

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

**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**

**Commission file number: 001-34121**

**Rio Tinto plc**

**Rio Tinto Limited**

**ABN 96 004 458 404**

## Edgar Filing: RIO TINTO PLC - Form 20-F

(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	9.000% Notes due 2019	New York Stock Exchange New York Stock Exchange New York
2.500% Notes due 2016	Stock Exchange	2.500% Notes due 2016	Stock Exchange
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:

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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  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

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  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       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       Other

by the International Accounting Standards Board

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

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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**Performance highlights**

Record underlying earnings<sup>(a)</sup> of US\$15.5 billion, 11 per cent above 2010.

Net earnings<sup>(a)</sup> 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<sup>(a)</sup> 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 <sup>(a)</sup>	28,521	25,978	10%
Underlying earnings <sup>(a)</sup>	15,549	13,987	11%
Net earnings <sup>(a)</sup>	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)

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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](http://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 identify forward-looking statements.

Examples of forward-looking statements in this *Annual report* include those regarding estimated

ore reserves, anticipated production or construction dates, costs, outputs and productive lives of assets or similar factors. Forward looking statements involve known and unknown risks, uncertainties, assumptions and other factors set forth in this document that are beyond the Group's control. For example, future ore reserves will be based in part on market prices that may vary significantly from current levels. These may materially affect the timing and feasibility of particular developments. Other factors include the ability to produce and transport products profitably, demand for our products, 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.

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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**

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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



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inertness and high strength make it ideal for use in medical applications and in the aerospace industry.

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

### Key strengths

Poised to benefit from late-cycle demand growth.

Substantial brownfield and greenfield development pipeline.  
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**

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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**

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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.

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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 through 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 identifying 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.



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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<sup>(a) (b)</sup>**

**US\$ millions**

**Definition**

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

**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.

More information on page 209

**Total shareholder return (TSR)**

%

**Definition**

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

**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.

More information on page 99

**Net debt<sup>(a)</sup>**

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

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### 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<sup>(a)(c)</sup>

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<sup>(a)</sup>

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

### 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.

\*2008 intensity is shown both excluding former

Alcan, and including former Alcan indexed to 100.

### 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**



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<b>Commodity prices and global demand for the Group's products are expected to remain uncertain.</b>	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.
<b>Past strong demand for the Group's products in China could be affected by future developments in that country.</b>	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.
<b>Rio Tinto is exposed to fluctuations in exchange rates.</b>	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.
<b>Political, legal and commercial changes in the places where the Group operates.</b>	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.

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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

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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](http://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<sup>TM</sup>) process which applies a structured approach to the identification and evaluation of higher consequence/lower frequency hazards. The risk reduction resulting from the SQRA<sup>TM</sup> 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.



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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**

	<b>2011</b>	<b>2010</b>
	<b>US\$ million</b>	<b>US\$ million</b>
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<sup>(a)</sup>. 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

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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<sup>(b)</sup>. 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.

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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**

	<b>2011</b>	2010
	<b>US\$ million</b>	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<sub>2</sub>e 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)**

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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.

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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**

	<b>2011</b>	2010
	<b>US\$ million</b>	US\$ million
Revenue	3,220	3,035
Operating cash flow	333	598
Underlying earnings	252	328
Capital expenditure	639	300
Net operating assets	<b>3,605</b>	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 fostering 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.

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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<sub>2050</sub> 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.

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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



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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

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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 HIs melt plant at Kwinana, south of Perth, was being finalised at year's end. The HIs melt technology business continued to progress, with an agreement signed in August with the India-based Jindal Group to incorporate the HIs melt 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

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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:

<b>Year</b>	<b>Discovery</b>	<b>Commodity</b>	<b>Location</b>
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**



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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.

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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

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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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**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.

		Underlying earnings	( Restated <sup>a)</sup> net earnings US\$m
Changes from 2010 to 2011	US\$m	US\$m	US\$m
<b>2010</b>		<b>13,987</b>	<b>14,238</b>
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 <sup>(b)</sup>		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)
<b>2011</b>		<b>15,549</b>	<b>5,826</b>

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(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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	US\$m	Underlying earnings US\$m	Restated net earnings US\$m
Changes from 2009 to 2010			
<b>2009</b>		<b>6,298</b>	<b>4,872</b>
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
<b>2010</b>		<b>13,987</b>	<b>14,238</b>

(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



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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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### **Financial review continued**

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:

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	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**

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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.

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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	<b>52,539</b>	58,247
Equity attributable to non-controlling interests	<b>6,669</b>	6,265
Net debt (note 25)	<b>8,451</b>	4,071
Total capital	<b>67,659</b>	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.

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### 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\$m
	US cents	
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	Effect on underlying and net earnings of 10% change in full year average
	dmtu	US\$	+/- US\$m
Iron ore	Tonne	2,395	1,720
Aluminium <sup>(a)(b)</sup>	Pound	4.00	510
Copper <sup>(a)</sup>	Ounce	1,571	340
Gold	Pound	16	70
Molybdenum	Tonne		55
Thermal and coking coal			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.

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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**

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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	<b>2,905</b>
Other (capital commitments)	9,700	3,300	41		<b>13,041</b>
	10,223	4,066	605	1,052	<b>15,946</b>
Long-term debt and other financial obligations:					
Debt	1,264	3,922	2,289	13,492	<b>20,967</b>
Interest payments	1,093	1,543	1,236	4,794	<b>8,666</b>
Unconditional purchase obligations	2,578	3,828	3,211	12,303	<b>21,920</b>
Other	1,646	256	42	20	<b>1,964</b>
	6,581	9,549	6,778	30,609	<b>53,517</b>
<b>Total</b>	<b>16,804</b>	<b>13,615</b>	<b>7,383</b>	<b>31,661</b>	<b>69,463</b>

**Table of Contents****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**

	Restated (a)				
	2011	2010	2009	2008	2007
For the years ending 31 December					
Amounts in accordance with IFRS	US\$m	US\$m	US\$m	US\$m	US\$m
Consolidated revenue	<b>60,537</b>	55,171	40,262	52,861	29,700
Group operating profit <sup>(b)</sup>	<b>13,940</b>	19,608	7,506	10,194	8,571
Profit for the year from continuing operations	<b>6,775</b>	15,195	5,784	5,436	7,746
Loss after tax from discontinued operations	<b>(10)</b>	(97)	(449)	(827)	
Profit for the year	<b>6,765</b>	15,098	5,335	4,609	7,746
Basic earnings per share <sup>(c)</sup>					
Profit from continuing operations (US cents)	<b>303.5</b>	731.0	301.7	286.8	464.9
Loss after tax from discontinued operations (US cents)	<b>(0.5)</b>	(4.9)	(25.5)	(52.7)	
Profit for the year per share (US cents)	<b>303.0</b>	726.1	276.2	234.1	464.9
Diluted earnings per share <sup>(c)</sup>					
Profit from continuing operations (US cents)	<b>301.5</b>	726.7	300.7	285.5	462.9
Loss after tax from discontinued operations (US cents)	<b>(0.5)</b>	(4.9)	(25.4)	(52.4)	
Profit for the year per share (US cents)	<b>301.0</b>	721.8	275.3	233.1	462.9
<b>Dividends per share</b>	2011	2010	2009	2008	2007
Dividends declared during the year <sup>(c)</sup>					
US cents					
- interim	<b>54.0</b>	45.0		55.6	42.5
- final and special	<b>91.0</b>	63.0	45.0	55.6	68.7
UK pence					
- interim	<b>33.1</b>	28.2		29.6	20.9
- final and special	<b>57.3</b>	39.1	28.8	37.9	35.3
Australian cents					
- interim	<b>49.8</b>	49.3		63.3	49.6
- final and special	<b>84.2</b>	61.9	51.6	83.0	76.1
Dividends paid during the year (US cents) <sup>(c)</sup>					
- ordinary and special	<b>117.0</b>	90.0	55.6	124.3	94.8
Weighted average number of shares basic (millions) <sup>(e)</sup>	<b>1,923.1</b>	1,961.0	1,763.6	1,570.1	1,572.9
Weighted average number of shares diluted (millions) <sup>(e)</sup>	<b>1,935.5</b>	1,972.6	1,769.6	1,577.3	1,579.6
<b>Statement of financial position data</b>		(a)			(d)
		Restated			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	<b>119,545</b>	112,773	97,236	89,616	101,091
Share capital/premium	<b>10,024</b>	10,105	9,344	5,826	3,323

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Total equity/net assets	<b>59,208</b>	64,512	45,925	22,461	26,293
Equity attributable to Rio Tinto shareholders	<b>52,539</b>	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.

**Table of Contents****Acquisitions and divestments****Acquisitions**

Asset	Cost	Status
US\$m		
<b>Acquired in 2012</b>		
<b>Copper</b> Ivanhoe Mines	308	Purchase of additional shares increasing the Group's holding to 51 per cent
<b>Acquired in 2011</b>		
<b>Copper</b> 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
<b>Energy</b> 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
<b>Energy</b> 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
<b>Acquired in 2010</b>		
<b>Copper</b> 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
<b>Acquired in 2009</b>		
<b>Copper</b> 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	Status
US\$m		
<b>Divested in 2011</b>		
<b>Alcan Engineered Products</b>	Undisclosed	Sold 61 per cent to investment funds affiliated with Apollo Global Management, LLC (Apollo) and the Fonds Stratégique d'Investissement (FSI)
<b>Minerals</b> Talc	340 <sup>(a)</sup>	Sold to Imerys SA
<b>Energy</b> Colowyo	Undisclosed	Sold to Western Fuels-Colorado LLC
<b>Exploration</b> sundry assets	52	Sale of projects including Altai Nuurs coking coal deposit and Sari Gunay gold deposit
<b>Divested in 2010</b>		
<b>Energy</b> Cloud Peak	573	Secondary public offering
<b>Alcan Packaging</b> Beauty	Undisclosed	Sold to Sun European Partners LLP
<b>Alcan Packaging</b> Medical Flexibles	66	Sold to Amcor
<b>Alcan Packaging</b> Food Americas	1,200	Sold to Bemis Company Inc.
<b>Energy</b> Maules Creek (Rio Tinto: 75.7%)	427	Sold to Aston Resources
<b>Energy</b> Vickery (Rio Tinto: 75.7%)	28	Sold to Whitehaven Coal
<b>Alcan Packaging</b> global Pharmaceuticals, global Tobacco, Food Europe and Food Asia	1,948	Sold to Amcor
<b>Sundry asset sales</b>	57	Sale of assets including Ghana Bauxite Company, Brockville Specialty Alumina Plant and Rawhide Mine
<b>Divested in 2009</b>		
<b>Energy</b> Jacobs Ranch	764	Sold to Arch Coal, Inc
<b>Iron Ore</b> Corumbá mine	814	Sold to Vale
<b>Diamonds &amp; Minerals</b> Exploration projects in Argentina and Canada	850	Sold to Vale
<b>Aluminium</b> Ningxia smelter (Rio Tinto: 50%)	125	Sold to Qingtongxia Aluminium Group
<b>Exploration</b> sundry assets	68	Sold to multiple parties
<b>Energy</b> Cloud Peak	741	IPO and connected debt offering
<b>Alcan Engineered Products</b> composites	349	Sold to Schweiter Technologies



(a) Enterprise value

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**Table of Contents****Capital projects**

Project	Approved capital cost (100%) US\$	Status
<b>Iron ore</b> expansion of Iron Ore Company of Canada (Rio Tinto 58.7%) from 18 to 22mtpa	\$486m	Recommended in May 2010 and is currently being commissioned as planned.
<b>Iron ore</b> 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.
<b>Iron ore</b> 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.
<b>Iron ore</b> 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.
<b>Iron ore</b> 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.
<b>Iron ore</b> 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.
<b>Iron ore</b> 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).
<b>Iron ore</b> 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.
<b>Iron ore</b> 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.
<b>Iron ore</b> 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.
<b>Iron ore</b> 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.
<b>Iron ore</b> 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.
<b>Iron ore</b> 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.
<b>Iron ore</b> 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.
<b>Alumina</b> 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.
<b>Aluminium</b> 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.
<b>Aluminium</b> 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.
<b>Aluminium</b> 60kt per annum AP60 plant in Quebec, Canada	\$1.1bn	Approved in December 2010, first hot metal is expected in February 2013.
<b>Aluminium</b> 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.

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<p><b>Molybdenum</b> moly autoclave project in Utah, US Phase 1: 30mlbs, phase 2: 60mlbs</p>	<p>\$340m</p>	<p>Approval given to restart in April 2010. Phase 1 by Q4 2012, capacity by Q4 2013. Phase 2 complete in Q1 2015.</p>
<p><b>Nickel</b> construction of the Eagle nickel and copper mine in Michigan, US</p>	<p>\$469m</p>	<p>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.</p>
<p><b>Copper</b> 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.</p>	<p>\$5.9bn</p>	<p>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.</p>
<p><b>Copper</b> development of Organic Growth Project 1 and the Oxide Leach Area Project at Escondida (Rio Tinto share 30%)</p>	<p>\$1.4bn</p>	<p>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.</p>

(Rio Tinto share)

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**Capital projects continued**

Project	Approved capital cost (100%) US\$	Status
<b>Coking coal</b> 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.
<b>Thermal coal</b> 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.
<b>Thermal coal</b> 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.
<b>Coking coal</b> 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.
<b>Diamonds</b> 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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**Table of Contents****Metals and minerals production**

	Rio Tinto % share <sup>(a)</sup>	2011 Production Rio Tinto		2010 Production		2009 Production	
		Total	share	Total	share	Total	share
<b>ALUMINA ( 000 tonnes) (b)</b>							
<b>Rio Tinto Alcan</b>							
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
<b>Pacific Aluminium</b>							
Gove (Australia)	100.0	2,549	2,549	2,473	2,473	2,519	2,519
<b>Other Aluminium</b>							
Specialty plants (France/Germany) (e)	100.0	552	552	507	507	367	367
<b>Rio Tinto total</b>			<b>8,947</b>		<b>9,089</b>		<b>8,815</b>
<b>ALUMINIUM ( 000 tonnes) (b)</b>							
<b>Rio Tinto Alcan</b>							
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
<b>Pacific Aluminium</b>							
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
<b>Other Aluminium</b>							
Lynemouth (UK)	100.0	168	168	145	145	109	109
Sebree (US)	100.0	197	197	196	196	193	193
			365		341		303
<b>Rio Tinto total</b>			<b>3,824</b>		<b>3,790</b>		<b>3,808</b>
<b>BAUXITE ( 000 tonnes) (b)</b>							
<b>Rio Tinto Alcan</b>							
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
		<b>48,473</b>	<b>28,192</b>	<b>46,105</b>	<b>25,892</b>	<b>41,621</b>	<b>23,141</b>

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<b>Pacific Aluminium</b>							
Gove (Australia)	100.0	7,246	7,246	7,190	7,190	7,185	7,185
<b>Rio Tinto total</b>			<b>35,437</b>		33,082		30,325
<b>BORATES ( 000 tonnes) (I)</b>							
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
<b>Rio Tinto total</b>			<b>504</b>		500		424

See notes on page 47

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	Rio Tinto % share <sup>(a)</sup>	2011 Production		2010 Production		2009 Production	
		Total	Rio Tinto share	Total	Rio Tinto share	Total	Rio Tinto share
<b>COAL (hard coking) ( 000 tonnes)</b>							
<b>Rio Tinto Coal Australia</b>							
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
<b>Rio Tinto total hard coking coal</b>			<b>8,815</b>		<b>8,967</b>		<b>7,467</b>
<b>COAL (semi-soft coking) ( 000 tonnes)</b>							
<b>Rio Tinto Coal Australia</b>							
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
<b>Rio Tinto total semi-soft coking coal</b>			<b>2,859</b>		<b>3,075</b>		<b>2,885</b>
<b>COAL (thermal) ( 000 tonnes)</b>							
<b>Rio Tinto Coal Australia</b>							
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
<b>Total Australian thermal coal</b>			<b>17,791</b>		<b>18,430</b>		<b>20,217</b>
<b>US Coal</b>							
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
<b>Total US thermal coal</b>			<b>1,939</b>		<b>42,283</b>		<b>109,520</b>
<b>Rio Tinto total thermal coal</b>			<b>19,729</b>		<b>60,713</b>		<b>129,738</b>
<b>COPPER (mined) ( 000 tonnes)</b>							
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
<b>Rio Tinto total</b>			<b>519.7</b>		<b>678.1</b>		<b>804.7</b>
<b>COPPER (refined) ( 000 tonnes)</b>							
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
<b>Rio Tinto total</b>			<b>334.4</b>		<b>392.8</b>		<b>412.4</b>
<b>DIAMONDS ( 000 carats)</b>							
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
<b>Rio Tinto total</b>			<b>11,733</b>		<b>13,843</b>		<b>14,026</b>





**Table of Contents****Metals and minerals production continued**

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

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Rio Tinto % share <sup>(a)</sup>	2011 Production		2010 Production		2009 Production	
	Total	Rio Tinto share	Total	Rio Tinto share	Total	Rio Tinto share
<b>TITANIUM DIOXIDE FEEDSTOCK ( 000 tonnes)</b>						
Rio Tinto Iron & Titanium (Canada/South Africa) (x) (y)	100.0	1,443 1,443	1,392	1,392	1,147	1,147
<b>URANIUM ( 000 lbs U<sub>3</sub>O<sub>8</sub>)</b>						
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
<b>Rio Tinto total</b>		<b>7,058</b>		<b>11,377</b>		<b>14,140</b>

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<sub>2</sub>O<sub>3</sub>.
  - (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).

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

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		Total ore reserves at end 2011		Interest %	Rio Tinto share Recoverable mineral millions of tonnes		
Type of mine (b)	Tonnage millions of tonnes	Grade % Al <sub>2</sub> O <sub>3</sub>					
<b>BAUXITE (c)</b>							
<b>Reserves at operating mines</b>							
<b>Rio Tinto Alcan</b>							
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		
<b>Sub-total</b>					1,615		
<b>Pacific Aluminium</b>							
Gove (Australia) (f)	O/P	170	49.4	100.0	170		
<b>Rio Tinto total</b>					1,784		
<b>BORATES (g)</b>							
<b>Reserves at operating mine</b>							
Rio Tinto Minerals Boron (US) mine stockpiles (h)	O/P	21		100.0	21		
		2.5		100.0	3		
<b>Rio Tinto total</b>					24		
<b>COAL (i)</b>							
<b>Reserves at operating mines</b>							
<b>Rio Tinto Coal Australia</b>							
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
<b>Rio Tinto total reserves at operating mines</b>							603
<b>Undeveloped reserves (p)</b>							
<b>Rio Tinto Coal Australia</b>							
Mount Pleasant (l)	O/C	SC	326	26.92	0.48	80.0	261
<b>Rio Tinto Coal Mozambique</b>							
Benga (q)	O/C	SC + MC	137	26.40	0.92	65.0	89
<b>Rio Tinto total undeveloped reserves</b>							350





**Table of Contents****Ore Reserves (under Industry Guide 7) continued**

	Type of mine (b)	Total ore reserves at end 2011		Average mill recovery %	Interest %	Rio Tinto share Recoverable
		Tonnage	Grade			metal
		millions of tonnes	%Cu			millions of tonnes
<b>COPPER</b>						
<b>Reserves at operating mines</b>						
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
<b>Rio Tinto total reserves at operating mines</b>						<b>17.423</b>
<b>Undeveloped reserves (p)</b>						
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
<b>Rio Tinto total undeveloped reserves</b>						<b>3.798</b>
<b>DIAMONDS (c)</b>						
<b>Reserves at operating mine</b>						
Diavik (Canada)	O/P + U/G	19	3.1		60.0	35.3
<b>Recoverable diamonds millions of carats</b>						
<b>Recoverable metal millions of ounces</b>						
<b>GOLD</b>						
<b>Reserves at operating mines</b>						
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
<b>Rio Tinto total reserves at operating mines</b>						<b>16.578</b>
<b>Undeveloped reserves (p)</b>						
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

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

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	Type of mine (b)	Total ore reserves at end 2011		Average mill recovery %	Interest %	Rio Tinto share Marketable product millions of tonnes
		Tonnage	Grade			
		millions of tonnes	% Fe			
<b>IRON ORE (c)</b>						
<b>Reserves at operating mines</b>						
Hammersley 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
Hammersley - Channar						
Brockman ore (ee)	O/P	53	63.0		60.0	32
Hammersley - 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
<b>Rio Tinto total reserves at operating mines</b>						2,633
<b>Undeveloped reserves (p)</b>						
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
<b>Rio Tinto total undeveloped reserves</b>						142
						<b>Recoverable</b>
						<b>metal</b>
						<b>millions</b>
						<b>of tonnes</b>
<b>MOLYBDENUM</b>						
<b>Reserves at operating mine</b>						
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
<b>Rio Tinto total</b>						0.257
						<b>Recoverable</b>
						<b>metal</b>
						<b>millions</b>
						<b>of tonnes</b>
<b>NICKEL</b>						
<b>Undeveloped reserves (n)</b>						
Eagle (US)						
	U/G	4.3	3.16	84	100.0	0.114



**Table of Contents****Ore Reserves (under Industry Guide 7) continued**

	Type of mine (b)	Total ore reserves at end 2011		Average mill recovery %	Interest %	Rio Tinto share Recoverable metal millions of ounces
		Tonnage	Grade			
		millions of tonnes	grammes per tonne			
<b>SILVER</b>						
<b>Reserves at operating mines</b>						
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
<b>Rio Tinto total</b>						117.450
		millions				Marketable product millions
		of tonnes				of tonnes
<b>TITANIUM DIOXIDE FEEDSTOCK (g)</b>						
<b>Reserves at operating mine</b>						
RTFT (Canada)	O/P	52			100.0	52
		millions				Recoverable metal millions
		of tonnes				of tonnes
<b>URANIUM</b>						
<b>Reserves at operating mines</b>						
Energy Resources of Australia						
Ranger #3 mine (II)	O/P	3.4	0.194	86	68.4	0.0038
Ranger #3 stockpiles (h) (II)		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
<b>Rio Tinto total</b>						0.0413

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	Proven ore reserves at end 2011				Probable ore reserves at end 2011		Drill hole spacing (mm)
	Type of mine (b)	Tonnage	Grade	Drill hole spacing (mm)	Tonnage millions	Grade	
		millions of tonnes	% Al <sub>2</sub> O <sub>3</sub>		of tonnes	% Al <sub>2</sub> O <sub>3</sub>	
<b>BAUXITE (c)</b>							
<b>Reserves at operating mines</b>							
<b>Rio Tinto Alcan</b>							
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
<b>Pacific Aluminium</b>							
Gove (Australia) (f)	O/P	125	49.4	50m x 50-100m	45 millions	49.2	200m x 200m
<b>BORATES (g)</b>							
<b>Reserves at operating mine</b>							
Rio Tinto Minerals mine stockpiles (h)	Boron (US)	O/P	13	130m x 130m	8.3		130-488m x 130-488m
					2.5		
<b>COAL (i)</b>							
<b>Reserves at operating mines</b>							
<b>Rio Tinto Coal Australia</b>							
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
<b>Undeveloped reserves (p)</b>							
<b>Rio Tinto Coal Australia</b>							
Mount Pleasant (l)	O/C	399	82			326	350-1000m x 350-1000m
<b>Rio Tinto Coal Mozambique</b>							
Benga (q)	O/C	311	44	106	250m x 250m	31	500m x 500m



**Table of Contents****Ore Reserves (under Industry Guide 7) continued**

	Type of mine (b)	Proven ore reserves at end 2011			Probable ore reserves at end 2011		
		Tonnage millions of tonnes	Grade % Cu	Drill hole	Tonnage millions of tonnes	Grade % Cu	Drill hole
				spacing (mm)			spacing (mm)
<b>COPPER</b>							
<b>Reserves at operating mines</b>							
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
<b>Undeveloped reserves (p)</b>							
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
<b>DIAMONDS (c)</b>							
<b>Reserves at operating mine</b>							
Diavik (Canada)	O/P + U/G	5.4	3.0	24-30m x 24-30m	14	3.2	30-54m x 30-54m
<b>GOLD</b>							
<b>Reserves at operating mines</b>							
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				
<b>Undeveloped reserves (p)</b>							
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 of mine (b)	Proven ore reserves at end 2011			Probable ore reserves at end 2011			
		Tonnage millions of tonnes	Grade %Fe	Drill hole		Tonnage millions of tonnes	Grade %Fe	Drill hole spacing (mm)
				spacing (mm)	spacing (mm)			
<b>IRON ORE (c)</b>								
<b>Reserves at operating mines</b>								
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		
<b>Undeveloped reserves (p)</b>								
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	

**Table of Contents****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	Tonnage millions of tonnes	Grade %Mo	Drill hole
				spacing			spacing
				(mm)			(mm)
<b>MOLYBDENUM</b>							
<b>Reserves at operating mine</b>							
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			millions		
<b>NICKEL</b>							
<b>Undeveloped reserves (p)</b>							
Eagle (US)	U/G				4.3	3.16	1-25m x 1-25m
		of tonnes	%Ni		of tonnes	%Ni	
		millions			millions		
<b>SILVER</b>							
<b>Reserves at operating mines</b>							
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	4.08	39-114m x 39-114m
		millions of tonnes	grammes per tonne		of tonnes	grammes per tonne	
<b>TITANIUM DIOXIDE FEEDSTOCK (g)</b>							
<b>Reserves at operating mine</b>							
RTFT (Canada)	O/P				52.0		60-100m x 60-100m
		millions of tonnes			of tonnes		
<b>URANIUM</b>							
<b>Reserves at operating mines</b>							
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

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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<sub>2</sub>O<sub>3</sub>.
- (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 Paraborndoo (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
<b>BAUXITE</b> <b>Rio Tinto Alcan</b> <b>CBG Sangaredi (23%)</b>	Kamsar, Guinea	Road, air and port	Lease expires in 2038
<b>MRN Porto Trombetas(12%)</b>	Porto Trombetas, Para, Brazil	Air or port	Mineral rights granted for undetermined period
<b>Weipa/Ely</b>	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
<b>Pacific Aluminium</b> <b>Gove</b>	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
<b>COPPER</b> <b>Escondida (30%)</b>	Atacama Desert, Chile	Pipeline and road to deep sea port at Coloso; road and rail	Rights conferred by Government under Chilean Mining Code
<b>Grasberg joint venture</b>  (40% of production)	Papua, Indonesia	Pipeline, road and port	Indonesian Government Contracts of Work expire in 2021 with option of two ten-year extensions
<b>Kennecott Utah Copper</b>  <b>Bingham Canyon</b>	Near Salt Lake City, Utah, US	Pipeline, road and rail	Owned
<b>Northparkes (80%)</b>	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
<b>Palabora (57.7%)</b>	Phalaborwa, Limpopo Province, South Africa	Rail and road	Lease from South African Government until deposits depleted. Base metal claims owned by Palabora

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### DIAMONDS & MINERALS

#### Diamonds

<b>Argyle Diamonds</b>	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
<b>Diavik (60%)</b>	Northwest Territories, Canada	Air, ice road in winter	Mining leases from Canadian Federal Government expiring in 2017 and 2018
<b>Murowa (77.8%)</b>	Zvishavane, Zimbabwe	Road and air	Claims and mining leases
<b>Industrial Minerals</b>			
<b>Rio Tinto Minerals Boron</b>	California, US	Road and rail	Owned
<b>Rio Tinto Fer et Titane</b>	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
Lac Tio <b>QIT Madagascar Minerals (80%)</b>	Fort-Dauphin, Madagascar	Road and port	Mining lease
<b>Richards Bay Minerals (37%)</b>	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

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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

**Table of Contents****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
<b>ENERGY</b> <b>Energy Resources of Australia</b>	Northern Territory, Australia	Road	Mining tenure granted by Federal Government
(68.4%) Ranger			
<b>Rio Tinto Coal Australia</b> 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
<b>Rio Tinto Coal Mozambique</b> Benga (65%)	Tete, Mozambique	Road and rail	Mining concession granted by state
<b>Rössing Uranium</b> (68.6%)	Namib Desert, Namibia	Rail, road and port	National government grant
<b>IRON ORE</b> <b>Hammersley Iron</b>	Hammersley Ranges, Western Australia	Railway and port (owned by Hammersley Iron and operated by Pilbara Iron)	Agreements for life of mine with Government of Western Australia
Brockman 2 Brockman 4 Marandoo Mount Tom Price Nammuldi Paraburdoo Western Turner Syncline Yandicoogina Channar (60%) Eastern Range (54%)			
<b>Hope Downs 1</b> (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
<b>Iron Ore Company of Canada</b> (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
<b>Robe River Iron Associates</b> (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



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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

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

**Table of Contents**

**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)
<b>ALUMINIUM</b>				
<b>Rio Tinto Alcan</b>				
<b>Alma</b>	Alma, Quebec, Canada	100% freehold	Aluminium smelter producing aluminium rod, t-foundry, molten metal, high purity, remelt, busbars	438,000 tonnes
<b>Alouette (40%)</b>	Sept-Îles, Quebec, Canada	100% freehold	Aluminium smelter producing aluminium high purity, remelt	per year aluminium 590,000 tonnes
<b>Alucam (46.7%)</b>	Edéa, Cameroon	100% freehold	Aluminium smelter producing aluminium slab, remelt	per year aluminium 100,000 tonnes
<b>Arvida</b>	Saguenay, Quebec, Canada	100% freehold	Aluminium smelter producing aluminium billet, molten metal	per year aluminium 176,000 tonnes
<b>Bécancour (25.1%)</b>	Bécancour, Quebec, Canada	100% freehold	Aluminium smelter producing aluminium slab, billet, t-foundry, remelt, molten metal	per year aluminium 430,000 tonnes
<b>Dunkerque</b>	Dunkerque, France	100% freehold	Aluminium smelter producing aluminium slab, small form foundry, remelt	per year aluminium 262,000 tonnes
<b>Grande-Baie</b>	Saguenay, Quebec, Canada	100% freehold	Aluminium smelter producing aluminium slab, molten metal, high purity, remelt	per year aluminium 224,000 tonnes
<b>ISAL</b>	Reykjavik, Iceland	100% freehold	Aluminium smelter producing aluminium slab, remelt	per year aluminium 189,000 tonnes
<b>Jonquière (Vaudreuil)</b>	Jonquière, Quebec, Canada	100% freehold	Refinery producing specialty aluminas and smelter grade aluminas	per year aluminium 1,500,000 tonnes
<b>Kitimat (a)</b>	Kitimat, British Columbia, Canada	100% freehold	Aluminium smelter producing aluminium billet, slab, remelt	per year alumina 184,000 tonnes
<b>Laterrière</b>	Saguenay, Quebec, Canada	100% freehold	Aluminium smelter producing aluminium slab, remelt, molten metal	per year aluminium 238,000 tonnes
<b>Lochaber</b>	Fort William, Scotland, UK	100% freehold	Aluminium smelter producing aluminium slab, remelt	per year aluminium 45,000 tonnes
<b>Queensland Alumina</b>	Gladstone, Queensland, Australia	73.3% freehold; 26.7% leasehold (of which more than 80% expires in	Refinery producing alumina	per year aluminium 3,950,000 tonnes

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(80%) <b>Saint-Jean-de-Maurienne</b>	Saint-Jean-de-Maurienne, France	2026 and after) 100% freehold	Aluminium smelter producing aluminium rod, remelt	per year alumina 141,000 tonnes
<b>São Luis (Alumar) (10%)</b>	São Luis, Maranhão, Brazil	100% freehold	Refinery producing alumina	per year aluminium 3,500,000 tonnes
<b>Shawinigan</b>	Shawinigan, Quebec, Canada	100% freehold	Aluminium smelter producing aluminium billet, remelt	per year alumina 102,000 tonnes
<b>Sohar (20%)</b>	Sohar, Oman	100% leasehold (expiring 2039)	Aluminium smelter producing aluminium, high purity, remelt	per year aluminium 372,000 tonnes
<b>SØRAL (50%)</b>	Husnes, Norway	100% freehold	Aluminium smelter producing aluminium billet, remelt	per year aluminium 178,000 tonnes
<b>Yarwun</b>	Gladstone, Queensland, Australia	97% freehold. 3% leasehold (expiring 2101 and after)	Refinery producing alumina	per year aluminium 1,400,000 tonnes
<b>Pacific Aluminium</b>				
<b>Bell Bay</b>	Bell Bay, Northern Tasmania, Australia	100% freehold	Aluminium smelter producing aluminium slab, molten metal, small form and t-foundry, remelt	per year alumina 181,000 tonnes
<b>Boyne Smelters (59.4%)</b>	Boyne Island, Queensland, Australia	100% freehold	Aluminium smelter producing aluminium billet, EC grade, small form and t-foundry, remelt	per year aluminium 559,000 tonnes
<b>Gove</b>	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	per year aluminium 2,570,000 tonnes
<b>Tiwai Point (New Zealand Aluminium Smelters)</b>	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	per year alumina 365,000 tonnes
(79.4%) <b>Tomago (51.6%)</b>	Tomago, New South Wales, Australia	100% freehold	Aluminium smelter producing aluminium billet, slab, remelt	per year aluminium 540,000 tonnes

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Smelter/refinery	Location	Title/lease	Plant type/product	Capacity as of 31 December 2011 (based on 100% ownership)
<b>Other aluminium</b>				
<b>Lynemouth</b>	Lynemouth, Northumberland, UK	100% freehold	Aluminium smelter producing aluminium slab, remelt	182,000 tonnes
<b>Sebree</b>	Robards, Kentucky, US	100% freehold	Aluminium smelter producing aluminium billet, t-foundry, remelt	per year aluminium 199,000 tonnes per year aluminium
<b>COPPER</b>				
<b>Kennecott Utah Copper</b>	Magna, Salt Lake City, Utah, US	100% freehold	Flash smelting furnace/Flash convertor furnace copper refinery	335,000 tonnes per year refined copper
<b>Palabora (57.7%)</b>	Phalaborwa,  South Africa	100% freehold	Reverberatory Pierce Smith copper refinery	90,000 tonnes per year refined copper
<b>DIAMONDS &amp; MINERALS</b>				
<b>Boron</b>	California, US	100% freehold	Borates refinery	565,000 tonnes
<b>Rio Tinto Fer et Titane Sorel Plant</b>	Sorel-Tracy, Quebec, Canada	100% freehold	Ilmenite smelter	per year boric oxide 1,300,000 tonnes
				per year titanium dioxide slag,  900,000 tonnes
<b>Richards Bay Minerals (37%)</b>	Richards Bay,  South Africa	100% freehold	Ilmenite smelter	per year iron 1,030,000 tonnes per year titanium dioxide slag, 550,000 tonnes per year iron
<b>IRON ORE</b>				
<b>Hismelt®</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
<b>IOC Pellet Plant (59%)</b>	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)
<b>ALUMINIUM</b>				
<b>Rio Tinto Alcan</b>				
<b>Highlands power stations</b>	Lochaber, Kinlochleven, UK	100% freehold	Hydroelectric power	109MW
<b>Kemano power station</b>	Kemano, British Columbia, Canada	100% freehold	Hydroelectric power	896MW
<b>Quebec power stations</b>	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
<b>Vigelands power station</b>	Nr Kristiansand, Norway	100% freehold	Hydroelectric power	26MW
<b>Yarwun alumina refinery</b>	Gladstone, Queensland, Australia	100% freehold	Gas turbine and heat recovery steam generator	160MW
<b>co-generation plant</b>				
<b>Weipa power stations</b>	Lorim Point, Andoom	100% leasehold	On-site generation (diesel)	36MW
<b>Pacific Aluminium</b>				
<b>Gladstone power station</b>	Gladstone, Queensland, Australia	100% freehold	Thermal power station	1,680MW
(42%)				
<b>Gove power station</b>	Nhulunbuy	100% leasehold	Heavy oil fired thermal power station	180MW
<b>Other aluminium</b>				
<b>Lynemouth power station</b>	Lynemouth, UK	100% freehold	Thermal power station	420MW
<b>COPPER</b>				
<b>Phalaborwa power station</b>	Phalaborwa, Limpopo Province, South Africa	100% freehold	Steam turbine running off waste heat boilers at the copper smelter	9.27MW
(57.7%)				
<b>Puncakjaya Power (22.12%)</b>	Grasberg, Papua, Indonesia	Lease	Diesel power plant	193MW
<b>Kennecott Utah Copper</b>	Salt Lake City, Utah, US	100% freehold	Thermal power station	175MW
				31.8MW
<b>Power Stations</b>			Steam turbine running off waste heat boilers at	
			the copper smelter	
			Combined heat and power plant supplying steam	6.2MW
			to the copper refinery	





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Power plant	Location	Title/lease	Plant type/product	Capacity as of 31 December 2011  (based on 100% ownership)
<b>DIAMONDS &amp; MINERALS</b> <b>Boron co-generation plant</b>	Boron, California, US	100% freehold	Co-generation uses natural gas to generate steam and electricity, used to run Boron's refining operations	48MW
<b>ENERGY</b> <b>Energy Resources of</b> <b>Australia (Rio Tinto: 68.4%)</b> <b>IRON ORE</b> <b>Cape Lambert power</b> <b>station (Rio Tinto: 53%)</b> <b>IOC power station</b> <b>Paraburdoo power station</b>  <b>Yurralyi Maya power station</b> (Rio Tinto: 58%)	Ranger mine, Jabiru, Northern Territory, Australia	Lease	Five diesel generator sets rated at 5.1MW; 1 diesel generator rated at 1.9MW	27.4MW
	Cape Lambert, Western Australia, Australia	Lease	Gas fired boilers with steam turbines	105MW
	Sept Îles, Quebec, Canada	100% freehold	Hydroelectric power	22MW
	Paraburdoo, Western Australia, Australia	Lease	LM6000 PC gas fired turbines	153MW
	Dampier, Western Australia, Australia	Lease	LM6000 PD gas fired turbines	180MW

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**Governance**

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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.

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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.

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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

Prioritise value-adding growth, and opportunistic merger and acquisition activity;

Support the vision of global sector leadership through regular review and oversight of Group strategy;

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

Lead succession planning for the board and senior executives;

### What we have achieved

Organic growth programme continues to ramp up whilst acquisitions completed have created further growth options;

Major projects progressing well with phased approach to allocating cash for investment through the cycle;

Disciplined capital approval process resulting in US\$16 billion capital expenditure approved for 2012;

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;



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Strive for excellence in the Group's governance processes and policies, including risk governance; and

Deliver year-on-year improvement in safety performance.

Secured an enhanced mix of experience on the Board through the appointments of Chris Lynch and John Varley in 2011;

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 <sup>(c)</sup>	Board, short notice <sup>(c)</sup>	Audit committee <sup>(c)</sup>	Remuneration committee <sup>(c)</sup>	Sustainability committee <sup>(c)</sup>	Nominations committee <sup>(c)</sup>	Chairman committee <sup>(c)</sup>
Tom Albanese	8/8	2/2					17/19
Robert Brown	7/8	2/2			5/5	4/4	
Vivienne Cox <sup>(d)</sup>	8/8	1/2	5/5		5/5	4/4	
Jan du Plessis	8/8	2/2				4/4	19/19
Sir Rod Eddington <sup>(a)</sup>	3/3	1/1			3/3	2/2	
Guy Elliott	8/8	2/2					15/19
Yves Fortier <sup>(a)</sup>	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 <sup>(b)</sup>	3/3	1/1				1/1	
Paul Tellier	8/8	1/2	6/6	3/3		4/4	
John Varley <sup>(b)</sup>	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.

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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

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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

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### 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

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### 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:

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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

Women to represent 20 per cent of our senior management by 2015.

Women to represent 40 per cent of our 2015 graduate intake.

15 per cent of our 2015 graduate intake to be nationals from regions where we are developing new businesses.

Two new objectives relating to diversity of the board were added during 2011.

#### Progress

Women represented 14 per cent of our senior management in 2011.

Women represented 35 per cent of our 2011 graduate intake.

21 per cent of our 2011 graduate intake were nationals from regions where we are developing new businesses.

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.

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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

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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.

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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

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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.

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**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.

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**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 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.

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**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.

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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.

Details of certain agreements triggered on a change of control can be found on page 120 under the heading 'Dual listed companies structure'.

Details of certain restrictions on holding shares in Rio Tinto are described on page 120 under the heading 'Limitations on ownership of shares and merger obligations'. There are no other restrictions on the transfer of ordinary shares in Rio Tinto plc save for:

restrictions that may from time to time be imposed by laws and regulations (for example, those relating to market abuse and insider dealing);

restrictions that may be imposed pursuant to the Listing Rules of the UK Financial Services Authority, whereby certain employees of the Group require approval to deal in shares;

restrictions on the transfer of shares that may be imposed under Rio Tinto plc's Articles of Association or under Part 22 of the UK Companies Act 2006, in either case following a failure to supply information required to be disclosed following service of a request under section 793 of the UK Companies Act 2006; and

restrictions on the transfer of shares held under certain employee share plans while they remain subject to the plan. At the annual general meetings held in 2011, shareholders authorised:



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the purchase by Rio Tinto Limited and its subsidiaries, and the on-market repurchase by Rio Tinto plc of up to 152,273,000 Rio Tinto plc shares (representing approximately ten per cent of Rio Tinto plc's issued share capital at that time);

the off-market purchase by Rio Tinto plc of up to 152,273,000 Rio Tinto plc shares acquired by Rio Tinto Limited or its subsidiaries under the above authority; and

the off-market or on-market buy-back by Rio Tinto Limited of up to 43.5 million Rio Tinto Limited shares (representing approximately ten per cent of Rio Tinto Limited's issued share capital at the time).

### Purchases

	(a) Total number of shares purchased	(b) Average price paid per share US\$	(c) Total number of shares purchased as part of publicly announced plans or programmes	Rio Tinto Limited (a) Total number of shares purchased	(b) Average price paid per share US\$	(c) Total number of shares purchased as part of publicly announced plans or programmes	Rio Tinto Group Approximate dollar value of shares that may yet be purchased under the plans or programmes US\$
2011							
1 Jan to 31 Jan				225,999	85.27		
1 Feb to 28 Feb	3,585,000	70.97	3,585,000	333,102	87.83		4,745,556,933
1 Mar to 31 Mar	9,883,351	67.04	9,649,000	458,883	84.58		4,099,565,700
1 Apr to 30 Apr	4,670,550	71.94	4,670,550	89,676	91.72		3,763,547,786
1 May to 31 May	8,545,000	67.50	8,475,000	28,449	84.40		3,191,314,402
1 Jun to 30 Jun	9,203,000	67.75	9,203,000	30,901	84.88		2,567,837,422
1 Jul to 31 Jul	7,236,000	71.55	7,236,000	36,790	89.12		2,050,091,685
1 Aug to 31 Aug	11,957,355	59.21	11,757,355	6,700	72.46		3,353,533,567
1 Sep to 30 Sep	11,770,637	53.99	11,500,000	379,630	73.66		2,734,188,547
1 Oct to 31 Oct	7,142,590	48.82	7,142,590	10,342	70.13		2,385,501,146
1 Nov to 30 Nov	11,465,000	51.55	10,015,000	32,361	70.59		1,864,780,885
1 Dec to 31 Dec	7,405,000	49.90	7,405,000	136,099	66.12		1,495,257,382
<b>Total</b>	92,863,483 <sup>(d)</sup>	61.12	90,638,495 <sup>(e)</sup>	1,768,932	81.59		
2012							
1 Jan to 31 Jan	10,318,021	56.29	10,318,021	437,142	67.91		914,440,144
1 Feb to 20 Feb	5,756,889	59.89	5,756,889	199,344	75.01		569,632,355

(a) Rio Tinto plc ordinary shares of 10p each; Rio Tinto Limited shares.

(b) The average prices paid have been translated into US dollars at the exchange rate on the day of settlement.

(c) Shares purchased by the Companies' registrars in connection with the dividend reinvestment plans and employee share plans are not deemed to form part of any publicly announced plan or programme.

(d) This figure represents 6.39 per cent of Rio Tinto plc issued share capital at 31 December 2011.

(e) This figure represents 6.24 per cent of Rio Tinto plc issued share capital at 31 December 2011.



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During 2011, in order to satisfy obligations under employee share plans, Rio Tinto plc issued 875,057 shares from treasury, and Rio Tinto plc's registrar purchased on market 1,720,000 shares and delivered 848,410 ordinary shares to plan participants. Rio Tinto Limited's registrar purchased on market and delivered 1,075,319 shares to plan participants.

Also during the year, the Companies' registrar purchased on market 504,988 Rio Tinto plc shares and 693,613 Rio Tinto Limited shares to satisfy obligations to shareholders under the dividend reinvestment plans.

On 4 August 2011, Rio Tinto announced an increase in the share buy-back programme by US\$2 billion to US\$7 billion, subject to market conditions, to be completed by the end of the first quarter of 2012. In the period to 20 February 2012, 106,713,405 Rio Tinto plc shares were repurchased for a total aggregate consideration of US\$6.43 billion.

For the period 1 January 2012 to 20 February 2012, Rio Tinto plc issued 201,130 shares from treasury in connection with employee share plans and Rio Tinto Limited's registrar purchased on market and delivered 636,486 shares to plan participants.

Awards over 2,407,309 Rio Tinto plc shares and 1,641,317 Rio Tinto Limited shares were granted under employee share plans during 2011. As at 20 February 2012, awards were outstanding over 8,385,698 Rio Tinto plc shares and 5,420,484 Rio Tinto Limited shares. Upon vesting, awards may be satisfied by the issue of new shares, the purchase of shares on market, or, in the case of Rio Tinto plc, by issuing treasury shares.

### **Dividends**

Details of dividends paid and the dividend policy can be found on page 123.

### **Directors**

The names of the directors who served during the year, together with their biographical details and other information are shown on pages 77 to 79. Rod Eddington and Yves Fortier retired at the conclusion of the Rio Tinto Limited annual general meeting held on 5 May 2011. Chris Lynch and John Varley were appointed as directors with effect from 1 September 2011.

Chris Lynch and John Varley will stand for election, and with the exception of Andrew Gould who will be retiring at the conclusion of the 2012 annual general meetings, all other directors will stand for re-election at the 2012 annual general meetings.

A table of directors' attendance at board and committee meetings during 2011 is on page 69.

### **Secretaries**

Details of the company secretary of each of Rio Tinto plc and Rio Tinto Limited together with their qualifications and experience are set out on page 79.

### **Corporate governance**

A full report on corporate governance can be found on pages 66 to 76 and forms part of this Directors' report.

### **Indemnities and insurance**

The Articles of Association and Constitution of the Companies provide for them to indemnify, to the extent permitted by law, officers of the Companies, including officers of wholly owned subsidiaries, against liabilities arising from the conduct of the Group's business. The directors and the company secretaries of the Companies, and certain employees serving as directors of subsidiaries at the Group's request have been indemnified in accordance with these provisions. No amount has been paid under any of these indemnities during the year.

The Group has purchased directors' and officers' insurance during the year. In broad terms, the insurance cover indemnifies individual directors' and officers' personal legal liability and legal defence costs for claims arising out of actions taken in connection with Group business. It is a condition of the insurance policy that detailed terms and premiums paid cannot be disclosed.

### **Employment policies and communication**

Information about the Group's employment policies and our employees is available on page 16.

### **Donations**

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No donations were made for political purposes in the EU, Australia or elsewhere, as defined by the UK Companies Act 2006. During 2011, the Group spent US\$294 million on community assistance programmes and payments into benefit receiving trusts set up in directly negotiated community impact benefit agreements. Donations in the UK during 2011 amounted to £0.4 million.

### Governmental regulations

Rio Tinto is subject to extensive governmental regulations affecting all aspects of its operations and consistently seeks to apply best practice in all of its activities. Due to Rio Tinto's product and geographical spread, there is unlikely to be any single governmental regulation in effect that could have a material effect on the Group's business.

Rio Tinto's operations in Australia and New Zealand are subject to state and federal regulations of general application governing mining and processing, land tenure and use, environmental requirements, including site-specific environmental licences, permits and statutory authorisations, workplace health and safety, trade and export, corporations, competition, access to infrastructure, foreign investment and taxation. Some operations are conducted under specific agreements with the respective governments and associated acts of parliament.

In addition, Rio Tinto's uranium operations in the Northern Territory, Australia and Namibia are subject to specific regulation in relation to mining and the export of uranium.

In November 2011, the Australian lower house passed the Minerals Resource Rent Tax (MRRT) which would levy a 30 per cent tax on the "super profits" from the mining of iron ore and coal in Australia. Whilst proposed to be effective in July 2012, the MRRT has not yet received full legislative approval. The deferred tax consequences to the Group will have no current cash flow implications but may be significant in the future. Given the complexity of the MRRT, however, quantification of these implications remains in progress.

US and Canada-based operations are subject to local, state, provincial and national regulations governing mining and processing, access to infrastructure, water use, land tenure and use, environmental aspects of operations, product and workplace health and safety, trade and export administration, corporations, competition, securities and taxation. In relation to hydroelectric power generation in Canada, water rights, as well as power sales and purchases, are regulated by the Quebec and British Columbia provincial agencies.

Rio Tinto's operations in Europe are subject to national and European rules and regulations governing general and specific aspects of current and planned operations, notably land tenure and use, workplace health and safety, environmental issues, including applicable regulations in case of sale or closure of industrial sites and permit requirements concerning activities listed for environmental protection purposes, chemical risks management (REACH), competition requirements including compliance with antitrust rules, trade and export, corporations, intellectual property, labour requirements (including personal data protection), investment and taxation.

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**Directors report continued**

Rio Tinto's South African-based operations are subject to black economic empowerment legislation which includes the requirement to transfer (for fair value) 26 per cent of the Group's South African mining assets to historically disadvantaged South Africans by 2014.

**Environmental regulation**

Rio Tinto measures its performance against environmental regulation by rating incidents on a low, moderate, high, or critical scale of likelihood and consequence of impacting the environment. High and critical ratings are reported to the executive management team and the Sustainability committee including progress with remedial actions. Prosecutions and other breaches are also used to gauge Rio Tinto's performance.

In 2011, there were 11 environmental incidents rated high consequence at Rio Tinto managed operations (2010: 18).

These incidents were of a nature to impact the environment or potentially concern local communities. Of these, seven resulted from water discharge, three were spills and one related to air emissions. The incidents included:

Discharge standards for water being exceeded on a number of occasions at Alucam, Cameroon.

Leakage of Jet A1 fuel from a fuel bladder at an exploration camp in Africa.

Overflow of water from a dam during an intense storm resulting in erosion below the dam at a project site in Guinea.

Leakage of sulphuric acid from a rail tanker in the rail yard at Palabora, South Africa.

Recording of levels of sulphur dioxide in air emissions above permitted amounts on a number of occasions at Palabora, South Africa.

An extended period of release into the local river of saline water which exceeded permitted levels at Hunter Valley Operations, Australia.

Overflow from a retention pond into local waterways during a high rainfall event at Kitimat, Canada.

During 2011, six operations incurred fines amounting to US\$236,416 (2010: US\$540,328). An amount of US\$156,300 related to a petrol spill that occurred in June 2010 at Gove, Australia. An amount of US\$67,952 related to permit breaches that occurred in 2008 and 2009 at a plant in Holland.

Australian corporations that exceed specified thresholds are required under the Australian National Greenhouse and Energy Reporting Act 2007 to register and report on greenhouse gas emissions and energy use and production. Three Rio Tinto entities, Rio Tinto Limited, Alcan Gove Pty Limited and Pechiney Consolidated Australia Limited, are separately covered by the Act. All three companies submitted their reports by the required 31 October 2011 deadline.

The same three Rio Tinto entities have obligations under the Australian Energy Efficiency Opportunities Act 2006 (EEO). All three completed the required public and government reporting in 2011, completing the first five year assessment cycle. Preparatory work was commenced for the second assessment cycle.

Further information on the Group's environmental performance is included in the sustainable development section of this Annual report, on pages 14 to 19 and on the website.

**Legal proceedings**

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Neither Rio Tinto plc nor Rio Tinto Limited nor any of their subsidiaries is a defendant in any proceedings which the directors believe will have a material effect on either Company's financial position or profitability. Contingencies are disclosed in note 33 to the financial statements.

### Exploration, research and development

The Group carries out exploration and research and development in support of its activities as described more fully under Exploration, and Technology & Innovation on pages 30 to 31. Amounts charged for the year net of any gains on disposal generated a net loss for exploration and evaluation of US\$1,348 million (2010: US\$72 million). Research and development costs were US\$148 million (2010: US\$187 million).

### Auditors

PricewaterhouseCoopers LLP and PricewaterhouseCoopers are the auditors of Rio Tinto plc and Rio Tinto Limited respectively. PricewaterhouseCoopers LLP have indicated their willingness to continue in office as auditors of Rio Tinto plc and a resolution to reappoint them as auditors of Rio Tinto plc will be proposed at the 2012 annual general meetings. The resolution will also seek authority for the Audit committee to determine their remuneration. PricewaterhouseCoopers will continue in office as auditors of Rio Tinto Limited.

A copy of the declaration given by PricewaterhouseCoopers as the Group's external auditors to the directors in relation to the auditors' compliance with the independence requirements of the Australian Corporations Act 2001 and the professional code of conduct for external auditors is set out on page 215 in the financial statements.

No person who was an officer of Rio Tinto during 2011 was a director or partner of the auditors at a time when the auditors conducted an audit of the Group.

Each person who held the office of director at the date the board resolved to approve this report makes the following statements:

so far as the directors are aware, there is no relevant audit information of which the auditor is unaware; and

the directors have taken all steps that he or she ought to have taken as a director to make him or herself aware of any relevant audit information and to establish that the auditor is aware of that information.

### Fees for audit and non-audit services

The amounts payable to the Group's auditor, PricewaterhouseCoopers, were:

	2011 US\$m	2010 US\$m
Audit fees <sup>(a)</sup>	14.4	15.7
Assurance services <sup>(b)</sup>	4.4	10.9
Taxation services	1.5	0.5
All other fees <sup>(c)</sup>	3.6	6.2
	<b>23.9</b>	33.3

The Group has early adopted the statutory changes in relation to the presentation of Group auditor's remuneration for the year ended 2011. Prior years have been reclassified accordingly.

(a) Audit fees relating to statutory audits.

(b) Assurance services are mainly related to half year review procedures, carve-out financial statements, sustainability assurance and limited assurance over the Taxes paid in 2010 report.

(c) All other fees include services in connection with the divestment programme and similar corporate projects. Further information on audit and non-audit fees is set out in note 41 to the financial statements.

A description of Rio Tinto's policies to uphold the independence of the Group's auditor is set out in the corporate governance section on page 75. Based on advice provided by the Audit committee as set out in the Report of the Audit committee on page 71, the directors are satisfied that the provision of non-audit services by PricewaterhouseCoopers is compatible with the general standard of independence for auditors and the standards imposed by the Australian Corporations Act 2001 and US legislation.



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### **Financial instruments**

Details of the Group's financial risk management objectives and policies and exposure to risk are described in note 31 to the 2011 financial statements.

### **Value of land**

Most of the Group's interests in mining properties and leases, and in other land and buildings have been included in the financial statements at cost in accordance with its accounting policies. It is not possible to estimate the market value of such interests in land as this will depend on product prices over the long term which will vary with market conditions.

### **Creditor payments**

It is the Group's policy to agree terms of payments with suppliers when entering into contracts and to meet its obligations accordingly. The Group does not follow any specific published code or standard on payment practice.

At 31 December 2011, there were 24 days (2010: 23 days) purchases outstanding in respect of the Group based on the total invoiced by suppliers during the year.



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**Remuneration report**

**Letter from the Remuneration committee chairman**

Dear Shareholder,

As the new chairman of the Remuneration committee, I am pleased to introduce our report on remuneration for 2011, for which we seek your support at our annual general meetings in London in April, and in Brisbane in May.

The report is designed to provide you with the necessary information to demonstrate the link between our Group's strategy, its performance, and the remuneration outcomes for its executives. It is also intended to deliver the remuneration disclosures required by Australian and UK regulation.

In writing to you, I am fully aware of the strength of feeling which the subject of executive remuneration provokes; and I am aware too that many of our shareholders have registered their concerns through their votes and abstentions on the remuneration report at our recent annual general meetings. Both the board and the Remuneration committee have reflected very carefully on this. I realise that the decisions made by the Committee will not always please all our owners: if we seek perfect consensus among shareholders, I am afraid we will seek in vain. But we are conscious of our obligation to be as accessible to you as we can so that, on behalf of the board, I hear your views, and try to answer your questions; and in so doing, carry those opinions into our decision-making forums. Since my appointment I have met a number of major shareholders in the UK and in Australia and this process has been invaluable to me in understanding shareholders' perspectives on legacy and current issues.

Reflecting shareholder feedback, we will be bringing to our 2013 annual general meetings proposals relating to the future structure of our incentive plans. We intend to consult widely on these proposals, and on the broader remuneration context, particularly during 2012, so that by the time we make our recommendations to you in 2013, we will have had the benefit of the thoughts and feedback of as many major shareholders as practical.

Our remuneration strategy and policies focus on using remuneration resource to help implement a successful corporate strategy that will create superior value for our shareholders over the long term. We see that resource as yours; and our endeavour is to use it wisely to promote and protect your interests. We want to use it to ensure that your Company can attract, motivate and retain the high quality and committed people that are critical to lead the business.

We seek to reward employees fairly and responsibly, by providing an appropriate balance between fixed and variable remuneration, the payment of which is linked to the achievement of what are intended to be demanding Group and individual performance measures. But our aim is to pay no more than is necessary to achieve this goal.

Whilst we delivered another record year of underlying earnings performance, short term incentive payments are, on average, lower than in 2010 as the Group did not outperform to the same extent, the challenging financial and safety targets set by your Board for 2011. I also acknowledge the responsibility shown by Tom Albanese and Guy Elliott in informing the Remuneration committee that they did not wish to be considered for an annual bonus in the light of the impairments in our Aluminium business. The Committee's decision endorsed this request.

This year, we have introduced a different format to the remuneration report. We have responded to the request for greater simplicity by providing you with the essential remuneration narrative in the first sections of the report, amplified by the ever-increasing disclosures required by Australian and UK statute and regulation which appear, piece by piece, in the pages that follow. So the sections which follow this letter are:

About the report

Our remuneration strategy and approach

What we paid our executive directors and why

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Remuneration committee responsibilities, independent advisers, and how the Committee spent its time in 2011

Appendix: detailed remuneration disclosures.

We hope this presentation makes our approach, and the facts behind it, more accessible. We would find it very helpful to know in due course what you think.

Yours sincerely,

John Varley

Remuneration committee chairman

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### **About the report**

This report has been prepared in accordance with applicable legislation and corporate governance guidance in the UK and Australia. Australian legislation requires disclosures in respect of key management personnel, being those persons having authority and responsibility for planning, directing and controlling the activities of the Group. For the purposes of this report, the key management personnel are, in addition to the directors, members of the Executive committee. The Executive committee comprises the executive directors, product group chief executive officers (PGCEOs) and Group executives. Throughout this report, the members of the Executive committee are collectively referred to as executives. The executives are listed on page 103 together with the positions held during the year and dates of appointment.

Australian legislation further requires disclosures in respect of the five highest paid executives below board level selected from the senior managers who make, or participate in making, decisions that affect the whole, or a substantial part, of the business of the Group, or have the capacity to significantly affect the Group's financial standing. The Committee has determined that below board level, only members of the Executive committee constitute the group of senior managers that make decisions that affect the whole, or a substantial part, of the business of the Group.

In addition to executive remuneration, this report covers the chairman's and the non-executive directors' remuneration on page 105.

### **Our remuneration strategy and approach**

Rio Tinto operates in global and local markets where it competes for a limited pool of talented executives. High quality people, who are capable of achieving stretching performance targets, are essential to generating superior returns for the Group. Our people and remuneration strategies aim to provide this support by enabling the Group to attract and retain talent that will maximise shareholder value.

We aim to engage people over the long term by fostering diversity, providing challenging work and development opportunities, and rewarding for performance. This people strategy is underpinned by our group wide values of respect, integrity, accountability and teamwork and our employee commitment to provide sustainable growth and development for both Rio Tinto and our employees.

Our remuneration strategy is based on the principles of aligning remuneration arrangements with the Group wide strategic drivers, and empowering employees by differentiating top performers, whilst achieving simplicity and transparency in the design and communication of remuneration arrangements. The remuneration strategy and supporting policies, and how they support our overall business strategy for achieving our vision to be the leading global mining and metals company, are set out below and in the executive remuneration structure table on pages 101 and 102.

#### **Competitive, performance-related remuneration**

We provide competitive rewards that attract, retain and motivate executives of the high calibre required to lead the Group while ensuring rewards remain appropriate compared to market practice and when compared to remuneration arrangements for other employees in the Group.

The majority of remuneration is linked to demanding performance targets over both the short and long-term to ensure that executive rewards are aligned with performance delivered for shareholders.

For the purposes of assessing the appropriate level of executive remuneration, the Committee references the FTSE30, (excluding financial services companies, and with due regard for size and complexity) as the initial comparator group. The FTSE30 is considered the most relevant comparator group as it comprises organisations broadly comparable to the Group in terms of global reach, revenue, market capitalisation and complexity. Additional references are also made to other relevant supplementary comparator groups including a cross-section of comparable international industrial organisations and other international mining companies where appropriate.

Typically, base salaries will be positioned at the median of these comparator groups, with total remuneration positioned across the full market range according to individual and business performance.

#### **Health and safety**

We promote and reward sustainable development, with a strong focus on health and safety in the Short Term Incentive Plan (STIP) targets.

As an organisation, we strive for superior long term shareholder value creation in a healthy, safe and environmentally appropriate way. These are key elements of our commitment to operational excellence and licence to operate.

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Health and safety key performance indicators (measured in relation to all injury frequency rate (AIFR), Significant Potential Incidents (SPI) and Semi Quantitative Risk Assessment (SQRA<sup>TM</sup>)), comprise 17.5 per cent of the STIP for executives.

The extent of the impact of a fatality on the STIP score for all executives is based on an assessment by the Committee of the impact of leadership, individual behaviour and systems in the incident.

For some executives, where relevant, an additional proportion of their individual objectives under the STIP are linked to safety objectives.

### **Long term focus**

Consistent with our strategy of investing in and operating large, long term, cost competitive mines and businesses we provide incentive plans that focus on longer term performance.

Our incentive plans are designed to promote and reward decision making with a positive long-term impact while avoiding excessive risks.

Half of the STIP is deferred into shares which vest after three years.

The performance based options and shares have a three and four year time horizon, respectively.

Options may be exercised up to ten years after the grant.

### **Shareholder alignment**

We reward executives for delivering shareholder value by using relative Total Shareholder Return (TSR) as the metric for our performance based long term incentive plans (LTIP).

Rewards are delivered based on the relative standing of our performance against both the HSBC Global Mining Index and the broader market of large global companies as measured through the Morgan Stanley Capital World Index (MSCI).

TSR is considered an appropriate performance measure for the long term incentive plans as it captures objectively the return Rio Tinto delivers to its shareholders over the long term and rewards executives based on the Group's TSR performance against its comparators.

The choice of both the HSBC Global Mining Index and MSCI reflects the fact that Rio Tinto competes against a global market for investors as well as within the mining sector and is consistent with rewarding executives for providing stable returns over the long term relative to the broader market and the mining sector.

The Remuneration committee is currently reviewing the performance measures for the LTIP to ensure that they remain aligned with long-term value creation for shareholders.



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**Remuneration report continued**

**What we paid our executive directors and why**

This section provides an overview of 2011 remuneration for the executive directors. This includes details of the key elements of remuneration and a summary of total remuneration for 2011.

**Tom Albanese (chief executive)**

**Base salary**

Base salaries are reviewed annually, with reference to underlying Group and individual performance; global economic conditions; role responsibilities; an assessment against relevant comparator groups; and base salary budgets applying to the broader employee population. The Committee has increased Tom's base salary by 2.5 per cent effective 1 March 2012. This was below the average increase for Rio Tinto employees in the UK.

Base salary (stated in £ '000)	<b>2012</b>	2011	% change
<b>STIP objectives for 2011</b>	<b>1,056</b>	1,030	2.5

In addition to the health, safety and financial measures summarised in the executive remuneration structure table on page 101, the following individual objectives were set for 2011:

Continue to advance the portfolio towards large, long-term, cost competitive mines and businesses.

Maintain or improve controllable cost performance against 2011 targets.

Demonstrate progress in Mongolia and Guinea.

Longer term objectives commensurate with the longer term nature of the business include:

Ensure Rio Tinto's portfolio remains strong.

Build upon distinctive sector competitive advantage in areas of operational excellence, sustainable development, innovation, and exploration.

Improve diversity (by gender and nationality) to become more effective on a global basis.

Maintain capital discipline especially on transactions through the commodity cycle.

**STIP outcomes for 2011**

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Tom led the Group in achieving record underlying earnings and record cash flow results in 2011.

The Group's safety performance was disappointing. There were six fatalities in 2011. The target 15 per cent reduction in the AIFR was not achieved; however near or above target results were achieved for the other key health and safety measures.

Tom's achievement against his personal objectives was seen as strong. In particular:

Good progress has been made around our large projects, such as Simandou.

In relation to Oyu Tolgoi, we strengthened our position with the Mongolian government as well as over Ivanhoe rounded off by our recent acquisition of control of that company.

Resource nationalism and geopolitical tensions remain serious threats throughout the resource sector and Tom invested considerable energy in the strengthening of Rio Tinto's position as a global player.

Tom notified the Remuneration committee that he did not wish to be considered for an annual bonus, recognising the significant impairment charge in relation to our aluminium business. The Remuneration committee's decision endorsed this request.

### **LTIP awards granted in 2011**

Award levels are set so as to incentivise executives to meet the long-term strategic goals of the Group, to provide sufficient retention for the executive team and to contribute towards the competitiveness of the

overall remuneration package. The expected value of awards granted in 2011, based on the fair value calculations performed by independent advisers, was 190 per cent of base salary (£1,957,000). The eventual value of the award will depend on performance during the years 2011-2014.

### **LTIP awards for 2012**

The Remuneration committee has decided that the award level in 2012 should again have an expected value of 190 per cent of base salary (£2,006,400). The eventual value of the award will depend on performance during the years 2012-2015.

### **LTIP outcomes for the period ended 31 December 2011**

The performance shares under the Performance Share Plan (PSP) awarded in 2008 had a four year performance period that ended on 31 December 2011. This award did not vest. Share options under the Share Option Plan (SOP) granted in 2009 had a performance period that ended on 31 December 2011. This award has vested in full. Tom has an option over 72,029 shares at a price of £16.53 per share. The market price of Rio Tinto plc shares at 20 February 2012 being the latest practicable date before the date of publication of this report was £37.06. These options can be exercised from 17 March 2012. Further details of the awards vesting in 2012 and in prior years are provided on pages 98 and 112.

### **Shareholding policy**

The Committee has determined that executive directors should aim to reach a holding equivalent in value to two times their base salary. At 20 February 2012 the value of Tom's holding was 7.7 times his current base salary.

### **Pension**

Tom's target defined benefit pension is equal to two-thirds of basic salary at age 60, through funded and unfunded arrangements as provided to other UK based employees. This is inclusive of benefits accrued in the US. The accrued pension as at 31 December 2011 was £476,000 per annum, (31 December 2010: £395,000 per annum). Further details are set out in table 2 on page 109.

### **Total remuneration**

The table below provides a summary of actual remuneration in respect of 2009, 2010 and 2011 stated in pounds sterling. This is in addition to statutory disclosure requirements. The purpose of this table is to enable shareholders to better understand the actual remuneration received and to provide an overview of the actual outcomes of the Group's remuneration arrangements. The remuneration details set out in table 1a on pages 106 and 107, include theoretical accounting values relating to various parts of the remuneration packages, most notably LTIP arrangements. Accordingly, the numbers below are not directly comparable with those

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in table 1a.

(stated in £ 000)	<b>2011</b>	2010	2009
Base salary paid <sup>(a)</sup>	<b>1,010</b>	907	907
STIP payment – cash	<b>0</b>	797	589
STIP payment – deferred share <sup>(b)</sup>	<b>0</b>	797	0
<b>Total short-term pay</b>	<b>1,010</b>	2,501	1,496
Expected value of LTIP awards granted <sup>(c)</sup>	<b>1,957</b>	1,723	1,723
Pension <sup>(d)</sup>	<b>1,230</b>	1,105	784
Other benefits <sup>(e)</sup>	<b>269</b>	208	211
<b>Total remuneration</b>	<b>4,466</b>	5,537	4,214
Percentage change in total remuneration (2011 versus 2010; 2010 versus 2009)	<b>(19.3%)</b>	31.4%	
Percentage of maximum STIP awarded	<b>0</b>	87.8%	54.1%
Percentage of maximum STIP forfeited	<b>100%</b>	12.2%	45.9%
Percentage of target STIP awarded	<b>0</b>	146.4%	108.2%

(a) Salary paid in the financial year to 31 December. Salaries are reviewed with effect from 1 March.

(b) Value of STIP deferred under the Bonus Deferral Plan (BDP).

(c) Based on the expected value of awards (PSP awards are calculated to have an expected value of 65 per cent of face value, SOP awards are calculated to have an expected value of 20 per cent of face value).

(d) Pension represents the value of one year's pension accrual calculated using an IAS19 methodology and assumptions on rates of investment return, inflation and salary increases and is sensitive to changes to those assumptions.

(e) Includes health care, provision of a car and driver and other contractual payments.

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The graphs below show the value of the 2012 remuneration package at below threshold, target and outstanding performance levels together with the proportion of the package delivered through fixed and variable reward. Election 1 provides a mix of performance shares under the PSP and performance options under the SOP and Election 2 provides the full LTIP opportunity in performance shares. Under the PSP, one and a half times the original award can vest for outstanding performance.

The PSP, SOP, STIP-deferred shares and STIP-cash are all performance related remuneration.

**Potential value of 2012 remuneration package**

£ 000

**Proportion of remuneration package value delivered through fixed and performance-related reward**

%

**Guy Elliott (chief financial officer)**

**Base salary**

Base salaries are reviewed annually, with reference to underlying Group and individual performance; global economic conditions; role responsibilities; an assessment against relevant comparator groups; and base salary budgets applying to the broader employee population. The Committee has increased Guy's base salary by 2.5 per cent effective 1 March 2012. This was below the average increase for Rio Tinto employees in the UK.

Base salary (stated in £ 000)	2012	2011	% change
<b>STIP objectives for 2011</b>	<b>738</b>	720	2.5

In addition to the health, safety and financial measures summarised in the executive remuneration structure table on page 101, the following individual objectives were set for 2011:

Continue to advance the portfolio towards large, long-term, cost competitive mines and businesses.

Enhance value through M&A transactions.

Expand marketing capabilities and competencies.

Complete balance sheet transition and recover the Group's credit rating.

**STIP outcomes for 2011**

Guy was part of the Executive committee that led the Group in achieving record underlying earnings and record cash flow results in 2011.

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The Group's safety performance was disappointing. There were six fatalities in 2011. The target 15 per cent reduction in the AIFR was not achieved; however near or above target results were achieved for the other key health and safety measures.

Guy's achievement against his personal objectives was seen as strong. In particular:

Rio Tinto completed approximately US\$6.3 billion in well executed acquisitions, completed several divestments such as Luzenac and Colowyo and prepared for the divestment of Pacific Aluminium.

A stronger balance sheet allowed the Group to recover the Group's credit rating with all four agencies, and the Group undertook an additional US\$2 billion share buy-back programme.

Improved marketing leadership.

Guy notified the Remuneration committee that he did not wish to be considered for an annual bonus, recognising the significant impairment charge in relation to our aluminium business. The Remuneration committee's decision endorsed this request.

### **LTIP awards granted in 2011**

Award levels are set so as to incentivise executives to meet the long-term strategic goals of the Group, to provide sufficient retention for the executive team and to contribute towards the competitiveness of the overall remuneration package. The expected value of awards granted in 2011, based on the fair value calculations performed by independent advisers, was 190 per cent of base salary. The eventual value of the award will depend on performance during the years 2011-2014.

### **LTIP awards for 2012**

The Remuneration committee has decided that the award level in 2012 will again have an expected value of 190 per cent of base salary (£1,402,200). The eventual value of the award will depend on performance during the years 2012-2015.

### **LTIP outcomes for the period ended 31 December 2011.**

The performance shares under the PSP awarded in 2008 had a four year performance period that ended on 31 December 2011. This award did not vest. Share options under the SOP granted in 2009 had a performance period that ended on 31 December 2011. This award has vested in full. Guy has an option over 53,615 shares at a price of £16.53 per share.

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**Remuneration report continued**

The market price of Rio Tinto plc shares at 20 February 2012 being the latest practicable date before the date of publication of this report was £37.06. These options can be exercised from 17 March 2012. Further details of the awards vesting in 2012 and in prior years are provided on pages 98 and 112.

**Shareholding policy**

The Committee has determined that executive directors should aim to reach a holding equivalent in value to two times their base salary. At 20 February 2012, the value of Guy's holding was 4.9 times his current base salary.

**Pension**

Guy's target defined benefit pension is equal to 2.3 per cent of basic salary for each year of service with the Company to age 60, through funded and unfunded arrangements as provided to other UK based employees. The accrued pension as at 31 December 2011 was £514,000 per annum, (31 December 2010: £471,000 per annum). Further details are set out in table 2 on page 109.

**Total remuneration**

The table below provides a summary of actual remuneration in respect of 2009, 2010 and 2011 stated in pounds sterling. This is in addition to statutory disclosure requirements. The purpose of this table is to enable shareholders to better understand the actual remuneration received and to provide an overview of the actual outcomes of the Group's remuneration arrangements. The remuneration details set out in table 1a on pages 106 and 107, include theoretical accounting values relating to various parts of the remuneration packages, most notably LTIP arrangements. Accordingly, the numbers below are not comparable with those in table 1a.

(stated in £ '000)	2011	2010	2009
Base salary paid <sup>(a)</sup>	713	675	675
STIP payment - cash	0	632	552
STIP payment - deferred			
shares <sup>(b)</sup>	0	632	0
<b>Total short-term pay</b>	<b>713</b>	<b>1,939</b>	<b>1,227</b>
Expected value of LTIP awards granted <sup>(c)</sup>	1,368	1,283	1,283
Pension <sup>(d)</sup>	351	331	248
Other benefits <sup>(e)</sup>	210	173	122
<b>Total remuneration</b>	<b>2,642</b>	<b>3,726</b>	<b>2,880</b>
Percentage change in total remuneration (2011 versus 2010; 2010 versus 2009)	(29.1%)	29.4%	
Percentage of maximum STIP awarded	0	93.6%	68.1%
Percentage of maximum STIP forfeited	100%	6.4%	31.9%
Percentage of target STIP awarded	0	155.9%	136.2%

(a) Salary paid in the financial year to 31 December. Salaries are reviewed with effect from 1 March.

(b) Value of STIP deferred under the Bonus Deferral Plan (BDP).

(c) Based on the expected value of awards (PSP awards are calculated to have an expected value of 65 per cent of face value, SOP awards are calculated to have an expected value of 20 per cent of face value).

(d) Pension represents the value of one year's pension accrual calculated using an IAS19 methodology and assumptions on rates of investment return, inflation and salary increases and is sensitive to changes to those assumptions.

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(e) Includes health care, provision of a car and driver and other contractual payments.

The graphs below show the value of the 2012 remuneration package at below threshold target and outstanding performance levels together with the proportion of the package delivered through fixed and variable reward. Election 1 provides a mix of performance shares under the PSP and performance options under the SOP and Election 2 provides the full LTIP opportunity in performance shares. Under the PSP, one and a half times the original award can vest for outstanding performance.

The PSP, SOP, STIP-deferred shares and STIP-cash are all performance related remuneration.

### **Potential value of 2012 remuneration package**

**£ 000**

### **Proportion of remuneration package value delivered through fixed and performance-related reward**

**%**

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**Sam Walsh (executive director and chief executive Iron Ore and Australia)**

**Base salary**

Base salaries are reviewed annually, with reference to underlying Group and individual performance; global economic conditions; role responsibilities; an assessment against relevant comparator groups; and base salary budgets applying to the broader employee population. The Committee has increased Sam's base salary by 4.0 per cent effective 1 March 2012. This was below the average increase for Rio Tinto employees in Australia.

Base salary (stated in A\$ '000)	<b>2012</b> <b>1,654</b>	2011 1,590	% change 4.0
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**STIP objectives for 2011**

In addition to the health, safety and financial measures summarised in the executive remuneration structure table on page 101, the following individual objectives were set for 2011:

Delivery of the Pilbara growth plans.

Delivery of expansion initiatives at IOC and the formation of the Simandou Joint Venture.

Identification and development of new global growth opportunities.

Provide leadership to the business in Australia.

Renew focus on overhead costs.

**STIP outcomes for 2011**

Each objective is scored out of a maximum of 200 per cent which represents outstanding performance. The following table summarises the outcomes for each objective.

Measures	Weight (%)	Score (out of 200%)	Weighted score (%)
Group financial	21.0	129	27.1
PG financial	31.5	141	44.4
PG health and safety	17.5	37	6.4
Individual	30.0	158	47.5
<b>Total</b>	<b>100.0</b>		<b>125.4</b>

The Group's performance against the financial targets was 129 per cent.

The Iron Ore group achieved record earnings and cash flow results for 2011 and the performance against the financial targets was 141 per cent.

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There were three fatalities in 2011. The RTIO safety scores, including the AIFR, SPI and SQRA™, were all above target and resulted in a score of 124 per cent (out of a maximum of 200 per cent). However, this was reduced to 37 per cent, which is the threshold safety score after a fatality.

The Committee, with input from the chief executive, then assessed Sam's performance against his individual objectives as 158 per cent (out of 200 per cent) which reflects his outstanding contribution to the business during the year. In particular:

Delivery on the Pilbara RTIO growth plans, keeping the 283 mtpa project on track, accelerating the 333 mtpa project, and increasing its scope to 353 mtpa

Rio Tinto's strong relationship with the Government of Guinea

Work on reducing overhead costs

His leadership in making RTIO a primary performance driver of Rio Tinto's business.

### **LTIP awards granted in 2011**

Award levels are set so as to incentivise executives to meet the long-term strategic goals of the Group, to provide sufficient retention for the executive team and to contribute towards the competitiveness of the overall remuneration package. The expected value of awards granted in 2011, based on the fair value calculations performed by independent advisers, was 190 per cent of base salary. The eventual value of the award will depend on performance during the years 2011-2014.

### **LTIP awards for 2012**

The Remuneration committee has decided that the award level in 2012 will again have an expected value of 190 per cent of base salary or A\$3,142,600. The eventual value of the award will depend on performance during the years 2012-2015.

### **LTIP outcomes for the period ended 31 December 2011**

The performance shares under the PSP awarded in 2008 had a four year performance period that ended on 31 December 2011. These awards did not vest. Share options under the SOP granted in 2009 had a performance period that ended on 31 December 2011. These awards have vested in full. Sam has an option over 40,005 shares at a price of A\$33.45 per share. The market price of Rio Tinto Limited shares at 20 February 2012 being the latest practicable date before the date of publication of this report was A\$68.04. These options can be exercised from 17 March 2012. Further details of the awards vesting in 2012 and in prior years are provided on pages 98 and 112.

### **Shareholding policy**

The Committee has determined that executive directors should aim to reach a holding equivalent in value to two times their base salary. At 20 February 2012, the value of Sam's holding was 2.0 times his current base salary.

### **Superannuation**

Sam's target defined benefit superannuation is a lump sum multiple of 4.05 times final basic salary at age 62 provided through an employer funded superannuation plan as provided to other Australian based employees. Sam receives an additional Company contribution on a defined contribution basis of 20 per cent of the lesser of 50 per cent of the annual STIP award or 20 per cent of basic salary in line with typical market practice in Australia. The accrued lump sum benefit as at 31 December 2011 was A\$6,245,000 (31 December 2010: A\$5,493,000). The additional Company contribution for 2011 was A\$59,000 (2010: A\$59,000). Further details are set out in table 2 on page 109.

### **Total remuneration**

The table below provides a summary of actual remuneration in respect of 2009, 2010 and 2011 stated in Australian dollars. This is in addition to statutory disclosure requirements. The purpose of this table is to enable shareholders to better understand the actual remuneration received and to provide an overview of the actual outcomes of the Group's remuneration arrangements. The remuneration details set out in table 1a on pages 106 and 107, include theoretical accounting values relating to various parts of the remuneration packages, most notably LTIP arrangements. Accordingly, the numbers below are not compatible with those in table 1a.

(stated in A\$ '000)

2011

2010

2009

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Base salary paid <sup>(a)</sup>	1,571	1,475	1,475
STIP payment cash	1,196	1,416	1,308
STIP payment deferred			
shares <sup>(b)</sup>	1,196	1,416	
<b>Total short-term pay</b>	<b>3,963</b>	4,307	2,783
Expected value of LTIP awards granted <sup>(c)</sup>	3,021	2,803	2,803
Superannuation <sup>(d)</sup>	372	377	395
Other benefits <sup>(e)</sup>	92	100	116
<b>Total remuneration</b>	<b>7,448</b>	7,587	6,097
Percentage change in total remuneration (2011 versus 2010; 2010 versus 2009)	<b>(1.8%)</b>	24.4%	
Percentage of maximum STIP awarded	<b>75.2%</b>	96.0%	73.9%
Percentage of maximum STIP forfeited	<b>24.8%</b>	4.0%	26.1%
Percentage of target STIP awarded	<b>125.4%</b>	160.0%	147.8%

(a) Salary paid in the financial year to 31 December. Salaries are reviewed with effect from 1 March.

(b) Value of STIP deferred under the Bonus Deferral Plan (BDP).

(c) Based on the expected value of awards (PSP awards are calculated to have an expected value of 65 per cent of face value, SOP awards are calculated to have an expected value of 20 per cent of face value).

(d) Superannuation represents the value of one year's superannuation accrual calculated using an IAS19 methodology and assumptions on rates of investment return, inflation and salary increases and is sensitive to changes to those assumptions.

(e) Includes health care, car allowance and other contractual payments.

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**Remuneration report continued**

The graphs below show the value of the 2012 remuneration package at below threshold, target and outstanding performance levels together with the proportion of the package delivered through fixed and variable reward. Election 1 provides a mix of performance shares under the PSP and performance options under the SOP and Election 2 provides the full LTIP opportunity in performance shares. Under the PSP, one and a half times the original award can vest for outstanding performance.

The PSP, SOP, STIP-deferred shares and STIP-cash are all performance related remuneration.

**Potential value of 2012 remuneration package**

A\$ 000

**Proportion of remuneration package value delivered through fixed and performance-related reward**

%

**Remuneration committee responsibilities, independent advisers, and how the Committee spent its time in 2011**

**Responsibilities**

The Committee's responsibilities are set out in its terms of reference which are available in the corporate governance section of the Rio Tinto website. The responsibilities of the Committee include:

determining the remuneration structure, policies and assessing their cost, including pension and superannuation arrangements for executives;

determining contractual notice periods and termination commitments and approve any retention and termination arrangements for executives;

approving the use of short and long term incentive plans for executives;

overseeing the operation of the Group's short and long term incentive plans as they relate to executives, including the approval of awards, setting of performance criteria, where applicable, and approval of any vesting;

approving awards under the Group's all-employee share plans;



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approving the terms of service upon appointment and any subsequent changes for the chairman, executives and the company secretary of Rio Tinto plc; and

reviewing and making recommendations to the Board on remuneration by gender.

The Committee considers the level of pay and conditions throughout the Group when determining executive remuneration and ensures the same principles are used when designing the broader employee remuneration policies. The Committee is committed to ensuring that remuneration policy and practices reflect, to the extent practicable, corporate governance guidance on executive remuneration.

The members of the Committee are all independent in accordance with the independence policy adopted by the board. The membership and meeting attendances are detailed in the corporate governance section on page 69. The chairman and chief executive participated in meetings at the invitation of the Committee during 2011. Jan du Plessis joined the Committee as a member with effect from 7 February 2012. The Committee is supported by members of senior management who regularly attend meetings to provide information as requested by the Committee. These included Hugo Bague (Group executive, people & organisation), John Beadle (global practice leader, Total Rewards) and Ben Mathews (company secretary, Rio Tinto plc). None of the attendees mentioned above were present when matters associated with their own remuneration were considered.

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### **Independent advisers**

The independent advisers engaged by and reporting to the Committee during 2011 were Deloitte LLP. Total fees paid by the Company to Deloitte LLP in 2011 for their services to the Committee amounted to US\$400,000. Deloitte LLP attended committee meetings and provided advice in relation to management proposals. Fees for these services were US\$65,000. In addition, Deloitte LLP provided general and technical executive remuneration advice for which fees amounted to US\$177,000 and provided remuneration data and information on market practice for which fees were US\$158,000. Deloitte LLP provide unrelated taxation advice and advisory services to the Group.

The Committee has adopted a protocol effective from 1 January 2012 governing the engagement of and communications with any external remuneration consultants, including Deloitte LLP. The purpose of the protocol is to ensure that any remuneration recommendations provided by remuneration consultants are provided without undue influence of key management personnel, as stipulated by applicable legislation.

The Group has also drawn on the services and publications of a range of advisers, including Towers Watson, Hay Group and Mercer in relation to remuneration data and external validation of TSR performance.

### **How the Committee spent its time in 2011**

During 2011, the Committee met three times. It fulfilled its responsibilities as set out in its terms of reference. In particular, its work has included:

reviewing and determining base salary increases for the executives;

reviewing and determining threshold and outstanding performance targets used in the 2011 STIP and so far in 2012, reviewing actual performance against these targets as well as establishing the 2012 STIP targets;

reviewing and determining long term incentive grants for the executives and deciding vesting outcomes;

a detailed review of potential performance measures to be used as part of the review of long term incentive plans;

reviewing changes to the UK income tax regime for pensions;

reviewing and determining changes to the PSP rules in order to allow participants the choice to take their entire LTIP opportunity in performance shares;

reviewing and approving proposals with respect to the new global employee share plan; and

a review of remuneration practices against our comparator groups.



**Table of Contents****Remuneration report: Appendix****Appendix: detailed remuneration disclosures****What we paid other Executive committee members and why****Base salary**

Base salaries are reviewed annually, with reference to underlying Group and individual performance, global economic conditions, role responsibilities, an assessment against relevant comparator groups and base salary budgets applying to the broader employee population. The average base salary increase for other Executive committee members was 3.3 per cent, effective from 1 March 2012. This was below the average increases applying to the broader Rio Tinto employee population in Australia, Canada, UK and US and in line with the 2012 salary budgets in each country.

Stated in '000	2012	2011	% change
Hugo Bague	£429.5	£415	3.5
Preston Chiaro	US\$789	US\$770	2.5
Bret Clayton	US\$763.5	US\$745	2.5
Jacynthe Côté (a)	C\$930	US\$885	2.9
Andrew Harding	£436	£420	3.8
Harry Kenyon-Slaney	£436	£420	3.8
Doug Ritchie	A\$967	A\$930	4.0
Debra Valentine	US\$652	US\$630	3.5

(a) Jacynthe Côté's base salary has been converted to Canadian dollars from March 2012 to align earnings currency with home base expenditures.

**STIP objectives and outcomes for 2011**

We set tough targets for our STIP and demand that sustainable business practices are adhered to, particularly around safety. Whilst we delivered another record year of underlying earnings performance, STIP payments are on average lower than in 2010 as the Group did not outperform to the same extent, the challenging financial and safety targets set for 2011. A summary of the assessed score against achievement of financial, health and safety and individual objectives by executive is set out in the following table on page 95.

**LTIP awards granted in 2011**

Award levels are set so as to incentivise executives to meet the long-term strategic goals of the Group, to provide sufficient retention for the executive team and to contribute towards the competitiveness of the overall remuneration package. The expected value of awards granted in 2011, based on the fair value calculations performed by independent advisers, was 190 per cent of base salary. The eventual value of the award will depend on performance during the years 2011-2014.

**LTIP awards for 2012**

The Remuneration committee has decided that the award level in 2012 for all other Executive committee members will again have an expected value of 190 per cent of base salary. The eventual value of the awards will depend on performance during the years 2012-2015.

**LTIP outcomes for the period ended 31 December 2011**

The performance shares under the PSP awarded in 2008 had a four year performance period that ended on 31 December 2011. For awards granted in 2008, different vesting schedules applied for awards made to individuals who were executive directors and PGCEOs and for other executives. Certain members of the Executive committee were not executive directors or PGCEOs at the time of grant and therefore this different vesting schedule applied.

These awards did not vest for those executives who were PGCEOs at the time the awards were granted. The performance shares partially vested at 33.3 per cent for other executives.

Share options under the SOP granted in 2009 had a performance period that ended on 31 December 2011. These awards vested in full. Options can be exercised from 17 March 2012.

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Further details of the LTIP outcomes for the period ended 31 December 2011 and in prior years are provided on pages 98 and 112.

### **Post employment benefits**

Executives may participate in pension, superannuation and post employment medical benefits offered to the broader employee population in similar locations.

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Measures	Weight (%)	Score (out of 200%)	Weighted score (%)
<b>Hugo Bague</b>			
Group financial	52.5	129	67.7
Group health and safety <sup>(a)</sup>	17.5	75	13.2
Individual	30.0	130	39.0
<b>Total</b>	<b>100.0</b>		<b>119.9</b>

(a) The health and safety score was reduced from 106 to 75 per cent of target due to fatalities.

**Preston Chiaro**

Group financial	52.5	129	67.7
T&I health and safety <sup>(a)</sup>	17.5	75	13.2
Individual	30.0	110	33.0
<b>Total</b>	<b>100.0</b>		<b>113.9</b>

(a) The health and safety score was reduced from 101 to 75 per cent of target to take into account safety reporting adjustments identified in 2011 in respect of the previous year. The 2011 STIP was also reduced by \$98,074 to recognise the impact these adjustments would have had on the 2010 STIP award.

**Bret Clayton**

Group financial	52.5	129	67.7
BS&O health and safety	17.5	129	22.6
Individual	30.0	125	37.5
<b>Total</b>	<b>100.0</b>		<b>127.8</b>

**Jacynthe Côté**

Group financial	21.0	129	27.1
PG financial	31.5	59	18.6
PG health and safety	17.5	162	28.3
Individual	30.0	115	34.5
<b>Total</b>	<b>100.0</b>		<b>108.5</b>

**Andrew Harding**

Group financial	21.0	129	27.1
PG financial	31.5	144	45.4
PG health and safety <sup>(a)</sup>	17.5	63	11.0
Individual	30.0	118	35.4
<b>Total</b>	<b>100.0</b>		<b>118.9</b>

(a) The health and safety score was reduced from 33 to 20 per cent of target due to fatalities.

Summary of 2011 individual objectives

Build a learning organisation and significantly improve the engagement of frontline employees

Drive improvement in capabilities at developing country assets and projects

Develop the globalisation of the business through the design and implementation of the Group employee diversity policy

Ensure organisational agility and workforce flexibility through functional optimisation and business partnering

Support our people strategy by building capability, diversity, engagement and leadership

Support operational excellence and growth through the creation of an underground mining support organisation

Add capabilities to innovation team to refill idea pipeline and deliver technology at commercial scale

Continue to build project development capabilities and delivery

Support our people strategy by building capability, diversity, engagement and leadership

Advance risk management strategies, ensuring integration and collaboration across the various functional areas

Support efforts on portfolio divestment

Deliver on exploration targets, including engagement and support to product groups in identifying and analysing early stage investment opportunities

Improve our analytical tools, pricing and evaluation models

Support our people strategy by building capability, diversity, engagement and leadership

Drive further sustainable cost reductions to achieve 40 per cent EBITDA margins

Continue to enhance portfolio quality

Drive value improvement on key growth projects to reduce capital expenditure intensity

Bring about transformational change in the product group

Support our people strategy by building capability, diversity, engagement and leadership

Ensure appropriate resources, structure and support to deliver sustainable value in key strategic locations

Provide the leadership, resources and support to maximise long term value from the Group's investment in Oyo Tolgoi

Pursue growth opportunities

Support our people strategy by building capability, diversity, engagement and leadership

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### Harry Kenyon-Slaney

Group financial	21.0	129	27.1
PG financial	31.5	106	33.4
PG health and safety	17.5	62	10.8
Individual	30.0	138	41.4
<b>Total</b>	<b>100.0</b>		<b>112.7</b>

Improve operational and commercial performance across the product group

Progress current growth projects in a safe, timely and cost-effective manner

Build Diamonds & Minerals strategy and develop and build upon our strategy in Africa

Support our people strategy by building capability, diversity, engagement and leadership

Identification, evaluation and capture of new expansion opportunities

### Doug Ritchie

Group financial	21.0	129	27.1
PG financial	31.5	98	30.9
PG health and safety <sup>(a)</sup>	17.5	20	3.5
Individual	30.0	130	39.0
<b>Total</b>	<b>100.0</b>		<b>100.5</b>

(a) The health and safety score was reduced from 33 to 20 per cent of target due to fatalities.

Optimise the development of existing asset base

Improve and build upon our relationships in China

Support our people strategy by building capability, diversity, engagement and leadership

Provide effective leadership to the legal, external relations, media, security and compliance functions

### Debra Valentine

Group financial	52.5	129	67.7
Group health and safety	17.5	106	18.6
Individual	30.0	135	40.5
<b>Total</b>	<b>100.0</b>		<b>126.8</b>

Deliver key corporate projects and support for business needs

Effectively support portfolio enhancement and growth activities

Continued focus on developing government relations capabilities across key countries

Support our people strategy by building capability, diversity, engagement and leadership

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**Remuneration report: Appendix continued**

**Total remuneration**

The tables below provide a summary of actual remuneration in respect of 2010 and 2011 stated in the currency of payment. This is in addition to statutory disclosure requirements. The purpose of this table is to enable shareholders to better understand the actual remuneration received by executives and to provide an overview of the actual outcomes of the Group's remuneration arrangements. The remuneration details set out in table 1a on pages 106 and 107, include theoretical accounting values relating to various parts of the remuneration packages, most notably LTIP arrangements.

	<b>Hugo Bague</b>		<b>Preston Chiaro(g)</b>		<b>Bret Clayton</b>		<b>Jacynthe Côté(h)</b>	
(stated in '000)	2011	2010	2011	2010	2011	2010	2011	2010
Base salary paid (a)	£406	£360	US\$763	US\$725	US\$738	US\$700	US\$875	US\$825
STIP payment - cash	£248	£252	US\$389	US\$563	US\$476	US\$476	US\$480	US\$635
STIP payment - deferred share(b)	£249	£253	US\$390	US\$563	US\$476	US\$476	US\$480	US\$636
<b>Total short-term pay</b>	<b>£903</b>	<b>£865</b>	<b>US\$1,542</b>	<b>US\$1,851</b>	<b>US\$1,690</b>	<b>US\$1,652</b>	<b>US\$1,835</b>	<b>US\$2,096</b>
Expected value of LTIP awards granted (c)	£789	£684	US\$1,463	US\$1,378	US\$1,416	US\$1,330	US\$1,682	US\$1,568
Pension or superannuation (d)	£27	£27	US\$256	US\$239	US\$235	US\$174	US\$437	US\$413
Other benefits (e)	£281	£193	US\$209	US\$888	US\$1,070	US\$1,106	US\$42	US\$1,619
<b>Total remuneration (f)</b>	<b>£2,000</b>	<b>£1,769</b>	<b>US\$3,470</b>	<b>US\$4,356</b>	<b>US\$4,411</b>	<b>US\$4,262</b>	<b>US\$3,996</b>	<b>US\$5,696</b>
Percentage change in total remuneration (2011 versus 2010)	<b>13.0%</b>		<b>(20.3%)</b>		<b>3.5%</b>		<b>(29.8%)</b>	
Percentage of maximum STIP awarded	59.9%	70.2%	50.6%	77.6%	63.9%	68.0%	54.2%	77.0%
Percentage of maximum STIP forfeited	40.1%	29.8%	49.4%	22.4%	36.1%	32.0%	45.8%	23.0%
Percentage of target STIP awarded	119.9%	140.4%	101.2%	155.2%	127.8%	136.0%	108.5%	154.1%

  

	<b>Andrew Harding</b>		<b>Harry Kenyon-Slaney</b>		<b>Doug Ritchie</b>		<b>Debra Valentine</b>	
(stated in '000)	2011	2010	2011	2010	2011	2010	2011	2010
Base salary paid (a)	£410	£390	£410	£360	A\$917	A\$850	US\$620	US\$570
STIP payment - cash	£249	£301	£236	£298	A\$467	A\$604	US\$399	US\$433
STIP payment - deferred share(b)	£250	£303	£237	£298	A\$467	A\$604	US\$400	US\$433
<b>Total short-term pay</b>	<b>£909</b>	<b>£994</b>	<b>£883</b>	<b>£956</b>	<b>A\$1,851</b>	<b>A\$2,058</b>	<b>US\$1,419</b>	<b>US\$1,436</b>
Expected value of LTIP awards granted (c)	£798	£799	£798	£684	A\$1,767	A\$1,615	US\$1,197	US\$1,083
Pension or superannuation (d)	£27	£38	£87	£85	A\$245	A\$225	US\$215	US\$194
Other benefits (e)	£507	£375	£127	£88	A\$73	A\$135	US\$816	US\$906
<b>Total remuneration (f)</b>	<b>£2,241</b>	<b>£2,206</b>	<b>£1,895</b>	<b>£1,813</b>	<b>A\$3,936</b>	<b>A\$4,033</b>	<b>US\$3,647</b>	<b>US\$3,619</b>
Percentage change in total remuneration (2011 versus 2010)	<b>1.6%</b>		<b>4.5%</b>		<b>(2.4%)</b>		<b>0.8%</b>	
Percentage of maximum STIP awarded	59.4%	77.4%	56.3%	82.8%	50.2%	71.0%	63.4%	76.0%
Percentage of maximum STIP forfeited	40.6%	22.6%	43.7%	17.2%	49.8%	29.0%	36.6%	24.0%
Percentage of target STIP awarded	118.9%	154.8%	112.7%	165.5%	100.5%	142.1%	126.8%	152.0%

(a) Salary paid in the financial year to 31 December. Salaries are reviewed with effect from 1 March.

(b) Value of STIP deferred under the BDP.

(c) Based on expected value of awards (PSP award are calculated to have an expected value of 65 per cent of face value, SOP awards are calculated to have an expected value of 20 per cent of face value).

(d) Pension or superannuation represents the value of one year's pension or superannuation accrual calculated using an IAS19 methodology and assumptions on rates of investment return, inflation and salary increases and is sensitive to changes to those assumptions.

(e) Includes health care, expatriate related payments, car allowance or car and other contractual payments.

(f) The value of all components of total remuneration paid or awarded in currencies other than the base salary currency have been converted to base salary currency using average annual exchange rates.



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- (g) Tax equalisation costs relating to Preston Chiaro's assignment to the UK were significantly higher in 2010 than in 2011.
  
- (h) Other benefits includes a one-time special bonus which vested 50 per cent in 2010 and 50 per cent in 2011. The 2010 amount includes the vesting of a one-off time-based, special retention grant as part of a legacy Alcan Inc. arrangement awarded on assuming the role of president and CEO Primary Metals, Rio Tinto Alcan. Further details of the 2011 other payments are provided on page 99.

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**Potential value of 2012 remuneration package**

The graphs below show the value of the 2012 remuneration package at below threshold, target and outstanding performance levels together with the proportion of the package delivered through fixed and variable reward. The remuneration mix is identical for all other executive committee members. Election 1 provides a mix of performance shares under the PSP and performance options under the SOP and Election 2 provides the full LTIP opportunity in performance shares. Under the PSP, one and a half times the original award can vest for outstanding performance.

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**Remuneration report: Appendix continued**

**Remuneration mix**

Consistent with the Group's strategy, the Committee seeks to achieve a remuneration mix which best reflects the long-term nature of the business. As such, the total remuneration package is designed to provide an appropriate balance between fixed and variable components with a focus on long-term variable pay. The PSP, SOP, STIP-deferred shares and STIP-cash are all performance related remuneration.

**Proportion of remuneration package value delivered through fixed and performance-related reward**

%

**Long term incentives vesting outcomes for the period ended 31 December 2011**

**2008 PSP awards**

A group of eight comparator companies was used to assess Rio Tinto's relative TSR performance, which is the performance measure used to determine the vesting of awards made under the 2008 PSP. For PSP awards made from and including 2010, two indices are used for assessing Rio Tinto's relative TSR performance as detailed in the table on page 99.

**PSP performance period that ended on 31 December 2011**

<p>Comparator companies<sup>(a)</sup></p> <p>Performance period (4 years)</p> <p>Performance condition<sup>(b)</sup></p> <p>TSR Ranking</p> <p>% of shares vested</p> <p>% of shares forfeited</p>	<p>Alcoa, Anglo American, Barrick Gold, BHP Billiton, Freeport-McMoRan, Newmont Mining, Vale do Rio Dolce, Xstrata</p> <p>1 January 2008 - 31 December 2011</p> <p>For awards made prior to 2010, different performance conditions applied for executive directors and PGCEOs; and other executives</p> <p>6th (17.2% TSR)</p> <p>Executive directors and PGCEOs at the date awards were granted <sup>(c)</sup>: Nil</p> <p>Other executives at the date awards were granted <sup>(d)</sup>: 33.3%</p> <p>Executive directors and PGCEOs at the date awards were granted <sup>(c)</sup>: 100%</p> <p>Other executives at the date awards were granted <sup>(d)</sup>: 66.7%</p>
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(a) The comparator companies were selected at the start of the performance period.

(b) The performance condition for executive directors and PGCEOs provides greater upside for outstanding performance than that applying for other executives. The threshold and maximum vesting levels for each group were used to calibrate the vesting schedules. For executive directors and PGCEOs, Rio Tinto must achieve a ranking of 5th (median of the comparator group) for threshold vesting at 35 per cent. The maximum vesting for executive directors and PGCEOs is 1.5 times the award with equal steps between 5th and 1st rank. For awards to other executives, Rio Tinto must achieve a ranking of 7th for threshold vesting at 16.7 per cent. The maximum vesting for other executives is one times the award with equal steps between 7th and 1st rank. No awards vest below the threshold levels. The performance condition for all executives was aligned in 2010 when the comparator group was changed to measure TSR against the HSBC Global Mining Index and the Morgan Stanley Capital World Index.

(c) Applies to: Tom Albanese, Preston Chiaro, Bret Clayton, Guy Elliott and Sam Walsh.

(d) Applies to: Hugo Bague, Jacynthe Côté, Andrew Harding, Harry Kenyon-Slaney, Doug Ritchie and Debra Valentine who were subject to the other executive performance condition at the time the 2008 PSP awards were made.

The methodology used to calculate the starting share prices for TSR comparison purposes, for Rio Tinto and comparator companies, was the 12 month average prior to the commencement of the performance period. The methodology used to calculate the ending share prices for TSR comparison purposes, for Rio Tinto and comparator companies, was the last 12 months in the performance period. The methodology used to set the levels of award was based on the prior year average share price.

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PSP awards granted to executive directors and PGCEOs in 2006 partially vested at 39 per cent in 2010. PSP awards granted in 2007 partially vested at 36 per cent in 2011. The average vesting of performance shares for executive directors and PGCEOs in the prior five years (2007-2011) has been approximately 27 per cent of the maximum grant.

### 2009 SOP awards

The HSBC Global Mining Index is used to assess Rio Tinto's relative TSR performance which is the performance measure used to determine the vesting of awards made under the SOP.

#### SOP performance period that ended on 31 December 2011

Comparator group	HSBC Global Mining Index
Performance period (3 years)	1 January 2009-31 December 2011
Index TSR %	116.0
Rio Tinto TSR %	151.3
% of options vested	100
% of options forfeited	

The 2008 average share price was abnormally inflated by the BHP Billiton bid. The Remuneration committee at that time used the average of the Rio Tinto share price over the three month period commencing 12 February 2009 (as opposed to a 12 month period commencing 1 January 2008) for the purpose of calculating the opening share price for TSR performance over the performance period. It used the same period in relation to the HSBC Global Mining Index. However, the usual 12 month methodology was used to calculate the ending share prices for TSR comparison purposes for Rio Tinto and the Index. The usual conventions were also applied to set the number of options awarded, based upon the prior year average share price which resulted in a significant reduction in options awarded for the majority of participants compared to the prior year.

Share options granted to executives in 2007 and 2008 did not vest and have lapsed in accordance with the SOP rules. The average vesting of share options for executives in the prior five years (2007-2011) has been 60 per cent of the maximum grant.

### 2009 MSP awards

Although executives are not eligible to receive awards under the MSP, Jacynthe Côté, Andrew Harding, Harry Kenyon-Slaney and Doug Ritchie each received grants prior to their appointments as PGCEOs. Hugo Bague and Debra Valentine received grants prior to remuneration arrangements for all Executive committee members being aligned in 2010. The vesting period for these previous MSP awards ended during 2011 with the exception of a residual award made to Debra Valentine when she joined the Group in 2008 and which vested in January 2012.

Plan period	Plan period that ended 31 December 2011
Vesting period	17 March 2009-31 December 2011
% of shares vested	100
% of shares forfeited	

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### Five-year TSR and relevant index TSR

TSR is the performance measure used to determine the vesting of awards made under the PSP and SOP. In 2011, Rio Tinto achieved record earnings; however the share price deteriorated over the course of 2011. Rio Tinto's TSR relative to the relevant index over the performance period has a direct impact on the levels of LTIP vesting.

The effect of this performance on shareholder wealth, as measured by TSR delivered during the relevant calendar year, is detailed in the table.

Year	Dividends	Share price-		Share price-		Total
	paid during	Rio Tinto plc		Rio Tinto Limited		shareholder
	the year	pence		A\$		(TSR)
	US cents	1 Jan	31 Dec	1 Jan	31 Dec	Group %
2011	117.0	4,487	3,125	85.47	60.30	<b>(31.8)</b>
2010	90.0	3,390	4,487	74.89	85.47	<b>33.2</b>
2009	68.0	1,231	3,390	29.97	74.89	<b>173.5</b>
2008	152.0	4,392	1,231	105.65	29.97	<b>(71.5)</b>
2007	116.0	2,245	4,392	58.60	105.65	<b>93.0</b>

The graph below illustrates the TSR performance of the Group against the HSBC Global Mining Index and the MSCI over the past five years. These two indices are used to assess Rio Tinto's relative TSR performance for awards made under the PSP from and including 2010. The HSBC Global Mining Index alone is used to determine the vesting of awards made under the SOP. The remuneration structure table on page 102 provides further details of the performance conditions for the PSP and SOP.

### Other payments during 2011

This section provides information on any other payments made during the year.

#### Bonus Deferral Plan (BDP)/Company Contributed Awards (CCA)

During the global and industry downturn in 2009, the Committee decided to defer the 2008 STIP payments into shares in order to enhance alignment with shareholders during a challenging economic period by ensuring executives were rewarded in-line with share price performance. Executive directors and PGCEOs were required to defer 100 per cent of any bonus due in respect of 2008, and all other executives were required to defer 50 per cent. The bonus deferral for executive directors and PGCEOs vested 100 per cent based on continued service at the end of 2011. In the case of the other executives (as described in the 2010 remuneration report), an amount equal to 25 per cent of salary (the CCA) was added to the amount of the bonus deferral to provide enhanced retention during a challenging period. Half the shares vested at the end of 2010 and half vested at the end of 2011. Accordingly, half of the shares awarded under the BDP and CCA vested for Jacynthe Côté, Hugo Bague, Andrew Harding, Harry Kenyon-Slaney, Doug Ritchie and Debra Valentine in December 2011. These shares were conditionally awarded prior to the named executives becoming PGCEOs or Group executives. The payments made under these awards are detailed in Table 1a.

The BDP continues to operate with 50 per cent of STIP awards deferred from 2010 onwards.

#### One-off long term incentive grant

Upon promotion to the role of chief executive of Rio Tinto Alcan on 1 February 2009, and based on the terms of her Alcan Inc. contract, Jacynthe Côté was granted a one-time conditional award of deferred shares equal to 25 per cent of her base salary. 50 per cent of the award vested on 1 February 2010 and the remaining 50 per cent vested on 1 February 2011 based on the successful achievement of the performance conditions for the award which were based on the successful integration and re-organisation of Rio Tinto Alcan.

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The payments made under this award are detailed in Table 1a.

### Former director

In early 2012, Rio Tinto was responsible for a payment on behalf of Dick Evans, a former executive director who retired on 31 December 2009. This payment of US\$255,524 was in accordance with Rio Tinto's contractual obligations with regard to his former international assignment.

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**Remuneration report: Appendix continued**

**When remuneration is delivered**

The following chart provides a timeline of when the 2011 total remuneration is delivered.

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**Executive remuneration structure**

The remuneration structure for executives, including the relationship between each element of remuneration and Group performance, is summarised below:

Fixed	Link to Group performance	Remuneration arrangements
<b>Base salary</b>	Provides the fixed element of the remuneration package	Base salaries reviewed annually effective 1 March
	Reflects an employee's sustained contribution to the organisation	Any increases are determined with reference to underlying Group and individual performance, global economic conditions, role responsibilities, an assessment against relevant comparator groups and base salary budgets applying to the broader employee population
<b>Benefits</b>	Provides locally competitive post employment and other benefits in a cost efficient manner	Post employment benefit arrangements include pension or superannuation and post retirement medical benefits where applicable
		Other benefits include healthcare, accident insurance where applicable, provision of a car, professional advice, spouse travel, flexible perquisites and secondment costs comprising housing, education, tax equalisation and relocation payments made to and on behalf of executives living outside their home country
Performance-related (At risk)		
<b>STIP</b>	Focuses participants on achieving demanding annual performance goals, which are based on the Group's KPIs, to create sustainable shareholder value	The maximum annual bonus opportunity for outstanding performance under the STIP for executives is 200 per cent of base salary (for target performance, this is 120 per cent of base salary for executive directors and 100 per cent of base salary for other executives)
	50 per cent of the STIP delivered in cash and 50 per cent delivered in deferred shares under the BDP. The BDP vests in the December of the third year after the end of performance year to which they relate. Vesting is subject to continued employment to ensure ongoing alignment between the executives and shareholders	Threshold, target and outstanding performance levels are established for all STIP measures in order to drive high levels of business and individual performance. The STIP awards for achieving these performance levels are 50 per cent, 100 per cent and 200 per cent of the STIP opportunity respectively
		The financial performance targets for the measures identified below are established through an annual planning process, where the product group and Group plans are ultimately approved by the board. The central case or base plan delivers what the board considers to be target performance. Probability factors are then applied based upon a range of potential operating and cost scenarios to establish the threshold and outstanding performance levels. These threshold and outstanding levels are approved by the Remuneration committee at the beginning of each performance year
		The following measures and weightings are used to determine STIP payments for executives:

	Weighting for executive directors and Group	Weighting for PGCEOs(a)
	executives%	%
Business measures		
<b>Rio Tinto Group</b>		
Earnings – flexed and unflexed	26.25	10.50
Cash flow – flexed and unflexed	26.25	10.50
<b>Product group</b>		
Earnings		15.75
Cash flow		15.75
<b>Total financial measures</b>	<b>52.50</b>	<b>52.50</b>
<b>Health and safety</b>	17.50	17.50
<b>Total business measures</b>	<b>70.00</b>	<b>70.00</b>
<b>Individual objectives</b>	30.00	30.00
<b>Total</b>	<b>100.00</b>	<b>100.00</b>



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(a) Sam Walsh is considered a PGCEO with regard to STIP performance measures.

An explanation of why performance is assessed against these measures and objectives is provided below:

The inclusion of health and safety in the STIP (measured in relation to AIFR 40 per cent, SPI 25 per cent and SQRA<sup>TM</sup> 35 per cent) is a strong reminder that the safety of our employees is paramount and should not be compromised when targeting superior financial results

In order to increase the focus on the significant risks that can be addressed before people are injured, the weighting to the combined leading safety indicators, SPI and SQRA<sup>TM</sup>, was increased from 50 per cent to 60 per cent in 2011 while the weighting to the lagging safety indicator, AIFR, was reduced from 50 per cent to 40 per cent

The maximum health and safety score a PGCEO, the Group executive T&I and the Group executive Business Support and Operations can achieve after a fatality is 75 per cent (out of a maximum of 200 per cent).

The extent of the impact of a fatality on the STIP score for executives is based on a judgment process that assesses the impact of leadership, individual behaviour and systems in the incident. Recommendations on the appropriate downward adjustment are made to the Remuneration committee

The Committee selected the financial measures as they are KPIs used in managing the business. In measuring performance against the annual plan, the original plan is flexed to exclude the impact of uncontrollable fluctuations in exchange rates, quoted metal prices and other prices. Earnings and cash flow results are therefore compared against equally weighted flexed and unflexed targets

Individual objectives are tailored to each executive but are generally based on the achievement of strategic initiatives, key project deliverables and leadership competencies

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**Remuneration report: Appendix continued**

<b>LTIP</b>	<p>Link to Group performance</p> <p>Award levels are set so as to incentivise executives to meet the long-term strategic goals of the Group, to provide sufficient retention for the executive team and to contribute towards the competitiveness of the overall remuneration package</p> <p>For grants made under the PSP and SOP from March, 2012, if an executive leaves during the first 24 months from the date of grant as a good leaver then awards will be reduced to reflect the time worked up to the date of termination, as a proportion of the first 24 months from the date of grant. This compares to the previous practice of pro rating awards over a 12 month period and is designed to more closely align these provisions with market practice. The award will continue to vest at the normal vesting date subject to achievement against the performance conditions.</p>	<p>Remuneration arrangements</p> <p>Awards are made in the form of options under the SOP and/or performance shares under the PSP</p> <p>Awards have an expected value equal to 190% of base salary</p> <p>Executives can express a preference regarding the mix of the long term incentive opportunity between:</p> <p>A mix of performance shares and performance options. Under this preference the maximum performance share award is 200% of base salary (vesting up to 1.5 times for exceptional performance) and the maximum share option award is 300% of base salary</p> <p>Receiving their full opportunity in performance shares. Under this preference the maximum performance share award is 292% of base salary (vesting up to 1.5 times for exceptional performance)</p> <p>The expected value of awards made under either preference is the same</p>													
<b>SOP</b>	<p>Rewards participants for increasing the share price and delivering superior TSR performance against other companies over a longer timeframe</p> <p>Motivates and drives individual contribution while focusing individuals on the collective performance of the Group</p> <p>Three year performance period to provide long-term alignment with shareholders</p> <p>How performance is generated is as important as what level of performance is delivered. Therefore, before awards vest, the Committee must also satisfy itself that TSR performance is an appropriate reflection of the underlying performance of the business and can adjust vesting accordingly</p>	<p>Market value performance options vest subject to the achievement of a stretching TSR performance condition, comparing Rio Tinto's TSR performance to that of the HSBC Global Mining Index</p> <p>Awards have a maximum face value of 300% of base salary (expected value of 60% of base salary)</p> <p>Vesting for awards is as follows:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Outperformance of the index</td> <td style="width: 30%;">by 5% per annum</td> <td style="width: 40%;">Awards of over 20,000 options will vest in full</td> </tr> <tr> <td>Performance between index and 5% out performance</td> <td></td> <td>Proportionate vesting for performance between index and 5% outperformance of the index (ie two-thirds vesting for 2.5% outperformance)</td> </tr> <tr> <td>Performance equal to index</td> <td></td> <td>Awards of up to 20,000 options or one-third of the award (whichever is higher)</td> </tr> <tr> <td>Performance less than index</td> <td></td> <td>Nil vesting</td> </tr> </table>	Outperformance of the index	by 5% per annum	Awards of over 20,000 options will vest in full	Performance between index and 5% out performance		Proportionate vesting for performance between index and 5% outperformance of the index (ie two-thirds vesting for 2.5% outperformance)	Performance equal to index		Awards of up to 20,000 options or one-third of the award (whichever is higher)	Performance less than index		Nil vesting	
Outperformance of the index	by 5% per annum	Awards of over 20,000 options will vest in full													
Performance between index and 5% out performance		Proportionate vesting for performance between index and 5% outperformance of the index (ie two-thirds vesting for 2.5% outperformance)													
Performance equal to index		Awards of up to 20,000 options or one-third of the award (whichever is higher)													
Performance less than index		Nil vesting													
<b>PSP</b>	<p>Rewards participants for increasing the share price and delivering superior TSR performance against other companies over a longer timeframe</p> <p>Motivates and drives individual contribution while focusing individuals on the collective performance of the Group</p> <p>Four year performance period to provide long-term alignment with shareholders</p>	<p>Conditional share awards vest subject to the achievement of a stretching TSR performance condition, comparing Rio Tinto's TSR performance against:</p> <p>50% the HSBC Global Mining Index</p> <p>50% the Morgan Stanley Capital World Index (MSCI)</p> <p>Awards have a maximum face value of 292% of base salary (expected value of 190% of base salary assuming one times award vests)</p> <p>Vesting for awards is as follows:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Outperformance of the index</td> <td style="width: 30%;">by 8% per annum</td> <td style="width: 40%;">1.5 times award vests</td> </tr> </table>	Outperformance of the index	by 8% per annum	1.5 times award vests										
Outperformance of the index	by 8% per annum	1.5 times award vests													

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As with options, before vesting the Committee must also satisfy itself that TSR performance is an appropriate reflection of the underlying performance of the business and can adjust vesting accordingly

Performance between index and 8% out performance	Proportionate vesting for performance between index and 8% outperformance of the index.
Outperformance of the index by approximately 5% per annum	One times award vests
Performance equal to index	0.35 times award vests
Performance less than index	Nil vesting

The outperformance required for maximum vesting has been calibrated to be equivalent to the upper quartile performance against these indices and, as such, is considered by the Committee to be particularly stretching. The outperformance required for one times award vesting approximates 5% which is consistent with the outperformance required for full vesting of the SOP

Dividends are not received by executives during the performance period and are not received on awards which do not vest

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### **Performance evaluation process for executives**

Rio Tinto conducts an annual performance evaluation process for all of its executives. In the case of members of the Executive committee, the chief executive conducts the review. In the case of the chief executive, the chairman of the Remuneration committee conducts the review in conjunction with the chairman of the board.

The key objectives of the performance process are to:

Improve organisational effectiveness by creating alignment between the executive's individual objectives and Rio Tinto's strategy, and

provide a consistent, transparent and balanced approach to measure, recognise and reward executive performance.

Individual objectives are set with the Remuneration committee in the first quarter of each year. Annual performance reviews are completed during early January of the following year. Performance evaluations for each executive took place in January 2012 in accordance with the process described. Individual objectives and awards for 2011 for executives are set out in the tables on pages 88, 89, 91 and 95.

### **Executives' service contracts**

The executives have service contracts that can be terminated by either party with 12 months' notice in writing, or immediately by paying the base salary only in lieu of any unexpired notice. Debra Valentine's service contract was aligned with the other executives during 2011. For Jacynthe Côté, the 12 months' notice includes salary and target bonus opportunity, in line with typical market practice in Canada and her Alcan Inc. contract.

In the case of dismissal for cause, the Company can terminate employment without notice and without payment of any salary or compensation in lieu of notice. Bonus and outstanding awards under the LTIP are forfeited in these circumstances.

If termination is a result of a redundancy, the terms of the relevant policy may apply in the same way as for other local employees. In the case of involuntary termination, Jacynthe Côté may be eligible to receive 24 months' salary and target bonus opportunity inclusive of notice in line with entitlements under her Alcan Inc. contract.

STIP and LTIP rules govern entitlements that participants may have upon termination. If termination is due to any reason besides cause or resignation, participants are eligible to receive a pro rata STIP for the portion of the performance period worked which is calculated based on actual business and individual performance. Any outstanding deferred shares under the BDP normally vest at their normal vesting date. Where an individual leaves for 'good' leaver reasons or in other circumstances that the Committee determines, outstanding performance options and performance shares will vest at the normal vesting date subject to performance against the performance conditions, with any awards held for less than 12 months at the date of termination reduced pro rata. Contractual entitlements to severance are not triggered by a change of control. All of the Company's share plans contain provisions relating to a change of control. Outstanding deferred shares under the BDP would normally vest in full and outstanding performance shares and performance options would normally vest and become exercisable on a change of control on a pro rata basis, subject to the satisfaction of any performance conditions at that time.

Name	Position held during 2011	Date of appointment to current position
<b>Executive directors</b>		
Tom Albanese	chief executive	1 May 2007
Guy Elliott	chief financial officer	19 June 2002
Sam Walsh	CEO Iron Ore and Australia	5 June 2009
<b>Other executives</b>		
Hugo Bague	Group executive, People & Organisation	1 August 2007
Preston Chiaro	Group executive, Technology & Innovation	1 November 2009
Bret Clayton	Group executive, Business Support & Operations	1 November 2009
Jacynthe Côté	CEO Rio Tinto Alcan	1 February 2009
Andrew Harding	CEO Copper	1 November 2009
Harry Kenyon-Slaney	CEO Diamonds & Minerals	1 November 2009
Doug Ritchie	CEO Energy	1 November 2009

## Employee share plans

### Management Share Plan (MSP)

The primary focus of the MSP is to support the Group's ability to attract and retain key staff below executive level in an increasingly tight and competitive labour market. Executives are not eligible to participate in the MSP. Jacynthe Côté, Andrew Harding, Harry Kenyon Slaney and Doug Ritchie received grants under the MSP prior to becoming PGCEOs. Hugo Bague and Debra Valentine received grants prior to Group executives being excluded from participation in the plan in 2010.

Retention of key individuals is also important given the long-term nature of the delivery of the business strategy. MSP awards are conditional awards not subject to a performance condition as they vest subject to continued employment, at the end of three years, and thus act as an effective retention tool. Shares to satisfy the awards are purchased in the market and no new shares are issued.

### All employee share plans

Executives may participate in broad based share and share option plans which are available to Group employees generally and for which performance conditions do not apply. These plans form part of standard remuneration practice whereby employees are offered participation in plans to encourage alignment with the long term performance of the Group. Executives may participate in the Rio Tinto plc Share Savings Plan or the Rio Tinto Limited Share Savings Plan depending on whether they are employed by Rio Tinto plc or Rio Tinto Limited. The Share Ownership Plan is available to eligible employees in the UK who may receive an annual award of shares up to five per cent of salary, subject to a cap of £3,000.

Where under an employee share plan operated by the Company, participants are the beneficial owners of the shares, but not the registered owners, the voting rights are normally exercised by the registered owner at the direction of the participant.

### Proposed new global employee share plan

The Committee believes that all employees should be given the opportunity to become shareholders in our business. The Committee is implementing a new global employee share purchase plan from 2012. The new plan may be offered to all eligible employees across the world save for any local jurisdictional restrictions. Under the plan employees may acquire shares up to the value of US\$5,000 per year, capped at 10 per cent of base salary. Each share purchased will be matched by the Company providing the participant holds the shares, and remains employed, at the end of the vesting period. The Committee believes the new plan will serve to engage, retain and motivate employees over the long term.

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### **Remuneration report: Appendix continued**

#### **Dilution**

Awards under the SOP, PSP and Share Savings Plan may be satisfied by treasury shares, the issue of new shares or the purchase of shares in the market. Currently, Rio Tinto plc satisfies these awards by the issue of new shares or the transfer of shares from treasury. Rio Tinto Limited satisfies these awards by the market purchase and delivery of shares to plan participants. Rio Tinto plc complies with applicable corporate governance guidelines in relation to the issue of new shares. All other share awards are satisfied by the use of shares which are purchased in the market. Further information in respect of the number of shares issued under plan arrangements can be found in note 46 to the financial statements.

#### **Shareholding policy for executives**

The Group recognises the importance of aligning executives' interests with those of shareholders and they are therefore expected to build up a shareholding. The Committee has determined that executive directors should aim to reach a holding equivalent in value to two times their base salary over three years, with other executives aiming to achieve this holding over five years.

#### **Share dealing policy**

Executives and employee insiders are bound by the Rules for dealing in Rio Tinto securities which comply with the requirements of the ASX Listing Rules and are consistent with the UK Listing Authority's Model Code. These rules are available on the Rio Tinto website. The rules apply fixed close periods before results announcements as well as other prohibited periods during which key management personnel and employee insiders are prohibited from trading Rio Tinto securities. Directors, other executives and employee insiders are required to certify that they do not hold any inside information when seeking clearance to deal in Rio Tinto securities. All employees subject to the rules receive regular training and information.

Executives and employee insiders are prohibited from engaging in hedging arrangements, dealing in derivatives or entering into other arrangements which limit the economic risk related to Rio Tinto securities, including in relation to securities awarded under long term incentive plans.

#### **Executives' external and other appointments**

Executives may be invited to become non executive directors of other companies. It is Rio Tinto's policy that such appointments can broaden the experience and knowledge of executives, to the benefit of the Group. This policy limits each executive's external appointment to one FTSE100 company directorship or equivalent. Consequently, where there is no likelihood that such an appointment will give rise to a conflict of interest, the board will normally provide consent to the appointment. The executive is permitted to retain any fees earned.

In 2011, the following executive directors received fees from external appointments: Guy Elliott received US\$219,918 (2010: US\$100,537) and Sam Walsh received A\$137,084 (2010: A\$120,690).

Details of all board members' and executives' external appointments can be found on pages 77 to 80.

#### **Company secretary remuneration**

The executive remuneration policy applies to the company secretary of each of Rio Tinto plc and Rio Tinto Limited. They participate in the performance share plan and they receive awards under MSP. The individual performance measures for the company secretaries' STIP comprise Group and individual objectives. Their personal measures reflect the key responsibilities of the company secretarial role and include ensuring compliance with regulatory requirements, continual improvement of corporate governance practice and measures related to the provision of corporate secretarial services to the Group.



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**Chairman and non executive directors remuneration**

**Remuneration policy**

**Chairman**

The Remuneration committee determines the terms of service, including remuneration, of the chairman. It is Rio Tinto's policy that the chairman should be remunerated on a competitive basis and at a level which reflects his contribution to the Group, as assessed by the board. The chairman is not present at any discussion regarding his own remuneration.

The chairman receives a fixed annual fee and does not receive any additional fee or allowance for either committee membership or for overseas travel. He is provided with a car and driver for business purposes, and private healthcare. He is also covered under the Group's accident policy. These are disclosed as benefits in Table 1b on page 108. He does not participate in the Group's incentive plans or pension arrangements.

**Non executive directors**

Fees paid to non executive directors reflect their respective duties and responsibilities and the time required to be spent by them so as to make a meaningful and effective contribution to the affairs of Rio Tinto. Non-executive directors receive a fixed annual fee comprising a base fee, committee membership or committee chairmanship fees, as applicable, and allowances for attending meetings which involve medium or long distance air travel. Rio Tinto does not pay retirement or post employment benefits to non executive directors, nor do any of them participate in any of the Group's incentive plans. Where the payment of statutory minimum superannuation contributions for Australian non-executive directors is required by Australian superannuation law, these contributions are deducted from the director's overall fee entitlements. Non-executive directors are also covered under the Group's accident policy.

The fees payable to non executive directors are subject to review by the Chairman's committee. During 2011, the review took into account market and related developments. In light of Rio Tinto's size, the complexity of its Dual Listed Companies' structure and the resulting demands on directors as well as market developments, the base fee for non-executive directors was increased to £85,000 from 1 January 2012. Other fees were also increased, as indicated in the table below, with effect from 1 January 2012, including allowances for overseas meetings involving long and medium distance flights.

**Fees**

The table below sets out the annual fees payable to the chairman and the non-executive directors.

	2012	2011	2010
<b>Director fees</b>			
Chairman's fee	£ 700,000	£ 700,000	£ 700,000
Non-executive director base fee	£ 85,000	£ 80,000	£ 70,000
Senior independent director	£ 40,000	£ 35,000	£ 35,000
<b>Committee fees</b>			
Audit committee chairman	£ 35,000	£ 35,000	£ 30,000
Audit committee member	£ 20,000	£ 15,000	£ 15,000
Remuneration committee chairman	£ 30,000	£ 30,000	£ 20,000
Remuneration committee member	£ 15,000	£ 10,000	£ 10,000
Sustainability committee chairman	£ 30,000	£ 25,000	£ 20,000
Sustainability committee member	£ 15,000	£ 10,000	£ 7,500
Nominations committee member	£ 7,500	£ 7,500	£ 7,500
<b>Overseas meeting allowances</b>			
Long distance (flights over 10 hours per journey)	£ 10,000	£ 7,500	£ 7,500
Medium distance (flights of 5-10 hours per journey)	£ 5,000	£ 3,500	£ 3,500

**Remuneration paid during 2011**



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Details of each element of remuneration paid to the chairman and non-executive directors during 2011 are set out in Table 1b. No post employment, long term or termination payments were paid and no share based payments were made. The total payments made to the chairman and non-executive directors in 2011 are within the maximum aggregate annual amount of £3 million set out in the Group's constitutional documents approved by shareholders at the 2009 annual general meetings.

### Shareholding policy for non-executive directors

In 2006, the board recommended that non-executive directors be encouraged to build up a shareholding within three years of their appointment equal in value to one year's base fee. To help facilitate this, a non-executive directors' share purchase plan was established under which non-executive directors may elect to invest a proportion of their fees net of tax on a regular basis to acquire shares on the open market. Details of non-executive directors' share interests in the Group are set out in Table 3 on page 110.

### Letters of appointment

The chairman's letter of appointment stipulates his duties as chairman of the Group. His appointment may be terminated without liability on the part of Rio Tinto in accordance with the Group's constitutional documents dealing with retirement, disqualification from office or other vacation from office. Otherwise his appointment may be terminated by giving 12 months notice.

Non-executive directors have formal letters of appointment setting out their duties and responsibilities. These letters are available for inspection at Rio Tinto plc's registered office, and at its annual general meeting. Each non-executive director is appointed by the board subject to their election and annual re-election by shareholders as detailed on page 69. Non-executive directors' appointments may be terminated by giving three months' notice. There are no provisions for compensation payable on termination of their appointment.

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**Remuneration report: Appendix continued**

**Table 1a Executives remuneration**

Stated in US\$000 <sup>(a)</sup> <b>Executive directors</b>		Short-term benefits					Long-term benefits			
		Base salary	Cash bonus <sup>(b)</sup>	Other cash based benefits <sup>(c)</sup>	Non monetary benefits <sup>(d)</sup>	Total short-term benefits <sup>(e)</sup>	Value of share based awards <sup>(f)</sup>			
							Other long-term benefits	BDP <sup>(g)</sup>	CCA <sup>(h)</sup>	PSP
Tom Albanese	2011	1,619		3	429	2,051	535			2,384
	2010	1,403	1,248	3	318	2,972	487			1,522
Guy Elliott	2011	1,143		24	312	1,479	396			1,650
	2010	1,044	989	23	244	2,300	359			1,061
Sam Walsh	2011	1,622	1,211	93	2	2,928	922			2,390
	2010	1,354	1,391	83	9	2,837	552			1,220
<b>Other key management personnel</b>										
Hugo Bague	2011	651	388	131	320	1,490	210	27		654
	2010	557	396	103	196	1,252	130	62		354
Preston Chiaro	2011	762	389		209	1,360	376			1,118
	2010	725	563		888	2,176	262			708
Bret Clayton	2011	738	476		1,070	2,284	270			1,076
	2010	700	476		1,106	2,282	147			705
Jacynthe Côté	2011	916	480	7	35	1,438	300	44		1,199
	2010	907	2,214		40	3,161	213	102		643
Andrew Harding	2011	658	389	114	680	1,841	226	27		779
	2010	603	469	168	413	1,653	141	59		408
Harry Kenyon-Slaney	2011	658	369	132	72	1,231	224	19		694
	2010	557	466	112	25	1,160	148	43		336
Doug Ritchie	2011	947	473		75	1,495	287	33		912
	2010	780	593	32	92	1,497	178	71		522
Debra Valentine	2011	620	399	26	790	1,835	226	30		642
	2010	570	433		906	1,909	153	70		286

**Notes to Table 1a**

- (a) The total remuneration is reported in US dollars. The amounts have been converted using the relevant 2011 average exchange rates of £1 =US\$1.6039, A\$1=US\$1.0327 and C\$1 =US\$1.0116. The annual cash bonus payable under the STIP has been converted using the relevant 2011 year end exchange rates of £1=US\$1.5597, A\$1=US\$1.0124 and 1 C\$=US\$0.9771.
- (b) Cash bonus relates to the cash portion of the 2011 STIP to be paid in March 2012.
- (c) Other cash based benefits include cash in lieu of a car and fuel. For Hugo Bague, Harry Kenyon-Slaney and Andrew Harding, it includes a cash supplement equal to 20 per cent of the amount by which their Contributory Salary exceeds the Earning Cap as defined in the Rio Tinto Pension Fund. For Jacynthe Côté, it includes a residual amount paid out in 2011 for her 2010 flexible perquisites.
- (d) Non monetary benefits for executives include healthcare, provision of a car, professional advice, spouse travel, flexible perquisites and secondment costs comprising housing, education, tax equalisation and relocation payments made to and on behalf of executives living outside their home country. For Andrew Harding, it includes a UK tax payment made by the Company for the period from 1 January 2010 to 30 June 2010 during which he was on a commuter assignment to the UK as well as a US tax payment for 2010 for the period when he was an inbound assignee to the US from Australia. For Harry Kenyon-Slaney, it includes an Australian tax payment made by the Company in 2011 resulting from an international assignment in Australia. For Doug Ritchie, it includes a service award recognising long service under a policy applicable to all employees in Australia. For Tom Albanese and Guy Elliott, it includes the value of company provided transport. Rio Tinto provides accident cover for employee members of the Rio Tinto Pension Fund. Some of the executives are members of the Rio Tinto Pension Fund; the total premium paid in 2011 was US\$8,090.
- (e) Total short term benefits represents the disclosure of total emoluments and compensation required under the UK Companies Act 2006 (UK) and total remuneration under the Australian Corporations Act 2001 and applicable accounting standards.

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- (f) The value of share based awards has been determined in accordance with the recognition and measurement requirements of IFRS2 Share-based Payment . The fair value of awards granted under the Share Option Plan (SOP), the Management Share Plan (MSP), the Bonus Deferral Plan (BDP) and the Share Savings Plan (SSP) have been calculated at their dates of grant using an independent lattice-based option valuation model provided by external consultants, Lane Clark and Peacock LLP. With effect from 2010, the Group s policy for settling awards granted under the Performance Share Plan (PSP) (formerly known as the Mining Companies Comparative Plan (MCCP)) changed. For settlement of all awards under this plan, participants will be assigned shares and offered a third party facility to realise these shares for cash and/or to meet any tax liabilities. Accordingly, the fair values of the awards granted prior to this change were re-measured at 1 July 2010 and from that date treated as equity-settled awards. This re-measurement was calculated using a Monte Carlo valuation model based on the market price of shares and their relative TSR performance at 30 June 2010. The fair value of awards granted after July 2010 is measured at date of grant. Further details of the valuation methods and assumptions used for these awards are included in note 46 (Share Based Payments) in the 2011 financial statements. The fair value of other share based awards is measured at the purchase cost of the shares from the market. The non-executive directors do not participate in the long term incentive share schemes.
- (g) BDP represents the deferral of the full 2008 STIP and 50 per cent of the 2010 and 2011 STIP into Rio Tinto Shares.
- (h) CCA represents the additional shares provided to employees below the executive directors and PGCEO level under the 2008 BDP to provide and enhance retention.

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	Stated in US\$ '000(a)	Long-term benefits Value of share based awards			Post employment benefits(k)		Termination benefits	Total remuneration	Currency of actual payment
		MSP	SOP	Others(j)	Pension and superannuation	Other post employment benefits			
<b>Executive directors</b>									
Tom Albanese		2011	1,668	8	1,974		8,620	£	
		2010	1,667	7	1,708		8,363	£	
Guy Elliott		2011	1,189	7	563		5,284	£	
		2010	1,059	7	512		5,298	£	
Sam Walsh		2011	1,047	3	384		7,674	A\$	
		2010	1,136	3	346		6,094	A\$	
<b>Other key management personnel</b>									
Hugo Bague		2011	182	579	6	43	3,191	£	
		2010	209	338	5	41	2,391	£	
Preston Chiaro		2011		818	1	256	3,929	US\$	
		2010		767	1	239	4,153	US\$	
Bret Clayton		2011		791		234	4,656	US\$	
		2010		739		173	4,047	US\$	
Jacynthe Côté (i) (l)		2011	8	860		436	4,286	US\$/C\$	
		2010	952	483		409	5,967	US\$/C\$	
Andrew Harding		2011	173	644	8	43	3,741	£	
		2010	178	330	2	58	2,829	£/US\$/A\$	
Harry Kenyon-Slaney		2011	80	376	9	139	2,772	£	
		2010	96	290	9	131	2,213	£	
Doug Ritchie		2011	454	714	2	253	4,150	A\$	
		2010	424	354	1	207	3,254	A\$	
Debra Valentine		2011	339	573	1	208	3,861	US\$	
		2010	515	307	1	187	3,435	US\$	

(i) The vesting of Jacynthe Côté's 2009 MSP award was subject to satisfying specific performance conditions related to the integration and re-organisation of Rio Tinto Alcan. 50 per cent of the award vested on 1 February 2010 and the remaining 50 per cent vested on 1 February 2011.

(j) Others include the Share Savings Plan and Share Ownership Plan as described in the Remuneration report on page 103.

(k) The costs shown for defined benefit pension plans and post retirement medical benefits are the service costs attributable to the individual, calculated in accordance with IAS19. The cost for defined contribution plans is the amount contributed in the year by the Company. For Bret Clayton and Preston Chiaro, the 2010 pension and superannuation costs have been restated as part of the STIP was not included in the pensionable pay on which benefits are based. The figures previously disclosed were US\$163,000 for Bret Clayton and US\$210,000 for Preston Chiaro.

(l) Jacynthe Côté's remuneration is stated in US dollars. To convert the base salary, a fixed exchange rate of US\$1=C\$1.0350 was used during the year. All other short term benefits received are paid in Canadian dollars.

**Table of Contents****Remuneration report: Appendix continued****Table 1b Non-executive directors remuneration**

Stated in US\$ '000 <sup>(a)</sup>		Short-term benefits			Total remuneration <sup>(d)</sup>	Currency of actual payment
		Fees	Other cash based benefits <sup>(b)</sup>	Non monetary benefits <sup>(c)</sup>		
<b>Chairman</b>						
Jan du Plessis	2011	1,123		333	1,456	£
	2010	1,082		243	1,325	£
<b>Non-executive directors</b>						
Robert Brown	2011	156	46	55	257	£
	2010	98	44		142	£
Vivienne Cox	2011	175	18	22	215	£
	2010	144	12		156	£
Sir Rod Eddington	2011	51	22	7	80	A\$
	2010	120	33		153	A\$
Michael Fitzpatrick	2011	166	55		221	A\$
	2010	145	22		167	A\$
Yves Fortier	2011	55	29	18	102	£
	2010	131	41		172	£
Ann Godbehere	2011	196	18	25	239	£
	2010	144	23		167	£
Richard Goodmanson	2011	196	48	17	261	£
	2010	166	66		232	£
Andrew Gould	2011	238	12		250	£
	2010	197			197	£
Lord Kerr	2011	180	12	19	211	£
	2010	178	23		201	£
Chris Lynch <sup>(e)</sup>	2011	43	22		65	A\$
Paul Tellier	2011	180	46	38	264	£
	2010	158	59		217	£
John Varley	2011	59			59	£

**Notes to Table 1b**

(a) The total remuneration is reported in US dollars. The amounts have been converted using the relevant 2011 average exchange rates of £1 = US\$1.6039 and A\$1 = US\$1.0327.

(b) Other cash based benefits for non-executive directors comprise overseas meeting allowances.

(c) Non monetary benefits include for Jan du Plessis the value of company provided transport, spouse travel and medical insurance premiums. For Sir Rod Eddington, it includes the value of a retirement gift. For Yves Fortier, it includes the value of a retirement gift and spouse travel. For Robert Brown, Vivienne Cox, Ann Godbehere, Lord Kerr and Paul Tellier, it includes spouse travel. For Richard Goodmanson, it includes spouse travel and accountancy fees. For Lord Kerr, it includes accountancy fees. Rio Tinto plc provides accident cover for non-executive directors; the total premium paid in 2011 was US\$4,525.

(d) Represents disclosure of total emoluments and compensation required under the UK Companies Act 2006 and total remuneration under the Australian Corporations Act 2001 and applicable accounting standards.

(e) Chris Lynch's fees (other than statutory superannuation contributions) were paid to the Transurban Group.



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Table 2 Directors' pension entitlements (as at 31 December 2011)

**Defined benefit pensions**

Age	Years of service completed	Accrued benefits				Change in accrued benefits during the year ended 31 Dec 2011	Change in accrued benefit net of inflation <sup>(a)</sup>	Transfer values		
		At 31 Dec 2010	At 31 Dec 2011	2011 pension	2011 pension			At 31 Dec 2010	At 31 Dec 2011 <sup>(c)</sup>	Change, net of personal contributions
		£ 000 pa pension	£ 000 pa pension	£ 000 pa pension	£ 000 pa pension	£ 000 pa pension	£ 000	£ 000	£ 000	£ 000
<b>UK directors</b>										
Tom Albanese <sup>(b)</sup> <sup>(c)</sup>										
	30	395	476	81	65					
Guy Elliott <sup>(c)</sup>										
54	31	471	514	43	20	5,561	8,485	2,924	1,458	
56		A\$ 000 lump sum	A\$ 000 lump sum	A\$ 000 lump sum	A\$ 000 lump sum	A\$ 000 lump sum	9,054	11,937	2,883	460
<b>Australian director</b>										
Sam Walsh <sup>(c)</sup>										
62	20	5,493	6,245	752	559	5,493	6,245	665	559	

**Defined Contribution pensions**

**Australian director**

Sam Walsh

Notes to Table 2

Age	Years of service completed	Company Contributions	
		Year to 31 Dec 2010	Year to 31 Dec 2011
		A\$000	A\$000
62	20	59	59

(a) Price inflation is calculated as the increase in the relevant retail or consumer price index over the year to 31 December 2011, except for Australia where a September to September change is used.

(b) Tom Albanese accrued pension benefits in the US plans for service up to 30 June 2006 and is accruing benefits in the UK plans for subsequent service.

(c) The transfer value of benefits in the UK plans is calculated in a manner consistent with Retirement Benefit Schemes Transfer Values (GN11) published by the Institute of Actuaries and the Faculty of Actuaries. The transfer value of benefits in the US plans is represented by the Accumulated Benefit Obligation calculated on the accounting assumptions used for the Group's post-retirement benefits disclosures. Tom

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Albanese and Guy Elliott have benefits provided through a combination of funded and unfunded arrangements. The pension and transfer values shown are in respect of their total benefits. The increase in transfer values arising from changes in financial assumptions between 2010 and 2011 for the three directors are: Tom Albanese: £1,046,000; Guy Elliott: £ 1,680,000; Sam Walsh: nil.



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**Remuneration report: Appendix continued**

**Table 3 Directors and executives beneficial interests in Rio Tinto shares**

	Rio Tinto plc			Rio Tinto Limited			Exercise of options <sup>(c)</sup>	Movements	
	1 Jan 2011 <sup>(a)</sup>	31 Dec 2011 <sup>(b)</sup>	20 Feb 2011 <sup>(b)</sup>	1 Jan 2011 <sup>(a)</sup>	31 Dec 2011 <sup>(b)</sup>	20 Feb 2012 <sup>(b)</sup>		Compensation <sup>(d)</sup>	Other <sup>(e)</sup>
<b>Directors</b>									
Tom Albanese	227,955	251,328	252,285				957	48,952	(25,578)
Robert Brown	2,200	2,200	2,200						
Vivienne Cox	2,912	2,912	2,912						
Jan du Plessis	30,000	30,000	30,000						
Sir Rod Eddington									
Guy Elliott	96,435	103,078	103,092					33,159	(26,502)
Michael Fitzpatrick				6,252	6,252	6,252			
Yves Fortier	3,954	4,398	4,398						444
Ann Godbehere		1,046	1,046						1,046
Richard Goodmanson	7,028	9,287	9,287						2,259
Andrew Gould	2,642	2,642	2,642						
Lord Kerr	12,000	12,000	12,000						
Chris Lynch		2,070	2,070	5,121	5,121	5,121			2,070
Paul Tellier	12,093	13,852	13,852						1,759
John Varley		2,985	2,985						2,985
Sam Walsh				46,950	46,950	46,950		34,864	(34,864)
<b>Executives</b>									
Hugo Bague	18,822	24,216	34,528					33,290	(17,584)
Preston Chiaro	91,012	99,182	99,217				367	31,181	(23,343)
Bret Clayton	22,579	28,280	28,280					15,387	(9,686)
Jacynthe Côté	7,045	18,266	22,020					29,325	(14,350)
Andrew Harding		69	69	11,293	15,737	24,684		20,098	(6,638)
Harry Kenyon-Slaney <sup>(g)</sup>	19,551	21,831	21,845					10,310	(8,016)
Doug Ritchie				19,469	29,955	29,955		12,385	(1,899)
Debra Valentine	4,624	12,240	12,240				367	14,628	(7,379)

Notes to Table 3

(a) Or date of appointment, if later.

(b) Or date of retirement, if earlier.

(c) Shares obtained through the exercise of options under the Rio Tinto Share Savings Plan or the SOP. The number of shares retained may differ from the number of options exercised.

(d) Shares obtained through the Rio Tinto Share Ownership Plan and/or vesting of awards under the PSP, MSP and BDP.

(e) Share movements due to sale or purchase of shares, shares received under the Dividend Reinvestment Plan, shares purchased/sold through the Rio Tinto America Savings Plan or Non executive directors Share Purchase Plan.

(f) Interests in outstanding awards under LTIPs and option schemes are set out in Tables 4 and 5.

(g) The balance as at 31 December 2010 for Harry Kenyon-Slaney was understated in the 2010 remuneration report by 814 shares.

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Table 4 Executives with awards under long term incentive plans 2011

	Conditional award granted	Market price at award	1 Jan 2011	Awarded	Lapsed/cancelled	Dividend shares	Vested	31 Dec 2011	Performance period concludes	Date of vesting	Market price at election	Monetary value of vested award US\$ 000 <sup>(1)</sup>
<b>Bonus Deferral Plan</b>												
Tom Albanese	17-Mar-09	£19.82	28,278			1,164	29,442		01-Dec-11	13-Dec-11	£31.85	1,504
	21-Mar-11	£40.58		20,127				20,127	01-Dec-13			
Hugo Bague	17-Mar-09	£19.82	5,043			207	5,250		01-Dec-11	06-Dec-11	£33.51	282
	21-Mar-11	£40.58		6,380				6,380	01-Dec-13			
Preston Chiaro	17-Mar-09	£19.82	19,082			785	19,867		01-Dec-11	13-Dec-11	£31.85	1,015
	21-Mar-11	£40.58		8,837				8,837	01-Dec-13			
Bret Clayton	17-Mar-09	£19.82	5,229			215	5,444		01-Dec-11	02-Dec-11	£33.47	292
	21-Mar-11	£40.58		7,472				7,472	01-Dec-13			
Jacynthe Côté	17-Mar-09	£19.82	8,342			342	8,684		01-Dec-11	08-Dec-11	£32.17	448
	21-Mar-11	£40.58		9,979				9,979	01-Dec-13			
Guy Elliott	17-Mar-09	£19.82	18,644			767	19,411		01-Dec-11	14-Dec-11	£30.36	945
	21-Mar-11	£40.58		15,956				15,956	01-Dec-13			
Andrew Harding	17-Mar-09	A\$52.01	2,599			87	2,686		01-Dec-11	12-Dec-11	A\$64.13	178
	09-Jul-09	A\$47.60	547			17	564		01-Dec-11	12-Dec-11	A\$64.13	37
	21-Mar-11	£40.58		7,465				7,465	01-Dec-13			
Harry Kenyon-Slaney	17-Mar-09	£19.82	4,284			175	4,459		01-Dec-11	14-Dec-11	£30.36	217
	21-Mar-11	£40.58		7,521				7,521	01-Dec-13			
Doug Ritchie	17-Mar-09	A\$52.01	3,169			106	3,275		01-Dec-11	05-Dec-11	A\$67.00	227
	09-Jul-09	A\$47.60	667			21	688		01-Dec-11	05-Dec-11	A\$67.00	48
	21-Mar-11	A\$81.00		7,639				7,639	01-Dec-13			
Debra Valentine	17-Mar-09	£19.82	3,184			131	3,315		01-Dec-11	29-Dec-11	£33.04	176
	17-Mar-09	£19.82	3,102			127	3,229		01-Dec-11	13-Dec-11	£31.85	165
	21-Mar-11	£40.58		6,802				6,802	01-Dec-13			
Sam Walsh	17-Mar-09	A\$52.01	19,022			643	19,665		01-Dec-11	05-Dec-11	A\$67.00	1,361
	09-Jul-09	A\$47.60	4,004			135	4,139		01-Dec-11	05-Dec-11	A\$67.00	286
	21-Mar-11	A\$81.00		17,914				17,914	01-Dec-13			

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## Remuneration report: Appendix continued

Table 4 Executives with awards under long term incentive plans 2011 continued

	Conditional award granted	Market price at award	1 Jan 2011	Awarded	Lapsed/cancelled	Dividend shares	Vested	31 Dec 2011	Performance period concludes <sup>(g)</sup>	Date of vesting	Market price at election	Monetary value of vested award US\$ '000 <sup>(d)</sup>
<b>Performance Share Plan</b>												
Tom Albanese	13-Mar-07	£26.81	<b>53,412</b>		33,971		19,441		31-Dec-10	21-Feb-11	£43.12	1,344
	10-Mar-08	£52.58	<b>59,362</b>					<b>59,362<sup>(g)</sup></b>	31-Dec-11			
	17-Mar-09	£19.82	<b>48,019</b>					<b>48,019</b>	31-Dec-12			
	22-Mar-10	£37.30	<b>79,486</b>					<b>79,486</b>	31-Dec-13			
	06-May-11	£41.51		56,943				<b>56,943</b>	31-Dec-14			
Hugo Bague	09-Sep-07	£35.45	<b>7,305</b>		3,244		4,061		31-Dec-10	15-Feb-11	£45.68	298
	10-Mar-08	£52.58	<b>14,128</b>					<b>14,128<sup>(g)</sup></b>	31-Dec-11			
	22-Mar-10	£37.30	<b>31,531</b>					<b>31,531</b>	31-Dec-13			
	06-May-11	£41.51		22,943				<b>22,943</b>	31-Dec-14			
Preston Chiaro	13-Mar-07	£26.81	<b>31,084</b>		19,770		11,314		31-Dec-10	16-Feb-11	£45.20	820
	10-Mar-08	£52.58	<b>23,688</b>					<b>23,688<sup>(g)</sup></b>	31-Dec-11			
	17-Mar-09	£19.82	<b>20,904</b>					<b>20,904</b>	31-Dec-12			
	22-Mar-10	£37.30	<b>40,559</b>					<b>40,559</b>	31-Dec-13			
	06-May-11	£41.51		27,565				<b>27,565</b>	31-Dec-14			
Bret Clayton	13-Mar-07	£26.81	<b>27,316</b>		17,373		9,943		31-Dec-10	14-Feb-11	£46.59	743
	10-Mar-08	£52.58	<b>22,871</b>					<b>22,871<sup>(g)</sup></b>	31-Dec-11			
	17-Mar-09	£19.82	<b>20,182</b>					<b>20,182</b>	31-Dec-12			
	22-Mar-10	£37.30	<b>39,160</b>					<b>39,160</b>	31-Dec-13			
	06-May-11	£41.51		26,670				<b>26,670</b>	31-Dec-14			
Jacynthe Côté	10-Mar-08	£52.58	<b>22,299</b>					<b>22,299<sup>(g)</sup></b>	31-Dec-11			
	17-Mar-09	£19.82	<b>23,787</b>					<b>23,787</b>	31-Dec-12			
	22-Mar-10	£37.30	<b>46,153</b>					<b>46,153</b>	31-Dec-13			
	06-May-11	£41.51		31,682				<b>31,682</b>	31-Dec-14			
Guy Elliott	13-Mar-07	£26.81	<b>37,328</b>		23,741		13,587		31-Dec-10	11-Mar-11	£39.64	864
	10-Mar-08	£52.58	<b>30,930</b>					<b>30,930<sup>(g)</sup></b>	31-Dec-11			
	17-Mar-09	£19.82	<b>35,743</b>					<b>35,743</b>	31-Dec-12			
	22-Mar-10	£37.30	<b>59,166</b>					<b>59,166</b>	31-Dec-13			
	06-May-11	£41.51		39,805				<b>39,805</b>	31-Dec-14			
Andrew Harding	13-Mar-07	A\$74.50	<b>3,777</b>		1,677		2,100		31-Dec-10	25-Feb-11	A\$83.93	182
	09-Jul-09	A\$47.60	<b>795</b>		353		442		31-Dec-10	25-Feb-11	A\$83.93	38
	10-Mar-08	A\$126.48	<b>6,485</b>					<b>6,485<sup>(g)</sup></b>	31-Dec-11			
	09-Jul-09	A\$47.60	<b>1,365</b>					<b>1,365</b>	31-Dec-11			
	22-Mar-10	A\$75.03	<b>31,064</b>					<b>31,064</b>	31-Dec-13			
	06-May-11	£41.51		23,219				<b>23,219</b>	31-Dec-14			
Harry Kenyon-Slaney	13-Mar-07	£26.81	<b>8,514</b>		3,781		4,733		31-Dec-10	17-Feb-11	£44.99	341
	10-Mar-08	£52.58	<b>7,210</b>					<b>7,210<sup>(g)</sup></b>	31-Dec-11			
	22-Mar-10	£37.30	<b>31,531</b>					<b>31,531</b>	31-Dec-13			
	06-May-11	£41.51		33,936				<b>33,936</b>	31-Dec-14			
Doug Ritchie	13-Mar-07	A\$74.50	<b>10,200</b>		4,529		5,671		31-Dec-10	18-Feb-11	A\$87.61	513
	09-Jul-09	A\$47.60	<b>2,147</b>		954		1,193		31-Dec-10	18-Feb-11	A\$87.61	108
	10-Mar-08	A\$126.48	<b>8,691</b>					<b>8,691<sup>(g)</sup></b>	31-Dec-11			
	09-Jul-09	A\$47.60	<b>1,829</b>					<b>1,829</b>	31-Dec-11			
	22-Mar-10	A\$75.03	<b>32,180</b>					<b>32,180</b>	31-Dec-13			
	06-May-11	A\$79.57		24,713				<b>24,713</b>	31-Dec-14			
Debra Valentine	10-Mar-08	£52.58	<b>13,967</b>					<b>13,967<sup>(g)</sup></b>	31-Dec-11			
	22-Mar-10	£37.30	<b>31,887</b>					<b>31,887</b>	31-Dec-13			
	06-May-11	£41.51		22,553				<b>22,553</b>	31-Dec-14			
Sam Walsh	13-Mar-07	A\$74.50	<b>25,103</b>		15,966		9,137		31-Dec-10	15-Feb-11	A\$88.14	832
	09-Jul-09	A\$47.60	<b>5,284</b>		3,361		1,923		31-Dec-10	15-Feb-11	A\$88.14	175
	10-Mar-08	A\$126.48	<b>21,366</b>					<b>21,366<sup>(g)</sup></b>	31-Dec-11			

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09-Jul-09	A\$47.60	<b>4,497</b>			<b>4,497</b>	31-Dec-11		
17-Mar-09	A\$52.01	<b>26,670</b>			<b>26,670</b>	31-Dec-12		
09-Jul-09	A\$47.60	<b>5,614</b>			<b>5,614</b>	31-Dec-12		
22-Mar-10	A\$75.03	<b>55,842</b>			<b>55,842</b>	31-Dec-13		
06-May-11	A\$79.57		61,752		<b>61,752</b>	31-Dec-14		

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	Conditional award granted	Market price at award	1 Jan 2011	Awarded	Lapsed/ cancelled	Dividend shares	Vested	31 Dec 2011	Performance period concludes	Date of vesting	Market price at election	Monetary value of vested award US\$ '000)
<b>Management Share Plan</b>												
Hugo Bague	10-Mar-08	£52.58	1,826			49	1,875		31-Dec-10	15-Feb-11	£45.68	137
	17-Mar-09	£19.82	16,769					16,769	31-Dec-11			
Jacynthe Côté	10-Mar-08	£52.58	7,296			197	7,493		31-Dec-10	21-Feb-11	£43.12	518
	17-Mar-09	£19.82	5,463			67	5,530		01-Feb-11	25-Feb-11	£42.66	378
Andrew Harding	10-Mar-08	A\$126.48	837			26	863		31-Dec-10	24-Feb-11	A\$84.25	75
	09-Jul-09	A\$47.60	176			2	178		31-Dec-10	25-Feb-11	A\$83.93	15
	17-Mar-09	A\$52.01	8,490					8,490	31-Dec-11			
	09-Jul-09	A\$47.60	1,787					1,787	31-Dec-11			
Harry Kenyon-Slaney	10-Mar-08	£52.58	932			25	957		31-Dec-10	17-Feb-11	£44.99	69
	17-Mar-09	£19.82	7,403					7,403	31-Dec-11			
Doug Ritchie	10-Mar-08	A\$126.48	1,252			40	1,292		31-Dec-10	18-Feb-11	A\$87.61	117
	09-Jul-09	A\$47.60	263			3	266		31-Dec-10	18-Feb-11	A\$87.61	24
	17-Mar-09	A\$52.01	8,572					8,572	31-Dec-11			
	09-Jul-09	A\$47.60	1,804					1,804	31-Dec-11			
	14-Sep-09	A\$58.05	9,879					9,879	31-Dec-11			
Debra Valentine	10-Mar-08	£52.58	1,820			49	1,869		31-Dec-10	25-Feb-11	£42.66	128
	10-Mar-08	£52.58	6,052			163	6,215		15-Jan-11	14-Mar-11	£39.75	396
	10-Mar-08	£52.58	6,053					6,053	15-Jan-12			
	17-Mar-09	£19.82	19,107					19,107	31-Dec-11			

Notes to Table 4

- (a) Awards denominated in pounds sterling were for Rio Tinto plc ordinary shares of 10p each and awards denominated in Australian dollars were for Rio Tinto Limited shares.
- (b) The weighted fair value per share of conditional awards granted under the BDP was £40.13 for Rio Tinto plc and A\$80.36 for Rio Tinto Limited and for PSP was £33.08 for Rio Tinto plc and A\$65.86 for Rio Tinto Limited.
- (c) Conditional awards are awarded at no cost to the recipient and no amount remains unpaid on any shares granted.
- (d) The amount in US dollars has been converted from sterling at the rate of £1 = US\$1.60387 and Australian dollars at the rate of A\$1 = US\$1.03271, being the average exchange rates for 2011.
- (e) Details of the performance conditions for the PSP are provided in the Executive remuneration structure table on page 102.
- (f) As of 20 February 2012, the executives in the table above had 1,212,545 shares awarded and not vested under long term incentive plans.
- (g) The 2008 PSP awards granted on 10 March 2008 and with a performance period that concluded 31 December 2011 have lapsed in full for Tom Albanese, Preston Chiaro, Bret Clayton, Guy Elliott and Sam Walsh. The awards vested at 33.3 per cent for the other executives who were subject to the other executives' performance condition at the time the 2008 PSP awards were made.



**Table of Contents****Remuneration report: Appendix continued****Table 5 Executives holding options to acquire Rio Tinto plc or Rio Tinto Limited shares 2011**

	Date of grant	1 Jan 11	Granted	Vested during 2011	Exercised	Lapsed/cancelled <sup>(f)</sup>
<b>Share Savings Plan</b>						
Tom Albanese	06-Oct-06	957				
	04-Oct-11		531			
Hugo Bague	17-Oct-08	288				
	20-Oct-09	84				
	04-Oct-11		425			
Preston Chiaro	17-Oct-08	367		367	367	
	05-Oct-10	189				
	04-Oct-11		243			
Guy Elliott	17-Oct-08	629				
Andrew Harding	20-Oct-09	723				
Harry Kenyon-Slaney	05-Oct-07	280				
	20-Oct-09	434				
Doug Ritchie	20-Oct-09	422				
Debra Valentine	17-Oct-08	367		367	367	
	05-Oct-10	189				
Sam Walsh	20-Oct-09	125				
	05-Oct-10	457				
<b>Share Option Plan</b>						
Tom Albanese	07-Mar-03	168,459				
	22-Apr-04	101,706				
	09-Mar-05	101,592				
	07-Mar-06	81,722				
	10-Mar-08	89,045				89,045
	17-Mar-09	72,029				
	22-Mar-10	119,230				
	06-May-11		85,415			
Hugo Bague	17-Mar-09	15,714				
	22-Mar-10	47,297				
	06-May-11		34,415			
Preston Chiaro	07-Mar-06	62,067				
	10-Mar-08	35,533				35,533
	17-Mar-09	31,355				
	22-Mar-10	60,838				
	06-May-11		41,348			
Bret Clayton	07-Mar-06	13,033				
	10-Mar-08	34,307				34,307
	17-Mar-09	30,274				
	22-Mar-10	58,740				
	06-May-11		40,005			
Jacynthe Côté	17-Mar-09	35,680				
	22-Mar-10	69,230				
	06-May-11		47,523			

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	Vested and exercisable on		Exercise price	Value of options exercised during 2011 <sup>(e)</sup>	Market price on date of exercise	Date from which first exercisable	Expiry date
	31 Dec 2011	31 Dec 2011					
<b>Share Savings Plan</b>							
Tom Albanese		957	£ 17.084			01-Jan-12	01-Jul-12
		531	£28.630			01-Jan-17	01-Jul-17
Hugo Bague		288	£26.576			01-Jan-12	01-Jul-12
		84	£21.480			01-Jan-13	01-Jul-13
		425	£28.630			01-Jan-17	01-Jul-17
Preston Chiaro			£16.935	£10,064.98	£44.36	01-Jan-11	17-Jan-11
		189	£31.660			01-Jan-13	06-Jan-13
		243	£24.580			01-Jan-14	04-Jan-14
Guy Elliott		629	£26.576			01-Jan-14	01-Jul-14
Andrew Harding		723	A\$48.73			01-Jan-15	01-Jul-15
Harry Kenyon-Slaney		280	£23.850			01-Jan-13	01-Jul-13
		434	£21.480			01-Jan-15	01-Jul-15
Doug Ritchie		422	A\$48.73			01-Jan-15	01-Jul-15
Debra Valentine			£16.935	£10,064.98	£44.36	01-Jan-11	17-Jan-11
		189	£31.660			01-Jan-13	06-Jan-13
Sam Walsh		125	A\$48.73			01-Jan-15	01-Jul-15
		457	A\$59.26			01-Jan-16	01-Jul-16
<b>Share Option Plan</b>							
Tom Albanese	168,459	168,459	£10.434			07-Mar-06	07-Mar-13
	101,706	101,706	£10.979			22-Apr-09	22-Apr-14
	101,592	101,592	£15.086			09-Mar-08	09-Mar-15
	81,722	81,722	£22.397			07-Mar-09	07-Mar-16
			£47.280			10-Mar-11	10-Mar-18
		72,029	£16.530			17-Mar-12	17-Mar-19
		119,230	£37.050			22-Mar-13	22-Mar-20
		85,415	£42.450			06-May-14	06-May-21
Hugo Bague		15,714	£16.530			17-Mar-12	17-Mar-19
		47,297	£37.050			22-Mar-13	22-Mar-20
		34,415	£42.450			06-May-14	06-May-21
Preston Chiaro	62,067	62,067	£22.397			07-Mar-09	07-Mar-16
			£47.280			10-Mar-11	10-Mar-18
		31,355	£16.530			17-Mar-12	17-Mar-19
		60,838	£37.050			22-Mar-13	22-Mar-20
		41,348	£42.450			06-May-14	06-May-21
Bret Clayton	13,033	13,033	£22.397			07-Mar-09	07-Mar-16
			£47.280			10-Mar-11	10-Mar-18
		30,274	£16.530			17-Mar-12	17-Mar-19
		58,740	£37.050			22-Mar-13	22-Mar-20
		40,005	£42.450			06-May-14	06-May-21
Jacynthe Côté		35,680	£16.530			17-Mar-12	17-Mar-19
		69,230	£37.050			22-Mar-13	22-Mar-20
		47,523	£42.450			06-May-14	06-May-21





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**Remuneration report: Appendix continued**

**Table 5 Executives holding options to acquire Rio Tinto plc or Rio Tinto Limited shares 2011 continued**

	Date of grant	1 Jan 2011	Granted	Vested during 2011	Exercised	Lapsed/ cancelled(f)
<b>Share Option Plan</b>						
Guy Elliott	13-Mar-02	41,691				
	07-Mar-03	117,886				
	22-Apr-04	89,213				
	09-Mar-05	88,332				
	07-Mar-06	70,330				
	10-Mar-08	44,186				44,186
	17-Mar-09	53,615				
	22-Mar-10	88,749				
	06-May-11		59,708			
	17-Mar-09	6,268				
Andrew Harding	22-Mar-10	46,597				
	06-May-11		34,829			
Harry Kenyon-Slaney	17-Mar-09	6,938				
	22-Mar-10	47,297				
Doug Ritchie	07-Mar-06	7,308				
	17-Mar-09	8,230				
	22-Mar-10	48,270				
	06-May-11		37,070			
Debra Valentine	17-Mar-09	13,558				
	22-Mar-10	47,831				
	06-May-11		33,830			
Sam Walsh	07-Mar-06	48,079				
	10-Mar-08	30,523				30,523
	17-Mar-09	40,005				
	22-Mar-10	83,763				

**Notes to Table 5**

- (a) All options granted over ordinary shares. Rio Tinto plc ordinary shares of 10p each stated in sterling; Rio Tinto Limited ordinary shares stated in Australian dollars. Each option is granted over one share at no cost to participants. Details of the performance conditions for the SOP are provided in the Executive remuneration structure table on page 101.
- (b) The closing price of Rio Tinto plc ordinary shares at 31 December 2011 was £31.25 and the closing price of Rio Tinto Limited shares at 31 December 2011 was A\$60.30. The high and low prices during 2011 of Rio Tinto plc and Rio Tinto Limited shares were £47.18 and £26.37 and A\$89.04 and A\$58.52 respectively.
- (c) The exercise price represents the price payable on the options.
- (d) The weighted fair value per option during 2011, at date of grant was as follows: Rio Tinto plc SSP two year contract £6.73 and five year contract £4.95. Rio Tinto plc SOP £14.36; Rio Tinto Limited SOP A\$26.79.
- (e) The value of options exercised during 2011 is calculated by multiplying the number of options exercised by the difference between the market price and the exercise price on date of exercise.
- (f) Options granted in 2008 under the SOP failed to satisfy their performance condition and lapsed on 10 March 2011. The value of options which lapsed during 2011 is calculated using the closing share price on the lapse date with the exercise price subtracted. As the exercise price is greater than the share price on the lapse date the options are valued at zero.

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(g) Details of the performance conditions for the SOP are provided in the Executive remuneration structure table on page 102. (h) As of 20 February 2012, the executives held 2,442,088 options to acquire Rio Tinto plc and Rio Tinto Limited shares.

(i) Between 31 December 2011 and 20 February 2012 no options were granted to the executives.

	<b>Value of options granted in 2011 US\$000 s</b>	<b>% of  2011 total remuneration that consists of options</b>
<b>Executive directors</b>		
Tom Albanese	421	4.9
Guy Elliott	295	5.6
Sam Walsh		
<b>Other Executive committee members</b>		
Hugo Bague	176	5.5
Preston Chiaro	209	5.3
Bret Clayton	203	4.4
Jacynthe Côté	238	5.6
Andrew Harding	178	4.8
Harry Kenyon-Slaney		
Doug Ritchie	224	5.4
Debra Valentine	173	4.5

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	Vested and exercisable on 31 Dec 2011	31 Dec 2011	Exercise price	Value of options exercised during 2011 <sup>(e)</sup>	Market price on date of exercise	Date from which first exercisable	Expiry date
<b>Share Option Plan</b>							
Guy Elliott	41,691	41,691	£12.050			13-Mar-05	13-Mar-12
	117,886	117,886	£10.434			07-Mar-06	07-Mar-13
	89,213	89,213	£10.979			22-Apr-09	22-Apr-14
	88,332	88,332	£15.086			09-Mar-08	09-Mar-15
	70,330	70,330	£22.397			07-Mar-09	07-Mar-16
			£47.280			10-Mar-11	10-Mar-18
		53,615	£16.530			17-Mar-12	17-Mar-19
		88,749	£37.050			22-Mar-13	22-Mar-20
		59,708	£42.450			06-May-14	06-May-21
Andrew Harding		6,268	A\$33.45			17-Mar-12	17-Mar-19
		46,597	A\$76.15			22-Mar-13	22-Mar-20
		34,829	£42.450			06-May-14	06-May-21
Harry Kenyon-Slaney		6,938	£16.530			17-Mar-12	17-Mar-19
		47,297	£37.050			22-Mar-13	22-Mar-20
Doug Ritchie	7,308	7,308	A\$54.95			07-Mar-09	07-Mar-16
		8,230	A\$33.45			17-Mar-12	17-Mar-19
		48,270	A\$76.15			22-Mar-13	22-Mar-20
		37,070	A\$81.800			06-May-14	06-May-21
Debra Valentine		13,558	£16.530			17-Mar-12	17-Mar-19
		47,831	£37.050			22-Mar-13	22-Mar-20
		33,830	£42.450			06-May-14	06-May-21
Sam Walsh	48,079	48,079	A\$54.95			07-Mar-09	07-Mar-16
			A\$118.07			10-Mar-11	10-Mar-18
		40,005	A\$33.45			17-Mar-12	17-Mar-19
		83,763	A\$76.15			22-Mar-13	22-Mar-20

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### **Directors' report continued**

#### **Audited information**

Under Schedule 8 of the Large and Medium sized Companies and Groups (Accounts and Reports) Regulations 2008, the information included in respect of the non-executive directors and the directors' short term employee benefits and termination benefits in Tables 1a and 1b, and the information included in respect of the directors' accrued benefits, transfer values and defined contribution pension in Table 2, Table 4 and Table 5 and the information under 'Former director' on page 99, are all auditable.

The Australian Securities and Investments Commission issued an order dated 22 December 2010 (varied on 17 February 2012) under which the Remuneration report must be prepared and audited in accordance with the requirements of the Corporations Act 2001 applied on the basis of certain modifications set out in the order (as detailed on page 213). The information provided in this Remuneration report has been audited as required by section 308(3C) of the Corporations Act.

#### **Going concern**

The directors, having made appropriate enquiries, have satisfied themselves that no material uncertainties that cast significant doubt about the ability of the Companies and the Group to continue as a going concern have been identified, and they have a reasonable expectation that the Group has adequate financial resources to continue in operational existence for the foreseeable future. Therefore, these financial statements have been prepared on a going concern basis.

#### **Annual general meetings**

The 2012 annual general meetings will be held on 19 April in London and 10 May in Brisbane. Separate notices of the 2012 annual general meetings are produced for the shareholders of each Company.

The Directors' report is made in accordance with a resolution of the board.

#### **Jan du Plessis**

Chairman  
5 March 2012

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### **Shareholder information**

#### **Organisational structure**

The Rio Tinto Group consists of Rio Tinto plc, which is registered in England and Wales under company number 719885, and is listed on the London Stock Exchange, and Rio Tinto Limited, which is registered in Australia under ABN 96 004 458 404, and is listed on the Australian Securities Exchange. Rio Tinto is headquartered in London and has executive offices in Melbourne.

#### **Nomenclature and financial data**

Rio Tinto plc and Rio Tinto Limited operate together and are referred to in this report as Rio Tinto, the Rio Tinto Group or, more simply, the Group. These collective expressions are used for convenience only, since both Companies, and the individual companies in which they directly or indirectly own investments, are separate and distinct legal entities.

Limited, plc, Pty, Inc, Limitada, L.L.C., A.S. or SA have generally been omitted from Group company names, except to distinguish between Rio Tinto and Rio Tinto Limited. Financial data in US dollars (US\$) is derived from, and should be read in conjunction with, the 2011 financial statements. In general, financial data in pounds sterling (£) and Australian dollars (A\$) have been translated from the consolidated financial statements and have been provided solely for convenience; exceptions arise where data can be extracted directly from source records. Certain key information has been provided in all three currencies in the 2011 financial statements.

#### **History**

Rio Tinto plc was incorporated on 30 March 1962 (then called The Rio Tinto-Zinc Corporation Limited (RTZ)) and was formed by the merger of The Rio Tinto Company and The Consolidated Zinc Corporation. The Rio Tinto Company was incorporated in 1873 to reopen ancient copper workings in Spain. The Consolidated Zinc Corporation's origins trace back to the Australian mining industry in the early twentieth century. Operating out of Broken Hill in New South Wales, it came to prominence with the mining of silver, lead and zinc deposits and later expanded into lead and zinc smelting.

Rio Tinto Limited was incorporated on 17 December 1959 (then called The Rio Tinto Mining Company of Australia Limited) and in 1962 the Australian interests of Consolidated Zinc Corporation and the Rio Tinto Company Limited of the United Kingdom were merged to form Conzinc Riotinto of Australia Limited as a limited liability company under the laws of the State of Victoria, Australia. In 1980, Conzinc Riotinto of Australia Limited changed its name to CRA Limited.

Between 1962 and 1995, both RTZ and CRA discovered important mineral deposits, developed major mining projects and also grew through acquisition.

RTZ and CRA began operating in 1995 through a dual listed companies structure. In 1997, the RTZ Corporation became Rio Tinto plc and CRA Limited became Rio Tinto Limited, together known as the Rio Tinto Group.

In 2007, Rio Tinto completed an agreed takeover of the Canadian aluminium producer Alcan Inc.

#### **Dual listed companies structure**

In 1995, Rio Tinto shareholders approved the terms of the dual listed companies merger (the DLC structure) which was designed to place the shareholders of both Companies in substantially the same position as if they held shares in a single entity owning all of the assets of both Companies.

Following the approval of the DLC structure, both Companies entered into a DLC Merger Sharing Agreement (the Sharing Agreement) through which each Company agreed to ensure that the businesses of Rio Tinto plc and Rio Tinto Limited are managed together, to ensure that the boards of

directors of each Company are the same, and to give effect to certain arrangements designed to provide shareholders of each Company with a common economic interest in the DLC structure.

In order to achieve this third objective, the Sharing Agreement provided for the ratio of dividend, voting and capital distribution rights attached to each Rio Tinto plc share and to each Rio Tinto Limited share to be fixed in an Equalisation Ratio which has remained unchanged at 1:1. The Sharing Agreement has provided for this ratio to be revised in special circumstances where, for example, certain modifications are made to the share capital of one Company, such as rights issues, bonus issues, share splits and share consolidations, but not to the share capital of the other. Outside these specified circumstances, the Equalisation Ratio can only be altered with the approval of shareholders under the Class Rights Action approval procedure described under Voting rights. In addition, any adjustments are

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required to be confirmed by the Group's external auditors.

Consistent with the creation of the DLC structure, directors of each Company seek to act in the best interests of Rio Tinto as a whole. The Class Rights Action approval procedure is intended to deal with instances where there may be a conflict of interest between the shareholders of each Company.

To ensure that the boards of both Companies are identical, resolutions to appoint or remove directors must be put to shareholders of both Companies as a joint electorate (as Joint Decisions as described under Voting rights). It is a requirement that a person can only be a director of one Company if that person is also a director of the other Company. So, for example, if a person was removed as a director of Rio Tinto plc, he or she would also cease to be a director of Rio Tinto Limited.

One consequence of the DLC merger is that Rio Tinto is subject to a wide range of laws, rules and regulatory review across multiple jurisdictions. Where these rules differ, Rio Tinto, as a Group, aims to comply with the strictest applicable level.

### Dividend rights

The Sharing Agreement provides for dividends paid on Rio Tinto plc and Rio Tinto Limited shares to be equalised on a net cash basis, that is without taking into account any associated tax credits. Dividends are determined in US dollars and are then, except for ADR holders, translated and paid in sterling and Australian dollars. The Companies are also required to announce and pay their dividends and other distributions as close in time to each other as possible.

In the unlikely event that one Company did not have sufficient distributable reserves to pay the equalised dividend or the equalised capital distribution, it would be entitled to receive a top up payment from the other Company. The top up payment could be made as a dividend on the DLC Dividend Share, or by way of a contractual payment.

If the payment of an equalised dividend would contravene the law applicable to one of the Companies, then they may depart from the Equalisation Ratio. However, should such a departure occur, then the relevant Company will put aside reserves to be held for payment on the relevant shares at a later date.

Rio Tinto shareholders have no direct rights to enforce the dividend equalisation provisions of the Sharing Agreement.

The DLC Dividend Shares can also be utilised to provide the Group with flexibility for internal funds management by allowing dividends to be paid between the two parts of the Group. Such dividend payments are of no economic significance to the shareholders of either Company, as they will have no effect on the Group's overall resources.

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### **Shareholder information continued**

#### **Voting rights**

In principle, the Sharing Agreement provides for the shareholders of Rio Tinto plc and Rio Tinto Limited to vote as a joint electorate on all matters which affect shareholders of both Companies in similar ways. These are referred to as Joint Decisions. Such Joint Decisions include the creation of new classes of share capital, the appointment or removal of directors and auditors and the receiving of the annual financial statements. All shareholder resolutions including Joint Decisions are voted on a poll.

The Sharing Agreement also provides for the protection of shareholders of each Company by requiring their separate approval for decisions that do not affect the shareholders of both Companies equally. Matters requiring this approval procedure are referred to as Class Rights Actions and are voted on a poll. For example, fundamental elements of the DLC merger cannot be changed unless approved separately by shareholders of both Companies under the Class Rights Action approval procedure.

Exceptions to these principles can arise in situations such as where legislation requires the separate approval of a decision by the appropriate majority of shareholders in one Company and approval of the matter by shareholders of the other Company is not required.

Where a matter has been expressly categorised as either a Joint Decision or a Class Rights Action, the directors do not have the power to change that categorisation. If a matter falls within both categories, it is treated as a Class Rights Action. In addition, the directors can determine that matters not expressly listed in either category should be put to shareholders for their approval under either procedure.

To facilitate the joint voting arrangements each Company has entered into shareholder voting agreements. Each Company has issued a Special Voting Share to a special purpose company held in trust by a common Trustee.

Rio Tinto plc has issued its Special Voting Share (RTP Special Voting Share) to RTL Shareholder SVC and Rio Tinto Limited has issued its Special Voting Share (RTL Special Voting Share) to RTP Shareholder SVC. The total number of votes cast on Joint Decisions by the shareholders of one Company are voted at the parallel meeting of the other Company. The role of these special purpose companies in achieving this is described below.

In exceptional circumstances, certain shareholders of the Companies can be excluded from voting at the respective Company's general meetings because they have acquired shares in one Company in excess of a given threshold without making an offer for all the shares in the other Company. If this should occur, the votes cast by these excluded shareholders will be disregarded.

Following the Companies' general meetings the overall results of the voting are announced to the stock exchanges, to the media in the UK and Australia, and published on the Rio Tinto website.

At a Rio Tinto plc shareholders' meeting at which a Joint Decision is considered, each Rio Tinto plc share carries one vote and the holder of its Special Voting Share has one vote for each vote cast by the public shareholders of Rio Tinto Limited. The holder of the Special Voting Share is required to vote strictly, and only, in accordance with the votes cast by public shareholders for and against the equivalent resolution at the parallel Rio Tinto Limited shareholders' meeting.

The holders of Rio Tinto Limited ordinary shares do not actually hold any voting shares in Rio Tinto plc by virtue of their holding in Rio Tinto Limited and cannot enforce the voting arrangements relating to the Special Voting Share.

At a Rio Tinto Limited shareholders' meeting at which a Joint Decision is considered, each Rio Tinto Limited share carries one vote and the holder of its Special Voting Share will have one vote for each vote cast by the public shareholders of Rio Tinto plc in their parallel meeting. The holder of the Special Voting Share is required to vote strictly, and only, in accordance with the votes cast for and against the equivalent resolution at the parallel Rio Tinto plc shareholders' meeting.

The holders of Rio Tinto plc ordinary shares do not actually hold any voting shares in Rio Tinto Limited by virtue of their holding in Rio Tinto plc and cannot enforce the voting arrangements relating to the Special Voting Share.

#### **Capital distribution rights**

If either of the Companies goes into liquidation, the Sharing Agreement provides for a valuation to be made of the surplus assets of both Companies. If the surplus assets available for distribution by one Company on each of the shares held by its shareholders exceed the surplus assets available for distribution by the other Company on each of the shares held by its shareholders, then an equalising payment between the two Companies shall be made, to the extent permitted by applicable law, such that the amount available for distribution on each share held by shareholders of each Company conforms to the Equalisation Ratio. The objective is to ensure that the shareholders of both Companies have equivalent rights to the assets of the combined Group on a per share basis, taking account of the Equalisation Ratio.



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The Sharing Agreement does not grant any enforceable rights to the shareholders of either Company upon liquidation of a Company.

### Limitations on ownership of shares and merger obligations

The laws and regulations of the UK and Australia impose restrictions and obligations on persons who control interests in publicly listed companies in excess of defined thresholds that, under certain circumstances, include obligations to make a public offer for all of the outstanding issued shares of the relevant company. The threshold applicable to Rio Tinto plc under UK law and regulations is 30 per cent and to Rio Tinto Limited under Australian law and regulations is 20 per cent (on a stand alone basis or, taking into account only Rio Tinto plc interests, on a Joint Decision basis).

As part of the DLC merger, the Articles of Association of Rio Tinto plc and the Constitution of Rio Tinto Limited were amended with the intention of extending these laws and regulations to the combined enterprise and, in particular, to ensure that a person cannot exercise control over one Company without having made offers to the public shareholders of both Companies. It is consistent with the creation of the single economic enterprise, and the equal treatment of the two sets of shareholders, that these laws and regulations should operate in this way. The Articles of Association of Rio Tinto plc and the Constitution of Rio Tinto Limited impose restrictions on any person who controls, directly or indirectly, 20 per cent or more of the votes on a Joint Decision. If, however, such a person only has an interest in either Rio Tinto Limited or Rio Tinto plc, then the restrictions will only apply if they control, directly or indirectly, 30 per cent or more of the votes at that Company's general meetings.

If one of the thresholds specified above is breached then, subject to certain limited exceptions and notification by the relevant Company, such persons may not attend or vote at general meetings of the relevant Company, may not receive dividends or other distributions from the relevant Company, and may be divested of their interest by the directors of the relevant Company. These restrictions continue to apply until such persons have either made a public offer for all of the publicly held shares of the other Company, or have reduced their controlling interest below the thresholds specified, or have acquired through a permitted means at least 50 per cent of the publicly held shares of each Company.

These provisions are designed to ensure that offers for the publicly held shares of both Companies would be required to avoid the restrictions set out above, even if the interests which breach the thresholds are only held in one of the Companies. The directors do not have the discretion to exempt a person from the operation of these rules.

Under the Sharing Agreement, the Companies agree to co-operate to enforce the restrictions contained in their Articles of Association and Constitution.

### Guarantees

In 1995, each Company entered into a Deed Poll Guarantee in favour of creditors of the other Company. Pursuant to the Deed Poll Guarantees, each Company guaranteed the contractual obligations of the other Company and

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the obligations of other persons which are guaranteed by the other Company, subject to certain limited exceptions. Beneficiaries under the Deed Poll Guarantees may make demands upon the guarantor thereunder without first having recourse to the Company or persons whose obligations are being guaranteed. The obligations of the guarantor under each Deed Poll Guarantee expire upon termination of the Sharing Agreement and under other limited circumstances, but only in respect of obligations arising after such termination and, in the case of other limited circumstances, the publication and expiry of due notice. The shareholders of the Companies cannot enforce the provisions of the Deed Poll Guarantees.

**Markets**

**Rio Tinto plc**

The principal market for Rio Tinto plc shares is the London Stock Exchange with the shares trading through the Stock Exchange Electronic Trading Service (SETS) system.

Rio Tinto plc shares are also listed on NYSE Euronext Brussels and its American depositary receipts are listed on the New York Stock Exchange. Rio Tinto plc delisted from NYSE Euronext Paris with effect from 23 February 2012.

As at 20 February 2012, there were 46,491 holders of record of Rio Tinto plc's shares. Of these holders, 350 had registered addresses in the US and held a total of 357,865 Rio Tinto plc shares, representing 0.02 per cent of the total number of Rio Tinto plc shares issued and outstanding as at such date. In addition, 104,004,668 Rio Tinto plc shares were registered in the name of a custodian account in London which represented 7.23 per cent of Rio Tinto plc shares issued and outstanding. These shares were represented by 104,004,668 Rio Tinto plc ADRs held of record by 402 ADR

holders. In addition, certain accounts of record with registered addresses other than in the US hold shares, in whole or in part, beneficially for US persons.

**Rio Tinto Limited**

Rio Tinto Limited shares are listed on the Australian Securities Exchange (ASX). The ASX is the principal trading market for Rio Tinto Limited shares. The ASX is a national stock exchange with an automated trading system.

As at 20 February 2012, there were 211,506 holders of record of Rio Tinto Limited shares. Of these holders, 331 had registered addresses in the US, representing approximately 0.0425 per cent of the total number of Rio Tinto Limited shares issued and outstanding as of such date. In addition, nominee accounts of record with registered addresses other than in the US may hold Rio Tinto Limited shares, in whole or in part, beneficially for US persons.

**American depositary receipts (ADRs)**

Rio Tinto plc has a sponsored ADR facility with JPMorgan Chase Bank NA (JPMorgan) under a Deposit Agreement, dated 13 July 1988, as amended on 11 June 1990, as further amended and restated on 15 February 1999, 18 February 2005 when JPMorgan became Rio Tinto plc's depositary and on 29 April 2010. The ADRs evidence Rio Tinto plc American Depositary Shares (ADS), each representing one ordinary share. The shares are registered with the US Securities and Exchange Commission (SEC), are listed on the NYSE and are traded under the symbol RIO.

**Fees and charges payable by a holder of ADSs**

In accordance with the terms of the Deposit Agreement, JPMorgan may charge holders of Rio Tinto ADSs, either directly or indirectly, fees or charges up to the amounts described below.

Category	Depository actions	Associated fee
<b>Depositing or substituting the underlying shares</b>	Issuance of ADSs against the deposit of shares, including deposits and issuance in respect of:	US\$5.00 per 100 ADSs (or portion thereof) evidenced by the new ADSs delivered
	Share distributions, stock split, rights, merger	

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	Exchange of securities or other transactions	
<b>Selling or exercising rights</b>	<p>Other events or distributions affecting the ADSs or the deposited securities</p> <p>Distribution or sale of securities, the fee being in an amount equal to the fee for the execution and delivery of ADSs which would have been charged as a result of the deposit of such securities</p>	US\$5.00 for each 100 ADSs (or portion thereof)
<b>Withdrawing an underlying share</b>	<p>Acceptance of ADSs surrendered for withdrawal of deposited securities</p>	US\$5.00 for each 100 ADSs (or portion thereof) evidenced by the ADSs surrendered
<b>Transferring, splitting or grouping receipts</b>	Transfers, combining or grouping of depositary receipts	US\$2.50 per ADS
<b>General depositary services, particularly those charged on an annual basis</b>	<p>Other services performed by the depositary in administering the ADRs</p> <p>Provide information about the depositary's right, if any, to collect fees and charges by offsetting them against dividends received and deposited securities</p>	US\$0.02 per ADS (or portion thereof) not more than once each calendar year and payable at the sole discretion of the depositary by billing holders or deducting such charge from one or more cash dividends or other cash distributions
<b>Expenses of the depositary</b>	<p>Expenses incurred on behalf of holders in connection with:</p> <p>Compliance with foreign exchange control regulations or any law or regulation relating to foreign investment</p> <p>The depositary's or its custodian's compliance with applicable law, rule or regulation</p> <p>Stock transfer or other taxes and other governmental charges</p> <p>Cable, telex, facsimile and electronic transmission/delivery</p> <p>Expenses of the depositary in connection with the conversion of foreign currency into US dollars (which are paid out of such foreign currency)</p> <p>Any other charge payable by depositary or its agents</p>	Expenses payable at the sole discretion of the depositary by billing holders or by deducting charges from one or more cash dividends or other cash distributions

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**Shareholder information continued**

**Fees and payments made by the depositary to the issuer**

JPMorgan has agreed to reimburse certain company expenses related to the Rio Tinto plc ADR programme and incurred by the Group in connection with the programme. For the year ended 31 December 2011, JPMorgan reimbursed US\$1.05 million in respect of expenses incurred by the Group in connection with the ADR programme. JPMorgan did not pay any amount on the Group's behalf to third parties. JPMorgan also waived certain of its standard fees and expenses associated with the administration of the programme relating to routine programme maintenance, reporting, distribution of cash dividends, annual meeting services and report mailing services.

Under certain circumstances, including removal of JPMorgan as depositary or termination of the ADR programme by the Company, the Company is required to repay JPMorgan any amounts of administrative fees and expenses waived during the 12 month period prior to notice of removal or termination.

**Share ownership**

**Substantial shareholders**

Under the UK Disclosure and Transparency Rules and the Australian Corporations Act, any shareholder of Rio Tinto plc with voting rights of three per cent or more or any person with voting power of five per cent or more in Rio Tinto Limited, is required to provide the Companies with notice. The shareholders who have provided such, or an equivalent, notice are:

	Date of notice	Number of shares	Percentage of issued share capital
<b>Rio Tinto plc</b>			
The Capital Group Companies, Inc	13 Jun 2006	41,031,494	3.90
Capital Research and Management Company	16 Jul 2009	75,461,183	4.95
AXA S.A.	29 Jan 2008	48,493,873	4.86
Shining Prospect Pte. Ltd	2 Feb 2008	119,705,134	12.00
BlackRock Inc.	1 Dec 2009	127,744,871	8.38
Legal & General plc	1 Oct 2010	60,698,133	3.97

**Rio Tinto Limited**

Shining Prospect Pte. Ltd (a)	4 Feb 2008		
BlackRock Investment Management (Australia) Limited	8 Nov 2010	25,357,003	5.81

(a) Shining Prospect Pte. Ltd, a Singapore based entity owned by Chinalco (Aluminum Corporation of China) acquired 119,705,134 Rio Tinto plc shares on 1 February 2008. Through the operation of Australian Corporations Act as modified, this gave these entities and their associates voting power of 9.3 per cent in the Rio Tinto Group on a joint decision matter, making them substantial shareholders of Rio Tinto Limited, as well as of Rio Tinto plc. Further to the Rio Tinto plc rights issue in 2009, Shining Prospect Pte. Ltd increased its holding to 182,550,329 shares. As a result of this increase and the ongoing US\$7 billion Rio Tinto plc buy-back programme, these entities and their associates currently have a voting power of 9.8 per cent in the Rio Tinto Group on a joint decision matter.

As far as is known, Rio Tinto plc and Rio Tinto Limited are not directly or indirectly owned or controlled by another corporation or by any government or natural person. Rio Tinto is not aware of any arrangement which may result in a change in control. No shareholder possesses voting rights that differ from those attaching to Rio Tinto plc's and Rio Tinto Limited's securities.

As of 20 February 2012, the total amount of the Group's voting securities owned by the directors in Rio Tinto plc was 438,769 ordinary shares of 10p each and in Rio Tinto Limited was 58,323 ordinary shares, in aggregate representing less than one per cent of the Group's total number of shares in issue.

**Analysis of ordinary shareholders**

	No of accounts		Rio Tinto plc		Rio Tinto Limited	
	No of accounts	%	Shares	%	Shares	%
As at 20 February 2012						
1 to 1,000 shares	34,428	74.05	11,573,773	0.81	177,462	83.90
1,001 to 5,000 shares	9,443	20.31	18,883,745	1.31	30,476	14.41
5,001 to 10,000 shares	868	1.87	5,997,886	0.42	2,369	1.12
					16,419,633	3.77

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10,001 to 25,000 shares	516	1.11	8,072,024	0.56	<b>899</b>	<b>0.43</b>	<b>13,050,978</b>	<b>2.99</b>
25,001 to 125,000 shares	600	1.29	36,097,955	2.51	<b>234</b>	<b>0.11</b>	<b>10,748,112</b>	<b>2.47</b>
125,001 to 250,000 shares	192	0.41	33,977,547	2.36	<b>24</b>	<b>0.01</b>	<b>4,381,020</b>	<b>1.01</b>
250,001 to 1,250,000 shares	296	0.64	162,885,821	11.32	<b>29</b>	<b>0.01</b>	<b>14,729,223</b>	<b>3.38</b>
1,250,001 to 2,500,000 shares	68	0.15	116,543,512	8.10	<b>3</b>	<b>0.00</b>	<b>6,204,866</b>	<b>1.42</b>
2,500,001 shares and over <sup>(a)</sup>	80	0.17	1,044,692,203	72.61	<b>10</b>	<b>0.00</b>	<b>257,616,434</b>	<b>59.12</b>
	46,491	100.00	1,438,724,466 <sup>(b)</sup>	100.00	<b>211,506</b>	<b>100.00</b>	<b>435,758,720<sup>(c)</sup></b>	<b>100.00</b>

Number of holdings less than marketable parcel of A\$500

**3,512**

- (a) This includes 104,004,668 shares held in the name of a nominee on the share register. The shares are listed on the NYSE in the form of American Depositary Receipts ( ADRs ).
- (b) The total issued share capital is made up of 1,423,863,307 publicly held shares; 14,861,159 shares held in Treasury; and 3,200,000 shares repurchased from the market pending cancellation.
- (c) Publicly held shares in Rio Tinto Limited.

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### Twenty largest registered shareholders

In accordance with the ASX Listing Rules, below are the names of the 20 largest registered holders of Rio Tinto Limited shares and the number of shares and the percentage of issued capital each holds:

	Number	Percentage
	of shares	of issued share capital
<b>Rio Tinto Limited</b>		
HSBC Custody Nominees (Australia) Limited	84,755,278	19.45
JPMorgan Nominees Australia Limited	63,278,327	14.52
National Nominees Limited	57,921,763	13.29
Citicorp Nominees Pty Limited	11,623,385	2.67
Cogent Nominees Pty Limited	9,870,418	2.27
Citicorp Nominees Pty Limited	9,561,881	2.19
JPMorgan Nominees Australia Limited	9,430,697	2.16
AMP Life Limited	3,961,979	0.91
UBS Wealth Management Australia Nominees Pty Ltd	3,622,000	0.83
Australian Foundation Investment Company Limited	3,590,706	0.82
Argo Investments Limited	2,393,539	0.55
Perpetual Trustee Company Limited	2,024,839	0.46
Cogent Nominees Pty Limited	1,786,488	0.41
Australian Reward Investment Alliance	1,086,550	0.25
Navigator Australia Ltd	961,175	0.22
Australian United Investment Company Limited	915,000	0.21
Queensland Investment Corporation	883,400	0.20
RBC Dexia Investor Services Australia Nominees Pty Limited	814,589	0.19
UBS Nominees Pty Ltd	751,500	0.17
HSBC Custody Nominees (Australia) Limited	600,437	0.14
	269,833,951	61.91

Large registered shareholders are nominees who hold securities on behalf of beneficial shareholders.

### Dividends

Both Companies have paid dividends on their shares every year since incorporation in 1962. The rights of Rio Tinto shareholders to receive dividends are explained under the description of the Dual listed companies structure on page 119.

#### Dividend policy

The aim of Rio Tinto's progressive dividend policy is to increase the US dollar value of ordinary dividends over time. The rate of the total annual dividend, in US dollars, is determined taking into account the results for the past year and the outlook. Under Rio Tinto's 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.

#### Dividend determination

The majority of the Group's sales are transacted in US dollars, making this the most reliable measure for the Group's global business performance. It is Rio Tinto's main reporting currency and consequently the natural currency for dividend determination. Dividends determined in US dollars are translated at exchange rates prevailing two days prior to the announcement and are then declared payable in sterling by Rio Tinto plc and in Australian dollars by Rio Tinto Limited. On request, shareholders of Rio Tinto plc can elect to receive dividends in Australian dollars and shareholders of Rio Tinto Limited can elect to receive dividends in sterling. These dividend amounts are calculated by converting the declared dividend using currency exchange rates applicable five business days prior to the dividend payment date.

Shareholders who wish to receive their dividends in any other currencies should contact the Companies' share registrars, who also offer payment services in other currencies, subject to a fee.

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### 2011 dividends

The 2011 interim and final dividends were determined at 54 US cents and at 91 US cents per share respectively and the applicable conversion rates for the interim and final dividend were US\$1.62965 and US\$1.58730 to the pound sterling and US\$1.08405 and US\$1.08080 to the Australian dollar respectively. For those Rio Tinto plc shareholders who elected to receive their interim dividend in Australian dollars the applicable conversion rate was A\$1.50455 and for Rio Tinto Limited shareholders who elected to receive their dividend in sterling the applicable conversion rate was £0.66465.

Final dividends of 57.33 pence or 84.20 Australian cents per share will be paid on 12 April 2012. For those Rio Tinto plc shareholders requesting the 2011 final dividend be paid in Australian dollars, those holders of Rio Tinto plc ADRs (each representing one share) and those Rio Tinto Limited shareholders requesting the 2011 final dividend be paid in pounds sterling, the applicable conversion rates will be announced on 3 April 2012.

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**Shareholder information continued**

The charts below set out the amounts of interim and final dividends paid or payable on each share or ADR in respect of each financial year, but before deduction of any withholding tax.

These have been restated for the impact of the 2009 rights issues and the ADR ratio change.

	2011	2010	2009	2008 restated	2007 restated
<b>Rio Tinto Group US cents per share</b>					
Interim	54.00	45.00		55.61	42.53
Final	91.00	63.00	45.00	55.61	68.70
<b>Total</b>	<b>145.00</b>	<b>108.00</b>	<b>45.00</b>	<b>111.22</b>	<b>111.23</b>
<b>Rio Tinto plc UK pence per share</b>					
Interim	33.14	28.21		29.64	20.93
Final	57.33	39.14	28.84	37.85	35.27
<b>Total</b>	<b>90.47</b>	<b>67.35</b>	<b>28.84</b>	<b>67.49</b>	<b>56.20</b>
<b>Rio Tinto Limited Australian cents per share</b>					
Interim	49.81	49.27		63.25	49.64
Final	84.20	61.94	51.56	82.97	76.08
<b>Total</b>	<b>134.01</b>	<b>111.21</b>	<b>51.56</b>	<b>146.22</b>	<b>125.72</b>
<b>Rio Tinto plc US cents per ADR</b>					
Interim	53.55	43.45		55.61	42.53
Final <sup>(a)</sup>		63.25	45.00	55.61	68.7
<b>Total <sup>(a)</sup></b>		<b>106.70</b>	<b>45.00</b>	<b>111.22</b>	<b>111.23</b>

(a) The final dividend payable to holders of ADRs for the 2011 financial year will be announced on 3 April 2012 when the GBP:USD currency conversion rate is determined. The ADR dividend for 2010 is re-stated from the 2010 Annual Report and reflects the dividend after currency conversion.

**Dividend reinvestment plan (DRP)**

Rio Tinto offers a DRP to registered shareholders, which provides the opportunity to use cash dividends to purchase Rio Tinto shares in the market free of commission. Due to local legislation the DRP cannot be extended to shareholders in the US, Canada and certain other countries.

**Exchange rates**

The following tables show, for the periods and dates indicated, certain information regarding the exchange rates for the pound sterling and Australian dollar, based on the Noon Buying Rates for pounds sterling and Australian dollars expressed in US dollars per £1.00 and per A\$1.00.

**Pounds sterling**

Year ended 31 December(c)	Period end	Average rate	High	Low
Jan 2012	1.58	1.55	1.58	1.53
Dec 2011	1.55	1.56	1.57	1.54
Nov 2011	1.56	1.58	1.61	1.55
Oct 2011	1.60	1.57	1.61	1.53
Sep 2011	1.56	1.58	1.62	1.54
Aug 2011	1.63	1.64	1.65	1.62
2011	1.55	1.60	1.67	1.67
2010	1.56	1.55	1.64	1.43



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2009	1.62	1.57	1.70		1.35
2008	1.44	1.86	2.03		1.44
2007	1.99	2.00	2.11		1.92

### Share price information

The following table shows share prices for the period indicated, the reported high and low middle market quotations, which represent an average of bid and asked prices, for Rio Tinto plc's shares on the London Stock Exchange based on the Daily Official List, the highest and lowest sale prices of the Rio Tinto plc ADRs as reported on the NYSE composite tape and the high and low closing sale prices of Rio Tinto Limited shares based upon information provided by the ASX. There is no established trading market in the US for Rio Tinto Limited's shares.

	Pence per Rio Tinto plc share		US\$ per Rio Tinto plc ADS(a)		A\$ per Rio Tinto Limited share	
	High	Low	High	Low	High	Low
	2007	5,784	2,505	102.30	40.74	146.90
2008	7,078	1,049	118.03	12.50	156.10	32.00
2009	3,420	1,140	55.93	19.63	74.89	29.38
2010	4,584	2,812	72.65	39.30	87.94	61.70
2011	4,712	2,713	76.67	40.50	88.68	59.00
Aug 2011	4,282	3,388	72.04	52.36	81.52	68.58
Sep 2011	3,769	2,889	61.62	44.08	73.08	60.20
Oct 2011	3,620	2,713	58.94	40.50	70.22	59.00
Nov 2011	3,520	2,986	57.83	46.19	70.75	61.95
Dec 2011	3,384	3,027	53.69	45.99	67.00	60.20
Jan 2012	3,893	3,311	61.24	50.71	69.78	61.40
2010						
First quarter	3,910	3,036	60.11	46.39	80.00	66.60
Second quarter	4,062	2,812	62.24	39.30	80.86	61.70
Third quarter	3,762	2,880	60.28	43.27	77.26	65.03
Fourth quarter	4,584	3,697	72.65	58.36	87.94	77.00
2011						
First quarter	4,712	3,874	76.67	61.07	88.68	77.41
Second quarter	4,528	4,033	74.99	64.79	88.30	77.30
Third quarter	4,595	2,889	74.00	44.08	84.35	60.20
Fourth quarter	3,620	2,713	58.94	40.50	70.75	59.00

(a) On 12 April 2010, Rio Tinto announced a ratio change for the Rio Tinto plc ADR programme. With effect from 30 April 2010, one ADR represents one ordinary share of 10p in Rio Tinto plc. Prior to this date one ADR represented four ordinary shares of 10p. To effect this change ADR holders received three additional ADRs for every one ADR held as of 22 April 2010, the ADR record date. Prior year comparatives have been restated for the impact of the ratio change.

(b) None of these prices have been restated to take account of the rights issues undertaken in 2009.

**Table of Contents****Australian dollars**

Year ended 31 December(c)	Period end	Average rate	High	Low
Jan 2012	1.07	1.04	1.07	1.02
Dec 2011	1.02	1.01	1.03	0.99
Nov 2011	1.00	1.01	1.04	0.97
Oct 2011	1.06	1.01	1.07	0.94
Sep 2011	0.97	1.02	1.07	0.97
Aug 2011	1.07	1.05	1.10	1.02
2011	1.02	1.03	1.10	0.94
2010	1.02	0.92	1.02	0.81
2009	0.890	0.790	0.940	0.620
2008	0.698	0.852	0.983	0.607
2007	0.878	0.839	0.937	0.772

(c) The Noon Buying Rate on such dates differed slightly from the rates used in the preparation of Rio Tinto's financial statements as of such date. No representation is made that pound sterling and Australian dollar amounts have been, could have been or could be converted into dollars at the Noon Buying Rate on such dates or at any other dates.

**Material contracts****Articles of Association and Constitution**

As explained on pages 119 to 120, under the terms of the DLC structure the shareholders of Rio Tinto plc and of Rio Tinto Limited entered into certain contractual arrangements which are designed to place the shareholders of both Companies in substantially the same position as if they held shares in a single entity which owned all of the assets of both Companies. Please refer to the section on Guarantees on pages 120 to 121 for further information. Generally and as far as is permitted by the UK Companies Act and the Australian Corporations Act and ASX Listing Rules this principle is reflected in the Articles of Association of Rio Tinto plc and in the Constitution of Rio Tinto Limited. The summaries below include descriptions of material rights of the shareholders of both Rio Tinto plc and Rio Tinto Limited.

**Objects**

At the 2009 annual general meetings, shareholders of Rio Tinto plc and Rio Tinto Limited approved amendments to the constitutional documents whereby the object clauses were removed to allow the Companies to have the widest possible scope of activities.

**Directors**

Under Rio Tinto plc's Articles of Association a director may not vote in respect of any proposal in which he or any other person connected with him, has any material interest other than by virtue of his interests in shares or debentures or other securities of or otherwise in or through the Company, except where resolutions:

indemnify him or a third party in respect of obligations incurred by the director on behalf of, or for the benefit of, the Company, or in respect of obligations of the Company, for which the director has assumed responsibility under an indemnity, security or guarantee;

relate to an offer of securities in which he may be interested as a holder of securities or as an underwriter;

concern another body corporate in which the director is beneficially interested in less than one per cent of the issued shares of any class of shares of such a body corporate;

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relate to an employee benefit in which the director will share equally with other employees; and

relate to liability insurance that the Company is empowered to purchase for the benefit of directors of the Company in respect of actions undertaken as directors (or officers) of the Company.

Under Rio Tinto Limited's Constitution, except where a director is constrained by Australian law, a director may be present at a meeting of the board while a matter in which the director has a material personal interest is being considered and may vote in respect of that matter.

The directors are empowered to exercise all the powers of the Companies to borrow money, to charge any property or business of the Companies or all or any of their uncalled capital and to issue debentures or give any other security for a debt, liability or obligation

of the Companies or of any other person. The directors shall restrict the borrowings of Rio Tinto plc to the limitation that the aggregate amount of all moneys borrowed by the Company and its subsidiaries shall not exceed an amount equal to one and one half times the Company's share capital plus aggregate reserves unless sanctioned by an ordinary resolution of the Company.

Directors are not required to hold any shares of either Company by way of qualification. The Remuneration report on pages 104 to 105 provides information on shareholding policies relating to executive and non-executive directors. Please refer to Corporate Governance page 69 for information on appointment of directors.

### **Rights attaching to shares**

Under English law, dividends on shares may only be paid out of profits available for distribution, as determined in accordance with generally accepted accounting principles and by the relevant law. Shareholders are entitled to receive such dividends as may be declared by the directors. The directors may also pay shareholders such interim dividends as appear to them to be justified by the financial position of the Group.

Any Rio Tinto plc dividend unclaimed after 12 years from the date the dividend was declared, or became due for payment, will be forfeited and returned to the Company. Any Rio Tinto Limited dividend unclaimed may be invested or otherwise used by the board for the benefit of the Company until claimed or otherwise disposed of according to Australian law.

### **Voting rights**

Voting at any general meeting of shareholders on a resolution on which the holder of the Special Voting Share is entitled to vote shall be decided by a poll, and any other resolution shall be decided by a show of hands unless a poll has been duly demanded. On a show of hands, every shareholder who is present in person or by proxy or other duly authorised representative and is entitled to vote has one vote regardless of the number of shares held. The holder of the Special Voting Share is not entitled to vote on a show of hands. On a poll, every shareholder who is present in person or by proxy or other duly authorised representative and is entitled to vote has one vote for every ordinary share for which he or she is the holder and, in the case of Joint Decisions, the holder of the Special Voting Share has one vote for each vote cast by the shareholders at the parallel meeting of the other Company's shareholders.

A poll may be demanded by any of the following:

the chairman of the meeting;

at least five shareholders entitled to vote on the resolution;

any shareholder or shareholders representing in the aggregate not less than one tenth (Rio Tinto plc) or one 20th (Rio Tinto Limited) of the total voting rights of all shareholders entitled to vote on the resolution;

any shareholder or shareholders holding shares conferring a right to vote at the meeting on which there have been paid-up sums in the aggregate equal to not less than one tenth of the total sum paid up on all the shares conferring that right (Rio Tinto plc); or

the holder of the Special Voting Share.

A proxy form will be treated as giving the proxy the authority to demand a poll, or to join others in demanding one.

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The necessary quorum for a Rio Tinto plc general meeting is three members present (in person or by proxy or other duly authorised representative) and entitled to vote and for a Rio Tinto Limited general meeting is two members present in person or by proxy or other duly authorised representative.

Matters are transacted at general meetings by the proposing and passing of resolutions:

ordinary resolutions, which require the affirmative vote of a majority of the votes of those persons voting at a meeting at which there is a quorum, for example the election of directors; and

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### **Shareholder information continued**

special resolutions, which require the affirmative vote of not less than three fourths of the persons voting at a meeting at which there is a quorum, for example amending the Articles of Association of Rio Tinto plc or the Constitution of Rio Tinto Limited. The DLC Merger Sharing Agreement further classifies resolutions as Joint Decisions and Class Rights Actions as explained under Voting rights on page 120.

Annual general meetings must be convened with 21 days written notice for Rio Tinto plc and with 28 days notice for Rio Tinto Limited. Other meetings of Rio Tinto plc must be convened with 21 days written notice for the passing of a special resolution and with 14 days notice for any other resolution, depending on the nature of the business to be transacted. All meetings of Rio Tinto Limited require 28 days notice. In calculating the period of notice the days of delivery or receipt of the notice and the date of the meeting are not included. Among other things, the notice must specify the nature of the business to be transacted.

#### **Variation of rights**

If, at any time, the share capital is divided into different classes of shares, the rights attached to any class may be varied, subject to the provisions of the relevant legislation, with the consent in writing of holders of three fourths in value of the shares of that class or upon the adoption of an extraordinary resolution passed at a separate meeting of the holders of the shares of that class. At every such separate meeting, all of the provisions of the Articles of Association and Constitution relating to proceedings at a general meeting apply, except that the quorum for Rio Tinto plc should be two or more persons who hold or represent by proxy not less than one third in nominal value of the issued shares of the class.

#### **Rights in a winding-up**

Except as the shareholders have agreed or may otherwise agree, upon a winding up, the balance of assets available for distribution:

after the payment of all creditors including certain preferential creditors, whether statutorily preferred creditors or normal creditors; and

subject to any special rights attaching to any class of shares is to be distributed among the holders of ordinary shares according to the amounts paid-up on the shares held by them. This distribution is generally to be made in cash. A liquidator may, however, upon the adoption of a special resolution of the shareholders, divide among the shareholders the whole or any part of the assets in kind.

The DLC Merger Sharing Agreement further sets out the rights of ordinary shareholders in a liquidation as explained on page 120.

#### **Facility agreement**

Rio Tinto Finance plc and Rio Tinto Finance Limited entered into a facility agreement on 12 November 2010 as borrowers with a syndicate of banks. The facility is guaranteed by Rio Tinto plc and Rio Tinto Limited. The facility comprises a US\$6 billion multi-currency five-year revolving credit facility (including a US\$ denominated same day access swingline facility). The funds made available under the Facility Agreement may be used for the general corporate purposes of the Group.

Advances under the revolving facility bear an interest rate per annum equal to the margin (which is dependent on the Group's long-term credit rating as determined by Moody's and Standard & Poors and the level of drawdown) plus LIBOR or EURIBOR (in relation to any euro loan) plus any mandatory cost.

The Facility Agreement contains no financial covenants.

At 31 December 2011, the facility was undrawn. Further details of the Group's credit facilities are set out in note 23 of the 2011 financial statements.

#### **Exchange controls and foreign investment**

##### **Rio Tinto plc**

There are no UK foreign exchange controls or other restrictions on the import or export of capital or on the payment of dividends to non-resident holders of Rio Tinto plc shares or that affect the conduct of Rio Tinto plc's operations. The Bank of England, however, administers financial sanctions against specified targets related to certain regimes. There are no restrictions under Rio Tinto plc's Articles of Association or under UK law that limit the right of non-resident owners to

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hold or vote Rio Tinto plc shares.

### Rio Tinto Limited

Under current Australian legislation, the Reserve Bank of Australia does not restrict the import and export of funds and no permission is required for the movement of funds into or out of Australia, except that restrictions apply to certain financial transactions relating to specified individuals and entities associated with certain regimes.

The Department of Foreign Affairs and Trade has responsibility for the administration of restrictions relating to terrorists and their sponsors, and the former Iraqi regime.

Rio Tinto Limited may be required to deduct withholding tax from foreign remittances of dividends, to the extent that they are unfranked, and from payments of interest.

Acquisitions of interests in shares, voting power or certain other equity instruments in Australian companies by foreign interests are subject to review and approval by the Treasurer of the Commonwealth of Australia under the Foreign Acquisitions and Takeovers Act 1975 (the Takeovers Act). The Takeovers Act applies to any acquisition of 15 per cent or more of the outstanding shares of, or voting power in, an Australian company or to any transaction that results in one non-resident, or a group of associated non-residents, controlling 15 per cent or more of the shares of or voting power in, an Australian company. The Takeovers Act also applies to any transaction which results in a group of non-associated non-residents controlling 40 per cent or more of the shares of, or voting power in, an Australian company. Persons who are proposing such acquisitions or transactions are required to notify the Treasurer of their intention. The Treasurer has the power to order divestment in cases where such acquisitions or transactions have already occurred. The Takeovers Act does not affect the rights of owners whose interests are held in compliance with the legislation.

### Limitations on voting and shareholding

Except for the provisions of the Takeovers Act 1975 there are no limitations imposed by law, Rio Tinto plc's Articles of Association or Rio Tinto Limited's Constitution, on the rights of non-residents or foreign persons to hold or vote the Group's ordinary shares or ADSs that would not apply generally to all shareholders.

### Taxation

#### UK resident individuals' shareholdings in Rio Tinto plc

#### Taxation of dividends

Dividends carry a tax credit equal to one ninth of the dividend. Individuals who are liable to income tax at the basic rate will have no further tax to pay. Higher rate tax payers are liable to tax on UK dividends at 32.5 per cent, which after taking account of the tax credit, produces an effective tax liability of 25 per cent of the dividend received. Additional rate tax payers are liable to tax on UK dividends at 42.5 per cent, which after taking account of the tax credit, produces an effective tax liability of 36.1 per cent of the dividend received.

#### Dividend reinvestment plan (DRP)

The taxation effect of participation in the DRP will depend on individual circumstances. Shareholders will generally be liable to tax on dividends reinvested in the DRP on the same basis as if they had received the cash and arranged the investment. The dividend should, therefore, be included in the annual tax return.

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The shares acquired should be added to shareholdings at the date and at the net cost shown on the share purchase advice. The actual cost of the shares for Rio Tinto plc shareholders including the stamp duty/stamp duty reserve tax, will form the base cost for capital gains tax purposes.

### **Capital gains tax**

Shareholders who have any queries on capital gains tax issues are advised to consult their financial adviser.

Details of relevant events since 31 March 1982 and adjusted values for Rio Tinto plc securities as at that date are available on the Group's website.

### **Australian resident individuals' shareholdings in Rio Tinto Limited**

#### **Taxation of dividends**

The basis of the Australian dividend imputation system is that when Australian resident shareholders receive dividends from Rio Tinto Limited, they may be entitled to a credit for the Australian tax paid by the Group in respect of that income, depending on the tax status of the shareholder.

The application of the system results in the Australian tax paid by the Group being allocated to shareholders by way of franking credits attaching to the dividends they receive. Such dividends are known as franked dividends. A dividend may be partly or fully franked. The current Rio Tinto Limited dividend is fully franked and the franking credits attached to the dividend are shown in the distribution statement provided to shareholders.

The extent to which a company can frank a dividend depends on the credit balance in its franking account. Credits to this account can arise in a number of ways, including when a company pays company tax or receives a franked dividend from another company. The dividend is required to be included in a resident individual shareholder's assessable income. In addition, an amount equal to the franking credit attached to the franked dividend is also included in the assessable income of the resident individual, who may then be entitled to a rebate of tax equal to the franking credit amount included in their income. Should the franking credits exceed the tax due, the excess is refunded to the resident individual.

The effect of the dividend imputation system on non-resident shareholders is that, to the extent that the dividend is franked, no Australian tax will be payable and there is an exemption from dividend withholding tax.

A withholding tax is normally levied at the rate of 15 per cent when unfranked dividends are paid to non-resident shareholders residing in a country with which Australia has a taxation treaty. Most Western countries have a taxation treaty with Australia. A rate of 30 per cent applies to countries where there is no taxation treaty.

Since 1988, all dividends paid by Rio Tinto Limited have been fully franked. It is the Group's policy to pay fully franked dividends whenever possible. The boards expect Rio Tinto Limited to be able to pay fully franked dividends for the foreseeable future.

#### **Dividend reinvestment plan (DRP)**

Shareholders will generally be liable for tax on dividends reinvested in the DRP on the same basis as if they had received the cash and arranged the investment. The dividend should therefore be included in the annual tax return as assessable income.

The shares acquired should be added to the shareholding at the date of acquisition at the actual cost of the shares, which is the amount of the dividend applied by the shareholder to acquire shares and any incidental costs associated with the acquisition will form part of the cost base or reduced cost base of the shares for capital gains tax purposes.

### **Capital gains tax**

The Australian capital gains tax legislation is complex. If shareholders have acquired shares after 19 September 1985 they may be subject to capital gains tax on the disposal of those shares.

Generally, disposal of shares held on capital account would give rise to a capital gain or loss. A capital gain arises when the proceeds on disposal are greater than the cost base of shares. A capital loss arises when the

proceeds on sale are less than the cost base or reduced cost base. Where a capital gain arises on shares held for at least 12 months, individual, trust and superannuation fund shareholders may be eligible for a capital gains tax discount.

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Shareholders are advised to seek the advice of an independent taxation consultant on any possible capital gains tax exposure.

### US residents

The following is a summary of the principal UK tax, Australian tax and US Federal income tax consequences of the ownership of Rio Tinto plc ADSs, Rio Tinto plc shares and Rio Tinto Limited shares, the Group's ADSs and shares by a US holder as defined below. It is not intended to be a comprehensive description of all the tax considerations that are relevant to all classes of taxpayer. Future changes in legislation may affect the tax consequences of the ownership of the Group's ADSs and shares.

It is based in part on representations by the Group's depository bank as depository for the ADRs evidencing the ADSs and assumes that each obligation in the deposit agreements will be performed in accordance with its terms.

You are a US holder if you are a beneficial owner of the Group's ADSs and shares and you are: a citizen or resident of the US, a domestic corporation, an estate whose income is subject to US federal income tax regardless of its source, or a trust if a US court can exercise primary supervision over the trust's administration and one or more US persons are authorised to control all substantial decisions of the trust.

This section applies to US holders only if shares or ADSs are held as capital assets for tax purposes. This section does not apply to shareholders who are members of a special class of holders subject to special rules, including a dealer in securities, a trader in securities who elects to use a mark-to-market method of accounting for securities holdings, a tax exempt organisation, a life insurance company, a person liable for alternative minimum tax, a person that actually or constructively owns ten per cent or more of Rio Tinto's voting stock, a person that holds shares or ADSs as part of a straddle or a hedging or conversion transaction, or a person whose functional currency is not the US dollar.

This section is based on the US Internal Revenue Code of 1986, as amended (the Code), its legislative history, existing and proposed regulations, published rulings and court decisions, and on the convention between the US and UK, and the convention between the US and Australia which may affect the tax consequences of the ownership of the Group's ADSs and shares. These laws and conventions are subject to change, possibly on a retroactive basis.

For the purposes of the Conventions and of the Code, US holders of ADSs are treated as the owners of the underlying shares.

The summary describes the treatment applicable under the conventions in force at the date of this report.

### UK taxation of shareholdings in Rio Tinto plc

#### Taxation of dividends

US holders are not liable to UK withholding tax on dividends paid by Rio Tinto plc. Dividends carry a tax credit equal to one ninth of the net dividend, or ten per cent of the net dividend plus the tax credit. The tax credit is not repayable to US holders.

#### Capital gains

A US holder will not normally be liable to UK tax on capital gains realised on the disposition of Rio Tinto plc ADSs or shares unless the holder carries on a trade, profession or vocation in the UK through a permanent establishment in the UK and the ADSs or shares have been used for the purposes of the trade, profession or vocation or are acquired, held or used for the purposes of such a permanent establishment.



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### **Shareholder information continued**

#### **Inheritance tax**

Under the UK Estate Tax Treaty, a US holder, who is domiciled in the US and is not a national of the UK, will not be subject to UK inheritance tax upon the holder's death or on a transfer during the holder's lifetime unless the ADSs and shares form part of the business property of a permanent establishment in the UK or pertain to a fixed base situated in the UK used in the performance of independent personal services. In the exceptional case where ADSs or shares are subject both to UK inheritance tax and to US Federal gift or estate tax, the UK Estate Tax Treaty generally provides for tax payments to be relieved in accordance with the priority rules set out in the Treaty.

#### **Stamp duty and stamp duty reserve tax**

Transfers of Rio Tinto plc ADSs will not be subject to UK stamp duty provided that the transfer instrument is not executed in, and at all times remains outside, the UK. Electronic paperless purchases of Rio Tinto plc shares are subject to stamp duty reserve tax (SDRT) at a rate of 0.5 per cent (rounded to the nearest penny). Purchases of Rio Tinto plc shares using a stock transfer form are subject to Stamp Duty at a rate of 0.5 per cent on transactions over £1,000 (rounded up to the nearest £5). Conversions of Rio Tinto plc shares into Rio Tinto plc ADSs will be subject to additional Stamp Duty or SDRT at a rate of 1.5 per cent on all transfers to the depositary or its nominee.

#### **Australian taxation of shareholdings in Rio Tinto Limited**

##### **Taxation of dividends**

US holders are not normally liable to Australian withholding tax on dividends paid by Rio Tinto Limited because such dividends are normally fully franked under the Australian dividend imputation system, meaning that they are paid out of income that has borne Australian income tax. Any unfranked dividends would suffer Australian withholding tax which under the Australian income tax convention is limited to 15 per cent of the gross dividend.

##### **Capital gains**

US holders are not normally subject to any Australian tax on the disposal of Rio Tinto Limited ADSs or shares unless they have been used in carrying on a trade or business wholly or partly through a permanent establishment in Australia, or the gain is in the nature of income sourced in Australia.

##### **Gift, estate and inheritance tax**

Australia does not impose any gift, estate or inheritance taxes in relation to gifts of shares or upon the death of a shareholder.

##### **Stamp duty**

An issue or transfer of Rio Tinto Limited shares does not require the payment of Australian stamp duty.

#### **US federal income tax**

In general, taking into account the earlier assumptions that each obligation of the Deposit Agreement and any related agreement will be performed according to its terms, for US federal income tax purposes, if you hold ADRs evidencing ADSs, you will be treated as the owner of the shares represented by those ADRs. Exchanges of shares for ADRs, and ADRs for shares, generally will not be subject to US federal income tax.

##### **Taxation of dividends**

Under the US federal income tax laws, and subject to the Passive Foreign Investment Company, or PFIC, Rules discussed below, if you are a US holder, the gross amount of any dividend the Group pays out of its current or accumulated earnings and profits (as determined for US federal income tax purposes) is subject to US federal income taxation.

If you are a non-corporate US holder, dividends paid to you in taxable years beginning before 1 January 2012 that constitute qualified dividend income will be taxable to you at a maximum tax rate of 15 per cent provided that, in the case of shares or ADSs, you hold the shares or ADSs for more than 60 days during the 121 day period beginning 60 days before the ex-dividend date. Dividends we pay with respect to the shares or ADSs will generally be qualified dividend income.

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You must include any Australian tax withheld from the dividend payment in this gross amount even though you do not in fact receive it. The dividend is taxable to you when you, in the case of shares, or the depository, in the case of ADSs, receive the dividend, actually or constructively. The dividend will not be eligible for the dividends-received deduction generally allowed to US corporations in respect of dividends received from other US corporations. The amount of the dividend distribution that you must include in your income as a US holder will be the US dollar value of the non-US dollar payments made, determined at the spot UK pound/US dollar rate (in the case of Rio Tinto plc) or the spot Australian dollar/US dollar rate (in the case of Rio Tinto Limited) on the date the dividend distribution is includible in your income, regardless of whether the payment is in fact converted into US dollars. Generally, any gain or loss resulting from currency exchange fluctuations during the period from the date you include the dividend payment in income to the date you convert the payment into US dollars will be treated as ordinary income or loss and will not be eligible for the special tax rate applicable to qualified dividend income. The gain or loss generally will be income or loss from sources within the US for foreign tax credit limitation purposes. Distributions in excess of current and accumulated earnings and profits, as determined for US federal income tax purposes, will be treated as a non-taxable return of capital to the extent of your basis in the shares or ADSs and thereafter as capital gain.

Subject to certain limitations, any Australian tax withheld in accordance with the Australia/United States Tax Treaty and paid over to Australia will be creditable or deductible against your US federal income tax liability. Special rules apply in determining the foreign tax credit limitation with respect to dividends that are subject to the maximum 15 per cent tax rate.

For foreign tax credit purposes, dividends will generally be income from sources outside the US and will, depending on your circumstances, generally be either passive or general income which, in either case, is treated separately from other types of income for purposes of computing the foreign tax credit allowable to you.

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### **Taxation of capital gains**

Subject to the PFIC rules discussed below, if you are a US holder and you sell or otherwise dispose of the Group's ADSs or shares, you will recognise capital gain or loss for US federal income tax purposes equal to the difference between the US dollar value of the amount that you realise and your tax basis, determined in US dollars, in your shares or ADSs. Capital gain of a non-corporate US holder is generally taxed at preferential rates where the holder has a holding period greater than one year. The gain or loss will generally be income or loss from sources within the US for foreign tax credit limitation purposes.

### **Passive Foreign Investment Company (PFIC) Rules**

We believe that the Group's shares or ADSs should not be treated as stock of PFIC for US federal income tax purposes, but this conclusion is a factual determination that is made annually and thus may be subject to change. If we were to be treated as a PFIC, unless the shares or ADSs are marketable stock and a US holder elects to be taxed annually on a mark-to-market basis with respect to the shares or ADSs, gain realised on the sale or other disposition of the shares or ADSs would in general not be treated as capital gain. Instead, if you are a US holder, you would be treated as if you had realised such gain and certain excess distributions ratably over your holding period for the shares or ADSs and would be taxed at the highest tax rate in effect for each such year to which the gain was allocated, together with an interest charge in respect of the tax attributable to each such year. In addition, dividends that you receive from us will not be eligible for the special tax rates applicable to qualified dividend income if we are a PFIC either in the taxable year of the distribution or the preceding taxable year, but instead will be taxable at rates applicable to ordinary income.

### **Documents on display**

Rio Tinto is subject to the Securities and Exchange Commission reporting requirements for foreign companies. A Form 20-F, which corresponds with the Form 10-K for US public companies, was filed with the SEC on 16 March 2012. Rio Tinto's Form 20-F and other filings can be viewed on the Rio Tinto website as well as the SEC website at [www.sec.gov](http://www.sec.gov). ADR holders may also read without charge and copy at prescribed rates any document filed at the public reference facilities of the SEC's principal office at 100 F Street NE, Washington, DC 20549, US. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference facilities.

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**Table of Contents****Group income statement**

Years ended 31 December

		(a)		
		Restated		
		2010		
	Note	2011 US\$m	US\$m	2009 US\$m
<b>Continuing operations</b>				
Consolidated sales revenue <sup>(b)</sup>	2	60,537	55,171	40,262
Net operating costs (excluding items shown separately) <sup>(b)</sup>	4	(36,260)	(35,262)	(32,255)
Impairment charges less reversals	6	(9,174)	(982)	(1,573)
Gain on consolidation and on disposal of interests in businesses	2, 39	185	753	692
Exploration and evaluation costs	13	(1,437)	(594)	(514)
Profits on disposal of interests in undeveloped projects	13	89	522	894
<b>Operating profit</b>		<b>13,940</b>	19,608	7,506
Share of profit after tax of equity accounted units	7	704	1,101	786
Impairment after tax of investments in equity accounted units	6	(592)		
<b>Profit before finance items and taxation</b>		<b>14,052</b>	20,709	8,292
<b>Finance items</b>				
Net exchange (losses)/gains on external debt and intragroup balances	25	(154)	529	365
Net gains on derivatives not qualifying for hedge accounting		51	162	261
Finance income	8	115	163	120
Finance costs	8	(497)	(778)	(929)
Amortisation of discount		(353)	(294)	(249)
		(838)	(218)	(432)
<b>Profit before taxation</b>		<b>13,214</b>	20,491	7,860
<b>Taxation</b>	9	<b>(6,439)</b>	(5,296)	(2,076)
<b>Profit from continuing operations</b>		<b>6,775</b>	15,195	5,784
<b>Discontinued operations</b>				
Loss after tax from discontinued operations	2	(10)	(97)	(449)
<b>Profit for the year</b>		<b>6,765</b>	15,098	5,335
attributable to non-controlling interests		939	860	463
attributable to owners of Rio Tinto (Net earnings)		<b>5,826</b>	14,238	4,872
<b>Basic earnings/(loss) per share</b>				
Profit from continuing operations	10	<b>303.5c</b>	731.0c	301.7c
Loss from discontinued operations	10	<b>(0.5c)</b>	(4.9c)	(25.5c)
<b>Profit for the year</b>	10	<b>303.0c</b>	726.1c	276.2c
<b>Diluted earnings/(loss) per share</b>				
Profit from continuing operations	10	<b>301.5c</b>	726.7c	300.7c
Loss from discontinued operations	10	<b>(0.5c)</b>	(4.9c)	(25.4c)
<b>Profit for the year</b>	10	<b>301.0c</b>	721.8c	275.3c

(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. Refer to note 39.

(b) Following the continued integration and organisational restructure of Rio Tinto Aluminium and adoption of the integrated operations approach (see Rio Tinto Financial Information by Business Unit on pages 209 to 212), sales of surplus power and carbon products used in the smelting process, previously included within sales revenue, have been treated as a credit to operating costs. In addition, third party commodity swap arrangements for delivery and receipt of smelter grade alumina are offset within operating costs. Corresponding amounts in comparative periods have been reclassified accordingly. This reclassification is considered to improve the relevance of the financial statements for users. The impact of the reclassification on previously reported consolidated sales revenue is: 31 December 2010: US\$1,405 million (31 December 2009: US\$1,563 million). The impact on previously reported gross sales revenue is: 31 December 2010: US\$1,109 million (31 December 2009: US\$1,302 million).



**Table of Contents****Group statement of comprehensive income**

Years ended 31 December

	(a)		
	Restated		
	2011 US\$m	2010 US\$m	2009 US\$m
<b>Profit after tax for the year</b>	<b>6,765</b>	15,098	5,335
<b>Other comprehensive income:</b>			
Currency translation adjustment	(974)	1,504	4,161
Currency translation on companies disposed of transferred to the income statement	46	6	(13)
Cash flow hedge fair value gains/(losses):			
Cash flow hedge fair value gains/(losses)	82	(93)	(313)
Cash flow hedge losses transferred to the income statement	141	95	50
Cash flow hedge gains on companies disposed of transferred to the income statement			(5)
(Losses)/gains on revaluation of available for sale securities	(236)	215	358
Gains on revaluation of available for sale securities transferred to the income statement	(19)	(10)	(3)
Actuarial losses on post retirement benefit plans (note 47)	(1,956)	(782)	(844)
Share of other comprehensive income of equity accounted units, net of tax	48	206	368
Tax relating to components of other comprehensive income (note 9)	468	253	321
<b>Other comprehensive (loss)/income for the year, net of tax</b>	<b>(2,400)</b>	1,394	4,080
<b>Total comprehensive income for the year</b>	<b>4,365</b>	16,492	9,415
attributable to owners of Rio Tinto	<b>3,504</b>	15,350	8,569
attributable to non-controlling interests	<b>861</b>	1,142	846

(a) Refer to Group income statement.



**Table of Contents****Group cash flow statement**

Years ended 31 December

	Note	2011 US\$m	2010 US\$m	2009 US\$m
<b>Cash flow from consolidated operations</b> <sup>(a)</sup>		<b>26,589</b>	22,126	13,224
Dividends from equity accounted units		799	1,404	610
<b>Cash flows from operations</b>		<b>27,388</b>	<b>23,530</b>	<b>13,834</b>
Net interest paid		(613)	(696)	(1,136)
Dividends paid to holders of non-controlling interests in subsidiaries		(548)	(457)	(410)
Tax paid		(6,197)	(4,100)	(3,076)
<b>Net cash generated from operating activities</b>		<b>20,030</b>	18,277	9,212
<b>Cash flow from investing activities</b>				
Acquisitions of subsidiaries, joint ventures & associates	39	(4,156)	(907)	(396)
Disposals of subsidiaries, joint ventures & associates	39	387	604	2,424
Net proceeds from the disposal of assets held for sale	20	33	3,196	
Purchase of property, plant & equipment and intangible assets		(12,335)	(4,591)	(5,388)
Sales of financial assets		104	227	253
Purchases of financial assets		(146)	(145)	(44)
Other funding of equity accounted units		(745)	(154)	(265)
Other investing cash flows		20	59	59
<b>Cash used in investing activities</b>		<b>(16,838)</b>	(1,711)	(3,357)
<b>Cash flow before financing activities</b>		<b>3,192</b>	16,566	5,855
<b>Cash flow from financing activities</b>				
Equity dividends paid to owners of Rio Tinto		(2,236)	(1,754)	(876)
Own shares purchased from Rio Tinto shareholders		(5,504)		
Proceeds from issue of ordinary shares in Rio Tinto		48	92	14,877
Proceeds from additional borrowings		4,704	1,947	5,775
Cash movement on EAU funded balances	25	1,683		
Repayment of borrowings		(496)	(11,307)	(22,220)
Purchase of non-controlling interests	39	(2,243)		
Proceeds from issue of shares to non-controlling interests		424	250	53
Other financing cash flows		194	162	(72)
<b>Cash used in financing activities</b>		<b>(3,426)</b>	(10,610)	(2,463)
Effects of exchange rates on cash and cash equivalents		(71)	(139)	(284)
<b>Net (decrease)/increase in cash and cash equivalents</b>		<b>(305)</b>	5,817	3,108
Opening cash and cash equivalents less overdrafts		9,959	4,142	1,034
Closing cash and cash equivalents less overdrafts	22	9,654	9,959	4,142
<b>(a) Cash flow from consolidated operations</b>				
Operating profit		13,940	19,608	7,506
Adjustments for:				
Gain on consolidation and on disposal of interests in businesses	39	(185)	(753)	(692)
Impairment charges less reversals	6	9,174	982	1,573
Depreciation and amortisation		3,817	3,437	3,427
Provisions (including exchange differences on provisions)	27	961	907	930
Utilisation of provisions	27	(627)	(507)	(363)
Utilisation of provision for post retirement benefits	27	(678)	(1,110)	(470)
Change in inventories		(1,000)	(492)	653
Change in trade and other receivables		108	(1,316)	908
Change in trade and other payables		1,239	983	(570)
Other items		(160)	387	322
		26,589	22,126	13,224



**Table of Contents****Group statement of financial position**

At 31 December

		(a)
		Restated
		2010
	2011	2010
	US\$m	US\$m
	Note	
<b>Non-current assets</b>		
Goodwill	12	15,316
Intangible assets	13	5,700
Property, plant and equipment	14	56,024
Investments in equity accounted units	15	6,855
Inventories	17	375
Trade and other receivables	18	1,826
Deferred tax assets	19	1,863
Tax recoverable		52
Other financial assets (including loans to equity accounted units)	21	1,597
		89,608
<b>Current assets</b>		
Inventories	17	4,756
Trade and other receivables	18	5,582
Tax recoverable		542
Other financial assets (including loans to equity accounted units)	21	631
Cash and cash equivalents	22	9,948
		21,459
Assets of disposal groups held for sale	20	1,706
<b>Total assets</b>		112,773
<b>Current liabilities</b>		
Borrowings and other financial liabilities	23	(2,416)
Trade and other payables	26	(6,570)
Tax payable		(2,773)
Provisions including post retirement benefits	27	(1,117)
		(12,876)
<b>Non-current liabilities</b>		
Borrowings and other financial liabilities	23	(13,693)
Trade and other payables	26	(879)
Tax payable		(417)
Deferred tax liabilities	19	(5,222)
Provisions including post retirement benefits	27	(13,367)
		(33,578)
Liabilities of disposal groups held for sale	20	(1,807)
<b>Total liabilities</b>		(48,261)
<b>Net assets</b>		64,512
<b>Capital and reserves</b>		
Share capital		
Rio Tinto plc	28	246
Rio Tinto Limited	29	5,601
Share premium account <sup>(b)</sup>		4,258
Other reserves	30	15,643
Retained earnings	30	32,499

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<b>Equity attributable to owners of Rio Tinto</b>	<b>52,539</b>	58,247
Attributable to non-controlling interests <sup>(b)</sup>	<b>6,669</b>	6,265
<b>Total equity</b>	<b>59,208</b>	64,512

(a) Refer to Group income statement.

(b) Refer to statement of changes in equity.

The notes on pages 137 to 205 are an integral part of these consolidated financial statements.

The financial statements on pages 131 to 215 were approved by the directors on 5 March 2012 and signed on their behalf by

**Jan du Plessis**  
Chairman

**Tom Albanese**  
Chief executive

**Guy Elliott**  
Chief financial officer

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**Table of Contents****Group statement of changes in equity**

Years ended

31 December 2011

	Attributable to owners of Rio Tinto							
	Share capital	Share		Other reserves	Retained earnings	Total	Non-controlling interests	Total equity
	(notes 28 and 29) US\$m	premium US\$m	(note 30) US\$m	(note 30) US\$m	US\$m	US\$m	US\$m	US\$m
<b>Opening balance</b>	<b>5,847</b>	<b>4,258</b>	<b>15,643</b>	<b>32,499</b>	<b>58,247</b>	<b>6,265</b>	<b>64,512</b>	
Total comprehensive income for the year <sup>(a)</sup>			(924)	4,428	3,504	861	4,365	
Currency translation arising on Rio Tinto Limited's share capital <sup>(b)</sup>	(19)				(19)		(19)	
Dividends				(2,236)	(2,236)	(548)	(2,784)	
Share buyback schemes	(12)		12	(6,210)	(6,210)		(6,210)	
Own shares purchased/treasury shares reissued for share options and other items		(50)	(71)	10	(111)		(111)	
Newly consolidated operations <sup>(c)</sup>						1,555	1,555	
Change in equity held by Rio Tinto <sup>(c) (d) (e)</sup>				(793)	(793)	(1,882)	(2,675)	
Shares issued to holders of non-controlling interests						424	424	
Company no longer consolidated						(6)	(6)	
Employee share options			71	86	157		157	
<b>Closing balance</b>	<b>5,816</b>	<b>4,208</b>	<b>14,731</b>	<b>27,784</b>	<b>52,539</b>	<b>6,669</b>	<b>59,208</b>	

31 December 2010 Restated <sup>(f)</sup>

	Attributable to owners of Rio Tinto							
	Share capital	Share		Other reserves	Retained earnings	Total	Non-controlling interests	Total equity
	(notes 28 and 29) US\$m	premium US\$m	(note 30) US\$m	(note 30) US\$m	US\$m	US\$m	US\$m	US\$m
<b>Opening balance</b>	<b>5,170</b>	<b>4,174</b>	<b>14,010</b>	<b>20,477</b>	<b>43,831</b>	<b>2,094</b>	<b>45,925</b>	
Total comprehensive income for the year <sup>(a)</sup>			1,645	13,705	15,350	1,142	16,492	
Currency translation arising on Rio Tinto Limited's share capital <sup>(b)</sup>	677				677		677	
Dividends				(1,754)	(1,754)	(457)	(2,211)	
Own shares purchased/treasury shares reissued for share options and other items		84	(84)	(31)	(31)		(31)	
Consolidation of Oyu Tolgoi <sup>(g)</sup>						3,236	3,236	
Shares issued to holders of non-controlling interests						250	250	
Employee share options			48	69	117		117	
Cash settled share options reclassified as equity settled			24	33	57		57	
<b>Closing balance</b>	<b>5,847</b>	<b>4,258</b>	<b>15,643</b>	<b>32,499</b>	<b>58,247</b>	<b>6,265</b>	<b>64,512</b>	

31 December 2009

	Attributable to owners of Rio Tinto							
	Share capital	Share		Other reserves	Retained earnings	Total	Non-controlling interests	Total equity
	(notes 28 and 29) US\$m	premium <sup>(h)</sup> US\$m	(note 30) US\$m	(note 30) US\$m	US\$m	US\$m	US\$m	US\$m
<b>Opening balance</b>	<b>1,121</b>	<b>4,705</b>	<b>(2,322)</b>	<b>17,134</b>	<b>20,638</b>	<b>1,823</b>	<b>22,461</b>	
Total comprehensive income for the year <sup>(a)</sup>			4,401	4,168	8,569	846	9,415	
Currency translation arising on Rio Tinto Limited's share capital <sup>(b)</sup>	710				710		710	
Dividends				(876)	(876)	(410)	(1,286)	
Own shares purchased/ordinary shares reissued for share options and other items	3,339	(531)	11,901	(14)	14,695		14,695	
Shares issued to holders of non-controlling interests						53	53	
Subsidiaries now equity accounted						(218)	(218)	
Employee share options			30	65	95		95	

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<b>Closing balance</b>	5,170	4,174	14,010	20,477	43,831	2,094	45,925
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- (a) Refer to statement of comprehensive income.
  
- (b) Refer to note 1 (d).
  
- (c) The purchase of Riversdale has been treated as a step acquisition. Non-controlling interests of US\$1,498 million arose at the acquisition date, when Rio Tinto's share in Riversdale reached 52.6 per cent. These non-controlling interests reversed as Rio Tinto increased its interests in Riversdale to 100 per cent. An amount of US\$479 million has been recognised directly in equity in relation to Rio Tinto's interests purchased after the acquisition date, representing the excess of consideration paid to acquire these additional shareholdings, over non-controlling interests acquired. Refer to note 39.
  
- (d) A reduction of US\$339 million in non-controlling interests arose as Rio Tinto increased its economic share in Oyu Tolgoi through the acquisition of additional interests in Ivanhoe Mines Ltd. Adjustments to retained earnings attributable to owners of Rio Tinto of US\$129 million relate to the aggregate excess of consideration paid for the additional investments in Ivanhoe, over the value of the additional economic share acquired in Oyu Tolgoi. Refer to note 39.
  
- (e) In relation to the Group's purchase of an additional indirect stake in Coal & Allied, adjustments to retained earnings of US\$185 million were made for the excess of consideration paid to acquire shareholdings of US\$45 million from non-controlling interests.
  
- (f) Refer to Group income statement.
  
- (g) Rio Tinto consolidated Oyu Tolgoi LLC on 15 December 2010 following the signing of a new agreement with Ivanhoe Mines. Refer to note 39.
  
- (h) Charges to share premium in 2009 include underwriting fees and other fees for the Rio Tinto plc rights issue together with the mark-to-market losses from inception to receipt of proceeds on forward contracts taken out by Rio Tinto plc to provide confidence in the absolute dollar proceeds of the rights issue.

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### **Reconciliation with Australian Accounting Standards**

The Group's financial statements have been prepared in accordance with IFRS as adopted by the European Union ( EU IFRS ), which differs in certain respects from the version of IFRS that is applicable in Australia referred to as Australian Accounting Standards (AAS).

Prior to 1 January 2004, the Group's financial statements were prepared in accordance with UK GAAP. Under IFRS goodwill on acquisitions prior to 1998, which was eliminated directly against equity in the Group's UK GAAP financial statements, has not been reinstated. This was permitted under the rules governing the transition to IFRS set out in IFRS 1. The equivalent Australian Standard, AASB 1, does not provide for the netting of goodwill against equity. As a consequence, shareholders' funds under AAS include the residue of such goodwill, which amounted to US\$537 million at 31 December 2011 (2010: US\$584 million; 2009: US\$597 million).

Save for the exception described above, the Group's financial statements drawn up in accordance with IFRS are consistent with the requirements of AAS.

### **Outline of dual listed companies structure and basis of financial statements**

#### **The Rio Tinto Group**

These are the financial statements of the Group formed through the merger of economic interests of Rio Tinto plc and Rio Tinto Limited ( Merger ), and presented by both Rio Tinto plc and Rio Tinto Limited as their consolidated accounts in accordance with both United Kingdom and Australian legislation and regulations.

#### **Merger terms**

On 21 December 1995, Rio Tinto plc and Rio Tinto Limited, which are listed respectively on Stock Exchanges in the United Kingdom and Australia, entered into a dual listed companies (DLC) merger. This was effected by contractual arrangements between the companies and amendments to Rio Tinto plc's Memorandum and Articles of Association and Rio Tinto Limited's Constitution.

As a result, Rio Tinto plc and Rio Tinto Limited and their respective groups operate together as a single economic enterprise, with neither assuming a dominant role. In particular, the arrangements:

confer upon the shareholders of Rio Tinto plc and Rio Tinto Limited a common economic interest in both groups;

provide for common boards of directors and a unified management structure;

provide for equalised dividends and capital distributions; and

provide for the shareholders of Rio Tinto plc and Rio Tinto Limited to take key decisions, including the election of directors, through an electoral procedure in which the public shareholders of the two companies effectively vote on a joint basis.

The Merger involved no change in the legal ownership of any assets of Rio Tinto plc or Rio Tinto Limited, nor any change in the ownership of any existing shares or securities of Rio Tinto plc or Rio Tinto Limited, nor the issue of any shares, securities or payment by way of consideration, save for the issue by each company of one special voting share to a trustee company which provides the joint electoral procedure for public shareholders. During 2002, each of the parent companies issued a DLC Dividend Share to facilitate the efficient management of funds within the DLC structure.

#### **Accounting standards**

The financial statements have been drawn up in accordance with IFRS. The Merger was accounted for as a merger under UK GAAP. As permitted under the rules governing the transition to IFRS, which are set out in IFRS 1, the Group did not restate business combinations that occurred before the transition date of 1 January 2004. As a result, the DLC merger of economic interests described above continues to be accounted for as a merger under IFRS.

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The main consequence of adopting merger rather than acquisition accounting is that the statement of financial position of the merged Group includes the assets and liabilities of Rio Tinto plc and Rio Tinto Limited at their carrying values prior to the merger, subject to adjustments to achieve uniformity of accounting policies, rather than at their fair values at the date of the merger. For accounting purposes Rio Tinto plc and Rio Tinto Limited are viewed as a single public parent company (with their respective public shareholders being the shareholders in that single company). As a result the amounts attributable to both Rio Tinto plc and Rio Tinto Limited public shareholders are included in the amounts attributed to owners of Rio Tinto on the statement of financial position, income statement and statement of comprehensive income.

### Australian Corporations Act

The financial statements are drawn up in accordance with an order, under section 340 of the Australian Corporations Act 2001, issued by the Australian Securities and Investments Commission (ASIC) on 22 December 2010 (as amended on 17 February 2012). The main provisions of the order are that the financial statements are prepared in accordance with IFRS and include a reconciliation from EU IFRS to the Australian equivalents of IFRS (see above).

For further details of the ASIC Class Order relief see page 213.

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### **Notes to the 2011 financial statements**

## **1 Principal accounting policies**

### **Corporate information**

The financial statements of the Group were authorised for issue in accordance with a directors' resolution on 5 March 2012. Rio Tinto plc and Rio Tinto Limited are listed and incorporated respectively on Stock Exchanges in the United Kingdom and Australia. Rio Tinto plc's registered office is at 2 Eastbourne Terrace, London W2 6LG, United Kingdom. Rio Tinto Limited's registered office is at 120 Collins Street, Melbourne, Australia, 3000.

Rio Tinto's business is finding, mining and processing mineral resources. Major products are iron ore, aluminium, copper, diamonds, coal, uranium, gold and industrial minerals (borax, titanium dioxide and salt). Activities span the world but are strongly represented in Australia and North America with significant businesses in South America, Asia, Europe and Africa.

### **Basis of preparation**

The basis of preparation and the accounting policies used in preparing the financial statements for the year ended 31 December 2011 are set out below.

The financial statements for the year ended 31 December 2011 have been prepared in accordance with International Financial Reporting Standards as adopted by the EU (EU IFRS) and with International Financial Reporting Standards as issued by the International Accounting Standards Board (IFRS) and interpretations issued from time to time by the IFRS Interpretations Committee (IFRIC) and adopted by the EU that are mandatory for the year ended 31 December 2011, the Companies Act 2006 applicable to companies reporting under IFRS and in accordance with applicable United Kingdom law, applicable Australian law as amended by the Australian Securities and Investments Commission Order dated 22 December 2010 (as amended on 17 February 2012) and Article 4 of the European Union IAS regulation. The financial statements are prepared on a going concern basis (page 118).

The IFRS financial information has been drawn up on the basis of accounting policies consistent with those applied in the financial statements for the year to 31 December 2010, except for the following:

Amendment to IAS 24, Related party disclosures. The definition of a related party has been clarified to simplify the identification of related party relationships. The amendment also extended the definition of a related party to include the subsidiaries of equity accounted units.

Improvements to IFRS 2010. This standard collates further minor changes to IFRS. IAS 24 relates to disclosure only, prior year information has been reclassified to conform with the current presentation. The reclassification does not affect prior year statements of financial position.

The effect of adopting the Improvements standard is not material to Group earnings or to shareholders' funds in the current or prior year.

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. Refer to note 39.

The Group has not applied the following pronouncements which are not mandatory for 2011:

Amendment to IAS 1, Financial statement presentation presentation of items of other comprehensive income.

Amendment to IAS 12, Deferred Tax: Recovery of underlying assets.

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Amendment to IAS 19, Employee benefits .

IAS 28 (revised 2011), Associates and joint ventures .

Amendments to IFRS 7, Financial instruments: Disclosures .

IFRS 9, Financial instruments .

IFRS 10, Consolidated financial statements .

IFRS 11, Joint arrangements .

IFRS 12, Disclosures of interests in other entities .

IFRS 13, Fair value measurement .

IFRIC 20, Stripping costs in the production phase of a surface mine .

The Group is currently evaluating the impact of the above pronouncements. The following pronouncements, all of which are mandatory in 2013, are expected to be the most relevant to the Group:

The amendment to IAS 19, which calculates finance costs on a net funding basis.

IFRS 10, which defines the principle of control.

IFRS 11, which focuses on the rights and obligations of joint arrangements rather than their legal form.

IFRS 12 which includes the disclosure requirements for IFRS 10 and IFRS 11.

IFRIC 20 which specifies the accounting for post production stripping costs. As explained in note h) below the Group currently defers stripping costs incurred during the production stage of its operations, for those operations where this is the most appropriate basis for matching the costs against the related economic benefits and the effect is material. At 31 December 2011, US\$1.6 billion was included in the statement of financial position for deferred stripping costs. Under the interpretation this balance can only be carried forward if it can be identified with a remaining component of the ore body. Some of the balance may be written off to retained earnings on implementation of the Interpretation.

IFRS 13, which provides a common framework for measuring fair value.



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### Notes to the 2011 financial statements continued

## **1 Principal accounting policies continued**

### **Judgments in applying accounting policies and key sources of estimation uncertainty**

Many of the amounts included in the financial statements involve the use of judgment and/or estimation. 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 estimation is contained in the accounting policies and/or the Notes to the financial statements, and the key areas are summarised below.

Areas of judgment that have the most significant effect on the amounts recognised in the financial statements are:

Merger accounting for the 1995 merger of the economic interests of Rio Tinto plc and Rio Tinto Limited into the dual listed companies (DLC) structure (see Dual listed companies structure).

Review of asset carrying values, impairment charges and reversals and the recoverability of goodwill note 1(e) and (i), note 6 and note 12.

Estimation of asset lives note 1(e) and (i).

Determination of ore reserve estimates note 1(j).

Close down, restoration and clean up obligations note 1(k).

Deferral of stripping costs note 1(h).

Recognition of deferred tax on mineral rights recognised in acquisitions note 1(m).

Recoverability of potential deferred tax assets note 19(d) and (e).

Capitalisation of exploration and evaluation costs note 1(f).

Identification of functional currencies note 1(d).

Basis of consolidation note 1 (b).

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Acquisitions note 1(b).

Post retirement cost assumptions note 1(n).

Key sources of estimation uncertainty that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are:

Review of asset carrying values, impairment charges and reversals and the recoverability of goodwill 1(e) and (i), note 6 and note 12.

Estimation of close down, restoration and clean up costs and the timing of expenditure note 1(k) and note 27.

Estimation of liabilities for post retirement costs note 47.

Recoverability of potential deferred tax assets note 19(d) and (e).

Contingencies note 33.

These areas of judgment and estimation are discussed further in critical accounting policies and estimates.

### (a) Accounting convention

The financial information included in the financial statements for the year ended 31 December 2011, and for the related comparative period, has been prepared under the historical cost convention, as modified by the revaluation of certain derivative contracts, financial assets and the accounting for post retirement assets and liabilities. The Group's policy in respect of these items is set out in the notes below.

### (b) Basis of consolidation

The financial statements consist of the consolidation of the accounts of Rio Tinto plc and Rio Tinto Limited (together the Companies) and their respective subsidiaries (the Group) together with the Group's share of joint ventures and associates accounted for as described below.

All intragroup transactions and balances have been eliminated on consolidation.

*Subsidiaries:* Subsidiaries are entities controlled by the Companies. Control is the power to govern the financial and operating policies of those entities in order to obtain benefits from their activities. Control is presumed to exist where the Companies own more than one half of the voting rights (which is not always the same as more than 50 per cent ownership) unless it can be demonstrated that this does not constitute control. Control does not exist where other parties hold veto rights over significant operating and financial decisions of an entity or where the Companies have the power to govern an entity but cannot obtain benefit from its activities. Control does exist where another party or parties own more than one half of the voting rights of an entity but the Group can control those voting rights either through a contractual arrangement or through board control.

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*Joint ventures:* A joint venture is a contractual arrangement whereby two or more parties undertake an economic activity that is subject to joint control. Joint control is the contractually agreed sharing of control such that significant operating and financial decisions require the unanimous consent of the parties sharing control. In some situations, joint control exists even though the Group has an ownership interest of more than 50 per cent because of the veto rights held by joint venture partners. The Group has two types of joint venture:

*Jointly controlled entities (JCEs):* A JCE is a joint venture that involves the establishment of a corporation, partnership or other entity in which each venturer has a long term interest. JCEs are accounted for using the equity accounting method.

*Jointly controlled assets (JCAs):* JCAs do not involve the establishment of a corporation, partnership or other entity. A JCA is a joint venture in which the venturers have joint control over the assets contributed to or acquired for the purposes of the joint venture. This includes situations where the participants benefit from the joint activity through a share of the production, rather than by receiving a share of the results of trading. The Group's proportionate interest in the assets, liabilities, revenues, expenses and cash flows of JCAs are incorporated into the Group's financial statements under the appropriate headings.

*Associates:* An associate is an entity, that is neither a subsidiary nor a joint venture, over which the Group has significant influence. Significant influence is presumed to exist where the Group has between 20 per cent and 50 per cent of the voting rights, but can also arise where the Group holds less than 20 per cent if it has the power to participate in the financial and operating policy decisions affecting the entity.

Investments in associates are accounted for using the equity method of accounting. Under this method of accounting the investment is recorded initially at cost to the Group, including any goodwill on acquisition. In subsequent periods the carrying amount of the investment is adjusted to reflect the Group's share of the associates' retained post-acquisition profit or loss and other comprehensive income.

The Group uses the term 'Equity accounted units' to refer to associates and jointly controlled entities collectively. For all equity accounted units the carrying value will include any long term debt interests that in substance form part of the Group's net investment.

Where necessary, adjustments are made to the results of subsidiaries, joint ventures and associates to bring their accounting policies into line with those used by the Group.

### **Acquisitions**

The acquisition method of accounting is used for acquisitions. This means that the purchase consideration is allocated to the identifiable assets acquired and liabilities assumed (the identifiable net assets) on the basis of fair value at the date of acquisition which is the date on which control is obtained. Provisional fair values allocated at a reporting date are finalised within 12 months of the acquisition date.

Costs related to the acquisition of a subsidiary are expensed as incurred.

On an acquisition by acquisition basis, the Group recognises any non-controlling interest in the acquiree either at the non-controlling interest's proportionate share of the acquiree's identifiable net assets or at fair value. Goodwill (see note (e)) and amounts attributable to non-controlling interests will be higher when the latter is used.

Where the Group has a previously held non-controlling interest in the acquiree, this is remeasured to fair value at the acquisition date with any gain or loss being recognised in the income statement. The cash cost of such purchases is included in the investing section of the cash flow.

For purchases from non controlling interests, the difference between the purchase price and the relevant carrying value of the share of net assets acquired is recorded in equity. The cash cost of such purchases is included in the financing section of the cash flow.

The results of businesses acquired during the year are brought into the consolidated financial statements from the date on which control, joint control or significant influence commences.

### **Disposals**

Individual non-current assets or disposal groups (ie groups of assets and liabilities) to be disposed of, by sale or otherwise in a single transaction, are classified as held for sale if the following criteria are met at the period end:

the carrying amount will be recovered principally through a sale transaction rather than through continuing use; and

the disposal group is available for immediate sale in its present condition subject only to terms that are usual and customary for such sales; and

the sale is highly probable.

Disposal groups held for sale are carried at the lower of their carrying amount and fair value less costs to sell. Comparative statement of financial position information is not restated. Disposal groups acquired with a view to resale are held at fair value determined at the acquisition date. For these assets acquired for resale no profits or losses are recognised between the acquisition date and the disposal date, unless there is a subsequent impairment.

On classification as held for sale, the assets are no longer depreciated.

The results of businesses disposed of are taken out of the financial statements from the date on which control, joint control or significant influence ceases. The cash proceeds of such disposals are included in the Investing section of the cash flow. At this point any interest in the entity retained by the Group is remeasured to its fair value and the change in carrying amount is recognised in the income statement. This fair value is the initial carrying amount for any retained interest which may be subsequently accounted for as an associate, joint venture or financial asset depending on the facts. Any amounts previously recognised in other comprehensive income in respect of the entity disposed of are accounted for as if the Group had directly disposed of the appropriate share of the related assets or liabilities.

Gains or losses on disposals to non controlling interests where control is retained are recorded in equity. The cash proceeds of such disposals are included in the Financing section of the cash flow.

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### **Notes to the 2011 financial statements continued**

## **1 Principal accounting policies continued**

### **(c) Sales revenue**

Sales revenue comprises sales to third parties at invoiced amounts. Most sales are priced ex works, free on board (fob) or cost, insurance and freight (cif). Amounts billed to customers in respect of shipping and handling are classed as sales revenue where the Group is responsible for carriage, insurance and freight. All shipping and handling costs incurred by the Group are recognised as operating costs. If the Group is acting solely as an agent, amounts billed to customers are offset against the relevant costs. Revenue from services is recognised as services are rendered and accepted by the customer.

Sales revenue excludes any applicable sales taxes. Mining royalties are presented as an operating cost or, where they are in substance a profit based tax, within taxes.

Revenues from the sale of significant by products such as gold, are included in sales revenue. Sundry revenue incidental to the main revenue generating activities of the operations and which is a consequence of producing and selling the main products is treated as a credit to operating costs.

Third party commodity swap arrangements for delivery and receipt of smelter grade alumina are offset within operating costs.

A large proportion of Group production is sold under medium to long term contracts.

Sales revenue is only recognised on individual sales when all of the following criteria are met:

the significant risks and rewards of ownership of the product have been transferred to the buyer;

neither continuing managerial involvement to the degree usually associated with ownership, nor effective control over the goods sold, has been retained;

the amount of revenue can be measured reliably;

it is probable that the economic benefits associated with the sale will flow to the Group; and

the costs incurred or to be incurred in respect of the sale can be measured reliably.

These conditions are generally satisfied when title passes to the customer. In most instances sales revenue is recognised when the product is delivered to the destination specified by the customer, which is typically the vessel on which it will be shipped, the destination port or the customer's premises.

Sales revenue is commonly subject to adjustment based on an inspection of the product by the customer. In such cases, sales revenue is initially recognised on a provisional basis using the Group's best estimate of contained metal, and adjusted subsequently.

Certain products are provisionally priced, ie the selling price is subject to final adjustment at the end of a period normally ranging from 30 to 180 days after delivery to the customer. The final price is based on the market price at the relevant quotation point stipulated in the contract.

As is customary in the industry, revenue on provisionally priced sales is recognised based on estimates of the fair value of the consideration receivable based on relevant forward market prices. At each reporting date provisionally priced metal is marked to market based on the forward selling price for the quotational period stipulated in the contract. For this purpose, the selling price can be measured reliably for those products, such as copper, for which there exists an active and freely traded commodity market such as the London Metals Exchange and the value of product sold by the Group is directly linked to the form in which it is traded on that market.



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The marking to market of provisionally priced sales contracts is recorded as an adjustment to sales revenue. Information on provisionally priced sales contracts is included in note 31.

Certain of the Group's products, such as iron ore, were previously sold under long term contracts at a benchmark price. During 2010, pricing for the majority of iron ore customers changed to a quarterly basis reflecting the structural shift away from annual benchmark pricing. Changes to pricing mechanisms have continued in some markets during 2011 and substantially all iron ore sales are reflected at final prices in the results for the period, based on the best available information at the period end.

### (d) Currency translation

The functional currency for each entity in the Group, and for jointly controlled entities and associates, is the currency of the primary economic environment in which that entity operates. For many entities, this is the currency of the country in which they are located. Transactions denominated in other currencies are converted to the functional currency at the exchange rate ruling at the date of the transaction unless hedge accounting applies, in which case the contract rate is used. Monetary assets and liabilities denominated in foreign currencies are retranslated at year end exchange rates.

The Group's accounting policies for derivative financial instruments and hedge accounting are explained in more detail in note 1(p) (iii). The Group's financial statements are presented in US dollars, as that currency most reliably reflects the global business performance of the Group as a whole. On consolidation, income statement items for each entity are translated from the functional currency into US dollars at average rates of exchange where the average approximates the rate at the date of transactions. Statement of financial position items are translated into US dollars at year end exchange rates.

Exchange differences arising on the translation of the net assets of entities with functional currencies other than the US dollar are recognised directly in the foreign currency translation reserve. These translation differences are shown in the statement of comprehensive income with the exception of translation adjustments relating to Rio Tinto Limited's share capital which are shown in the Group statement of changes in equity.

Where an intragroup balance is, in substance, part of the Group's net investment in an entity, exchange gains and losses on that balance are taken to the foreign currency translation reserve. Except as noted above, or in note p) below relating to derivative contracts, all other exchange differences are charged or credited to the income statement in the year in which they arise.

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### **(e) Goodwill and intangible assets (excluding exploration and evaluation expenditure)**

Where the fair value of consideration paid for a business combination exceeds the fair value of the Group's share of identifiable net assets acquired, the difference is treated as purchased goodwill. When the fair value of the Group's share of identifiable net assets acquired exceeds the cost of consideration, the difference is immediately recognised in the income statement.

In 1997 and previous years, goodwill was eliminated against reserves in the year of acquisition as a matter of accounting policy, as was then permitted under UK GAAP. Such goodwill was not reinstated under subsequent UK accounting standards or on transition to IFRS.

Goodwill is not amortised; it is tested annually for impairment. Investments in equity accounted units (EAUs) including any goodwill are tested for impairment as a single asset when a trigger for impairment has been identified. The Group's impairment policy is explained in note 1 (i).

Purchased intangible assets are initially recorded at cost. Finite life intangible assets are amortised over their useful economic lives on a straight line or units of production basis, as appropriate. Intangible assets that are deemed to have indefinite lives and intangible assets that are not yet ready for use are not amortised; they are reviewed annually for impairment in accordance with accounting policy

note 1(i).

The Group considers that intangible assets have indefinite lives when, based on an analysis of all of the relevant factors, there is no foreseeable limit to the period over which the asset is expected to generate cash flows for the Group. The factors considered in making this determination include the existence of contractual rights for unlimited terms; or evidence that renewal of the contractual rights without significant incremental cost can be expected for indefinite periods into the future in view of the Group's future investment intentions. The life cycles of the products and processes that depend on the asset are also considered.

### **(f) Exploration and evaluation**

Exploration and evaluation expenditure comprises costs that are directly attributable to:

researching and analysing existing exploration data;

conducting geological studies, exploratory drilling and sampling;

examining and testing extraction and treatment methods; and/or

compiling pre-feasibility and feasibility studies.

Exploration expenditure relates to the initial search for deposits with economic potential. Evaluation expenditure arises from a detailed assessment of deposits or other projects that have been identified as having economic potential. Expenditure on exploration activity is not capitalised.

Capitalisation of evaluation expenditure commences when there is a high degree of confidence in the project's viability and therefore it is probable that future economic benefits will flow to the Group.

The carrying values of capitalised evaluation expenditure are reviewed twice a year by management. In the case of undeveloped mining projects, there may be only mineralised material to form a basis for that impairment review. The review is based on a status report summarising the Group's intentions for development. In some cases, the undeveloped projects are regarded as successors to orebodies, smelters or refineries currently in production. Where this is the case, it is intended that these will be developed and go into production when the current source of ore is exhausted or to replace the reduced output which results where existing smelters and/or refineries are closed. It is often the case that technological and other improvements will allow successor smelters and/or refineries to more than replace the capacity of their predecessors.

### **(g) Property, plant and equipment**

Property, plant and equipment are stated at cost, as defined in IAS 16, less accumulated depreciation and accumulated impairment losses. The cost of property, plant and equipment includes the estimated close down and restoration costs associated with the asset. Once an undeveloped mining project has been established as commercially viable, expenditure other than that on land, buildings, plant and equipment is capitalised under 'Mining properties and leases' together with any amount transferred from 'Exploration and evaluation'.

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In open pit mining operations, it is necessary to remove overburden and other waste materials to access ore from which minerals can be extracted economically. The process of mining overburden and waste materials is referred to as stripping. During the development of a mine (or pit), before production commences, stripping costs are capitalised as part of the investment in construction of the mine (or pit) and are subsequently amortised over the life of the mine (or pit) on a units of production basis.

Costs which are necessarily incurred whilst commissioning new assets, in the period before they are capable of operating in the manner intended by management, are capitalised. Development costs incurred after the commencement of production are capitalised to the extent they are expected to give rise to a future economic benefit. Interest on borrowings related to construction or development projects is capitalised until the point when substantially all the activities that are necessary to make the asset ready for its intended use are complete.

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### **Notes to the 2011 financial statements continued**

## **1 Principal accounting policies continued**

### **(h) Deferred stripping**

Where a mine operates several open pits that are regarded as separate operations for the purpose of mine planning, stripping costs are accounted for separately by reference to the ore from each separate pit. If, however, the pits are highly integrated for the purpose of mine planning, the second and subsequent pits are regarded as extensions of the first pit in accounting for stripping costs. In such cases, the initial stripping (ie overburden and other waste removal) of the second and subsequent pits is considered to be production phase stripping relating to the combined operation.

The Group's determination of whether multiple pit mines are considered separate or integrated operations depends on each mine's specific circumstances. The following factors would point towards the stripping costs for the individual pits being accounted for separately:

If mining of the second and subsequent pits is conducted consecutively with that of the first pit, rather than concurrently.

If separate investment decisions are made to develop each pit, rather than a single investment decision being made at the outset.

If the pits are operated as separate units in terms of mine planning and the sequencing of overburden and ore mining, rather than as an integrated unit.

If expenditures for additional infrastructure to support the second and subsequent pits are relatively large.

If the pits extract ore from separate and distinct orebodies, rather than from a single orebody.

If the designs of the second and subsequent pits are significantly influenced by opportunities to optimise output from the several pits combined, including the co-treatment or blending of the output from the pits then this would point to treatment as an integrated operation in accounting for stripping costs.

The relative importance of each of the above factors is considered in each case to determine whether, on balance, the stripping costs should be attributed to the individual pit or to the combined output from several pits.

The Group defers stripping costs incurred during the production stage of its operations, where this is the most appropriate basis for matching the costs against the related economic benefits and the effect is material. This is generally the case where there are fluctuations in stripping costs over the life of the mine (or pit). The amount of stripping costs deferred is based on the ratio ( Ratio ) obtained by dividing the tonnage of waste mined either by the quantity of ore mined or by the quantity of minerals contained in the ore. In some operations, the quantity of ore is a more practical basis for matching costs with the related economic benefits where there are important co-products or where the grade of the ore is relatively stable from year to year. Stripping costs incurred in the period are deferred to the extent that the current period Ratio exceeds the life of mine (or pit) Ratio. Such deferred costs are then charged against reported profits to the extent that, in subsequent periods, the current period Ratio falls short of the life of mine (or pit) Ratio.

The life of mine (or pit) Ratio is based on proven and probable reserves of the mine (or pit); it is a function of the pit design(s) and therefore changes to that design will generally result in changes to the Ratio. Changes in other technical or economic parameters that impact on reserves will also have an impact on the life of mine (or pit) Ratio even if they do not affect the pit design(s). Changes to the life of mine (or pit) Ratio are accounted for prospectively.

In the production stage of some mines (or pits), further development of the mine (or pit) requires a phase of unusually high stripping activity that is similar in nature to pre-production mine development. The costs of this unusually high level of stripping activity are deferred and charged against reported profits on a units of production basis in subsequent periods. This accounting treatment is consistent with that for pre-production mine development. Deferred stripping costs are included in Mining properties and leases within property, plant and equipment or within Investments in equity accounted units, as appropriate. Amortisation of deferred stripping costs is included in net operating costs or in the Group's share of the results of its equity accounted units, as appropriate.

**(i) Depreciation and impairment**

**Depreciation of non-current assets**

Property, plant and equipment is depreciated over its useful life, or over the remaining life of the mine if that is shorter and there is no alternative use for the asset.

The useful lives of the major assets of a cash-generating unit are often dependent on the life of the orebody to which they relate. Where this is the case, the lives of mining properties, and their associated refineries, concentrators and other long lived processing equipment generally relate to the expected life of the orebody. The life of the orebody, in turn, is estimated on the basis of the life-of-mine plan. Where the major assets of a cash-generating unit are not dependent on the life of a related orebody, management applies judgment in estimating the remaining service potential of long lived assets. In the case of smelters, factors affecting the remaining service potential include smelter technology and electricity contracts when the power is not sourced from the company's own electricity generating capacity.

Depreciation commences when an asset is available for use. The major categories of property, plant and equipment are depreciated on a units of production and/or straight line basis as follows:

*Units of production basis*

For mining properties and leases and certain mining equipment, the consumption of the economic benefits of the asset is linked to the production level. Except as noted below, these assets are depreciated on a units of production basis.

In applying the units of production method, depreciation is normally calculated using the quantity of material extracted from the mine in the period as a percentage of the total quantity of material to be extracted in current and future periods based on proven and probable reserves and, for some mines, other mineralisation. This other mineralised material may be included in depreciation calculations in limited circumstances and where there is a high degree of confidence in their economic extraction.

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### *Straight line basis*

Assets within operations for which production is not expected to fluctuate significantly from one year to another or which have a physical life shorter than the related mine are depreciated on a straight line basis.

Development costs that relate to a discrete section of an orebody, and which only provide benefit over the life of those reserves, are depreciated over the estimated life of that discrete section. Development costs incurred which benefit the entire orebody are depreciated over the estimated life of the orebody.

### **Impairment of non-current assets**

Property, plant and equipment and intangible assets with finite lives are reviewed for impairment if there is any indication that the carrying amount may not be recoverable. All goodwill and intangible assets that are not yet ready for use, or have an indefinite life, are tested annually for impairment regardless of whether there has been any change in events or circumstances.

Impairment is assessed at the level of cash-generating units which, in accordance with IAS 36 *Impairment of Assets*, are identified as the smallest identifiable group of assets that generates cash inflows, which are largely independent of the cash inflows from other assets.

In some cases, the business units within product groups consist of several operations with independent cash generating streams, which constitute separate cash-generating units.

Goodwill acquired through business combinations is allocated to the cash-generating unit, or groups of cash-generating units if that is the lowest level within the Group at which goodwill is monitored for internal management purposes, that are expected to benefit from the related business combination.

When an impairment review is undertaken, the recoverable amount is assessed by reference to the higher of value in use (being the net present value of expected future cash flows of the relevant cash-generating unit in its current condition) and fair value less costs to sell (fair value). The best evidence of fair value is the value obtained from an active market or binding sale agreement. Where neither exists, fair value is based on the best information available to reflect the amount the Group could receive for the cash generating unit in an arm's length transaction. This is often estimated using discounted cash flow techniques.

Where recoverable amount is assessed using fair value based on discounted cash flow techniques, the resulting estimates are based on detailed life of mine and/or production plans. For value in use, recent cost levels are considered, together with expected changes in costs that are compatible with the current condition of the business and which meet the requirements of IAS 36.

The cash flow forecasts for fair value purposes are based on management's best estimates of expected future revenues and costs, including the future cash costs of production, capital expenditure, closure, restoration and environmental clean up. For the purposes of determining fair value from a market participant's perspective, the cash flows incorporate management's price and cost assumptions in the short and medium term. In the longer term, operating margins are assumed to remain constant as it is considered unlikely that a market participant would prepare detailed forecasts over a longer term period. The cash flow forecasts may include net cash flows expected to be realised from extraction, processing and sale of mineralised material that does not currently qualify for inclusion in proven or probable ore reserves. Such non-reserve material is only included where there is a high degree of confidence in its economic extraction. This expectation is usually based on preliminary drilling and sampling of areas of mineralisation that are contiguous with existing reserves. Typically, the additional evaluation to achieve reserve status for such material has not yet been done because this would involve incurring costs earlier than is required for the efficient planning and operation of the mine.

As noted above, cost levels incorporated in the cash flow forecasts for fair value purposes are based on the current life-of-mine plan or long-term production plan for the cash-generating unit. Because future cash flows are estimates for the asset in its current condition, value in use does not reflect future cash flows associated with improving or enhancing an asset's performance. Anticipated enhancements to assets are included in fair value calculations.

Where the recoverable amount of a cash-generating unit is dependent on the life of its associated orebody, expected future cash flows reflect long-term mine plans, which are based on detailed research, analysis and iterative modelling to optimise the level of return from investment, output and sequence of extraction. The mine plan takes account of all relevant characteristics of the orebody, including waste to ore ratios, ore grades, haul distances, chemical and metallurgical properties of the ore impacting on process recoveries and capacities of processing equipment that can be used. The life-of-mine plan is therefore the basis for forecasting production output in each future year and for forecasting production costs.

Forecast cash flows for ore reserve estimation for Joint Ore Reserves Committee (JORC) purposes are generally based on Rio Tinto's price forecasts of commodity prices, which assume short term market prices will revert to the Group's assessment of the long term price, generally over a period of three to five years. For most commodities, these forecast commodity prices are derived from a combination of analyses of the marginal costs of the producers and of the incentive price of these commodities. These assessments often differ from current price levels and are updated periodically. For the long run, the Group does not believe that forward prices quoted in the metals markets provide a good indication of future price levels since forward prices tend to be strongly influenced by spot price levels. Rio Tinto's price forecasts of commodity prices include an element of carbon pricing. These price forecasts are also used for impairment testing unless management deems that in certain economic environments, a market participant would not assign Rio Tinto's view on prices, in which case management base them upon

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assumptions which a market participant would be expected to use under these economic conditions.

In some cases, prices applying to some part of the future sales volumes of a cash-generating unit are predetermined by existing sales contracts. The effects of such contracts are taken into account in forecasting future cash flows.

The discount rates applied to the future cash flow forecasts represent an estimate of the rate the market would apply having regard to the time value of money and the risks specific to the asset for which the future cash flow estimates have not been adjusted. The Group's weighted average cost of capital is used as a starting point for determining the discount rates, with appropriate adjustments for the risk profile of the countries in which the individual cash-generating units operate. For final feasibility studies and ore reserve estimation, internal hurdle rates are used which are generally higher than the weighted average cost of capital.

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### **Notes to the 2011 financial statements continued**

## **1 Principal accounting policies continued**

### **(i) Depreciation and impairment continued**

For operations with a functional currency other than the US dollar, the impairment review is undertaken in the relevant functional currency. The great majority of the Group's sales are based on prices denominated in US dollars. To the extent that the currencies of countries in which the Group produces commodities strengthen against the US dollar without commodity price offset, cash flows and, therefore, net present values are reduced.

Management considers that over the long term, there is a tendency for movements in commodity prices to compensate to some extent for movements in the value of the US dollar (and vice versa). However, such compensating changes are not synchronised and do not fully offset each other. In estimating fair value, a forecast of the long term exchange rates, for the Australian and Canadian dollars, is made having regard to spot exchange rates, historical data and external forecasts, and is linked to price assumptions.

When calculating value in use, IAS 36 requires that calculations should be based on exchange rates current at the time of the assessment.

Non financial assets other than goodwill that have suffered an impairment are tested for possible reversal of the impairment whenever events or changes in circumstances indicate that the impairment may have reversed.

### **(j) Determination of ore reserve estimates**

The Group estimates its ore reserves and mineral resources based on information compiled by Competent Persons as defined in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves of December 2004 (the JORC code). Reserves and, for certain mines, other mineral resources, determined in this way are used in the calculation of depreciation, amortisation and impairment charges, the assessment of life of mine stripping ratios and for forecasting the timing of the payment of close down and restoration costs and clean up costs.

For the purposes of disclosure with this combined Annual report on Form 20-F estimates of ore reserves have been computed in accordance with the SEC's Industry Guide 7, rather than in accordance with the JORC code, and are shown on pages 48 to 57. 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. Therefore, a reduction in commodity prices from the three year average historical price levels would not necessarily give rise to a reduction in reported ore reserves.

In assessing the life of a mine for accounting purposes, mineralisation is only taken into account where there is a high degree of confidence of economic extraction.

### **(k) Close down, restoration and environmental clean up obligations**

The Group holds provisions for close down and restoration costs which include the dismantling and demolition of infrastructure and the removal of residual materials and remediation of disturbed areas.

Close down and restoration costs are a normal consequence of mining, and the majority of close down and restoration expenditure is incurred at the end of the life of the mine. Although the ultimate cost to be incurred is uncertain, the Group's businesses estimate their costs based on feasibility and engineering studies using current restoration standards and techniques.

Close down and restoration costs are provided for in the accounting period when the obligation arising from the related disturbance occurs based on the net present value of future costs. This may occur during development or during the production phase of a facility.

Provisions for close down and restoration costs do not include any additional obligations which are expected to arise from future disturbance. The costs are estimated on the basis of a closure plan and are updated annually during the life of the operation to reflect known developments, e.g. revisions to cost estimates and to the estimated lives of operations. The estimates are subject to formal review at regular intervals.



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The initial closure provision is capitalised within property, plant and equipment. Subsequent movements in these closure provisions, including those resulting from new disturbance, updated cost estimates, changes to the estimated lives of operations and revisions to discount rates are also capitalised within property, plant and equipment. These costs are then depreciated over the lives of the assets to which they relate.

The amortisation or unwinding of the discount applied in establishing the net present value of provisions is charged to the income statement in each accounting period. The amortisation of the discount is shown as a financing cost.

Where rehabilitation is conducted systematically over the life of the operation, rather than at the time of closure, provision is made for the estimated outstanding continuous rehabilitation work at each statement of financial position date and the cost is charged to the income statement.

Clean up costs result from environmental damage that was not a necessary consequence of operations, and may include remediation, compensation and penalties. Provision is made for the estimated present value of such costs at the statement of financial position date. These costs are charged to the income statement. Movements in these clean up provisions are presented as an operating cost, except for the unwinding of the discount which is shown as a financing cost.

Remediation procedures may commence soon after the time the disturbance, remediation process and estimated remediation costs become known, but can continue for many years depending on the nature of the disturbance and the remediation techniques used.

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### **(l) Inventories**

Inventories are valued at the lower of cost and net realisable value, primarily on a weighted average cost basis. Average costs are calculated by reference to the cost levels experienced in the relevant month together with those in opening inventory. Cost for raw materials and stores is purchase price and for partly processed and saleable products is generally the cost of production. For this purpose the costs of production include:

labour costs, materials and contractor expenses which are directly attributable to the extraction and processing of ore;

the depreciation of mining properties and leases and of property, plant and equipment used in the extraction and processing of ore; and

production overheads.

Stockpiles represent ore that has been extracted and is available for further processing. If there is significant uncertainty as to when the stockpiled ore will be processed it is expensed as incurred. Where the future processing of this ore can be predicted with confidence, eg because it exceeds the mine's cut off grade, it is valued at the lower of cost and net realisable value. If the ore will not be processed within the 12 months after the statement of financial position date it is included within non-current assets and net realisable value is calculated on a discounted cash flow basis. Work in progress inventory includes ore stockpiles and other partly processed material. Quantities are assessed primarily through surveys and assays.

### **(m) Taxation**

Current tax is the tax expected to be payable on the taxable income for the year calculated using rates that have been enacted or substantively enacted by the statement of financial position date. It includes adjustments for tax expected to be payable or recoverable in respect of previous periods.

Deferred tax is provided in respect of fair value adjustments on acquisitions. These adjustments may relate to assets such as mining rights that, in general, are not eligible for income tax allowances. Provision for deferred tax is based on the difference between the carrying value of the asset and its income tax base (which may be nil). Even where there is no income tax base, the existence of a tax base for capital gains tax purposes is not taken into account in determining the deferred tax provision for the mineral rights because it is expected that the carrying amount will be recovered primarily through use of the rights and not from disposal. Also, the Group is only entitled to a deduction for capital gains tax purposes if the mineral rights are sold or formally relinquished.

### **(n) Post employment benefits**

For defined benefit post employment plans, the difference between the fair value of the plan assets (if any) and the present value of the plan liabilities is recognised as an asset or liability in the statement of financial position.

Any asset recognised is restricted, if appropriate, to the present value of any amounts the Group expects to recover by way of refunds from the plan or reductions in future contributions.

Actuarial gains and losses arising in the year are taken to the statement of comprehensive income. For this purpose, actuarial gains and losses comprise both the effects of changes in actuarial assumptions and experience adjustments arising because of differences between the previous actuarial assumptions and what has actually occurred.

Other movements in the net surplus or deficit are recognised in the income statement, including the current service cost, any past service cost and the effect of any curtailment or settlements. The interest cost less the expected return on assets is also charged to the income statement. All of the amounts charged to the income statement in respect of these plans are included within operating costs or in the Group's share of the results of equity accounted units as appropriate.

The most significant assumptions used in accounting for pension plans are the long term rate of return on plan assets, the discount rate and the mortality assumptions. The long term rate of return on plan assets is used to calculate interest income on pension assets, which is credited to the Group's income statement. The discount rate is used to determine the net present value of future liabilities. The discount rate used is the yield on high quality corporate bonds with maturity and terms that match those of the post employment obligations as closely as possible. Where there is no developed corporate bond market in a country, the rate on government bonds is used. Each year, the unwinding of the discount on those liabilities is charged to the Group's income statement as the interest cost. The mortality assumption is used to project the future stream of benefit payments, which is then discounted to arrive at a net present value of liabilities.

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Valuations of liabilities are carried out using the projected unit method. The long-term rate of return on pension plan assets is determined as management's best estimate of the long term return on the major asset classes, ie equity, debt, property and other, weighted by the actual allocation of assets among the categories at the measurement date. The expected rate of return is calculated using geometric averaging.

The values attributed to plan liabilities and the long-term rate of return are assessed in accordance with the advice of independent qualified actuaries.

The Group's contributions to defined contribution pension plans are charged to the income statement in the period to which the contributions relate.

### (o) Cash and cash equivalents

For the purposes of the statement of financial position, cash and cash equivalents comprise cash on hand, deposits held on call with banks and short term, highly liquid investments that are readily convertible into known amounts of cash and which are subject to insignificant risk of changes in value. For the purposes of the cash flow statement, cash and cash equivalents are net of bank overdrafts that are repayable on demand which are shown as current liabilities on the statement of financial position.

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### **Notes to the 2011 financial statements continued**

## **1 Principal accounting policies continued**

### **(p) Financial instruments**

#### **(i) Financial assets**

The Group classifies its financial assets in the following categories: at fair value through profit or loss, loans and receivables, available-for-sale and held to maturity investments. The classification depends on the purpose for which the financial assets were acquired. The Group's policy with regard to Financial risk management is set out in note 31. Generally, the Group does not acquire financial assets for the purpose of selling in the short term. When the Group enters into derivative contracts these transactions are designed to reduce exposures related to assets and liabilities, firm commitments or anticipated transactions.

Management determines the classification of financial assets at initial recognition.

#### ***(a) Financial assets at fair value through profit or loss***

Derivatives are included within financial assets at fair value through profit or loss unless they are designated as hedges. Assets in this category are classified based on their maturity.

#### ***(b) Loans and receivables***

Loans and receivables comprise non-derivative financial assets with fixed or determinable payments that are not quoted in an active market, with the exception of items for which the Group may not recover substantially all of its investment for reasons other than credit deterioration, which are classified as available-for-sale. Trade receivables are included within this category, however, trade receivables subject to provisional pricing are valued as explained in note 1 (c) Sales revenue.

#### ***(c) Held to maturity***

Held-to-maturity investments are non-derivative financial assets with fixed or determinable payments and fixed maturity that the Group has the positive intention and ability to hold to maturity.

#### ***(d) Available-for-sale financial assets***

Available-for-sale financial assets are non-derivatives that are either designated as available-for-sale or not classified in any of the other categories. They are included in non-current assets unless the Group intends to dispose of the investment within 12 months of the statement of financial position date or the asset matures within less than 12 months.

#### **(ii) Financial liabilities**

Borrowings and other financial liabilities (including trade payables but excluding derivative liabilities) are recognised initially at fair value, net of transaction costs incurred and are subsequently stated at amortised cost.

Any difference between the amounts originally received for borrowings and other financial liabilities (net of transaction costs) and the redemption value is recognised in the income statement over the period to maturity using the effective interest method.

#### **(iii) Derivative financial instruments and hedge accounting**

Derivatives are initially recognised at their fair value on the date the derivative contract is entered into and transaction costs are expensed in the income statement. They are subsequently re-measured subject to IAS 39 at their fair value at each statement of financial position date. The method of recognising the resulting gain or loss depends on whether or not the derivative is designated as a hedging instrument and, if so, the nature of the item being hedged. The Group designates certain derivatives as either hedges of the fair value of recognised assets or liabilities or of firm commitments (fair value hedges) or hedges of highly probable forecast transactions (cash flow hedges).

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**Fair value hedges:** Changes in the fair value of derivatives that are designated and qualify as fair value hedges are recorded in the income statement, together with any changes in the fair value of the hedged asset or liability or firm commitment that is attributable to the hedged risk. Where derivatives are held with different counterparties or with the same counterparty with no intention to settle net to the underlying asset or liability or firm commitment, the fair values of the derivative assets and liabilities are shown separately in the statement of financial position as there is no legal right of offset.

When a fair value interest rate hedging instrument expires or is sold, or when a fair value interest rate hedge no longer meets the criteria for hedge accounting, the fair value adjustments which have been made to the hedged item are amortised through the income statement over the remaining life of the hedged item or written off immediately where the hedged item is derecognised.

**Cash flow hedges:** The effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges is recognised in equity. The gain or loss relating to the ineffective portion is recognised immediately in the income statement. Amounts accumulated in equity are recycled in the income statement in the period when the hedged item affects profit or loss, for example when the forecast sale that is being hedged takes place. When the forecast transaction that is being hedged results in the recognition of a non-financial asset the gains and losses previously deferred in equity are transferred from equity and adjust the cost of the asset. The gains and losses are recognised subsequently in the income statement when the non-financial asset is amortised.

When a cash flow hedging instrument expires or is sold, or when a cash flow hedge no longer meets the criteria for hedge accounting, although the forecasted transaction is still expected to occur, any cumulative gain or loss relating to the instrument which is held in equity at that time remains in equity and is recognised when the forecast transaction is ultimately recognised in the income statement. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that was reported in equity is immediately transferred to the income statement.

**Derivatives that do not qualify for hedge accounting:** Any derivative contracts that do not qualify for hedge accounting are marked to market at the statement of financial position date.

**Embedded derivatives:** Derivatives embedded in other financial instruments or other host contracts are treated as separate derivatives when their risks and characteristics are not closely related to their host contracts. In some cases, the embedded derivatives may be designated as hedges and will be accounted for as described above.

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### **(iv) Fair value**

Fair value is the amount at which a financial instrument could be exchanged in an arm's length transaction between informed and willing parties. Where relevant market prices are available, these have been used to determine fair values. In other cases, fair values have been calculated using quotations from independent financial institutions, or by using valuation techniques consistent with general market practice applicable to the instrument.

- (a) The fair values of cash, short-term borrowings and loans to joint ventures and associates approximate to their carrying values, as a result of their short maturity or because they carry floating rates of interest.
- (b) The fair values of medium and long-term borrowings are calculated as the present value of the estimated future cash flows using quoted prices in active markets or an appropriate market based yield curve. The carrying value of the borrowings is amortised cost.
- (c) Derivative financial assets and liabilities are carried at fair value based on quoted market prices where available. Where no price information is available from a quoted market source, fair value is estimated based on the Group's views on relevant future prices using modelling techniques. The fair values of the various derivative instruments used for hedging purposes are disclosed in note 32. Movements on the hedging reserve are disclosed within note 30.

The Group assesses at each statement of financial position date whether there is objective evidence that a financial asset or a group of financial assets is impaired. In the case of equity securities classified as available-for-sale, an evaluation is made as to whether a decline in fair value is significant or prolonged based on an analysis of indicators such as significant adverse changes in the technological, market, economic or legal environment in which the company invested in operates.

Where an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts is recognised in the income statement.

### **(q) Share-based payments**

The fair value of cash-settled share plans is recognised as a liability over the vesting period of the awards. Movements in that liability between accounting dates are recognised as an expense. The grant date fair value of the awards is determined from the market value of the shares at the date of award and adjusted for any market based vesting conditions attached to the award eg relative Total Shareholder Return (TSR) performance. Fair values are subsequently re-measured at each accounting date to reflect the market value of shares at the measurement date and, where relevant, the number of awards expected to vest based on the current and anticipated TSR performance. If any awards are ultimately settled in shares, the liability is transferred directly to equity as part of the consideration for the equity instruments issued.

The Group's equity-settled share plans are settled either by the issue of shares by the relevant parent company, by the purchase of shares on market or by the use of shares previously acquired as part of a share buy back. The fair value of the share plans is recognised as an expense over the expected vesting period with a corresponding entry to retained earnings for Rio Tinto plc plans and to other reserves for Rio Tinto Limited plans.

If the cost of shares acquired to satisfy the plans exceeds the expense charged, the excess is taken to the appropriate reserve. The fair value of the share plans is determined at the date of grant, taking into account any market based vesting conditions attached to the award (eg TSR).

The Group uses fair values provided by independent actuaries calculated using a lattice based option valuation model.

Non-market based vesting conditions (eg earnings per share targets) are taken into account in estimating the number of awards likely to vest. The estimate of the number of awards likely to vest is reviewed at each statement of financial position date up to the vesting date, at which point the estimate is adjusted to reflect the actual awards issued. No adjustment is made after the vesting date even if the awards are forfeited or not exercised.

The terms of each plan are considered at the statement of financial position date. If a cash-settled plan changes to become equity-settled then the accumulated liability is transferred directly to equity at the date of change.

Further information about the treatment of individual share-based payment plans is provided in note 46.

(r) Share capital

Ordinary shares are classified as equity. Incremental costs directly attributable to the issue of new shares are shown in equity as a deduction, net of tax, from the proceeds.

Where any group company purchases the Group's equity share capital (treasury shares), the consideration paid, including any directly attributable incremental costs (net of income taxes) is deducted from equity attributable to owners of Rio Tinto. Where such shares are subsequently reissued, any consideration received, net of any directly attributable incremental transaction costs and the related income tax effects, is included in equity attributable to owners of Rio Tinto.

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### **Notes to the 2011 financial statements continued**

## **1 Principal accounting policies continued**

### **Critical accounting policies and estimates**

#### **(i) Dual listed company reporting**

As explained in detail in the *Outline of dual listed companies structure and basis of financial statements*, the consolidated financial statements of the Rio Tinto Group deal with the results, assets and liabilities of both of the dual listed companies, Rio Tinto plc and Rio Tinto Limited, and their subsidiaries. In other words, Rio Tinto plc and Rio Tinto Limited are viewed as a single parent company with their respective shareholders being the shareholders in that single company.

The *2011 Annual report* satisfies the obligations of Rio Tinto Limited to prepare consolidated accounts under Australian company law, as amended by an order issued by the Australian Securities and Investments Commission on 22 December 2010 (as amended on 17 February 2012). The 2011 financial statements disclose the effect of the adjustments to consolidated IFRS profit, consolidated total comprehensive income and consolidated shareholders' funds for the Group that would be required under the version of IFRS that is applicable in Australia, referred to as Australian Accounting Standards (AAS).

The US dollar is the presentation currency used in these financial statements, as it most reliably reflects the Group's global business performance.

#### **(ii) Impairment review of asset carrying values**

Events or changes in circumstances can give rise to significant impairment charges or reversals of impairment in a particular year.

Where the recoverable amounts of Group cash generating units are assessed by analyses of discounted cash flows, the resulting valuations are particularly sensitive to changes in estimates of long-term commodity prices, including any carbon element, exchange rates, operating costs and discount rates.

Note 12 outlines the significant judgments and assumptions made in performing impairment testing of non-current assets.

#### **(iii) Estimation of asset lives and determination of ore reserve estimates**

Intangible assets are considered to have indefinite lives when, based on an analysis of all of the relevant factors, there is no foreseeable limit to the period over which the asset is expected to generate cash flows for the Group. The factors considered in making this determination include the existence of contractual rights for unlimited terms; or evidence that renewal of the contractual rights without significant incremental cost can be expected for indefinite periods into the future in view of the Group's future investment intentions.

Rio Tinto estimates its ore reserves and mineral resources based on information compiled by Competent Persons as defined in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves of December 2004 (the JORC code). The amounts presented under IFRS and AAS are based on the reserves, and in some cases mineral resources, determined under the JORC code.

The estimation of ore reserves requires judgment to interpret available geological data then select an appropriate mining method and establish an extraction schedule. It also requires assumptions about future commodity prices, exchange rates, production costs, recovery rates and discount rates and, in some instances, the renewal of mining licences.

There are numerous uncertainties inherent in estimating ore reserves and assumptions that are valid at the time of estimation may change significantly when new information becomes available.

New geological data as well as changes in the above assumptions may change the economic status of reserves and may, ultimately, result in the reserves being restated. Such changes in reserves could impact on depreciation and amortisation rates, asset carrying values, deferred stripping calculations and provisions for close down and restoration costs.

#### **(iv) Close down, restoration and clean up obligations**

Provision is made for environmental remediation costs when the related environmental disturbance occurs, based on the net present value of estimated future costs.



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The ultimate cost of environmental disturbance is uncertain and management uses its judgment and experience to provide for these costs over the life of operations. Cost estimates can vary in response to many factors including changes to the relevant legal requirements, the Group's environmental policies, the emergence of new restoration techniques and the effects of inflation. Experience gained at other mine sites is also a significant consideration.

Cost estimates are updated throughout the life of the operation. The accuracy range for operations with a remaining life of more than ten but less than 40 years is plus or minus 30 per cent. For operations with a remaining life of more than five but less than ten years the range is 20 per cent. Operations must produce a full decommissioning plan five years prior to the estimated date of closure. The accuracy range of the full decommissioning plan is plus or minus 15 per cent.

The expected timing of expenditure included in cost estimates can also change, for example in response to changes in ore reserves, or production rates, operating licence or economic conditions. Expenditure may occur before and after closure and can continue for an extended period of time depending on the specific site requirements. Some expenditure can continue into perpetuity.

Cash flows must be discounted if this has a material effect. The selection of appropriate sources on which to base calculation of the risk free discount rate used for this purpose also requires judgment.

As a result of all of the above factors there could be significant adjustments to the provision for close down, restoration and clean up costs which would affect future financial results.

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**(v) Deferral of stripping costs**

Stripping of waste materials takes place throughout the production stage of the mine or pit. Some mining companies expense these production stage stripping costs as incurred, while others defer such stripping costs. In operations that experience material fluctuations in the ratio of waste materials to ore or contained minerals on a year to year basis over the life of the mine or pit, deferral of stripping costs reduces the volatility of the cost of stripping expensed in individual reporting periods. Those mining companies that expense stripping costs as incurred will therefore report greater volatility in the results of their operations from period to period.

The life of mine or pit waste-to-ore ratio is a function of an individual mine's pit design and therefore changes to that design will generally result in changes to the ratio. Changes in other technical or economic parameters that impact on reserves will also have an impact on the life of mine or pit ratio even if they do not affect the pit design. Changes to the life of mine or pit ratio are accounted for prospectively.

The Group's determination of whether multiple pit mines are considered separate or integrated operations depends on each mine's specific circumstances and the analysis requires judgment; another company could make the determination that a mine is separate or integrated differently than the Group, even if the fact pattern appears to be similar. To the extent the determination is different, the resulting accounting would also be different.

During 2011, production stage stripping costs capitalised by subsidiaries and equity accounted operations were US\$307 million and the amount charged against pre-tax profit was US\$50 million (2010: production stage costs exceeded the amounts charged against pre tax profit by US\$123 million; 2009: production stage costs exceeded the amounts charged against pre-tax profit by US\$174 million).

There was US\$11 million impairment (net of reversals) of deferred stripping in 2011. In 2010, there was no impairment of deferred stripping. In 2009, US\$59 million was written off as part of the Diamonds businesses impairment.

The net book value of stripping costs carried forward in property, plant and equipment and in investments in jointly controlled entities and associates at 31 December 2011 was US\$1.6 billion (2010: US\$1.3billion; 2009: US\$1.2billion).

Information about the stripping ratios of the business units, including equity accounted units, that account for the majority of the deferred stripping balance at 31 December 2011, along with the year in which deferred stripping is expected to be fully amortised, is set out in the following table:

	Actual stripping ratio for year			Life of mine stripping ratio		
	2011	2010	2009	2011	2010	2009
Kennecott Utah Copper (2026) <sup>(a) (d)</sup>	<b>2.09</b>	2.09	2.13	<b>1.94</b>	1.48	1.21
Grasberg Joint Venture (2016) <sup>(a)</sup>	<b>3.52</b>	4.15	3.42	<b>2.54</b>	3.13	3.00
Diavik (2012) <sup>(b)</sup>	<b>0.64</b>	1.21	1.17	<b>0.96</b>	0.95	1.02
Escondida (2058) <sup>(c) (e)</sup>	<b>0.17</b>	0.13	0.11	<b>0.13</b>	0.14	0.14

(a) Stripping ratios shown are waste to ore.

(b) Diavik's stripping ratio is disclosed as bench cubic metre per carat. The 2011 actual ratio is low because production is now from the bottom of the A418 pit requiring less movement of waste per carat.

(c) Escondida's stripping ratio is based on waste tonnes to pounds of copper mined. The higher actual ratio in 2011 reflects the lower grade in the year.

(d) KUC's life of mine stripping ratio has increased because of a strategic review of the Bingham Canyon pit in 2010 which led to a significant conversion of mineralised material to reserves.

(e) Escondida is an equity accounted unit.

Rio Tinto Borax capitalised stripping costs during the production stage of the mine as part of a distinct period of new development which was completed in 2004. The capitalised costs will be fully amortised in 2035.

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As noted in the Basis of preparation, IFRIC 20 will change the accounting for post production stripping costs. Implementation of the IFRIC, which is mandatory in 2013, may result in a write off to retained earnings of some of the US \$1.6 billion of deferred stripping costs included in the 31 December 2011 statement of financial position.

### **(vi) Recognition of deferred tax on mineral rights recognised in acquisitions**

On transition to IFRS with effect from 1 January 2004, deferred tax was provided in respect of fair value adjustments on acquisitions in previous years. No other adjustments were made to the assets and liabilities recognised in prior year acquisitions. Accordingly, shareholders' funds were reduced by US\$720 million primarily as a result of deferred tax on fair value adjustments to mining rights.

Deferred tax is provided in respect of fair value adjustments on acquisitions. These adjustments may relate to assets such as mining rights that, in general, are not eligible for income tax allowances. Provision for deferred tax is based on the difference between the carrying value of the asset and its income tax base (which may be nil). Even where there is no income tax base, the existence of a tax base for capital gains tax purposes is not taken into account in determining the deferred tax provision for the mineral rights because it is expected that the carrying amount will be recovered primarily through use of the rights and not from disposal. Also, the Group is only entitled to a deduction for capital gains tax purposes if the mineral rights are sold or formally relinquished.

For acquisitions after 1 January 2004, provision for deferred tax on acquisition results in a consequential increase in the amounts attributed to goodwill under IFRS. Amounts attributed to goodwill for business combinations in 2010 and 2011 are shown in note 39.

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### **Notes to the 2011 financial statements continued**

## **1 Principal accounting policies continued**

### **Critical accounting policies and estimates continued**

#### **(vii) Capitalisation of exploration and evaluation costs**

Under the Group's accounting policy, exploration and evaluation expenditure is not capitalised until the point is reached at which there is a high degree of confidence in the project's viability and it is therefore considered probable that future economic benefits will flow to the Group.

Subsequent recovery of the resulting carrying value depends on successful development or sale of the undeveloped project. If a project does not prove viable, all irrecoverable costs associated with the project net of any related impairment provisions are written off.

#### **(viii) Identification of functional currencies**

The functional currency for each entity in the Group, and for jointly controlled entities and associates, is the currency of the primary economic environment in which it operates. Determination of functional currency involves significant judgment and other mining companies may make different judgments based on similar facts. For many of Rio Tinto's entities, their functional currency is the currency of the country in which they operate. The Group reconsiders the functional currency of its entities if there is a change in the underlying transactions, events and conditions which determine their primary economic environment.

The determination of functional currency affects the carrying value of non-current assets included in the statement of financial position and, as a consequence, the amortisation of those assets included in the income statement. It also impacts exchange gains and losses included in the income statement.

The majority of the ex-Alcan businesses acquired by the Group in 2007 changed from US functional currency to local functional currency for accounting purposes on 1 January 2011. The integration of the ex-Alcan businesses with the existing aluminium business of Rio Tinto changed the economic environment for these ex-Alcan businesses since acquisition in several ways. In particular, the divestment of the majority of the ex-Alcan downstream operations, the legal reorganisations that have transferred ownership of certain ex-Alcan companies within the Rio Tinto group and the centralisation of certain functions such as procurement, pensions and, shipping have brought their business model closer to that for the rest of Rio Tinto's operations, the majority of which have the local currency as their functional currency. In addition, whilst financing is only a secondary indicator of functional currency, the magnitude of US dollar denominated debt, which has now been largely repaid, was a factor in the original determination of US functional currency at acquisition.

#### **(ix) Estimation of liabilities for post retirement costs**

The value of the Group's liabilities for post-retirement benefits will ultimately depend upon the amount of benefits paid out. This in turn will depend upon the future pay increases received by members of final pay plans, the level of inflation (for those benefits that are subject to some form of inflation protection) and how long individuals live in retirement.

Most of the Group's defined benefit pension plans are closed to new entrants and most of the liabilities relate to former employees. As a consequence, the carrying value of the Group's post-retirement liabilities is less sensitive to the assumption about future salary increases than it is to the assumption regarding future inflation. The assumption regarding future inflation is derived using market yields on inflation-linked instruments where possible, combined with consensus views on future inflation. This assumption is derived using the same process at each reporting date. Changes to the assumption therefore reflect changes to the market and consensus views of future inflation.

The Group reviews the actual mortality rates of retirees in its major pension plans on a regular basis and uses these rates to set its current mortality assumptions. It also allows for future improvements in mortality having regard to standard improvement scales in each country.

The discount rate used to value post-retirement liabilities is set in accordance with IAS19 Post retirement benefits based upon the yields on high quality corporate bonds in the relevant currency and of a duration consistent with the nature of the liabilities. The discount rate will vary from one period to another in line with movements in corporate bond yields, but at any given measurement date there is relatively little estimation uncertainty.

Details of the key assumptions, how they have moved since the previous statement of financial position date, and the sensitivity of the carrying value to changes in the assumptions, are set out in note 47.

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For 2011 the charge against income for post retirement benefits net of tax and non controlling interests was US\$445 million. This charge included both pension and post retirement healthcare benefits. The charge is net of the expected return on assets which was US\$561 million after tax and non-controlling interests.

In calculating the 2011 expense, the average future increase in compensation levels was assumed to be 3.7 per cent and this will be 3.4 per cent for 2012. The average discount rate used was 5.2 per cent and the average discount rate used in 2012 will be 4.3 per cent reflecting the net impact of changes in corporate bond yields in the regions where the Group has pension obligations.

The weighted average expected long term rate of return on assets used to determine the 2011 pension cost was 5.9 per cent. This will decrease to 5.0 per cent for 2012. This decrease results mainly from lower government bond yields in most territories which drives the assumed return on other asset classes.

Based on the known changes in assumptions noted above and other expected circumstances, the impact of post retirement costs on the Group's IFRS net earnings in 2012 would be an expected increase of US\$76 million to US\$521 million. The actual charge may be impacted by other factors that cannot be predicted, such as the effect of changes in benefits and exchange rates.

The table below sets out the potential change in the Group's 2011 net earnings (after tax and outside interests) that would result from hypothetical changes to post retirement assumptions and estimates. The sensitivities are viewed for each assumption in isolation although a change in one assumption is likely to result in some offset elsewhere.

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The figures in the below table only show the impact on underlying and net earnings. Changing the assumptions would also have an impact on the statement of financial position.

	US\$million
Sensitivity of the Group's 2011 underlying and net earnings to changes in:	
<b>Expected return on assets</b>	
increase of 1 percentage point	91
decrease of 1 percentage point	(91)
<b>Discount rate</b>	
increase of 0.5 percentage points	1
decrease of 0.5 percentage points	1
<b>Inflation</b>	
increase of 0.5 percentage points	(33)
decrease of 0.5 percentage points	31
<b>Salary increases</b>	
increase of 0.5 percentage points	(9)
decrease of 0.5 percentage points	9
<b>Demographic allowance for additional future mortality improvements</b>	
participants assumed to have the mortality rates of individuals who are one year older	17
participants assumed to have the mortality rates of individuals who are one year younger	(17)
<b>(x) Recoverability of potential deferred tax assets</b>	

The Group has carried forward losses, mainly in UK, French, Canadian, US and Australian taxable entities, that have the potential to reduce tax payments in future years. Deferred tax assets have been recognised on tax losses, and other temporary differences, to the extent their recovery is probable, having regard to the projected future taxable profits of these taxable entities.

The possible tax assets, i.e. the amounts that would be recognised if there were no need to assess recoverability on losses and other temporary differences in these taxable entities, are shown in the table below and totalled US\$3,248 million at 31 December 2011 (2010: US\$2,880 million). Of these, US\$2,451 million have been recognised as deferred tax assets (2010: US\$2,413 million), leaving US\$797 million (2010: US\$467 million) unrecognised, as recovery is not considered probable. These amounts exclude capital losses which can only be recovered against future capital gains. The 2010 comparatives have been restated to include all other temporary differences, in addition to tax losses, unless the taxable entity has net deferred tax liabilities. This reflects an increase in the amount of recognised deferred tax assets for temporary differences other than losses, and the fact that similar judgements are required to be made about the recovery of deductible temporary differences in entities with tax losses as those relating to the losses themselves.

US\$ million	Recognised		Unrecognised	
	2011	2010	2011	2010
At 31 December				
UK	229	232	nil	nil
France (a)	515	859	797	467
Canada (b)	746	674	nil	nil
US	322	317	nil	nil
Australia	639	331	nil	nil
<b>Total</b>	<b>2,451</b>	<b>2,413</b>	<b>797</b>	<b>467</b>

(a) The amount recognised takes account of legislation changes introduced in 2011 which restricts the recovery of losses.

(b) No capital losses have been recognised as deferred tax assets as there are no unrealised foreign exchange gains giving rise to capital gains (2010: US\$147 million which were recoverable against capital gains arising from unrealised foreign exchange gains).

**(xi) Contingencies**

Disclosure is made of material contingent liabilities unless the possibility of any loss arising is considered remote. Contingencies are disclosed in note 33.

**(xii) Basis of consolidation**

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In determining whether the Group has control, joint control or significant influence, the Group considers whether other parties hold veto rights over significant operating and financial decisions. In some instances, the Group has control of an entity where other parties own more than one half, or in some cases all, of the voting rights of an entity but the Group can control those voting rights through a contractual arrangement. In such circumstances, the Group considers, in particular, whether it obtains benefits, including non-financial benefits, from its power to govern the financial and operating policies of the entity.

In some cases, the Group makes acquisitions over a period of days, weeks or months. It is a matter of judgment as to whether the payments made during this period form part of one transaction or a number of separate transactions. In the latter case, the transactions will be treated as an acquisition in stages. The effect on the financial statements of treatment as an acquisition in stages is that any excess of consideration over identifiable net assets for transactions after the acquisition of control will be taken to equity. If the transactions were treated as one acquisition then all such excess consideration would be treated as goodwill. In addition, acquisitions of shares after the date on which control is gained and which are accounted for in stages are shown within the Financing section of the cash flow rather than the Investing section.

Factors which are considered in this judgment are the length of time between the acquisition date and completion of the transaction and whether, at the time of the initial share purchase, it was clear what percentage ownership would ultimately be obtained.

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Notes to the 2011 financial statements continued

**2 Operating segments**

	Restated		
	2011	2010	2009
<b>Sales revenue</b> <sup>(a) (b)</sup>	US\$m	US\$m	US\$m
Iron Ore	29,909	24,024	12,598
Aluminium <sup>(c)</sup>	12,159	11,313	8,701
Copper	7,634	7,797	6,220
Energy	7,327	5,652	4,869
Diamonds & Minerals	3,220	3,035	2,618
Other operations <sup>(c)</sup>	8,246	10,151	9,897
<b>Reportable segments total</b>	<b>68,495</b>	<b>61,972</b>	<b>44,903</b>
Inter-segment transactions	(2,817)	(2,758)	(2,169)
<b>Product Group Total</b>	<b>65,678</b>	<b>59,214</b>	<b>42,734</b>
Items excluded from underlying earnings	(56)		
<b>Gross sales revenue</b>	<b>65,622</b>	<b>59,214</b>	<b>42,734</b>
Less share of equity accounted units sales revenue	(5,085)	(4,043)	(2,472)
<b>Consolidated sales revenue</b>	<b>60,537</b>	<b>55,171</b>	<b>40,262</b>
<b>Depreciation and amortisation</b> <sup>(d)</sup>			
Iron Ore	1,203	993	763
Aluminium <sup>(c)</sup>	1,098	1,062	1,099
Copper	538	568	543
Energy	520	367	296
Diamonds & Minerals	337	268	290
Other operations <sup>(c)</sup>	535	587	765
<b>Reportable segments total</b>	<b>4,231</b>	<b>3,845</b>	<b>3,756</b>
Other items	113	114	111
Less: depreciation and amortisation of equity accounted units	(527)	(522)	(440)
<b>Depreciation and amortisation per note 4</b>	<b>3,817</b>	<b>3,437</b>	<b>3,427</b>
<b>Underlying earnings</b> <sup>(e)</sup>			
Iron Ore	12,853	10,189	4,126
Aluminium <sup>(c)</sup>	442	611	(260)
Copper	1,932	2,530	1,874
Energy	1,074	1,187	1,167
Diamonds & Minerals	252	328	800
Other operations <sup>(c)</sup>	(120)	237	(232)
<b>Reportable segments total</b>	<b>16,433</b>	<b>15,082</b>	<b>7,475</b>
Inter-segment transactions	40	(15)	(21)
Other items	(593)	(554)	(577)
Exploration and evaluation not attributed to product groups	(102)	(52)	5
Net finance costs	(229)	(474)	(584)
<b>Underlying earnings</b>	<b>15,549</b>	<b>13,987</b>	<b>6,298</b>
Items excluded from Underlying earnings <sup>(f)</sup>	(9,723)	251	(1,426)
<b>Net earnings attributable to owners of Rio Tinto per income statement</b>	<b>5,826</b>	<b>14,238</b>	<b>4,872</b>
<b>Tax charge</b>			
Iron Ore	5,939	4,602	1,868
Aluminium <sup>(c)</sup>	64	36	(385)
Copper	626	705	582
Energy	496	537	521
Diamonds & Minerals	29	(39)	37
Other operations <sup>(c)</sup>	11	(136)	(110)
<b>Reportable segments total</b>	<b>7,165</b>	<b>5,705</b>	<b>2,513</b>
Other items	(370)	(216)	(270)



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Exploration and evaluation not attributed to product groups	(28)	1	(30)
Net finance costs	(140)	(152)	(228)
	<b>6,627</b>	5,338	1,985
Tax charge excluded from Underlying earnings <sup>(f)</sup>	(188)	(42)	91
<b>Tax charge per income statement</b>	<b>6,439</b>	5,296	2,076

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	2011 US\$m	2010 US\$m	2009 US\$m
<b>Capital expenditure</b>			
Iron Ore	4,757	1,716	2,148
Aluminium <sup>(c)</sup>	1,957	963	1,300
Copper	3,784	990	587
Energy	1,327	685	510
Diamonds & Minerals	639	300	519
Other operations <sup>(c)</sup>	729	570	760
<b>Reportable segments total</b>	<b>13,193</b>	<b>5,224</b>	<b>5,824</b>
Other items	251	75	54
Less: capital expenditure of equity accounted units	(1,146)	(746)	(522)
<b>Capital expenditure per Financial information by business unit</b>	<b>12,298</b>	<b>4,553</b>	<b>5,356</b>
Add: Proceeds from disposal of property, plant and equipment	37	38	32
<b>Capital expenditure per statement of cash flow</b>	<b>12,335</b>	<b>4,591</b>	<b>5,388</b>

Rio Tinto's management structure is based on the principal product groups shown above together with the global functions that support the business. The chief executive of each product group reports to the Chief executive of Rio Tinto. The Chief executive of Rio Tinto monitors the performance of each product group based on a number of measures including capital expenditure and operating cash flows, with Underlying earnings being the key financial performance indicator. Finance costs and net debt are managed on a group basis.

Generally, business units are allocated to product groups based on their primary product. The Energy product group includes both coal and uranium businesses. The Diamonds & Minerals product group includes businesses with products such as borates and titanium dioxide feedstock together with diamonds operations. The Copper group includes certain gold operations in addition to copper.

The financial information by business unit provided on pages 209 to 212 of these financial statements provide additional voluntary disclosure which the Group considers is useful to the users of the financial statements.

**(a) Sales revenue**

Product group gross sales revenue includes the Group's share of the sales revenue of equity accounted units after adjusting for sales to subsidiaries.

Intersegment transactions relate to sales between the Aluminium Product Group and Constellium (formerly Alcan Engineered Products) and Other Aluminium operations whose results are reported within Other operations.

Gross sales revenue includes the sales revenue of equity accounted units (after adjusting for sales to subsidiaries) of US\$5,564 million (2010: US\$4,254 million, 2009: US\$3,197 million) in addition to consolidated sales revenue. Consolidated sales revenue includes subsidiary sales to equity accounted units which are not included in gross sales revenue.

**(b) Reclassification of sundry revenues**

Following the continued integration and organisational restructure of Rio Tinto Aluminium and adoption of the integrated operations approach (see financial information by business unit on pages 209 to 212), sales of surplus power and carbon products used in the smelting process, previously included within sales revenue, have been treated as a credit to operating costs. In addition, third party commodity swap arrangements for delivery and receipt of smelter grade alumina are offset within operating costs. Corresponding amounts in comparative periods have been reclassified accordingly. This reclassification is considered to improve the relevance of the financial statements for users. The impact of the reclassification on previously reported consolidated sales revenue is; 31 December 2010: US\$1,405 million (31 December 2009: US\$1,563 million). The impact on previously reported gross sales revenue is; 31 December 2010: US\$1,109 million (31 December 2009: US\$1,302 million).

**(c) Other operations - Aluminium**

Aluminium is now presented on an integrated operations basis splitting activities between Bauxite and Alumina, Primary Metal and Other Integrated Operations. Other operations now include Rio Tinto's interests in Pacific Aluminium and Other Aluminium. 2010 comparative information has been adjusted accordingly.

**(d) Depreciation and amortisation**

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Product group depreciation and amortisation totals include 100 per cent of subsidiaries' depreciation and amortisation and include Rio Tinto's share of the depreciation and amortisation of equity accounted units. Rio Tinto's share of the depreciation and amortisation charge of equity accounted units is deducted to arrive at depreciation and amortisation excluding equity accounted units as shown in note 4. These figures exclude impairment charges, which are excluded from Underlying earnings.

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Impairment charges net of reversals (note 6)	(9,766)	476		(9,290)	(739)	(1,103)
Profits on disposal of interests in businesses <sup>(g)</sup>	185	(18)		167	174	499
Gain on consolidation of Oyu Tolgoi <sup>(h)</sup>					445	
Loss after tax from discontinued operations				(10)	(97)	(449)
Exchange and derivative gains/(losses):						
Exchange (losses)/gains on US dollar net debt and intragroup balances	(155)	22	(14)	(147)	434	(56)
Gains/(losses) on currency and interest rate derivatives not qualifying for hedge accounting	12	(16)	(15)	(19)	56	9
Gains/(losses) on commodity derivatives not qualifying for hedge accounting	99	10		109	(61)	75
Chinalco break fee						(182)
Deferred tax asset write off <sup>(i)</sup>		(342)		(342)		
Restructuring costs from global headcount reduction <sup>(j)</sup>						(231)
Other exclusions	(46)	56	(201)	(191)	39	12
<b>Total excluded from Underlying earnings</b>	<b>(9,671)</b>	<b>188</b>	<b>(230)</b>	<b>(10)</b>	<b>(9,723)</b>	<b>251</b>
<b>Net earnings</b>	<b>13,214</b>	<b>(6,439)</b>	<b>(939)</b>	<b>(10)</b>	<b>5,826</b>	<b>14,238</b>
<b>Underlying earnings</b>	<b>22,885</b>	<b>(6,627)</b>	<b>(709)</b>	<b>15,549</b>	<b>13,987</b>	<b>6,298</b>

(g) Profits arising on the disposal of interests in businesses for the year ended 31 December 2011 relate principally to the divestment of the Group's talc business and Colowyo mine. Refer to note 39.

Profits arising on the disposal of interests in businesses for the year ended 31 December 2010 relate principally to the sale of the Group's 48 per cent interest in Cloud Peak Energy Inc.

Profits arising on the disposal of interests in businesses for the year ended 31 December 2009 related principally to sales of the Corumbá iron ore mine, the Jacobs Ranch coal mine and 52 per cent of Rio Tinto's interest in Cloud Peak Energy Resources LLC (CPER), and were partially offset by a loss from the sale of Alcan Composites.

(h) The gain on consolidation of Oyu Tolgoi represents the excess of the fair value ascribed to the Group's indirect share of the assets and liabilities of Oyu Tolgoi over the historic cost of acquiring that share through its investment in Ivanhoe Mines Ltd.

(i) In 2011, French deferred tax assets of US\$342 million were written off as a result of restrictions on the utilisation of losses introduced in 2011.

(j) During 2009, the Group incurred restructuring costs relating to the cost saving measures announced in December 2008.

(k) Exclusions from Underlying earnings relating to both equity accounted units (EAUs) and discontinued operations are stated net of tax. Exclusions from Underlying earnings relating to EAUs are included in the column 'Pre-tax' and the results of discontinued operations are shown in the column 'Discontinued operations'.

**Table of Contents****3 Operating segments additional information**

Sales revenue by destination <sup>(a)</sup>	2011 %	2010 %	2009 %	2011 US\$m	2010 US\$m	2009 US\$m
China	30.7	28.0	24.7	20,155	16,581	10,569
Japan	16.6	16.0	13.9	10,892	9,410	5,921
Other Asia	15.9	14.5	13.6	10,410	8,603	5,820
United States of America	13.7	15.2	19.7	9,019	8,975	8,412
Other Europe (excluding United Kingdom)	11.5	14.1	14.2	7,549	8,340	6,082
Canada	2.9	3.3	3.1	1,926	1,925	1,313
United Kingdom	1.4	2.3	2.4	922	1,334	1,031
Australia	2.5	2.0	2.8	1,647	1,164	1,181
Other	4.8	4.6	5.6	3,102	2,882	2,405
<b>Gross sales revenue</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>65,622</b>	<b>59,214</b>	<b>42,734</b>
Less share of equity accounted units sales revenue				(5,085)	(4,043)	(2,472)
<b>Consolidated sales revenue</b>				<b>60,537</b>	<b>55,171</b>	<b>40,262</b>

(a) Sales by geographical destination are based on the ultimate country of destination of the product, if known. If the eventual destination of the product sold through traders is not known, then revenue is allocated to the location of the product at the time when the risks and rewards of ownership are passed. Rio Tinto is domiciled in both the United Kingdom and Australia.

Sales revenue by product <sup>(a)</sup>	2011 US\$m	2010 US\$m	2009 US\$m
Iron Ore	29,867	23,834	12,096
Aluminium	14,327	12,721	9,864
Coal	6,350	5,360	5,683
Copper	5,144	5,716	4,775
Industrial Minerals	3,131	2,955	2,677
Gold	1,012	1,086	972
Diamonds	726	682	450
Other	5,065	6,860	6,217
<b>Gross sales revenue</b>	<b>65,622</b>	<b>59,214</b>	<b>42,734</b>
Less share of equity accounted units sales revenue	(5,085)	(4,043)	(2,472)
<b>Consolidated sales revenue</b>	<b>60,537</b>	<b>55,171</b>	<b>40,262</b>

(a) Sales revenues of the Group are derived from the above products sold to external customers.

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Notes to the 2011 financial statements continued

**3 Operating segments additional information continued**

	2011 US\$m	Restated 2010 US\$m
Non-current assets other than financial instruments and deferred tax assets <sup>(a)</sup>		
Australia	40,081	36,460
Canada	22,458	25,349
Mongolia	11,195	8,062
Africa	5,685	1,642
United States	5,012	4,398
South America	2,325	2,404
France	1,095	1,890
Europe (excluding France)	1,000	1,322
United Kingdom	894	1,433
Indonesia	770	646
Other countries	496	576
	<b>91,011</b>	<b>84,182</b>
<b>Non-current assets excluded from analysis above:</b>		
Deferred tax assets	1,875	1,863
Tax recoverable	74	52
Derivatives and other financial assets	1,454	1,370
Loans to equity accounted units <sup>(b)</sup>	1,695	1,363
Accounts receivable	1,450	778
<b>Total non-current assets per statement of financial position</b>	<b>97,559</b>	<b>89,608</b>

(a) Non-current assets by location exclude financial instruments, deferred tax assets, post-employment benefit assets and assets held for sale. Allocation is based on the location of the business units holding the assets, and includes investments in equity accounted units totalling US\$8,606 million (2010: US\$5,719 million) which represents the Group's share of net assets excluding quasi equity loans shown separately within 'Loans to equity accounted units' above.

(b) Loans to equity accounted units comprise quasi equity loans of US\$1,227 million (2010: US\$1,136 million) included in 'Investments in equity accounted units' on the face of the statement of financial position and non-quasi equity loans of US\$468 million (2010: US\$227 million) shown within 'other financial assets'.

**4 Net operating costs**

	2011 US\$m	2010 US\$m	2009 US\$m
Raw materials and consumables <sup>(a)</sup>	10,975	12,004	9,938
Amortisation of intangible assets	13 314	369	387
Depreciation of property, plant and equipment	14 3,503	3,068	3,040
Employment costs	5 6,908	6,406	6,198
Repairs and maintenance	2,533	1,946	1,771
Shipping costs	1,885	1,890	1,828
Other freight costs	959	838	756
(Increase)/decrease in finished goods and work in progress	(31)	(377)	517
Royalties	2,790	2,104	1,539
Amounts charged by jointly controlled entities <sup>(b)</sup>	3,730	2,934	2,420
Net foreign exchange (gains)/losses	(84)	(4)	123
Other external costs	2,901	3,304	3,127
Provisions (including exchange differences on provisions)	27 961	907	930
Research and development	148	187	193
Costs included above qualifying for capitalisation	(836)	(140)	(136)
Other operating income	(396)	(174)	(376)
<b>Net operating costs (excluding items shown separately)</b>	<b>36,260</b>	<b>35,262</b>	<b>32,255</b>

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(a) Refer to note (b) of the Group Income Statement for the reclassification of amounts in 2010 and 2009, previously included within sales revenue.

(b) Amounts charged by jointly controlled entities mainly relate to toll processing but also include purchases from jointly controlled entities of bauxite and aluminium which are then processed by the product group or sold to third parties. Generally, purchases are in proportion to the Group's share of the jointly controlled entity but in 2011, US\$849 million (2010: US\$564 million; 2009: US\$491 million) related to purchases of the other venturer's share of production.

Information on auditors' remuneration is included in note 41.

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**5 Employment costs**

	Note	2011 US\$m	2010 US\$m	2009 US\$m
Employment costs				
Wages and salaries		6,696	6,328	6,130
Social security costs		128	98	101
Net post retirement cost	47	604	573	524
Share option charge	46	156	124	177
		7,584	7,123	6,932
Less: charged within provisions		(676)	(717)	(734)
<b>Total employment costs</b>	4	<b>6,908</b>	<b>6,406</b>	<b>6,198</b>

**6 Impairment charges**

	Pre-tax 2011 US\$m	Taxation 2011 US\$m	Net amount 2011 US\$m	Net amount 2010 US\$m	Net amount 2009 US\$m
Aluminium <sup>(a)</sup>	(6,691)		(6,691)		(212)
Other operations – Aluminium <sup>(a)</sup>	(2,491)	327	(2,164)		
Alcan Engineered Products <sup>(b)</sup>				(589)	(500)
Diamonds <sup>(c)</sup>	(467)	123	(344)	(115)	(348)
Other	(117)	26	(91)	(35)	(43)
<b>Total</b>	<b>(9,766)</b>	<b>476</b>	<b>(9,290)</b>	<b>(739)</b>	<b>(1,103)</b>

(a) The annual impairment review of the Group’s aluminium businesses resulted in an impairment of US\$7,405 million to goodwill (2010 and 2009: no impairment charge) of which US\$6,586 million was allocated to Aluminium, and the balance to Other operations – Aluminium. The review also resulted in a US\$1,186 million impairment of property, plant and equipment (2010: no impairment charge, 2009: US\$212 million) related to Other operations – Aluminium, and a US\$579 million impairment of investments in equity accounted units (2010 and 2009: no impairment charge), of which US\$474 million related to Other operations – Aluminium and the balance to Aluminium. Details of the 2011 impairment review relating to the Group’s aluminium businesses are set out note 12.

The 2009 impairment charge related mainly to the planned closure of certain smelters, and was caused by a decrease in short term price assumptions at the date of the impairment review. The recoverable amount was based on fair value less costs to sell, and was assessed in line with the policy in note 1(i).

(b) Impairment to the Alcan Engineered businesses arose following finalisation of the proceeds and terms of the proposed sales transaction, which affected the assessment of fair value less costs to sell. The estimated proceeds were assessed in line with the policy in note 1(i). Refer to note 20 for further details.

(c) Of the net impairment to the Group’s diamond business during 2011 and 2010, US\$456 million (2010: US\$135 million) relates to Argyle and was caused by changes in assumptions about future capital costs required to complete the Argyle underground project. In addition, recovery in prices resulted in a reversal of impairment relating to Diavik of US\$112 million post-tax (2010: US\$158 million post-tax). The impairment to the Group’s Diamonds business during 2009 was caused by weak demand for luxury items and higher input costs. The estimate of fair value less costs to sell was based on the policy in note 1(i).

**7 Share of profit after tax of equity accounted units**

	2011 US\$m	2010 US\$m	2009 US\$m
Sales revenue <sup>(a)</sup>	6,099	4,722	3,020
Operating costs	(4,872)	(2,818)	(1,717)
Profit before finance items and taxation	1,227	1,904	1,303
Finance items	(54)	(87)	(49)
Share of profit after tax of equity accounted units	38	21	23
Profit before taxation	1,211	1,838	1,277
Taxation	(507)	(737)	(491)

Profit for the year (Rio Tinto share)

704 1,101 786

(a) Sales revenue of equity accounted units excludes charges by equity accounted units to Group subsidiaries.

## 8 Finance income and finance costs

	Note	2011 US\$m	2010 US\$m	2009 US\$m
Finance income from equity accounted units		35	33	36
Other finance income (including bank deposits and other financial assets)		80	130	84
<b>Total finance income</b>		<b>115</b>	163	120
Interest payable and similar charges <sup>(a)</sup>		(990)	(853)	(1,127)
Charges related to refinancing <sup>(b)</sup>			(107)	
Amounts capitalised	14	493	182	198
<b>Total finance costs</b>		<b>(497)</b>	(778)	(929)

(a) Interest payable and similar charges relate to interest on bank loans and other borrowings. This includes a fair value gain on interest rate swaps designated as hedges of US\$311 million and an offsetting fair value loss on bank borrowings attributable to interest rate risk of US\$308 million (2010: fair value gain on the interest rate swaps of US\$186 million and an offsetting fair value loss on bank borrowings attributable to interest rate risk of US\$196 million; 2009: fair value loss on the interest rate swaps of US\$59 million and an offsetting fair value gain on bank borrowings attributable to interest rate risk of US\$59 million).

(b) Charges on the refinancing of bonds in October 2010 includes a cash premium of US\$252 million, offset by non-cash mark to market hedge fair value adjustments of US\$167 million (note 31).

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Notes to the 2011 financial statements continued

**9 Taxation**

	Note	2011 US\$m	2010 US\$m	2009 US\$m
<b>Taxation charge</b>				
Current		6,131	5,026	2,593
Deferred	19	308	270	(517)
		<b>6,439</b>	<b>5,296</b>	<b>2,076</b>

**Prima facie tax reconciliation**

	2011 US\$m	Restated 2010 US\$m	2009 US\$m
Profit before taxation	13,214	20,491	7,860
Deduct: share of profit after tax of equity accounted units	(704)	(1,101)	(786)
Add: impairment after tax of investments in equity accounted units <sup>(a)</sup>	592		
Parent companies and subsidiaries profit before tax	13,102	19,390	7,074
Prima facie tax payable at UK rate of 26% (2010, 2009: 28%)	3,407	5,429	1,981
Higher rate of taxation on Australian earnings at 30%	759	295	136
Items excluded in arriving at Underlying earnings:			
Impairment charges	1,909	(23)	(5)
Gains on disposal of businesses and on newly consolidated operations	(30)	(77)	
Foreign exchange on intra-group balances	22	46	332
Foreign exchange on external debt	(5)	(61)	
Foreign exchange on derivatives and other excluded items	(2)	(17)	25
Impact of tax law changes on previously recognised deferred tax assets	342		
Other exclusions	(91)	13	(5)
Adjustments to deferred tax following changes in tax rates	20	(96)	(22)
Other tax rates applicable outside the UK and Australia	112	110	113
Resource depletion and other depreciation allowances	(182)	(163)	(132)
Research, development and other investment allowances	(78)	(74)	(55)
Utilisation of previously unrecognised deferred tax assets		(13)	(36)
Unrecognised current year operating losses	272	95	105
Foreign exchange differences	(3)	(63)	(167)
Withholding taxes	27	35	73
Non-taxable gains on asset disposals <sup>(b)</sup>			(208)
Other items	(40)	(140)	(59)
<b>Total taxation charge <sup>(c)</sup></b>	<b>6,439</b>	<b>5,296</b>	<b>2,076</b>

(a) Impairment of investments in equity accounted units is net of tax credits of US\$349 million.

(b) The non-taxable gains on asset disposals in 2009 relate to undeveloped potash assets in Argentina.

(c) This tax reconciliation relates to the Group's parent companies, subsidiaries and proportionally consolidated units. The tax credit/(charge) relating to components of other comprehensive income is as follows:

2011 Total US\$m	2010 Total US\$m	2009 Total US\$m
------------------------	------------------------	------------------------

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Tax on exchange adjustments	13	27	
Cash flow hedge fair value losses/(gains):			
Cash flow hedge fair value (gains)/losses	(24)	24	97
Cash flow hedge losses transferred to the income statement	(52)	(34)	(20)
Losses/(gains) on revaluation of available for sale securities	21	(25)	(1)
Gains on revaluation of available for sale securities transferred to the income statement	1	1	1
Currency translation reclassified	(3)		
Actuarial losses on post retirement benefit plans	567	216	232
Deferred tax on share options	(55)	47	50
	<b>468</b>	256	359
Share of tax on other comprehensive expense of equity accounted units	(3)	(3)	(38)
<b>Tax relating to components of other comprehensive income for the year <sup>(a)</sup></b>	<b>465</b>	253	321

(a) This comprises deferred tax credits of US\$511 million (2010: US\$226 million; 2009: US\$319 million) and current tax charges of US\$43 million (2010: US\$27 million credit; 2009: US\$2 million credit). See note 19.

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**10 Earnings/(loss) per ordinary share**

	2011 Earnings US\$m	2011 Weighted average number of shares (millions)	2011 Per share amount (cents)	Restated 2010 Earnings US\$m	2010 Weighted average number of shares (millions)	2010 Per share amount (cents)
Basic earnings per share attributable to ordinary shareholders of						
Rio Tinto continuing operations	5,836	1,923.1	303.5	14,335	1,961.0	731.0
Basic loss per share attributable to ordinary shareholders of						
Rio Tinto discontinued operations	(10)	1,923.1	(0.5)	(97)	1,961.0	(4.9)
Total basic earnings per share profit for the year <sup>(b)</sup>	5,826	1,923.1	303.0	14,238	1,961.0	726.1
Diluted earnings per share attributable to ordinary shareholders of						
Rio Tinto continuing operations	5,836	1,935.5	301.5	14,335	1,972.6	726.7
Diluted loss per share attributable to ordinary shareholders of						
Rio Tinto discontinued operations	(10)	1,935.5	(0.5)	(97)	1,972.6	(4.9)
Total diluted earnings per share profit for the year <sup>(c)</sup>	5,826	1,935.5	301.0	14,238	1,972.6	721.8

	2009 Earnings US\$m	2009 Weighted average number of shares (millions)	2009 Per share amount (cents)
Basic earnings per share attributable to ordinary shareholders of Rio Tinto continuing operations	5,321	1,763.6	301.7
Basic loss per share attributable to ordinary shareholders of Rio Tinto discontinued operations	(449)	1,763.6	(25.5)
Total basic earnings per share profit for the year <sup>(b)</sup>	4,872	1,763.6	276.2
Diluted earnings per share attributable to ordinary shareholders of Rio Tinto continuing operations	5,321	1,769.6	300.7
Diluted loss per share attributable to ordinary shareholders of Rio Tinto discontinued operations	(449)	1,769.6	(25.4)
Total diluted earnings per share profit for the year <sup>(c)</sup>	4,872	1,769.6	275.3

(a) The 2009 rights issues were at a discount to the then market price. Accordingly, earnings per share for all periods up to the date on which the shares were issued have been adjusted for the bonus element of the issues. The bonus factor for Rio Tinto plc was 1.2105 and for Rio Tinto Limited was 1.2679.

(b) The weighted average number of shares is calculated as the average number of Rio Tinto plc shares outstanding not held as treasury shares of 1,487.3 million (2010: 1,525.2 million; 2009: 1,366.1 million) plus the average number of Rio Tinto Limited shares outstanding not held by Rio Tinto plc of 435.8 million (2010: 435.8 million; 2009: 397.5 million). In 2011 and 2010, no Rio Tinto Limited shares were held by Rio Tinto plc (31 December 2010: nil, 31 December 2009: 171.1 million).

(c) For the purposes of calculating diluted earnings per share, the effect of dilutive securities of 12.4 million shares in 2011 (2010: 11.6 million shares; 2009: 6.0 million shares) is added to the weighted average number of shares described in (b) above. This effect is calculated under the treasury stock method. The Group's only potential dilutive ordinary shares are share options for which terms and conditions are described in note 46.

**11 Dividends**

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	2011	2010	2009
	US\$m	US\$m	US\$m
Rio Tinto plc previous year Final dividend paid	955	686	670
Rio Tinto plc Interim dividend paid	778	664	
Rio Tinto Limited previous year Final dividend paid	279	206	206
Rio Tinto Limited Interim dividend paid	224	198	
<b>Dividends paid during the year</b>	<b>2,236</b>	1,754	876
<b>Dividends per share: paid during the year</b>	<b>117.0c</b>	90.0c	55.6c
<b>Dividends per share: proposed in the announcement of the results for the year</b>	<b>91.0c</b>	63.0c	45.0c
			Dividends
	Dividends per share 2011	Dividends per share 2010	Dividends per share 2009
Rio Tinto plc previous year Final (pence)	39.14p	28.84p	37.85p
Rio Tinto plc Interim (pence)	33.14p	28.21p	
Rio Tinto Limited previous year Final fully franked at 30% (Australian cents)	61.94c	51.56c	82.97c
Rio Tinto Limited Interim fully franked at 30% (Australian cents)	49.81c	49.27c	

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Notes to the 2011 financial statements continued

**11 Dividends continued**

	Number of shares 2011 (millions)	Number of shares 2010 (millions)	Number of shares 2009 (millions)
Rio Tinto plc previous year Final	1,522.6	1,524.8	1,208.4
Rio Tinto plc Interim	1,479.5	1,526.0	
Rio Tinto Limited previous year Final	435.8	435.8	362.3
Rio Tinto Limited Interim	435.8	435.8	

The dividends paid in 2011 are based on the following US cents per share amounts: 2010 final 63.0 cents, 2011 interim 54.0 cents (2010 dividends paid: 2009 final 45.0 cents, 2010 interim 45.0; 2009 dividends paid: 2008 final 55.6 cents, 2009 interim nil).

The number of shares on which Rio Tinto plc dividends are based excludes those held as treasury shares. The number of shares on which the Rio Tinto Limited dividends are based excludes those shares held by Rio Tinto plc (2011: nil, 2010: nil, 2009: 171.1 million), in order that they represent those paid to public shareholders.

In addition, the directors of Rio Tinto announced a final dividend of 91.0 cents per share on 9 February 2012. This is expected to result in payments of US\$1,704 million (Rio Tinto plc: US\$1,307 million, Rio Tinto Limited US\$397 million). The dividends will be paid on 12 April 2012 to Rio Tinto plc shareholders on the register at the close of business on 2 March 2012 and to Rio Tinto Limited shareholders on the register at the close of business on 6 March 2012.

The proposed Rio Tinto Limited dividends will be franked out of existing franking credits or out of franking credits arising from the payment of income tax during 2012.

The approximate amount of the Rio Tinto Limited consolidated tax group's retained profits and reserves that could be distributed as dividends and franked out of credits, that arose from net payments of income tax in respect of periods up to 31 December 2011 (after deducting franking credits expected to be utilised on the 2011 final dividend declared), is US\$7,604 million.

**12 Goodwill**

	2011 US\$m	Restated 2010 US\$m
<b>Net book value</b>		
At 1 January	15,316	14,268
Adjustment on currency translation	(404)	72
Newly consolidated operations	680	983
Disposals		(7)
Impairment charges	(7,405)	
At 31 December	8,187	15,316
cost	22,125	21,906
accumulated impairment	(13,938)	(6,590)
At 1 January		
cost	21,906	20,854
accumulated impairment	(6,590)	(6,586)

**Impairment tests for goodwill**

At 31 December 2011, goodwill has been allocated as follows:

2011 2010

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### Net book value

Aluminium  
Copper Oyu Tolgoi (note 39)  
Rio Tinto Coal Mozambique (note 39)  
Other

US\$m	US\$m
5,864	13,678
983	983
530	
810	655
8,187	15,316

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### **Aluminium**

#### **Rio Tinto Alcan and Other operations**

The majority of the Group's goodwill relates to the aluminium cash-generating units held in the Aluminium product group and Other operations product group. A large component of the carrying value relates to the former Alcan businesses purchased in 2007.

The annual impairment review of aluminium resulted in an impairment of US\$7,405 million to goodwill (2010 and 2009: no impairment charge), of which US\$6,586 million relates to the Aluminium product group and US\$819 million relates to the Other operations product group. The recoverable amount has been assessed by reference to fair value less costs to sell, using discounted cash flows, in line with the policy in note 1(i).

Fair value less costs to sell was determined by estimating cash flows until the end of the life of each site based on long-term production plans, including closure restoration and environmental clean-up costs. Aluminium benefits from a global marketplace with substantial barriers to entry and there are a limited number of competitors who are able to access effectively the key resources necessary to make aluminium. In addition, continued global industrialisation is expected to support demand for aluminium in the long term. The industry has however been running surpluses in production for the past five years. With Chinese production still tracking demand in China, LME inventory is rising, negatively impacting prices. This is delaying the aluminium industry's investment in growth projects for new capacity. A current market participant's view of fair value might not include the full value of planned improvements in cash margins from existing operations and from the successful implementation of growth projects.

The key assumptions to which the calculation of fair value less costs to sell for aluminium is most sensitive are the aluminium price; the Canadian dollar and Australian dollar exchange rates against the US dollar; operating costs; and discount rates. These assumptions have been estimated in line with the policy in note 1(i).

#### **Key assumptions**

##### *Aluminium prices*

Short term prices are consistent with market observable prices, thereafter they are transitioned to a long-term price based on detailed analysis of market fundamentals. Both prices and margins are kept constant in real terms from 2021 onwards. Alumina prices are not considered a key assumption as they are determined as a percentage of Aluminium prices. For the purposes of sensitivities any reasonable possible changes consider movements in both commodities as a result of this relationship.

The long-term aluminium price for impairment testing purposes has decreased by three per cent in real terms compared to prior year, and was within the range published by market commentators of US\$2,180 and US\$2,644 per tonne, with an average of US\$2,394 per tonne, albeit at the upper end of this range. While the long-term price assumption was near the top end of the range, the market commentator prices exclude the impact of carbon pricing, while our long-term prices include an element of carbon pricing (see note 1(i)). This price is based on an assessment of future climate policy evolution and the range of carbon prices that could result from this process.

##### *Foreign exchange rates*

In the determination of fair value less costs to sell, the Group uses the 30-day moving average spot exchange rates, kept constant in real terms, as a proxy for long-term future exchange rates. For those currencies that show a strong correlation with world commodity prices, specifically the Australian and Canadian dollar, the spot exchange rate is adjusted to ensure consistency with the Group's view of long-term commodity prices. These long run exchange rate assumptions are applied from 2014. From the 30-day moving average spot exchange rate as at the measurement date the Group assumes a linear annual increase in the strength of the US dollar over the period to 2014. To determine the long run exchange rates used for the impairment assessment, an adjustment factor of 0.93 was used on the 30 day moving average spot exchange rate for the Australian and Canadian dollar.

##### *Post-tax discount rates*

In arriving at fair value less costs to sell, a post-tax discount rate of 6.6 per cent (2010: 6.5 per cent) has been applied to the post-tax cash flows expressed in real terms. The discount rate used has been increased by a premium of between one and four per cent for operations in countries with a higher risk profile.

##### *Operating costs*

Operating costs are based on long-term production plans and known cost improvement strategies. Underlying input cost assumptions are consistent with related output price assumptions. As noted above, margins are assumed to remain constant from 2021 onwards.

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### *Goodwill sensitivity analysis*

Any adverse change to any of the key assumptions would lead to a further impairment. It is estimated that adverse changes in key assumptions would lead to the following decreases in fair value less costs to sell which may lead to a further impairment to goodwill and property, plant and equipment within the aluminium cash-generating units:

	US\$ billion
0.5% increase in discount rate applied to post-tax cash flows	2.2
5% decrease in aluminium and alumina prices	5.7
5% strengthening of local currencies	2.9
5% increase in operating costs	6.3

Each of the sensitivities above was determined assuming the relevant key assumption moved in isolation, except where modifying the aluminium price directly affects the price assumption for certain input costs and further assumes that there is no mitigating action by management.

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### Notes to the 2011 financial statements continued

## **12 Goodwill continued**

### **Oyu Tolgoi**

Goodwill of US\$983 million arose following consolidation on 15 December 2010 of Oyu Tolgoi LLC of which US\$881 million was calculated in accordance with the requirement in IFRS to recognise a deferred tax liability on the difference between the fair value of newly consolidated assets and liabilities and their tax base.

Oyu Tolgoi's annual impairment review resulted in no impairment charge for 2011 (2010: no impairment charge). The recoverable amount has been assessed by reference to fair value less costs to sell, in line with the policy in note 1(i). For the purposes of testing goodwill on Oyu Tolgoi for impairment, deferred tax liabilities recognised on consolidation are included in the aggregate net assets against which the provisional fair value is compared.

In arriving at fair value less costs to sell, a country specific post-tax discount rate of 8.7 per cent, including the appropriate country risk premium, has been applied to the post-tax cash flows expressed in real terms. Fair value less costs to sell was determined by estimating cash flows until the end of the life of mine plan.

The key assumptions to which the calculation of fair value less costs to sell for Oyu Tolgoi is most sensitive are the timing of a reliable supply of power, the long-term copper prices and discount rates. Other key assumptions include the long-term gold price; Mongolian Tugrik and Chinese Yuan exchange rates against the US dollar; and operating costs. Future selling prices and operating costs have been estimated in line with the policy in note 1(i). Based on the assessment of fair value less costs to sell, the resultant recoverable amount exceeds the carrying value of all assets by approximately ten per cent.

If the timing of reliable power supply is delayed, this could have an adverse impact upon the recoverable amount estimated to be up to US\$900 million based on the delay in commencing full production, eliminating the excess above carrying value and resulting in an estimated US\$200 million impairment to goodwill.

A five per cent decrease in the long-term copper price, in isolation, would lead to the fair value less costs to sell being equal to its carrying amount. An eight per cent increase in the discount rate, in isolation, would also lead to the fair value less costs to sell being equal to its carrying amount.

### **Rio Tinto Coal Mozambique (formerly Riversdale Mining Limited)**

The Group acquired a controlling interest in Riversdale Mining Limited on 8 April 2011. Goodwill of US\$530 million arose in accordance with the requirement in IFRS to recognise deferred tax liability on the difference between the provisional fair value of newly consolidated assets and liabilities and their tax base. The recognition of Rio Tinto Coal Mozambique's identifiable assets and liabilities in the statement of financial position was based on fair values at the acquisition date with the assistance of an independent third party valuer. These fair values are provisional and will be finalised within one year of the acquisition.

Refer to note 39 for further information relating to the consolidation of Rio Tinto Coal Mozambique.

### **Other**

Other goodwill includes US\$506 million (2010: US\$507 million) relating to Australian Iron Ore which comprises the business units located in the Pilbara region of Western Australia that mine iron ore, namely Robe River and Hamersley Iron. The recoverability of the Other goodwill has been assessed by reference to fair value less costs to sell using discounted cash flows, which is in line with the policy in note 1(i). The recoverable amounts were determined to be in excess of carrying value, and there are no reasonably possible changes in key assumptions that would cause the remaining goodwill to be impaired by a significant amount.

**Table of Contents****13 Intangible assets**

	Exploration and evaluation <sup>(a)</sup>	Trademarks, patented and non patented technology	Contract based intangible <sup>(b)</sup> assets	Other intangible assets	Total <sup>(d)</sup>
	US\$m	US\$m	US\$m	US\$m	US\$m
<b>Year ended 31 December 2011</b>					
<b>Net book value</b>					
At 1 January 2011	307	259	4,537	597	5,700
Adjustment on currency translation	14	(6)	(79)	(4)	(75)
Expenditure during the year	248			161	409
Amortisation for the year <sup>(c)</sup>		(24)	(123)	(167)	(314)
Impairment charges		(1)		(11)	(12)
Newly consolidated operations (note 39)	2,425				2,425
Disposals, transfers and other movements	(137)			(41)	(178)
At 31 December 2011	2,857	228	4,335	535	7,955
cost	2,857	361	5,436	1,106	9,760
accumulated amortisation and impairment		(133)	(1,101)	(571)	(1,805)

	Exploration <sup>(a)</sup> and evaluation	Trademarks, patented and non patented technology	Contract based intangible <sup>(b)</sup> assets	Other intangible assets	Total <sup>(d)</sup>
	US\$m	US\$m	US\$m	US\$m	US\$m
<b>Year ended 31 December 2010</b>					
<b>Net book value</b>					
At 1 January 2010	145	289	4,802	494	5,730
Adjustment on currency translation	25	(5)	(1)	52	71
Expenditure during the year	143			186	329
Amortisation for the year <sup>(c)</sup>		(25)	(167)	(177)	(369)
Subsidiaries now equity accounted				38	38
Subsidiaries no longer consolidated			(7)		(7)
Disposals, transfers and other movements	(6)		(90)	4	(92)
At 31 December 2010	307	259	4,537	597	5,700
cost	307	370	5,525	1,373	7,575
accumulated amortisation and amortisation		(111)	(988)	(776)	(1,875)

(a) Exploration and evaluation: useful life not determined until transferred to property, plant & equipment.

(b) The Group benefits from certain intangible assets acquired with Alcan including power supply contracts, customer contracts and water rights. The water rights are expected to contribute to the efficiency and cost effectiveness of operations for the foreseeable future; accordingly, these rights are considered to have indefinite lives and are not subject to amortisation. These water rights constitute the majority of the amounts in the column of the above table entitled 'Contract based intangible assets'. The water rights have been allocated to cash-generating units within aluminium.

In 2011, the recoverable amount of these cash-generating units was determined based on fair value less costs to sell, using a methodology and assumptions consistent with those described in note 1(i) and note 12. No impairment of these indefinite-lived intangible assets was recognised during 2011, as the fair value less costs to sell of the related cash-generating units was in excess of their carrying amounts.

(c) Finite life intangible assets are amortised over their useful economic lives on a straight line or units of production basis, as appropriate. Where amortisation is calculated on a straight line basis, the following useful lives have been determined:

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*Trademark, patented and non-patented technology*  
 Trademarks: 14 to 20 years  
 Patented and non-patented technology: 10 to 20 years

*Other intangible assets*  
 Internally generated intangible assets and computer software: 2 to 5 years  
 Other intangible assets: 2 to 20 years

*Contract based intangible assets*  
 Power contracts: 2 to 39 years Other purchase and customer contracts: 5 to 15 years

(d) There are no intangible assets either pledged as security or held under restriction of title.

### Exploration and evaluation expenditure

The charge for the year and the net amount of intangible assets capitalised during the year are as follows:

	2011	2010	2009
	US\$m	US\$m	US\$m
Net (expenditure)/proceeds in the year (net of proceeds of US\$52 million (2010: US\$568 million; 2009: US\$932 million) on disposal of undeveloped projects)	(1,604)	(135)	486
Changes in accruals (including impairment of undeveloped projects of US\$37 million (2010: nil; 2009: nil) and non-cash proceeds on disposal of undeveloped projects)	8	(80)	(104)
Amount capitalised during the year	248	143	(2)
Net (charge)/credit for the year	(1,348)	(72)	380
<b>Reconciliation to income statement</b>			
Exploration and evaluation costs	(1,437)	(594)	(514)
Profit on disposal of interests in undeveloped projects	89	522	894
Net (charge)/credit for the year	(1,348)	(72)	380

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Notes to the 2011 financial statements continued

**14 Property, plant and equipment**

	Mining properties <sup>(a)</sup> and leases	Land and buildings <sup>(b)</sup>	Plant and equipment US\$m	Capital works in progress US\$m	Total US\$m
<b>Year ended 31 December 2011</b>					
<b>Net book value</b>					
At 1 January 2011	14,029	6,299	28,615	7,081	56,024
Adjustment on currency translation	(96)	(88)	(354)	(189)	(727)
Capitalisation of additional closure costs (note 27)	2,835				2,835
Interest capitalised <sup>(c)</sup> (note 8)				493	493
Additions	178	114	981	10,652	11,925
Depreciation for the year <sup>(a)</sup> <sup>(d)</sup>	(672)	(321)	(2,510)		(3,503)
Impairment charges, net of reversals <sup>(e)</sup>	(142)	(91)	(956)	(568)	(1,757)
Disposals		(12)	(66)	(33)	(111)
Newly consolidated operations (note 39)			19		19
Subsidiaries no longer consolidated	(90)	(68)	(118)	(6)	(282)
Transfers and other movements <sup>(f)</sup>	433	302	1,521	(2,205)	51
At 31 December 2011	16,475	6,135	27,132	15,225	64,967
cost	22,186	9,327	48,080	16,558	96,151
accumulated depreciation and impairment	(5,711)	(3,192)	(20,948)	(1,333)	(31,184)
Non-current assets held under finance leases <sup>(g)</sup>		18	24		42
Other non-current assets pledged as security <sup>(h)</sup>	13	29	1,674	977	2,693

	Mining properties and leases <sup>(a)</sup>	Land and buildings <sup>(b)</sup>	Plant and equipment US\$m	Capital works in progress US\$m	Total US\$m
<b>Year ended 31 December 2010 Restated</b>					
<b>Net book value</b>					
At 1 January 2010	6,738	5,958	25,595	7,512	45,803
Adjustment on currency translation	785	214	1,810	541	3,350
Capitalisation of additional closure costs (note 27)	872				872
Interest capitalised <sup>(c)</sup> (note 8)				182	182
Additions	170	171	829	3,117	4,287
Depreciation for the year <sup>(a)</sup>	(432)	(320)	(2,316)		(3,068)
Impairment charges, net of reversals	66	(248)	(314)	(277)	(773)
Disposals		(17)	(77)	(6)	(100)
Newly consolidated operations (note 39)	4,881			874	5,755
Subsidiaries no longer consolidated	2	(18)	(11)	(1)	(28)
Transfers and other movements <sup>(f)</sup>	947	559	3,099	(4,861)	(256)
At 31 December 2010	14,029	6,299	28,615	7,081	56,024
cost	19,173	9,289	47,374	7,955	83,791
accumulated depreciation and impairment	(5,144)	(2,990)	(18,759)	(874)	(27,767)
Non-current assets held under finance leases <sup>(g)</sup>		19	33		52
Other non-current assets pledged as security <sup>(h)</sup>	4	15	1,742	37	1,798

(a) Mining properties include deferred stripping costs of US\$1,119 million (2010: US\$1,033 million). Amortisation of deferred stripping costs of US\$50 million (2010: US\$11 million; 2009: US\$3 million) is included within Depreciation for the year. Impairment of deferred stripping costs of US\$11 million is charged to the income statement in 2011 (2010: nil; 2009: US\$59 million).

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- (b) At 31 December 2011, the net statement of financial position amount for land and buildings includes freehold US\$6,004 million (2010: US\$6,037 million); long leasehold US\$75 million (2010: US\$217 million); and short leasehold US\$56 million (2010: US\$45 million).
- (c) Interest is capitalised at a rate based on the Group's cost of borrowing or at the rate on project specific debt, where applicable. The Group's average borrowing rate used for capitalisation of interest is 4.8 per cent (2010: 5.0 per cent; 2009: 4.2 per cent).
- (d) Assets within operations for which production is not expected to fluctuate significantly from one year to another or which have a physical life shorter than the related mine are depreciated on a straight line basis as follows:
- Land and Buildings*  
Land: Not depreciated
- Buildings: 5 to 50 years
- Plant and equipment*  
Other plant and equipment: 3 to 35 years
- Power assets: 25 to 100 years  
Capital work in progress: Not depreciated
- (e) During 2011 and 2010, impairment charges primarily relate to the impairment of Alcan. Refer to note 6 for further information.
- (f) Transfers and other movements includes reclassifications between categories.
- (g) The finance leases under which these assets are held are disclosed in note 24.
- (h) Excludes assets held under finance leases. Non-current assets pledged as security represent amounts pledged as collateral against US\$202 million (2010: US\$244 million) of loans, which are included in note 23.

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**15 Investments in equity accounted units**

	2011	2010
	US\$m	US\$m
<b>Summary statement of financial position (Rio Tinto share)</b>		
Rio Tinto's share of assets		
Non-current assets	11,598	10,089
Current assets	3,048	2,576
	<b>14,646</b>	12,665
Rio Tinto's share of liabilities		
Current liabilities	(2,084)	(1,394)
Non-current liabilities	(2,729)	(4,416)
	<b>(4,813)</b>	(5,810)
Rio Tinto's share of net assets <sup>(a)</sup>	<b>9,833</b>	6,855

(a) Further details of investments in jointly controlled entities and associates are set out in notes 36 and 37. Refer to note 39 on the 2011 acquisition of Riversdale Mining Limited, and additional interests in Ivanhoe Mines Ltd. purchased during the year.

At 31 December 2011, the quoted value of the Group's share in associates having shares listed on recognised stock exchanges was US\$6,412 million (2010: US\$5,280 million).

**16 Net debt of equity accounted units (excluding amounts due to Rio Tinto)**

	Rio Tinto share of		Rio Tinto share of	
	Group	net debt/	Group	net debt/
	interest	(funds)	interest	(funds)
	2011	2011	2010	2010
	%	US\$m	%	US\$m
<b>Jointly controlled entities</b>				
Sohar Aluminium Company LLC	20.0	393	20.0	330
Minera Escondida Limitada	30.0	142	30.0	163
Richards Bay Minerals	37.0	46	37.0	94
Halco Mining Inc.	45.0	20	45.0	27
Queensland Alumina Limited (QAL)	80.0	17	80.0	11
Constellium Holdco B.V	39.0	(22)		
<b>Associates</b>				
Ivanhoe Mines Ltd. <sup>(d)</sup>	49.0	(278)	40.3	(404)
Port Waratah Coal Services	29.2	362	27.6	305
Mineração Rio do Norte S.A.	12.0	25	12.0	39
Other equity accounted units		(156)		(86)
		<b>549</b>		479

(a) In accordance with IAS 28 and IAS 31, the Group includes its net investment in equity accounted units in its consolidated statement of financial position. This investment is net of the Group's share of the net debt of such units, which is set out above. Further details of investments in jointly controlled entities and associates are set out in notes 36 and 37.



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- (b) Some of the debt of equity accounted units is subject to financial and general covenants.
- (c) As at 31 December 2011, US\$15 million of the debt shown above is with recourse to Rio Tinto, with a maximum exposure of \$5m (2010: US\$12 million with maximum exposure of \$5m).
- (d) Ivanhoe Mines Ltd. owns 66 per cent of Oyu Tolgoi LLC, which is consolidated by Rio Tinto. Net debt of Ivanhoe Mines Ltd. excludes its share of the net debt of Oyu Tolgoi LLC. Refer to note 39 for further information relating to the consolidation of Oyu Tolgoi LLC.

### 17 Inventories

	2011 US\$m	2010 US\$m
Raw materials and purchased components	1,292	1,162
Consumable stores	1,385	1,279
Work in progress	1,814	1,357
Finished goods and goods for resale	1,197	1,333
	<b>5,688</b>	5,131
Comprising:		
Expected to be used within one year	5,307	4,756
Expected to be used after more than one year	381	375
	<b>5,688</b>	5,131

Inventory write downs, net of reversals, amounting to US\$184 million (2010: US\$115 million; 2009: US\$99 million) were recognised during the year.

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Notes to the 2011 financial statements continued

**18 Trade and other receivables**

	Non-current 2011	Current 2011	Non-current 2010	Current 2010
	US\$m	US\$m	US\$m	US\$m
Trade receivables	11	3,721	10	3,939
Provision for doubtful debts <sup>(a)</sup>		(35)		(37)
Trade receivables net	11	3,686	10	3,902
Amounts due from equity accounted units	318	422	337	217
Other receivables <sup>(b)</sup>	1,025	1,368	300	1,017
Pension surpluses (note 47)	88		110	
Prepayment of tolling charges to jointly controlled entities <sup>(c)</sup>	634		787	
Other prepayments	289	582	282	446
	<b>2,365</b>	<b>6,058</b>	1,826	5,582

(a) At 31 December 2011, trade and other receivables of US\$35 million (2010: US\$37 million) were impaired. The majority of these receivables were more than 90 days overdue.

(b) Non-current receivables include a US\$700 million prepayment for an intangible asset, following signing of the agreement for the Simandou iron ore project. The prepayment is shown as a purchase of intangible assets in the cash flow statement.

(c) Rio Tinto Aluminium has made certain prepayments to jointly controlled entities for toll processing of bauxite and alumina. These prepayments will be charged to Group operating costs as processing takes place.

There is no material element of trade and other receivables that is interest bearing.

Due to their short-term maturities, the fair value of trade and other receivables approximates their carrying value.

As of 31 December 2011, trade and other receivables of US\$159 million (2010: US\$292 million) were past due but not impaired. The ageing of these receivables is as follows:

	2011 US\$m	2010 US\$m
less than 30 days overdue	104	162
between 30 and 60 days overdue	29	67
between 60 and 90 days overdue	22	17
more than 90 days overdue	4	46
	<b>159</b>	292

These relate to a number of customers for whom there is no recent history of default or other indicators of impairment.

With respect to trade and other receivables that are neither impaired nor past due, there are no indications as of the reporting date that the debtors will not meet their payment obligations.

**19 Deferred taxation**

2011 US\$m	Restated 2010
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		US\$m
At 1 January	<b>3,359</b>	2,073
Adjustment on currency translation	<b>(13)</b>	340
Charged to the income statement	<b>308</b>	270
Credited to statement of comprehensive income <sup>(a)</sup>	<b>(511)</b>	(226)
Newly consolidated operations (note 39) <sup>(b)</sup>	<b>1,187</b>	881
Other movements <sup>(c)</sup>	<b>5</b>	21
At 31 December	<b>4,335</b>	3,359
Comprising:		
deferred tax liabilities <sup>(d)</sup>	<b>6,210</b>	5,222
deferred tax assets <sup>(d)</sup>	<b>(1,875)</b>	(1,863)

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Deferred tax balances for which there is a right of offset within the same jurisdiction are presented net on the face of the statement of financial position as permitted by IAS 12. The closing deferred tax liabilities and assets, prior to this offsetting of balances, are shown below.

	Restated
	Total
	2011
	US\$m
<b>Deferred tax liabilities arising from:</b>	
Accelerated capital allowances	8,424
Unremitted earnings	480
Unrealised exchange gains	681
Capitalised interest	457
Other temporary differences	844
	<b>10,886</b>
<b>Deferred tax assets arising from:</b>	
Capital allowances	(502)
Provisions	(2,057)
Post retirement benefits	(1,738)
Tax losses	(1,454)
Unrealised exchange losses	(241)
Other temporary differences	(559)
	<b>(6,551)</b>
<b>Charged/(credited) to the income statement</b>	
(Decelerated)/accelerated capital allowances	(172)
Provisions	(16)
Post retirement benefits	117
Tax losses	66
Tax on unremitted earnings	39
Unrealised exchange losses	299
Other temporary differences	(25)
	<b>308</b>

- (a) The amounts credited directly to the Statement of comprehensive income relate to tax relief on share options, provisions for tax on exchange differences on intragroup loans qualifying for reporting as part of the net investment in subsidiaries, on cash flow hedges and on actuarial gains and losses on pension schemes and post retirement healthcare plans.
- (b) Deferred tax relating to newly consolidated operations is principally due to deferred tax liabilities arising on the difference between the fair value and the tax base of the assets of Riversdale in 2011 and Oyu Tolgoi in 2010. Refer to note 39.
- (c) Other movements include deferred tax relating to tax payable recognised by subsidiary holding companies on the profits of the equity accounted units to which it relates. Other movements in 2010 also included amounts relating to the divestment of the Alcan Packaging businesses and Alcan Engineered Products, excluding Cable Division, classified as assets held for sale at year end.
- (d) The deferred tax liability of US\$6,210 million (2010: US\$5,222 million) includes US\$6,036 million (2010: US\$5,056 million) due in more than one year. The deferred tax asset of US\$1,875 million (2010: US\$1,863 million) includes US\$1,767 million (2010: US\$853 million) receivable in more than one year.
- (e) US\$1,959 million (2010: US\$1,217 million) of potential deferred tax assets have not been recognised as assets in these accounts. There is a time limit, the shortest of which is three years, for the recovery of US\$45 million of these potential assets (2010: US\$22 million). US\$595 million (2010: US\$449 million) of the potential assets relates to realised or unrealised capital losses, recovery of which depends on the existence of capital gains in future years. US\$797 million (2010: US\$467 million) of the potential assets relates to trading losses in France, which were acquired as part of the Alcan acquisition.

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(f) Deferred tax is not recognised on the unremitted earnings of subsidiaries and jointly controlled entities where the Group is able to control the timing of the remittance and it is probable that there will be no remittance in the foreseeable future. If these earnings were remitted, tax of US\$187 million (2010: US\$146 million) would be payable.

(g) There is a limited time period, the shortest of which is five years, for the recovery of US\$896 million (2010: US\$675 million) of tax losses and other tax assets which have been recognised as deferred tax assets in the financial statements.

### **20 Assets and liabilities held for sale**

At 31 December 2011 assets and liabilities held for sale comprise Zululand Anthracite Colliery, which was acquired with Riversdale Mining Limited.

At 31 December 2010 assets and liabilities held for sale comprise Alcan's Engineered Products group (AEP), excluding the Cable Division, following the receipt on 5 August 2010 of a binding offer from funds affiliated with Apollo Global Management, LLC (Apollo) and the Fonds Stratégique d'Investissement (FSI) to buy a 61 per cent stake in AEP, excluding the Cable Division. The divestment was completed on 4 January 2011.

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### Notes to the 2011 financial statements continued

## 21 Other financial assets

	Non-current			Restated		Restated Total 2010 US\$m
	2011 US\$m	Current 2011 US\$m	Total 2011 US\$m	Non-current 2010 US\$m	Current 2010 US\$m	
Loans to EAUs	468	121	589	227	110	337
Currency and commodity contracts: designated as hedges	11	75	86			
Derivatives and embedded derivatives not related to net debt:						
not designated as hedges	5	40	45	19	124	143
Derivatives related to net debt	342	5	347	137	6	143
Equity shares and quoted funds	549	153	702	585	365	950
Other investments, including loans	547	191	738	629	26	655
	1,922	585	2,507	1,597	631	2,228

Detailed information relating to other financial assets is given in note 32.

## 22 Cash and cash equivalents

	Note	2011 US\$m	2010 US\$m
Cash at bank and in hand		2,167	1,785
Other short term deposits		7,503	8,163
<b>Balance per Group statement of financial position</b>		<b>9,670</b>	<b>9,948</b>
Bank overdrafts repayable on demand (unsecured)	23	(16)	(7)
Cash and cash equivalents included in Assets held for sale			18
<b>Balance per Group cash flow statement</b>		<b>9,654</b>	<b>9,959</b>

Cash and cash equivalents include US\$305 million (2010: US\$398 million) for which there are restrictions on remittances.

## 23 Borrowings and other financial liabilities

	Note	Non-current			Restated	
		2011 US\$m	Current 2011 US\$m	Total 2011 US\$m	Non-current 2010 US\$m	Current 2010 US\$m
<b>Borrowings at 31 December</b>						
Finance leases	24	34	35	69	70	82
Rio Tinto Finance (USA) Limited Bonds 7.125% 2013 (a) (b)		100		100	98	98
Rio Tinto Finance (USA) Limited Bonds 5.875% 2013 (a) (b)		610		610	621	621
Rio Tinto Finance (USA) Limited Bonds 8.95% 2014 (a) (b)		1,957		1,957	1,922	1,922
Rio Tinto Finance (USA) Limited Bonds 1.875% 2015		500		500	500	500
Rio Tinto Finance (USA) Limited Bonds 2.5% 2016		695		695		
Rio Tinto Finance (USA) Limited Bonds 2.25% 2016		496		496		
Rio Tinto Finance (USA) Limited Bonds 6.5% 2018 (a) (b)		2,066		2,066	1,953	1,953
Rio Tinto Finance (USA) Limited Bonds 9.0% 2019 (a) (b)		1,451		1,451	1,446	1,446
Rio Tinto Finance (USA) Limited Bonds 3.5% 2020		993		993	992	992
Rio Tinto Finance (USA) Limited Bonds 4.125% 2021		996		996		

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Rio Tinto Finance (USA) Limited Bonds 3.75% 2021	1,143		1,143			
Rio Tinto Finance (USA) Limited Bonds 7.125% 2028 <sup>(a) (b)</sup>	1,048		1,048	906		906
Rio Tinto Finance (USA) Limited Bonds 5.2% 2040	1,147		1,147	500		500
Alcan Inc. Debentures 6.45% due 2011 <sup>(b)</sup>					401	401
Alcan Inc. Global Notes 4.875% due 2012 <sup>(a) (b)</sup>		498	498	496		496
Alcan Inc. Global Notes 4.50% due 2013 <sup>(a) (b)</sup>	489		489	486		486
Alcan Inc. Global Notes 5.20% due 2014 <sup>(a) (b)</sup>	488		488	487		487
Alcan Inc. Global Notes 5.00% due 2015 <sup>(a) (b)</sup>	475		475	470		470
Alcan Inc. Debentures 7.25% due 2028	107		107	108		108
Alcan Inc. Debentures 7.25% due 2031	433		433	436		436
Alcan Inc. Global Notes 6.125% due 2033	737		737	738		738
Alcan Inc. Global Notes 5.75% due 2035	282		282	282		282
Colowyo Coal Company L.P. Bonds 9.56% 2011					12	12
Colowyo Coal Company L.P. Bonds 10.19% 2016				35		35
Loans from equity accounted units <sup>(e)</sup>	3,171	301	3,472	14	1,351	1,365
Other secured loans	388	64	452	347	41	388
Other unsecured loans	379	349	728	370	327	697
Bank overdrafts		16	16		7	7
<b>Total borrowings including overdrafts</b>	<b>20,185</b>	<b>1,263</b>	<b>21,448</b>	13,277	2,151	15,428

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**Other financial liabilities**

	Non-current 2011	Current 2011	Total 2011	Non-current 2010	Restated Current 2010	Total 2010
	US\$m	US\$m	US\$m	US\$m	US\$m	US\$m
Forward commodity contracts: designated as hedges	92	118	210	262	159	421
Derivatives related to net debt	1	1	2	34		34
Other derivatives and embedded derivatives: not designated as hedges	22	65	87	63	106	169
Other financial liabilities	57		57	57		57
<b>Total other financial liabilities</b>	<b>172</b>	<b>184</b>	<b>356</b>	<b>416</b>	<b>265</b>	<b>681</b>
<b>Total borrowings and other financial liabilities</b>	<b>20,357</b>	<b>1,447</b>	<b>21,804</b>	<b>13,693</b>	<b>2,416</b>	<b>16,109</b>

Detailed information relating to other financial liabilities is given in note 32.

- (a) As at 31 December 2011, US\$6.1 billion notional of the fixed rate borrowings were fully swapped to floating rates and US\$0.3 billion notional of the Rio Tinto Finance (USA) Limited 9.0% due 2019 was swapped for the first two years to floating rates. Fair value hedge accounting has been applied to the entire amounts borrowed except for US\$500 million of the Alcan Inc. Global Notes 4.875% due 2012, US\$87 million of the Rio Tinto Finance (USA) Limited Bonds 5.875% due 2013, US\$250 million of the Rio Tinto Finance (USA) Limited Bonds 8.95% due 2014, US\$750 million of the Rio Tinto Finance (USA) Limited Bonds 6.5% due 2018, US\$75 million of the Rio Tinto Finance (USA) Limited Bonds 7.125% 2028 and the Rio Tinto Finance (USA) Limited 9.0% due 2019. The fair value of interest rate swap assets and liabilities at 31 December 2011 was US\$347 million and US\$2 million, respectively. These are included in other financial assets and other financial liabilities in the statement of financial position. Details of the major interest rate swaps are shown in note 32 B (c).
- (b) As at 31 December 2010, US\$7.6 billion notional of the fixed rate borrowings were fully swapped to floating rates and US\$0.3 billion notional of the Rio Tinto Finance (USA) Limited 9.0% due 2019 was swapped for the first two years to floating rates. Fair value hedge accounting has been applied to all borrowings except for Alcan Inc. Debentures 6.45 per cent due 2011 and Alcan Inc. Global Notes 4.875 per cent due 2012. The fair value of interest rate swap assets and liabilities at 31 December 2010 was US\$143 million and US\$34 million, respectively. These are included in other financial assets and other financial liabilities in the statement of financial position. Details of the major interest rate swaps are shown in note 32 B (c).
- (c) Rio Tinto has a US\$10 billion (2010: US\$10 billion) European Medium Term Note (EMTN) programme for the issuance of debt, of which nil was outstanding at 31 December 2011 (2010: nil).
- (d) The Group's borrowings of US\$21.4 billion (2010: US\$15.4 billion) include some US\$7.0 billion (2010: US\$6.0 billion) which relates to borrowings of subsidiaries that are without recourse to the Group, some of which are subject to various financial and general covenants with which the respective borrowers were in compliance as at 31 December 2011 and 31 December 2010.
- (e) US\$3.4 billion (2010: US\$1.0 billion) of loans from equity accounted units consist of unsecured loans which incur interest at a rate of LIBOR plus 6.5% from February 2011 (9.9% in prior periods), are denominated in US dollars and are repayable out of future profits.

**24 Capitalised finance leases**

	Note	2011 US\$m	2010 US\$m
<b>Present value of minimum lease payments</b>			
Total minimum lease payments		70	89
Effect of discounting		(1)	(7)
	14	69	82
<b>Payments under capitalised finance leases</b>			
Due within one year		35	12
Between 1 and 3 years		15	21
Between 3 and 5 years		10	12
More than 5 years		9	37



**25 Consolidated net debt**

	2011 US\$m	Restated 2010 US\$m
<b>Analysis of changes in consolidated net debt</b>		
Opening balance	(4,071)	(18,861)
Adjustment on currency translation	(39)	(1,269)
Exchange (losses)/gains (charged)/credited to the income statement <sup>(a)</sup>	(85)	1,130
Cash movements excluding exchange movements	(4,498)	15,244
Other movements	242	(315)
<b>Closing balance</b>	<b>(8,451)</b>	<b>(4,071)</b>
Total borrowings in statement of financial position	(21,448)	(15,428)
Derivatives related to net debt (note 32)	345	109
EAU funded balances excluded from net debt	2,982	1,300
<b>Adjusted total borrowings</b>	<b>(18,121)</b>	<b>(14,019)</b>
Cash and cash equivalents (note 22)	9,670	9,948
<b>Consolidated net debt</b>	<b>(8,451)</b>	<b>(4,071)</b>

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**25 Consolidated net debt continued**

	2011 US\$m	2010 US\$m	2009 US\$m
<b>Exchange gains/(losses) on US dollar net debt and intragroup balances excluded from Underlying earnings</b>			
Exchange (losses)/gains on US dollar net debt	(175)	1,119	2,211
Exchange gains/(losses) on intragroup balances	36	(589)	(1,912)
Exchange gains on loans from equity accounted units	1	20	36
Exchange (losses)/gains on settlement of dividend	(16)	(21)	30
<b>(Charged)/credited to income statement</b>	<b>(154)</b>	<b>529</b>	<b>365</b>

(a) Exchange gains taken to the income statement include amounts taken to Underlying earnings. Further information relating to the currency and interest rate exposures arising from net debt and related derivatives is given in note 32 B(c) on Financial Instruments.

The Group updated its definition of net debt in 2011, such that it is stated net of the impact of certain funding arrangements relating to Equity Accounted Units (EAUs) and partially owned subsidiaries ( EAU funded balances ). This modification is required in order to avoid showing liabilities twice in the net debt disclosure, where funding has been provided to an EAU by the Group and subsequently on lent by the EAU to a consolidated Group subsidiary. Total borrowings have been similarly adjusted to present adjusted total borrowings. Comparative figures have been adjusted accordingly.

Syndicated bank loans related to revolving credit facilities arranged for the acquisition of Alcan Inc. in 2007 were all fully repaid and cancelled at 31 December 2010.

**26 Trade and other payables**

	Non-current 2011	Current 2011	Non-current 2010	Restated Current 2010
	US\$m	US\$m	US\$m	US\$m
Trade payables		3,288		2,076
Amounts owed to equity accounted units	346	243	505	222
Other payables (a)	107	1,852	138	851
Employee entitlements		766		681
Royalties and mining taxes		653		594
Accruals and deferred income	126	2,572	109	2,097
Government grants deferred	140	7	127	49
	<b>719</b>	<b>9,381</b>	<b>879</b>	<b>6,570</b>

(a) Other payables include deferred consideration of US\$94 million (2010: US\$108 million) relating to certain assets acquired. All other accounts payable and accruals are non interest bearing. Due to their short-term maturities, the fair value of trade and other payables approximates their carrying value.

**27 Provisions (not including taxation)**

Pensions	Other employee entitlements <sup>(b)</sup>	Close	Other US\$m	Total 2011 US\$m	Restated Total 2010 US\$m

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	and post retirement healthcare(a)	US\$m	down and restoration/ environmental <sup>(c)(d)</sup>			
	US\$m		US\$m			
At 1 January	4,472	866	8,607	539	<b>14,484</b>	13,694
Adjustment on currency translation	(77)	(6)	(147)	(6)	<b>(236)</b>	461
Amounts capitalised			2,022		<b>2,022</b>	686
Change in discount rate			909		<b>909</b>	233
Subsidiaries no longer consolidated	(21)	(22)	(82)		<b>(125)</b>	
Charged/(credited) to profit:						
new provisions		209	30	46	<b>285</b>	229
increases to existing provisions	320	97	163	75	<b>655</b>	610
unused amounts reversed		(38)	(34)	(10)	<b>(82)</b>	(76)
exchange (gains)/losses on provisions			7		<b>7</b>	97
amortisation of discount		1	364		<b>365</b>	299
Utilised in year	(678)	(245)	(202)	(180)	<b>(1,305)</b>	(1,617)
Actuarial losses recognised in equity	1,924	1			<b>1,925</b>	860
Transfers from/(to) assets held for sale				128	<b>128</b>	(829)
Transfers and other movements	15	8	17	85	<b>125</b>	(163)
<b>At 31 December</b>	<b>5,955</b>	<b>871</b>	<b>11,654</b>	<b>677</b>	<b>19,157</b>	<b>14,484</b>
<b>Statement of financial position analysis:</b>						
Current	131	550	392	414	<b>1,487</b>	1,117
Non-current	5,824	321	11,262	263	<b>17,670</b>	13,367
<b>Total</b>	<b>5,955</b>	<b>871</b>	<b>11,654</b>	<b>677</b>	<b>19,157</b>	<b>14,484</b>

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- (a) The main assumptions used to determine the provision for pensions and post retirement healthcare, and other information, including the expected level of future funding payments in respect of those arrangements, are given in note 47.
- (b) The provision for other employee entitlements includes a provision for long service leave of US\$313 million (2010: US\$267 million), based on the relevant entitlements in certain Group operations and includes US\$71 million (2010: US\$132 million) of provision for redundancy and severance payments. On 1 July 2010, the Performance Share Plan (formerly the Mining Companies Comparative Plan) was redesignated from cash settled to equity settled due to a change in settlement terms. This resulted in a provision balance of US\$57 million being reclassified to reserves, refer to note 30. Further details of the plans treatment are provided in note 46.
- (c) The Group's policy on close down and restoration costs is described in note 1(k). Close down and restoration costs are a normal consequence of mining, and the majority of close down and restoration expenditure is incurred at the end of the relevant operation. Remaining lives of mines and infrastructure range from one to over 50 years with an average, weighted by closure provision, of around 19 years (2010: 21 years). Although the ultimate cost to be incurred is uncertain, the Group's businesses estimate their respective costs based on feasibility and engineering studies using current restoration standards and techniques. Provisions of US\$11,654 million (2010: US\$8,607 million) for close down and restoration costs and environmental clean up obligations include estimates of the effect of future inflation and have been adjusted to reflect risk. These estimates have been discounted to their present value at an average nominal rate of approximately four per cent per annum, based on an estimate of the long term, risk free, pre-tax cost of borrowing. Excluding the effects of future inflation, and before discounting, this provision is equivalent to some US\$21.1 billion (2010: US\$12.3 billion).
- (d) Some US\$327 million (2010: US\$687 million) of environmental clean up expenditure is expected to take place within the next five years. The remainder includes amounts for the operation and maintenance of remediation facilities in later years.

**28 Share capital Rio Tinto plc**

	2011 Number (million)	2010 Number (million)	2009 Number (million)	2011 US\$m	2010 US\$m	2009 US\$m
<b>Issued and fully paid up share capital</b>						
At 1 January	1,529.004	1,529.004	1,004.103	246	246	160
Ordinary shares issued (a) (c)			524.901			86
Own shares purchased and cancelled (b)	(75.604)			(12)		
At 31 December	1,453.400	1,529.004	1,529.004	234	246	246
<b>Shares held by public</b>						
At 1 January	1,526.305	1,523.969	998.193			
Ordinary shares issued (a) (c)			524.901			
Shares reissued from treasury (b)	0.875	2.336	0.875			
Shares purchased and cancelled	(75.604)					
Shares purchased and held in treasury	(13.234)					
Shares purchased and awaiting cancellation (b)	(1.800)					
At 31 December	1,436.542	1,526.305	1,523.969			
Shares repurchased and held in treasury (b)	15.058	2.699	5.035			
Shares repurchased and awaiting cancellation (b)	1.800					
Shares held by public	1,436.542	1,526.305	1,523.969			
<b>Total share capital</b>	1,453.400	1,529.004	1,529.004			
<b>Other share classes</b>						
Special Voting Share of 10p (d)	1 only	1 only	1 only			
DLC Dividend Share of 10p (d)	1 only	1 only	1 only			
Equalisation Share of 10p (d)	1 only	1 only	1 only			

(a) No new ordinary shares were issued in 2011. 875,057 ordinary shares were reissued from treasury during the year resulting from the exercise of options under Rio Tinto plc employee share based payment plans, with exercise prices between £10.43 and £47.12 per share (2010: no new ordinary shares issued, and 2,336,005 shares reissued from treasury with exercise prices between £7.98 and £40.07 per share; 2009: 440,018 shares issued, and 874,925 shares reissued from treasury with exercise prices between £7.98 and £29.38 per share). 524,460,478 new ordinary shares were issued in July 2009 as a result of the Rio Tinto plc rights issue.

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(b) The authority for the Company to buy back its ordinary shares was renewed at the 2011 annual general meeting. No shares were bought back and held in treasury from 2008 to 2010. From February to April 2011, 14,371,550 shares were bought back and held in treasury of which 1,137,550 were cancelled. From April to December 2011 76,266,945 shares were bought back of which 74,466,945 were cancelled in 2011 and 1,800,000 were cancelled in January 2012.

(c) The aggregate consideration received for treasury shares reissued was US\$48 million (2010: US\$92 million; 2009: US\$3 million). No new shares were issued as a result of the exercise of options under Rio Tinto plc employee share based payment plans in 2011 and 2010. The aggregate consideration for new shares issued resulting from the exercise of options under Rio Tinto plc employee share based payment plans was US\$32 million in 2009.

The aggregate gross consideration received for new shares issued arising from the rights issue during 2009 was US\$12.0 billion. The difference between the nominal value and issue price of the shares issued was credited to merger reserve and expenses associated with the rights issue were charged against the share premium account.

(d) The Special Voting Share was issued to facilitate the joint voting by shareholders of Rio Tinto plc and Rio Tinto Limited on Joint Decisions, following the DLC merger. Directors have the ability to issue an Equalisation Share if that is required under the terms of the DLC Merger Sharing Agreement. The DLC Dividend Share was issued to facilitate the efficient management of funds within the DLC structure. During 2011, US\$86 million of shares (2010: US\$39 million of shares; 2009: US\$17 million of shares) were purchased by the Employee Share Ownership Trust on behalf of Rio Tinto plc to satisfy future share options and awards as they vest.

Information relating to share options and other share based incentive schemes is given in note 46 on share based payments.

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## Notes to the 2011 financial statements continued

**29 Share capital Rio Tinto Limited**

	2011 Number (million)	2010 Number (million)	2009 Number (million)	2011 US\$m	2010 US\$m	2009 US\$m
<b>Issued and fully paid up share capital</b>						
At 1 January	435.76	435.76	285.75	5,601	4,924	961
Adjustment on currency translation				(19)	677	710
Ordinary shares issued <sup>(a)</sup>			150.01			3,253
At 31 December	435.76	435.76	435.76	5,582	5,601	4,924
Share capital held by Rio Tinto plc <sup>(b)</sup>			171.07			
Special Voting Share of 10 <sup>(b)</sup>	1 only	1 only	1 only			
DLC Dividend Share of 10 <sup>(b)</sup>	1 only	1 only	1 only			
<b>Total share capital <sup>(b)</sup></b>	<b>435.76</b>	<b>435.76</b>	<b>606.83</b>			

(a) No new ordinary shares were issued during 2011 and 2010. 150,015,297 ordinary shares were issued during 2009 as a result of the Rio Tinto Limited rights issue. The aggregate gross consideration received for new shares issued during 2009 was US\$3.2 billion.

(b) The Special Voting Share was issued to facilitate the joint voting by shareholders of Rio Tinto Limited and Rio Tinto plc on Joint Decisions following the DLC merger. Directors have the ability to issue an Equalisation Share if that is required under the terms of the DLC Merger Sharing Agreement. The DLC Dividend Share was issued to facilitate the efficient management of funds within the DLC structure.

No shares were bought back during 2011. During the year ended 31 December 2010, Rio Tinto Limited purchased and cancelled 171,072,520 ordinary shares off-market, which were held by Tinto Holdings Australia Pty Limited (a wholly owned subsidiary of Rio Tinto plc). The selective buyback and cancellation were approved by shareholders at the 2010 Rio Tinto Limited annual general meeting. As a result of these transactions, no ordinary shares in Rio Tinto Limited were held by the above subsidiary of Rio Tinto plc at 31 December 2011 (31 December 2010: nil). No shares were bought back during 2009.

Share options exercised during the year to 31 December 2011 under various Rio Tinto Limited employee share option schemes were satisfied by the on-market purchase of Rio Tinto Limited shares by a third party on the Group's behalf.

Information relating to share options and other share based incentive schemes is given in note 46 on share based payments.

**Table of Contents****30 Other reserves and retained earnings**

	2011 US\$m	Restated 2010 US\$m	2009 US\$m
<b>Capital redemption reserve <sup>(a)</sup></b>			
At 1 January	12	12	12
Own shares purchased and cancelled	12		
At 31 December	24	12	12
<b>Hedging reserves <sup>(b)</sup></b>			
At 1 January	(155)	(128)	14
Parent and subsidiaries net cash flow hedge fair value gains/(losses)	84	(72)	(206)
Parent and subsidiaries net cash flow hedge losses transferred to the income statement	81	47	16
Net movement on equity accounted units cash flow hedges	2	(1)	
Cash flow hedge gains reclassified on disposal			(4)
Tax on the above	(56)	(1)	52
At 31 December	(44)	(155)	(128)
<b>Available for sale revaluation reserves <sup>(c)</sup></b>			
At 1 January	427	247	(107)
(Losses)/gains on available for sale securities	(238)	213	357
Gains on available for sale securities transferred to the income statement	(19)	(10)	(3)
Tax on the above	23	(23)	
At 31 December	193	427	247
<b>Other reserves <sup>(d)</sup></b>			
At 1 January	11,785	11,776	(169)
Own shares purchased from Rio Tinto Limited shareholders to satisfy share options	(71)	(84)	(35)
Employee share options: value of services	71	48	30
Merger reserve arising from Rio Tinto plc's rights issue <sup>(d)</sup>			11,936
Deferred tax on share options	(20)	21	14
Cash settled share options reclassified as equity settled		24	
At 31 December	11,765	11,785	11,776
<b>Foreign currency translation reserve <sup>(e)</sup></b>			
At 1 January	3,574	2,103	(2,072)
Parent and subsidiaries currency translation and exchange adjustments	(891)	1,230	3,732
Equity accounted units currency translation adjustments	54	208	456
Currency translation reclassified on disposal	46	6	(13)
Tax on the above	10	27	
At 31 December	2,793	3,574	2,103
<b>Total other reserves per statement of financial position</b>	<b>14,731</b>	<b>15,643</b>	<b>14,010</b>





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## Notes to the 2011 financial statements continued

**30 Other reserves and retained earnings continued**

	2011 US\$m	2010 US\$m	2009 US\$m
<b>Retained earnings</b> <sup>(f)</sup>			
At 1 January	32,499	20,477	17,134
Parent and subsidiaries profit for the year	5,720	14,229	4,497
Equity accounted units retained profit for the year	106	9	375
Actuarial losses <sup>(g)</sup>	(1,911)	(769)	(973)
Tax relating to components of other comprehensive income	513	236	269
Total comprehensive income for the year	4,428	13,705	4,168
Share buyback scheme	(6,210)		
Dividends paid	(2,236)	(1,754)	(876)
Change in equity interest held by Rio Tinto	(793)		
Own shares purchased/treasury shares reissued for share options and other items <sup>(h)</sup>	10	(31)	(14)
Employee share options and other IFRS 2 charges taken to the income statement <sup>(i)</sup>	86	69	65
Cash settled share options reclassified as equity settled		33	
At 31 December	27,784	32,499	20,477

(a) The capital redemption reserve was set up to comply with section 170 of the Companies Act 1985, when shares of a company are redeemed or purchased wholly out of the company's profits. The amount at 31 December 2011 reflects the amount by which the Company's issued share capital is diminished in accordance with section 733 of the Companies Act 2006.

(b) The hedging reserve records gains or losses on cash flow hedges that are recognised initially in equity, as described in note 1(p.iii).

(c) The available for sale revaluation reserves record fair value gains or losses relating to available for sale securities, as described in note 1(p.i).

(d) Other reserves record the cumulative amount recognised under IFRS 2 in respect of options granted but not exercised to acquire shares in Rio Tinto Limited, less, where applicable, the cost of shares purchased to satisfy share options exercised. The cumulative amount recognised under IFRS 2 in respect of options granted but not exercised to acquire shares in Rio Tinto plc is recorded in retained earnings.

Other reserves includes US\$11,936 million which represents the difference between the nominal value and issue price of the shares issued arising from Rio Tinto plc's rights issue completed in July 2009. No share premium was recorded in the Rio Tinto plc financial statements through the operation of the merger relief provisions of the Companies Act 1985.

(e) Exchange differences arising on the translation of the Group's net investment in foreign controlled companies are taken to the foreign currency translation reserve, as described in note 1(d). The cumulative differences relating to an investment are transferred to the income statement when the investment is disposed of.

(f) Retained profit and movements in reserves of subsidiaries include those arising from the Group's share of proportionally consolidated units.

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- (g) This includes actuarial losses relating to equity accounted units of US\$5 million (2010: US\$4 million; 2009: US\$126 million).
- (h) For 2011 this is stated net of a US\$95 million reclassification between share premium and retained earnings, relating to the weighted average cost of shares held, that was applied to the rate of shares in Rio Tinto plc to Rio Tinto Limited, and for the satisfaction of share options, in prior periods.
- (i) The movement during 2009 included IFRS 2 charges arising from a Broad Based Black Economic Empowerment (BBBEE) transaction. The discount to fair value arising from this transaction was treated as a share based payment in accordance with IFRIC 8 Scope of IFRS 2 (Share based Payments) and AC 503 Accounting for BEE Transactions.

### **31 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.

Generally, the Group only sells commodities it has produced but also enters into third party direct transactions and physical swaps on Alumina to balance the regional positions and to balance the loading on production facilities. In the long term, natural hedges operate in a number of ways to help protect and stabilise earnings and cash flow.

The Group has a diverse portfolio of commodities and operates in a number of markets, which have varying responses to the economic cycle. The relationship between commodity prices and the currencies of most of the countries in which the Group operates provides further natural protection in the long term. Production of minerals is an important contributor to the Gross Domestic Products of Australia and Canada, countries in which the Group has a large presence. As a consequence, the Australian and Canadian currencies have historically tended to strengthen when commodity prices are high. In addition, US dollar floating rates have historically also tended to be high when commodity prices are high, and vice versa, and hence the Group's interest rate policy is to generally borrow and invest, after the impact of hedging, at floating interest rates. However, in some circumstances, the Group reserves the right to maintain a higher proportion of fixed rate funding. These natural hedges significantly reduce the necessity for using derivatives or other forms of synthetic hedging. Such hedging is therefore undertaken to a strictly limited degree, as described below.

Treasury operates as a service to the business of the Rio Tinto Group and not as a profit centre. Strict limits on the size and type of transaction permitted are laid down by the Rio Tinto board and are subject to rigorous internal controls. Senior management is advised of corporate cash and debt positions, as well as commodity and interest rate derivatives through a monthly reporting framework.

Rio Tinto does not acquire or issue derivative financial instruments for trading or speculative purposes; nor does it believe that it has material exposure to such trading or speculative holdings through its investments in joint ventures and associates. Derivatives are used to separate funding and cash management decisions from currency exposure and interest rate management. The Group held financial assets of US\$20.1 billion at 31 December 2011 mainly consisting of cash and cash equivalents, trade and other receivables and loans to equity accounted units. The credit risk associated with these balances is discussed below.

Derivative contracts are carried at fair value based on published quotations for the period for which a liquid active market exists. Beyond this period, Rio Tinto's own valuations are used.

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**(i) Foreign exchange risk**

Rio Tinto's shareholders' equity, earnings and cash flows are influenced by a wide variety of currencies due to the geographic diversity of the Group's sales, expenditure and the countries in which it operates. The US dollar, however, is the currency in which the majority of the Group's sales are denominated. Operating costs are influenced by the currencies of those countries where the Group's mines and processing plants are located and also by those currencies in which the costs of imported equipment and services are determined. The Australian and Canadian dollars are the most important currencies (apart from the US dollar) influencing costs. In any particular year, currency fluctuations may have a significant impact on Rio Tinto's financial results. A strengthening of the US dollar against the currencies in which the Group's costs are partly determined has a positive effect on Rio Tinto's Underlying earnings.

Given the dominant role of the US currency in the Group's affairs, the US dollar is the currency in which financial results are presented both internally and externally. It is also the most appropriate currency for financing the Group's operations. Borrowings and cash are predominantly denominated in US dollars, either directly or through the use of derivatives.

Certain US dollar debt and other financial assets and liabilities, including intragroup balances, are not held in the functional currency of the relevant subsidiary. This results in an accounting exposure to exchange gains and losses as the financial assets and liabilities are translated into the functional currency of the subsidiary that accounts for those assets and liabilities. These exchange gains and losses are recorded in the Group's income statement except to the extent that they can be taken to equity under the Group's accounting policy which is explained in note 1(d). Exchange gains and losses on US dollar net debt and intragroup balances are excluded from Underlying earnings. Other exchange gains and losses are included in Underlying earnings.

See section B(c) of note 32 – Financial instruments for the details of currency and interest rate contracts relating to borrowings.

After taking into account relevant swap instruments, almost all of the Group's net debt is either denominated in US dollars or in the functional currency of the entity holding the debt. The table below summarises the net debt by currency.

	2011 US\$m	Restated 2010 US\$m
Net (debt)/funds by currency		
United States dollar	(8,701)	(3,969)
Australian dollar	(124)	(201)
South African rand	104	62
UK sterling	322	24
Euro	(133)	(9)
Canadian dollar	(81)	(123)
Other	162	145
<b>Total</b>	<b>(8,451)</b>	<b>(4,071)</b>
<b>Currency hedging</b>		

Under normal market conditions, the Group does not generally believe that active currency hedging of transactions would provide long-term benefits to shareholders. The Group reviews its exposure on a regular basis and reserves the right to enter into hedges to maintain financial stability. Currency protection measures may be deemed appropriate in specific commercial circumstances and are subject to strict limits laid down by the Rio Tinto board, typically hedging of capital expenditures and other significant financial items such as acquisitions, disposals, tax and dividends. The Group held a legacy of currency forward contracts used to hedge operating cash flow exposures acquired with the North companies which expired in 2010. Refer to section B ((a) to (c)) of note 32 – Financial instruments for the currency forward and option contracts used to manage the currency risk exposures of the Group at 31 December 2011.



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## Notes to the 2011 financial statements continued

**31 Financial risk management continued****Foreign exchange sensitivity: Risks associated with exposure to financial instruments**

The sensitivities below give the estimated effect of a ten per cent weakening in the full year closing exchange rate of significant currencies against the US dollar on the value of financial instruments. The impact is expressed in terms of the effect on: net earnings, Underlying earnings and equity, assuming that each exchange rate moves in isolation. The sensitivities are based on financial assets and liabilities held at 31 December 2011, where balances are not denominated in the functional currency of the subsidiary and exclude financial assets and liabilities held by equity accounted units. They also exclude exchange movements on local currency deferred tax balances and provisions. These balances will not remain constant throughout 2012, and therefore the sensitivities should be used with care.

**At 31 December 2011****Gains/(losses) associated with a 10% weakening of the currency**

	Closing exchange rate	Effect on net earnings US\$m	Of which amount impacting Underlying earnings US\$m	Impact directly on equity US\$m
Currency Exposure	US cents			
Australian dollar	101	(536)	78	(1)
Canadian dollar <sup>(a)</sup>	98	(1,190)	41	
South African rand	12	(4)	(5)	
Euro	130	239	(22)	(1)
New Zealand dollar	77	52	4	
At 31 December 2010				

**Gains/(losses) associated with a 10% weakening of the currency**

	Closing exchange rate	Effect on net earnings US\$m	Of which amount impacting Underlying earnings US\$m	Impact directly on equity US\$m
Currency Exposure	US cents			
Australian dollar	102	209	75	2
Canadian dollar	100	35	56	
South African rand	15	(5)		8
Euro	133	276	2	
New Zealand dollar	77	19	3	

(a) As reported in note 1, effective 1 January 2011, Rio Tinto Alcan entities changed from US functional currency to local functional currency for accounting purposes. The US dollar denominated external and intragroup debt held in Canada creates a currency exposure.

**(ii) Interest rate risk**

Interest rate risk refers to the risk that the value of a financial instrument or cash flows associated with the instruments will fluctuate due to changes in market interest rates. Rio Tinto's interest rate management policy is generally to borrow and invest at floating interest rates. This approach is based on historical correlation between interest rates and commodity prices. In some circumstances, a higher proportion of fixed rate funding may be considered appropriate. As noted above, Rio Tinto hedges its interest rate and currency risk by entering into interest rate and currency derivatives to achieve its policies. The market value of such

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instruments moves in alignment with the market and at times can act as an alternative source of funding. The Group reviews the positions on a regular basis and may act to monetise in-the-money instruments either to take advantage of favourable market conditions or manage counterparty credit risk. During 2011 the Group closed out interest rate swaps with a notional principal of US\$1,325 million giving rise to a net cash inflow of US\$96 million (including accrued interest of US\$15 million). The interest rate swaps were in fair value hedge relationships prior to close out. See section B (c) of note 32 Financial instruments for the details of currency and interest rate contracts relating to borrowings. At the end of 2011, US\$10.8 billion (2010: US\$5.8 billion) of the Group's adjusted total borrowings (see note 25) was at fixed rates after taking into account interest rate swaps, resulting in a fixed to floating debt ratio of 60 per cent fixed to 40 per cent floating (2010: 41 per cent fixed to 59 per cent floating). On a net debt basis, the fixed to floating debt ratio was 128 per cent fixed to (28) per cent floating (2010: 142 per cent fixed to (42) per cent floating). The net debt ratio at the end of 2011 and 2010 reflects the high level of cash, cash equivalents and other liquid resources held by the Group and the impact of borrowings held at fixed rates.

A monthly Treasury report is provided to senior management which summarises corporate debt exposed to currency risks and, where applicable, the offsetting derivatives. See section B (c) of note 32 Financial Instruments for the details of currency and interest rate contracts relating to borrowings.

See note 23 Borrowings for the details of debt outstanding at 31 December 2011.

Based on the Group's net debt (refer to note 25) and other floating rate financial instruments outstanding as at 31 December 2011, the effect on net earnings of a half percentage point increase in US dollar LIBOR interest rates, with all other variables held constant, would be an increase of US\$8 million (2010: increase of US\$6 million) reflecting the high level of cash at period end. These balances will not remain constant throughout 2012, however, and therefore the sensitivities should be used with care.

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**(iii) Commodity price risk**

The Group's normal policy is to sell its products at prevailing market prices. Exceptions to this rule are subject to strict limits laid down by the Rio Tinto board and to rigid internal controls. Rio Tinto's exposure to commodity prices is diversified by virtue of its broad commodity base and the Group does not generally believe commodity price hedging would provide a long term benefit to shareholders. The Group may hedge certain commitments with some of its customers or suppliers. Details of commodity derivatives held at 31 December 2011 are set out in note 32 – B (a) to (c) Financial instruments.

Metals such as copper and aluminium are generally sold under contract, often long term, at prices determined by reference to prevailing market prices on terminal markets, such as the London Metal Exchange (LME) and COMEX in New York, usually at the time of delivery. Prices fluctuate widely in response to changing levels of supply and demand but, in the long run, prices are related to the marginal cost of supply. Gold is also priced in an active market in which prices respond to daily changes in quantities offered and sought. Newly mined gold is only one source of supply; investment and disinvestment can be important elements of supply and demand. Contract prices for many other natural resource products including coal are generally agreed quarterly or for longer periods with customers, although volume commitments vary by product.

Certain products, predominantly copper concentrate are provisionally priced, i.e. the selling price is for a period normally ranging from 30 to 180 days after delivery to the customer, based on the market price at the relevant quotation point stipulated in the contract. Revenue recognised on provisionally priced sales is based on estimates of fair value of the consideration receivable which is based on forward market prices. At each reporting date provisionally priced metal is marked to market based on the forward selling price for the period stipulated in the contract. For this purpose, the selling price can be measured reliably for those products, such as copper for which an active and freely traded commodity market exists such as the London Metal Exchange and the value of product sold by the Group is directly linked to the form in which it is traded on that market.

The marking to market of provisionally priced sales contracts is recorded as an adjustment to sales revenue.

At the end of 2011, the Group had 181 million pounds of copper sales (2010: 270 million pounds) that were provisionally priced at US344 cents per pound (2010: US428 cents per pound). The final price of these sales will be determined during the first half of 2012. A ten per cent change in the price of copper realised on the provisionally priced sales would increase or reduce net earnings by US\$41 million (2010: US\$72 million).

Approximately 17 per cent of Rio Tinto's 2011 Underlying earnings from operating businesses came from products whose prices were terminal market related and the remainder came from products priced by direct negotiation.

**Commodity price sensitivity: Risks associated with derivatives**

The Group's commodity derivatives are impacted by changes in market prices and include those aluminium forward and option contracts embedded in electricity purchase contracts outstanding at 31 December 2011. The Group's sensitivity to changes in market prices, based on the assumption that the market price increases by ten per cent with all other variables held constant, expressed in terms of the resulting change in the Group's net earnings for the year or, where applicable, the change in equity, would not be significant. The Group's own use contracts are excluded from the sensitivity analysis as they are outside the scope of IAS 39. Such contracts to buy or sell non financial items can be net settled but were entered into and continue to be held for the purpose of the receipt or delivery of the non financial item in accordance with the business unit's expected purchase, sale or usage requirements. The sensitivity does not include the impact arising from balances with equity accounted units. The impact of reflecting equity accounted units primarily relates to the sensitivity to aluminium prices with a US\$85 million reduction in net earnings (2010: US\$100 million).





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Notes to the 2011 financial statements continued

**31 Financial risk management continued**

**(iv) Credit risk**

Credit risk is the risk that a counterparty will not meet its obligations under a financial instrument or customer contract, leading to a financial loss. The Group is exposed to credit risk from its operating activities (primarily from customer receivables) and from its financing activities, including deposits with banks and financial institutions, foreign exchange transactions and other financial instruments.

**Credit risks related to receivables**

Customer credit risk is managed by each business unit subject to Rio Tinto’s established policy, procedures and controls relating to customer credit risk management. Credit limits are established for all customers based on internal or external rating criteria. Where customers are rated by an independent credit rating agency, these ratings are used to set credit limits. In circumstances where no independent credit rating exists, the credit quality of the customer is assessed based on an extensive credit rating scorecard. Outstanding customer receivables are regularly monitored and any credit concerns highlighted to senior management. High risk shipments to major customers are generally covered by letters of credit or other forms of credit insurance.

At 31 December 2011, the Group had approximately 108 customers (2010: 138 customers) that owed the Group more than US\$5 million each and these balances accounted for approximately 76 per cent (2010: 70 per cent) of all receivables owing. There were 46 customers (2010: 57 customers) with balances greater than US\$20 million accounting for just over 55 per cent (2010: just over 53 per cent) of total amounts receivable. Note 18 provides details of trade and other receivables past due but not impaired.

The maximum exposure to credit risk at the reporting date is the carrying value of each class of financial assets mentioned in note 21. The Group does not hold collateral as security for any trade receivables.

**Credit risk related to financial instruments and cash deposits**

Credit risk from balances with banks and financial institutions is managed by Group Treasury in accordance with a board approved policy. Investments of surplus funds are made only with approved counterparties and within credit limits assigned to each counterparty. Counterparty credit limits are reviewed by the Rio Tinto board on an annual basis, and may be updated throughout the year subject to relevant approval. The limits are set to minimise the concentration of risks and therefore mitigate the potential for financial loss through counterparty failure.

The Group held cash and cash equivalents of US\$9.7 billion at 31 December 2011 (2010: US\$10.0 billion). This included US\$7.5 billion (2010: US\$8.2 billion) invested in short term deposits consisting of US\$5.8 billion (2010: US\$ nil) held in US Treasury funds and the remaining amount principally held in a diversified portfolio of liquidity funds. Loans to equity accounted units including quasi equity loans amounted to US\$1.8 billion (2010: US\$1.5 billion).

**(v) Liquidity and Capital risk management**

The Group’s total capital is defined as equity attributable to owners of Rio Tinto plus equity attributable to non-controlling interests plus net debt and amounted to US\$68 billion at 31 December 2011 (2010: US\$69 billion).

	2011	2010
	US\$m	US\$m
<b>Total capital</b>		
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
<b>Total</b>	<b>67,659</b>	<b>68,583</b>

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,

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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.

The unified credit status of the Group is maintained through cross guarantees whereby contractual obligations of Rio Tinto plc and Rio Tinto Limited are automatically guaranteed by the other.

In February 2011, the Group commenced a US\$5 billion share buy-back programme which, subject to market conditions, was intended to be completed by the end of 2012. In August 2011, the share buy-back programme was increased by US\$2 billion to US\$7 billion, and which, subject to market conditions, is due to be completed by the end of the first quarter of 2012. At 31 December 2011, 91 million Rio Tinto plc shares have been bought back at a total cost of US\$5.5 billion.

In May 2011, the Group issued three Rio Tinto Finance ( USA ) Limited bonds amounting to US\$700 million 2.5% bond due 2016, US\$1,000 million 4.125% bond due 2021 and US\$300 million 5.2% bond due 2040. This was followed by the issue of three further Rio Tinto Finance ( USA ) Limited bonds in September 2011 amounting to US\$500 million 2.25% bond due 2016, US\$1,150 million 3.75% bond due 2021 and US\$350 million 5.2% bond due 2040.

In 2011, Oyu Tolgoi LLC received additional funding through shareholder loans from wholly owned subsidiaries of Ivanhoe Mines Limited which amounted to US\$2.2 billion. Of this funding, Ivanhoe Mines Limited ( an EAU ) was funded US\$1.7 billion by Rio Tinto. In 2010, additional funding through shareholder loans was US\$109 million which the Group funded through Ivanhoe Mines Limited.

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In October 2010, the Group tendered US\$1.9 billion of its Rio Tinto Finance (USA) Limited 5.875% bond due in 2013 and refinanced this with the issue of three fixed rate Rio Tinto Finance (USA) Limited bonds amounting to US\$500 million 1.875% bond due 2015, US\$1,000 million 3.5% bond due 2020 and US\$500 million 5.2% bond due 2040.

In November 2010, the Group entered into a US\$6 billion five year multi-currency committed revolving credit facility with its relationship banks. At 31 December 2011, the facility was undrawn. Any borrowings under this facility are at prevailing LIBOR rates plus an agreed margin dependent on the amount of drawdown and the credit rating of the Group. The facility is not subject to any financial covenants. The overall agreement also enables same day access to a US\$ swing-line facility. The funds available under the facility agreement may be used for general corporate purposes of the Group.

The Group's net debt as a percentage of total capital was 12 per cent at 31 December 2011 (2010: six per cent).

The table below analyses the Group's financial liabilities into relevant maturity groupings based on the remaining period from the balance sheet date to the contractual maturity date. As the amounts disclosed in the table are the contractual undiscounted cash flows, these balances will not necessarily agree with the amounts disclosed in the balance sheet.

**At 31 December 2011**

	Trade and other payables	Borrowings before swaps	Expected future interest payments <sup>(a)</sup>	Derivatives related to net debt <sup>(a)(b)</sup>	Other financial liabilities	Total US\$m
	US\$m	US\$m	US\$m	US\$m	US\$m	US\$m
<b>Financial liabilities</b>						
Within 1 year, or on demand	(7,724)	(1,264)	(1,093)	(1,400)	(246)	(11,727)
Between 1 and 2 years	(397)	(1,226)	(830)	(1)	(255)	(2,709)
Between 2 and 3 years		(2,696)	(713)		(27)	(3,436)
Between 3 and 4 years		(1,056)	(630)		(15)	(1,701)
Between 4 and 5 years		(1,233)	(606)		(16)	(1,855)
After 5 years		(13,492)	(4,794)		(4)	(18,290)
	(8,121)	(20,967)	(8,666)	(1,401)	(563)	(39,718)

**At 31 December 2010 Restated**

	Trade and other payables	Borrowing before swaps	Expected future interest payments <sup>(a)</sup>	Derivatives related to net debt <sup>(a)(b)</sup>	Other financial liabilities	Total US\$m
	US\$m	US\$m	US\$m	US\$m	US\$m	US\$m
<b>Financial liabilities</b>						
Within 1 year, or on demand	(4,985)	(2,153)	(705)	(1,795)	(312)	(9,950)
Between 1 and 2 years	(575)	(557)	(742)	17	(276)	(2,133)
Between 2 and 3 years		(1,232)	(730)	18	(159)	(2,103)
Between 3 and 4 years		(2,605)	(606)	15	(30)	(3,226)
Between 4 and 5 years		(965)	(530)	11	(30)	(1,514)
After 5 years		(7,783)	(4,166)	(26)	(22)	(11,997)
	(5,560)	(15,295)	(7,479)	(1,760)	(829)	(30,923)

(a) Interest payments have been projected using interest rates applicable at 31 December. Where debt is subject to variable interest rates, future interest payments are subject to change in line with market rates.

(b) The Group has agreed to provide Ivanhoe Mines Ltd. with an interim loan facility of US\$1,800 million while Rio Tinto and Ivanhoe work together to complete project financing for the development of the Oyu Tolgoi copper-gold project. At 31 December 2011, US\$1,399 million (2010: US\$1,800 million) remained undrawn and is reflected in amounts within one year, or on demand.

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## Notes to the 2011 financial statements continued

**32 Financial instruments**

Except where stated, the information given below relates to the financial instruments of the parent companies and their subsidiaries and proportionally consolidated units, and excludes those of equity accounted units. The information is grouped in the following sections:

- A Financial assets and liabilities by categories
- B Derivative financial instruments
- C Fair values

**(A) Financial assets and liabilities by categories**

	Note	Total US\$m	Loans and receivables US\$m	Available for sale securities US\$m	Held at fair value US\$m	Held to maturity assets/other financial liabilities US\$m
<b>At 31 December 2011</b>						
<b>Financial assets</b>						
Cash and cash equivalents	22	9,670	9,670			
Trade and other receivables <sup>(a)</sup>	18	6,738	6,738			
Equity shares and quoted funds	21	702		702		
Other investments, including loans	21	738	140		338	260
Currency and commodity contracts designated as hedges		86			86	
Derivatives and embedded derivatives not related to net debt: not designated as hedges	21	45			45	
Derivatives related to net debt	21	347			347	
Loans to equity accounted units including quasi equity loans		1,816	1,816			
<b>Total financial assets</b>		<b>20,142</b>	<b>18,364</b>	<b>702</b>	<b>816</b>	<b>260</b>
<b>Financial liabilities</b>						
Trade and other payables <sup>(b)</sup>	26	(8,121)				(8,121)
Short term borrowings and bank overdrafts	22,23	(1,263)				(1,263)
Medium and long term borrowings	23	(20,185)				(20,185)
Deferred consideration	26 <sup>(a)</sup>	(94)				(94)
Forward commodity contracts: designated as hedges	23	(210)			(210)	
Derivatives related to net debt	23	(2)			(2)	
Other derivatives and embedded derivatives not designated as hedges	23	(87)			(87)	
Other financial liabilities	23	(57)				(57)
<b>Total financial liabilities</b>		<b>(30,019)</b>			<b>(299)</b>	<b>(29,720)</b>
						Restated Held to maturity assets/other financial liabilities
<b>31 December 2010</b>						
<b>Financial assets</b>						
Cash and cash equivalents	22	9,948	9,948			
Trade and other receivables <sup>(a)</sup>	18	5,708	5,708			
Equity shares and quoted funds	21	950		950		
Other investments, including loans	21	655	185	64	289	117

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Derivatives and embedded derivatives not related to net debt: not designated as hedges	21	143			143	
Derivatives related to net debt	21	143			143	
Loans to equity accounted units including quasi equity loans		1,473	1,473			
<b>Total financial assets</b>		<b>19,020</b>	<b>17,314</b>	<b>1,014</b>	<b>575</b>	<b>117</b>
<b>Financial liabilities</b>						
Trade and other payables <sup>(b)</sup>	26	(5,560)				(5,560)
Short term borrowings and bank overdrafts	22,23	(1,064)				(1,064)
Medium and long term borrowings	23	(13,277)				(13,277)
Deferred consideration	26 <sup>(a)</sup>	(108)				(108)
Forward commodity contracts: designated as hedges	23	(421)			(421)	
Derivatives related to net debt	23	(34)			(34)	
Other derivatives and embedded derivatives not designated as hedges	23	(169)			(169)	
Other financial liabilities	23	(57)				(57)
<b>Total financial liabilities</b>		<b>(20,690)</b>			<b>(624)</b>	<b>(20,066)</b>

(a) This excludes pension surpluses, prepayment of tolling charges to jointly controlled entities and other prepayments and accrued income.

(b) Trade and other payables includes trade creditors, amounts owed to equity accounted units, other creditors excluding deferred consideration shown separately and accruals.

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**(B) Derivative financial instruments**

The Group's derivatives, including embedded derivatives, as at 31 December 2011, are summarised below:

**(a) Forward contracts relating to operating transactions: designated as hedges**

	Total fair Value			
	2011		2010	
	Asset US\$m	Liability US\$m	Asset US\$m	Liability US\$m
Copper forward contracts		(210)		(409)
Aluminium forward contracts embedded in electricity purchase contracts	72			(12)
Aluminium options embedded in electricity purchase contracts	14			
<b>Total</b>	<b>86</b>	<b>(210)</b>		<b>(421)</b>
Less than 1 year	<b>75</b>	<b>(118)</b>		<b>(159)</b>
Between 1 and 5 years	<b>11</b>	<b>(92)</b>		<b>(262)</b>
<b>Total</b>	<b>86</b>	<b>(210)</b>		<b>(421)</b>

**Reconciliation to statement of financial position categories for derivatives designated as hedges**

	2011 US\$m	2010 US\$m
non-current assets (note 21)	11	
current assets (note 21)	75	
current liabilities (note 23)	(118)	(159)
non-current liabilities (note 23)	(92)	(262)
<b>Total derivatives designated as hedges, detailed above</b>	<b>(124)</b>	<b>(421)</b>

The above copper forward contracts were entered into as a condition of the refinancing of Palabora in 2005, and to reduce the Group's exposure to movements in the copper price.

The above aluminium forward contracts were entered into to hedge the sales of high cost smelters and to convert aluminium sales sold at a fixed price to LME cash. The ineffective portion arising from fair value hedges recognised in the income statement was US\$5 million before tax.

Aluminium price exposures are embedded within certain aluminium smelter electricity purchase contracts. These contracts reduce the Group's exposure to movements in the aluminium price.

**(b) Forward and option contracts relating to operating transactions: not designated as hedges**

	Total fair Value			
	2011		2010	
	Asset US\$m	Liability US\$m	Asset US\$m	Liability US\$m
Currency forward contracts and swaps	22	(6)	5	(4)
Aluminium forward contracts	19	(34)	131	(17)
Aluminium options embedded in electricity purchase contracts	1	(15)		(43)
Aluminium forward contracts embedded in electricity purchase contracts	3			(4)
Other embedded derivatives		(32)		(101)
Other commodity contracts			7	
<b>Total</b>	<b>45</b>	<b>(87)</b>	<b>143</b>	<b>(169)</b>
Less than 1 year	<b>40</b>	<b>(65)</b>	<b>124</b>	<b>(106)</b>
Between 1 and 5 years	<b>5</b>	<b>(22)</b>	<b>18</b>	<b>(47)</b>
More than 5 years			<b>1</b>	<b>(16)</b>
<b>Total</b>	<b>45</b>	<b>(87)</b>	<b>143</b>	<b>(169)</b>





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Notes to the 2011 financial statements continued

**32 Financial instruments continued**

**Reconciliation to statement of financial position categories for derivatives not designated as hedges**

	2011 US\$m	2010 US\$m
non-current assets (note 21)	5	19
current assets (note 21)	40	124
current liabilities (note 23)	(65)	(106)
non-current liabilities (note 23)	(22)	(63)
<b>Total derivatives not designated as hedges, detailed above</b>	<b>(42)</b>	<b>(26)</b>

Embedded options exist within electricity purchase contracts for certain smelters. These derivatives reduce the Group's exposure to movements in the aluminium price. A number of put and call options were combined to form synthetic forward contracts that were designated as hedges of variable priced aluminium sales.

The above aluminium forward contracts were taken out to manage exposure to movements in the aluminium price. These contracts are not designated as hedges as they are predominantly offset by other aluminium forward contracts.

**(c) Currency and interest contracts relating to borrowings**

	Total fair Value			
	2011		2010	
	Asset US\$m	Liability US\$m	Asset US\$m	Liability US\$m
Interest Contracts (designated as hedges)	341	(1)	132	(34)
Interest Contracts (not designated as hedges)	6	(1)	11	
<b>Total</b>	<b>347</b>	<b>(2)</b>	<b>143</b>	<b>(34)</b>
Less than 1 year	5	(1)	6	
Between 1 and 5 years	88	(1)	87	(17)
More than 5 years	254		50	(17)
<b>Total</b>	<b>347</b>	<b>(2)</b>	<b>143</b>	<b>(34)</b>

**Reconciliation to statement of financial position categories for currency and interest derivatives**

	2011 US\$m	2010 US\$m
non-current assets (note 21)	342	137
current assets (note 21)	5	6
current liabilities (note 23)	(1)	
non-current liabilities (note 23)	(1)	(34)
<b>Total currency and interest rate contracts, detailed above</b>	<b>345</b>	<b>109</b>

The interest rate contracts are used to convert certain fixed rate borrowings to a floating rate.

The ineffective portion arising from fair value hedges recognised in the income statement was a credit of US\$3 million (2010: charge of US\$10 million; 2009: nil).

**(C) Fair values**

The carrying amounts and fair values of all of the Group's financial instruments which are not carried at an amount which approximates to their fair value at 31 December are shown in the following table. The fair values of the Group's cash, short term borrowings and loans to jointly controlled entities and associates

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approximate their carrying values as a result of their short maturity or because they carry floating rates of interest.

Primary financial instruments held or issued to finance the Group's operations  
Medium and long-term borrowings (note 23)

31 December 2011		31 December 2010	
Carrying	Fair	Carrying	Fair
value	value	value	value
US\$m	US\$m	US\$m	US\$m
<b>(20,185)</b>	<b>(21,863)</b>	(13,277)	(15,875)

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**Valuation hierarchy**

The table below shows the financial instruments carried at fair value in table 32 (a) by valuation method.

At 31 December 2011

	Total	Level 1 <sup>(a)</sup>	Level 2 <sup>(b)</sup>	Level 3 <sup>(c)</sup>	Not held at fair value
<b>Assets</b>					
Equity shares and quoted funds (note 21)	702	643	14	45	
Other investments, including loans (note 21)	738	145		193	400
	1,440	788	14	238	400
<b>Derivatives</b>					
Forward contracts: designated as hedges (Section B <sup>(a)</sup> of note 32)	(124)		(138)	14	
Forward contracts and option contracts not designated as hedges (Section B <sup>(b)</sup> of note 32)	(42)	1	(32)	(11)	
Interest rate swap agreements (Section B <sup>(c)</sup> of note 32)	345		345		
	1,619	789	189	241	400

At 31 December 2010

	Total	Level 1 <sup>(a)</sup>	Level 2 <sup>(b)</sup>	Level 3 <sup>(c)</sup>	Not held at fair value
<b>Assets</b>					
Equity shares and quoted funds (note 21)	950	897	16	37	
Other investments, including loans (note 21)	619	150		203	266
	1,569	1,047	16	240	266
<b>Derivatives</b>					
Forward contracts: designated as hedges (Section B <sup>(a)</sup> of note 32)	(421)		(409)	(12)	
Forward contracts and option contracts not designated as hedges (Section B <sup>(b)</sup> of note 32)	(26)		16	(42)	
Interest rate swap agreements (Section B <sup>(c)</sup> of note 32)	109		110	(1)	
	1,231	1,047	(267)	185	266

(a) Valuation is based on unadjusted quoted prices in active markets for identical financial instruments. This category includes listed equity shares and other quoted funds.

(b) Valuation is based on inputs that are observable for the financial instruments which includes quoted prices for similar instruments or identical instruments in markets which are not considered to be active or either directly or indirectly based on observable market data.

(c) Valuation is based on inputs for the asset or liability that are not based on observable market data (unobservable inputs).

**Level 3 Financial assets and financial liabilities**

The table below shows the summary of changes in the fair value of the Group's level 3 financial assets and financial liabilities for the year ended 31 December 2011 and 31 December 2010.

	31 December 2011	31 December 2010
	Level 3 financial assets and	Level 3 financial assets and
	financial liabilities	financial liabilities
<b>Opening balance</b>	185	(96)
Currency translation adjustments	(2)	(2)

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Realised gains to income statement	17	91
Unrealised losses to income statement	30	147
Unrealised losses to comprehensive income	14	
Additions	6	27
Disposals	(9)	18
<b>Closing balance</b>	<b>241</b>	<b>185</b>
<b>Total losses for the year included in the income statement for assets and liabilities held at year end</b>	<b>26</b>	<b>97</b>

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## Notes to the 2011 financial statements continued

**33 Contingent liabilities and commitments**

	2011 US\$m	2010 US\$m
<b>Capital commitments (including those related to joint ventures and associates) <sup>(a)</sup></b>		
Within 1 year	9,700	5,219
Between 1 and 3 years	3,300	2,264
Between 3 and 5 years	41	90
<b>Total</b>	<b>13,041</b>	<b>7,573</b>

(a) Included in the above table are other commitments of US\$39 million (2010: US\$25 million). Capital commitments incurred by the Group relating to joint ventures and associates amount to US\$215 million (2010: US\$1,421 million). Capital commitments incurred jointly with other venturers (Rio Tinto share) relating to joint ventures amount to US\$1,260 million (2010: US\$695 million). In addition to the above, in 2010, the Group provided Ivanhoe Mines Ltd. with an interim loan facility of US\$1,800 million while Rio Tinto and Ivanhoe work together to complete project financing for the development of the Oyu Tolgoi copper-gold project. At 31 December 2011 the amount remaining undrawn was US\$1,399 million (2010: US\$1,800 million). Refer to note 39 for further details relating to the Group's interest in Ivanhoe Mines Ltd. and Oyu Tolgoi.

**Operating leases**

The aggregate amount of minimum lease payments under non cancellable operating leases are as follows:

	2011 US\$m	2010 US\$m
Within 1 year	523	507
Between 1 and 3 years	766	854
Between 3 and 5 years	564	561
After 5 years	1,052	1,107
	<b>2,905</b>	<b>3,029</b>

**Unconditional purchase obligations**

The aggregate amount of future payment commitments for the next five years under unconditional purchase obligations outstanding at 31 December was:

	2011 US\$m	2010 US\$m
Within 1 year	2,578	2,295
Between 1 and 2 years	2,080	1,466
Between 2 and 3 years	1,748	1,468
Between 3 and 4 years	1,631	1,305
Between 4 and 5 years	1,580	1,210
After 5 years	12,303	10,156
	<b>21,920</b>	<b>17,900</b>

Unconditional purchase obligations relate to commitments to make payments in the future for fixed or minimum quantities of goods or services at fixed or minimum prices. The future payment commitments set out above have not been discounted and mainly relate to commitments under take or pay power and freight contracts. They exclude unconditional purchase obligations of jointly controlled entities apart from those relating to the Group's tolling arrangements.

	2011 US\$m	2010 US\$m
<b>Contingent liabilities (excluding those relating to joint ventures and associates)</b>		
Indemnities and other performance guarantees	706	557
<b>Contingent liabilities relating to joint ventures and associates <sup>(a)</sup></b>		

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Incurring in relation to interests in joint ventures  
Incurring in relation to other venturers contingent liabilities

147  
78

214  
79

- (a) Amounts disclosed include those arising as a result of the Group's investments in both jointly controlled assets and jointly controlled entities.
- (b) There are a number of legal claims currently outstanding against the Group. No material loss to the Group is expected to result from these claims.

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**34 Average number of employees**

	Subsidiaries and proportionally consolidated units			Equity accounted units (Rio Tinto share) (a)			Group Total		
	2011	2010	2009	2011	2010	2009	2011	2010	2009
<b>The principal locations of employment were:</b>									
Australia and New Zealand	<b>20,875</b>	18,772	17,537	<b>2,544</b>	2,428	2,355	<b>23,419</b>	21,200	19,892
Canada	<b>13,689</b>	13,418	12,957	<b>295</b>	295	500	<b>13,984</b>	13,713	13,457
Europe	<b>6,601</b>	15,205	16,965	<b>3,377</b>	223	274	<b>9,978</b>	15,428	17,239
Africa	<b>6,107</b>	5,451	6,539	<b>2,328</b>	2,204	1,673	<b>8,435</b>	7,655	8,212
United States	<b>4,995</b>	6,416	8,830	<b>406</b>	721	80	<b>5,401</b>	7,137	8,910
Indonesia	<b>2,325</b>	2,261	2,165		13		<b>2,325</b>	2,274	2,165
South America	<b>347</b>	430	2,039	<b>1,221</b>	1,175	1,148	<b>1,568</b>	1,605	3,187
Other countries	<b>2,026</b>	869	844	<b>794</b>	833	356	<b>2,820</b>	1,702	1,200
Discontinued operations		6,180	27,732					6,180	27,732
	<b>56,965</b>	69,002	95,608	<b>10,965</b>	7,892	6,386	<b>67,930</b>	76,894	101,994

(a) Employee numbers, which represent the average for the year, include 100 per cent of employees of subsidiary companies. Employee numbers for proportionally consolidated and equity accounted units are proportional to the Group's interest. Average employee numbers include a part year effect for companies acquired or disposed of during the year.

Part time employees are included on a full time equivalent basis. Temporary employees are included in employee numbers.

People employed by contractors are not included.

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## Notes to the 2011 financial statements continued

**35 Principal subsidiaries and consolidated operations**

## At 31 December 2011

Company and country of incorporation/operation	Principal activities	Class of shares held	Proportion of class held (%)	Group interest (%)
<b>Australia</b>				
Argyle Diamond Limited	Mining and processing of diamonds	Ordinary	100	100
Coal & Allied Industries Limited <sup>(a)</sup>	Coal mining	Ordinary	80	80
Dampier Salt Limited	Salt production	Ordinary	68.40	68.40
Energy Resources of Australia Limited	Uranium mining	Class A	68.39	68.39
Hamersley Iron Pty Limited	Iron ore mining	Ordinary	100	100
Queensland Coal Pty Limited <sup>(b)</sup>	Coal mining	Ordinary	100	100
Rio Tinto Aluminium (Holdings) Limited	Bauxite mining; alumina production; primary aluminium smelting	Ordinary	100	100
<b>Canada</b>				
Iron Ore Company of Canada Inc. <sup>(c)</sup>	Iron ore mining; iron ore pellets	Common shares	58.72	58.72
QIT-Fer et Titane Inc.	Titanium dioxide feedstock; high purity iron and steel	Common shares	100	100
		Class B preference shares CAD 0.01	100	100
Rio Tinto Alcan Inc.	Bauxite mining; alumina refining; production of specialty alumina; aluminium smelting; engineered products	Common shares	100	100
<b>Madagascar</b>				
QIT Madagascar Minerals SA	Ilmenite mining	Common shares	80	80
<b>Mongolia</b>				
Oyu Tolgoi LLC	Copper and gold mining (in development)	(d)		32.34
<b>Mozambique</b>				
Riversdale Mining Limited <sup>(e)</sup>	Coal mining (in development) and exploration	Common shares	100	100
<b>Namibia</b>				
Rössing Uranium Limited <sup>(f)</sup>	Uranium mining	B N\$1 C N10c	71.16 } 70.59	68.58
<b>Papua New Guinea</b>				
Bougainville Copper Limited <sup>(g)</sup>	Copper and gold mining	Ordinary 1 Kina	53.83	53.83
<b>South Africa</b>				
Palabora Mining Company Limited	Copper mining, smelting and refining	Ordinary R1	72.90	57.70
<b>United States of America</b>				
Kennecott Holdings Corporation (including Kennecott Utah Copper, Kennecott Land and Kennecott Exploration)	Copper and gold mining, smelting and refining, land development and exploration activities	Common US\$0.01	100	100
U.S. Borax Inc.	Mining, refining and marketing of borates	Common US\$0.10	100	100

The Group comprises a large number of companies and it is not practical to include all of them in this list. The list therefore only includes those companies that have a more significant impact on the profit or assets of the Group.

The Group's principal subsidiaries are mostly held by intermediate holding companies and not directly by Rio Tinto plc or Rio Tinto Limited.



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- (a) Of the Group's 80 per cent interest in Coal & Allied Industries Limited, an indirect share of 4.29 per cent, purchased during 2011, is held through its investment in an equity accounted unit.
- (b) Queensland Coal Pty Limited is the main legal entity that owns the shares shown in note 38 of Hail Creek, Blair Athol, Clermont and Kestrel.
- (c) This entity is incorporated in the United States of America but operates in Canada.
- (d) The Group holds no direct equity interest in Oyu Tolgoi LLC; this entity is consolidated by virtue of contractual rights which permit the exercise of control over certain policies and activities of Oyu Tolgoi LLC. The Group interest of 32.34 per cent arises through its 49 per cent investment in Ivanhoe Mines Ltd; Ivanhoe Mines owns 66 per cent of Oyu Tolgoi LLC. Refer to note 39 for further details relating to the consolidation of Oyu Tolgoi LLC from 15 December 2010.
- (e) This entity is incorporated in Australia but operates in Mozambique.
- (f) The Group's shareholding in Rössing Uranium Limited carries 35.54 per cent of the total voting rights. Rössing is consolidated by virtue of board control.
- (g) The results of Bougainville Copper Limited are not consolidated. See note 44.

**Table of Contents****36 Principal jointly controlled entities****At 31 December 2011**

Company and country of incorporation/operation	Principal activities	Number of shares held	Class of shares held	Proportion of class held (%)	Group interest (%)
<b>Australia</b>					
Boyne Smelters Limited <sup>(a)</sup>	Aluminium smelting	153,679,560	Ordinary	59.4	59.4
Queensland Alumina Limited <sup>(a)</sup>	Alumina production	1,769,600	Ordinary	80	80
<b>Chile</b>					
Minera Escondida Limitada <sup>(b)</sup>	Copper mining and refining			30	30
<b>Mozambique</b>					
Rio Tinto Benga (Mauritius) Limited <sup>(c)</sup>	Coal mining (in development)	381,322,349	Ordinary	65	65
		1	Management		
<b>New Zealand</b>					
New Zealand Aluminium Smelters Limited <sup>(a)</sup>	Aluminium smelting	24,998,400	Ordinary	79.4	79.4
<b>Norway</b>					
Sor-Norge Aluminium A.S.	Aluminium smelting	500,000	Ordinary	50	50
<b>Oman</b>					
Sohar Aluminium Company L.L.C.	Aluminium smelting/power generation	37,500	Ordinary	20	20
<b>South Africa</b>					
Richards Bay Titanium (Pty) Ltd	Titanium dioxide/high purity iron production		Preferred Ordinary		37.7
		150,960	A Ordinary		
			B Ordinary	51	
			A Preference		38.5
		140,046	B Preference	51	
Richards Bay Mining (Pty) Ltd	Ilmenite, rutile and zircon mining		Preferred Ordinary		
		36,260	A Ordinary		36.3
			B Ordinary	49	
			A Preference		37
		31,335	B Preference	49	
<b>United States of America</b>					
Halco (Mining) Inc.	<sup>(d)</sup>	4,500	Common	45	45
Pechiney Reynolds Quebec Inc.	<sup>(e)</sup>	100	Common	50	50.3
		1	Preferred	100	

The Group has joint control of the above operations which are independent legal entities. It therefore includes them in its accounts using the equity accounting method.

The Group comprises a large number of operations and it is not practical to include all of them in this list. The list therefore only includes those jointly controlled entities that have a more significant impact on the profit or operating assets of the Group.

The Group's principal jointly controlled entities are held by intermediate holding companies and not directly by Rio Tinto plc or Rio Tinto Limited.

With the exception of footnote (d) and (e), all jointly controlled entities operate mainly in the countries in which they are incorporated.

(a) While the Group holds more than a 50 per cent interest in these entities, other participants have veto rights over operating, financing and strategic decision making. Accordingly, the Group does not have the ability to unilaterally control, and therefore does not consolidate these entities.

(b) The year end of Minera Escondida Limitada is 30 June. However, the amounts included in the consolidated financial statements of Rio Tinto are based on accounts of Minera Escondida Limitada that are coterminous with those of the Group.

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- (c) This entity is incorporated in Mauritius but operates mainly in Mozambique, where it has a 100 per cent interest in Riversdale Mozambique Limitada, a coal mine located in Tete, Mozambique.
- (d) Halco has a 51 per cent indirect interest in Compagnie des Bauxites de Guinée, a bauxite mine, the core assets of which are located in Guinea.
- (e) Pechiney Reynolds Quebec has a 50.1 per cent interest in the Aluminerie de Becancour aluminium smelter, which is located in Canada.

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## Notes to the 2011 financial statements continued

**37 Principal associates****At 31 December 2011**

Company and country of incorporation/operation	Principal activities	Number of shares held	Class of shares held	Proportion of class held (%)	Group interest (%)
<b>Brazil</b>					
Mineração Rio do Norte SA <sup>(a)</sup>	Bauxite mining	25,000,000	Ordinary	12.5	} 12
		47,000,000	Preferred	11.8	
<b>Cameroon</b>					
Compagnie Camerounaise de l'Aluminium	Aluminium smelting	1,623,127	Ordinary	46.7	46.7
<b>Canada</b>					
Ivanhoe Mines Ltd <sup>(b)</sup>	Copper and gold mining	361,858,442	Common	49	49

The Group's principal associates are held by intermediate holding companies and not directly by Rio Tinto plc or Rio Tinto Limited.

The Group comprises a large number of operations and it is not practical to include all of them in this list. The list therefore only includes those associates that have a more significant impact on the profit or operating assets of the Group.

With the exception of Ivanhoe Mines Ltd, the core assets of which are located in Mongolia, all associates operate mainly in the countries in which they are incorporated.

(a) Mineração Rio do Norte SA is accounted for as an associated company because the Group has significant influence through representation on its Board of Directors.

(b) Ivanhoe Mines Ltd own 66% of Oyu Tolgoi LLC, which the Group consolidates (refer to note 35). The Group only equity accounts for its interest in the net assets of Ivanhoe Mines Ltd., that does not relate to Oyu Tolgoi LLC. Refer to note 39 for further details of additions to the Group's investment in Ivanhoe Mines Ltd. during 2010 and 2011.

**Table of Contents****38 Principal jointly controlled assets and other proportionally consolidated units**

At 31 December 2011

Name and country of operation	Principal activities	Group interest (%)
<b>Australia</b>		
Tomago Aluminium Joint Venture	Aluminium smelting	51.6
Bengalla <sup>(a)</sup>	Coal mining	32
Blair Athol Coal <sup>(b)</sup>	Coal mining	71.2
Clermont Coal	Coal mining	50.1
Hail Creek	Coal mining	82
Kestrel	Coal mining	80
Mount Thorley <sup>(c)</sup>	Coal mining	64
Warkworth	Coal mining	42.1
Northparkes Mine	Copper/gold mining and processing	80
Gladstone Power Station	Power generation	42.1
Robe River Iron Associates <sup>(d)</sup>	Iron ore mining	53
Hope Downs Joint Venture	Iron ore mining	50
<b>Brazil</b>		
Consórcio de Alumínio Maranhão	Alumina production	10
<b>Canada</b>		
Alouette	Aluminium production	40
Diavik	Mining and processing of diamonds	60
<b>Indonesia</b>		
Grasberg expansion	Copper and gold mining	40

The Group comprises a large number of operations, and it is not practical to include all of them in this list. The list therefore only includes those proportionally consolidated units that have a more significant impact on the profit or operating assets of the Group.

The Group's proportionally consolidated units are held by intermediate holding companies and not directly by Rio Tinto plc or Rio Tinto Limited.

(a) The Group owns a 40 per cent interest in Bengalla through its 80 per cent investment in Coal and Allied, giving a beneficial interest to the Group of 32 per cent.

(b) The Group has a direct interest of 57.2 per cent in Blair Athol Coal, and an additional 14 per cent interest through its investment in an equity accounted unit.

(c) The Group owns an 80 per cent interest in Mount Thorley through its 80 per cent investment in Coal and Allied, giving a beneficial interest to the Group of 64 per cent.

(d) The Group holds 65 per cent of Robe River Iron Associates, of which 30 per cent is held through a 60 per cent owned subsidiary. The Group's net beneficial interest is, therefore, 53 per cent, net of amounts attributable to outside equity shareholders.



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## Notes to the 2011 financial statements continued

**39 Purchases and sales of subsidiaries, joint ventures, associates and other interests in businesses****2011 Acquisitions****Rio Tinto Coal Mozambique (formerly Riversdale Mining Limited)**

After the opening of Rio Tinto's bid for Riversdale Mining Limited (Riversdale) on 11 January 2011, Rio Tinto cumulatively increased its interests in the issued share capital of Riversdale, culminating in the acquisition of a controlling 52.6 per cent interest on 8 April 2011 (the acquisition date). The cumulative consideration paid to reach the controlling percentage was US\$2,191 million, all of which was cash. Subsequent to the acquisition date, Rio Tinto continued to increase its interest in Riversdale and on 1 August 2011, its interest increased to 100 per cent; consideration paid for the remaining 47.4 per cent was US\$1,977 million. Riversdale was delisted on 7 July 2011 and subsequently renamed Rio Tinto Coal Mozambique (RTCM). Due to the mutual proximity of the dates of individual increases in Rio Tinto's shareholding prior to the acquisition date, the transactions have been accounted for as an acquisition taking place in only two stages, first the acquisition of a controlling interest on 8 April 2011, and secondly the purchase of additional interests after the acquisition date.

RTCM owns and operates a number of exploration and early development stage projects, specialising in coal opportunities in southern Africa. Its principal interests are the Benga project, a 65:35 joint venture with Tata Steel Limited, which is equity accounted, and the wholly owned Zambeze coal project. These projects are located contiguously in the Tete and Moatize provinces of Mozambique. Riversdale also has several prospective exploration tenements in the region.

The acquisition is in line with Rio Tinto's growth strategy of investing in, developing, and operating, large, long term, cost-competitive mines, and provides Rio Tinto with one of the world's most promising tier one coking coal developments.

Fair values recognised on acquisition are provisional and will be subject to further review during the 12 months from the acquisition date.

Goodwill arising on acquisition comprises US\$530 million, being Rio Tinto's 52.6 per cent share at the acquisition date, of the amount calculated in accordance with IFRS to recognise a deferred tax liability on the difference between the provisional fair value of newly consolidated assets and liabilities and their tax base.

The fair values of the identifiable assets and liabilities of Riversdale Mining Limited at the acquisition date were provisionally estimated as follows:

	Provisional fair value
As at 8 April 2011 (of which 52.6 per cent attributable to owners of Rio Tinto)	US\$m
Intangible assets	1,797
Investments in Equity Accounted Units	1,802
Cash	478
Other assets and liabilities	91
Deferred tax liabilities	(1,009)
Non-controlling interests	(1,498)
Goodwill	530
<b>Net attributable assets including goodwill at the acquisition date</b>	<b>2,191</b>
Cash consideration to acquire 52.6 per cent interest	2,191
Less: cash acquired on acquisition	(478)
<b>Included within acquisitions of subsidiaries per the cash flow statement</b>	<b>1,713</b>
<b>Included within purchase of non-controlling interests per the cash flow statement</b> (purchase of 47.4 per cent interest)	<b>1,977</b>
<b>Total cash outflow per the cash flow statement</b>	<b>3,690</b>

Non-controlling interests were recognised at their proportionate share of the provisional fair value of identifiable assets and liabilities at the acquisition date.

For the period since acquisition, losses after tax of US\$63 million are included in the consolidated income statement; there was no impact on consolidated sales revenue. Had Rio Tinto Coal Mozambique been consolidated from 1 January 2011, the consolidated income statement would have reduced by US\$119 million to show profit after tax from continuing operations of US\$6,656 million. Consolidated sales revenue would have been unaffected.

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Cash flows relating to the Group's purchase of its interest in Rio Tinto Coal Mozambique are allocated between investing and financing activities in accordance with the presentation requirements for staged acquisitions under IAS 7 'Cash flow statements'. In the interim Financial Statements for the six months ended 30 June 2011, all cash flows relating to the purchase of interests in Rio Tinto Coal Mozambique were included within investing activities. Comparative figures for the six months ended 30 June 2012 will be revised accordingly.

### **Hathor Exploration Limited**

During 2011, between April and October, Rio Tinto built up a 5.8 per cent interest in Hathor Exploration Limited (Hathor), a uranium exploration company listed on the Toronto Stock Exchange. In October, an all cash offer was made for the remaining shares. On 30 November 2011 the conditions of the offer were satisfied and Rio Tinto acquired a controlling interest of 70.2 per cent of Hathor. By 31 December 2011 ownership had reached 88.0 per cent; by 12 January 2012 the remaining 12.0 per cent was acquired and Hathor has since been delisted from the Toronto Stock Exchange. Due to the mutual proximity of the dates of individual increases in Rio Tinto's shareholding subsequent to the acquisition date, and before the end of the year, these transactions have been accounted for as taking place in one stage, at 30 November, resulting in an ownership interest of 88 per cent being recognised at the acquisition date.

Fair values recognised on acquisition are provisional and will be subject to further review during the 12 months from the acquisition date.



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Goodwill arising on acquisition comprises US\$150 million, being Rio Tinto's 88 per cent share of the amount calculated in accordance with IFRS to recognise a deferred tax liability on the difference between the provisional fair value of newly consolidated assets and liabilities with their tax base.

The fair values of the identifiable assets and liabilities of Hathor at the acquisition date were provisionally estimated as follows:

	Provisional fair value US\$m
As at 30 November 2011 (of which 88 per cent attributable to owners of Rio Tinto)	
Intangible assets	628
Cash	30
Other assets and liabilities	(1)
Deferred tax liabilities	(184)
Non-controlling interests	(57)
Goodwill	150
<b>Net attributable assets including goodwill at the acquisition date</b>	<b>566</b>
<b>Consideration:</b>	
Cash consideration	550
Less: cash acquired on acquisition	(30)
<b>Included within acquisitions of subsidiaries per the cash flow statement</b>	<b>520</b>
Gain recognised on previously held interest of 5.8%	16
<b>Total</b>	<b>536</b>

For the period since acquisition, there was no impact on the consolidated income statement. Had Hathor been consolidated from 1 January 2011, the consolidated income statement would have reduced by US\$73 million, to show profit after tax from continuing operations of US\$6,702 million. Consolidated sales revenue would have been unaffected.

**Ivanhoe Mines Ltd**

During the year and in January 2012, Rio Tinto increased its ownership of shares in Ivanhoe Mines Ltd ( Ivanhoe ) as follows:

Date	Description	Shares acquired (million)	Price per Share C\$	Aggregate consideration US\$ million	Ownership after transaction	
					Shares (million)	%
2 February 2011	Rights offering	34.4	13.93	477	263.6	40.3
3 February 2011	Share purchase	10.0	US\$ 25.34	253	273.6	41.9
3 February 2011	Share rights purchase	1.5	13.93	21	275.1	42.1
21 June 2011	Warrant exercise	55.2	US\$ 9.10	502	330.3	46.5
24 August 2011	Exercise of rights to subscribe	27.9	18.98	536	358.2	48.5
27 September 2011	Share purchase agreement	3.7	19.75	71	361.9	49.0
<b>As at 31 December</b>		<b>132.7</b>		<b>1,860</b>		
17 January 2012	Exercise of rights to subscribe	0.4	19.66	9	362.3	49.0
24 January 2012	Share purchase	15.1	20.00	299	377.4	51.0
<b>Total</b>		<b>148.2</b>		<b>2,168</b>		

**2010 Acquisitions**

**Consolidation of Oyu Tolgoi (restated)**

On 15 December 2010, Rio Tinto consolidated provisional fair values relating to Oyu Tolgoi LLC ( Oyu Tolgoi ), following the signing of a new agreement with Ivanhoe Mines Ltd ( Ivanhoe ), under which Rio Tinto obtained contractual control over certain policies and activities of Oyu Tolgoi. No direct equity interest was acquired under the agreement and the existing equity arrangements were not changed as a result of the agreement. Oyu Tolgoi LLC is owned 66 per cent by Ivanhoe and 34 per cent by the Government of Mongolia. The signing of the agreement did not affect the Government of Mongolia's economic interest in Oyu Tolgoi LLC.

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Provisional fair values on consolidation were determined for Oyu Tolgoi at 31 December 2010. The fair values continued to be reviewed and were finalised by 15 December 2011, 12 months after the effective date of the agreement with Ivanhoe. During the course of the year ended 31 December 2011, certain reallocations between balance sheet categories were identified as additional information became available. An amount of US\$1,087 million was reclassified to loans and borrowings, with corresponding adjustments of US\$676 million to non-controlling interests and US\$352 million to Investments in Equity Accounted Units.

The restatement arising from reallocation between balance sheet categories at 31 December 2010 resulted in an increase to goodwill of US\$20 million and a reduction of US\$86 million to both the non-cash gain on consolidation recognised in the income statement, and to equity attributable to owners of Rio Tinto. Fair values have not been restated other than for the impact of the reallocation. The reallocation did not result in an impairment.

**Table of Contents****Notes to the 2011 financial statements continued****39 Purchases and sales of subsidiaries, joint ventures, associates and other interests in businesses continued****Ivanhoe Mines Ltd**

In addition to the agreement described above, during the year ended 31 December 2010 Rio Tinto also entered into the transactions described below, in relation to its investment in Ivanhoe Mines Ltd ( Ivanhoe ).

Date	Description	Shares acquired (million)	Price per consideration		Ownership after transaction	
			Share C\$	US\$ million	Shares (million)	%
1 March 2010	Share purchase	15.0	16.31	241	98.6	22.4
30 June 2010	Warrant exercise	46.1	US\$ 8.54	393	144.7	29.6
13 September 2010	Debt facility conversion	40.1	US\$ 10.00	(a)	184.8	34.9
13 September 2010	Anti-dilution warrants	0.6	3.15	2	185.4	34.9
15 December 2010	Series B warrants (partial)	33.8	US\$ 8.88	300	219.2	38.6
15 December 2010	Share purchase from Robert Friedland	10.0	(b)	253	229.2	40.3
<b>Total</b>		<b>145.6</b>		<b>1,189</b>		

(a) On 13 September 2010, Rio Tinto increased its ownership to 34.9 per cent following automatic conversion of the US\$350 million convertible debt facility Rio Tinto made available to Ivanhoe in 2007, which was fully drawn down by mid 2008. The outstanding principal and accrued interest (US\$401 million) under the credit facility automatically converted on maturity into common shares at a price of US\$10 per share.

(b) The Robert Friedland share purchase has a price equal to the simple average of the closing price of Ivanhoe shares in the NYSE on the 20 days preceding 8 December 2010.

**2009 Acquisitions**

On 28 October 2009, Rio Tinto completed the second tranche of its private placement investment in Ivanhoe Mines Ltd, increasing its ownership by 9.8 per cent to 19.7 per cent of Ivanhoe s common shares. The second tranche consisted of 46,304,473 common shares at a subscription price of US\$8.38 per share for a total consideration of US\$388 million.

There were no other significant acquisitions for the year ended 31 December 2009.

**2011 Disposals****Constellium (formerly Alcan Engineered Products)**

On 4 January 2011, Rio Tinto completed the divestment of 61 per cent of Alcan Engineered Products (AEP) to certain investment funds affiliated Apollo Global Management, LLC ( Apollo ) and the Fonds Stratégique d Investissement (FSI). The terms of the transaction are confidential. AEP with Apollo Global was rebranded as Constellium on 3 May 2011.

Apollo is now the majority shareholder in Constellium (formerly AEP) with a 51 per cent stake in a new holding company for AEP, with the FSI holding 10 per cent. Rio Tinto holds a 39 per cent stake and accounts for its interest in Constellium as an equity accounted unit.

**Divestment of the Talc business**

On 1 August 2011, Rio Tinto completed the divestment of its talc business to Imerys for gross consideration based on an enterprise value of US\$340 million before any deductions or tax.

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### Proposed Chalco Joint Venture and Settlement Agreement with Government of Guinea for the Simandou Iron Ore Project

Under the terms of a binding agreement with Chalco signed on 29 July 2010, Rio Tinto's 95 per cent interest in Simfer S.A. ( Simfer ), the entity which currently undertakes the various aspects of the Simandou project, will be held in a newly-formed Joint Venture for the development and operation of the Simandou iron ore project ( Chalco JV ), through its subsidiary Simfer Jersey. Chalco will acquire a 47 per cent interest in Simfer Jersey (and, therefore, an effective interest in Simfer and the Simandou project) by providing US\$1.35 billion on an earn-in basis through sole funding of ongoing development works and historical development expenditure incurred since March 2010.

Once Chalco has paid its US\$1.35 billion and prior to the Government of Guinea (GoG) taking up any portion of its interests (see below), the effective interests of Rio Tinto and Chalco in the Simandou project will be 50.35 per cent and 44.65 per cent respectively; with the International Finance Corporation (IFC), the financing arm of the World Bank, holding the remaining 5 per cent.

The formation of the Chalco JV remains subject to the satisfaction of certain regulatory requirements.

Chinalco and Rio Tinto have entered into an agreement under which Chinalco guarantees the performance of Chalco's obligations under the binding agreement.

On 22 April 2011, Rio Tinto signed the Settlement Agreement with GoG relating to the southern concession of the Simandou project, known as blocks 3 and 4, which is the location of Rio Tinto's declared iron ore resources in Guinea. In recognition of this and of the resolution of all other outstanding issues and the finalisation of new investment agreement terms, Simfer paid US\$700 million ( the Settlement Sum ) to the Guinean Public Treasury upon promulgation of Guinean Presidential Decrees granting Simfer a mining concession and approving the proposed Chalco JV. The Presidential Decrees were promulgated on 22 April 2011.

Under the Settlement Agreement, there will be an income tax holiday of eight years from the first taxable profit, followed by a general tax rate of 30 per cent. Royalties will be payable at 3.5 per cent Free on Board (FOB) for all exported ore. Simfer will also be exempt from withholding tax on dividends. All imported goods used for construction and maintenance will be exempt from VAT and Customs duty.

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As part of the Settlement Agreement, GoG has the following options to take up to a 35 per cent interest in the mining portion of the Simandou project (ie in Simfer):

From the grant of the Presidential Decrees: 7.5 per cent non-contributing stake at no cost and 10 per cent fully contributing stake at historic cost;

Five years from the grant of the Presidential Decrees: a further 7.5 per cent non-contributing stake at no cost;

15 years from the grant of the Presidential Decrees: 5 per cent fully contributing stake at market value; and

20 years from the grant of the Presidential Decrees: 5 per cent fully contributing stake at market value.

In addition, the Settlement Agreement provides for joint ownership of railway and port infrastructure, with GoG entitled to take a 51 per cent interest in a newly formed Infrastructure SPV ( InfraCo ) that will hold the rail and port assets. The other Simfer participants will take up an interest in the remaining portion of InfraCo equity in proportion to their relative interests in Simfer. The Settlement Agreement stipulates that participants in InfraCo will be required to fully fund their proportion of InfraCo s capital cost or be subject to dilution.

InfraCo will appoint Simfer (or an affiliate of Simfer s within the Rio Tinto Group) as its operator ( the Operator ). The rail line will be available for passenger and freight trains and the operator may haul other mineral producers ore subject to commercial agreement. Simfer will have the status of a foundation customer, and will therefore retain priority use of the infrastructure.

The infrastructure will revert to GoG ownership after 25 to 30 years. Simfer will retain its status as a foundation customer. On transfer of the project infrastructure to GoG, GoG will put the management of InfraCo to international tender. Simfer will be one of the parties invited to tender. Any user access charges to Simfer will reflect its status as a foundation customer.

Certain provisions of the Settlement Agreement, including the GoG participation regime changes, require amendment to Simfer s current mining convention ( Mining Convention ), which requires ratification by the Guinean National Assembly (or by Transitional Council until the Guinean National Assembly is duly constituted) in order for these provisions to have full effect. This is expected to take place in the first six months of 2012.

Both prior to and post participation by Chalco and GoG, Rio Tinto will retain control of Simfer and, therefore, the mining portion of the Simandou project. As such, Rio Tinto will continue to account for its interest in Simfer as a subsidiary. Contributions to funding made by Chalco to acquire its interest in the Chalco JV will be credited to equity. The effect on the Group of the options granted to GoG will be recognised upon ratification by the Guinean National Assembly (or Transitional Council) of the amendments to the Mining Convention discussed above.

The Settlement Sum is shown as a non-current prepayment for an intangible asset in the Group s statement of financial position at 31 December 2011 and as the purchase of an intangible asset in the Group s cash flow.

The eventual basis of consolidation of InfraCo is unknown pending finalisation of the detailed infrastructure agreements.

### **2010 Disposals**

Rio Tinto completed the sale of Alcan Packaging global pharmaceuticals, global tobacco, food Europe and food Asia divisions to Amcor for a total consideration of US\$1,948 million on 1 February 2010. The consideration was adjusted to exclude Medical Flexibles operations and to reflect actual business performance over the six months preceding completion.

Rio Tinto s subsidiary, Coal & Allied, which was 75.7% owned in 2010 sold the Maules Creek project to Aston Resources, a private Australian company, for A\$480 million (US\$427 million). The sale was completed on 18 February 2010. Coal & Allied s Vickery asset was sold to Whitehaven Coal (ASX listed) for A\$31.5 million (US\$28 million), with an effective date of 4 February 2010.

The sale of the Alcan Packaging Food Americas division to Bemis Company Inc., for a total consideration of US\$1.2 billion was completed on 1 March 2010.

On 5 July 2010, Rio Tinto completed the divestment of the remainder of its Alcan Packaging business with the closing of the sale of the Medical Flexibles business acquired by Amcor for US\$66 million and of the sale of the Alcan Beauty Packaging business acquired by Sun European Partners LLP for an undisclosed

sum.

## 2009 Disposals

On 1 December 2009, Rio Tinto completed the sale of Alcan Composites, part of Alcan Engineered Products, to Schweiter Technologies for a total consideration of US\$349 million.

On 20 November 2009, Rio Tinto received US\$741 million in connection with Cloud Peak Energy Inc.'s initial public offering (IPO) and related transactions, comprising US\$434 million net proceeds from the sale of part of Rio Tinto's interest in Cloud Peak Energy Resources LLC (CPER), in connection with Cloud Peak Energy Inc.'s IPO of common stock, and a cash distribution by CPER of US\$307 million from the proceeds of its debt offering of US\$600 million. An additional US\$7 million was received as part of a working capital adjustment at 31 December 2009. Rio Tinto retained an interest in CPER of 48 per cent, which was treated as an equity accounted unit (EAU) until its disposal on 21 December 2010.

US\$660 million of sales proceeds arose from these transactions and US\$151 million was received as dividends from an EAU. The sales proceeds comprised the gross IPO proceeds of US\$459 million, 52 per cent of the cash distribution by CPER (representing the percentage not retained by the Group) and US\$38 million of deferred consideration.

On 1 October 2009, Rio Tinto completed the sale of its Jacobs Ranch coal mine to Arch Coal Inc. for a final cash consideration of US\$764 million.

On 18 September 2009, Rio Tinto completed the sale of its Corumbá iron ore mine and associated river logistics operations to Vale SA for a cash consideration of US\$750 million.

On 26 January 2009, Rio Tinto completed the sale of its 50 percent equity share of the Alcan Ningxia aluminium joint venture in China to Qingtongxia Aluminium Group Co Ltd (QTX) for gross cash consideration of US\$125 million.

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## Notes to the 2011 financial statements continued

**39 Purchases and sales of subsidiaries, joint ventures, associates and other interests in businesses continued**

The aggregated carrying value of the Group's share of the major classes of assets and liabilities at the dates of sale were:

	2009 US\$m
Goodwill	184
Intangible assets	169
Property, plant & equipment	2,021
Investments in equity accounted units	11
Inventories	288
Other financial assets	251
Borrowings	(12)
Deferred tax liabilities	(82)
Provisions	(796)
Outside equity shareholders	(1)
<b>Net assets</b>	<b>2,033</b>
Add: Divestment of investment in associate	80
Less: Retained investment in associates	(359)
Less: Recycled gains and losses and movements in other comprehensive income	(18)
<b>Net assets and investments in associates disposed of</b>	<b>1,736</b>
<b>Consideration</b>	
Cash proceeds (net of transactions costs) <sup>(a)</sup>	2,424
Deferred consideration	46
Accrued disposal costs	(42)
<b>Net consideration</b>	<b>2,428</b>
<b>Gain on disposal</b>	<b>692</b>
Net cash inflow from disposals	2,424
Acquisitions of subsidiaries, joint ventures and associates	(396)
<b>Cash flow from disposals/acquisitions of subsidiaries, joint ventures and associates</b>	<b>2,028</b>

(a) Cash proceeds were stated net of US\$20 million cash and cash equivalents transferred on sale of subsidiaries.

**Table of Contents****40 Directors and key management remuneration**

Aggregate remuneration, calculated in accordance with the Companies Act 2006, of the directors of the parent companies was as follows:

	2011 US\$ '000	2010 US\$ '000	2009 US\$ '000
Emoluments	10,145	11,384	18,021
Long term incentive plans	3,215	3,334	3,092
Pension contributions: defined contribution plans	61	54	389
Gains made on exercise of share options		17,265	20

The Group defines key management personnel as the directors and members of the Executive committee. The Executive committee comprises the executive directors, product group chief executive officers (PGCEOs) and Group executives.

The aggregate remuneration incurred by Rio Tinto plc in respect of its directors was US\$9,059,000 (2010: US\$10,510,000; 2009: US\$17,784,000). The aggregate pension contribution to defined contribution plans was nil (2010: nil; 2009: US\$342,000). The aggregate remuneration, including pension contributions and other retirement benefits, incurred by Rio Tinto Limited in respect of its directors was US\$4,362,000 (2010: US\$4,262,000; 2009: US\$3,718,000). The aggregate pension contribution to defined contribution plans was US\$61,000 (2010: US\$54,000; 2009: US\$47,000).

During 2011, three directors (2010: three; 2009: three) accrued retirement benefits under defined benefit arrangements, and one director (2010: one; 2009: two) accrued retirement benefits under defined contribution arrangements.

Emoluments included in the table above have been translated from local currency at the average rate for the year with the exception of bonus payments which, together with amounts payable under long term incentive plans, have been translated at the year end rate.

Detailed information concerning directors' remuneration, shareholdings and options is shown in the *Remuneration report*, including Tables 1 to 5, on pages 106 to 117 of the 2011 *Annual report*.

Aggregate compensation, representing the expense recognised under IFRS, of the Group's key management, including directors, was as follows:

	2011 US\$ '000	2010 US\$ '000	2009 US\$ '000
Short term employee benefits and costs	25,122	28,487	35,881
Post employment benefits	4,542	3,984	3,692
Termination benefits			1,357
Share-based payments	28,190	20,822	34,476
	57,854	53,293	75,406

The figures shown above include employment costs which comprise social security and accident premiums in the UK and US and payroll taxes in Australia paid by the employer as a direct additional cost of hire. In total, they amount to US\$2,010,000 (2010: US\$2,020,000; 2009: US\$2,269,000) and although disclosed here, are not included in Table 1 of the *Remuneration report*.

In 2005, prior to being appointed a member of key management personnel, Mr. Andrew Harding relocated to the United States. As an expatriate in the US, Mr. Harding was unable to access car leasing arrangements and so was loaned a sum of US\$30,000 by the Group for the purposes of purchasing a car. The loan repayable over 60 months attracted interest of US\$3,235 during the term of the loan. The balance as at 1 January 2010 was US\$4,531 and the loan was repaid in full on 21 December 2010.

More detailed information concerning the remuneration of key management is shown in the *Remuneration report*, including Tables 1 to 5 on pages 106 to 117 of the 2011 *Annual report*.





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## Notes to the 2011 financial statements continued

**41 Auditors remuneration**

	<b>2011</b>	2010	2009
	<b>US\$m</b>	US\$m	US\$m
<b>Group Auditors remuneration<sup>(a)</sup></b>			
Audit of the Company	<b>2.8</b>	2.7	2.1
Audit of the subsidiaries	<b>11.6</b>	13.0	20.0
	<b>14.4</b>	15.7	22.1
Audit related assurance services	<b>1.1</b>	1.0	1.1
Other assurance services <sup>(b)</sup>	<b>3.3</b>	9.9	22.0
Total assurance services	<b>4.4</b>	10.9	23.1
Tax compliance <sup>(c)</sup>	<b>0.3</b>	0.1	0.3
Tax advisory services <sup>(c)</sup>	<b>1.2</b>	0.4	2.1
Services related to corporate finance transactions not covered above			
Services in connection with bond issues/capital raising	<b>0.5</b>	0.3	4.2
Services in connection with divestment programme	<b>2.0</b>	5.0	8.4
Other non-audit services not covered above	<b>1.1</b>	0.9	1.9
Total other services	<b>5.1</b>	6.7	16.9
	<b>23.9</b>	33.3	62.1
<b>Remuneration payable to other accounting firms <sup>(d)</sup></b>			
Audit of the accounts of the Group's subsidiaries	<b>2.6</b>	2.6	0.5
Taxation services <sup>(c)</sup>	<b>12.0</b>	6.6	9.1
Financial systems design and implementation	<b>0.8</b>		
Internal audit	<b>10.5</b>	6.5	8.4
Litigation services	<b>0.3</b>	0.4	0.1
Other services <sup>(e)</sup>	<b>30.4</b>	15.9	12.2
	<b>56.6</b>	32.0	30.3
Fees in respect of pension scheme audits	<b>0.1</b>		0.1
	<b>56.7</b>	32.0	30.4
	<b>80.6</b>	65.3	92.5

The Group has early adopted the statutory changes in relation to the Group auditors remuneration in line with the UK Companies Regulations 2011 (Statutory Instrument 2011/2198) for the year ended 2011. 2010 and 2009 fees have been reclassified accordingly.

(a) The remuneration payable to PricewaterhouseCoopers, the Group Auditors, is approved by the Audit committee. The Audit committee sets the policy for the award of non audit work to the auditors and approves the nature and extent of such work, and the amount of the related fees, to ensure that independence is maintained. The fees disclosed above consolidate all payments made to PricewaterhouseCoopers by the Companies and their subsidiaries, together with the Group's share of the payments made by proportionally consolidated units. Non-audit services arise largely from assurance and/or regulation related work.

(b) Other assurance services are mainly related to carve-out financial statements, sustainability assurance and limited assurance over the Taxes paid in 2010 report.

(c) Taxation services includes tax compliance and advisory services. Tax compliance involves the preparation or review of returns for corporation, income, sales and excise taxes. Tax advisory services includes advice on non recurring acquisitions and disposals, advice on transfer pricing and advice on employee global mobility.

(d) Remuneration payable to other accounting firms does not include fees for similar services payable to suppliers of consultancy services other than accountancy firms.

(e) Other services in 2011, 2010 and 2009 in respect of other accounting firms includes costs relating to capital raising, divestments and similar corporate services, advice on mine expansion and infrastructure projects, pension fund and payroll administration, advice on accounting matters, secondments of accounting firms' staff, forensic audit and other consultancy.



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**42 Related party transactions**

Information about material related party transactions of the Rio Tinto Group is set out below:

**Subsidiary companies and proportionally consolidated units**

Details of investments in principal subsidiary companies are disclosed in note 35. Information relating to proportionally consolidated units can be found in note 38.

**Equity accounted units**

Transactions and balances with equity accounted units are summarised below. Purchases relate largely to amounts charged by jointly controlled entities for toll processing of bauxite and alumina. Sales relate largely to charges for supply of coal to jointly controlled marketing entities for onward sale to third party customers.

	<b>2011</b>	2010	2009
	<b>US\$m</b>	US\$m	US\$m
<b>Income statement items</b>			
Purchases from equity accounted units	(4,211)	(3,009)	(2,558)
Sales to equity accounted units	4,079	3,038	2,088
<b>Cash flow statement items</b>			
	<b>US\$m</b>	US\$m	US\$m
Cash movement on EAU funded balances (note 25)	1,683		
Net funding of equity accounted units	(745)	(154)	(265)
<b>Statement of financial position items</b>			
	<b>US\$m</b>	US\$m	
Investments in equity accounted units (note 15) <sup>(a)</sup>	9,833	6,855	
Loans to equity accounted units	589	337	
Loans from equity accounted units	(3,472)	(278)	
Trade and other receivables: amounts due from equity accounted units (note 18)	1,374	1,341	
Trade and other payables: amounts due to equity accounted units (note 26)	(589)	(727)	

(a) Further information about investments in equity accounted units is set out in notes 36 and 37.

**Pension funds**

Information relating to pension fund arrangements is disclosed in note 47.

**Directors and key management**

Details of directors and key management remuneration are set out in note 40 and in the Remuneration report on pages 86 to 118.

**43 Exchange rates in US\$**

The principal exchange rates used in the preparation of the 2011 financial statements are:

	Annual average			Year end		
	<b>2011</b>	2010	2009	<b>2011</b>	2010	2009
Sterling	1.60	1.55	1.57	1.54	1.55	1.61
Australian dollar	1.03	0.92	0.79	1.01	1.02	0.89
Canadian dollar	1.01	0.97	0.88	0.98	1.00	0.95

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South African rand	0.14	0.14	0.12	0.12	0.15	0.14
Euro	1.39	1.33	1.39	1.30	1.33	1.44

### **44 Bougainville Copper Limited (BCL)**

Mining has been suspended at the Panguna mine since 1989. Safe mine access by company employees has not been possible since that time and an accurate assessment of the condition of the assets cannot therefore be made. Considerable funding would be required to recommence operations to the level which applied at the time of the mine's closure in 1989. An Order of Magnitude study undertaken in 2008 indicates that costs in a range of US\$2 billion to US\$4 billion would be required to re-open the mine assuming all site infrastructure is replaced. The directors consider that the Group does not currently realise a benefit from its interest in BCL and therefore BCL information continues to be excluded from the financial statements. BCL reported a net loss of US\$2 million for the financial year (2010: net profit of US\$1 million). This is based upon actual transactions for the financial year. The aggregate amount of capital and reserves reported by BCL as at 31 December 2011 was US\$139 million (2010: US\$142 million). The Group owns 215,920,089 shares in BCL, representing 53.8 per cent of the issued share capital. The investment of US\$195 million was fully provided against in 1991. At 31 December 2011, the number of shares in BCL held by the Group, multiplied by the share price as quoted in the Australian Securities Exchange, resulted in an amount of US\$164 million (2010: US\$354 million).

**Table of Contents****Notes to the 2011 financial statements continued****45 Events after the statement of financial position date****Ivanhoe Mines Ltd**

On 24 January 2012, Rio Tinto took a majority stake in Ivanhoe Mines Ltd (Ivanhoe), purchasing shares that took its interest to 51 per cent from 49 per cent at 31 December 2011. The Group had previously gained control of Oyu Tolgoi LLC (OT), in which Ivanhoe holds a 66 per cent interest, on 15 December 2010 and it has consolidated OT since that date. The Group will consolidate the remainder of Ivanhoe (the non OT assets) from the date of acquisition of control, reflecting 100 per cent of the assets and liabilities in the relevant lines in the statement of financial position and the proportion of Ivanhoe and its non OT subsidiaries, not owned by the Group, will be shown as non-controlling interests.

Non OT assets will be ascribed provisional fair values as at the date of acquisition of control subject to finalisation within 12 months. Any excess or shortfall of the fair value of the 49 per cent interest in non OT assets the Group held before this transaction, against the carrying value of that interest, will be taken to the income statement.

Any excess or shortfall of the consideration paid for the additional two per cent interest in Ivanhoe, over the resulting reduction in the non-controlling interest in OT and the incremental fair value of the non OT assets acquired, will be charged or credited to equity. Deferred tax will be provided on any excess of the fair value attributed to assets acquired over the tax basis of those assets, with a consequential increase in goodwill.

**Richards Bay Minerals**

On 1 February 2012 Rio Tinto announced that it will increase its stake in Richards Bay Minerals (RBM) to 74 per cent through the acquisition of BHP Billiton's 37 per cent interest. The acquisition has been triggered by BHP Billiton's decision to exercise a put option agreed between Rio Tinto and BHP Billiton as part of RBM's restructuring in 2009. The final consideration for the acquisition will be determined through a previously agreed valuation process. Completion is subject to regulatory approvals.

Rio Tinto currently treats its interest in RBM as an equity accounted unit, as it is a jointly controlled entity. On initial consolidation, the excess or shortfall of the fair value of the Group's existing interest in RBM over the carrying value of that interest will be taken to the income statement.

**46 Share based payments**

Rio Tinto plc and Rio Tinto Limited (the Companies) have a number of share based payment plans, which are described in detail in the Remuneration report. These plans have been accounted for in accordance with the fair value recognition provisions of IFRS 2 Share-based Payment, which means that IFRS 2 has been applied to all grants of employee share based payments that had not vested as at 1 January 2004.

The charge that has been recognised in the income statement for Rio Tinto's share based compensation plans, and the related liability (for cash-settled plans), is set out in the table below.

	Charge recognised for the year			Liability at the end of the year	
	2011	2010	2009	2011	2010
	US\$m	US\$m	US\$m	US\$m	US\$m
Equity-settled plans	157	119	76		
Cash-settled plans <sup>(a)</sup>	(1)	5	101	2	5
<b>Total</b>	<b>156</b>	<b>124</b>	<b>177</b>	<b>2</b>	<b>5</b>

(a) From 1 July 2010 the accounting treatment for the Performance Share Plan (formerly called the Mining Companies Comparative Plan) changed from cash settled to equity settled. This resulted in six months of expense for 2010 being classified as cash-settled and the remaining six months as equity-settled. For further detail refer to the Performance Share Plan section in this note.

All options and awards outstanding when the 2009 rights issues took place were adjusted to nullify any impact on the economic position of the participant at exercise.

The main plans are as follows:

### Share Savings Plans

Awards under these plans are settled in equity and accounted for accordingly. The fair value of each award on the day of grant was estimated using a lattice-based option valuation model, including allowance for the exercise price being at a discount to market price.

### Share Option Plans

The Group has a policy of settling these awards in equity, although the directors at their discretion can offer a cash alternative. The awards are accounted for in accordance with the requirements applying to equity-settled, share based payment transactions. The performance conditions in relation to Total Shareholder Return (TSR) have been incorporated in the measurement of fair value for these awards by modelling the correlation between Rio Tinto's TSR and that of the index. The relationship between Rio Tinto's TSR and the index was simulated many thousands of times to derive a distribution which, in conjunction with the lattice-based option valuation model, was used to determine the fair value of the options.

### Share Ownership Plan

The fair values of awards of Matching and Free Shares made by Rio Tinto are taken to be the market value of the shares on the date of purchase. These awards are settled in equity. The total fair value of shares awarded during the year was US\$3 million (2010: US\$2 million).

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### **Performance Share Plan (formerly the Mining Companies Comparative Plan)**

Prior to 2010, the Remuneration Committee gave the Plan's participants the option to receive their awards in cash or as shares. This option resulted in the Plan being classified as a cash-settled share-based payment transaction and it was accounted for accordingly.

In 2010 the Group's policy for settling these awards changed. Since 2010, participants have been assigned shares in settlement of their awards with no option to receive a direct cash alternative. As a result of this, and with effect from 1 July 2010, the Plan has been accounted for in accordance with the requirements applying to equity-settled share-based payment transactions.

The change in settlement policy has been accounted for under IFRS 2 as a modification. Accordingly, the fair values of the awards granted prior to this change were re-measured at 1 July 2010 and from that date treated as equity-settled awards. The incremental fair value as a result of this modification was nil. This re-measurement was calculated using a Monte Carlo simulation model. The fair value of awards granted after July 2010 are measured at date of grant.

For the purpose of the disclosures below, the grant date fair values of the awards made prior to 2008 were calculated as the market value of the shares at the date of award reduced by 50 per cent for anticipated relative TSR performance. The grant date fair value of the awards made since 2008 were calculated using a Monte Carlo simulation model. In each case fair values were adjusted for non receipt of dividends between measurement date and date of vesting (excluding awards for executive directors and product group CEOs). Forfeitures are assumed prior to vesting at three per cent per annum of outstanding awards (except for the 2009 awards which applied to senior executives only with no allowance for forfeitures).

### **Management Share Plan**

The Management Share Plan was introduced during 2007 to provide conditional share-based awards to management. The vesting of these awards is dependent on service and/or performance based conditions being met. The awards will be settled in equity including the dividends accumulated from date of award to vesting. The awards are accounted for in accordance with the requirements applying to equity-settled share based payment transactions. The fair value of each award on the day of grant is equal to share price on the day of grant less a small adjustment for the timing of dividends vesting. Forfeitures are assumed prior to vesting at five per cent per annum of outstanding awards.

### **Bonus Deferral Plan**

The Bonus Deferral Plan was introduced during 2009 and is made up of two parts: the Bonus Deferral Award and the Company Contributed Award. The Bonus Deferral Award was established for the mandatory deferral of 100 per cent of the 2008 Bonus for executive directors and product group executives and 50 per cent of the 2008 Bonus for other executives. In addition, in order to enhance retention of key employees the Company Contributed Award was made in respect of 25 per cent of the gross annual basic salary for other executives.

Additional Bonus Deferral Awards were made in 2010 for the mandatory deferral of 50 per cent of the 2010 Bonus for executive directors and product group executives and 10 per cent of the 2010 Bonus for other executives, on the same terms as the 2008 Bonus Deferral Awards.

The vesting of these awards is dependent only on service conditions being met. The awards will be settled in equity including the dividend accumulated from date of award to vesting. The awards are accounted for in accordance with the requirements applying to equity-settled share based payment transactions. The fair value of each award on the day of grant is equal to the share price on the day of grant less a small adjustment for the timing of dividends vesting. Forfeitures are assumed prior to vesting at three per cent per annum of outstanding awards.

### **Lattice-based option valuation model**

The fair value of share options is estimated as at the date of grant using a lattice-based option valuation model. The significant assumptions used in the valuation model are disclosed below. Expected volatilities are based on the historical volatility of Rio Tinto's share returns under the UK and Australian listings. Historical data was used to estimate employee forfeiture and cancellation rates within the valuation model. Under the Share Option Plans, it is assumed that after options have vested, 20 per cent per annum of participants will exercise their options when the market price is at least 20 per cent above the exercise price of the option. Participants in the Share Savings Plans are assumed to exercise their options immediately after vesting.

The implied lifetime of options granted is derived from the output of the option valuation model and represents the period of time that options granted are expected to be outstanding. The risk-free rate used in the valuation model is equal to the yield available on UK and Australian zero-coupon government bonds (for Rio Tinto plc and Limited options respectively) at the date of grant with a term equal to the expected term of the options.

The key assumptions used in the valuations are noted in the table below:



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	Risk-free		Dividend	Forfeiture	Cancellation <sup>(a)</sup>	Implied lifetime Years
	interest rate	Expected volatility	yield	rates	rates	
	%	%	%	%	%	
<b>Awards made in 2011</b>						
<b>Share Savings Plan</b>						
Rio Tinto plc	0.6-1.4	46.0	2.5	5.0	5.0	2.2-5.2
Rio Tinto Limited	3.5-3.6	37.0	1.9	5.0	5.0	3.2-5.2
<b>Share Option plan</b>						
Rio Tinto plc	2.5	46.0	1.6		n/a	5.3
Rio Tinto Limited	5.4	37.0	1.3		n/a	6.4

- (a) In addition to the regular cancellation rates above it is assumed that on the anniversary of date of grant a proportion of employees will cancel their awards in favour of new awards if the then share price is less than the exercise price. The proportion assumed is a sliding scale from 20 per cent cancelling if the then share price equals the exercise price to 100 per cent cancelling if the then share price is 75 per cent of the exercise price or less.

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Notes to the 2011 financial statements continued

**46 Share based payments continued**

**Summary of options outstanding**

A summary of the status of the Companies' equity-settled share option plans at 31 December 2011 is presented below.

	Number	Weighted average exercise price per option £/A\$	Weighted average remaining contractual life Years	Aggregate intrinsic value 2011 US\$m
<b>Options outstanding at 31 December 2011</b>				
Rio Tinto plc Share Savings Plan (£17-£32)	1,391,220	25.94	2.3	11
Rio Tinto Limited Share Savings Plan (A\$40-A\$67)	2,306,519	53.78	2.8	16
Rio Tinto plc Share Option Plan (£10-£43)	3,596,937	21.61	5.6	65
Rio Tinto Limited Share Option Plan (A\$17-A\$82)	1,181,273	42.91	5.6	25
	8,475,949			117

As at 31 December 2010 there were 8,680,850 options outstanding with an aggregate intrinsic value of US\$317 million.

**Options exercisable at 31 December 2011**

Rio Tinto plc Share Option Plan (£10-£23)	1,526,370	14.84	2.5	39
Rio Tinto Limited Share Option Plan (A\$17-A\$55)	492,547	37.00	2.9	11
	2,018,917			50

As at 31 December 2011, there were no options (2010: no options) exercisable under either the Rio Tinto plc or the Rio Tinto Limited Share Savings Plans.

The Management Share Plan, Performance Share Plan and Bonus Deferral Plan together represent 81 per cent of the total IFRS 2 charge. A summary of the status of these plans at 31 December is presented below.

**Performance Share Plan**

	Rio Tinto plc Awards				Rio Tinto Limited Awards			
	Weighted average fair value at grant date		Weighted average fair value at grant date		Weighted average fair value at grant date		Weighted average fair value at grant date	
	2011	2011	2010	2010	2011	2011	2010	2010
	Number	£	Number	£	Number	A\$	Number	A\$
Non-vested shares at 1 January	2,475,349	27.37	2,324,181	14.98	1,289,576	57.09	1,515,643	31.97
Reclassification of phantom awards			(19,624)	12.81			(9,563)	28.28
Awarded	782,919	31.28	1,127,414	36.35	466,965	62.26	576,767	75.81

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Forfeited	(36,018)	32.37	(51,313)	20.33	(24,040)	69.76	(156,918)	37.49
Failed performance conditions	(366,574)	10.49	(416,765)	7.49	(254,234)	28.96	(302,218)	19.61
Vested	(382,473)	10.35	(488,544)	7.41	(273,706)	28.64	(334,135)	19.42
Non-vested shares at 31 December	2,473,203	33.67	2,475,349	27.37	1,204,561	71.24	1,289,576	57.09

	2011 Number	Weighted average share price 2011 £	2010 Number	Weighted average share price 2010 £	2011 Number	Weighted average share price 2011 A\$	2010 Number	Weighted average share price 2010 A\$
Shares issued in respect of vested awards during the year	382,473	43.27	488,544	32.06	273,706	87.81	334,135	71.94

In addition to the equity-settled awards shown above, there were 2,608 plc cash-settled awards outstanding at 31 December 2011. The total liability for these awards at 31 December 2011 was less than US\$1 million (2010: less than US\$1 million).

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**Management Share Plan and Bonus Deferral Plan**

	Rio Tinto plc Awards				Rio Tinto Limited Awards			
	Weighted average fair value at grant date		Weighted average fair value at grant date		Weighted average fair value at grant date		Weighted average fair value at grant date	
	2011	2011	2010	2010	2011	2011	2010	2010
	Number	£	Number	£	Number	A\$	Number	A\$
Non-vested awards at 1 January	2,758,763	27.58	2,619,721	22.76	1,475,544	62.46	1,342,742	55.81
Awarded	828,730	39.83	999,569	36.34	544,812	79.60	569,125	75.71
Forfeited	(179,131)	30.92	(232,952)	24.29	(67,699)	61.31	(79,694)	57.81
Expired	(382)	46.13						
Vested	(842,608)	31.39	(627,575)	22.63	(378,569)	75.81	(356,629)	59.60
Non-vested awards at 31 December	2,565,372	30.05	2,758,763	27.58	1,574,088	65.23	1,475,544	62.46
Comprising								
Management Share Plan	2,446,784	29.56	2,506,151	28.61	1,521,599	64.29	1,344,119	64.49
Bonus Deferral Plan	118,588	40.13	252,612	17.32	52,489	80.36	131,425	41.75

  

	Weighted Average share price 2011		Weighted Average share price 2010		Weighted Average share price 2011		Weighted Average share price 2010	
	2011	2011	2010	2010	2011	2011	2010	2010
	Number	£	Number	£	Number	A\$	Number	A\$
Shares issued in respect of vested awards during the year (including dividend shares applied on vesting)								
Management Share Plan	599,902	42.88	374,609	34.69	176,881	80.28	282,117	73.59
Bonus Deferral Plan	245,928	32.65	213,786	42.74	117,160	65.66	109,512	86.37

In addition to the equity-settled awards shown above, there were 9,476 plc cash-settled awards and 2,056 Limited cash settled awards outstanding at 31 December 2011. The total liability for the plc awards at 31 December 2011 was less than US\$1 million (2010: less than US\$1 million) and for Limited awards was less than US\$1million (2010: less than US\$1million).

**47 Post retirement benefits**

**Description of plans**

The Group operates a number of pension and post retirement healthcare plans around the world. Some of these plans are defined contribution and some are defined benefit, with assets held in separate trusts, foundations and similar entities. Valuations of these plans are produced and updated annually to 31 December by qualified actuaries.

**Pension plans**

The majority of the Group's pension obligations are in Canada, the UK, the US, Switzerland and the Eurozone. There are some defined benefit obligations in Australia but the retirement arrangements there are predominantly defined contribution. In general the Group has a policy of moving towards defined contribution provision.

A number of defined benefit pension plans are sponsored by the Canadian entities. The two main plans are for salaried and bargaining employees. Benefits for salaried staff are generally linked to final average pay, while benefits for bargaining employees are reviewed in negotiation with unions.

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There are a number of pension arrangements in the UK. The defined benefit sections of these arrangements are linked to final pay and are closed to new members, with new employees being admitted to defined contribution sections.

A number of defined benefit pension plans are sponsored by the US entities. Benefits for salaried staff are generally linked to final average pay and closed to new entrants, while benefits for bargaining employees are reviewed in negotiation with unions.

In Europe, there are defined benefit plans in Switzerland, the Netherlands, Germany and France. The largest single plan is in Switzerland and provides benefits linked to final average pay.

In Australia, the main arrangements are principally defined contribution in nature but there are sections providing defined benefits linked to final pay, typically paid in lump sum form.

The Group also operates a number of unfunded defined benefit plans, which are included in the figures below.

### Post retirement healthcare plans

Certain subsidiaries of the Group, mainly in the US and Canada, provide health and life insurance benefits to retired employees and in some cases to their beneficiaries and covered dependants. Eligibility for cover is dependent upon certain age and service criteria. These arrangements are generally unfunded, and are included in the figures below.

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Notes to the 2011 financial statements continued

**47 Post retirement benefits continued**

**Plan assets**

The proportions of the total fair value of assets in the pension plans for each asset class at the statement of financial position date were:

	2011	2010
Equities	47.9%	53.6%
Bonds	39.5%	34.8%
Property	8.1%	7.1%
Other	4.5%	4.5%
	<b>100.0%</b>	100.0%

The assets of the plans are generally managed on a day-to-day basis by external specialist fund managers. These managers may invest in the Group's securities subject to limits imposed by the relevant fiduciary committees and local legislation. The approximate total holding of Group securities within the plans is US\$22 million (2010: US\$24 million).

**Main assumptions (rates per annum)**

The main assumptions for the valuations of the plans under IAS 19 are set out below. Information on the sensitivity of the results to the main assumptions is set out in the sensitivity section on page 205.

	UK	Australia <sup>(a)</sup>	US	Canada	Eurozone	Switzerland	Other (mainly Africa) <sup>(b)</sup>
At 31 December 2011							
Rate of increase in salaries	4.4%	3.8%	3.7%	3.3%	2.4%	2.4%	4.9%
Rate of increase in pensions	2.5%	2.1%		0.8%	1.5%		2.9%
Discount rate	4.7%	3.2%	4.3%	4.5%	4.2%	2.0%	5.4%
Inflation <sup>(c)</sup>	3.0%	2.1%	2.2%	2.0%	2.0%	1.4%	2.9%
At 31 December 2010							
Rate of increase in salaries	4.9%	4.3%	3.8%	3.5%	2.5%	2.6%	4.3%
Rate of increase in pensions	3.2%	2.6%		0.9%	1.9%		2.3%
Discount rate	5.4%	4.7%	5.3%	5.5%	4.9%	2.6%	5.0%
Inflation	3.4%	2.6%	2.3%	2.3%	2.1%	1.6%	2.3%

(a) The discount rate shown for Australia is after tax.

(b) The assumptions vary by location for the Other plans. Assumptions shown are for Southern Africa.

(c) The inflation assumption shown for the UK is for the Retail Price Index. The assumption for the Consumer Price Index at 31 December 2011 was 2.0 per cent (2010: 2.7 per cent).

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The main financial assumptions used for the healthcare plans, which are predominantly in the US and Canada, were: discount rate: 4.3 per cent (2010: 5.3 per cent), medical trend rate: 6.7 per cent reducing to 5.0 per cent by the year 2017 broadly on a straight line basis (2010: 7.4 per cent, reducing to 4.9 per cent by the year 2017), claims costs based on individual company experience.

For both the pension and healthcare arrangements the post retirement mortality assumptions allow for future improvements in longevity. The mortality tables used imply that a man aged 60 at the statement of financial position date has a weighted average expected future lifetime of 25 years (2010: 24 years) and that a man aged 60 in 2031 would have a weighted average expected future lifetime of 27 years (2010: 26 years).

	UK	Australia	US	Canada	Eurozone	Switzerland	Other (mainly Africa) <sup>(a)</sup>
Long-term rate of return expected at 1 January 2011							
Equities	7.6%	8.4%	7.8%	7.2%	7.0%	5.7%	8.6%
Bonds	4.4%	4.9%	4.6%	4.2%	4.4%	2.5%	4.8%
Property	5.8%	6.3%	5.9%	5.3%	5.2%	3.8%	6.7%
Other	3.5%	2.7%	3.1%	3.2%	2.8%	1.9%	3.1%
Long-term rate of return expected at 1 January 2010							
Equities	8.0%	8.7%	8.4%	7.7%	7.8%	6.4%	12.7%
Bonds	4.5%	4.8%	5.0%	4.8%	4.8%	2.8%	8.7%
Property	6.1%	6.6%	6.4%	5.8%	6.1%	4.4%	10.7%
Other	4.2%	2.5%	3.2%	3.1%	2.9%	2.4%	6.5%

(a) The assumptions vary by location for the Other plans. Assumptions shown are for Southern Africa. The expected rate of return on pension plan assets is determined as management's best estimate of the long-term returns of the major asset classes – equities, bonds, property and other – weighted by the allocation of assets among the categories at the measurement date. The expected rate of return is calculated using geometric averaging. The expected rates of return shown have been reduced to allow for plan expenses including, where appropriate, taxes incurred within pension plans on investment returns.

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Based on the assumptions made and the distribution of assets the weighted average expected return on assets as at 1 January 2011 was 5.9 per cent (2010: 6.4 per cent) and is expected to be 5.0 per cent as at 1 January 2012.

The sources used to determine management's best estimate of long-term returns are numerous and include country-specific bond yields, which may be derived from the market using local bond indices or by analysis of the local bond market, and country-specific inflation and investment market expectations derived from market data and analysts' or governments' expectations as applicable.

**Total expense recognised in the income statement**

	Pension	Other	2011 Total	2010 Total	2009 Total
	benefits	benefits	US\$m	US\$m	US\$m
Current employer service cost for defined benefit plans	(239)	(11)	(250)	(233)	(193)
Interest cost	(852)	(58)	(910)	(974)	(826)
Expected return on assets	782	1	783	777	581
Past service cost	(6)	4	(2)	(29)	(11)
Gains on curtailment and settlement	41	20	61	111	124
Total defined benefit expense	(274)	(44)	(318)	(348)	(325)
Current employer service cost for defined contribution and industry-wide plans	(285)	(1)	(286)	(225)	(199)
<b>Total expense recognised in the income statement</b>	<b>(559)</b>	<b>(45)</b>	<b>(604)</b>	<b>(573)</b>	<b>(524)</b>

The above expense amounts are included as an employee cost within net operating costs. In 2011, US\$21 million (pre-tax) of curtailment and settlement gains relating to the sale of businesses have been excluded from Underlying earnings (2010: US\$88 million, 2009: US\$61 million).

**Total amount recognised in other comprehensive income before tax**

	2011	2010	2009
	US\$m	US\$m	US\$m
Actuarial losses	(1,948)	(719)	(919)
(Loss) on currency translation on plans using US dollar functional currency		(67)	(70)
(Loss)/gain on application of asset limit	(13)		19
Total loss recognised in other comprehensive income (a)	(1,961)	(786)	(970)
Cumulative amount recognised in Other comprehensive income at 31 December	(4,547)	(2,586)	(1,800)

(a) Actuarial loss includes US\$5 million loss related to equity accounted units (2010: US\$4 million loss; 2009: US\$126 million loss).

**(Deficits)/surpluses in the plans**

The following amounts were measured in accordance with IAS 19 at 31 December:

	Pension	Other	2011 Total	2010 Total	2009 Total	2008 Total	2007 Total
	benefits	benefits	US\$m	US\$m	US\$m	US\$m	US\$m
Total fair value of plan assets	13,075		13,075	13,144	12,407	9,306	14,350
Present value of obligations funded	(16,797)	(1)	(16,798)	(15,507)	(15,148)	(11,044)	(14,822)
Present value of obligations unfunded	(933)	(1,202)	(2,135)	(2,002)	(2,385)	(1,784)	(2,089)
Present value of obligations total	(17,730)	(1,203)	(18,933)	(17,509)	(17,533)	(12,828)	(16,911)
Unrecognised past service cost	8	(4)	4	3	(7)	(12)	(2)
Effect of asset limit	(13)		(13)			(19)	(45)
Aggregate (deficit) to be shown in the statement of financial position	(4,660)	(1,207)	(5,867)	(4,362)	(5,133)	(3,553)	(2,608)
Comprising:							



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Deficits	(4,748)	(1,207)	<b>(5,955)</b>	(4,472)	(5,150)	(3,713)	(3,313)
Surpluses	88		<b>88</b>	110	17	160	705
<b>Net (deficits) on pension plans</b>	(4,660)		<b>(4,660)</b>	(3,238)	(3,803)	(2,648)	(1,519)
<b>Unfunded post retirement healthcare obligation</b>		(1,207)	<b>(1,207)</b>	(1,124)	(1,330)	(905)	(1,089)

The surplus amounts shown above are included in the statement of financial position as Trade and other receivables. See note 18. Deficits are shown in the statement of financial position as Post retirement benefits. See note 27.

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Notes to the 2011 financial statements continued

**47 Post retirement benefits continued**

**Contributions to plans**

Contributions to defined benefit pension plans during 2011 totalled US\$610 million (2010: US\$1,036 million; 2009: US\$560 million). The decrease compared to 2010 results from a combination of special contributions made in 2010 as a result of the sale of the Packaging business and the acceleration of some contributions from 2011 into 2010. Contributions of US\$269 million (2010: US\$212 million; 2009: US\$190 million) were made to defined contribution arrangements and US\$16 million (2010: US\$12 million; 2009: US\$9 million) to industry-wide plans; these are charged against profits and are included in the figures for defined contribution current employer service costs shown on the previous page.

Contributions for other benefits totalled US\$72 million (2010: US\$79 million; 2009: US\$46 million).

Contributions to defined benefit pension plans for 2012 are estimated to be around US\$39 million less than for 2011. This is kept under regular review and actual contributions will be determined in line with the Group's wider financing strategy. Healthcare plans are generally unfunded and contributions for future years will be equal to benefit payments and therefore cannot be predetermined.

**Movements in the present value of the defined benefit obligation and in the fair value of assets**

The amounts shown below include, where appropriate, 100 per cent of the costs, contributions, gains and losses in respect of employees who participate in the plans and who are employed in operations that are proportionally consolidated or equity accounted. Consequently, the costs, contributions, gains and losses may not correspond directly to the amounts disclosed above in respect of the Group. Defined contribution plans and industry-wide plans are excluded from the movements below.

	Pension	Other	2011	2010
	benefits	benefits	Total	Total
			US\$m	US\$m
<b>Change in present value of obligation:</b>				
Present value of obligation at start of the year	(16,391)	(1,118)	(17,509)	(17,533)
Current employer service cost	(239)	(11)	(250)	(233)
Interest cost	(852)	(58)	(910)	(974)
Contributions by plan participants	(45)	(2)	(47)	(53)
Experience gain/(loss)	34	(1)	33	146
Changes in actuarial assumptions (loss)	(1,551)	(123)	(1,674)	(1,207)
Benefits paid	974	74	1,048	1,045
Arrangements divested	19		19	1,119
Inclusion of arrangements		(2)	(2)	(15)
Past service cost	(5)	2	(3)	(39)
Curtailments	41	20	61	104
Settlements	1		1	428
Currency exchange rate gain/(loss)	284	16	300	(297)
Present value of obligation at end of the year	(17,730)	(1,203)	(18,933)	(17,509)

	2011	2010	2009	2008	2007
Gains and losses on obligations					
Experience gains/(losses): (ie variances between the estimate of obligations and the subsequent outcome)	33	146	(139)	(37)	(41)
As a percentage of the present value of the year end obligations	0%	1%	(1%)	0%	0%
Change in assumptions (loss)/gain (US\$m)	(1,674)	(1,207)	(1,671)	1,684	315

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			2011	2010
	Pension	Other	Total	Total
	benefits	benefits	US\$m	US\$m
<b>Change in plan assets:</b>				
Fair value of plan assets at the start of the year	13,144		<b>13,144</b>	12,407
Expected return on plan assets	782	1	<b>783</b>	777
Actuarial (losses)/gains on plan assets	(320)		<b>(320)</b>	346
Contributions by plan participants	45	2	<b>47</b>	53
Contributions by employer	624	71	<b>695</b>	1,116
Benefits paid	(974)	(74)	<b>(1,048)</b>	(1,045)
Arrangements divested	(5)		<b>(5)</b>	(401)
Inclusion of arrangements				15
Settlements	(1)		<b>(1)</b>	(421)
Currency exchange rate (loss)/gain	(220)		<b>(220)</b>	297
Fair value of plan assets at the end of the year	13,075		<b>13,075</b>	13,144
Actual return on plan assets			<b>463</b>	1,123

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	2011	2010	2009	2008	2007
Difference between the expected and actual return on plan assets: (Loss)/gain (US\$m)	(320)	346	891	(3,308)	(129)
As a percentage of year end plan assets	(2%)	3%	7%	(36%)	(1%)

**Sensitivity**

The values reported for the defined benefit pension obligations are sensitive to the actuarial assumptions used for projecting future benefit payments and discounting those payments. The approximate sensitivities to the principal assumptions used to measure the obligations are:

Assumption	Change in assumption	Approximate (increase)/ decrease in obligations	
		Pensions US\$m	Other US\$m
Discount rate	increase of 0.5 percentage points	1,091	68
	decrease of 0.5 percentage points	(1,166)	(73)
Inflation	increase of 0.5 percentage points	(598)	(39)
	decrease of 0.5 percentage points	572	33
Salary increases	increase of 0.5 percentage points	(136)	(4)
	decrease of 0.5 percentage points	131	3
Demographic allowance for future improvements in longevity	participants assumed to have the mortality rates of individuals who are one year older	421	18
	participants assumed to have the mortality rates of individuals who are one year younger	(421)	(18)

**Post-retirement healthcare sensitivity to changes in assumptions**

An increase of one per cent in the assumed medical cost trend rates would increase the aggregate of the current service cost and interest cost components of the post retirement healthcare expense by US\$5 million (2010: US\$7 million; 2009: US\$6 million), and increase the benefit obligation for these plans by US\$71 million (2010: US\$72 million; 2009: US\$98 million). A decrease of one per cent in the assumed medical cost trend rates would decrease the aggregate of the current service cost and interest cost components of the post retirement healthcare expense by US\$4 million (2010: US\$6 million; 2009: US\$5 million), and decrease the benefit obligation for these plans by US\$60 million (2010: US\$62 million; 2009: US\$83 million).

**Table of Contents****Rio Tinto financial information by business unit**

Twelve months ended 31 December

	Rio Tinto interest %	Gross revenue(a)			EBITDA(b)			Net earnings(c)		
		2011 US\$m	2010 US\$m	2009 US\$m	2011 US\$m	2010 US\$m	2009 US\$m	2011 US\$m	2010 US\$m	2009 US\$m
<b>Iron Ore</b>										
Hamersley	100.0	21,626	16,757	8,874	15,935	11,819	5,190	10,617	7,911	3,283
Robe River (d)	53.0	5,229	4,322	2,186	4,084	3,328	1,422	2,172	1,771	718
Iron Ore Company of Canada	58.7	2,471	2,447	1,006	1,329	1,379	344	491	491	112
Dampier Salt	68.4	434	442	453	23	79	203	(1)	29	88
Product group operations		29,760	23,968	12,519	21,371	16,605	7,159	13,279	10,202	4,201
Evaluation projects/other		149	56	79	(441)		(47)	(426)	(13)	(75)
		29,909	24,024	12,598	20,930	16,605	7,112	12,853	10,189	4,126
<b>Aluminium</b>										
	(e)	2,834	2,490	1,413	360	321	(33)	(12)	(32)	(242)
Bauxite & Alumina		2,834	2,490	1,413	360	321	(33)	(12)	(32)	(242)
Primary Metal		6,985	6,415	5,271	1,385	1,354	544	450	496	(56)
Other Integrated Operations		46	46	32	(142)	(14)	(44)	(128)	(42)	(32)
Intersegment		(1,786)	(1,422)	(1,111)	2	(10)	5	3	(6)	3
Integrated Operations		8,079	7,529	5,605	1,605	1,651	472	313	416	(327)
Other Product Group Items		3,923	3,592	3,050	127	190	91	95	129	58
Product group operations		12,002	11,121	8,655	1,732	1,841	563	408	545	(269)
Evaluation projects/other		157	192	46	31	47	12	34	66	9
		12,159	11,313	8,701	1,763	1,888	575	442	611	(260)
<b>Copper</b>										
Kennecott Utah Copper	100.0	3,470	3,342	2,382	1,944	2,174	1,446	1,224	1,338	814
Escondida	30.0	2,167	2,699	2,039	1,203	1,806	1,327	659	1,013	760
Grasberg joint venture	(f)	406	611	991	262	403	706	129	206	385
Palabora	57.7	1,110	837	635	346	205	123	100	52	17
Northparkes	80.0	402	308	173	212	193	98	127	112	53
Product group operations		7,555	7,797	6,220	3,967	4,781	3,700	2,239	2,721	2,029
Evaluation projects/other		79			(573)	(282)	(229)	(307)	(191)	(155)
		7,634	7,797	6,220	3,394	4,499	3,471	1,932	2,530	1,874
<b>Energy</b>										
Rio Tinto Coal Australia	(g)	6,196	4,603	3,870	2,318	1,731	1,799	1,240	940	1,017
Rössing	68.6	450	493	376	(83)	23	83	(48)	(3)	24
Energy Resources of Australia	68.4	675	533	620	77	118	358	(53)	22	138
Product group operations		7,321	5,629	4,866	2,312	1,872	2,240	1,139	959	1,179
Evaluation projects/other		6	23	3	(80)	427	(15)	(65)	228	(12)
		7,327	5,652	4,869	2,232	2,299	2,225	1,074	1,187	1,167
<b>Diamonds &amp; Minerals</b>										
Diamonds	(h)	727	682	450	180	157	(7)	10	69	(68)
RTIT	(i)	1,580	1,331	1,284	345	255	209	151	74	(9)
Rio Tinto Minerals	(j)	901	1,015	882	239	209	187	144	199	78
Product group operations		3,208	3,028	2,616	764	621	389	305	342	1
Evaluation projects/other		12	7	2	(61)	(15)	820	(53)	(14)	799
		3,220	3,035	2,618	703	606	1,209	252	328	800



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**Rio Tinto financial information by business unit continued**

	Rio Tinto	Gross revenue(a)			EBITDA(b)			Net earnings(c)		
	2011	2010	2009	2011	2010	2009	2011	2010	2009	
interest	US\$m	US\$m	US\$m	US\$m	US\$m	US\$m	US\$m	US\$m	US\$m	
(k)										
<b>Other operations</b>	<b>8,246</b>	10,151	9,897	<b>411</b>	757	494	<b>(120)</b>	237	(232)	
Intersegment transactions	(2,817)	(2,758)	(2,169)	58	(34)	(33)	40	(15)	(21)	
<b>Product Group Total</b>	<b>65,678</b>	59,214	42,734	<b>29,491</b>	26,620	15,053	<b>16,473</b>	15,067	7,454	
<b>Other items</b>				<b>(843)</b>	(594)	(719)	<b>(593)</b>	(554)	(577)	
Exploration and evaluation				(127)	(48)	(22)	(102)	(52)	5	
Net interest							(229)	(474)	(584)	
<b>Underlying earnings</b>				<b>28,521</b>	25,978	14,312	<b>15,549</b>	13,987	6,298	
Share of equity accounted unit sales (a)	(5,085)	(4,043)	(2,472)							
Items excluded from underlying earnings	(56)			115	575	159	(9,723)	251	(1,426)	
<b>Consolidated sales revenue/EBITDA/net earnings</b>	<b>60,537</b>	55,171	40,262	<b>28,636</b>	26,553	14,471	<b>5,826</b>	14,238	4,872	
Depreciation & amortisation in subsidiaries				(3,817)	(3,437)	(3,427)				
Impairment charges				(9,766)	(982)	(1,573)				
Depreciation & amortisation in equity accounted units				(527)	(522)	(440)				
Taxation and finance items in equity accounted units				(474)	(903)	(739)				
<b>Profit on ordinary activities before finance items and tax</b>				<b>14,052</b>	20,709	8,292				

Refer to notes (a) to (k) on page 212.

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Rio Tinto	interest %	Capital expenditure(m) for the year to 31 December			Depreciation & amortisation for the year to 31 December			Operating assets(n) as at 31 December			Employees as at 31 December		
		2011 US\$m	2010 US\$m	2009 US\$m	2011 US\$m	2010 US\$m	2009 US\$m	2011 US\$m	2010 US\$m	2009 US\$m	2011 Number	2010 Number	2009 Number
<b>Iron Ore</b>													
Hamersley	100.0	2,328	1,227	1,337	810	630	506	8,415	8,010	7,530	8,029	7,525	6,556
Robe River <sup>(d)</sup>	53.0	1,023	222	599	249	222	140	2,935	2,612	2,751	1,557	1,489	1,114
Iron Ore Company of Canada	58.7	653	253	180	110	108	86	1,177	847	808	2,361	2,179	2,027
Dampier Salt	68.4	53	14	21	25	23	18	249	196	179	510	439	405
Simandou		700			9	10	7	588	(42)	(10)	1,172	767	607
Other				11			6	4	5	5			666
		4,757	1,716	2,148	1,203	993	763	13,368	11,628	11,263	13,629	12,399	11,375
<b>Aluminium</b>													
Bauxite & Alumina	(e)	665	428	749	351	324	295	9,504	8,249	6,976	4,649	4,335	4,598
Primary Metal		1,211	531	549	725	716	781	15,726	21,525	21,565	11,075	11,464	12,027
Other Integrated Operations		81	4	2	22	22	23	974	1,041	(102)	1,128	1,133	1,147
Integrated Operations		1,957	963	1,300	1,098	1,062	1,099	26,204	30,815	28,439	16,852	16,932	17,772
<b>Copper</b>													
Kennecott Utah Copper	100.0	561	259	210	227	296	298	2,025	1,870	1,886	2,291	2,014	1,919
Escondida	30.0	481	206	213	135	119	104	1,548	1,468	1,625	1,077	1,033	997
Grasberg joint venture	(f)	161	102	79	37	49	47	596	540	378	2,312	2,258	2,162
Palabora	57.7	64	33	16	86	69	67	3		(11)	2,292	2,158	2,030
Northparkes	80.0	56	53	17	32	32	25	406	403	301	257	226	186
Oyu Tolgoi	(l)	2,225	290		3			5,049	2,489		1,866	725	
Other		236	47	52	18	3	2	2,467	948	1,361	117	154	359
		3,784	990	587	538	568	543	12,094	7,718	5,540	10,212	8,568	7,653
<b>Energy</b>													
Rio Tinto Coal Australia	(g)	1,016	609	456	349	266	205	3,993	3,145	2,222	3,874	3,186	3,289
Rio Tinto Coal Mozambique		172						3,363			137		
Rössing	68.6	39	35	24	28	31	27	153	201	324	1,637	1,592	1,415
Energy Resources of Australia	68.4	100	41	30	143	70	64	137	348	263	547	523	521
Other								518			14		
		1,327	685	510	520	367	296	8,164	3,694	2,809	6,209	5,301	5,225
<b>Diamonds &amp; Minerals</b>													
Diamonds	(h)	445	186	250	146	70	104	1,170	1,185	1,293	1,218	1,064	1,040
RTIT	(i)	144	91	247	155	145	129	1,965	2,708	2,626	3,804	3,528	4,121
Rio Tinto Minerals	(j)	50	23	22	36	53	57	465	682	693	1,796	2,340	2,214
Other								5	5		73	30	
		639	300	519	337	268	290	3,605	4,580	4,612	6,891	6,962	7,375
<b>Other operations</b>													
Product Group Total	(k)	729	570	760	535	587	765	3,830	7,160	9,299	9,953	16,913	21,475
		13,193	5,224	5,824	4,231	3,845	3,756	67,265	65,595	61,962	63,746	67,075	70,875
Intersegment transactions								79	221	174			
Net assets/(liabilities) held for sale	(o)							55	(101)	3,462		6,180	27,732
Other items		251	75	54	113	114	111	(3,427)	(2,097)	(2,906)	4,184	3,639	3,387
Less: equity accounted units		(1,146)	(746)	(522)	(527)	(522)	(440)						
<b>Total</b>		<b>12,298</b>	<b>4,553</b>	<b>5,356</b>	<b>3,817</b>	<b>3,437</b>	<b>3,427</b>	<b>63,972</b>	<b>63,618</b>	<b>62,692</b>	<b>67,930</b>	<b>76,894</b>	<b>101,994</b>



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Less: Net debt  
 Less: EAU funded  
 balances excluded from  
 net debt  
 Equity attributable to  
 owners of Rio Tinto  
 Refer to notes (d) to (o) on page 212.

			(8,451)	(4,071)	(18,861)	
			(2,982)	(1,300)		
			<b>52,539</b>	58,247	43,831	

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### **Rio Tinto financial information by business unit continued**

Business units have been classified according to the Group's management structure. Generally, business units are allocated to product groups based on their primary product. The Aluminium group excludes Pacific Aluminium, Other Aluminium and the Cable division of Alcan Engineered Products which are included in Other operations.

- (a) Gross sales revenue includes 100 per cent of subsidiaries' sales revenue and the Group's share of the sales revenue of equity accounted units (after adjusting for sales to subsidiaries).
- (b) EBITDA of subsidiaries and the Group's share of EBITDA relating to equity accounted units represents profit before: tax, net finance items, depreciation and amortisation. Underlying EBITDA excludes the same items that are excluded from Underlying earnings.
- (c) Net earnings represent profit after tax for the period attributable to the owners of the Rio Tinto Group. Earnings of subsidiaries and equity accounted units are stated before finance items but after the amortisation of discount related to provisions. Earnings attributed to business units do not include amounts that are excluded in arriving at Underlying earnings.
- (d) The Group holds 65 per cent of Robe River Iron Associates, of which 30 per cent is held through a 60 per cent owned subsidiary. The Group's net beneficial interest is, therefore, 53 per cent, net of amounts attributable to outside equity shareholders.
- (e) Aluminium is now presented on an integrated operations basis splitting activities between Bauxite and Alumina, Primary Metal and Other integrated operations (which in total reflect the results of the integrated production of aluminium) and Other product group items which relate to other commercial activities. 2010 and 2009 comparative information has been adjusted accordingly.
- (f) Under the terms of a joint venture agreement, 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.
- (g) Includes Rio Tinto's 80 per cent interest in Coal and Allied (prior to 16 December 2011 Rio Tinto's interest was 75.7 per cent), which is managed by Rio Tinto Coal Australia, a 100 per cent subsidiary of Rio Tinto. Coal and Allied owns a 40 per cent interest in Bengalla and an 80 per cent interest in Mount Thorley, giving the Group a beneficial interest at 31 December of 32 per cent and 64 per cent, respectively.
- (h) Diamonds includes Rio Tinto's interests in Argyle (100 per cent), Diavik (60 per cent) and Murowa (77.8 per cent).
- (i) Includes Rio Tinto's interests in Rio Tinto Fer et Titane (RTFT) (100 per cent), QMM (80 per cent) and RBM (attributable interest of 37 per cent). On 1 February the Group announced it would take a majority stake in RBM. Refer to Events after the statement of financial position date on page 198.
- (j) Includes Rio Tinto's interests in Rio Tinto Borax (100 per cent). Rio Tinto completed the sale of its 100 per cent interests in its talc operations on 1 August 2011.
- (k) Other operations include Rio Tinto's 100 per cent interests in Pacific Aluminium, Other Aluminium and the Cable division of Alcan Engineered Products, Rio Tinto Marine, and its 39 per cent interest in Constellium (formerly Alcan Engineered Products excluding the Cable division). Rio Tinto completed the sale of its Colowyo coal mine on 1 December 2011.
- (l) Rio Tinto's interest in Oyu Tolgoi LLC is held indirectly through its investment in Ivanhoe Mines Ltd (Ivanhoe). The Group's remaining interests in the assets of Ivanhoe, unrelated to Oyu Tolgoi LLC, are reported in the Copper group within Other. On 24 January 2012, the Group took a majority stake in Ivanhoe and will consolidate Ivanhoe from that date (Refer to Events after the statement of financial position date on page 198).
- (m) 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. The details provided include 100 per cent of subsidiaries' capital expenditure and Rio Tinto's share of the capital expenditure of equity accounted units. Amounts relating to equity accounted units not specifically funded by Rio Tinto are deducted before arriving at total capital expenditure for the Group.

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- (n) Operating assets of subsidiaries comprise net assets excluding post retirement assets and liabilities, net of tax, and are before deducting net debt. Operating assets are less non-controlling interests, which are calculated by reference to the net assets of the relevant companies (ie net of such companies' debt).
  
- (o) Net assets held for sale at 31 December 2011 include Riversdale's Zululand Anthracite Colliery (ZAC) which was acquired with a view to resale. Net assets held for sale at 31 December 2010 relate to Alcan Engineered Products excluding the Cable Division.

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**Australian Corporations Act summary of ASIC relief**

Pursuant to section 340 of the Corporations Act 2001 (Corporations Act), the Australian Securities and Investments Commission issued an order dated 22 December 2010 (as amended on 17 February 2012) that granted relief to Rio Tinto Limited from certain requirements of the Corporations Act in relation to the Company's financial statements and associated reports. The order essentially continues the relief that has applied to Rio Tinto Limited since the formation of the Group's Dual Listed Companies (DLC) structure in 1995. The order applies to Rio Tinto Limited's financial reporting obligations for financial years and half-years ending between 31 December 2010 and 30 June 2014 (inclusive).

In essence, instead of being required under the Corporations Act to prepare consolidated financial statements covering only itself and its controlled entities, the order allows Rio Tinto Limited to prepare consolidated financial statements in which it, Rio Tinto plc and their respective controlled entities are treated as a single economic entity. In addition, those consolidated financial statements are to be prepared:

in accordance with the principles and requirements of International Financial Reporting Standards as adopted by the European Union (EU IFRS) rather than the Australian Accounting Standards (AAS) (except for one limited instance in the case of any concise report), and in accordance with United Kingdom financial reporting obligations generally;

on the basis that the transitional provisions of International Financial Reporting Standard 1 First-time Adoption of International Financial Reporting Standards should be applied using the combined financial statements previously prepared for Rio Tinto Limited, Rio Tinto plc and their respective controlled entities under Generally Accepted Accounting Principles in the United Kingdom, under which the DLC merger between Rio Tinto Limited and Rio Tinto plc was accounted for using merger, rather than acquisition, accounting (reflecting that neither Rio Tinto Limited nor Rio Tinto plc was acquired by, or is controlled by, the other, and meaning that the existing carrying amounts, rather than fair values, of assets and liabilities at the time of the DLC merger were used to measure those assets and liabilities at formation);

on the basis that Rio Tinto Limited and Rio Tinto plc are a single company (with their respective shareholders being the shareholders in that single company); and

with a reconciliation, from EU IFRS to AAS, of the following amounts: consolidated profit for the financial year, total consolidated income for the financial year and total consolidated equity at the end of the financial year (see page 136).

Those consolidated financial statements must also be audited in relation to their compliance with relevant Australian and United Kingdom requirements. Rio Tinto Limited must also prepare a Directors' report which satisfies the content requirements of the Corporations Act (applied on the basis that for these purposes the consolidated entity is the Group, and the consolidated financial statements cover the Group). This includes a Remuneration report (see pages 86 to 118) prepared in accordance with the requirements of the Corporations Act.

Rio Tinto Limited is also required to comply generally with the lodgement and distribution requirements of the Corporations Act (including timing requirements) in relation to those consolidated financial statements (including any concise financial statements), the Auditor's report and the Directors' report. The Corporations Act also requires that a binding resolution to adopt the Remuneration report be voted on by shareholders at the Company's annual general meeting.

Rio Tinto Limited is not required to prepare separate consolidated financial statements solely for it and its controlled entities. Rio Tinto Limited is also not required to prepare and lodge parent entity financial statements for itself in respect of each relevant financial year.

However, Rio Tinto Limited must in accordance with the Corporations Act include in the consolidated financial statements for the Group, as a note, various parent entity information regarding Rio Tinto Limited (including in relation to assets, liabilities, shareholders' equity, profit and loss, income, guarantees, contingent liabilities, and contractual commitments) prepared in accordance with AAS (see page 205).



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**Report of Independent Registered Public Accounting Firms**

**To the Boards of Directors and Shareholders of Rio Tinto plc and Rio Tinto Limited:**

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of income, comprehensive income, shareholders' equity and cash flows present fairly, in all material respects, the financial position of the Rio Tinto Group at December 31, 2011 and 2010 and the results of their operations and cash flows for each of the three years in the period ended December 31, 2011 in conformity with International Financial Reporting Standards (IFRSs) as issued by the International Accounting Standards Board. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2011 based on criteria established in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Rio Tinto Group's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's report on internal control over financial reporting. Our responsibility is to express opinions on these financial statements and on Rio Tinto Group's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

**PricewaterhouseCoopers LLP**

London, United Kingdom

5 March 2012

In respect of the Board of Directors and

Shareholders of Rio Tinto plc

**PricewaterhouseCoopers**

Brisbane, Australia

5 March 2012

In respect of the Board of Directors and

Shareholders of Rio Tinto Limited

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**Financial calendar**

<b>2012</b>	
17 January	Fourth quarter 2011 operations review
9 February	Announcement of results for 2011
29 February	Rio Tinto plc and Rio Tinto Limited shares and Rio Tinto plc ADRs quoted ex-dividend for 2011 final dividend
2 March	Record date for 2011 final dividend for Rio Tinto plc shares and ADRs
6 March	Record date for 2011 final dividend for Rio Tinto Limited shares
16 March	Publication of 2011 Annual report. Annual review and Notices of annual general meetings
20 March	Plan notice date for election under the dividend reinvestment plan and date for electing dividends paid in alternate currency for the 2011 final dividend
	Dividend currency conversion date (Rio Tinto plc holders electing to receive Australian dollars and Rio Tinto Limited holders electing to receive pounds sterling)
3 April	
12 April	Payment date for 2011 final dividend to holders of ordinary shares and ADRs
17 April	First quarter 2012 operations review
19 April	Annual general meeting for Rio Tinto plc
10 May	Annual general meeting for Rio Tinto Limited
17 July	Second quarter 2012 operations review
8 August	Announcement of half year results for 2012
15 August	Rio Tinto plc and Rio Tinto Limited shares and Rio Tinto plc ADRs quoted ex-dividend for 2012 interim dividend
17 August	Record date for 2012 interim dividend for Rio Tinto plc shares and ADRs
21 August	Record date for 2012 interim dividend for Rio Tinto Limited shares
22 August	Plan notice date for election under the dividend reinvestment plan and date for electing dividends paid in alternate currency for the 2012 interim dividend for Rio Tinto plc
23 August	Plan notice date for election under the dividend reinvestment plan and date for electing dividends paid in alternate currency for the 2012 interim dividend for Rio Tinto Limited
	Dividend currency conversion date (Rio Tinto plc holders electing to receive Australian dollars and Rio Tinto Limited holders electing to receive pounds sterling)
6 September	
13 September	Payment date for 2012 interim dividend to holders of ordinary shares and ADRs
16 October	Third quarter 2012 operations review
<b>2013</b>	
January	Fourth quarter 2012 operations review
February	Announcement of results for 2012



## **Table of Contents**

### **Useful information**

#### **Registered offices**

##### **Rio Tinto plc**

2 Eastbourne Terrace

London

W2 6LG

Registered in England No. 719885

Telephone: +44 (0) 20 7781 2000

Fax: +44 (0) 20 7781 1800

Website: riotinto.com

##### **Rio Tinto Limited**

Level 33

120 Collins Street

Melbourne

Victoria 3000

ABN 96 004 458 404

Telephone: +61 (0) 3 9283 3333

Fax: +61 (0) 3 9283 3707

Website: riotinto.com

Rio Tinto's agent in the US is

Cheree Finan, who may be

contacted at

Rio Tinto Services Inc.

80 State Street

Albany, NY 12207-2543

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### Shareholders

Please refer to the Investor Centre of the respective registrar if you have any queries about your shareholding.

### Rio Tinto plc

#### Computershare Investor Services PLC

The Pavilions

Bridgwater Road

Bristol BS99 6ZY

Telephone: +44 (0) 870 703 6364

Fax: +44 (0) 870 703 6119

UK residents only, freephone: 0800 435021 Website: [www.computershare.com](http://www.computershare.com)

#### Holders of Rio Tinto American

##### Depository Receipts (ADRs)

Please contact the ADR administrator

if you have any queries

about your ADRs.

ADR administrator

JPMorgan Chase & Co

PO Box 64504

St. Paul, MN 55164-0504

Telephone: +1 (651) 453 2128

US residents only, toll free general:

(800) 990 1135

US residents only, toll free Global

invest direct: (800) 428 4237

Website: [www.adr.com](http://www.adr.com)

Email: [jpmorgan.adr@wellsfargo.com](mailto:jpmorgan.adr@wellsfargo.com)

### Rio Tinto Limited

#### Computershare Investor Services Pty Limited

GPO Box 2975

Melbourne

## Edgar Filing: RIO TINTO PLC - Form 20-F

Victoria 3001

Telephone: +61 (0) 3 9415 4030

Fax: +61 (0) 3 9473 2500

Australian residents only, toll free:

1800 813 292

New Zealand residents only, toll free:

0800 450 740

Website: [www.computershare.com](http://www.computershare.com)

**Former Alcan Inc. Shareholders**

**Computershare Investor Services Inc.**

9th Floor

100 University Avenue

Toronto, ON M5J 2Y1

Ontario

Telephone: +1 514 982 7555 North American residents only, toll free: +1 (866) 624 1341 Website: [www.computershare.com](http://www.computershare.com)

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View share balances

Change address details

View payment and tax information

Update payment instructions

In addition, shareholders who register their email address on Investor Centre, can be notified electronically of events such as annual general meetings, and can receive shareholder communications such as the annual report or notice of meeting electronically online.

**Rio Tinto plc shareholders**

[www.investorcentre.co.uk/riotinto](http://www.investorcentre.co.uk/riotinto)

**Rio Tinto Limited shareholders**

[www.investorcentre.com](http://www.investorcentre.com)

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**Table of Contents****Item 19. Exhibits**

Exhibits marked \* have been filed as exhibits to this Annual report on Form 20-F and other exhibits have been incorporated by reference as indicated.

**INDEX****Exhibit**

<b>Number</b>	<b>Description</b>
1.1	Articles of Association of Rio Tinto plc (adopted by special resolution passed on 20 April 2009 and amended on 1 October 2009) (incorporated by reference to Exhibit 1.1 of Rio Tinto plc Annual report on Form 20-F for the fiscal year ended 31 December 2009, File No. 1-10533)
1.2	Constitution of Rio Tinto Limited (ACN 004 458 404) (as adopted by special resolution passed on 24 May 2000 and amended by special resolution on 18 April 2002, 29 April 2005, 27 April 2007, 24 April 2008 and 20 April 2009) (incorporated by reference to Exhibit 1.2 of Rio Tinto plc Annual report on Form 20-F for the fiscal year ended 31 December 2009, File No. 1-10533)
3.1	DLC Merger Implementation Agreement, dated 3 November 1995 between CRA Limited and The RTZ Corporation PLC relating to the implementation of the DLC merger (incorporated by reference to Exhibit 2.1 of Rio Tinto plc's Annual report on Form 20-F for the financial year ended 31 December 1995, File No. 1-10533)
3.2	DLC Merger Sharing Agreement, dated 21 December 1995 and amended on 14 April 2005, 29 April 2005 and 18 December 2009 between CRA Limited and The RTZ Corporation PLC relating to the ongoing relationship between CRA and RTZ following the DLC merger (incorporated by reference to Exhibit 3.2 of Rio Tinto plc Annual report on Form 20-F for the fiscal year ended 31 December 2009, File No. 1-10533)
3.3	RTZ Shareholder Voting Agreement, dated 21 December 1995 and amended on 18 January 2010 between The RTZ Corporation PLC, RTZ Shareholder SVC Pty. Limited, CRA Limited, R.T.Z. Australian Holdings Limited and The Law Debenture Trust Corporation p.l.c (incorporated by reference to Exhibit 3.3 of Rio Tinto plc Annual report on Form 20-F for the fiscal year ended 31 December 2009, File No. 1-10533)
3.4	CRA Shareholder Voting Agreement, dated 21 December 1995 and amended 18 January 2010 between CRA Limited, CRA Shareholder SVC Limited, The RTZ Corporation PLC and The Law Debenture Trust Corporation p.l.c., relating to the RTZ Special Voting Share (incorporated by reference to Exhibit 3.4 of Rio Tinto plc Annual report on Form 20-F for the fiscal year ended 31 December 2009, File No. 1-10533)
4.01	Rio Tinto plc - Share Option Plan 2004 (incorporated by reference to Exhibit 4.3 of Rio Tinto's Registration statement on Form S-8, File No. 333-147914)
4.02	Rio Tinto Limited - Share Option Plan 2004 (incorporated by reference to Exhibit 4.6 of Rio Tinto's Registration statement on Form S-8, File No. 333-147914)
4.03*	Rules of the Rio Tinto plc Performance Share Plan 2004 (formerly known as the Rio Tinto plc - Mining Companies Comparative Plan 2004)
4.04*	Rules of the Rio Tinto Limited Performance Share Plan 2004 (formerly known as the Rio Tinto Limited - Mining Companies Comparative Plan 2004)
8.1*	List of subsidiary companies.
12.1*	Certifications pursuant to Rule 13a-14(a) of the Exchange Act.
13.1*	Certifications furnished pursuant to Rule 13a-14(b) of the Exchange Act (such certifications are not deemed filed for purpose of Section 18 of the Exchange Act and not incorporated by reference in any filing under the Securities Act).
15.1*	Consent of Independent Accountants to the incorporation of the audit report relating to the Rio Tinto Group and effectiveness of internal control over financial reporting of the Rio Tinto Group by reference in registration statements on Form F-3 and Form S-8.
99.1*	Mine safety and health administration safety data.

\* Filed herewith.

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**Signature**

The Registrants hereby certify that they meet all of the requirements for filing on Form 20-F and that they have duly caused and authorised the undersigned to sign this Annual Report on their behalf.

**Rio Tinto plc**

(Registrant)

/s/ Ben Mathews  
Name: **Ben Mathews**  
Title: Secretary

Date: 15 March 2012

**Rio Tinto Limited**

(Registrant)

/s/ Ben Mathews  
Name: **Ben Mathews**  
Title: Assistant Secretary

Date: 15 March 2012