	Note	2023 US$m	2022 US$m Restated[a]	2021 US$m Restated[a]
Consolidated operations				
Consolidated sales revenue	1, 6	**54,041**	55,554	63,495
Net operating costs (excluding items disclosed separately)	7	**(37,052)**	(34,770)	(32,690)
Net impairment (charges)/reversals	4	**(936)**	150	(269)
Loss on disposal of interest in subsidiary	5	**—**	(105)	—
Exploration and evaluation expenditure (net of profit from disposal of interests in undeveloped projects)	8	**(1,230)**	(896)	(719)
Operating profit		**14,823**	19,933	29,817
Share of profit after tax of equity accounted units		**675**	777	1,042
Impairment of investments in equity accounted units	4	**—**	(202)	—
Profit before finance items and taxation		**15,498**	20,508	30,859
Finance items				
Net exchange (losses)/gains on external net debt and intragroup balances		**(251)**	253	802
Losses on derivatives not qualifying for hedge accounting		**(54)**	(424)	(231)
Finance income	9	**536**	179	64
Finance costs	9	**(967)**	(335)	(243)
Amortisation of discount on provisions	14, 36	**(977)**	(1,519)	(418)
		(1,713)	(1,846)	(26)
Profit before taxation		**13,785**	18,662	30,833
Taxation	10	**(3,832)**	(5,614)	(8,236)
Profit after tax for the year		**9,953**	13,048	22,597
– attributable to owners of Rio Tinto (net earnings)		**10,058**	12,392	21,115
– attributable to non-controlling interests		**(105)**	656	1,482
Basic earnings per share	2	**620.3c**	765.0c	1,304.7c
Diluted earnings per share	2	**616.5c**	760.4c	1,296.3c

(a) Comparative information has been restated to reflect the adoption of narrow-scope amendments to IAS 12. Refer to page 186 for details.

The notes on pages 158 to 167 and pages 173 to 237 are an integral part of these consolidated financial statements.

Group Statement of Comprehensive Income

Years ended 31 December

	Note	2023 US$m	2022 US$m Restated[a]	2021 US$m Restated[a]
Profit after tax for the year		**9,953**	13,048	22,597
Other comprehensive income/(loss)				
Items that will not be reclassified to the income statement:				
Re-measurement (losses)/gains on pension and post-retirement healthcare plans	28	**(461)**	578	1,026
Changes in the fair value of equity investments held at fair value through other comprehensive income (FVOCI)		**(24)**	—	5
Tax relating to these components of other comprehensive income	10	**152**	(123)	(305)
Share of other comprehensive (losses)/income of equity accounted units, net of tax		**(3)**	5	12
		(336)	460	738
Items that have been/may be subsequently reclassified to the income statement:				
Currency translation adjustment[b]		**644**	(2,399)	(1,865)
Currency translation on subsidiary disposed of, transferred to the income statement		**—**	105	—
Fair value movements:				
– Cash flow hedge gains/(losses)		**30**	(167)	(211)
– Cash flow hedge (gains)/losses transferred to the income statement		**(39)**	106	14
Net change in costs of hedging reserve	35	**5**	4	(18)

Tax relating to these components of other comprehensive loss	10	**1**	21	62
Share of other comprehensive income/(losses) of equity accounted units, net of tax		**14**	(27)	(12)
		655	(2,357)	(2,030)
Total other comprehensive income/(loss) for the year, net of tax		**319**	(1,897)	(1,292)
Total comprehensive income for the year		**10,272**	11,151	21,305
– attributable to owners of Rio Tinto		**10,335**	10,649	19,895
– attributable to non-controlling interests		**(63)**	502	1,410

(a) Comparative information has been restated to reflect the adoption of narrow-scope amendments to IAS 12. Refer to page 166 for details.
(b) Excludes a currency translation gain of US$47 million (2022: charge of US$240 million; 2021: charge of US$211 million) arising on Rio Tinto Limited's share capital for the year ended 31 December 2023, which is recognised in the Group statement of changes in equity. Refer to the Group statement of changes in equity on page 172.

The notes on pages 158 to 167 and pages 173 to 237 are an integral part of these consolidated financial statements.

Group Cash Flow Statement

Years ended 31 December

	Note	2023 US$m	2022 US$m	2021 US$m
Cash flows from consolidated operations[a]		**20,251**	23,158	33,936
Dividends from equity accounted units		**610**	879	1,431
Cash flows from operations		**20,861**	24,037	35,367
Net interest paid		**(612)**	(573)	(438)
Dividends paid to holders of non-controlling interests in subsidiaries		**(462)**	(421)	(1,090)
Tax paid		**(4,627)**	(6,909)	(8,494)
Net cash generated from operating activities		**15,160**	16,134	25,345
Cash flows from investing activities				
Purchases of property, plant and equipment and intangible assets	1	**(7,086)**	(6,750)	(7,384)
Sales of property, plant and equipment and intangible assets		**9**	—	61
Acquisitions of subsidiaries, joint ventures and associates	5	**(834)**	(850)	—
Disposals of subsidiaries, joint ventures, joint operations and associates	5	**—**	80	4
Purchases of financial assets		**(39)**	(55)	(45)
Sales of financial assets[b][c]		**1,220**	892	114
Net (funding of)/receipts from equity accounted units		**(144)**	(75)	6
Other investing cash flows[d]		**(88)**	51	85
Net cash used in investing activities		**(6,962)**	(6,707)	(7,159)
Cash flows before financing activities		**8,198**	9,427	18,186
Cash flows from financing activities				
Equity dividends paid to owners of Rio Tinto	3	**(6,470)**	(11,727)	(15,357)
Proceeds from additional borrowings[e]	19, 20	**1,833**	321	1,488
Repayment of borrowings and associated derivatives[e]	19, 20	**(310)**	(790)	(1,707)
Lease principal payments	19	**(426)**	(374)	(358)
Proceeds from issue of equity to non-controlling interests		**127**	86	66
Purchase of non-controlling interest[f]	5, 30	**(33)**	(2,961)	—
Other financing cash flows		**2**	(28)	6
Net cash used in financing activities		**(5,277)**	(15,473)	(15,862)
Effects of exchange rates on cash and cash equivalents		**(23)**	15	100
Net increase/(decrease) in cash and cash equivalents		**2,898**	(6,031)	2,424
Opening cash and cash equivalents less overdrafts		**6,774**	12,805	10,381
Closing cash and cash equivalents less overdrafts	22	**9,672**	6,774	12,805

Notes to the Group Cash Flow Statement

(a) Cash flows from consolidated operations	Note	2023 US$m	2022 US$m	2021 US$m
Profit after tax for the year (comparative restated)[g]		**9,953**	13,048	22,597
Adjustments for:				
– Taxation (comparative restated)[g]		**3,832**	5,614	8,236
– Finance items		**1,713**	1,846	26
– Share of profit after tax of equity accounted units		**(675)**	(777)	(1,042)
– Loss on disposal of interest in subsidiary	5	**—**	105	—
– Impairment charges of investments in equity accounted units after tax	4	**—**	202	—
– Net impairment charges/(reversals)	4	**936**	(150)	269
– Depreciation and amortisation		**5,334**	5,010	4,697
– Provisions (including exchange differences on provisions)		**1,470**	1,006	1,903
– Pension settlement		**—**	—	(291)

Utilisation of other provisions	36	**(104)**	(176)	(128)
Utilisation of provisions for close-down and restoration	14	**(777)**	(609)	(541)
Utilisation of provisions for post-retirement benefits and other employment costs	26	**(277)**	(254)	(231)
Change in inventories		**(422)**	(1,185)	(1,397)
Change in receivables and other assets[h]		**(418)**	20	(367)
Change in trade and other payables		**(86)**	700	685
Other items[i]		**(228)**	(1,242)	(480)
		20,251	23,158	33,936

(b) In 2023, we received net proceeds of US$1,157 million (2022: US$352 million and 2021: US$107 million) from our sales and purchases of investments within a separately managed portfo fixed income instruments. Refer to note 19 for details. Purchases and sales of these securities are reported on a net cash flow basis within "Sales of financial assets" or assets" depending on the overall net position at each reporting date.

(c) In 2022, Sale of financial assets includes US$525 million of cash received from the sale of the gross production royalty at the Cortez Complex in Nevada, USA. Refer to note 7.

(d) In 2022, Other investing cash flows includes inflows relating to payments from a trust fund controlled by the Government of Australia to Energy Resources Aus has been completed. At 31 December 2023 the total amount held in the trust fund was US$349 million (31 December 2022: US$329 million). In 2021, Other investing cash flows included a net settlement upon completion of a transaction increasing the Group's 60% share in the Diavik Diamond Mine to sole ownership.

(e) On 7 March 2023, we issued US$650 million 10-year fixed rate, US$1.1 billion 30-year fixed rate, SEC-registered bonds. The 10-year notes, which mature on 9 March 2033, have a coupon of 5% and the 30-year notes, which mature on 9 March 2053, have a coupon of 5.125%. The funds were received net of issuance fees and discount. There were no debt securities issued during the year ended 31 December 2022. In 2021, we issued US$1.25 billion 30-years fixed rate SEC-registered debt securities, which expire on 2 November 2051 with a coupon of 2.75%. The funds were received net of issuance fees and discount. We also completed a US$1.2 billion (nominal value) bond buyback program.

(f) On 16 December 2022, we acquired the remaining 49% share of Turquoise Hill Resources for expected consideration of US$3.2 billion inclusive of transaction fees. At 31 December 2022, US$2,961 million had been paid, including US$33 million of transaction costs. In 2023, further transaction costs of US$33 million were paid, the balance to dissenting shareholders remains unpaid.

(g) Comparative information has been restated to reflect the adoption of narrow-scope amendments to IAS 12. Refer to page 166 for details.

(h) In 2021, the Mongolian Tax Authority required payment by Oyu Tolgoi of US$356 million in relation to disputed tax matters. Oyu Tolgoi continues to dispute the matters and has cl amounts subject to international arbitration as prepayments pending resolution.

(i) Other items includes the recognition of realised losses of US$557 million on currency forwards not designated as hedges (2022: realised losses US$459 million, 2021: realised losses US$131 million). In 2022, other items also included the deduction of US$432 million relating to the gain recognised on sale of the Cortez royalty shown in "Sale of financial as 2021 other items included US$336 million relating to a gain on recognition of a new wharf at Kitimat, Canada with no associated cash flow.

The notes on pages 158 to 167 and pages 173 to 237 are an integral part of these consolidated financial statements.

Group Balance Sheet

At 31 December

	Note	2023 US$m	2022 US$m Restated[a]
Non-current assets			
Goodwill	11	**797**	826
Intangible assets	12	**4,389**	3,645
Property, plant and equipment	13	**66,468**	64,734
Investments in equity accounted units		**4,407**	3,298
Inventories	16	**214**	203
Deferred tax assets	15	**3,624**	2,796
Receivables and other assets	17	**1,659**	1,893
Other financial assets	23	**481**	406
		82,039	77,801
Current assets			
Inventories	16	**6,659**	6,213
Receivables and other assets	17	**3,945**	3,478
Tax recoverable		**115**	347
Other financial assets	23	**1,118**	2,160
Cash and cash equivalents	22	**9,673**	6,775
		21,510	18,973
Total assets		**103,549**	96,774
Current liabilities			
Borrowings	20	**(824)**	(923)
Leases	21	**(345)**	(292)
Other financial liabilities	23	**(273)**	(69)
Trade and other payables	18	**(8,238)**	(8,047)
Tax payable		**(542)**	(223)
Close-down and restoration provisions	14	**(1,523)**	(1,142)
Provisions for post-retirement benefits and other employment costs	26	**(361)**	(353)
Other provisions	36	**(637)**	(554)
		(12,743)	(11,603)
Non-current liabilities			
Borrowings	20	**(12,177)**	(10,148)
Leases	21	**(1,006)**	(908)
Other financial liabilities	23	**(513)**	(904)
Trade and other payables	18	**(596)**	(604)
Tax payable		**(31)**	(36)
Deferred tax liabilities	15	**(2,584)**	(3,164)
Close-down and restoration provisions	14	**(15,627)**	(14,617)
Provisions for post-retirement benefits and other employment costs	26	**(1,197)**	(1,305)
Other provisions	36	**(734)**	(744)
		(34,465)	(32,430)
Total liabilities		**(47,208)**	(44,033)
Net assets		**56,341**	52,741
Capital and reserves			
Share capital			
– Rio Tinto plc	34	**207**	207
– Rio Tinto Limited	34	**3,377**	3,330
Share premium account		**4,324**	4,322
Other reserves	35	**8,328**	7,755
Retained earnings	35	**38,350**	35,020
Equity attributable to owners of Rio Tinto		**54,586**	50,634
Attributable to non-controlling interests		**1,755**	2,107
Total equity		**56,341**	52,741

(a) Comparative information has been restated to reflect the adoption of narrow-scope amendments to IAS 12. Refer to page 166 for details.

The notes on pages 158 to 167 and pages 173 to 237 are an integral part of these consolidated financial statements.

The financial statements on pages 158 to 237 were approved by the directors on 21 February 2024 and signed on their behalf by

Dominic Barton	**Jakob Stausholm**	**Peter Cunningham**
Chair	Chief Executive	Chief Financial Officer

Group Statement of Changes in Equity

Year ended 31 December 2023	Attributable to owners of Rio Tinto: Share capital (note 34) US$m	Share premium account US$m	Other reserves (note 35) US$m	Retained earnings (note 35) US$m	Total US$m	Non-controlling interests US$m	Total equity US$m
Opening balance as previously reported	**3,537**	**4,322**	**7,805**	**34,511**	**50,175**	**2,099**	**52,274**
Adjustment for transition to new accounting pronouncements[(a)]	**—**	**—**	**(50)**	**509**	**459**	**8**	**467**
Restated opening balance	**3,537**	**4,322**	**7,755**	**35,020**	**50,634**	**2,107**	**52,741**
Total comprehensive income for the year[(b)]	**—**	**—**	**585**	**9,750**	**10,335**	**(63)**	**10,272**
Currency translation arising on Rio Tinto Limited's share capital	**47**	**—**	**—**	**—**	**47**	**—**	**47**
Dividends (note 3)	**—**	**—**	**—**	**(6,466)**	**(6,466)**	**(462)**	**(6,928)**
Newly consolidated operation (note 5)	**—**	**—**	**—**	**—**	**—**	**33**	**33**
Own shares purchased from Rio Tinto shareholders to satisfy share awards to employees[(c)]	**—**	**—**	**(78)**	**(17)**	**(95)**	**—**	**(95)**
Change in equity interest held by Rio Tinto (note 30)	**—**	**—**	**—**	**(13)**	**(13)**	**13**	**—**
Treasury shares reissued and other movements	**—**	**2**	**—**	**—**	**2**	**—**	**2**
Equity issued to holders of non-controlling interests	**—**	**—**	**—**	**—**	**—**	**127**	**127**
Employee share awards charged to the income statement	**—**	**—**	**66**	**76**	**142**	**—**	**142**
Closing balance	**3,584**	**4,324**	**8,328**	**38,350**	**54,586**	**1,755**	**56,341**

Year ended 31 December 2022	Attributable to owners of Rio Tinto: Share capital (note 34) US$m	Share premium account US$m	Other reserves (note 35) US$m	Retained earnings (note 35) US$m	Total US$m	Non-controlling interests US$m	Total equity US$m
Opening balance as previously reported[(d)]	3,777	4,320	9,998	33,320	51,415	5,158	56,573
Adjustment for transition to new accounting pronouncements[(a)]	—	—	(22)	537	515	8	523
Restated opening balance	3,777	4,320	9,976	33,857	51,930	5,166	57,096
Total comprehensive income for the year[(b)]	—	—	(2,193)	12,842	10,649	502	11,151
Currency translation arising on Rio Tinto Limited's share capital	(240)	—	—	—	(240)	—	(240)
Dividends (note 3)	—	—	—	(11,716)	(11,716)	(421)	(12,137)
Own shares purchased from Rio Tinto shareholders to satisfy share awards to employees[(c)]	—	—	(84)	(16)	(100)	—	(100)
Change in equity interest held by Rio Tinto	—	—	—	701	701	(3,907)	(3,206)
Treasury shares reissued and other movements	—	2	—	—	2	—	2
Equity issued to holders of non-controlling interests	—	—	—	(711)	(711)	797	86
Employee share awards charged to the income statement	—	—	56	63	119	—	119
Transfers and other movements	—	—	—	—	—	(30)	(30)
Closing balance (restated)	3,537	4,322	7,755	35,020	50,634	2,107	52,741

Year ended 31 December 2021	Attributable to owners of Rio Tinto: Share capital (note 34) US$m	Share premium account US$m	Other reserves (note 35) US$m	Retained earnings (note 35) US$m	Total US$m	Non-controlling interests US$m	Total equity US$m
Opening balance as previously reported	3,988	4,314	11,960	26,792	47,054	4,849	51,903
Adjustment for transition to new accounting pronouncements[(a)]	—	—	—	516	516	7	523
Restated opening balance	3,988	4,314	11,960	27,308	47,570	4,856	52,426
Total comprehensive income for the year[(b)]	—	—	(1,938)	21,833	19,895	1,410	21,305
Currency translation arising on Rio Tinto Limited's share capital	(211)	—	—	—	(211)	—	(211)
Dividends (note 3)	—	—	—	(15,385)	(15,385)	(1,090)	(16,475)
Share buyback	—	—	—	—	—	—	—
Own shares purchased from Rio Tinto shareholders to satisfy share awards to employees[(c)]	—	—	(95)	(18)	(113)	—	(113)
Change in equity interest held by Rio Tinto	—	—	—	76	76	(76)	—
Treasury shares reissued and other movements	—	6	—	—	6	—	6
Equity issued to holders of non-controlling interests	—	—	—	—	—	66	66
Employee share awards charged to the income statement	—	—	49	60	109	—	109
Closing balance	3,777	4,320	9,976	33,874	51,947	5,166	57,113

(a) The impact of adopting the narrow-scope amendments to IAS 12. Refer to page 166 for details.
(b) Refer to the Group statement of comprehensive income for further details. Adjustments to other reserves include currency translation attributable to owners o
Rio Tinto Limited's share capital.
(c) Net of contributions received from employees for share awards.
(d) In 2022, the opening balance includes US$17 million adjustment for the prospective adoption of Amendments to IAS 37 "Provisions, Contingent Liabilities and Contingent A
in the prior year financial statements.

The notes on pages 158 to 167 and pages 173 to 237 are an integral part of these consolidated financial statements.

Notes to the 2023 financial statements

Our financial performance

We use a number of measures, including segmental revenue, underlying EBITDA, and capital expenditure to provide

understanding of our operations' underlying business performance, including revenue generation, productivity ar
comparable basis between reporting years.

1 Our financial performance by segment

Our management structure is based on product groups (PG) together with global support functions whose leaders m Committee. The Executive Committee members each report directly to our Chief Executive who is the chief operati is responsible for allocating resources and assessing performance of the operating segments. The CODM's primary EBITDA.

The Copper reportable segment has been adjusted to reflect a change in management responsibility for the Simanc (Simandou) to the Chief Technical Officer for the build phase of this project. As a result, Simandou is now inc below reportable segments in our segmental analysis. Prior year comparatives have been adjusted accordingly.

Our reportable segments are as follows:

Reportable segment	Principal activities
Iron Ore	Iron ore mining and salt and gypsum production in Western Australia.
Aluminium	Bauxite mining; alumina refining; aluminium smelting.
Copper	Mining and refining of copper, gold, silver, molybdenum, other by-products and exploration activities.
Minerals	Includes mining and processing of borates, titanium dioxide feedstock, and iron concentrate and pellets from t Canada. Also includes diamond mining, sorting and marketing and development projects for battery materials, su

	2023		
	Segmental revenue US$m	Underlying EBITDA US$m	Capital expenditure[a] US$m
Iron Ore	32,249	19,974	2,588
Aluminium	12,285	2,282	1,331
Copper	6,678	1,904	1,976
Minerals	5,934	1,414	746
Reportable segments total	57,146	25,574	6,641
Other operations	142	(578)	323
Inter-segment transactions	(231)	8	
Share of equity accounted units[b]	(3,016)		
Central pension costs, share-based payments, insurance and derivatives		168	
Restructuring, project and one-off costs		(190)	
Central costs		(990)	
Central exploration and evaluation expenditures		(100)	
Proceeds from disposal of property, plant and equipment			9
Other items			113
Consolidated sales revenue/Purchases of property, plant and equipment and intangible assets	54,041		7,086
Underlying EBITDA		23,892	

(a) Capital expenditure for reportable segments includes the net cash outflow on purchases less disposals of property, plant and equipment, capitalised e disposals of other intangible assets. The details provided include 100% of subsidiaries' capital expenditure and Rio Tinto's share of the capital expenditure of joint o

(b) Consolidated sales revenue includes subsidiary sales of US$20 million (2022: US$50 million; 2021: US$44 million) to equity accounted units which are not included in segmental r Segmental revenue includes the Group's proportionate share of product sales by equity accounted units (after adjusting for sales to subsidiaries) of US$3,036 million (2022: US$2,900 million; 2021: US$3,117 million) which are not included in consolidated sales revenue.

Notes to the 2023 financial statements

1 Our financial performance by segment *continued*

	2022 Adjusted[a]			2021 Adjusted[a]		
	Segmental revenue US$m	Underlying EBITDA US$m	Capital expenditure[b] US$m	Segmental revenue US$m	Underlying EBITDA US$m	Capital expenditure[b] US$m
Iron Ore	30,906	18,612	2,940	39,582	27,592	3,947
Aluminium	14,109	3,672	1,377	12,695	4,382	1,300
Copper	6,699	2,565	1,622	7,827	4,027	1,328
Minerals	6,754	2,419	679	6,481	2,603	644
Reportable segments total	58,468	27,268	6,618	66,585	38,604	7,219
Other operations	192	(205)	53	251	(86)	(13)
Inter-segment transactions	(256)	24		(268)	42	
Share of equity accounted units[c]	(2,850)			(3,073)		
Central pension costs, share-based payments, insurance and derivatives		377			110	
Restructuring, project and one-off costs		(173)			(80)	
Central costs		(766)			(613)	
Central exploration and evaluation expenditures		(253)			(257)	
Proceeds from disposal of property, plant and equipment			—			61
Other items			79			117
Consolidated sales revenue/Purchases of property, plant and equipment and intangible assets	55,554		6,750	63,495		7,384

Underlying EBITDA	26,272	37,720

(a) Comparative information has been adjusted to reflect the movement of the Simandou iron ore project from the "Copper" reportable segment to "Other operations"
(b) Capital expenditure for reportable segments includes the net cash outflow on purchases less disposals of property, plant and equipment, capitalised evaluatio disposals of other intangible assets. The details provided include 100% of subsidiaries' capital expenditure and Rio Tinto's share of the capital expenditure of joint operatio
(c) Consolidated sales revenue includes subsidiary sales of US$20 million (2022: US$50 million; 2021: US$44 million) to equity accounted units which are not included in segmental revenue. Segmental revenue includes the Group's proportionate share of product sales by equity accounted units (after adjusting for sales to subsidiaries) of US$3,330 million (2022: US$2,900 million; 2021: US$3,117 million) which are not included in consolidated sales revenue.

Segmental revenue

Segmental revenue includes consolidated sales revenue plus the equivalent sales revenue of equity accounted units in interest (after adjusting for sales to/from subsidiaries).

Segmental revenue measures revenue on a basis that is comparable to our underlying EBITDA metric.

Other segmental reporting

For further information relating to Revenue by destination and product and Non-operating assets by geography, refer operating assets section on page 183 and 187, respectively.

Underlying EBITDA

Underlying EBITDA represents profit before taxation, net finance items, depreciation and amortisation adjusted to exc items which do not reflect the underlying performance of our reportable segments.

Other relevant judgements - Exclusions from underlying EBITDA

Items excluded from profit after tax are those gains and losses that, individually or in aggregate with similar it require exclusion in order to provide additional insight into the underlying business performance. The following i after tax in arriving at underlying EBITDA in each year irrespective of materiality:

- Depreciation and amortisation in subsidiaries and equity accounted units;
- Taxation and finance items in equity accounted units;
- Taxation and finance items relating to subsidiaries;
- Unrealised gains/(losses) on embedded derivatives not qualifying for hedge accounting;
- Net gains/(losses) on disposal of interests in subsidiaries;
- Impairment charges net of reversals;
- The underlying EBITDA of discontinued operations;
- Adjustments to closure provisions where the adjustment is associated with an impairment charge and for legacy sit disturbance or environmental contamination relates to the pre-acquisition period.

In addition, there is a final judgemental category which includes, where applicable, other credits and charges tha if of a similar type, are of a nature or size to require exclusion in order to provide additional insight into und 2023, this includes all re-estimates of the closure provisions for fully impaired sites identified in the second h materiality of the adjustment in aggregate. In 2022 this category included the gain recognised by Kitimat relating the gain recognised upon sale of the Cortez royalty. In 2021 the category included the changes in closure estimate Australia and Gove Refinery.

	2023 US$m	2022 US$m Restated[a]	2021 US$m Restated[a]
Profit after tax for the year	**9,953**	13,048	22,597
Taxation	**3,832**	5,614	8,236
Profit before taxation	**13,785**	18,662	30,833
Depreciation and amortisation in subsidiaries excluding capitalised depreciation[b]	**4,976**	4,871	4,525
Depreciation and amortisation in equity accounted units	**484**	470	497
Finance items in subsidiaries	**1,713**	1,846	26
Taxation and finance items in equity accounted units	**741**	640	759
(Gains)/losses on embedded commodity derivatives not qualifying for hedge accounting (including foreign exchange)	**(15)**	(6)	51
Impairment charges net of reversals[c]	**936**	52	269
Gain recognised by Kitimat relating to LNG Canada's project[d]	—	(116)	(336)
Change in closure estimates (non-operating and fully impaired sites)[e]	**1,272**	180	1,096
Loss on disposal of interests in subsidiary[c]	—	105	—
Gain on sale of the Cortez royalty[f]	—	(432)	—
Underlying EBITDA	**23,892**	26,272	37,720

(a) Comparative information has been restated to reflect the adoption of narrow-scope amendments to IAS 12. Refer to page 166 for details.
(b) Depreciation and amortisation in subsidiaries for the year ended 31 December 2023 is net of capitalised depreciation of US$358 million (2022: US$139 million; 2021: US$172 million).
(c) Refer to note 4 for details.
(d) During 2022, LNG Canada elected to terminate their option to purchase additional land and facilities for expansion of their operations at Kitimat, Ca underlying EBITDA consistent with prior years as it was part of a series of transactions that together were material. On 3 December 2021 we gained control over a new wharf at Kitimat that was built and paid for by LNG Canada. The gain on recognition was excluded from underlying EBITDA on the grounds of individual magnitude and con impairment charge in 2021. Refer to note 4 for details.
(e) In 2023 the charge includes US$0.9 billion related to the closure provision update announced by Energy Resources of Australia on 12 December 2023 together with half year results for the period ended 30 June 2023, published in August. This update was considered material and therefore it was aggregated with ot which were similar in nature and have been excluded from underlying EBITDA. The other closure study updates were at legacy sites managed by our centr at Yarwun alumina refinery which was expensed due to the impairment earlier in the year. In 2022, the charge related to re-estimates of underlying cl environmental damage preceded ownership by Rio Tinto. In 2021, the closure provision increase excluded from underlying earnings was attributable to study update Australia, Diavik, Gove refinery, and a number of the Group's legacy sites where the environmental damage preceded ownership by Rio Tinto.
(f) On 2 August 2022, we completed the sale of a gross production royalty which was retained following the disposal of the Cortez Complex in 2008. The ga excluded from underlying EBITDA on the grounds of individual magnitude.

2 Earnings per ordinary share

Basic earnings per share

	2023	2022 Restated[a]	2021 Restated[a]
Net earnings attributable to owners of Rio Tinto (US$ million)	**10,058**	12,392	21,115
Weighted average number of shares (millions)[b]	**1,621.4**	1,619.8	1,618.4
Basic earnings per ordinary share (cents)	**620.3**	765.0	1,304.7

Diluted earnings per share

For the purposes of calculating diluted earnings per share, the effect of dilutive securities of 10.1 million shares in 2023 (2022: 9.8 million; 2021: 10.5 million) is added to the weighted average number of shares described in footnote (b) below. This effect is cal method, in accordance with IAS 33 "Earnings per Share". Our only potential dilutive ordinary shares are share a conditions are described in note 27.

	2023	2022 Restated[(a)]	2021 Restated[(a)]
Net earnings attributable to owners of Rio Tinto (US$ million)	**10,058**	12,392	21,115
Weighted average number of shares (millions)[(b)]	**1,631.5**	1,629.6	1,628.9
Diluted earnings per share attributable to ordinary shareholders of Rio Tinto (cents)	**616.5**	760.4	1,296.3

(a) Comparative information has been restated to reflect the adoption of narrow-scope amendments to IAS 12. Refer to page 166 for details.
(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 1,250.5 million (2022: 1,248.9 million; 2021: 1,247.4 million) plus the average number of Rio Tinto Limited shares outstanding of 370.9 million (2022: 370.9 million; 2021: 371.0 million) over the relevant period. There were no cross holdings of shares between Rio Tinto Limited and Rio Tinto plc at 31 December 2023 (2022: nil; 2021: nil).

Notes to the 2023 financial statements

3 Dividends

Our Directors have announced a final dividend of 258.0 cents per share on 21 February 2024. This is expected to result in payments of US$4.2 billion. The dividend will be paid on 18 April 2024 to Rio Tinto plc and Rio Tinto Limited shareholders on the reg on 8 March 2024. Dividends per share announced for the year ended 31 December are as follows:

	2023	2022	2021
Ordinary dividends per share: announced with the results for the year	**258.0c**	225.0c	417.0c
Special dividends per share: announced with the results for the year[(a)]	**—**	—	62.0c

(a) Dividends are determined in US dollars, which is our functional currency, and declared in British pounds for Rio Tinto Plc and Australian dollars for Rio Tin exchange rate to convert the US dollar dividend into British pounds and Australian dollars is determined with reference to the WMR 4pm (UK) fixings on the da results for the year. Ordinary shareholders of Rio Tinto Limited and Rio Tinto Plc are paid equal cash dividends on a per share basis in line with the terms

Total dividends per share paid in the year

	Dividends per share 2023	Dividends per share 2022	Dividends per share 2021
Previous year final - paid during the year (US cents)	**225.0c**	417.0c	309.0c
Previous year special - paid during the year (US cents)	**—**	62.0c	93.0c
Interim - paid during the year (US cents)	**177.0c**	267.0c	376.0c
Interim special - paid during the year (US cents)	**—**	—	185.0c
Total paid during the year (US cents)	**402.0c**	746.0c	963.0c

	Dividends per share 2023	Dividends per share 2022	Dividends per share 2021
Rio Tinto plc previous year final (pence)	**185.4p**	306.7p	221.9p
Rio Tinto plc previous year special (pence)	**—**	45.6p	66.8p
Rio Tinto plc interim (pence)	**137.7p**	221.6p	270.8p
Rio Tinto plc interim special (pence)	**—**	—	133.3p
Total paid during the year (pence)	**323.1p**	573.9p	692.8p
Rio Tinto Limited previous year final – fully franked at 30% (Australian cents)	**326.5c**	577.0c	397.5c
Rio Tinto Limited previous year special – fully franked at 30% (Australian cents)	**—**	85.8c	119.6c
Rio Tinto Limited interim – fully franked at 30% (Australian cents)	**260.9c**	383.7c	509.4c
Rio Tinto Limited interim special – fully franked at 30% (Australian cents)	**—**	—	250.6c
Total paid during the year (Australian cents)	**587.4c**	1,046.5c	1,277.1c

The franking credits available to the Group at 31 December 2023, after allowing for Australian tax payable in respect of the curren reporting period’s profit, are estimated to be US$8,734 million (2022: US$7,246 million; 2021: US$6,611 million).

The proposed Rio Tinto Limited dividend will be fully franked based on a tax rate of 30%, and reduce the franking account balance by US$410 million

Reconciliation of dividend declared to dividend paid

	2023 US$m	2022 US$m	2021 US$m
Rio Tinto plc previous year final dividend payable	**2,875**	5,024	3,809
Rio Tinto plc previous year special dividend payable	**—**	747	1,146
Rio Tinto plc interim dividend payable	**2,147**	3,162	4,627
Rio Tinto plc interim special dividend payable	**—**	—	2,276
Rio Tinto Limited previous year final dividend payable	**815**	1,597	1,138
Rio Tinto Limited previous year special dividend payable	**—**	237	343
Rio Tinto Limited interim dividend payable	**629**	949	1,372
Rio Tinto Limited interim special dividend payable	**—**	—	674
Dividends payable during the year	**6,466**	11,716	15,385
Net movement of unclaimed dividends in the year	**4**	11	(28)
Dividends paid during the year[(b)]	**6,470**	11,727	15,357

(b) We economically hedge the dividend cash flows from the announcement date to the payment date in order to reduce our foreign exchange exposure on these cash f these hedges is shown within ‘Other items’ in the Cash flows from consolidated operations and is not included in the above.

4 Impairment charges net of reversals

Recognition and measurement

Impairment charges and reversals are assessed at the level of cash-generating units (CGUs) which, in accordance Assets", are identified as the smallest identifiable asset or group of assets that generate cash inflows, which inflows from other assets. Separate cash-generating units are identified where an active market exists for inte of those products are further processed internally. In some cases, individual business units consist of several operations with generating streams which constitute separate CGUs.

Goodwill acquired through business combinations is allocated to the cash-generating unit or groups of cash-gene benefit from the related business combination, and tested for impairment at the lowest level within the Group a internal management purposes. All cash-generating units containing goodwill (note 11), indefinite-lived intangible ass are not ready for use (note 12) are tested annually for impairment as at 30 September, regardless of whether th or more frequently if events or changes in circumstances indicate a potential impairment charge.

Other relevant judgements - determination of CGUs

Judgement is applied to identify the Group's CGUs, particularly when assets belong to integrated operations, impact impairment charges and reversals. The most relevant judgement continues to relate to the grouping of R Quebec Operations and QIT Madagascar Minerals (QMM) as a single CGU on the basis that they are vertically in there is no active market for QMM's ilmenite.

Property, plant and equipment, including right-of-use assets and intangible assets with finite lives are review frequently if there is an indication that the carrying amount may not be recoverable. This review starts with a generating units to consider changes in the business or strategic direction. Following this, an assessment of i performed. Internal sources of information considered include assessment of the financial performance of the CG External sources of information include changes in forecast commodity prices, costs and other market factors.

Non-current assets (excluding goodwill) that have suffered impairment are reviewed using the same basis for val whenever events or changes in circumstances indicate that the impairment loss may no longer exist, or may have impairment reversal will be recognised. The carrying amount of the cash-generating unit after reversal must be amount, as calculated above, and (b) the carrying amount that would have been determined (net of amortisation o loss been recognised for the cash-generating unit in prior periods.

In 2023, we identified indicators of impairment at the Gladstone alumina refineries in the Aluminium segment ar at the Simandou project. Refer to page 179 for details.

Key judgement - indicators of impairment and impairment reversals

The Oyu Tolgoi and Kitimat cash-generating units have both been impaired in previous years and are therefore indicators of further impairment or impairment reversal as such adjustments would likely be material to our r impairment, the carrying value and fair value for these CGUs were equal, making the CGUs sensitive to changes albeit headroom may have subsequently arisen due to the passage of time.

Oyu Tolgoi

We assessed the Oyu Tolgoi CGU for internal sources of information that could indicate impairment or impairme operational performance of the mine and development progress for the underground operation. For external sour indicate impairment or impairment reversal, we considered current and projected commodity prices. We conclude indicators of impairment or impairment reversal.

Kitimat

The Kitimat smelter was impaired in 2013 and 2014 during the construction phase as cost overruns were not exp through economic performance. The plant was further impaired in 2021 (refer to page 180 for details) as opera adversely impacted by a workforce strike in June 2021 that has reduced the capacity over a prolonged period.

In 2023, the operational performance of the plant was considered as part of the assessment of internal source impairment or impairment reversal. As highlighted in the climate change section, the economic performance of segment has the potential to perform more strongly as the world transitions to a lower carbon future; however sources of information did not indicate that this had yet been priced into asset valuations. We concluded tha impairment or impairment reversal.

Where indication of impairment or impairment reversal exists, an impairment review is undertaken. The recoverab reference to the higher of value in use (being the net present value of expected future cash flows of the relev condition) and fair value less costs of disposal (FVLCD). When the recoverable amount of the cash-generating un FVLCD, this amount is further classified in accordance with the fair value hierarchy for observable market data account for the cash-generating unit being tested. The Group considers that the best evidence of FVLCD is the v market or binding sale agreement and, in this case, the recoverable amount is classified in the fair value hier on quoted prices for equity instruments but adjusted to reflect factors such as a lack of liquidity in the mark level 2 in the fair value hierarchy. No cash-generating units are currently assessed for impairment by referenc FVLCD classified as level 1 or level 2.

Notes to the 2023 financial statements

4 Impairment charges net of reversals *continued*

Where unobservable inputs are material to the measurement of the recoverable amount, FVLCD is based on the best infor the amount the Group could receive for the cash-generating unit in an orderly transaction between market participants This is often estimated using discounted cash flow techniques and is classified as level 3 in the fair value hierarch

Where the recoverable amount is assessed using FVLCD based on discounted cash flow techniques, the resulting estimate
life-of-mine and long-term production plans. These may include anticipated expansions which are at the evaluation sta

The cash flow forecasts for FVLCD purposes are based on management's best estimates of expected future revenues and c
future cash costs of production, capital expenditure, and closure, restoration and environmental costs. For the purpo
a market participant's perspective, the cash flows incorporate management's price and cost assumptions in the short a
longer term, operating margins are assumed to remain constant where appropriate, as it is considered unlikely that a
prepare detailed forecasts over a longer term. The cash flow forecasts may include net cash flows expected to be real
processing and sale of material that does not currently qualify for inclusion in mineral reserves. Such non-reserve m
there is a high degree of confidence in its economic extraction. This expectation is usually based on preliminary dri
mineralisation that are contiguous with existing ore reserves. Typically, the additional evaluation required to achie
material has not yet been done because this would involve incurring evaluation costs earlier than is required for the
of the mine.

As noted above, cost levels incorporated in the cash flow forecasts for FVLCD purposes are based on the current life
production plan for the cash-generating unit. This differs from value in use which requires future cash flows to be e
current condition and therefore does not include future cash flows associated with improving or enhancing an asset's
enhancements to assets may be included in FVLCD calculations and, therefore, generally result in a higher value.

Where the recoverable amount of a cash-generating unit is dependent on the life of its associated orebody, expected f
current life of mine and long-term production plans; these are based on detailed research, analysis and iterative mod
return from investment, output and sequence of extraction. The mine plan takes account of all relevant characteristic
waste-to-ore ratios, ore grades, haul distances, chemical and metallurgical properties of the ore impacting process r
processing equipment that can be used. The life-of-mine plan and long-term production plans are, therefore, the basis
output and production costs in each future year.

Forecast cash flows for ore reserve estimation for JORC purposes are generally based on Rio Tinto's commodity price f
short-term market prices will revert to the Group's assessment of the long-term price, generally over a period of thr
commodities, these forecast commodity prices are derived from a combination of analyses of the marginal costs of the
price of these commodities. These assessments often differ from current price levels and are updated periodically. Th
published medium- and long-term forward prices necessarily provide a good indication of future levels because they te
by spot prices. The price forecasts used for mineral reserve estimation are generally consistent with those used for
management deems that in certain economic environments a market participant would not assume Rio Tinto's view on pric
preparing FVLCD impairment calculations management estimates the assumptions that a market participant would be expec

Forecast future cash flows of a cash-generating unit take into account the sales prices under existing sales contrac

The discount rates applied to the future cash flow forecasts represent an estimate of the rate the market participant
time value of money and the risks specific to the asset for which the future cash flow estimates have not been adjust
average cost of capital is generally used as a starting point for determining the discount rates, with appropriate ad
countries in which the individual cash-generating units operate. For final feasibility studies and mineral reserve es
which are generally higher than the Group's weighted average cost of capital, are used. For developments funded with
component of the weighted average cost of capital may be calculated by reference to the specific interest rate of the
leverage of the project.

For operations with a functional currency other than the US dollar, the impairment review is undertaken in the releva
estimating FVLCD, internal forecasts of exchange rates take into account spot exchange rates, historical data and ext
constant in real terms after five years. The great majority of the Group's sales are based on prices denominated in U
currencies of countries in which the Group produces commodities strengthen against the US dollar without an increase
flows and, therefore, net present values are reduced. Management considers that, over the long term, there is a tende
commodity prices to compensate to some extent for movements in the value of the US dollar, particularly against the A
dollar, and vice versa. However, such compensating changes are not synchronised and do not fully offset each other. I
present value of future cash flows in foreign currencies is translated at the spot exchange rate on the testing date

Generally, discounted cash flow models are used to determine the recoverable amount of CGUs. In this case, significan
determine the appropriate estimates and assumptions used and there is significant estimation uncertainty. In particul
disposal valuations, judgement is required to determine the estimates a market participant would use. The discounted
sensitive to the following estimates: the timing of project expansions; the cost to complete assets under constructio
production timing and recovery rates; exchange rates; operating costs; reserve and resource estimates; closure costs
long-term contract revenues between CGUs; and, in some instances, the renewal of mining licences. Some of these varia
individual CGU. Future changes in these variables may differ from management's expectations and may materially alter
the CGUs.

		2023				2022	2021
	Note	**Pre-tax amount US$m**	**Taxation US$m**	**Non-controlling interest US$m**	**Net amount US$m**	Pre-tax amount US$m	Pre-tax amount US$m
Aluminium - Alumina refineries		**(1,175)**	**347**	**—**	**(828)**	—	—
Aluminium – Pacific Aluminium		**—**	**—**	**—**	**—**	(202)	—
Aluminium - Kitimat		**—**	**—**	**—**	**—**	—	(269)
Other operations - Simandou		**239**	**152**	**(215)**	**176**	—	—
Other operations - Roughrider		**—**	**—**	**—**	**—**	150	—
Total impairment charges net of reversals		**(936)**	**499**	**(215)**	**(652)**	(52)	(269)
Allocated as:							
Intangible assets	12	**231**				150	—
Property, plant and equipment	13	**(1,167)**				—	(269)
Investment in equity accounted units (EAUs)		**—**				(202)	—
Total impairment charges net of reversals		**(936)**				(52)	(269)
Comprising:							
Net impairment (charges)/reversals of consolidated balances					**(936)**	150	(269)
Impairment (charges) related to EAUs (pre-tax)					**—**	(202)	—
Total impairment charges net of reversals					**(936)**	(52)	(269)
Taxation (including related to EAUs)					**499**	—	72
Non-controlling interests					**(215)**	—	—

Total impairment charges net of reversals in the income statement	**(652)**	(52)	(197)

2023

Aluminium - Alumina refineries, Australia

The Gladstone alumina refineries are responsible for more than half of our scope 1 carbon dioxide emissions in key focus as we evaluate options to decarbonise our assets. In March 2023, the Australian Parliament legislated heavy industrial carbon emitters to purchase carbon credits based on their scope 1 emissions with a reducing ba challenging market conditions facing these assets, together with our improved understanding of the capital requ now legislated cost escalation for carbon emissions, were identified as impairment triggers during the six mont

Using a fair value less cost of disposal methodology and discounting real-terms post-tax cash flows at 6.6%, we have recognised a pre-tax impairment charge of US$1,175 million (post-tax US$828 million). This represented a full impairment of the property, plant and Yarwun alumina refinery (US$948 million) and an impairment of US$227 million for the property, plant and equipment of Queensland A Limited (QAL). These impairments reflect market participant assumptions and the difficult trading conditions fo below our planned output.

For QAL, the recoverable amount (net present value of US$325 million) was represented by future cash flows attributable to the d project. This major capital project improves the energy efficiency of the alumina production process and signif These cash flows were risk adjusted to reflect the pre-feasibility study stage of project evaluation. If invest approved, the post-tax impairment charge would be US$325 million greater and result in a full impairment of QAL.

Impact of climate change on our business - Gladstone alumina refineries

We are committed to the decarbonisation of our assets to reduce Scope 1 and 2 emissions by 50% by 2030 and to net zero emissions by 2050 relative to our 2018 equity baseline. We anticipate that further carbon action may be necessary to align with t agreement to limit temperature increase to 1.5°C. To illustrate the sensitivity of the refinery valuations to the cost of modelled a 10% increase in those unit costs across all years, before the impact of decarbonisation projects wit 2023 impairment valuation remaining constant. For QAL, this sensitivity indicated a US$60 million reduction in the pre-tax this is expected to be largely mitigated by decarbonisation projects, including double digestion. There was n plant and equipment was already fully impaired.

Notes to the 2023 financial statements

4 Impairment charges net of reversals *continued*

Other operations - Simandou, Guinea

The Simandou project in Guinea was fully impaired in 2015 as uncertainty over infrastructure ownership and funding ha on exploration and evaluation being neither budgeted nor planned. In the second half of 2023, we concluded key agreem Guinea and Winning Consortium Simandou (WCS) on the trans-Guinean infrastructure for the Simandou project and progre our joint venture partners that will enable the development of the Simandou iron-ore mine. We therefore concluded tha agreements remain subject to regulatory approvals, the key uncertainties that gave rise to the 2015 impairment have r impairment reversal trigger was identified at 1 October 2023.

Revisions to the Investment Framework and changes to the proposed infrastructure arrangements since 2015 mean that hi with these items have been superseded and therefore the attributable asset cost and accumulated impairment associated been permanently derecognised. Previously capitalised exploration and evaluation costs associated with the mine and plant and equipment that continue to be relevant to the Simandou project development have been assessed for impairmen recoverable amount of the cash-generating unit measured on a fair value less cost of disposal basis, is significantly of the remaining impaired assets and therefore supports a full reversal of their previously recorded impairment charg reversal of US$239 million is allocated as US$231 million to intangible assets (exploration and evaluation) and US$8 million to property, plant and equipment. A deferred tax asset of US$152 million has been recorded to account for the difference between the asset values incl accounts and the carrying value of in-country depreciable assets. Under our Aspirational Leadership pricing scenario, are expected to drive demand for the higher-grade iron ore at Simandou which would indicate a higher recoverable valu impairment has been fully reversed, this Paris aligned-sensitivity would not result in a different impairment reversa

All spend on the Simandou project between the impairment in 2015 and 30 September 2023 was expensed as incurred. With 2023, qualifying spend is capitalised.

2022

Other operations - Roughrider, Canada

On 17 October 2022, we completed the sale of the Roughrider uranium undeveloped project located in the Athabasca Basin i Canada for US$150 million (US$80 million in cash and US$70 million in shares of Uranium Energy Corp.). The project was fully impaired year ended 31 December 2017 due to significant uncertainty over whether commercially viable quantities of mineral resourc a future date. The sale therefore led to an impairment reversal during the year ended 31 December 2022. It also led t recognised US$105 million arising from the recycling of the currency translation reserve to the income statement.

Aluminium - Pacific Aluminium, Australia and New Zealand

The operating and economic performance of the Boyne Smelter in Queensland, Australia was below our expectations in 20 with reduced capacity and the economic performance suffered due to the high cost of energy from the coal-fired Gladst conditions were identified as an impairment trigger. We calculated a recoverable amount for the cash-generating unit expressed in real terms and discounted using a post-tax rate of 6.6% over the period to 2029. This date was chosen as it coincided with both t remaining term of the Boyne Smelter joint venture agreements and the Group's Paris-aligned commitment to reduce carbo by 50% by 2030 relative to the 2018 baseline. Despite the implementation of temporary energy price caps by the Australian Government i in an impairment charge of US$202 million, representing a full impairment of the carrying value of the Boyne Smelter investment unit.

2021

Aluminium – Kitimat, Canada

On 3 December 2021, we announced completion of the newly-constructed wharf at Kitimat. Construction spend was incurred therefore a gain of US$396 million representing the estimated fair value of the cost of construction was recorded and the carr Kitimat CGU increased accordingly. Output from the smelter was reduced to 25% as a result of a workforce strike in 2021 and ramp-up to full capacity was expected to extend through to 2022. As a previously impaired CGU, and therefore carrying limited headroom, these f identified as conditions that could indicate that the uplifted carrying value may not be supportable and therefore th

Using the fair value less cost of disposal methodology and discounting real post-tax cash flows at 6.6%, we recognised a post-tax impairment charge of US$197 million (pre-tax US$269 million) representing the difference between the recoverable amount (US$3,126 million) and the carrying value (US$3,323 million).

5 Acquisitions and disposals

Acquisitions

Recognition and measurement

In determining whether a particular set of activities is a business, an acquired arrangement has to have an input and substantive process, which together significantly contribute to the ability to create outputs. Where an acquisition does not meet the definition of a business as defined by IFRS 3 "Business Combinations" each asset is recognised on the balance sheet at fair value. In the Group cash flow statement we assess, based on the substance of the transaction, whether to allocate the cash consideration for these transactions either to "Purchases of property, plant and equipment, and intangible assets" or to "Acquisitions of subsidiaries, joint ventures and associates" depending on the type of assets purchased.

For undeveloped mining projects that have arisen through acquisition, the allocation of the purchase price consideration may result in undeveloped properties being recognised at an earlier stage of project evaluation compared with projects arising from the Group's exploration and evaluation program. Subsequent expenditure on acquired undeveloped projects is only capitalised if it meets the high degree of confidence threshold discussed in note 12.

Where we increase our ownership interest in a subsidiary, the difference between the purchase price and the carrying value of the share of net assets acquired is recorded in equity. The cash cost of such purchases is included within "financing activities" in the cash flow statement.

2023

On 8 November 2023 we acquired Meridian Minera Limitada's (MML) 57.7% share in Agua de la Falda (ADLF) for US$45 million. Subsequently, we entered into an agreement with Corporación Nacional del Cobre de Chile (Codelco), a state-owned enterprise, to explore and potentially acquired assets in Chile's prospective Atacama region - the project will be known as Nuevo Cobre.

The majority ownership of 57.7% equity confers voting rights that will allow Rio Tinto to control the relevant activities of Nuevo Cobre. Therefore, we have accounted for Nuevo Cobre as an investment in a partially owned subsidiary. There was no goodwill recognised on acquisition as the transaction was not accounted for as a business combination. The difference between the net assets acquired and the purchase consideration has been recognised within Intangible assets as Exploration and Evaluation assets. The transaction gives rise to the recognition of a non-controlling interest of US$33 million representing Codelco's 42.3% equity stake in Nuevo Cobre.

On 30 November 2023, Rio Tinto and Giampaolo Group completed a transaction to form the Matalco joint venture. We acquired a 50% equity interest in Matalco Canada Inc which owns one Canadian aluminium recycling facility and a 50% equity interest in Matalco USA LLC which owns six aluminium recycling facilities in the USA for combined consideration of US$738 million, inclusive of accrued transaction costs and working capital adjustments.

Rio Tinto has joint control over the Matalco businesses and therefore our investment is accounted for under the equity method.

At 31 December 2023, the fair value of the underlying identifiable assets acquired and liabilities assumed have been provisionally determined and will be finalised within one year of the acquisition date in line with the requirements of IFRS.

2022

Following approval from Australia's Foreign Investment Review Board (FIRB), on 29 March 2022 we completed the acquisition of Rincon Mining Pty Limited, the owner of a lithium project in Argentina. Total cash consideration was US$825 million. In determining whether Rincon's set of activities is a business, we assessed whether it had inputs and substantive processes which together significantly contribute to the ability to create outputs. Based on this assessment, we concluded that Rincon did not meet the definition of a business as defined by IFRS 3 "Business Combinations" and therefore no goodwill was recorded. The transaction was therefore treated as an asset purchase with US$822 million of capitalised exploration and eva recorded for the principal economic resource. The balanc consideration was allocated to property, plant and equip assets/liabilities. For the Group cash flow statement we determi since Rincon constitutes a group of companies, it was ap present the cash outflow as "Acquisitions of subsidiarie and associates" rather than as separate asset purchases did not meet the definition of a business combination.

On 31 August 2022 we made a US$25 million investment in McEwen Copper Inc. through our copper leaching technology[TM] ventu We accounted for our holding in McEwen Copper Inc. as an in associate, given our representation on their Board.

On 16 December 2022 we acquired the remaining 49% share of Turquoise Hill Resources for expected consideration of US$3.2 billion, inclusive of transaction costs. This transaction was not business combination as it related to the purchase of no interests in an entity already consolidated as a subsidi the transaction did not result in the remeasurement of a liabilities and has been accounted for in the statement adjustment to non-controlling interests and retained ear

At 31 December 2022, consideration paid amounted to US$2,961 million including US$33 million of transaction costs. In 2023, a further US$33 million of transaction costs were paid (previously US$41 million expected to be Certain shareholders exercised their right to dissent to accordance with the terms of the circular, those dissenti received initial consideration of C$34.40 per share, with final conside depending on the outcome and timing of dissent proceeding the end of 2023 remained outstanding. We included within provisions (note 26) US$211 million for additional consideration to to the dissenting shareholders representing the differenc initial consideration and C$43 per share paid to all other shareho

2021

On 18 November 2021, we announced that we had completed acquisition of the 40% share in the Diavik Diamond Mine in the Northwest Territories of Canada held by Dominion Diamond becoming the sole owner as a result. The transaction did not meet definition of a business combination and therefore the i assets and liabilities were treated as an asset purchase purchase, we recognised our 60% existing share of assets, revenues and expenses, with liabilities recognised according to i obligations, and a corresponding 40% receivable or contingent ass representing the co-owner's share where applicable. Rece relating to the co-owner's share were de-recognised and of the net purchase consideration on completion.

Disposals

Recognition and measurement

If a group of assets and liabilities (Disposal group) is value of the disposal group is de-recognised with the di between the carrying amount and the consideration receiv recognised in the income statement. Certain amounts prev recognised in other comprehensive income in respect of t disposed of may be recycled to the income statement. The proceeds of disposals are included within "Investing act cash flow statement.

Notes to the 2023 financial statements

5 Acquisitions and disposals continued

2023

On 28 August 2023, we completed the sale of a 55% interest in the undeveloped La Granja project in Peru for US$105 million to First Quantum Minerals (FQM). The consideration received is recorded in the cash flow statement as US$104 million (net of US$1 million of cash balance), of which US$16 million relating to sale of land is included within "net cash used in investing activities" and the remaining US$88 million is included within "net cash generated from operating activities". As a result of the sale, our retained interest in La Granja represents a 45% owned associate (equity accounted) over which Rio Tinto has significant influence during the evaluation phase.

On initial recognition, the gain on fair valuation of interest retained in the project of US$85 million was recognised to the extent of US$47 million (relating to the 55% interest sold) within "profit relating to interests in undeveloped projects" and the remaining gain of US$38 million was eliminated against the fair value of the EAU. In total, we recognised a pre-tax gain of US$154 million in the income statement, primarily representing the consideration transferred by First Quantum, plus the fair value of the retained interest in the project.

2022

As summarised in note 4, we sold our shareholding in the Roughrider uranium undeveloped project on 17 October 2022 for consideration of US$150 million (US$80 million in cash and US$70 million in shares of Uranium Energy Corp). This transaction was treated as a disposal of a subsidiary as the carrying value was largely represented by assets recorded as a purchase price allocation from the Hathor Exploration business combination in 2012.

2021

There were no material disposals in 2021.

6 Revenue by destination and product

Recognition and measurement

We recognise sales revenue related to the transfer of promised goods or services when control of the goods or services passes to the customer. The amount of revenue recognised reflects the consideration to which the Group is or expects to be entitled in exchange for those goods or services.

Sales revenue is recognised on individual sales when control transfers to the customer. In most instances, control passes and sales revenue is recognised when the product is delivered to the vessel or vehicle on which it will be transported once loaded, the destination port or the customer's premises. There may be circumstances when judgement is required based on the five indicators of control below:

- The customer has the significant risks and rewards of ownership and has the ability to direct the use of, and obtain substantially all of the remaining benefits from, the good or service.
- The customer has a present obligation to pay in accordance with the terms of the sales contract. For shipments under the Incoterms cost, insurance and freight (CIF)/carriage paid to (CPT)/cost and freight (CFR), this is generally when the ship is loaded, at which time the obligation for payment is for both product and freight.
- The customer has accepted the asset. Sales revenue may be subject to adjustment if the product specification does not conform to the terms specified in the sales contract but this does not impact the passing of control. Assay and specification adjustments have historically been immaterial.
- The customer has legal title to the asset. The Group usually retains legal title until payment is received for credit risk purposes only.
- The customer has physical possession of the asset. This indicator may be less important as the customer may obtain control of an asset prior to obtaining physical possession, which may be the case for goods in transit.

Revenue is principally derived from sale of commodities. We sell the majority of our products on CFR or CIF Incoterms. This means t
Group is responsible (acts as principal) for providing shippin
and, in some instances, insurance after the date at which cont
goods passes to the customer at the loading port. The Group, t
has separate performance obligations for freight and insurance
that are provided solely to facilitate the sale of the product
Other Incoterms commonly used by the Group are free on board (
where the Group has no responsibility for freight or insurance
control of the goods has passed at the loading port, and deliv
place (DAP), where control of the goods passes when the produc
delivered to the agreed destination. For these Incoterms, ther
one performance obligation, being the provision of product at
where control passes.

Within each sales contract, each unit of product shipped is a
performance obligation. Revenue is generally recognised at the
contracted price as this reflects the standalone selling price
revenue excludes any applicable sales taxes. Sales of copper
concentrate are stated net of the treatment and refining charg
will be required to convert it to an end product.

The Group's products are sold to customers under contracts tha
tenure and pricing mechanisms, including some volumes sold on
spot market. Pricing for iron ore is on a range of terms, the
being either monthly or quarterly average pricing mechanisms,
smaller proportion of iron ore volumes being sold on the spot

Certain of the Group's products may be provisionally priced at
revenue is recognised and a provisional invoice issued; howeve
substantially all iron ore and aluminium sales are reflected a
in the results for the period. Provisionally priced receivable
subsequently measured at fair value through the income stateme
under IFRS 9 "Financial Instruments" as described in note 24.
selling price for all provisionally priced products is based o
the quotational period stipulated in the contract. Final price
concentrate are normally determined between 30 and 120 days af
delivery to the customer. The change in value of the provision
receivable is based on relevant forward market prices and is i
sales revenue. Refer to "Other revenue" within the sales by pr
disclosure below.

Revenues from the sale of significant by-products, such as gol
included in sales revenue. Third-party commodity swap arrangem
principally for delivery and receipt of smelter-grade alumina
within operating costs. The sale and purchase of third-party p
for own use or to mitigate shortfalls in our production are ac
on a gross basis with sales presented within revenue from cont
with customers. Other operating income includes revenue incide
the main revenue-generating activities of the operations and i
as a credit to operating costs.

Typically, the Group has a right to payment before or at the po
control of the goods passes, including a right, where applicabl
payment for provisionally priced products and unperformed freig
insurance services. Cash received before control passes is reco
a contract liability. The amount of consideration does not cont
significant financing component as payment terms are less than

We have a number of long-term contracts to supply products to
customers in future periods. Generally, revenue is recognised o
invoice basis, as each unit sold is a separate performance obli
therefore the right to consideration from a customer correspond
with our performance completed to date.

We do not disclose sales revenue from freight and insurance se
separately as we do not consider that this is necessary in ord
understand the impact of economic factors on the Group. Our Ch
Executive, the chief operating decision maker as defined under
"Operating Segments", does not review information specifically
to these sources of revenue in order to evaluate the performan
business segments and Group information on these sources of re
is not provided externally.

Consolidated sales revenue by destination(a)

	2023 %	2022 %	2021 %	2023 US$m	2022 US$m	2021 US$m
Greater China (includes Taiwan)	**59.6**	54.3	59.7	**32,193**	30,172	37,878
United States of America	**13.9**	15.9	12.6	**7,516**	8,823	8,012
Asia (excluding Greater China and Japan)	**7.2**	7.1	6.9	**3,881**	3,937	4,415