.92**	**0.48**	80.0	261
Rio Tinto Coal Mozambique							
Benga (q)	O/C	SC + MC	**137**	**26.40**	**0.92**	65.0	89
Rio Tinto total undeveloped reserves							350

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Ore Reserves (under Industry Guide 7) continued

	Type of mine (b)	Total ore reserves at end 2011 Tonnage	Grade	Average mill recovery %	Interest %	Rio Tinto share Recoverable metal
		millions of tonnes	%Cu			millions of tonnes
COPPER						
Reserves at operating mines						
Bingham Canyon (US)						
mine	O/P	**835**	**0.48**	85	100.0	3.384
stockpiles (h)		**80**	**0.22**	85	100.0	0.146
Escondida (Chile)						
sulphide mine (r)	O/P	**1,988**	**0.97**	82	30.0	4.769
sulphide leach mine (r)	O/P	**3,449**	**0.49**	29	30.0	1.477
oxide mine (s)	O/P	**74**	**1.03**	68	30.0	0.156
sulphide stockpiles (h) (r)		**5.0**	**1.00**	80	30.0	0.012
sulphide leach stockpiles (h) (r)		**54**	**0.73**	30	30.0	0.035
oxide stockpiles (h)		**36**	**0.52**	68	30.0	0.039
Grasberg (Indonesia)	O/P + U/G	**2,523**	**0.97**	89	(t)	6.869
Northparkes (Australia)						
mine	U/G	**62**	**0.85**	89	80.0	0.379
stockpiles (h)		**8.4**	**0.41**	85	80.0	0.023
Palabora (South Africa) (u)	U/G	**49**	**0.57**	84	57.7	0.134
Rio Tinto total reserves at operating mines						17.423
Undeveloped reserves (p)						
Eagle (US)	U/G	**4.3**	**2.69**	98	100.0	0.113
Oyu Tolgoi (Mongolia)						
Hugo Dummett North (v)	U/G	**410**	**1.90**	92	32.3	2.319
Hugo Dummett North Extension (w)	U/G	**27**	**1.85**	94	29.5	0.138
Southern Oyu (x)	O/P	**955**	**0.49**	81	32.3	1.228
Rio Tinto total undeveloped reserves						3.798
		millions of tonnes	carats per tonne			Recoverable diamonds millions of carats
DIAMONDS (c)						
Reserves at operating mine						
Diavik (Canada)	O/P + U/G	**19**	**3.1**		60.0	35.3
		millions of tonnes	grammes per tonne			Recoverable metal millions of ounces
GOLD						
Reserves at operating mines						
Bingham Canyon (US)						
mine	O/P	**835**	**0.20**	64	100.0	3.436
stockpiles (h)		**80**	**0.14**	64	100.0	0.225
Grasberg (Indonesia)	O/P + U/G	**2,523**	**0.83**	68	(t)	12.518
Northparkes (Australia)						
mine	O/P + U/G	**62**	**0.30**	73	80.0	0.358
stockpiles (h)		**8.4**	**0.25**	76	80.0	0.041
Rio Tinto total reserves at operating mines						16.578
Undeveloped reserves (p)						
Eagle (US)	U/G	**4.3**	**0.27**	55	100.0	0.020
Oyu Tolgoi (Mongolia)						
Hugo Dummett North (v)	U/G	**410**	**0.40**	83	32.3	1.411
Hugo Dummett North Extension (w)	U/G	**27**	**0.72**	85	29.5	0.157

Southern Oyu (x)	O/P	**955**	**0.36**	75	32.3	2.658
Rio Tinto total undeveloped reserves						4.245

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	Type of mine (b)	Total ore reserves at end 2011 Tonnage millions of tonnes	Total ore reserves at end 2011 Grade % Fe	Average mill recovery %	Interest %	Rio Tinto share Marketable product millions of tonnes
IRON ORE (c)						
Reserves at operating mines						
Hamersley wholly owned (Australia)						
Brockman 2 (Brockman ore) (y)	O/P	**35**	**62.3**		100.0	35
Brockman 4 (Brockman ore)	O/P	**585**	**62.0**		100.0	585
Marandoo (Marra Mamba ore)	O/P	**225**	**63.1**		100.0	225
Mt Tom Price (Brockman ore)						
mine (z)	O/P	**63**	**63.7**		100.0	63
stockpiles (h)		**16**	**62.6**		100.0	16
Mt Tom Price (Marra Mamba ore)	O/P	**16**	**60.8**		100.0	16
Nammuldi (Marra Mamba ore) (aa)	O/P	**179**	**62.5**		100.0	179
Paraburdoo (Brockman ore) (bb)	O/P	**12**	**63.2**		100.0	12
Western Turner Syncline (Brockman ore)	O/P	**280**	**62.2**		100.0	280
Yandicoogina (Pisolite ore HG)						
mine (cc)	O/P	**217**	**58.7**		100.0	217
stockpiles (h)		**2.7**	**58.5**		100.0	3
Yandicoogina (Process Product) (dd)	O/P	**161**	**58.7**		100.0	161
Hamersley - Channar						
Brockman ore (ee)	O/P	**53**	**63.0**		60.0	32
Hamersley - Eastern Range						
Brockman ore (ff)	O/P	**38**	**62.9**		54.0	21
Hope Downs 1 (Australia)						
Marra Mamba ore	O/P	**295**	**61.6**		50.0	148
Iron Ore Company of Canada (gg)	O/P	**578**	**65.0**		58.7	339
Palabora (South Africa) (hh)	U/G	**9.6**	**55.1**		57.7	5
Robe River (Australia)						
Pannawonica (Pisolite ore)						
mine (ii)	O/P	**257**	**57.1**		53.0	136
stockpiles (h)		**4.7**	**56.5**		53.0	2
West Angelas (Marra Mamba ore)						
mine	O/P	**292**	**61.7**		53.0	155
stockpiles (h)		**4.8**	**57.7**		53.0	3
Rio Tinto total reserves at operating mines						2,633
Undeveloped reserves (p)						
Hope Downs 4 (Brockman Ore) (jj)	O/P	**136**	**63.1**		50.0	68
Turee Syncline Central (Brockman Ore)	O/P	**74**	**62.5**		100.0	74
Rio Tinto total undeveloped reserves						142
		millions of tonnes	%Mo			Recoverable metal millions of tonnes
MOLYBDENUM						
Reserves at operating mine						
Bingham Canyon (US)						
mine (kk)	O/P	**835**	**0.041**	71	100.0	0.240
stockpiles (h) (kk)		**80**	**0.030**	71	100.0	0.017
Rio Tinto total						0.257
		millions of tonnes				Recoverable metal millions of tonnes
NICKEL						
Undeveloped reserves (n)						
Eagle (US)	U/G	**4.3**	**3.16**	84	100.0	0.114

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Ore Reserves (under Industry Guide 7) continued

	Type of mine (b)	Total ore reserves at end 2011 Tonnage	Grade	Average mill recovery %	Interest %	Rio Tinto share Recoverable metal millions
		millions of tonnes	grammes per tonne			of ounces
SILVER						
Reserves at operating mines						
Bingham Canyon (US)						
mine	O/P	**835**	**2.10**	65	100.0	36.490
stockpiles (h)		**80**	**1.34**	65	100.0	2.230
Grasberg (Indonesia)	O/P + U/G	**2,523**	**4.22**	70	(p)	78.730
Rio Tinto total						117.450
		millions of tonnes				Marketable product millions of tonnes
TITANIUM DIOXIDE FEEDSTOCK (g)						
Reserves at operating mine						
RTFT (Canada)	O/P	**52**			100.0	52
		millions of tonnes	% U_3O_8			Recoverable metal millions of tonnes
URANIUM						
Reserves at operating mines						
Energy Resources of Australia						
Ranger #3 mine (ll)	O/P	**3.4**	**0.194**	86	68.4	0.0038
Ranger #3 stockpiles (h) (ll)		**5.8**	**0.120**	86	68.4	0.0041
Rössing (Namibia)						
mine	O/P	**158.9**	**0.036**	84	68.6	0.0331
stockpiles (h)		**2.3**	**0.022**	77	68.6	0.0003
Rio Tinto total						0.0413

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		Proven ore reserves at end 2011			Probable ore reserves at end 2011		
	Type of mine (b)	Tonnage	Grade	Drill hole spacing (mm)	Tonnage	Grade	Drill hole spacing (mm)
BAUXITE (c)		millions of tonnes	$\%Al_2O_3$		millions of tonnes	$\%Al_2O_3$	
Reserves at operating mines							
Rio Tinto Alcan							
Porto Trombetas (MRN) (Brazil) (d)	O/P	59	50.9	200m x 200m	22	50.5	400m x 400m
Sangaredi (Guinea) (e)	O/P	115	51.4	38m x 38m	106	49.8	75m x 75m
Weipa (Australia)	O/P	558	52.5	150m x 150m	996	53.0	300m x 300m
Pacific Aluminium							
Gove (Australia) (f)	O/P	125	49.4	50m x 50-100m	45	49.2	200m x 200m
		millions of tonnes			millions of tonnes		
BORATES (g)							
Reserves at operating mine							
Rio Tinto Minerals Boron (US) mine	O/P	13		130m x 130m	8.3		130-488m x 130-488m
stockpiles (h)					2.5		

		Recoverable reserves	Ave. % yield to give marketable reserves	Marketable reserves			
	Type of mine (b)	total millions of tonnes		Proven millions of tonnes	Drill hole spacing (mm)	Probable millions of tonnes	Drill hole spacing (mm)
COAL (i)							
Reserves at operating mines							
Rio Tinto Coal Australia							
Bengalla (l)	O/C	180	75	128	100-450m x 100-450m	7.2	300-1000m x 300-1000m
Blair Athol (m)	O/C	7.9	89	7.0	300m x 300m		
Clermont	O/C	185	96	173	300m x 300m	4.2	600m x 600m
Hail Creek (n)	O/C	139	52	49	100-500m x 100-500m	23	200-1000m x 200-1000m
Hunter Valley Operations (l) (o)	O/C	333	68	195	125-500m x 125-500m	33	400-1000m x 400-1000m
Kestrel Coal	U/G	147	83	41	500m x 500m	81	1000m x 1000m
Mount Thorley Operations (l)	O/C	36	65	20	125-500m x 125-500m	3.2	400-1000m x 400-1000m
Warkworth (l)	O/C	388	65	132	125-500m x 125-500m	121	400-1000m x 400-1000m
Undeveloped reserves (p)							
Rio Tinto Coal Australia							
Mount Pleasant (l)	O/C	399	82			326	350-1000m x 350-1000m
Rio Tinto Coal Mozambique							
Benga (q)	O/C	311	44	106	250m x 250m	31	500m x 500m

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Ore Reserves (under Industry Guide 7) continued

		Proven ore reserves at end 2011			Probable ore reserves at end 2011		
	Type of mine (b)	Tonnage millions of tonnes	Grade %Cu	Drill hole spacing (mm)	Tonnage millions of tonnes	Grade %Cu	Drill hole spacing (mm)
COPPER							
Reserves at operating mines							
Bingham Canyon (US)							
mine	O/P	411	0.54	85m x 85m	424	0.41	131m x 131m
stockpiles (h)		45	0.21		35	0.22	
Escondida (Chile)							
sulphide mine (r)	O/P	1277	1.03	55m x 55m	711	0.87	100m x 100m
sulphide leach mine (r)	O/P	1514	0.52	55m x 55m	1,935	0.47	100m x 100m
oxide mine (s)	O/P	17	1.24	40m x 40m	57	0.96	50m x 50m
sulphide stockpiles (h) (r)		5.0	1.00				
sulphide leach stockpiles (h) (r)		54	0.73				
oxide stockpiles (h)		36	0.52				
Grasberg (Indonesia)	O/P + U/G	829	1.10	12-39m x 12-39m	1,694	0.91	39-114m x 39-114m
Northparkes (Australia)							
mine	O/P + U/G				62	0.85	30-50m x 30-50m
stockpiles (h)		8.4	0.41				
Palabora (South Africa) (u)	U/G				49	0.57	76m x 76m
Undeveloped reserves (p)							
Eagle (US)	U/G				4.3	2.69	1-25m x 1-25m
Oyu Tolgoi (Mongolia)							
Hugo Dummett North (v)	U/G				410	1.90	50-200m x 50-200m
Hugo Dummett North Extension (w)	U/G				27	1.85	50-200m x 50-200m
Southern Oyu (x)	O/P	127	0.58	30-75m x 30-75m	828	0.48	30-75m x 30-75m
					millions of tonnes		
DIAMONDS (c)			carats per tonne			carats per tonne	
Reserves at operating mine							
Diavik (Canada)	O/P + U/G	5.4	3.0	24-30m x 24-30m	14	3.2	30-54m x 30-54m
		millions of tonnes	grammes per tonne		millions of tonnes	grammes per tonne	
GOLD							
Reserves at operating mines							
Bingham Canyon (US)							
mine	O/P	411	0.22	85m x 85m	424	0.18	131m x 131m
stockpiles (h)		45	0.15		35	0.12	
Grasberg (Indonesia)	O/P + U/G	829	1.01	12-39m x 12-39m	1,694	0.73	39-114m x 39-114m
Northparkes (Australia)							
mine	O/P + U/G				62	0.30	30-50m x 30-50m
stockpiles (h)		8.4	0.25				
Undeveloped reserves (p)							
Eagle (US)	U/G				4.3	0.27	1-25m x 1-25m
Oyu Tolgoi (Mongolia)							
Hugo Dummett North (v)	U/G				410	0.40	50-200m x 50-200m
Hugo Dummett North Extension (w)	U/G				27	0.72	50-200m x 50-200m
Southern Oyu (x)	O/P	127	0.93	30-75m x 30-75m	828	0.27	30-75m x 30-75m

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	Type	Proven ore reserves at end 2011			Probable ore reserves at end 2011		
	of mine (b)	Tonnage	Grade	Drill hole spacing (mm)	Tonnage millions	Grade	Drill hole spacing (mm)
IRON ORE (c)		millions of tonnes	%Fe		of tonnes	%Fe	
Reserves at operating mines							
Hamersley wholly owned (Australia)							
Brockman 2 (Brockman ore) (y)	O/P	25	62.4	50m x 50m	10	62.1	50m x 50m
Brockman 4 (Brockman ore)	O/P	441	62.3	50m x 50m	145	61.3	50-100m x 50m
Marandoo (Marra Mamba ore)	O/P	201	63.3	75m x 75m	24	61.1	75m x 75m
Mt Tom Price (Brockman ore)							
mine (z)	O/P	25	63.8	30-120m x 30-60m	38	63.6	30-120m x 30-60m
stockpiles (h)					16	62.6	
Mt Tom Price (Marra Mamba ore)	O/P	15	60.9	60m x 30m	1.0	59.0	60m x 30m
Nammuldi (Marra Mamba ore) (aa)	O/P	99	62.7	50m x 50m	81	62.3	50-200m x 50m
Paraburdoo (Brockman ore) (bb)	O/P	6.8	62.9	30-60m x 30-60m	4.9	63.6	30-60m x 30-60m
Western Turner Syncline (Brockman ore)	O/P	213	62.5	60m x 60m	67	61.2	60m x 60m
Yandicoogina (Pisolite ore HG)							
mine (cc)	O/P	217	58.7	50-100m x 50-200m			
stockpiles (h)					2.7	58.5	
Yandicoogina (Process Product) (dd)	O/P	161	58.7	50-100m x 50-200m			50-100m x 50-200m
Hamersley Channar							
Brockman ore (ee)	O/P	32	63.2	30-60m x 30-60m	21	62.7	30-120m x 30-120m
Hamersley Eastern Range							
Brockman ore (ff)	O/P	32	63.0	30-60m x 30-60m	6.7	62.8	30-120m x 30-120m
Hope Downs 1 (Australia)							
Marra Mamba ore	O/P	15	61.4	25-50m x 50m	281	61.6	25-100m x 50m
Iron Ore Company of Canada (gg)	O/P	354	65.0	0-61m x 0-122m	224	65.0	61-122m x 0-122m
Palabora (South Africa) (hh)	U/G				9.6	55.1	76m x 76m
Robe River (Australia)							
Pannawonica (Pisolite ore)							
mine (ii)	O/P	167	57.4	50-70m x 50-70m	91	56.4	50-100m x 50-100m
stockpiles (h)		1.0	56.3		3.7	56.6	
West Angelas (Marra Mamba ore)							
mine	O/P	133	62.1	25-50m x 25m	160	61.4	50-200m x 25-50m
stockpiles (h)		0.6	62.4		4.2	56.9	
Undeveloped reserves (p)							
Hope Downs 4 (Brockman Ore) (jj)	O/P	72	63.0	63-125m x 50-100m	64	63.2	63-125m x 50-100m
Turee Syncline Central (Brockman ore)	O/P	68	62.6	60-120m x 60-120m	5.8	62.1	60-120m x 60-120m

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Ore Reserves (under Industry Guide 7) continued

		Proven ore reserves at end 2011			Probable ore reserves at end 2011		
	Type of mine (b)	Tonnage millions of tonnes	Grade %Mo	Drill hole spacing (mm)	Tonnage millions of tonnes	Grade %Mo	Drill hole spacing (mm)
MOLYBDENUM							
Reserves at operating mine							
Bingham Canyon (US)							
- mine (kk)	O/P	411	0.043	85m x 85m	424	0.038	131m x 131m
- stockpiles (h) (kk)		45	0.039		35	0.018	
		millions of tonnes	%Ni		millions of tonnes	%Ni	
NICKEL							
Undeveloped reserves (p)							
Eagle (US)	U/G	millions			4.3 millions	3.16	1-25m x 1-25m
		millions of tonnes	grammes per tonne		millions of tonnes	grammes per tonne	
SILVER							
Reserves at operating mines							
Bingham Canyon (US)							
- mine	O/P	411	2.23	85m x 85m	424	1.96	131m x 131m
- stockpiles (h)		45	1.25		35	1.47	
Grasberg (Indonesia)	O/P + U/G	829	4.22	12-39m x 12-39m	1,694 millions	4.08	39-114m x 39-114m
		millions of tonnes			millions of tonnes		
TITANIUM DIOXIDE FEEDSTOCK (g)							
Reserves at operating mine							
RTFT (Canada)	O/P				52.0 millions		60-100m x 60-100m
		millions of tonnes	$\%U_3O_8$		millions of tonnes	$\%U_3O_8$	
URANIUM							
Reserves at operating mines							
Energy Resources of Australia							
(Australia)							
- Ranger #3 mine (ll)	O/P	2.7	0.224	25m x 25m	0.7	0.083	50m x 50m
- Ranger #3 stockpiles (h) (ll)					5.8	0.120	
Rössing (Namibia)							
- mine	O/P	22	0.033	7-9m x 7-9m	136	0.037	20-120m x 20-120m
- stockpiles (h)		2.3	0.022				

Notes

(a) Commodity prices (based on a three year average historical price to 30 June, 2011) used to test whether the reported reserve estimates could be economically extracted, include the following benchmark prices:

Ore reserve	Unit	US$
Aluminium	pound	0.95
Copper	pound	3.07
Gold	ounce	1,112
Iron ore	dry metric tonne	112

Platts Spot price, 62% Fe fines, fob West Australia		
Molybdenum	pound	15.64
Nickel	pound	8.58
Silver	ounce	19.53

Prices for all other commodities are determined by individual contract negotiation. The reported reserves for these commodities have been tested to confirm that they could be economically extracted using a combination of existing contract prices until expiry and thereafter three year historical prices.

(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 technical and economic studies supporting a reduced cut-off grade.
(f) On 17 October 2011, Rio Tinto announced a reorganization of its aluminium assets with the Gove mine moving into Pacific Aluminium.
(g) 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.
(h) Stockpile components of reserves are shown for all operations at the relevant mine.
(i) Coal reserves are shown as both recoverable and marketable. The yield factors shown reflect the impact of further processing, where necessary, to provide marketable coal. All reserves at operating mines are assigned, all undeveloped reserves are unassigned. By assigned and unassigned, we mean the following: assigned reserves means coal which has been committed by the coal company to operating mine shafts, mining equipment, and plant facilities, and all coal which has been leased by the company to others; unassigned reserves represent coal which has not been committed, and which would require new mineshafts, mining equipment, or plant facilities before operations could begin on the property.
(j) Coal type: SC: steam/thermal coal, MC: metallurgical/coking coal.
(k) Analyses of coal from the US were undertaken according to ASTM Standards on an As Received moisture basis whereas the coals from Australia have been analysed on an Air Dried moisture basis according to Australian Standards. MJ/kg = megajoules per kilogramme. 1 MJ/kg = 430.2 Btu/lb.
(l) Rio Tinto s interest in these mines is held through Coal and Allied Industries Ltd; Rio Tinto increased its interest in Coal and Allied from 75.7 per cent to 80.0 per cent with effect from 16 December 2011.
(m) The reduced reserves at Blair Athol reflect production depletion.
(n) The lower reserves at Hail Creek have resulted from production depletion, geological model updates and updated mining studies.
(o) Hunter Valley Operations reduced its reserves after updating economic inputs in the modelling process.
(p) 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.
(q) Rio Tinto acquired Riversdale Mining Limited, renamed as Rio Tinto Coal Mozambique, in August 2011. The Benga project was commissioned in February 2012 and the reserve is listed here for the first time.
(r) Escondida sulphide and sulphide leach reserves increased after updating economic inputs in the modelling process.
(s) The Escondida oxide reserve decrease is driven by an updated geological model and mining studies.
(t) 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.
(u) The decrease in reserves at Palabora reflects production as well as updated anticipated metal recovery rates based on reconciliation results.
(v) Rio Tinto increased its interest in Hugo Dummett North from 26.6 per cent to 32.3 per cent during 2011.
(w) Rio Tinto increased its interest in Hugo Dummett North Extension from 24.9 per cent to 29.5 per cent during 2011.
(x) Rio Tinto increased its interest in South Oyu from 26.6 per cent to 32.3 per cent during 2011.
(y) The Brockman 2 (Brockman ore) reserve increase results from updated geological models and mining studies.
(z) The Mt Tom Price (Brockman ore) reserve decrease follows production.
(aa) The Nammuldi (Mara Mamba ore) reserve increase is due to updated geological models and inclusion of additional material following mining studies.
(bb) The Paraburdoo (Brockman ore) reserve decrease follows production.
(cc) The Yandicoogina (Pisolite ore HG) reserve increase is due to the inclusion of additional material following mining studies.
(dd) The Yandicoogina (Process Product) reserve increase is due to the inclusion of additional material following mining studies.
(ee) The Hamersley Channar (Brockman ore) reserve decrease reflects production and updating of the geologic model.
(ff) The Hamersley Eastern Range (Brockman ore) reserve decrease is due to updated geological models and mining studies.
(gg) Reserves at Iron Ore Company of Canada are reported as marketable product (56 per cent pellets and 44 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 844 million dry tonnes at 38.2 per cent iron (proven) and 530 million dry tonnes at 37.8 per cent iron (probable).
(hh) Palabora underground iron ore reserves are reported for the first time following technical and economic studies.
(ii) The increase in the Pannawonica (Pisolite ore) reserves is due to updated geological models.
(jj) Hope Downs 4 (Brockman Ore) is currently under construction.
(kk) Molybdenum grades interpolated from exploration drilling assays have been factored based on a long reconciliation history to blasthole and mill samples.
(ll) Tonnage and grade changes at Ranger include production, removal of low grade stockpiled material as announced in mid 2011 as well as technical studies leading to an expected increase in the grade of the remaining ore.
(mm) 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 2011

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

Mine	Location	Access	Title/lease
BAUXITE			
Rio Tinto Alcan			
CBG Sangaredi (23%)	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 21 year extension, then two years notice of termination; the Ely Alcan Queensland Pty. Limited Agreement Act 1965 (ML7301) expires in 2048 with 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			
Northparkes (80%)	Goonumbla, New South Wales, Australia	Road and rail	Hold three State Government mining leases of which two expire in 2012. Lease renewals were lodged in 2011 as per Government requirements and are under review. Third lease expires 2031. Development consent approved in 2009 for extension of mine life to 2025
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
Murowa (77.8%)	Zvishavane, Zimbabwe	Road and air	Claims and mining leases

Industrial Minerals

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
QIT Madagascar Minerals (80%)	Fort-Dauphin, Madagascar	Road and port	Mining lease
Richards Bay Minerals (37%)	Richards Bay, KwaZulu-Natal, South Africa	Rail, road and port	Long-term renewable mineral leases; State lease for Reserve 4 initially runs to end 2022; Ingonyama Trust lease for Reserve 10 runs to 2022. Application made for both mineral leases to be converted to new order mining rights following transfer in December 2009 of 26% interest to investor groups of historically disadvantaged South Africans in terms of Mining Charter legislation

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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 million tonnes	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 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
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 2019	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 27MW with an upgrade under way
Discovered in 1997. Small-scale production started in 2004	Open pit	Supplied by ZESA with diesel generator back up

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
Began as exploration project 1980s; construction approved 2005; ilmenite production started end of 2008	Mineral sand dredging	On site diesel generators
Production started 1977; interest acquired 1989. Fifth mining plant commissioned in 2000. One mining plant decommissioned in 2008	Dune sand dredging	Contract with ESKOM

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Mines and production facilities continued

Group mines as at 31 December 2011 continued

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

Mine	Location	Access	Title/lease
ENERGY			
Energy Resources of Australia (68.4%) Ranger	Northern Territory, Australia	Road	Mining tenure granted by Federal Government
Rio Tinto Coal Australia Bengalla (32%) Blair Athol (71.2%) Clermont Mine (50.1%) Hail Creek (82%) Hunter Valley Operations (80%) Kestrel (80%) Mount Thorley Operations (64%) Warkworth (44.46%)	New South Wales and Queensland, Australia	Road, rail, conveyor and port	Leases granted by state
Rio Tinto Coal Mozambique Benga (65%)	Tete, Mozambique	Road and rail	Mining concession granted by state
Rössing Uranium (68.6%)	Namib Desert, Namibia	Rail, road and port	National government grant
IRON ORE			
Hamersley Iron Brockman 2 Brockman 4 Marandoo Mount Tom Price Nammuldi Paraburdoo Western Turner Syncline Yandicoogina Channar (60%) Eastern Range (54%)	Hamersley Ranges, Western Australia	Railway and port (owned by Hamersley Iron and operated by Pilbara Iron)	Agreements for life of mine with Government of Western Australia
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 (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	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

Mesa A West Angelas **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

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History	Type of mine	Power source
Mining commenced 1981. Interest acquired through acquisition of North 2000	Open pit	On site diesel/steam power generation
Production started for export at Blair Athol in 1984. 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	Open cut and underground (Kestrel)	State-owned grid
Interest acquired in 2011. Construction of mine and coal handling and preparation plant started in 2010 and is expected to be finalised early 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
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

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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 2011 (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	590,000 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	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	430,000 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	189,000 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 aluminium
Kitimat (a)	Kitimat, British Columbia, Canada	100% freehold	Aluminium smelter producing aluminium billet, slab, remelt	184,000 tonnes per year alumina
Laterrière	Saguenay, Quebec, Canada	100% freehold	Aluminium smelter producing aluminium slab, remelt, molten metal	238,000 tonnes per year aluminium
Lochaber	Fort William, Scotland, UK	100% freehold	Aluminium smelter producing aluminium slab, remelt	45,000 tonnes per year aluminium
Queensland Alumina	Gladstone, Queensland, Australia	73.3% freehold; 26.7% leasehold (of which more than 80% expires in	Refinery producing alumina	3,950,000 tonnes per year aluminium

(80%)		2026 and after)		per year alumina
Saint-Jean-de-Maurienne	Saint-Jean-de-Maurienne, France	100% freehold	Aluminium smelter producing aluminium rod, remelt	141,000 tonnes per year aluminium
São Luis (Alumar) (10%)	São Luis, Maranhão, Brazil	100% freehold	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	178,000 tonnes per year aluminium
Yarwun	Gladstone, Queensland, Australia	97% freehold. 3% leasehold (expiring 2101 and after)	Refinery producing alumina	1,400,000 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	181,000 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	559,000 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 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	Refinery producing alumina	2,570,000 tonnes per year alumina
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	365,000 tonnes per year aluminium
Tomago (51.6%)	Tomago, New South Wales, Australia	100% freehold	Aluminium smelter producing aluminium billet, slab, remelt	540,000 tonnes per year aluminium

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Smelter/refinery	Location	Title/lease	Plant type/product	Capacity as of 31 December 2011 (based on 100% ownership)
Other aluminium				
Lynemouth	Lynemouth, Northumberland, UK	100% freehold	Aluminium smelter producing aluminium slab, remelt	182,000 tonnes per year aluminium
Sebree	Robards, Kentucky, US	100% freehold	Aluminium smelter producing aluminium billet, t-foundry, remelt	199,000 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	565,000 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, 900,000 tonnes per year iron
Richards Bay Minerals (37%)	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				
HIsmelt® (60%) (b)	Kwinana, Western Australia	100% leasehold (renewed in 2010 for 21 years)	HIsmelt® ironmaking plant producing pig iron	800,000 tonnes per year pig iron
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 2011 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.

(b) In March 2009, Rio Tinto announced that HIsmelt® would be placed on an extended care and maintenance programme. In December 2010, the HIsmelt® joint venture partners agreed to close the Kwinana site permanently and terminate the joint venture. A closure study is expected to be completed in 2012. In 2011, Rio Tinto signed a Memorandum of Understanding with Jindal Steel and Power Limited (JSPL) that will involve the relocation of the existing Kwinana HIsmelt® plant from Australia to India at JSPL s existing facility in Angul, Orissa. The relocated plant will be fully owned by JSPL, and JSPL and Rio Tinto will work together to further develop and market the technology.

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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 2011 (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	2,919MW
Vigelands power station	Nr Kristiansand, Norway	100% freehold	Hydroelectric power	26MW
Yarwun alumina refinery	Gladstone, Queensland, Australia	100% freehold	Gas turbine and heat recovery steam generator	160MW
co-generation plant				
Weipa power stations	Lorim Point, Andoom	100% leasehold	On-site generation (diesel)	36MW
Pacific Aluminium				
Gladstone power station	Gladstone, Queensland, Australia	100% freehold	Thermal power station	1,680MW
(42%)				
Gove power station	Nhulunbuy	100% leasehold	Heavy oil fired thermal power station	180MW
Other aluminium				
Lynemouth power station	Lynemouth, UK	100% freehold	Thermal power station	420MW
COPPER				
Phalaborwa power station	Phalaborwa, Limpopo Province, South Africa	100% freehold	Steam turbine running off waste heat boilers at the copper smelter	9.27MW
(57.7%)				
Puncakjaya Power (22.12%)	Grasberg, Papua, Indonesia	Lease	Diesel power plant Thermal power plant	193MW
Kennecott Utah Copper	Salt Lake City, Utah, US	100% freehold	Thermal power station	175MW
				31.8MW
Power Stations			Steam turbine running off waste heat boilers at the copper smelter	
			Combined heat and power plant supplying steam to the copper refinery	6.2MW

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Power plant	Location	Title/lease	Plant type/product	Capacity as of 31 December 2011 (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				
Cape Lambert power station (Rio Tinto: 53%)	Cape Lambert, Western Australia, Australia	Lease	Gas fired boilers with steam turbines	105MW
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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Shareholder information

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Corporate governance

Letter from the chairman

Dear Shareholder,

To achieve our vision of global leadership in the mining and metals sector, 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. I hope this will demonstrate to you that the way in which we conduct our business supports our strategic aim of creating long-term, sustainable returns to you, our shareholders.

In this letter, I wanted to share with you my views on the composition of the board, its continued evolution, the importance we place on diversity, and on sound and effective corporate governance, which I see as fundamental to the successful delivery of our strategy.

My role as non-executive chairman is to lead the board and to ensure it is focused on its oversight of management and the delivery of our strategy. Tom Albanese s role, as chief executive, is to focus on sustained operational excellence and growth of the business and to do so safely. Our roles are complementary, but importantly, they are distinct, with our respective responsibilities set out in writing and in a form which has been approved by the board.

For me, the delineation between these executive and non-executive roles is crystal clear: the non-executives have oversight of the executive management team whilst the executive, under Tom s leadership, have an operational role based upon our vision of leadership in the mining and metals sector. The non-executive directors nevertheless exercise a strong and deliberately challenging role in the board decision-making process and ensure appropriate control mechanisms are in place to safely implement our strategy and plans.

With me as chairman, the board comprises three executive directors and ten independent non-executive directors, all of whom meet our own independence criteria, which are in turn based upon the requirements of the corporate governance codes in the UK, the US and Australia.

We are a balanced and diverse board. 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 with measurable objectives for achieving diversity across the company, including on the board. More information on this policy is set out in this report.

When I was appointed three years ago I made it clear that one of my objectives was to gradually and systematically refresh the board. Since then our Nominations committee, which I chair, has dedicated considerable attention to succession planning, both non-executive and executive. The composition of the board has changed considerably in this period. It will continue to evolve as we constantly review the profile, skill sets, diversity and individual qualities of our non-executives against the current and future needs of the business and the ever-changing environment in which we operate.

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, the Group s strategic direction, monitoring business performance, optimising capital allocation and expenditure whilst carefully evaluating the wide range of risks facing the business. 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.

As they typically come from a wide range of backgrounds, we provide new board members with a detailed induction programme and extensive training. I also lead a rigorous evaluation exercise of the performance of the directors each year and having just completed this for 2011, I am very comfortable with the contribution each member of the board is making. Resulting from that evaluation, I also support the need for continuous improvement and the desire for a renewed focus on the Group s strategic position relative to its peers, as well as how we will deal with the growing human resource and productivity challenges facing the sector generally.

I believe that our non-executive directors cannot make an effective contribution without the familiarisation and deeper understanding gained through site visits. So in 2011, the directors visited our operations in the Pilbara, Western Australia; and our coal operations in Queensland, Australia. Future visits are planned to the Group s new operations in Mozambique, and to our established operations in South Africa. Indeed, of the eight board meetings held in 2011 five were in the UK, two in Australia and one in Canada.

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 are also willing to embrace it openly and appreciate how we want the Group to be managed in the interests of all our stakeholders. Good governance is, in essence, at the heart of everything we do.

I would welcome your feedback.

Yours sincerely,

Jan du Plessis
Chairman

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Corporate governance continued

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 2011

In compiling this report, the directors have referred to the UK Corporate Governance Code (the Code), the Australian Securities Exchange (ASX) Corporate Governance Principles and Recommendations 2nd edition with 2010 Amendments (the ASX Principles), and the New York Stock Exchange (NYSE) Corporate Governance Standards (the NYSE Standards).

Throughout 2011 and at the date of this report the Group applied the principles of, and was compliant with, the provisions of Section 1 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 72. 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 vision 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 and acquisitions and oversight of risk. It is available on the website.

The board is ultimately accountable to Rio Tinto s shareholders for the performance of the business. Responsibility for day-to-day management of the business is delegated to the chief executive and the Executive committee. Authorities are also delegated to individual executives, 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 101). 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 77 to 79. Details of changes to the board during 2011 and in the year to date are set out in the Directors report on page 83.

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 judgement 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

Progress against our priorities

What we said	What we have achieved
Prioritise value-adding growth, and opportunistic merger and acquisition activity;	Organic growth programme continues to ramp up whilst acquisitions completed have created further growth options;
Support the vision of global sector leadership through regular review and oversight of Group strategy;	Major projects progressing well with phased approach to allocating cash for investment through the cycle;
Review financial and non-financial performance metrics to maintain a strong balance sheet;	Disciplined capital approval process resulting in US$16 billion capital expenditure approved for 2012;
Lead succession planning for the board and senior executives;	High quality Tier 1 projects in advanced study;
	Keen focus on the Group s risks, increasing oversight and review of key risks by board and committees;

Strive for excellence in the Group s governance processes and policies, including risk governance; and	
	Secured an enhanced mix of experience on the Board through the appointments of Chris Lynch and John Varley in 2011;
Deliver year-on-year improvement in safety performance.	
	Overall progress against key indicators in 2011. Regrettably there were fatalities in controlled operations;
	Delivered continued improvements in safety in terms of injury frequency rates; and
	Achieved balance sheet flexibility allowing the Group to pursue further economic growth and/or mergers and acquisitions.

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annum, although the test also takes other circumstances into account. The chairman was considered independent on 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.

Executive directors other directorships

Executive directors may be invited to become non-executive directors of other companies. The board has adopted 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 104.

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 of each Company on an annual basis.

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.

Governance processes

In 2011, there were eight scheduled board meetings and two board meetings convened and held at short notice. Details of the directors attendance at all of the board and committee meetings held in 2011 are set out below.

The board has regular discussions with the executives during the year on the Group s strategy. These discussions will typically include strategy presentations that are given by product group chief executives, other members of the Executive committee or global heads of function. The board also holds an annual two day strategy-setting meeting with the Executive committee 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.

Directors membership of and attendance of board and committee meetings during 2011

	Board scheduled[c]	Board short notice[c]	Audit committee[c]	Remuneration committee[c]	Sustainability committee[c]	Nominations committee[c]	Chairman s committee[c]
Tom Albanese	8/8	2/2					17/19
Robert Brown	7/8	2/2			5/5	4/4	
Vivienne Cox [d]	8/8	1/2	5/5		5/5	4/4	
Jan du Plessis	8/8	2/2				4/4	19/19
Sir Rod Eddington [a]	3/3	1/1			3/3	2/2	
Guy Elliott	8/8	2/2					15/19
Yves Fortier [a]	3/3	1/1			3/3	2/2	
Michael Fitzpatrick	8/8	1/2	6/6	3/3		4/4	
Ann Godbehere	8/8	1/2	6/6			4/4	
Richard Goodmanson	8/8	2/2		3/3	5/5	4/4	
Andrew Gould	8/8	1/2		3/3		4/4	
Lord Kerr	8/8	1/2	6/6		5/5	4/4	
Chris Lynch [b]	3/3	1/1				1/1	
Paul Tellier	8/8	1/2	6/6	3/3		4/4	
John Varley [b]	3/3	1/1				1/1	
Sam Walsh	8/8	2/2					

(a) Retired from the board on 5 May 2011
(b) Appointed 1 September 2011
(c) Number of meetings attended/maximum the director could have attended
(d) Stood down from Audit committee with effect from October 2011

What are our priorities

Succession

Review executive succession planning under the leadership of the Nominations committee.

Performance

Optimal application of human resources;

Leadership in mine operations, profitability and value accretive growth;

Maintaining strength in the balance sheet;

Delivery on existing commitments without losing sight of credible alternatives;

Addressing the performance challenges within Rio Tinto Alcan; and

Continued drive for improvements in safety performance.

Strategy

Enhanced economic scenario planning;

An asset allocation strategy focusing on the relative merits of dividend/capital management versus M&A growth; and

Weather the current economic weakness and volatility and capitalising on opportunities, as and when these arise.

People

Globalising the business in relation to employee diversity and ensuring host country employee representation; and

Embedding values, ethics and governance.

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Corporate governance continued

In addition, the directors are in regular informal communication with members of the Executive committee and other senior executives. 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. In 2011, these included a briefing on the Bribery Act. The directors are also encouraged to participate in site visits to the Group s operations around the world and to meet local employees. In 2011, the board visited our operations in: the Pilbara, Western Australia; and our coal mines in Queensland. The board also takes the opportunity to combine attendance at the annual general meeting in Australia with site visits.

Board performance evaluation

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

For 2011, the board evaluation process was led by the chairman and managed by the company secretary. Questionnaires were completed by each director, the results of which informed discussions between the company secretary and each individual director. The chairman personally appraises the performance of non-executive directors each year and provides feedback on each individual s performance and contribution. The board considered the output from its performance evaluation. Actions included:

- regular discussion on Rio Tinto s strategic position relative to its peers, and high risk topics, such as iron ore pricing, Simandou and Oyu Tolgoi;
- continued development of directors knowledge and understanding of the business and operating environment through the site visits and specific training; and
- striving for an optimal allocation of human resources, particularly in non-OECD locations where the Group s dependency and exposure is increasing.

A similar process was followed for the board committees. Actions included:

- mapping the Group s key risks to the remit of each board committee and ensuring agendas maintain a focus on these risks;
- continually improving safety metrics with a goal of zero harm; and
- maintaining a focus on executive succession planning.

The performance of the chairman is evaluated by the non-executive directors, with input from members of the executive. The process is led by the senior independent non-executive director.

The chief executive undertakes a performance evaluation of the other executive directors, with input from the chairman and the non-executive directors.

Based upon the results of these evaluations, it was concluded that the board and its committees are operating effectively and that the individual directors performance continues to be effective and demonstrates the level of commitment expected by Rio Tinto.

Governance structure

The board has established committees which are responsible for audit, remuneration, succession and sustainability. In addition, a Chairman s committee operates under delegated authority between scheduled board meetings. These assist the board in ensuring that high standards of corporate governance are maintained across the Group.

The committees are governed by terms of reference which are reviewed annually and can be viewed in the corporate governance section of the website.

The chief executive is assisted by the work of management committees in monitoring performance and delivering Rio Tinto strategy.

(a) The Continuous Disclosure committee is an independent management committee.

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Board committees

Audit committee

Members of the Committee are Ann Godbehere (chair), Michael Fitzpatrick, Lord Kerr and Paul Tellier. Vivienne Cox was a member of the Audit committee until 17 October 2011.

Key responsibilities

The primary function of the Audit committee, as set out in its terms of reference which are summarised below, is to assist the board in fulfilling its responsibilities by monitoring decisions and processes designed to ensure the integrity of financial reporting and sound systems of internal control and risk management. The scope of the Committee s responsibilities includes: financial reporting and internal controls over financial reporting; internal controls; corporate assurance; external auditors; risk management; and 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 such direct access to the resources of the Group as it may reasonably require including the external and internal auditors.

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 and capital expenditure 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 Rio Tinto s risk management policies and processes. Its responsibilities also include the oversight of the whistleblowing programme.

Governance processes

In discharging its responsibilities, the Committee met six times in 2011. The Group s 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, the NYSE Code and US legislation. 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 Rio Tinto Corporate 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 respectively. 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.

The external auditor attended all six committee meetings during the year. In advance of the Committee meetings, the audit partners brief the chairman on key matters. Following the majority of the meetings, a private session was held with members of the external audit team to discuss the status of the audit and nature of interaction with management.

During the year, the Committee reviewed the effectiveness of PwC for Group audit and local, statutory audit work. The evaluation took the form of a survey comprising a range of questions covering objectivity and quality and efficiency and was completed by individual Rio Tinto business units. The results of this

survey were presented to the Committee which concluded that PwC continued to provide a high quality audit and an effective and independent challenge to management. The Committee was satisfied with the external audit process and that the independence of the external auditors was in no way compromised.

PwC has been the external auditor since the formation of the dual listed company structure in 1995. The Committee does not consider it necessary to undertake a tender process for the Group s external auditors. Since 2002, PwC has followed the requirements of the Sarbanes-Oxley and APB Ethical Standards and rotated the audit partner at least every five years. This continued refreshing of the team brings new perspectives to the audit and promotes healthy debate between auditors and management as well as the Committee. The current UK audit partner, Richard Hughes, was appointed for the 2011 year end and therefore 2015 will be his last year of involvement before transition to a new partner. The current Australian audit partner, Rob Hubbard, retires after the 2011 year end audit process having served as audit partner since 2007. PwC s transitional arrangements have been reviewed and the Committee is satisfied that the new partner, Paul Bendall, is ready to take on this role.

What we did in 2011

Reviewed implementation of revised Group risk management processes;

Reviewed ore reserves governance and reporting processes;

Focused on impairment, acquisitions and the Annual report;

Reviewed and approved the Integrity and Compliance Programme;

Oversight of transition of lead audit partner;

Engaged with management over tax transparency reporting; and

Oversight of the tender for, and appointment of the Internal Audit service provider.

What we are doing in 2012

Implementation of dedicated induction, training and development programme for all Committee members;

Overview of Internal Audit Strategy for 2013/14;

Monitoring effectiveness of the Group s risk management process;

Oversight of transition of Australian external audit partner;

Appointment of new Head of Corporate Assurance; and

Engagement with European Commission over EU audit reform proposals.

Ann Godbehere

Chairman

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Corporate governance continued

Nominations committee

Members of the Committee are Jan du Plessis (chair), Robert Brown, Vivienne Cox, Michael Fitzpatrick, Ann Godbehere, Richard Goodmanson, Andrew Gould, Lord Kerr, Chris Lynch, Paul Tellier and John Varley. Sir Rod Eddington and Yves Fortier were members of the Committee until retirement on 5 May 2011.

Key responsibilities

The Committee is responsible, on behalf of the board, for regularly assessing the balance of executive and non-executive directors and the composition of the board in terms of the skills, diversity and capacity required to oversee the delivery of Rio Tinto strategy.

The Committee develops and agrees the desired profiles of potential candidates for board membership. It oversees the recruitment process in consultation with external search consultants. Proposals for new board members are submitted to the full board for approval.

On behalf of the board, the Committee also reviews proposals for senior executive appointments, monitors executive succession planning and oversees the board s policy on external appointments of executive committee members.

Governance processes

In 2011, the Committee met four times.

The members of the Committee are independent in accordance with the independence policy adopted by the board.

What we did in 2011

- Reviewed the plans formulated for both executive and non-executive director succession;
- Considered the implications arising from the annual re-election of directors, including possible revisions to terms of appointment; and
- Monitored emerging regulation, including relating to diversity, and adopted a Diversity and inclusion policy.

What we are doing in 2012

- Continue regular executive succession planning reviews, including in relation to the chief executive, and taking into account the Group s Diversity and inclusion policy;
- Enhance the knowledge and skills of the board through the addition of new, suitably diverse directors with good understanding and experience of the world s emerging economies; and
- Further development of the quality and depth of bench-strength of the executive.

Jan du Plessis

Chairman

Sustainability committee

Members of the Committee are Richard Goodmanson (chair), Robert Brown, Lord Kerr and Vivienne Cox. Sir Rod Eddington and Yves Fortier were members of the Committee until retirement on 5 May 2011.

Key responsibilities

The Committee assists the board to oversee management processes, standards, and strategies designed to manage social and environmental risks and achieve compliance with social and environmental responsibilities and commitments. The Committee reviews the effectiveness of management policies and procedures relating to safety, health, employment practices, relationships with neighbouring communities, environment, human rights, land access, political involvement and sustainable development.

Governance processes

In 2011, the Committee met five times. The chairman, chief executive, and other senior management regularly attend its meetings.

The members of the Committee are all independent.

What we did in 2011

Assessed safety performance and progress towards embedding a zero harm culture through the Group and its non-managed operations;

Monitored progress made with the Group s process safety programmes in identifying and understanding critical process safety risk and the development of mitigation plans;

Following the Committee s site visit at the Pilbara, Western Australia, considered how Rio Tinto Iron Ore meets the challenges of balancing water demand, supply and distribution;

Reviewed the Group s integrated approach to managing land access risk, focused on emerging biodiversity offset requirements and the importance of rehabilitation performance in support of the Group s licence to operate;

Reviewed the work performed relating to land with post-operational environmental contamination for which the Group is liable for restoration or other remedial actions;

Considered the implications of emerging legislation, including national developments around the world on climate change policy; and

Reviewed work plans formulated for health, safety, environment, communities and employment practices.

What we are doing in 2012

Review reputational risks around non-managed operations within the wider context of identified risks within the Committee s remit;

Consider deep dives on key risks and management s plans for tackling them; and

Undertake locally-focused sustainable development reviews with management during site visits.

Richard Goodmanson

Chairman

Remuneration committee

Members of the Committee are John Varley (chair), Michael Fitzpatrick, Richard Goodmanson, Andrew Gould and Paul Tellier. Andrew Gould was chairman of the Committee until 17 October 2011.

Key responsibilities

The Remuneration committee assists the board to fulfil its oversight responsibility to shareholders to ensure that remuneration policy and practices reward fairly and responsibly and with a clear link to corporate and individual performance.

The report of the Remuneration committee on pages 86 to 118 has been recommended by the Committee for approval by the board. Key responsibilities, governance processes, key achievements in 2011 and priorities for 2011 are set out in the report.

Chairman s committee

Members of the Committee are Jan du Plessis (chair), Tom Albanese and Guy Elliott.

Key responsibilities

The Committee acts on behalf of the board between scheduled board meetings either in accordance with authority delegated by the board or as specifically set out within its terms of reference. It supports the functioning of the board and ensures that the business of the board and its committees is properly planned and aligned with management. When mandated by the board, the Chairman s committee will consider urgent matters between board meetings, and deal with the implementation of board decisions on transactions and other corporate matters. Other than for the chairman of the board, the Committee performs the annual review of non-executive directors fees and makes a recommendation to the board, as appropriate.

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Diversity and inclusion

Our commitment to diversity and inclusion

We are a global company, and wherever we operate, and across every part of our business, we strive to create an inclusive culture in which difference is recognised and valued. By bringing together men and women from diverse backgrounds and giving each person the opportunity to contribute their skills, experience and perspectives, we believe that we are able to develop the best solutions to challenges and deliver sustainable value for Rio Tinto and its stakeholders.

What diversity and inclusion means for Rio Tinto

- Embracing workforce diversity — age, gender, race, national or ethnic origin, religion, language, political beliefs, sexual orientation, physical ability.
- Valuing diversity of perspective — leveraging the diverse thinking, skills, experience and working styles of our employees and other stakeholders.
- Building a flexible organisation — providing opportunities for work arrangements that accommodate the diverse needs of individuals at different career and life stages.
- Respecting stakeholder diversity — developing strong and sustainable relationships with diverse shareholders, communities, employees, governments, customers and suppliers.

How we support diversity and inclusion

We use the following to drive action and build awareness about diversity and inclusion:

- Governance models
- Policies, practices and targets
- Leadership and cultural competence
- Stakeholder relationships
- Education and communication.

We prioritise long and short-term programmes based on need and impact.

Read a summary of our Diversity and Inclusion Policy in the corporate governance section of our website.

Our current focus

Our goal is to have a workforce that is representative of the countries and communities in which we operate. Currently, our focus is to improve the representation of women and of people from nationalities which are under-represented in our workforce.

Some of the activities and initiatives relating to diversity that we undertook during the year are:

Establishment of a Group Diversity and Inclusion Council, an internal executive advisory group helping to drive necessary changes to our processes and culture to gain the full business benefits of diversity and inclusion.

Establishment of a diversity champions network to share best practice across businesses, geographies and functions and support the work of the Diversity and Inclusion Council.

Development of a Group Diversity and Inclusion Policy that sets out principles and guides the direction for diversity and inclusion efforts.

Amendment to the terms of reference of the Remuneration committee to formalise its responsibility to review remuneration by gender across the Group.

Pilot training programmes in unconscious bias to help minimise the impact of bias in recruitment and development practices and extension of cultural competency training to enhance our capability to grow and globalise the Company.
A three year commitment by the chairman to mentoring high potential female board candidates through the FTSE100 Cross-company Mentoring Programme.

Participation by the managing director Australia in the Male champions of change initiative of corporate leaders to promote strategies and actions to elevate women s representation in leadership.

Proportion of women employees and board members

In 2011, the proportion of women on the board was 14 per cent, in senior management 14 per cent and in the overall workforce 18 per cent.

Measurable objectives and progress

We established the following five year measurable objectives for workforce diversity at the start of 2011.

Measurable objective	Progress
Women to represent 20 per cent of our senior management by 2015.	Women represented 14 per cent of our senior management in 2011.
Women to represent 40 per cent of our 2015 graduate intake.	Women represented 35 per cent of our 2011 graduate intake.
15 per cent of our 2015 graduate intake to be nationals from regions where we are developing new businesses.	21 per cent of our 2011 graduate intake were nationals from regions where we are developing new businesses.
Two new objectives relating to diversity of the board were added during 2011.	

The Nominations committee will undertake a review of board diversity in 2012.

During each director selection and appointment process, the professional search firm supporting the board will provide at least one credible and suitably experienced female candidate.

The board will assess the objectives annually, as well as the progress in achieving them.

Board diversity

The board has been actively engaged in the corporate governance reviews highlighting issues surrounding board diversity. The board reviewed its corporate governance practices during the year, including how the director selection and appointment process takes into account the board s desired mix of skills and diversity. The review included an assessment of the terms of reference of the Nominations committee and Remuneration committee, and resulted in amendments in relation to board appointments and succession planning. More information about the selection, appointment and election of directors is available in the corporate governance section of the website.

The Nominations committee regularly reviews the structure, size and composition of the board. As a consequence of this review in 2011 the board formalised the following statement as to the mix of skills and diversity it is looking to achieve in membership of the board.

In leading a global mining and metals company, the board seeks to continually evolve its membership by seeking non-executive directors with diverse and complementary skills and perspectives, as well as experience which reflects the geographic spread of the Group s operations. Core skills required for non-executive membership of the board are maintained. These skills may, depending upon the circumstances, comprise international business, financial or public policy experience, strategic acumen or mining or metals industry experience. The board aspires to increase other aspects of diversity, including the gender diversity, of directors in order to bring a diversity of skills, experience and perspective to the governance of the Group. The board recognises that the evolution of the mix of skills and diversity is a long-term process and weighs the various factors relevant to board balance and diversity when vacancies arise.

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Corporate governance continued

Other disclosures

Global code of conduct

Rio Tinto s commitment to integrity and compliance is set out in *The way we work*. This contains principles and standards of conduct which reaffirm the Group s commitment to corporate responsibility. It is inspired by our four core values: accountability, respect, teamwork and integrity.

It is supported by Rio Tinto s extensive framework of policies and standards. Core policies are adopted by the board after wide consultation, externally and within the Group. Once adopted, they are communicated to business units worldwide, together with mandatory standards, guidance notes and resources to support implementation. Business units are required to devote the necessary effort by management to implement and report on these policies and standards.

Rio Tinto s core policies, addressed in *The way we work*, include: access to land; business integrity; communities; corporate governance; employment; environment; human rights; internal controls and reporting; occupational health; political involvement; government relations; safety; sustainable development; and transparency. These are supported by policies in the areas of data privacy, risk, information management and security.

Each policy is supported by standards and guidance, expanding on the minimum expectations on topics such as antitrust, continuous disclosure, antibribery, compliance, cultural heritage and health, safety and the environment. These policies and standards apply to all Rio Tinto managed businesses. Where the Group does not have operating responsibility for a business, Rio Tinto s policies are communicated to its business partners and they are encouraged to adopt similar policies of their own. Rio Tinto employees are required to undertake training about the requirements of *The way we work* and other core policies.

Whistleblowing programme

The board has adopted a whistleblowing programme called *Speak-OUT*. Employees may report concerns, including suspicion of violations of the Group s financial reporting or environmental procedures. The *Speak-OUT* programme is independently administered, confidential, and our employees can use this programme without fear of recrimination.

Dealing in Rio Tinto securities

Rio Tinto has a set of rules which restrict the dealing in Rio Tinto securities by directors and employees with access to inside information . These rules require those people to seek clearance from the chairman or the company secretary before any proposed dealing to ensure that they do not deal when in possession of inside information. Directors and members of the Executive committee will not be given clearance during close periods immediately preceding the announcement of annual and interim results. The rules prohibit the hedging of unvested options or other unvested securities issued as remuneration. The Rules for dealing in Rio Tinto securities can be viewed on the website.

Communication with stakeholders

Rio Tinto recognises the importance of effective timely communication with shareholders and the wider investment community.

To ensure that trading in its securities takes place in an informed market, the Group has adopted continuous disclosure standards which are overseen by the Continuous Disclosure committee and form part of the Group s corporate governance standards. The committee is responsible for determining whether information relating to Rio Tinto may require disclosure to the markets under the continuous disclosure requirements in the jurisdictions in which Rio Tinto is listed. The members of the committee are: the chief financial officer (chair); the company secretary of Rio Tinto plc; general counsel, Asia Pacific; the head of Business Development; the head of Investor Relations; and the global practice leader, Media Relations.

Rio Tinto makes immediate disclosure to the listing authorities of any information that a reasonable person would expect to have a material effect on its share price in accordance with their rules. All information released to the markets is posted on the media section of the website.

In addition to statutory documents, Rio Tinto s website features in-depth information on health, safety and the environment, corporate governance, as well as general investor information, publications and policies and guidance. Annual and half year results, as well as any major presentations, are also webcast. Presentation material from investor seminars is also made available on the website.

The annual general meetings present an opportunity to provide a summary business presentation, to inform shareholders of recent developments and to give them the opportunity to ask questions. Generally, the chairs of all board committees will be available to answer questions raised by shareholders and all directors are expected to attend where possible. Rio Tinto s external auditor, PricewaterhouseCoopers, attends the annual general meetings and is available to answer questions about the conduct of the audit and the preparation and content of the auditor s report. Any questions received and answers provided ahead of the annual general

meetings are made available to shareholders, who also have the opportunity to meet informally with directors after the meetings.

The main channels of communication with the investment community are through the chairman, chief executive and chief financial officer, who have regular meetings with the Companies major shareholders. The senior independent director, chairmen of board committees, and other non-executive directors are also available on request. The senior independent director has a specific responsibility to be available to shareholders who have concerns, and where contact with the chairman, chief executive or chief financial officer has failed to resolve their concerns, or for whom such contact is inappropriate.

During 2011, these meetings with the investment community focused on the issues of strategy, board succession, corporate governance, executive remuneration, and the operational and financial platform of the Group. The Group has an active programme of investor dialogue, including regular investor seminars, which provide a two way communication opportunity with investors and analysts. More recently, corporate governance round tables have been hosted to provide investors with an opportunity to engage with non-executive directors. Feedback is communicated to the board. Surveys of major shareholders opinions and perceptions of the Group are presented to the board by the Group s investor relations advisers on a regular basis.

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Risk management

Risk management

Rio Tinto s overriding objective is to generate attractive sustainable returns to shareholders through a strategy of investing in large, long-term, cost-competitive mines and businesses. The directors recognise that creating shareholder return is the reward for taking and accepting risk. The risks facing shareholders are, to some extent, managed by the Group s diversified portfolio of assets spread across multiple geographies, currencies and commodities.

A description of the risk factors that could affect Rio Tinto are found on pages 10 to 12.

Risk policy and standard

The board recognises that risk is an integral component of the business, and that it is characterised by both threat and opportunity. The Group fosters a risk aware corporate culture in all decision making, and is committed to managing all risk in a proactive and effective manner through competent risk management. To support this commitment, risk is analysed in order to inform the management decisions taken at all levels within the organisation. The principles of the risk analysis and management process are set out in the Risk policy and standard which is on the website.

Risk approach

The Risk policy and standard is supported by an integrated framework of risk governance and reporting specifying how the Group organises the handling of risk. Together with the policy, the framework provides an on-going process for identifying, evaluating and managing the significant risks faced by the Group. Clear accountability for risk management is defined throughout the Group and is a key performance area of line managers. The process has been in place for 2011 and up to the date of the report.

To support risk understanding and management at all levels, the Group Risk function provides the necessary infrastructure, information collation for the senior executive, and co-ordination between other risk-focused functions. Group Risk reports into the Risk management committee.

Internal controls

The directors are responsible for the Group s system of internal controls and for reviewing annually its effectiveness in providing shareholders with a return on their investments that is consistent with a responsible assessment and management of risks. This includes reviewing financial, operational and compliance controls and risk management procedures and their effectiveness. The directors have completed their annual review and assessment for 2011. Whilst the Audit committee is responsible for oversight of the effectiveness of the risk management process, accountability for identifying and managing risks rests with the chief executive and is cascaded throughout the Group through the Executive committee.

Internal risk control systems

Two of the Group s management committees, the Executive committee and the Disclosures and procedures committee, regularly review reports related to the Group s control framework in order to satisfy the internal control requirements of the Code, the ASX Principles, the NYSE Code and US legislation. Each year, the leaders of the Group s businesses and administrative offices complete an internal control questionnaire that seeks to confirm that adequate internal controls are in place, are operating effectively and are designed to capture and evaluate failings and weaknesses, if any exist, and that action is taken promptly, as appropriate. The results of the internal control evaluation are presented to the Audit committee in support of their review of the Group s internal controls. Assurance functions, including internal auditors and sustainable development auditors, perform reviews of the integrity and effectiveness of control activities and provide regular written and oral reports to the Audit committee, Sustainability committee and management committees.

In 2011, information was reported by management to the Audit committee to enable it to assess the effectiveness of the internal controls and the management of material business risks. In addition, as part of their role, the board and its committees routinely monitor the Group s material business risks.

Due to the limitations inherent in any risk management system, the process for identifying, evaluating and managing the material business risks is designed to manage rather than eliminate risk and to provide reasonable but not absolute assurance against material misstatement or loss. Certain risks, for example natural disasters, cannot be managed to an acceptable degree using internal controls. Such major risks are transferred to third parties in the international insurance markets, to the extent considered appropriate. The Group has material investments in a number of jointly controlled entities and associates. Where Rio Tinto does not have managerial control, it cannot guarantee that local management of mining and related assets will comply with Rio Tinto standards or objectives. Accordingly, the review of their internal controls is less comprehensive than that of the Group s managed operations.

Auditors and internal assurance

As indicated in the report of the Audit committee on page 71, Rio Tinto has adopted policies designed to uphold the independence of the Group s external auditors by prohibiting their engagement to provide other accounting and other professional services that might compromise their appointment as independent auditors.

The engagement of the external auditors to provide statutory audit services, other services pursuant to legislation, taxation services and certain other services are pre-approved. Any engagement of the external auditors to provide other permitted services is subject to the specific approval of the Audit committee or its chairman.

Prior to the commencement of each financial year the chief financial officer and the external auditors submit to the Audit committee a schedule of the types of services that are expected to be performed during the following year for its approval. The Audit committee may impose a financial limit on the total value of other permitted services that can be provided. Any non-audit service provided by the external auditors, where the expected fee exceeds a pre-determined level, must be subject to the Group s normal tender procedures.

In exceptional circumstances, the chief financial officer is authorised to engage the external auditors to provide such services without going to tender, but if the fees are expected to exceed certain pre-determined limits then the chairman of the Audit committee must give prior approval of the engagement.

Further information on audit and non-audit fees as well as remuneration payable to other accounting firms, is set out in note 41 to the financial statements and in the Directors report.

Corporate Assurance

Corporate Assurance is an internal function which provides independent and objective assurance on the adequacy and effectiveness of the Group s systems for risk management, internal control, and governance together with recommendations to improve the efficiency and effectiveness of the relevant systems and processes. The function has adopted international auditing standards set by the Institute of Internal Auditors (IIA).

The function operates independently of management, under a mandate approved by the Audit committee and the Sustainability committee and has full access to all functions, records, property and personnel of the Group. The head of Corporate Assurance reports functionally to both the Audit committee and Sustainability committee, providing each committee with information relevant to their specific terms of reference.

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Corporate governance continued

A risk-based approach is used to focus assurance activities on high risk areas and audit plans are presented annually to the Audit committee and Sustainability committee for approval.

In respect of its internal audit function, Rio Tinto utilises the services of external service providers. The Audit committee has a policy which addresses conflicts of interest in relation to management requested engagements of the service provider. The policy complies with the IIA s standards on independence. Certain services are pre-approved under the policy as they would not be in conflict with the internal auditor s role. There is a list of prohibited services which may not be undertaken without approval of the head of Corporate Assurance, and guidance on the consideration of services which may give rise to a conflict of interest.

Financial reporting

Financial statements

The directors are required to prepare financial statements for each financial period which give a true and fair view of the state of affairs of the Group as at the end of the financial period and of the profit or loss and cash flows for that period. This includes preparing financial statements in accordance with UK company law which give a true and fair view of the state of the Company s affairs, and preparing a Remuneration report which includes the information required by Regulation 11, Schedule 8 of the Large and Medium Sized Companies and Groups (Accounts and Reports) Regulations 2008 and the Australian Corporations Act 2001.

The directors are responsible for maintaining proper accounting records, in accordance with UK and Australian legislation. They have a general responsibility for taking such steps as are reasonably open to them to safeguard the assets of the Group and to prevent and detect fraud and other irregularities. The directors are also responsible for ensuring that appropriate systems are in place to maintain and preserve the integrity of the Group s website. Legislation in the UK governing the preparation and dissemination of financial statements may differ from current and future legislation in other jurisdictions. The work carried out by the auditors does not involve consideration of such developments and, accordingly, the auditors accept no responsibility for any changes, should any be made, to the financial statements after they are made available on the website.

The directors, senior executives, senior financial managers and other members of staff who are required to exercise judgment in the course of the preparation of the financial statements are required to conduct themselves with integrity and honesty and in accordance with the ethical standards of their profession and/or business.

The directors consider that the 2011 Annual report presents a true and fair view and has been prepared in accordance with applicable accounting standards, using the most appropriate accounting policies for Rio Tinto s business and supported by reasonable judgments and estimates. The accounting policies have been consistently applied. The directors have received a written statement from the chief executive and the chief financial officer to this effect. In accordance with the internal control requirements of the Code and the ASX Principles Recommendation 7.3, this written statement relies on a sound system of risk management and internal controls and confirms that the system is operating effectively in all material respects in relation to financial reporting risks.

Disclosure controls and procedures

The Group maintains disclosure controls and procedures as such term is defined in Exchange Act Rule 13a-15(e). Management, with the participation of the chief executive and chief financial officer, has evaluated the effectiveness of the design and operation of the Group s disclosure controls and procedures pursuant to Exchange Act Rule 13a-15(b) as of the end of the period covered by this report and has concluded that these disclosure controls and procedures were effective at a reasonable assurance level.

Management s report on internal control over financial reporting

The management of Rio Tinto plc and Rio Tinto Limited is responsible for establishing and maintaining adequate internal control over financial reporting. The Companies internal control over financial reporting is a process designed under the supervision of their common chief executive and chief financial officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation and fair presentation of the Group s published financial statements for external reporting purposes in accordance with International Financial Reporting Standards.

Because of its inherent limitations, internal control over financial reporting cannot provide absolute assurance, and may not prevent or detect all misstatements whether caused by error or fraud, if any, within each of Rio Tinto plc and Rio Tinto Limited.

The Group s internal control over financial reporting includes policies and procedures that pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect transactions and dispositions of assets; provide reasonable assurances that transactions are recorded as necessary to permit preparation

of financial statements in accordance with IFRS and that receipts and expenditures are being made only in accordance with authorisations of management and directors of each of the Companies; and provide reasonable assurance regarding prevention or timely detection of unauthorised acquisition, use or disposition of the Group s assets that could have a material effect on our financial statements.

Management conducted an assessment of the effectiveness of internal control over financial reporting as of 31 December 2011, based on the Internal Control Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and concluded that it was effective.

PricewaterhouseCoopers LLP and PricewaterhouseCoopers, the auditors of Rio Tinto plc and Rio Tinto Limited respectively, audited the Financial statements included in this Form 20-F and audited the effectiveness of internal controls over financial reporting as of 31 December 2011. Their audit report is included on page 216 of this Annual Report on Form 20-F.

There were no changes in the internal controls over financial reporting that occurred during the period covered by this Annual Report on Form 20-F that have materially affected or are reasonably likely to materially affect the internal controls over financial reporting of each of Rio Tinto plc and Rio Tinto Limited.

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Board of directors

Key for committee memberships:

(A) Audit committee
(R) Remuneration committee
(N) Nominations committee
(S) Sustainability committee
(C) Chairman s committee
(I) Independent

Jan du Plessis (R, N and C) Chairman, BCom, LLB, CA(SA), age 58

Appointment: Director of Rio Tinto since 2008. He was appointed chairman in 2009.

Skills and experience: Jan worked in various management positions in the South African Rembrandt Group from 1981, and in 1988 became Group finance director of Compagnie Financière Richemont, the Swiss luxury goods group. In 2004 Jan became chairman of British American Tobacco plc.

External appointments (current and recent): Non-executive director of Marks and Spencer Group plc since 2008 and senior independent non-executive director from 1 March 2012, non-executive director of British American Tobacco plc from 1999 until 2009 and chairman of the board from 2004 until 2009, non-executive director and chairman of the audit committee of Lloyds Banking Group plc from 2005 and 2008 respectively until 2009, chairman of RHM plc from 2005 until 2007.

Tom Albanese (C) Chief executive, BS (Mineral Economics),

MS (Mining Engineering), age 54

Appointment: Director of Rio Tinto since 2006. He was appointed chief executive in 2007.

Skills and experience: Tom joined Rio Tinto in 1993 on Rio Tinto s acquisition of Nerco and held a series of management positions before being appointed chief executive of the Industrial Minerals group in 2000, after which he became chief executive of the Copper group and head of Exploration in 2004.

External appointments (current and recent): Director of Ivanhoe Mines Limited from 2006 to 2007, director of Palabora Mining Company from 2004 to 2006, member of the executive committee of the International Copper Association from 2004 to 2006, member of the board of visitors, Duke University, Fuqua School of Business from 2009.

Robert Brown (N, S and I) Non-executive director, BSc, age 67 **Appointment:** Director of Rio Tinto since 2010.

Skills and experience: Bob is chairman of Aimia (Groupe Aeroplan Inc) and serves on the board of Bell Canada Enterprises (BCE Inc), the holding company for Bell Canada. He was previously president and chief executive officer of CAE Inc, a world leader in flight simulation and training. Before that he spent 16 years at Bombardier Inc where he was first head of the Aerospace Group and then president and chief executive officer. He has also served as chairman of Air Canada and of the Aerospace Industries Association of Canada.

Bob was inducted to the Order of Canada as well as l Ordre National du Québec. He has been awarded honorary doctorates from five Canadian universities.

External appointments (current and recent): Non-executive director of Aimia (Groupe Aeroplan Inc) since 2005 and chairman since 2008, non-executive director of Bell Canada Enterprises (BCE Inc) since 2009, president and chief executive officer of CAE Inc from 2004 until 2009, non-executive director of Nortel Corporation from 2000 to 2006, Ace Aviation Holdings Inc from 2004 to 2009 and Fier CPVC Montreal L.P. since 2005.

Vivienne Cox (N, S and I) Non-executive director, MA (Oxon),

MBA (INSEAD), age 52

Appointment: Director of Rio Tinto since 2005.

Skills and experience: Vivienne is the former Executive Vice President of Gas, Power and Renewables and former Chief Executive of BP Alternative Energy. During her career at BP she served in a variety of posts ranging from supply and trading, to commercial, finance and exploration and renewable energy. Vivienne holds degrees in chemistry from Oxford University and in business administration from INSEAD.

External appointments (current and recent): Non-executive director of BG Group plc since 8 February 2012, non-executive director of Pearson plc since 1 January 2012, non-executive director of the Department for International Development since 2010, non-executive director of The Climate Change Organisation since 2010, non-executive director of Climate Change Capital Limited since 2008 and non-executive chairman since 2009, member of the supervisory board of Vallourec since 2010, member of the offshore advisory committee of Mainstream Renewable Power since 2010, member of the board of INSEAD since 2009, executive vice president for BP plc between 2004 and 2009.

Guy Elliott (C) Chief financial officer, MA (Oxon), MBA (INSEAD), age 56

Appointment: Director and chief financial officer of Rio Tinto since 2002.

Skills and experience: Guy joined the Group in 1980 after gaining an MBA having previously been in investment banking. He subsequently held a variety of commercial and management positions, including head of Business Evaluation and president of Rio Tinto Brasil.

External appointments (current and recent): Non-executive director of Royal Dutch Shell plc since 2010 and chairman of its audit committee since May 2011, non-executive director and senior independent director of Cadbury plc from 2007 and 2008 respectively until 2010.

Michael Fitzpatrick (A, R, N and I) Non-executive director, BEng,

BA (Oxon), age 59

Appointment: Director of Rio Tinto since 2006.

Skills and experience: Michael is chairman of Treasury Group Limited, an incubator of fund management companies. He is also chairman of the Australian Football League, having previously played the game professionally, and a former chairman of the Australian Sports Commission. Michael founded the pioneering infrastructure asset management company Hastings Funds Management Ltd in 1994 following a career in investment banking in Australia and New York.

External appointments (current and recent): Chairman of the Infrastructure Capital Group Limited since 2009, chairman of the Treasury Group Limited since 2005, the director of the Walter & Eliza Hall Institute of Medical Research since 2001, chairman of the Victorian Funds Management Corporation from 2006 to 2008.

Ann Godbehere (A, N and I) Non-executive director, FCGA, age 56

Appointment: Director of Rio Tinto since 2010 and chairman of the Audit committee.

Skills and experience: Ann has more than 25 years experience in the financial services industry. She spent ten years at Swiss Re, latterly as chief financial officer from 2003 until 2007 and from 2008 until 2009 she was interim chief financial officer and executive director of Northern Rock post nationalisation. Ann is a qualified accountant.

External appointments (current and recent): Non-executive director of British American Tobacco plc with effect from 3 October 2011, non-executive director of UBS AG since 2009, non-executive director of Atrium Underwriting Group Limited and Ariel Group Limited since 2007, non-executive director of Prudential Plc since 2007 and chairman of its audit committee since 2009, chief financial officer and executive director of Northern Rock from 2008 to 2009.

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Board of directors continued

Richard Goodmanson (R, N, S and I) Non-executive director, MBA, BEc and BCom, BEng (Civil), age 64

Appointment: Director of Rio Tinto since 2004 and chairman of the Sustainability committee.

Skills and experience: Richard was executive vice president and chief operating officer of DuPont until 2009. He was responsible for a number of the global functions, and for the non-US operations of DuPont, with particular focus on growth in emerging markets. During his career he has worked at senior levels for McKinsey & Co, PepsiCo and America West Airlines, where he was president and chief executive officer.

External appointments (current and recent): Non-executive director of Qantas Airways Limited since 2008, economic adviser to the governor of Guangdong Province, China from 2003 to 2009, executive vice president and chief operating officer of DuPont from 1999 until 2009, director of the United Way of Delaware between 2002 and 2009 (chairman between 2006 and 2007).

Andrew Gould (R, N and I) Non-executive director, BA, FCA, age 65

Appointment: Director of Rio Tinto since 2002. Andrew was appointed the senior independent non-executive director in 2008. Andrew will retire at the conclusion of the Rio Tinto Limited annual general meeting in 2012 when he will be succeeded as senior independent non-executive director by John Varley.

Skills and experience: Andrew is chairman of Schlumberger Limited, where he has held a succession of financial and operational management positions, including that of executive vice president of Schlumberger Oilfield Services and chief executive officer of Schlumberger Limited. He has worked in Asia, Europe and the US. He joined Schlumberger in 1975. He holds a degree in economic history from Cardiff University and qualified as a chartered accountant with Ernst & Young.

External appointments (current and recent): Chairman of Schlumberger Limited since 2003, chief executive officer of Schlumberger Limited from 2003 to 2011, non-executive director of BG Group plc with effect from 1 June 2011, member of the board of trustees of King Abdullah University of Science and Technology in Jeddah, Saudi Arabia since 2008, member of the advisory board of the King Fahd University of Petroleum and Minerals in Dhahran, Saudi Arabia since 2007, member of the UK prime minister s Council of Science and Technology from 2004 to 2007.

Lord Kerr of Kinlochard (A, N, S and I) Non-executive director, GCMG, MA (Oxon), age 70

Appointment: Director of Rio Tinto since 2003.

Skills and experience: John Kerr was in the UK Diplomatic Service for 36 years and headed it from 1997 to 2002 as permanent under secretary at the Foreign Office. He previously served in HM Treasury and in the Soviet Union and Pakistan, and was ambassador to the European Union (1990 to 1995), and the US (1995 to 1997). He has been an Independent member of the House of Lords since 2004.

External appointments (current and recent): Advisory board member of Edinburgh Partners Limited since 1 January 2012, director of Scottish Power Limited since 2009, deputy chairman of Royal Dutch Shell plc since 2005, director of The Scottish American Investment Trust plc since 2002, advisory board member of BAE Systems from 2008 to 2011, chairman of the Centre for European Reform (London) since 2008, vice president of the European Policy Centre (Brussels) since 2007, chairman of the Court and Council of Imperial College London from 2005 to 2011, trustee of the Carnegie Trust for the Universities of Scotland since 2005, Fulbright Commissioner from 2004 to 2009, director of The Shell Transport and Trading Company plc from 2002 to 2005, advisory board member of Scottish Power (Iberdrola) from 2007 to 2009, trustee of the National Gallery from 2002 to 2010, trustee of the Rhodes Trust from 1997 to 2010.

Chris Lynch (N and I) Non-executive director, BComm, MBA, age 58

Appointment: Appointed as a director of Rio Tinto with effect from 1 September 2011. Chris will stand for election by shareholders at the 2012 annual general meetings.

Skills and experience: Chris is chief executive officer of the Transurban Group, but has announced his intention to stand down in July 2012. His career has included seven years at BHP Billiton, where he was chief financial officer and then executive director and group president Carbon Steel Materials. Prior to this Chris spent 20 years with Alcoa Inc.

External appointments (current and recent): Chief executive officer of the Transurban Group from 2008 until July 2012, executive director of BHP Billiton Limited and BHP Billiton plc from 2006 to 2007, non-executive director of AMT Management Limited during 2008, non-executive director of Citylink Melbourne Limited during 2008, non-executive director of Sydney Roads Limited during 2008, non-executive director of The Hills Motorway Limited during 2008, director of Minerals Council of Australia from 2006 until 2007, commissioner of the Australian Football League since 2008.

Hon. Paul Tellier (A, R, N and I) Non-executive director, LLL, BLitt (Oxon), LL.D, C.C. age 72

Appointment: Director of Rio Tinto since 2007.

Skills and experience: Paul was clerk of the Privy Council Office and secretary to the Cabinet of the Government of Canada from 1985 to 1992 and was president and chief executive officer of the Canadian National Railway Company from 1992 to 2002. Until 2004, he was president and chief executive officer of Bombardier Inc.

External appointments (current and recent): Chairman of Global Container Terminals since 2007, director of McCain Foods since 1996, trustee of the International Accounting Standards Foundation since 2007, co-chair of the Prime Minister of Canada s Advisory Committee on the Renewal of the Public Service since 2006, strategic adviser to Société Générale (Canada) since 2005, member of the advisory board of General Motors of Canada since 2005, director of Bell Canada from 1996 to 2010, director of BCE Inc from 1999 to 2010, non-executive director of Alcan Inc. from 1998 to 2007, director of Bombardier Inc from 1997 to 2004.

John Varley (R, N and I) Non-executive director, BA, MA (Oxon), age 55

Appointment: Appointed as a director of Rio Tinto with effect from 1 September 2011 and as chairman of the Remuneration committee with effect from 18 October 2011. He will succeed Andrew Gould as senior independent non-executive director on Andrew s retirement from the board in May 2012. John will stand for election by shareholders at the 2012 annual general meetings.

Skills and experience: John was chief executive of Barclays PLC from 2004 until 2010. During a 28-year career with the bank he held a variety of positions, including chairman of the asset management division, group finance director and deputy chief executive. John joined the Barclays executive committee in 1996 and was appointed a director of Barclays PLC in 1998.

External appointments (current and recent): Senior adviser to Barclays PLC from January to October 2011 and chief executive from 2004 until 2010, non-executive director of BlackRock, Inc. since 2009, non-executive director of AstraZeneca plc since 2006, member of the International Advisory Panel of the Monetary Authority of Singapore since 2006, chairman of Marie Curie Cancer Care since 2011, honorary president of the UK Drug Policy Commission since 2007, chairman of Business Action on Homelessness since 2006, president of the Employer s Forum on Disability since 2005.

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Sam Walsh AO Executive director, BCom (Melbourne), age 62 **Appointment:** Director of Rio Tinto since 2009 and chief executive, Iron Ore and Australia.

Skills and experience: Sam joined Rio Tinto in 1991, following 20 years in the automotive industry at General Motors and Nissan Australia. He has held a number of management positions within the Group, including from 2001 to 2004 chief executive of the Aluminium group and since 2004 chief executive of the Iron Ore group. Sam is also a Fellow of the Australian Institute of Management, the Australasian Institute of Mining and Metallurgy, the Chartered Institute of Purchasing and Supply Management and the Australian Institute of Company Directors. In June 2010, Sam was appointed an Officer in the General Division of the Order of Australia.

External appointments (current and recent): Director of Seven West Media Limited since 2008.

Directors who left the Group during 2011

Sir Rod Eddington BEng, MEng, DPhil (Oxon)

Appointment : Director of Rio Tinto from 2005 until his retirement at the conclusion of the 2011 annual general meeting.

Skills and experience: Sir Rod was chief executive of British Airways plc until 2005. Prior to his role with British Airways, Sir Rod was managing director of Cathay Pacific Airways from 1992 until 1996 and executive chairman of Ansett Airlines from 1997 until 2000.

External appointments (current and recent): Non-executive chairman of JPMorgan Australia and New Zealand since 2006, director of CLP Holdings since 2006, director of News Corporation plc since 1999, director of John Swire & Son Pty Limited since 1997, chairman of Infrastructure Australia since 2008, director of Allco Finance Group Limited from 2006 until 2009, chief executive of British Airways plc from 2000 until 2005, chairman of the EU/Hong Kong Business Co-operation Committee of the Hong Kong Trade Development Council from 2002 until 2006.

Yves Fortier CC, OQ, QC, LLD, Av Em

Appointment: Director of Rio Tinto from 2007 until his retirement at the conclusion of the 2011 annual general meeting.

Skills and experience: Yves Fortier was ambassador and permanent representative of Canada to the United Nations from 1988 to 1992. He was chairman of the law firm Ogilvy Renault (now Norton Rose) from 1992 to 2009 and was chairman of Alcan from 2002 until 2007.

External appointments (current and recent): Chairman emeritus and senior partner of Ogilvy Renault (now Norton Rose) from 2009 to 2011, chairman of Ogilvy Renault (now Norton Rose) from 1992 until 2009, director of NOVA Chemicals Corporation Governance from 1998 until 2009, chairman and director of Alcan Inc. from 2002 until 2007, director of Royal Bank of Canada from 1992 to 2005, director of Nortel Corporation from 1992 to 2005, governor of Hudson s Bay Company from 1998 to 2006, trustee of the International Accounting Standards Committee from 2000 to 2006.

Company secretaries

Ben Mathews BA (Hons), FCIS, age 45

Skills and experience: Ben joined as company secretary of Rio Tinto plc during 2007. Prior to joining Rio Tinto, he spent five years with BG Group plc, as company secretary. He has previously worked for National Grid plc, British American Tobacco plc and PricewaterhouseCoopers LLP. Ben is a fellow of the Institute of Chartered Secretaries and Administrators and has a joint honours degree in French and European Studies.

External appointments (current and recent): None.

Stephen Consedine BBus, CPA, age 50

Skills and experience: Stephen joined Rio Tinto in 1983 and has held various positions in Accounting, Treasury, and Employee Services before becoming company secretary of Rio Tinto Limited in 2002. He holds a business degree and is a certified practising accountant.

External appointments (current and recent): None.

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Executive committee

Hugo Bague MA (Linguistics), age 51

Skills and experience: Hugo Bague was appointed Group executive, People & Organisation in 2009 having joined Rio Tinto as global head of Human Resources in 2007. Previously he worked for Hewlett-Packard where he was the global vice president, Human Resources for the Technology Solutions Group, based in the US. Prior to this he worked for Compaq Computers, Nortel Networks and Abbott Laboratories based in Switzerland, France and Germany.

External appointments (current and recent): Non-executive director and member of the nominating and governance committee and the compensation committee of Jones Lang LaSalle Incorporated since 1 March 2011.

Preston Chiaro BSc (Hons) (Environmental Engineering), MEng (Environmental Engineering), age 58

Skills and experience: Preston was appointed Group executive, Technology & Innovation in 2009. He joined the Group in 1991 at Kennecott Utah Copper s Bingham Canyon mine as vice president, Technical Services. In 1995 he became vice president and general manager of the Boron Operations in California and was chief executive of Rio Tinto Borax from 1999 to 2003. Preston then became chief executive of the Energy group and in 2007, upon a management re-organisation, he also assumed responsibility for the Industrial Minerals group.

External appointments (current and recent): Director of Cloud Peak Energy Inc from 2008 to 2011, board member of Resources for the Future since 2006, director of Rössing Uranium Limited from 2004 to 2009, director of the World Coal Institute between 2003 and 2009 (chairman from 2006 to 2008), chairman of the Coal Industry Advisory Board to the International Energy Agency between 2004 and 2006, director of Energy Resources of Australia Limited between 2003 and 2006, director of Coal & Allied Industries Limited between 2003 and 2006.

Bret Clayton BA (Accounting), age 50

Skills and experience: Bret was appointed Group executive, Business Support & Operations in 2009. He joined the Group in 1994 and has held a series of management positions, including chief executive of the Copper and Diamonds groups, president and chief executive officer of Rio Tinto Energy America and chief financial officer of Iron Ore. Prior to joining the Group, Bret worked for PricewaterhouseCoopers for nine years, providing auditing and consulting services to the mining industry.

External appointments (current and recent): Non executive director and member of the audit committee of Constellium Holdco B.V. since January 2011, non executive director of Ivanhoe Mines Limited between 2007 and 2009, member of the board of directors and the executive committee of the International Copper Association between 2006 and 2009, member of the Coal Industry Advisory Board to the International Energy Agency (IEA) between 2003 and 2006, member of the board of directors of the US National Mining Association between 2002 and 2006.

Jacynthe Côté BChem, age 53

Skills and experience: Jacynthe became chief executive, Rio Tinto Alcan in 2009. She joined Alcan in 1988 and has significant operational and international experience in the aluminium industry. She was chief executive officer, Primary Metal, Rio Tinto Alcan, where she was responsible for all primary metal facilities and power generation installations worldwide. Her previous roles in Alcan include president and chief executive officer, Bauxite & Alumina business group and senior management roles in business planning, human resources and environment, health and safety. Jacynthe has a degree in chemistry from Laval University in Quebec and and was awarded an honorary doctorate from Université du Québec à Chicoutimi in 2011.

External appointments (current and recent): Member of the Advisory Board of the Montreal Neurological Institute since July 2010, member of the Hautes Études Commerciales Board since 2009, member of the Canadian Council of Chief Executives since 2009, member of the International Aluminium Institute since 2009.

Andrew Harding BEng (Mining Engineering), MBA, age 45

Skills and experience: Andrew was appointed chief executive, Copper in 2009. He joined Rio Tinto in 1992, initially working for Hamersley Iron. Andrew went on to hold operating roles within the Energy, Aluminium and Iron Ore product groups, including at the Mount Thorley, Hunter Valley, Weipa, Mount Tom Price, Marandoo and Brockman mines. In 2007, he became global practice leader, Mining within Rio Tinto s Technology & Innovation group. Prior to his current role, Andrew was president and chief executive officer, Kennecott Utah Copper.

External appointments (current and recent): Director of Ivanhoe Mines Limited between 2009 and July 2010 and from February 2011.

Harry Kenyon-Slaney BSc (Hons) (Geology), age 51

Skills and experience: Harry was appointed chief executive of Rio Tinto s Diamonds & Minerals product group in 2009. He joined the Group in 1990 from Anglo American Corporation and has held management positions in South Africa, Australia and the UK. Harry spent his early career at Rio Tinto in marketing and operational roles in the uranium, copper and industrial minerals businesses. In 2004, he was appointed chief executive of Energy Resources of Australia, and prior to his current role, became managing director of Rio Tinto Iron & Titanium in 2007.

External appointments (current and recent): Chairman of the Australian Uranium Association from 2006 to 2007, chairman of the Copper Development Association, South Africa from 2000 to 2003, director of Energy Resources of Australia Limited from 2004 to 2007.

Doug Ritchie LLB, FAusIMM, FAIM, FAICD, age 55

Skills and experience: Doug was appointed chief executive of Rio Tinto s Energy group in 2009. He has been with the Group since 1986 when he joined CRA as corporate counsel. Since then he has held a number of roles in various Rio Tinto businesses and corporate functions, including Exploration, Project Development and the Energy, Aluminium and Diamonds & Minerals product groups. Doug s previous roles have included head of Business Evaluation, managing director of Dampier Salt, Rio Tinto Coal Australia and Rio Tinto Diamonds. Prior to his current role, he was managing director, Strategy of Rio Tinto.

External appointments (current and recent): Director of the World Coal Association since 2010, director of Rössing Uranium Limited since 2009, director of Australian Coal Association from 2006 to 2008, director of Dalrymple Bay Coal Terminal Pty Ltd from 2006 to 2007, director of Queensland Resources Council from 2006 to 2007, deputy chairman of the Coal Industry Advisory Board to the IEA, director of Coal & Allied Industries Limited between 2006 and 2007 and from 2008 to 2011.

Debra Valentine BA (History), JD, age 58

Skills and experience: Debra was appointed Group executive, Legal & External Affairs in 2009 having joined Rio Tinto as global head of Legal in 2008. Debra previously worked at United Technologies Corporation in the US where she was vice president, deputy general counsel and secretary. Before then, she was a partner with the law firm O Melveny & Myers, in Washington DC. Debra served as general counsel at the US Federal Trade Commission from 1997 to 2001.

External appointments (current and recent): Member, Council on Foreign Relations since 1993, American Law Institute since 1991, commissioner, Congressional Antitrust Modernisation Commission from 2004 to 2007.

Tom Albanese, Guy Elliott and Sam Walsh were also members of the Executive committee in 2011 through their positions as chief executive, chief financial officer and chief executive of Iron Ore and Australia respectively. Their biographies are shown on pages 77 and 79.

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Directors report

The directors present their report and audited financial statements for the year ended 31 December 2011.

Dual listed structure and constitutional documents

An explanation of the dual listed companies structure (DLC) of Rio Tinto plc and Rio Tinto Limited, and of the Companies constitutional documents can be found on pages 119 to 126. This section also provides a description of voting rights restrictions which may apply in respect of the shares of either Company under specified circumstances.

Activities and business review

Rio Tinto s principal activities during 2011 were minerals exploration, development, production and processing.

The business review set out on pages 1 to 42 provides a comprehensive review of the development and performance of Rio Tinto s operations for the year ended 31 December 2011 and the likely future developments of those operations. The information set out in the business review is incorporated by reference into this report and is deemed to form part of this report.

The subsidiary and associated undertakings principally affecting the profits or net assets of the Group in the year are listed in notes 35 to 38 to the financial statements.

Significant changes and events affecting the Group during 2011 and until the date of this report have been:

On 4 January 2011 the Group announced the completion of the divestment of 61 per cent of its Alcan Engineered Products business.

On 8 February 2011 the Group announced its approval of a US$933 million investment to extend the life of the Marandoo iron ore mine in the Pilbara region of Western Australia by 16 years to 2030.

On 10 February 2011 Rio Tinto announced a capital management programme, comprising a US$5 billion share buy-back. This was increased to US$7 billion on 4 August 2011.

On 21 February 2011 Rio Tinto announced that coastal operations in the Pilbara region were being affected by ongoing weather issues associated with tropical cyclones and there was likely to be an impact on shipped tonnage for the first quarter of the year.

On 23 February 2011 the Group announced that it had received a binding offer from Imerys SA to acquire Rio Tinto s talc business for an enterprise value of US$340 million. Completion of the transaction was announced on 1 August 2011.

On 29 March 2011 the Group declared that its offer for Riversdale Mining Limited (Riversdale) was unconditional. The acquisition was completed on 29 July 2011 for a price of A$16.50 per share.

On 7 April 2011 the Group announced approval of investment of US$238 million for a feasibility study and long-lead items to extend Kennecott Utah Copper s Bingham Canyon mine in Utah.

On 22 April 2011 Rio Tinto, its subsidiary Simfer S.A (Simfer) and the Government of Guinea signed a Settlement Agreement securing Rio Tinto s mining title in Guinea, West Africa. In recognition of the resolution of all outstanding issues and finalisation of new investment agreement terms, Simfer agreed to pay US$700 million to the Guinean Government upon promulgation of Presidential Decrees granting its mining concession and the approval of the proposed Chalco and Rio Tinto Simandou joint venture. On 18 October 2011 the Group announced the acceleration of the development of the Simfer project with further investment of US$211 million for continued studies and US$1.117 billion for commitments for early works and procurement of long-lead items.
On 4 May 2011 the Full Court of the Federal Court in Australia made a decision endorsing the ruling of the Australian Competition Tribunal not to declare the Hamersley rail line available for third-party access. The Full Court also ruled that the Tribunal s decision to declare the Robe line available for third-party access should be set aside. On 28 October 2011 the Group announced that the High Court of Australia had granted Fortescue Metals Group Ltd and the National Competition Council leave to pursue appeals in relation to the decision of the Full Federal Court.

On 18 May 2011 Rio Tinto announced that it had priced US$700 million of five-year, US$1 billion of 10-year and US$300 million of 30-year SEC-registered debt securities.

On 15 June 2011 the Group announced that it was accelerating its iron ore expansion programme in the Pilbara region with US$676 million of funding (Rio Tinto share US$350 million) for early works and procurement. On 9 September 2011 Rio Tinto announced an investment of US$310 million to assure a sustainable water supply for its iron ore operations in the Pilbara region of Western Australia, ensuring a sufficient resource to accommodate an expansion of annual production capacity up to the planned 333 million tonnes. On 15 September 2011 the Group announced a further investment of US$833 million (Rio Tinto share US$706 million) in power and fuel supply projects to support the planned increase in iron ore production capacity. On 8 February 2012 the Group announced that it had committed a further US$3.4 billion (Rio Tinto share US$ 2.9 billion) to the expansion of its Pilbara iron ore operations, comprising US$2.2 billion to extend the life of the Nammuldi iron ore mine and US$1.2 billion for early infrastructure works for the proposed capacity expansion to 353 million tonnes per year. On 19 February 2012 the Group announced a US$518 million investment in autonomous trains for the Pilbara iron ore rail network.

On 8 August 2011 the Group declared its non-binding offer made to Coal & Allied Industries Limited (Coal and Allied) on 6 August 2011, under which Rio Tinto and Mitsubishi Development Pty Ltd (Mitsubishi), would acquire all of the shares in Coal & Allied they did not already own. On 28 November 2011 the Group announced that Coal & Allied shareholders had approved the transaction at a price of A$125 per share and the acquisition was completed on 15 December 2011.

On 5 September 2011 the Group announced that it had informed the board of Palabora Mining Company Limited (Palabora) of its intention to divest its 57.7 per cent shareholding in Palabora.

On 15 September 2011 Rio Tinto announced it had priced US$500 million of five-year, US$1.15 billion of ten year and US$350 million of 30-year SEC-registered debt securities.

On 20 September 2011 Rio Tinto announced an increase in the copper mineralisation at its wholly-owned Kennecott Utah Copper Bingham Canyon Mine.

On 17 October 2011 the Group announced its intention to divest 13 aluminium assets at an appropriate point in the future. Prior to divestment Rio Tinto s interests in six Australian and New Zealand assets would be transferred into a new business unit, to be called Pacific Aluminium. The remaining seven non-core assets were also transferred out of Rio Tinto Alcan to be managed separately while the Group investigates divestment options.

On 19 October 2011 Rio Tinto announced a recommended cash offer for all the common shares of Hathor Exploration Limited (Hathor). On 12 January 2012, Rio Tinto announced the completion of the acquisition of 100 per cent of the issued and outstanding shares of Hathor for a price of C$4.70 per share.

On 1 December 2011 Rio Tinto announced an additional investment of US$2.7 billion to modernise its aluminium smelter in Kitimat, British Columbia by 2014. The Kitimat project is expected to increase the smelter s production capacity to approximately 420,000 tonnes per year.

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Directors report continued

During 2011, the Group increased its ownership in Ivanhoe Mines Limited (Ivanhoe) to 49 per cent, the maximum shareholding permitted in contractual arrangements between Rio Tinto and Ivanhoe. On 13 December 2011 the Group announced that an independent arbitrator had upheld Rio Tinto's claim in respect of Ivanhoe Mines Shareholder Rights Plan (SRP) giving Rio Tinto the ability, on the expiry of a standstill agreement with Ivanhoe, to purchase additional shares in Ivanhoe beyond 49 per cent without being diluted by the SRP. On 24 January 2012 Rio Tinto announced that it had taken a majority stake in Ivanhoe Mines having purchased shares that took its interest to 51 per cent.

On 1 February 2012 following BHP Billiton's decision to exercise a put option agreed between Rio Tinto and BHP Billiton as part of Richards Bay Minerals (RBM s) restructuring in 2009, the Group announced its intention to increase its stake in RBM to 74 per cent through the acquisition of BHP Billiton's 37 per cent interest.

On 14 February 2012, the Group announced that it had approved US$1.4 billion investment in two projects to support higher production at the Escondida copper mine in Chile in which Rio Tinto holds a 30 per cent interest.

Details of events after the statement of financial position date are contained in note 45 to the financial statements.

As permitted by sections 299(3) and 299A(3) of the Australian Corporations Act 2001, information which is likely to result in unreasonable prejudice, regarding likely future developments in, and the expected results of the operations of the Group or its strategies and prospects, has been omitted.

Risk identification, assessment and management

The Group s principal risks and uncertainties are set out on pages 10 to 12.

Share capital

Details of the Group s share capital as at 31 December 2011 can be found at notes 28 and 29 to the financial statements. Details of the rights and obligations attached to each class of shares can be found on page 125 under

the heading Voting rights . The voting rights of shares held beneficially by a third party in line with an employee share plan are set out on page 103.